TOWN OF NISKAYUNA
Planning Board and Zoning Commission

Agenda
May 22, 2023
7:00 PM

REGULAR AGENDA MEETING

I. CALL TO ORDER

II. ROLL CALL

III. APPROVAL OF MINUTES

1. May 8, 2023

IV. PUBLIC HEARINGS

V. PRIVILEGE OF THE FLOOR

VI. UNFINISHED BUSINESS

1. RESOLUTION 2023-15 A Resolution to make a recommendation to the Town Board on a Special Use Permit for a 22-lot Average Density Development (ADD) subdivision consisting of 10 single-family detached homes and 12 townhomes at 1851 Union St off of Ruffner Road (Mohawk Golf Club).

VII. NEW BUSINESS

VIII. DISCUSSION ITEM

1. Antonia Park / Polsinelli Dr. (40.-1-54.11) – An Application for Approval of Plat Plan -- Minor Subdivision approval for a 2-lot minor subdivision and lot line adjustment.

IX. REPORTS

X. COMMISSION BUSINESS

XI. ADJOURNMENT

NEXT MEETING: June 12, 2023 at 7 PM
To be Held in the Town Board Room
& via Remote Software

TOWN OF NISKAYUNA

Planning and Zoning Commission

Hybrid Meeting

Meeting Minutes

May 8, 2023

Members Present: Kevin Walsh, Chairman
Chris LaFlamme
Michael Skrebutenas
Genghis Khan
David D'Arpino
Leslie Gold
Nancy Strang
Joseph Drescher

Also Present: Laura Robertson, Town Planner
Alaina Finan, Town Attorney

I. CALL TO ORDER

Chairman Walsh called the hybrid meeting to order at 7:00 P.M.

II. ROLL CALL

Mr. McPartlon was excused and absent.

III. MINUTES

Ms. Gold made a motion to approve the minutes from the 3/27 meeting. Seconded by Mr. Khan. Hearing no further comments, the minutes were voted on and approved unanimously.

Mr. Skrebutenas made a motion to approve the minutes from the 4/17 meeting. Seconded by Mr. LaFlamme. Chairman Walsh made a friendly amendment to the 4/17 regarding the attendance list. Hearing no further comments, the minutes were voted on and approved unanimously, with the exception of Mr. D'Arpino and Mr. Drescher who abstained.

IV. PUBLIC HEARINGS

No public hearings tonight.

V. PRIVILEGE OF THE FLOOR

Mr. Bill Sweet of the Mohawk Golf Club came forward first by request and stated that due to the fact that he had received the TDE comments as well as the Planning Board agenda too late to properly prepare for tonight's meeting, he was requesting to table any action on the project at this meeting.

Chairman Walsh made a motion to table Resolution 2023-15 until the 5/22 meeting. Seconded by Mr. Skrebutenas.

Mr. Khan asked what time the packet was available to the public. Ms. Robertson stated the packet was available at 9pm on Friday. She has been emailing the applicants a reminder to attend the meeting and, as a curtesy, including a link to the packet in her reminder on Monday, but she said the packet was available to everyone late on Friday.

Mr. Sweet stated he would like to have a meeting with the project leads and the TDE before the following meeting, as was discussed at the 4/17 meeting.

Hearing no further comments, Chairman Walsh asked for all in favor on the motion to table the resolution. All were in favor.

Chairman Walsh said that although the Mohawk Golf Club will not be discussed at this meeting, Privilege of the Floor will be conducted as usual for those wishing to speak on the matter.

Ms. Shoshana Bewlay of 1119 Ruffner Rd stated that the meeting requested by Mr. Sweet with the Planning Board could not have a quorum present without it being public.

Ms. Lorene Zabin of 2455 Brookshire Dr stated that it was rude of Mr. Sweet to request the resolution be tabled, as many people had shown up specifically to see action on this project. Ms. Zabin said it was up to the Planning Board to take the public into consideration, not just the applicant.

Mr. Ken Schwartz of 1363 Ruffner Ct stated that at the last meeting, the Polsinelli Dr applicants were questioned for a great deal of time regarding water issues. Mr. Schwartz said comparatively that project had much less impact on stormwater than the Mohawk Club project, and he felt frustrated that the Club representatives have not given substantive answers about this issue.

Mr. Norm Shilling of 1400 Rowe Rd read through the TDE report for the Antonia Park project and stated his concern with the underground detention basins as proposed by the applicant. Mr. Shilling wondered who would be responsible for the maintenance of the detention basins. Mr. Shilling stated that the detention basin was designed to handle the mean storm load (confidence level 50%), not the higher storm loads (confidence 90%). He asked how many people would like something that effects there home or their safety to be designed to a 50% confidence level rather than a 90% confidence level.

Mr. Charles Horowitz of 1223 Ruffner Rd stated that he had adequate time to review the packet for tonight's meeting and was happy to see that the surrounding of his neighbor's property at 1219 Ruffner Rd by 3 roads as a result of the Mohawk Club project was labelled as an unforeseen hardship in the Planning Board findings. Mr. Horowitz was unhappy, however, that his property was not included in that unforeseen hardship. Mr. Horowitz stated that his property is the closest to any of the proposed units, and that the proposed road curved in a way that brought it closer to his house but did not alter the green.

Mr. Jim Dillon of 1242 Ruffner Rd was disturbed that a meeting would be occurring with the applicants and Planning Board to discuss the technical nature of the project. Mr. Dillon stated that the original intent of this application was to have the project go through without disturbance to the golf course and that the surrounding neighborhood would have to absorb all of the

impacts. Mr. Dillon mentioned that the area where the access road is proposed currently has many beautiful trees that would be taken down.

Ms. Louisa Lombardo of 1242 Ruffner Rd stated that there was no reasonable way to access the subdivision and the proposed location was not suitable for development.

Mr. Mark Thomas of 1265 Ruffner Rd read a letter from the Audubon Society of the Capital Region which stated that the Society strongly opposed development of the parcel in question. The area has a high concentration of important trees, birds, insects and other wildlife. Furthermore, the letter indicates that the area is a wetland which is ecologically important.

Mr. Lou D'Ambrosi of 1184 Hedgewood Ln stated that the developer was taking on no hardships, and all the impacts would go to the existing residents. Mr. D'Ambrosi believed that more developments would follow this on the Club property.

Mr. Fantauzzi of 1397 Rowe Rd stated that he is at the bottom of a hill and experiences severe water issues on his property. Mr. Fantauzzi believed that the Polsinelli Dr subdivision would worsen the issues at hand. Mr. Fantauzzi stated that he wanted to see a legitimate means to address the water concerns from the developers.

Mr. Doug McFaddon of Rowe Rd said that there were many comments brought forward by the TDE regarding the Polsinelli Dr project and wondered how they would be addressed before a resolution was made.

Ms. Lorene Zabin of 2455 Brookshire Dr referenced the construction of Mansion Square to say that once the land is gone and the project is approved there is no getting the land back. She cautioned the Board to be very thorough in their recommendations. Ms. Zabin stressed that the residents' voices should be heard throughout this process.

Hearing no further comments Chairman Walsh closed Privilege of the Floor.

VI. UNFINISHED BUSINESS

No unfinished business tonight.

VII. NEW BUSINESS

1. **RESOLUTION 2023-15 A Resolution to make a recommendation to the Town Board on a Special Use Permit for a 22-lot Average Density Development (ADD) subdivision consisting of 10 single-family detached homes and 12 townhomes at 1851 Union St off of Ruffner Road (Mohawk Golf Club).**

This item was tabled and not discussed at this meeting.

VIII. DISCUSSION ITEMS

1. **Antonia Park / Polsinelli Dr. (40.-1-54.11) – A sketch plan application for a 2-lot minor subdivision and lot line adjustment.**

Mr. Fred Polsinelli and Mr. Brett Steenburgh came forward on behalf of the project. Ms. Robertson said that the TDE was not present but a meeting would be scheduled soon.

Mr. Steenburgh appreciated the TDE's comments and said that most would be simple fixes. Mr. Steenburgh looked forward to sitting down and having a discussion with the TDE to discuss the items more in depth. Mr. Steenburgh requested the Town Engineer also attend the meeting to discuss sewer issues.

Mr. Steenburgh told Chairman Walsh that given the magnitude of the project (small), it did trigger many of the standard practices set forward in the New York State Stormwater Design Manual that apply to larger projects.

Mr. Steenburgh said that his main focus with the attenuation basin was water quantity, which he had done quite a bit with, and therefore utilized some non-standard practices in his design. Many of the water quality practices do not do much to address attenuation, and as drainage is a primary concern for this region he felt as if water storage was paramount.

Mr. Steenburgh said that many of the standard attenuation practices were not applicable for this project. Mr. Steenburgh stated that the proposals in place were specifically designed and suited for this particular project.

Mr. Steenburgh told Chairman Walsh that the issue of attenuation basin maintenance was a high priority as it affected the salability of the lots.

Mr. Steenburgh estimated that the total area of disturbance was roughly ¾ acres.

Ms. Gold stressed that properly declaring who has responsibility of the attenuation basins was of utmost importance as she had seen instances where ownership is not known which furthers problems.

Mr. Steenburgh stated that he had not responded to the most recent set of TDE comments and restated that he would like to review them in person with the TDE.

Mr. Steenburgh told Mr. Skrebutenas that the creation of an HOA would be unfeasible given there are only 2 proposed units.

Mr. Khan asked if the TDE fully understood the scope of the water issues in the Rowe Rd area. Ms. Robertson said that the Planning Department has had frequent contact with the TDE and comments from the public are also passed along.

Ms. Robertson stressed the importance of visually seeing the flow of water throughout the property on the stormwater plans, which Mr. Steenburgh said he could pull out from the hydrologic modeling and show more clearly to people.

Mr. Khan discussed again the severity of the flooding in that area and requested the applicant ensure that all calculations regarding stormwater were precise as many people could be negatively impacted if the numbers were even slightly off.

Mr. Steenburgh described that due to the clay makeup of the ground on the proposed site, the added impermeable surface would not drastically affect the runoff numbers.

Mr. Khan asked about Mr. Shilling's comment during Privilege of the Floor regarding the usage of mean variables as opposed to extreme variables. Mr. Steenburgh responded saying that the mean variables were in use as they were in nearly all other similar projects he had worked on since the data became available.

Mr. LaFlamme thought that it did not seem reasonable to use the mean variables as the existing conditions were severe. Mr. Steenburgh stated that he has confidence that from his calculations the proposed basins would be equipped to handle severe storms. Mr. Steenburgh said that he believed his basins would lessen the runoff for downhill neighbors.

Ms. Robertson stated that she frequently attends flood water management trainings which she noted differs from stormwater management however the recurring theme from the trainings is that the frequency and severity of storms will increase with climate change. That means that the mean numbers being used for current calculations may be less than the mean in coming years. Ms. Robertson recommended that Mr. Steenburgh take that into account going forward.

Mr. Steenburgh agreed with Ms. Robertson, but stated if that was the wish of the Town, then the Town should modify their code to reflect that. Mr. Steenburgh said that he has done numerous projects in Niskayuna where the applicant was not asked to add these extra accommodations and it would be unfair for him to ask Mr. Polsinelli to be held to a higher standard than anyone else.

Ms. Robertson believed the code was strong on this as it is currently written, because of the documented stromwater issues downstream. Ms. Robertson also noted that the Vincenzo subdivision adjacent to the one in question was already experiencing runoff issues which factored into the request for this subdivision to maximize their stormwater attenuation.

IX. REPORT

1. 1757 Union St Façade Upgrade (materials attached)

Ms. Robertson said that the signage had already been approved with the only change was that the trim would be painted white.

Ms. Gold thought the trim looked too bright.

Ms. Robertson and Chairman Walsh agreed that it looked good and paired well with the sign.
The Planning Board approved of the façade upgrade changes.

X. COMMISSION BUSINESS

Ms. Robertson informed the Board that the second meeting in June would have to be cancelled due to a conflict with the early voting date. The Board asked if the meeting could be rescheduled. Mr. Robertson said that it could not.

XI. ADJOURNMENT

Mr. Skrebutenas motioned to adjourn the meeting, Mr. D'Arpino seconded the motion. All were in favor. The meeting was adjourned at 8:35 pm.

Audubon Society of the Capital Region
P.O. Box 14144
Albany, NY 12212-4144

May 3, 2023

Town of Niskayuna Planning Board
One Niskayuna Circle
Niskayuna, NY 12309

Dear Chairman Walsh and Members of the Planning Board:

The Audubon Society of the Capital Region (ASCR) would like to thank you for providing the opportunity to comment on the proposed special use permit for a 22-lot average density development subdivision (ADD) of single family homes and townhomes in the 14-acre parcel of land owned by the Mohawk Golf Club (MGC). ASCR strongly opposes approval of the ADD and subsequent development of this parcel for the following reasons:

- Deforestation and development of the area will destroy the habitat of resident and migrating wildlife, particularly birds. The area is a mixed successional forest that includes mature coniferous trees and deciduous trees, including shagbark hickory and oak trees, which provide places for birds to build their nests and raise their young. The trees also house insects, the larvae of which feed the nesting birds that breed there.

- ASCR understands that this parcel is a wetland, which is critical to the health of the ecosystem in the area, since wetlands filter rainwater and snow in order to provide clean water for human and animal consumption. Wetlands also support aquatic wildlife which is part of the delicate balance of the property. Creation of new structures will alter vegetation and indirectly impact existing, high-quality habitat.

- Building impervious surfaces such as paved roads, patios, driveways, and homes will cause stormwater runoff to become more concentrated in a time of increasing severe weather events caused by climate change.

ASCR recommends that the Mohawk Golf Club administration consider other portions of its property for subdivision development that will have less impact on the area's ecosystem in accordance with the Town of Niskayuna's Comprehensive Plan and that the Town Board will carefully consider such a dramatic change to an existing land use.

Sincerely,

Teresa Murphy, President
Carol Quantock, Vice President
Audubon Society of the Capital Region

Laura Robertson

From: Margaret Corey <margaret.corey@gmail.com> on behalf of Margaret Corey
Sent: Sunday, May 7, 2023 2:29 PM
To: Laura Robertson
Subject: [EXTERNAL] Proposed Special Use Permit for Development at 1851 Union St and off Ruffner Road

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Ms. Robertson,

I am unable to attend tomorrow evening's Planning Board Meeting, where I understand the Board will vote on issuing a Special Use Permit for the referenced project.

Please provide the Board this letter in OPPOSITION to issuing a Special Use Permit for the project. In the interest of brevity, I will not re-enumerate the many comments from area residents, including me, in opposition to the project. However to summarize the concerns leading to opposition:

- The proposed project is not in conformance with the Town comprehensive plan, which stresses maintaining the character of the existing neighborhood.

The Planning Board Findings for the project state that "there is not a balance between.....streets and utilities with preservation of natural and scenic qualities of open space"

The developers' own engineer, in response to the TDE review of the project, states that the proposed residences will be "compatible" with the Ruffner Road neighborhood but will be "modern style" homes.

The character of the existing neighborhood WILL in fact, be adversely impacted. One existing home will now be surrounded on three sides by roads! The developer, instead of updating the traffic study that the TDE found was based on an outdated standard, instead commented that their study was close enough. Not an acceptable response.

- Significant questions remain unanswered regarding the suitability of the area for development.

Sec. 220-28 states that the ADD variance is appropriate for "suitable areas". The proposed project is not in a "suitable area". Residents have provided photographic evidence of wetlands in the proposed project area. Although the developer's engineer states that the wetlands may not be USACOE regulated because they drain to a municipal storm sewer (with no evidence provided to back this assertion), the poor drainage issues in this portion of Niskayuna are well known and well documented- just refer to the recent resident comments in opposition to developing only two single family homes off Rowe Road, which is downgradient from this proposed development of 22 lots.

The project area also provides excellent wildlife habitat, which has been well documented to the Board. It is noteworthy that the Audubon Society has written in opposition of the project.

-Significant questions remain regarding utilities and services to the proposed development.

The developer's attitude of "trust us we will work these things out" is not acceptable to those of us with existing homes in the area that would be adversely impacted if water and sewer utilities are found not to be adequate. Emergency egress has not yet been worked out.

I urge the Planning Board to make the right decision not only for the many residents that will be adversely impacted by this proposed project, but also for maintenance of the unique and special character of our Town. The Planning Board is urged to DENY this request for a Special Use Permit.

--
Margaret Corey
2529 Hilltop Road

TOWN OF NISKAYUNA
PLANNING BOARD AND ZONING COMMISSION

AGENDA STATEMENT

AGENDA ITEM NO. VI. 1 MEETING DATE: 5/22/2023

ITEM TITLE: RESOLUTION: A Resolution to make a Recommendation to the Town Board on a special use permit for a 22-lot Average Density Development (ADD) subdivision consisting of 10 single-family detached homes and 12 townhomes at 1851 Union St. off of Ruffner Road (Mohawk Golf Club).

PROJECT LEAD: Genghis Khan & David D'Arpino

APPLICANT: Matthew Moberg, agent for the owner

SUBMITTED BY: Laura Robertson, Town Planner

REVIEWED BY:
■ Conservation Advisory Council (CAC) ☐ Zoning Board of Appeals (ZBA) ☐ Town Board ☐ OTHER:

ATTACHMENTS:
■ Resolution ■ Site Plan ☐ Map ☐ Report ☐ Other:

SUMMARY STATEMENT:

Matthew Moberg, agent for the owner of the Mohawk Golf Club, submitted a Sketch Plan Application and average density development special use permit for a Major Subdivision of a 14 acre portion of the existing property including the construction of 10 single family homes and 12 townhomes.

BACKGROUND INFORMATION

The property is located within the R-1 Low Density Residential zoning district.

In November of 2022, the applicant submitted a sketch plan drawing entitled The following entitled "Sketch 22-lot Townhouse Layout Residential Subdivision Mohawk Golf Club 1851 Union St. and 1245 Ruffner Rd." by ABD Engineers, LLP 411 Union St. Schenectady, NY dated October 20, 2022 and labeled Dwg. "5429A-S4 Townhouse" with no subsequent revisions and a 2-page drawing set entitled "Unit – A" by Pigliavento Builders. The initial sketch plan includes the removal of a single family home on Ruffner Road in order to construct access to the greater Mohawk Golf Club parcel.

The initial sketch plan was all townhome units (22). The Planning Department found that Townhomes, as single family dwellings, are a permitted principal use in the R-1 zoning district but, with their contiguous sidewall, they did not comply with the side setback requirement of the R-1 district and therefore required area variances from the Zoning Board of Appeals (ZBA). The aforementioned sketch plan drawing provided with the application included a table of 67 required area variances.

Additionally, in a letter to the applicant, the Planning Department outlined the following additional concerns over the intial sketch plan:

Utility Concerns

The Town of Niskayuna maintains a 6 inch water main on Ruffner Road, which is in the High Pressure Zone. This Zone may not have the capacity to handle the addition of 22 single family units. An independent engineering analysis of the water system capacity for this area will be required.

The sewer line to the Niskayuna Waste Water treatment plant is near or at capacity. An independent engineering analysis of the sewer system capacity for this development may be required.

There are known drainage issues in the area. Depending on where the storm water management pond is discharged to – an independent downstream drainage analysis may be required.

A wetland delineation will be required.

Emergency Access

Section 189-17 (J) (1) states: "Where cul-de-sacs are designed to be permanent, they should, in general, not exceed 500 feet in length and shall terminate in a circular turnaround having a minimum right-of-way radius of 60 feet and pavement radius of 45 feet." As these cul-de-sacs appear to be longer than 500 feet, the Planning Board should discuss a proposed secondary means of access for emergencies.

General Planning

It is important to keep in mind the long term gains to the Mohawk Golf Club that come from integrating potential residential development into the golf course campus while preserving the natural and scenic quality of open space and ensuring the subdivision is in harmony with the development pattern of the neighboring residential properties.

Some thoughts to consider that may help with some of the above goals include:

1. A more organic shaped road which follows the contours of the land and has vistas which open out onto the golf course, which would add value both to the golf course and the proposed homes.

2. A walking connection from the proposed subdivision to the golf course.

3. Quality open spaces such as a gathering pavilion or picnic area which overlook the golf course and provide amenities to the home owners, which would continually connect them to the land and to the golf course.

4. Discussion on parkland, preservation of natural features and trees, and conformance with the Comprehensive Plan are important to the ultimate layout of any proposed subdivision in the area.

Complete Streets

The Complete Streets Committee identified a critical multi-use path connection along the Mohawk Golf Club property – between Rosendale Heights (Country Club Estates)

neighborhood and Ruffner Road, along the boundary with 1218 S Country Club Drive. A walking/biking connection here would be critical to connecting neighborhoods and promoting alternative transportation methods that reduce greenhouse gas emissions. This connection should be a part of any development discussion to offset traffic impacts.

11/14/22 Planning Board (PB) meeting --- Mr. Dave Kimmer of ABD Engineering and Mr. Bill Sweet of the Mohawk Club presented the project to the PB. They noted that the proposed project would disturb approximately 10 acres of the property. The Board noted the number of variances that will be required particularly those related to the size of the proposed lots. The Planning Office stated that cul-de-sacs have emergency access challenges. The developers indicated that they believe the boulevard entrance with wide access roads should address this concern. The PB expressed concerns regarding the mass and scale of the garage doors that dominate the front facades of the townhomes. The PB asked that Mr. Kimmer and Mr. Sweet provide additional information on the items listed below.

1. Explore and present alternate site plan layouts that eliminate the need for cul-de-sacs. This may include ring roads or a road looping through the property.
2. Reduce the number of required variances by adjusting the lot sizes to be more zoning code compliant. This may require impeding on the currently proposed 50' buffer between the existing homes on Ruffner Rd. and the proposed townhomes.
3. Investigate widening the boulevard roads to facilitate emergency access.
4. Explore ways to decrease the visual impact of the aligned front facing garages, including working with the Niskayuna ARB.

11/15/22 Conservation Advisory Council (CAC) meeting – Dave Kimmer and Bill Sweet repeated the presentation they made to the PB on 11/14/22. During the discussion Mr. Sweet added that the Mohawk Club would maintain the storm water management areas. The CAC was concerned with the loss of greenspace with the proposal and asked for greenspace to be offset somewhere else on the Club parcel. The developer did not want to offset greenspace within the Mohawk Golf Club. The CAC requested the developer maximize the undevelopable greenspace within the subdivision by reducing some of the oversize lots at the ends and adding this area to the community greenspace. The CAC agreed with the additional detail the PB requested and added that they would like the developer to explore quantifying and mitigating the increased traffic on Ruffner Road and the surrounding area.

The Planning Office spoke with Mr. Kimmer about the Thanksgiving holiday shortened turnaround between the 11/14 and 11/28 PB meetings. Mr. Kimmer stated that they would not be able to address the action items in time for the 11/28 meeting and would target the 12/12/22 PB meeting, instead.

11/16/22 Architectural Review Board (ARB) meeting – the ARB reviewed the site plan and elevation images of the project very briefly at their 11/16/22 meeting. The Planning Office made them aware of the PB's concern regarding the size and proportion of the garage doors. The ARB will review the project in more detail during their December meeting.

11/28/22 Planning Board (PB) meeting – Mr. Kimmer attended the meeting and represented the applicant. The PB had a general discussion of the site plan that was presented at the 11/14/22 PB meeting. Ms. Robertson noted that the project is at the sketch plan phase of the review process. She reminded the PB that to approve the sketch plan they need to be generally in support of the design – 22 units, overall layout, etc. Mr. Kimmer explained how the proposed boulevard entrance to the subdivision complies with NYS Emergency Access Fire Code. He also presented a "loop layout" site plan design that disturbs approximately 25% - 30% more land and would include several "thru lots".

The Board noted that demolishing an existing home and using the lot to create a boulevard entrance to the subdivision is a significant change to the two immediately adjacent properties and the neighborhood. They noted that this should be considered very carefully during the sketch plan review process. They asked the applicant to thoroughly explore all possible access points to the land for alternate entrance and emergency access options. Ms. Robertson reminded Mr. Kimmer that the Niskayuna code is more stringent regarding the allowed length of cul-de-sac roads than the NYS Fire Code. Mr. Kimmer acknowledged that he has some additional CAD work to complete and committed to provide the materials requested in the 11/14/22 and 11/28/22 meetings.

12/6/22 -- The applicant provided the Planning Office with a significantly revised site plan design and documentation set on 12/6/22. The following documents were stamped "Received Dec 06 2022 Planning Office Niskayuna, NY".

1. A summary letter authored by Joseph J. Bianchine, P.E. addressed to Laura Robertson, Town Planner dated 12/6/22 that describes the new Average Density Development design proposal.
2. An Application for Special Use Permit
3. A 2-page (containing two options for page 1) site plan drawing entitled "Sketch 22-Lot Subdivision Average Density Development Mohawk Golf Club 1851 Union St. and 1245 Ruffner Rd." dated December 6, 2022 with no subsequent revisions.
4. A 1-page exhibit entitled "Alternate Access Exhibit Average Density Development Mohawk Golf Club" dated December 6, 2022 with no subsequent revisions.
5. A Full Environmental Assessment Form (EAF) dated 12/6/22.

The project summary letter describes the revised design as an Average Density Development subdivision consisting of a mix of 12 townhomes and 10 single family homes. The letter also includes the following description of the changes.

1. A secondary access to the subdivision is now shown in the plans. A 12' wide grass paver access road will connect to the existing golf course maintenance / cart path via a full width 60' Town R.O.W. stub off of the northern cul-de-sac.
2. There are two "Sheet 1s" included in the plan set. The second Sheet 1 demonstrates that it is possible, although less desirable, to meet the open space requirements for an ADD project set forth in Niskayuna zoning code Section 220-28 F (4) (a).
3. A separate color exhibit is included which demonstrates why building roads from either of the existing access points to the north or south along Ruffner Road would not be possible without steep slopes or excessive disturbance to existing golf course features and / or neighboring properties.

12/7/22 Conservation Advisory Commission (CAC) – The CAC reviewed the 12/6/22 site plan drawings. Mr. Kimmer of ABD Engineers and Mr. Sweet of the Mohawk Club attended the meeting and explained why the design has shifted back to an Average Density Design (ADD). They noted that a secondary emergency access road off of the north end of the property is included in the revised design. They explained that the project now includes 10 single-family homes and 12 townhomes and complies with all of the requirements of an ADD subdivision.

The CAC discussed with the applicant their concern for the reduction of quality wildlife habitat and open space from this proposal and asked if there is a consideration for offsetting the loss elsewhere on the golf course. The applicants agreed to explore a development restriction near

the Schenectady Water reservoir that wouldn't the ability of the club to use the land for the golf course needs.

The CAC discussed with the applicant the long term plans for the development and protection of the golf club, including where future development could go along Balltown Road. They requested the applicant consider a long range plan for the golf club that would protect the golf club operations and outline anywhere there could be future changes and development.

The CAC felt there would be traffic impacts and wanted the applicant to explore traffic mitigation in the area, including a critical complete streets connection between Country Club Estates and Ruffner Road. The applicants agreed to see if they could fit a walking path connection from the corner of South and East Country Club Drive to Ruffner Road.

The Planning Office noted that the applicants should review the plan with the Town Water & Sewer Department and complete a traffic count analysis.

12/12/23 Planning Board (PB) meeting – Dave Kimmer, of ABD Engineers, and Bill Sweet of the Mohawk Club attended the meeting and described the revised site plan. Mr. Kimmer explained that the applicant had reimagined the project and is no longer pursing 22 townhomes. The project is now proposed as an Average Density Development (ADD). This eliminates the need for the 67 area variances. He noted that ten (10) single-family detached homes are included and that an emergency access path was added. After a general discussion the Board stated they would prefer to provide access to the proposed development via. an existing easement or the extension of an existing road rather than demolishing an existing home to create room for a new road. They asked the applicants to explore providing access from East Country Club Drive. Dave Kimmer agreed to explore this option. The Board also reviewed and discussed the open space requirement of an ADD project.

1/9/23/23 Planning Board (PB) meeting – The project was not on the agenda for the 1/9/23 meeting.

1/23/2023 UPDATE: Dave Kimmer provided the Planning Office with the following documents in response to the action items noted in the 12/12/23 PB meeting.

- A modified site plan that now includes a roundabout at the intersection with Ruffner Rd to calm the existing traffic on Ruffer Rd and help mitigate impacts caused by the ADD project.
- An exhibit showing a proposed walking path connection between East Country Club Drive and Ruffner Rd.
- A typical townhome image with a side-load garage
    - Floor plans and elevation view images are included
- A 3-sheet traffic exhibit and document with supporting calculations (using ITE Trip Generation, 9th Edition)
    - The documents compare the estimated traffic (trip) impact of the ADD "as proposed" to the traffic impact that could be expected if alternative access points to the south and north are used thereby creating a "thru connection".

Traffic Direction	Peak Period	As Proposed (trips)	Thru Connection (trips)
Southbound	AM	6.4	71.6
	PM	8.1	95.1

Northbound	AM	6.4	60.8
	PM	8.1	80.6

Example -- the ITE Trip Generation analysis is estimating that "As Proposed", with a single entrance off of Rufner Rd., 6.4 trips of southbound traffic will be added during the AM peak and 8.1 trips of southbound traffic will be added during the evening peak.

Mr. Moberg and Mr. Sweet of the Mohawk Club led a project site walk on their property so that members of the Planning Board and Planning Office could see and assess the location first hand. The attendees included: Mr. Khan and Mr. D'Arpino of the Planning Board, Mr. Kimmer of ABD Engineers (engineer for the Mohawk Club) and Planning Office staff.

The Planning Office has initiated the process of securing a Town Designated Engineer (TDE) to review the traffic exhibit and other technical materials on behalf of the Town.

1/23/23 Planning Board (PB) meeting – Dave Kimmer, of ABD Engineers, and Bill Sweet of the Mohawk Club attended the meeting and presented their updated site drawings and traffic exhibit. A general discussion of the overall project followed that included topics of concern that were raised by neighboring residents during Privilege of The Floor earlier in the meeting. Ms. Robertson provided a top level summary of the project and briefly described the numerous steps that remain, including several public hearings, before the project could be acted on by the Planning Board. The Board requested that the applicant provide additional information on the following items.

- Demonstrate that they have taken a hard look at all options to provide access to the 14 acre site by creating fully documented design drawings for access from other points including: Rowe Rd., East Country Club Drive and the existing easement connecting to Ruffner Rd.
- Continue to formalize the proposed deed restrictions that have been discussed.
- Provide the Town Planning Office with a long term strategic plan for the Mohawk Club or initiate a process to work with the Town to develop one.

2/6/23 Meeting to discuss utilities – Dave Kimmer and Joe Bianchine of ABD Engineers and Bill Sweet of The Mohawk Club attended a meeting at Town Hall with staff from the Planning, Engineering and Legal Departments to discuss utility (water and sewer) related service to the proposed project site. The Town presented existing DEC capacity concerns in the gravity sewer trunk line along River Road to the wastewater treatment plant. They stated that a documented and approved water and wastewater plan for the project is a required next step. Without an approved plan for water and wastewater there is no way to know the true feasibility of the project.

2/22/23 Architectural Review Board (ARB) meeting – The ARB reviewed the most recent site plan documents for the project at their 2/22/23 meeting (rescheduled from 2/15/23). The Board commented that the existing plan, including the positioning & renderings of the proposed homes, neither capitalized on the potential for beautiful views of the golf course nor did it blend well with the neighboring homes. They commented that it appeared to be a "densified" design that located as many dwelling units as possible on the land. Their suggestion was to consider a smaller number of more upscale units on larger lots contiguous to the fairway with more picturesque views of the golf course. They noted that they would be happy to work with all involved parties as appropriate.

The Planning Office received an updated documentation package for the project on 2/17/23 consisting of the following.

1. **DENSITY EXHIBIT**: A "Density Exhibit" that depicts the number of lots (homes) on (10) ten, 14-acre areas of land contiguous to the proposed project site to the north, south and east.

	Project Site	1	2	3	4	5	6	7	8	9	10
Acres	14	14	14	14	14	14	14	14	14	14	14
Lots	22	28	25	28	25	25	20	19	23	48	46

2. **HISTORICAL EXHIBIT**: An 8-page "Historical Exhibit" that consists of aerial images of the proposed project site, including the surrounding lands, for the time span of 1940 thru 2021. The images provide a time stamped sequential progression of the development of this portion of Niskayuna.

3. **OVERALL GOLF COURSE MAP**: A 1-page image of the layout of the golf course and the overall club grounds including the driving range, 9-hole course and undeveloped land.

4. **OVERALL STORM WATER:** A 1-page map of the project area that includes existing storm water retention areas, the general direction of storm water flow on the land and proposed storm water management areas.

5. **SUBDIVISION PLAN:** A revised 3-page subdivision plan with a revision date of 2/16/23.
    a. The plan indicates a connection to the sewer main on Ruffner Road
    b. The traffic circle that was included in the previous drawing revision is removed.

6. **TRAFFIC STATISTICS**: A table of proposed traffic statistics using the ITE Trip Generation, 9th Edition manual.

7. **ALTERNATE LAYOUTS**: A 12-page document set of (9) nine alternate methods of providing primary and emergency access to the proposed 14 acre site including advantages and concerns for each method.

8. **ALTERNATE LAYOUTS TABLE:** A 4-page document that summarizes the (9) alternate layouts from the Alternate Layout exhibit including the advantages and concerns for each in a tabular format.

9. **COVER LETTER:** A 2-paged cover letter addressed to Ms. Laura Robertson, Town Planner dated 2/17/23 that lists the documents that were provided with the letter and a request to be placed on the agenda for the 2/27/23 Planning Board meeting.

As previously mentioned, it is the Town's policy to utilize a consulting engineering firm to act as a Town Designated Engineer (TDE) to review technical materials including but not limited to: water, sewer, drainage, traffic, roadways, etc. The Planning Office is securing quotations for this service and will initiate a technical review in the next few weeks.

2/27/23 Planning Board (PB) meeting – Dave Kimmer of ABD Engineers and William Sweet of the Mohawk Club attended the meeting and presented the new project documents to the Board. Mr. Kimmer stated that he had a conversation with Matt Yetto, Town Engineer, regarding providing water and sewer to the project site and believes they have come up with an alternative connection that solved the capacity issues. Ms. Robertson stated that the alternate sewer

connection had not been evaluated yet and that he does not have Town approval; a full sewer study by the applicant would be required. She stated there is also a possibility of needed a public lift station. Mr. Sweet stated that he understood and wanted the project to advance with the understanding that the utility / engineering analysis will be completed at a later date. Chairman Walsh noted that the applicant's #1 plan is to demolish the existing house at 1245 Ruffner Rd. and provide access to the proposed subdivision via. a newly constructed road on that property. He asked if the applicant has a #2 plan. Mr. Kimmer said no, they are fully committed to the #1 plan.

The Planning Board members expressed major concerns over demolishing the existing home at 1245 Ruffner Rd, indicating they felt that would have a negative impact on the neighborhood. Several Board members expressed support in further reviewing alternate designs.

Design Option (Scheme)	**Main Access Point**	**Emergency Access Point**
3A	S. Country Club Dr.	Ruffner Rd.
7	Union St.	Ruffner Rd.
8	Balltown Rd.	Ruffner Rd.
2	Ruffner Rd. at existing easement	Ruffner Rd.

The applicant stated that they would like to move forward and have a public hearing on their preferred design – Scheme #1. The Board voted and agreed to hold a public hearing on design Scheme #1 at the 3/13/23 PB meeting.

<u>3/1/23 Conservation Advisory Council (CAC) meeting</u> –

At the March 1 CAC meeting, the CAC went carefully through the long form EAF and summarized their concerns with the project as follows:

- Impact to utilities was a concern
- Clearing 14 acres of land has impact of aesthetics and creates loss of habitat for a number of different species
- This parcel was a core part of the public/private recreation and open space system
- Impact to the character of the neighborhood was a concern.
- Removing the home was a concern that it would set a bad precedence for the Town of Niskayuna.
- There are alternatives proposed by the applicant that mitigate some of the impacts to the surrounding community and the neighborhood disruption, but they aren't being pursued by the applicant.
- A public road that runs through the golf course could open up further development of the parcel which is also concerning – there needs to be a long term plan for the golf club.

They specifically noted the following sections of Part 2:

1. Impact on land (1) – the water table is 2 feet , drainage is a concern to be evaluated
2. Impacts on Surface water (3) – drainage to the Rowe Rd / Whamer, Hilltop drive area to be evaluated
3. Impacts on Plants and Animals (7) – substantial impacts to predominant species (g) and conversion of more than 10 acres of forest (h)
4. Impact on Aesthetic Resources (9) – publically seen (c) & (d), diminish enjoyment of aesthetic resource (e)

5. Impact on Historic and Archeological Resources (10) – Golf course may be on 1982 historic inventory to be evaluated
6. Impact on Open Space and Recreation (11) – impairment of ecosystem services and wildlife habitat (a) and potential loss of future recreational resource (b)
7. Impact on Transportation (13) – still being evaluated
8. Consistency with Community Plans (17) – large impacts
9. Consistency with Community Character (18) – large impacts

On March 2, 2023, Dave Kimmer, on behalf on the Mohawk Golf Club, withdrew their request for a public hearing on March 13 and indicated they would be submitting an alternative design to the Planning Board on March 13 for their review, with a request to call for a public hearing on that design, potentially for March 27, 2023. The public hearing was withdrawn by Planning Staff.

On March 6, 2023, a new design and supporting documents were provided to the Planning Office for review. The new design is based on Scheme #2 with primary access to the proposed subdivision from the existing 60' easement off of Ruffner Rd and emergency access from the existing easement near 1245 Ruffner Rd.

3/3/2023 Complete Streets (reviewing scheme #2) – A Complete Streets member questioned the measurements on the single family home sketch plan (via email) and whether or not they were truly compliant with Town Zoning requirements. The Committee discussed that they were in favor of pedestrian connections to County Club Estates, Rowe Road and Ruffner as part of any development proposal here – to increase connectivity between neighborhoods.

3/9/2023 Tree Council – The Tree Council heard comments from the public concerned about trees being removed in the Ruffner Road neighborhood generally and also the amount of trees being removed specifically for this proposal. The Council briefly discussed the plan and discussed whether or not clearing could be done over top of wetlands. They made the following comments:

1. 10 acres was a large swath of clear cutting that did not appear to include saving groves or trees interspersed with development. They suggested considering alternative home configurations that allowed pockets of trees to be saved between some of the lots.
2. They questioned whether or not the stormwater ponds could be incorporated into the golf course as water features, allowing more forest to remain and not be cleared to create detention ponds
3. They requested trees of significance (10" DBH) be marked on future plans to see if different road or home configurations could avoid removing the larger trees.

Planning Department – In its review on the revised plans, the Planning Department notes that 1245 Ruffner Road is no longer proposed to be demolished and replaced with a road access, which is an improvement to the plan. The plan utilizes an existing paper street for access, shows a multi-use path connection to Country Club Drive, and shows some modification to the golf course layout. The Planning Department notes the following items still need to be worked through:

1. Utilities – the utility connections and drainage have not been preliminarily studied/designed and reviewed by a Town Designated engineer to ensure that the water and sewer systems have capacity and the project is not draining to areas within the Town that are at capacity.

2. Number of Lots – The Planning Department is requesting a new single family drawing with lot line dimensions labeled (and new access point shown) to verify that the 22 lot number is compliant with the new road configuration and Town Code.
3. Wetland delineation – the applicant indicated at the 2/27/23 meeting that the road configuration for Scheme #2 may require a wetland permit. The Board has also expressed concerns that a single wetland determination was completed during a draught last year (summer 2022). A new wetland determination will be required for the parcel and proposed access way.
4. The proposed public road is not shown in the center of the ROW. The Planning Department needs to check with Highway and Engineering if this is an issue for maintenance in the future.
5. The applicant presents two ADD drawings for the Planning Board to discuss, one with a 50 foot buffer to the Ruffner Road residents (that does not comply with the square footage of open space set aside) and one that shows a 30 foot buffer but lots that are compliant with the square footage of open space requirement. The applicant will need to comply with the square footage of open space requirement. The Planning Department recommends exploring options that increase open space set asides along the golf course and in other areas around the edges of the subdivision – to try and get the 50 foot buffer to be compliant with code.

3/13/23 Planning Board (PB) meeting – Bill Sweet, of The Mohawk Golf Club and David Kimmer, of ABD Engineers attended the meeting and spoke on behalf of the applicant. Mr. Sweet noted that he felt the project had reached an appropriate stage for a Town Designated Engineer (TDE) to be engaged. The Board discussed the 5 items listed above, agreed to call for a public hearing on design Scheme #2 for the 3/27/23 PB meeting and requested the following pieces of information.

1. Planning Office to engage a TDE to immediately address the following items.
    a. Review Building and Fire code regarding cul-de-sacs
    b. Review applicant's utility plans (water, sewer, drainage)
2. Planning Board members are requested to review the Town of Niskayuna subdivision code (Section 189-17 J (1))
3. The applicant is to explore a first right of refusal clause on the property that provides the Town of Niskayuna the first opportunity to purchase any land the Mohawk Club places up for sale in the future.
4. The applicant will explore relocating storm water detention ponds onto golf course as potential water hazards, as a way to decrease the amount of tree clearing necessary for the project.

The Planning Board should review any new information that is provided and consider calling for a Recommendation to the Town Board regarding the special use permit for the 4/17/23 PB meeting.

3/27/23 Planning Board (PB) meeting – Dave Kimmer of ABD Engineers and Bill Sweet of The Mohawk Club attended the meeting to speak to the Board. Many residents and neighbors came forward to speak about the project during the public hearing. The Board discussed Weston & Sampson, the TDE for this project. The Board identified the following concerns as items for the TDE to explore:

1. A traffic study to corroborate the applicant's traffic assessment
2. Potential code violations, including but not limited to cul-de-sac length
3. Utilities information such as water and sewer line connections.
    a. Mr. Sweet believed as a new sewer line had been proposed the development would not exceed capacity limits, but should still be examined

Ms. Robertson informed the applicants that the Town insisted on the paper street being placed in the middle of the right-of-way. Tree conservation was discussed, and Mr. Sweet offered to take members of the Tree Council on a site visit to identify trees of value when the weather was amenable. Although no significant impacts were expected in regards to schools, Ms. Robertson stated she would follow through with the School District to keep them informed of the plans.

The Board generally agreed that the 4/17/23 meeting should be used to analyze the TDE's first review letter.

4/3/23 Conservation Advisory Council (CAC) meeting – Bill Sweet of the Mohawk Club attended the meeting. The ADD concept was discussed and while Ms. Robertson and Mr. Henry showed how ADD would maximize the amount of green space, members of the Council felt as if it was inappropriate and the houses were too congested in the parcel. Mr. Strayer stressed the importance the Mohawk Club had for the Town and wanted to make sure it was an asset that could be used into the future. The Council went through part 2 of the long form EAF and noted their main concerns:

- Drainage concerns needed to be further evaluated but were noted due to the grading of the neighborhood and the high water table on site
- Clearing of trees was noted to have an ecological impact as well as a public aesthetic impact on the area
- It was determined that the project would have significant conflict with both community plans and community character
    - Expansion of public utilities was noted a major area of concern
    - Concern regarding this project opening doors to further expansion on Club property- large scale development could lead to serious changes all over town
    - Impact on schools was undetermined but identified as a potential issue
    - Density of proposal was a key issue identified by many Council members

In order to mitigate the aforementioned concerns, the Council requested:

- A long term plan for the Club that detailed potential areas of development, as well as areas to be set aside for conservation
- Permission from the Club to allow the Town to conduct a Natural Resources Inventory on their property
- Incorporate green Town initiatives such as the pesticide free and low mow campaigns when possible

Although they voted unanimously that the Town Board adopt a positive recommendation for SEQR and require an Environmental Impact Statement to review project alternatives, the Council still stressed that they wanted an amicable relationship with the Club and wanted to work with them to find a solution that benefitted all parties. The CAC's findings are attached to this agenda statement – Part 2 and Part 3 of the Long Form EAF will be forwarded to the Town Board prior to their calling for a public hearing.

4/17/23 Planning Board (PB) meeting. The Planning Board discussed the initial letter from the TDE, who was in attendance. The applicant felt many of the comments were more appropriate for detailed design, but the Planning Board asked for the letter to be responded to and the applicant has responded. The TDE has also prepared a more detailed second letter for the Planning Board to review, after viewing the applicants responses (attached). The Planning Board discussed the Conservation Advisory Council's findings. The project leads felt it was appropriate at this time to call for a recommendation to the Town Board with findings. The tentative resolution could be moved to May 22 if needed.

5/8/2023 the Planning Department, in conjunction with the project leads, have prepared findings that support a negative recommendation to the Town Board on the special use permit. The Board should discuss the findings and decide if they are ready to take action on their recommendation. The resolution is attached.

5/8/23 Planning Board (PB) meeting At the beginning of the meeting, the applicant asked to table any action on their project until the May 22 meeting. The Planning Board voted 7-0 to table the resolution to make a recommendation to the TB.

On 5/11/23 the meeting between Planning Office, Engineering Office, applicant & TDE was held in the Town Board room (meeting notes attached). The members went through the TDE letter point by point and agreed to the following points:

- ABD will add the fire truck turning radius to the emergency access road
- ABD will survey the trees in the future
- The SHPO letter will be worked on and submitted
- The Town will check on a traffic counter on Ruffner Road
- The Town will investigate possible issues with a SW Pond and the drainage coming into the pond
- The Applicant will provide a summary of the site changes discussed
- The Applicant will change the sewer system to gravity with a pump station
- The Applicant will move the road to the center of the R-O-W
- The Applicant will make a visual representation to the Planning Board of home the storm water ponds will be integrated into the golf course.

On 5/17/2023, an updated ADD plan was submitted to the Town of Niskayuna showing the fire truck turning radius for the emergency access, noting the emergency access would be maintained and plowed by the Mohawk Golf Course, changing the sewer system from low pressure to gravity and a pump station (with a high pressure force main), changing the road to be in the center of the ROW, and adding to exhibits that show the flow of golf holes and colored in versions of the stormwater pond and detention area.

Following this submittal, the Planning Office and Project leads reviewed the changes in the context of the project lead findings proposed at the May 8th meeting. Because the changes to the site map were minor, there were only a few minor changes to the proposed findings (sentences removed have a strike through, sentences added are underlined) – attached.

The Planning Board can expect the applicant to make a presentation on the updates to their plan and present their input on the proposed findings. The Planning Board should be prepared to discuss the findings and take action on the proposed resolution for the May 22 meeting.

RESOLUTION NO. 2023-15

AT A REGULAR MEETING OF THE PLANNING BOARD AND ZONING COMMISSION OF THE TOWN OF NISKAYUNA DULY CALLED AND HELD ON THE 8TH DAY OF MAY 2023 AT THE NISKAYUNA TOWN OFFICE BUILDING, ONE NISKAYUNA CIRCLE, IN SAID TOWN AT 7:00 P.M., THE FOLLOWING MEMBERS WERE PRESENT VIRTUALLY OR IN PERSON:

HONORABLE: KEVIN A. WALSH, CHAIRMAN
GENGHIS KHAN
MICHAEL A. SKREBUTENAS
CHRIS LAFLAMME
PATRICK MCPARTLON
DAVID D'ARPINO
LESLIE GOLD
NANCY STRANG
JOSEPH DRESCHER

One of the purposes of the meeting was to make a recommendation to the Town Board on a Special Use Permit.

The meeting was duly called to order by the Chairman.

The following resolution was offered by
whom moved its adoption, and seconded by

WHEREAS, Michael Rutherford (MGC Golf Operations, LLC) has submitted a special use permit application for a 22-lot Average Density Development subdivision (10 single family homes and 12 townhomes) at 1851 Union St (50.-1-4.11) off of Ruffner Road, as shown in a drawing entitled "Sketch 22-Lot Subdivision, Average Density Development, Mohawk Golf Club, 1851 Union Street" by ABD Engineers, LLP, dated December 6, 2022 and last revised March 15, 2023, and

WHEREAS, the zoning classification of the property is R-1 Low-Density Residential zoning district, and

WHEREAS, An Average Density Development in an R-1 Zone requires a special use permit, and

WHEREAS, the Planning Board conducted a public hearing on March 27, 2023 to consider the application for special use permit, and

WHEREAS, the application was referred to the Conservation Advisory Council (CAC) on April 3, 2023 and they made a recommendation for a positive declaration on environmental impacts under the State Environmental Quality Review Act (SEQR), citing in part:

- The density of the proposed subdivision was too high
- The small lots are inconsistent with the character of the neighborhood
- Piecemeal development of the Mohawk Golf Club (no long-term plan) could have negative impacts on utilities, roads and open space (loss of recreational resource)
- Clearing of 14 acres of land - ecosystem services and wildlife habitats would be impaired.
- Open space: leftover green space would not be as effective post-development
- Wetlands and Historic Preservation were unknowns
- The negative effect on the Comprehensive Plan; and,

WHEREAS, the application was referred to the Complete Streets Committee and on March 3, 2023 the Committee recommended a multi-use path between Country Club Estates and Ruffner Road, among other bike and pedestrian connections, as part of this proposal, and

WHEREAS, the application was referred to the Tree Council and on March 9, 2023 the Council commented that

- 10 acres was a large swath of clear cutting that did not appear to include saving groves or trees interspersed within the proposed development. They suggested considering alternative home configurations that allows for pockets of trees to be saved between some of the lots.
- The stormwater ponds should be incorporated into the golf course as water features, allowing more forest to remain intact
- Trees of significance (10" DBH) should be marked on plans to see if different road or home configurations could avoid removing the larger trees; and

WHEREAS, the preliminary application was referred to the Architectural Review Board and on February 22, 2023 the Board commented that:

- The existing plan neither capitalized on the potential for beautiful views of the golf course not did it blend in well with the neighboring homes.
- The design was dense and appeared to locate as many dwelling units as possible on the land
- A smaller number of units on larger lots contiguous with the fairway with picturesque views of the golf course was recommended

WHEREAS, the application was referred to the Schenectady County Planning Department, and

WHEREAS, the Planning Board referred this application to the Town's Superintendent of Water, Sewer and Engineering, the Fire District Chief and the Chief of Police and concerns were raised, including but not limited to,

- Accepting a public road crossing a golf course near an active golfing green – with the potential for golf balls to strike traveling vehicles
- Length of the cul-de-sac and usability of emergency access road
- ~~Requirement for the road to be in the center of the Right-of-way~~
- Details concerning the sewer system; and

WHEREAS this Board has carefully reviewed the proposal and has identified concerns, including but not limited to:

- The character and use of the land
- The provisions for open space

WHEREAS by this resolution does set forth its recommendation hereon,

NOW, THEREFORE, be it hereby

FURTHER RESOLVED, that this Planning Board and Zoning Commission hereby recommends that the Town Board reject the special use permit for a 22-lot Average Density Development (ADD) subdivision consisting of 10 single-family detached homes and 12 townhomes at 1851 Union St off of Ruffner Road, as shown in a the above referenced drawings. The findings for this recommendation by the Planning Board are attached to this resolution.

Upon roll call the foregoing resolution was adopted by the following vote:

KEVIN A. WALSH, CHAIRMAN
GENGHIS KHAN
MICHAEL A. SKREBUTENAS
CHRIS LAFLAMME
PATRICK MCPARTLON
DAVID D'ARPINO
LESLIE GOLD
NANCY STRANG
JOSEPH DRESCHER

The Chairman declared the same _____.

PLANNING BOARD FINDINGS

SPECIAL USE PERMIT APPLICATION: Mohawk Golf Club & Ruffner Road ADD Proposal
Planning Board Report to Town Board

May 8, 2023

In consideration of a recommendation to the Town Board for a Special Use Permit application for sketch plan approval including a Special Use Permit for a 22-lot Average Density Development (ADD) subdivision consisting of 10 single-family detached homes and 12 townhomes, the Planning Board makes the following findings:

Section 220-28 (Average Density Development)

A. Purpose. The purpose of this section is to permit variation in lot size and housing type in suitable areas in order to encourage flexibility of design, facilitate the adequate and economical provisions of streets and utilities and preserve the natural and scenic qualities of open space, in accordance with the intent of § 281 of the Town Law of New York State.

The Planning Board finds that this particular configuration of an average density proposal does not balance the economical provisions of streets and utilities with preservation of natural and scenic qualities of open space. The street patterns for a single family home subdivision and average density development are nearly identical, but the reduction in lot size fragments rather than providing any significant protection to natural and scenic open space. ~~The provisions of low pressure sewer may provide cost savings to the applicant but presents maintenance challenges and expensive repairs in the future for the Town.~~ The proposed gravity pump station may need more area for maintenance, and the driveway must be paved and support the Town's large Vac-truck. As identified by the Architectural Review Board, the existing plan neither capitalizes on the potential for beautiful views of the golf course nor does it blend well with the neighboring homes.

B. Conditions for lot size reduction. The purposes are achieved by permitting lot size to be reduced in a subdivision tract if:

1) The overall density does not exceed that which is permitted in the applicable zoning district
The applicant has provided an R-1 subdivision sketch showing 22 single family homes and proposed a 22 lot average density development.

2) The land thus gained is preserved as permanent open space for the use of the residents of the area
The forest proposed as a buffer to adjacent residence has benefit limited to the directly adjacent parcels – but little benefit to the surrounding neighborhood. The large triangle of open space would not be for use of the residents in the area.

F. Requirements for average density developments. In addition to the criteria for review established by Article **VIII** of this chapter, the Planning Board shall apply the following standards in their site plan review of average density development projects:

1) Where permitted. This section applies only to lands zoned R-R and R-1.
The parcel in question is located in an R-1 zone.

2) Dimension requirements.
   a) Minimum area. The minimum area required to apply the provisions of this section shall be 10 contiguous acres of land.
   The proposed development area is 14 acres of contiguous land.

   b) Lot size variation

[1] The size(s) of lots in an average density development may vary from the normal requirements of the district in which they are located, but no dimension or area requirement for the district shall be reduced by more than 50%.
No area dimension requirement appears to be been reduced by more than 50%. The front, side and rear setbacks are all proposed to be reduced by the full 50%. The lot frontages and sizes vary from nearly full 50% reduction for the majority of Town home lots, to 10-20% reduction on the minimum R-1 single family home lots. The average frontage for the lots is approximately 80 feet. The average lot size is approximately 14,850 square feet. The eight smallest lots are between 9,300 and 10,800 square feet.

For the existing 12 homes directly adjacent to the average density development proposal, the average lot size is 26,575 square feet. The average frontage of for these homes onto Ruffner Road is 130 feet of frontage. For this particular area, this equates to a 60% reduction in lot frontage with the ADD compared with the adjacent homes, and a 48% reduction in lot size.

[2] Lands associated with a structure on which attached single-family dwelling units are located shall be considered a lot for the purposes of applying standards for yard dimensions.
The yard dimensions are shown for attached single-family dwellings.

[3] Lots of detached single-family dwellings and those portions of land on which attached single-family dwelling units are located shall be used when determining the reduced lot size to be set aside for open space purposes.
The yard dimensions are shown for detached single-family dwellings.

3) Dwelling Units
   a) Maximum in project. The maximum number of dwellings shall be determined from the preparation of a conventional subdivision sketch plan of the project area. The sketch plan shall be prepared in conformance with Chapter **189**, Subdivision of Land, and the provisions of this chapter for detached single-family dwellings and shall include designated park areas. Where two or more zoning districts are involved, the standards for the applicable zoning district shall be applied to each part of the project area. The number of dwelling units permitted in each district will then be added together for the total number of dwelling units permitted. The permitted number of building plots or dwelling units shall not exceed the number which could be permitted, in the Planning Board's judgment, if the land were subdivided into lots conforming to the minimum lot size and density requirements of the Zoning Ordinance applicable to the district or districts in which such land is situated and conforming to all other applicable requirements. Consideration of terrain, topography, drainage, flooding potential and other natural conditions must be considered in determining the maximum number of dwellings in the project.
   The Planning Board reviewed a 22-lot single family home subdivision sketch. The sketch did not show drainage, flooding potential, or account for possible proposed parkland requirements for a single family home subdivision.

   b) Dwelling unit types. A minimum of 40% of the total number of project dwelling units shall be single-family detached units with the remaining units being townhouses or semidetached units.
   10 single family homes and 12 townhomes equates to 45% of units being single family homes.

4) Open space requirements.
   a) Quantitative considerations: The subdivider shall set aside for open space purposes the same percentage of the entire proposed development as that by which the total of the lot areas have been reduced.

The total area of lot reduction is 67,206. The total area of proposed open space is 118,678 square feet.

b) Qualitative considerations:

[1] Land reserved for open space shall, in the judgment of the Planning Board, be in a location(s), of a size and shape and of a type or character suitable for the purposes for which such land shall be primarily reserved. Types may include playgrounds, neighborhood parks or a natural or conservation area such as a natural watercourse. As a portion of the submittal to the Planning Board, the subdivider shall propose conditions to be established for continuing ownership and maintenance of the open space land. The Planning Board may require that the open space be located at a suitable place on the edge of the subdivision so that additional land may be added at such time as the adjacent land is subdivided. –

The open space of the subdivision consists of a natural area of forest that is 2.72 acres total (at least one acre is a 50 foot wide linear strip of land along the backs of the proposed homes). The Planning Board finds that the size and shape does not take advantage of the open and scenic qualities of the golf course, is not accessible to the public, and is not optimal as a natural conservation area for wildlife.

[2] Homeowners' association charters shall provide that, in the event of default by the association, the Town can take over the continuing ownership and maintenance of all open space lands and tax landowners accordingly.

There is no homeowner's association associated with this proposal – the land is proposed to be deed restricted and remain in the ownership of the golf course.

[3] Homeowners' association charters shall address an obligation on the part of all homeowners in the development to adhere to maintenance and appearance standards established by the association and which are acceptable to the Town.

There is no homeowner's association associated with this proposal – the land is proposed to be deed restricted and remain in the ownership of the golf course.

c) Minimum width. Reserved open space shall not be narrower than 200 feet, except where necessary to provide a pathway or other means of access. An easement for a natural watercourse dedicated to the Town may be considered as open space for the purpose of this regulation if such easement is at least 200 feet wide. Open space shall be arranged to provide an area of adequate size and shape so as to be of value to the residents.

The open space is, at its narrowest, 50 feet. The strip of 50 feet extends approximately 1,000 feet, totaling 50,000 square feet of the proposed open space. The remaining area is a forested triangle of approximately 68,000 square feet. The maximum width of the triangle is 200 feet. This proposal has the maximum width of the land at 200 feet, not the minimum. This land would also be difficult for the developer to develop and it not accessible to surrounding residents. The open space does not take advantage of the open or scenic qualities of the golf course, and as habitat for wildlife it becomes fragmented and mostly linear. Two acres of long, fragmented habitat does not support wildlife in the same manner as larger, consolidated acreage reserves.

H. Considerations in report. In addition to the considerations set forth in §§ 220-59 and 220-46B of this chapter, the Planning Board shall also determine that:

1) Such development shall not be detrimental to the health, safety or general welfare of the persons residing in the vicinity or injurious to property or improvements within its proximity; and

The proposal includes opening up a new intersection on a road that conducts a fair amount of traffic within the neighborhoods (Ruffner Road). The Planning Board explored alternative access points and indicated their preference for pre-existing rights of way.

2) The proposed development is in conformity with the objectives of the Comprehensive Plan, especially as the proposal relates to the implementation of highways, parks and the preservation of scenic and open space areas.
The 2013 Comprehensive Plan strives to preserve and build on 'livability factors' such as parks, open spaces and natural areas, walking and bike paths, traditional tree lined neighborhoods, historic areas and easily accessible and diverse shopping areas. The Plan states preservation of community character "not only has wide support from residents, its preservation makes economic sense" (p5). The Plan also recognizes that "as Niskayuna reaches full build-out, development pressures on the remaining undeveloped land will likely intensity" and therefore the Plan attempts to "ensure an adequate open space and recreation system" and asks the Town to "take advantage of open space opportunities as they arise… [recognizing] the important role open space plays in the character of individual neighborhoods and the Town identity" (p5).

The Mohawk Golf Club is recognized as an important parcel within the Town's 2013 Comprehensive Plan. On page 52 and 57, the Golf Club is identified as the largest privately owned parcel open space and recreation area in Niskayuna. It accounts for nearly half of all privately held recreation areas (190 acres of the total 433). In the neighborhood narratives, neighborhood #5, the Country Club neighborhood, is recognized for deriving its name from the Mohawk Golf Club course founded in 1889. The Club "surrounds this neighborhood and gives it a sense of open space" (p 14).

On page 35, the Plan reiterates that "Open space is a nonrenewable resource, and as Niskayuna approached full build out and development pressures intensify the Town's remaining, important and unprotected open space may disappear without upfront planning." The Planning Board finds that both the larger Mohawk Golf Club parcel and this particular 14 acre piece need careful planning to take full advantage of the scenic qualities of the golf course and remaining forested areas.

Furthermore, as the Plan examines issues related to residential development, it states "Residential areas throughout the Town are one of its greatest assets and should be protected from inappropriate and poor design that does not contribute to the overall intent of the neighborhood." The Planning Board finds that by maximizing the lots and fragmenting the open space, the poor design of this average density development does not contribute to the overall intent of the neighborhood.

In the issue area of land use, the Plan identifies that "as the Town continues to grow, existing large land parcels may be identified for development resulting in drastic shifts from their current use. Such development shifts require careful consideration to determine redevelopment impacts on the surrounding area, infrastructure and existing land use patterns" (p86). This is a large parcel, where poor design could shift adjacent development patterns in the future and therefore piecemeal consideration of subdivision and open space is not advisable.

While the Planning Board recognizes the right of the developer to pursue subdivision application, a poorly planned Average Density Development application that is not harmonious with the surrounding residential neighborhoods, that does not capitalize on open space opportunities, and potentially shifts land use pattern from open space/recreation to clustered home development, is contrary to the Town's Comprehensive Plan.

CHAPTER 189 Subdivision of Land

189-15 General Requirements

A. Character of land. Land to be subdivided shall be of such character that it can be used safely for building purposes without danger to health or peril from fire, flood or other menace.
The Planning Board has open questions about the length of the cul-de-sac and the interaction of the proposed public roadway with golf course use and operations

B. Conformity to Official Map and Master Plan. Subdivisions shall conform to the Official Map of the Town and shall be in harmony with the Master Plan.

As previously documented in findings for ADD Code 220-28 (H) (2) above, the Planning Board finds that this proposal is not in conformity with the Town Master Plan. The Town's Official Map does not show a layout of roads through this parcel.

C. Specifications for required improvements. All required improvements shall be constructed or installed to conform to the Town Specifications, which may be obtained from the Town Engineer.
Engineering studies are required for all proposed water, sewer and stormwater improvements. ~~The road must be constructed within the center of the Right of way~~. ~~The Town of Niskayuna does not accept Low Pressure Sanitary Sewer unless it is proven that gravity sewer is not feasible.~~ The location of the pump station may require a larger parcel for maintenance. The road to the pump station will have to be paved and the width of the pavement / turnaround will need to accommodate the Town's large Vac-truck. Also the Town discourages long driveways to pump stations because of maintenance and plowing in the winter.

D. Five copies of a stormwater pollution prevention plan (SWPPP) will be submitted as part of the preliminary subdivision application as outlined in Chapter 180[1] of the Town Code of the Town of Niskayuna.
A SWPPP would be required should this project progress to preliminary subdivision review

189-16 Street layout

A. Width, location and construction
1) Streets shall be of sufficient width, suitably located and adequately constructed to conform to the Master Plan and to accommodate the prospective traffic and afford access for fire-fighting, snow removal and other road maintenance equipment.
~~The road must be in the center of the right of way~~. The TDE has raised concerns over the length of the cul-de-sac and the usability of the emergency access proposed between two single family residences on Ruffner Road. The applicant has addressed the emergency access fire truck turning radiuses and indicated they would maintain and plow the emergency access way, but the TDE may still have concerns about the width of the access.

2) The arrangement of streets shall be such as to cause no undue hardship to adjoining properties and shall be coordinated so as to compose a convenient system.
The length of the cul-de-sac is a concern. The sharp bend in the road as it exits the Ruffner Rd paper street in essence creates 3 front yards for the 1219 Ruffner Road property, which is potentially an unforeseen hardship. The Complete Streets Committee felt there was a lack of connection from this neighborhood to the adjacent neighborhoods, and that the configuration is potentially isolating to the residents on the proposed cul-de-sac.

The proposed walking connection to South Country Club drive is a benefit of the proposal.

B. Arrangement. The arrangement of streets in the subdivision shall provide for the continuation of principal streets of adjoining subdivisions and for proper projection of principal streets into adjoining properties which are not yet subdivided, in order to make possible necessary fire protection, movement of traffic and the construction or extension, presently or when later required, of needed utilities and public services such as sewers, water and drainage facilities. Where, in the opinion of the Planning Board, topographic or other conditions make such continuance undesirable or impracticable, the above conditions may be modified.
The current arrangement of the long cul-de-sac does not provide for the continuation of principal streets into adjoining subdivisions.

J. Culs-de-sac.
1) Where culs-de-sac are designed to be permanent, they should, in general, not exceed 500 feet in length and shall terminate in a circular turnaround having a minimum right-of-way radius of 60 feet and pavement radius of 45 feet.
The cul-de-sac, as proposed is 1,750 feet long.

189-21 Parks, open space and natural features

A. Recreation areas shown on Town Plan. Where a proposed park, playground or open space shown on the Town Plan is located in whole or in part in a subdivision, the Board shall require that such area or areas be shown on

the plat in accordance with the requirements specified in Subsection B below. Such area or areas may be dedicated to the Town or County by the subdivider if the Town Board approves such dedication.
There is currently no recreation or parkland proposed for this subdivision. Parkland is separate from the open space requirement of an average density development special use permit.

B. Parks and playgrounds not shown on Town Plan. The subdivider shall dedicate to the Town usable land equal in size to 10% or more of the subdivider's tract. This land shall be used by the Town for parks, playgrounds or for other specific public recreational uses as deemed desirable by the Planning Board. Usable area or areas bordering a stream, lake or other watercourse can be given special consideration by the Board in excess of the ten-percent minimum.
There is currently no recreation or parkland proposed for this subdivision. The applicant has discussed requesting a waiver for parks and playgrounds – with payment of cash in lieu of land dedication (pursuant to Section 189-21(D).

D. Preservation of natural features. The Planning Board shall, wherever possible, establish the preservation of all natural features which add value to residential developments and to the community, such as large trees or groves, watercourses and falls, beaches, historic spots, vistas and similar irreplaceable assets. No tree with a diameter of eight inches or more as measured three feet above the base of the trunk shall be removed unless such tree is within the right-of-way of a street as shown on the final subdivision plat. Removal of additional trees shall be subject to the approval of the Planning Board. In no case, however, shall a tree with a diameter of five inches or more as measured three feet above the base of the trunk be removed without prior approval by the Planning Board. In those areas where grade contours are to be raised, measures should be taken to ensure against damage or killing of trees. Such measures shall include but not be limited to construction of wells around the bases of trees and making provision for aeration and drainage.
There is no data available to the Planning Board at this time concerning the numbers, sizes and locations of trees over 8 inches. Vistas to the golf course and natural forest areas are natural features that add value to residential development and to the community. As detailed in the Town's 2013 Comprehensive Plan, the Mohawk Golf Course is a valuable asset in the public/private network of recreational and open/space throughout the Town. If not protected and developed correctly, the Town could lose an irreplaceable asset to the Town and surrounding neighborhoods. The Planning Board finds that this plan does not provide for adequate preservation of natural features and more data on the location of trees, as well as retaining patches of forest within the subdivision to avoid clear-cutting 12 acres, is necessary for any proposal within this area.

Section 220-60 (Special Use Permit)

General Character:

The Planning Board finds that the general character of this proposed average density development is unsuitable for this location. Typical lot sizes in this area are an average of 26,575 square feet with frontages averaging 130 feet. The proposed lots sizes average 14,850 square feet with average frontages of 80 feet. The bulk and scale of the smaller lots will not be in harmony with the surrounding neighborhood. Similar benefits of forest and buffer preservation could be achieved through single family home subdivision, but the clustering and massing of homes proposed will be markedly different from the surrounding area. There is no discernable benefit to using an average density development in this location. Furthermore, the plan does not provide for adequate preservation of natural features and the open space provided is not useful to the majority of the neighborhood.

Height and Use of Land:

The Planning Board finds that the clustering of the improvements is not suitable for this location. The number of units is too high and the configuration does not take advantage of the natural surroundings, including the remaining forest and the golf course holes.

Building or structures:

The Planning Board finds that the single-family homes and townhomes being clustered is not consistent with the surrounding neighborhoods and is not the recommended approach. The benefit with this configuration is weighted more towards the developer than the characteristics of the surrounding land and neighborhoods.

Provisions of Open Space and Treatment of Grounds:

This lot is the largest and one of the last open space areas in the area. The open space proposed with the ADD is mostly beneficial to a small number of existing homes and does not provide amenity to the majority of the neighborhood. It is strictly related to buffering the negative impacts of this development without providing additional benefit to the neighborhood. Additionally, the open space doesn't provide any value to the golf course because the wooded lot is no longer adjacent to the field of play. As far as habitat preservation is concerned, 2 acres does not provide the same types of habitat for wildlife as 14 acres, and the habitat is fractured, largely linear, and much less useful.

General Fitness of the structure or use to its proposed location:

As previously documented, the Planning Board finds that the average density use, as configured, is not a suitable use for this proposed location.

Provision for Automobile parking or storage:

The provision for automobile parking and storage is adequate.

Street capacity and Use:

The Planning Board recommends an actual traffic study on Ruffner Road to determine the full impacts of adding vehicles and intersections to this area.

Public Health and Convenience:

The Planning Board finds this proposal has little impact on public health.

Preservation of general character of the neighborhood:

As previously documented, the Planning Board finds that this proposal is contrary to the preservation of general character of the neighborhood.

Additional Findings

Please see the Town Designated Engineer's most recent review letter.

CAC Preliminary Findings

At the April 3 CAC meeting, the CAC went carefully through the long form EAF and summarized their concerns with the project as follows:

- A lack of a long-term plan for the entirety of the Mohawk Club property
- Clearing of 14 acres of land has impact of aesthetics and creates loss of habitat for a number of different species. Additionally, trees and greenery would have to be permanently removed both for the main access road and the additional emergency access road
- Piecemeal development of the Mohawk Club may diminish its ability to remain the open space asset that it is for the Town of Niskayuna. A public road that runs through the golf course could open up further development of the parcel which is also concerning – there needs to be a long term plan for the golf club.
- This parcel was a core part of the public/private recreation and open space system
- Impact to the character of the neighborhood was a concern.
- There are alternatives proposed by the applicant that mitigate some of the impacts to the surrounding community and the neighborhood disruption, but they aren't being further flushed out for full environmental mitigation.

They specifically noted the following sections of Part 2:

- Impact on Land (1): The water table in the specified area is two feet which could lead to drainage issues- it was noted that the developer is planning on getting a second wetlands delineation to add clarity to these concerns.
- Impact on Surface Water (3): Drainage onto Rowe Rd, Whamer Ln and Hilltop Dr needs to be further evaluated.
- Impact on Plants and Animals (7): Significant impact found on predominant species in the area as well as more than 10 acres of forest being converted for residential purposes.
- Impact on Aesthetic Resources (9): Project would diminish public enjoyment of aesthetic resources.
- Impact on Historic and Archaeological Resources (10): Mohawk Club may be on 1982 historic inventory- needs to be evaluated.
- Impact on Open Space and Recreation (11): Ecosystem services and wildlife habitats would be impaired. Piecemeal development of Mohawk Club could lead to future loss of recreational resources.
- Impact on Transportation (13): Still to be evaluated.
- Impact with Community Plans (17): Large impact- public sewer lines, water lines and stormwater detention pond will need to be expanded and created (f). Public utilities may need to be expanded further if future golf course property is developed (f/g). The project is inconsistent with local land use plans and could open the door for future development (c/g).
- Impact with Community Character (18): Large impact- impact on schools was not anticipated to be high but needed to be looked into (b). The density of the proposal

would be inconsistent with the existing community (e). Leftover green space would not be as effective post-development as it is as one collective unit.

MOTION FOR A POSITIVE DECLARATION: Chairman Dart Strayer made a motion to recommend a positive declaration to the Town Board, seconded by Mr. Ramasubramanian. The Board voted unanimously (6-0) on a positive declaration.

- Density is too high – explore alternatives with less density that mitigate more environmental concerns
- Revisit how open space is working to make it more usable and vibrant
- Long range plan for the Club is needed, and should be created to work with the Town's comprehensive plan
- Full development of Mohawk Club could lead to hundreds of new housing units which would have serious ramifications for many Town services
- Specifically, piecemeal development would not work well with Town
- Requested that Mohawk Club allow Town to perform Natural Resource Inventory on their property
- Mohawk Club is a vital asset within the Town- it is the Board's intention to work with the Club to find a solution that works with both the Town and the Club

Meeting Name: TDE Meeting - MGC

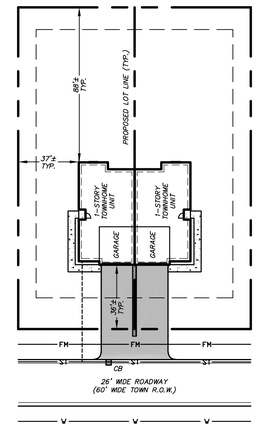
Name	Entity	Email
Laura Robertson	TON	lrobertson@niskayuna.org
Nick Blowers	TON	nblowers@niskayuna.org
Trisha Bergami	TON	tbergami@niskayuna.org
Dan Biggs	Weston & Sampson	BiggsD@wseinc.com
DAVE KIMMER	ABD	DAVE@ABDENG.com
BILL SWEET	MGC	WRSWEET@aol.com
Dan Bolke	TON	dbolke@niskayuna.org
Matthew Yetto	TON	myetto@niskayuna.org

NOTES

- Send ABD Fire truck turning radius - Will add turning radius
- Flag wetlands - add to survey (future)
- Will survey trees (future)
- SHPO - to be submitted
- Check on traffic counter on Ruffner Road
- Town to investigate issues w/ SW pond and drainage to pond
- Applicant to provide summary of site changes disc.
- Will change gravity to pump station
- Will move road to center of ROW
- Will make visual of integrating ponds into golf course.

Date: 5/11/2023

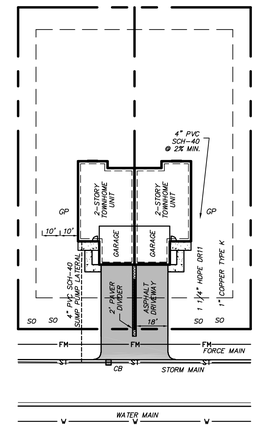
THE SIZE, LOCATION, AND LAYOUT OF THE PROPOSED STRUCTURES AND PAVEMENT SHOWN ON THIS PLAN MAY VARY BASED ON FUTURE LOT OWNERS' PREFERENCES. THESE DETAILS, AND ASSOCIATED SITE GRADING, MAY BE ADJUSTED BY A LICENSED DESIGN PROFESSIONAL PRIOR TO CONSTRUCTION, WITHIN THE LIMITS OF LOCAL, STATE, AND FEDERAL REGULATIONS.



TYPICAL TOWNHOME LOT "A"

SCALE: 1"=40'

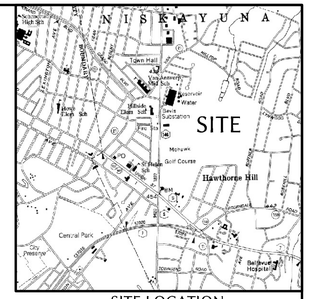
(WITH SETBACK DETAILS)



TYPICAL TOWNHOME LOT "B"

SCALE: 1"=40'

(WITH UTILITY AND DRIVEWAY DETAILS)



SITE LOCATION

GENERAL NOTES:

1. BASE MAPPING PREPARED BY ABD ENGINEERS, LLP FROM A FIELD SURVEY COMPLETED IN JUNE 2021, AND GIS INFORMATION.
2. THE PLANS SHOW SOME KNOWN SUBSURFACE STRUCTURES, ABOVEGROUND STRUCTURES AND/OR UTILITIES BELIEVED TO EXIST WITHIN THE WORKING AREA. EXACT LOCATION OF WHICH MAY VARY FROM THE LOCATIONS INDICATED. IN PARTICULAR, THE CONTRACTOR IS WARNED THAT THE EXACT OR EVEN APPROXIMATE LOCATION OF SUCH PIPE LINES, SUBSURFACE STRUCTURES AND/OR UTILITIES IN THE ARE MAY BE DIFFERENT FROM THAT SHOWN OR MAY NOT BE SHOWN AND IT SHALL BE HIS OR HER RESPONSIBILITY TO PROCEED WITH GREAT CARE IN EXECUTING ANY WORK. PROVIDE (48) HOURS BEFORE YOU DIG, DRILL OR BLAST, CALL U.F.P.O. (1-800-962-7962).
3. EXISTING AND PROPOSED GAS, ELECTRIC, AND TELECOMMUNICATIONS SERVICE LAYOUTS ARE SCHEMATIC ONLY. ALL REMOVALS, FINAL LOCATIONS, AND INSTALLATION REQUIREMENTS SHALL BE COORDINATED WITH ALL UTILITY COMPANIES.

ZONING:	R-1 (LOW DENSITY RESIDENTIAL) - SINGLE FAMILY DWELLINGS	
	REQUIRED (CONVENTIONAL ZONING)	REQUIRED (AVG. DENSITY DEVELOPMENT)
LOT AREA:	18,000 SF MIN.	9,000 SF MIN.
LOT WIDTH:	100' MIN.	50' MIN.
LOT DEPTH:	125' MIN.	62.5' MIN.
LOT COVERAGE:	25% MAX.	25% MAX.
YARD DIMENSIONS:		
FRONT:	35' MIN.	17.5' MIN.
SIDE:	20' MIN.	10' MIN.
REAR:	25' MIN.	12.5' MIN.

APPROXIMATE SITE STATISTICS		PROPOSED
BUILDINGS:	38,000± SF	6.1%
PAVEMENT:	72,000± SF	11.5%
GREEN SPACE:	514,781± SF	82.4%
TOTAL	624,781± SF (14.34± AC)	100.0%

OPEN SPACE STATISTICS	
STANDARD TOTAL LOT AREA (18,000 SF X 22):	396,000 SF
PROPOSED TOTAL LOT AREA:	328,795 SF
PERCENT REDUCTION [(396,000-328,795)/396,000)]:	17.0%
TOTAL PROJECT AREA:	624,781 SF
PROPOSED OPEN SPACE:	118,678 SF
PERCENT OPEN SPACE (118,678/624,781) (SHALL BE GREATER THAN OR EQUAL TO PERCENT REDUCTION)	19.0%

OWNER:
MGC GOLF OPERATIONS, LLC
8 AIRLINE DRIVE
ALBANY, NY 12205

1851 UNION STREET
TAX MAP #: 50.00-1-4.11
AREA: 190± ACRES

NO.	REVISION	BY	DATE
1.	ADDED ROUNDABOUT	DK	1.5.23
2.	REMOVED ROUNDABOUT	DK	2.16.23
3.	CHANGED ENTRANCE POINT	DK	3.6.23
4.	P.B. PUBLIC HEARING	DK	3.15.23

JOSEPH T. BIANCHINE, P.E.
N.Y.S. LICENSE NO. 50226

PROGRESS PRINT 5/7/2023

SKETCH 22-LOT SUBDIVISION

AVERAGE DENSITY DEVELOPMENT

MOHAWK GOLF CLUB

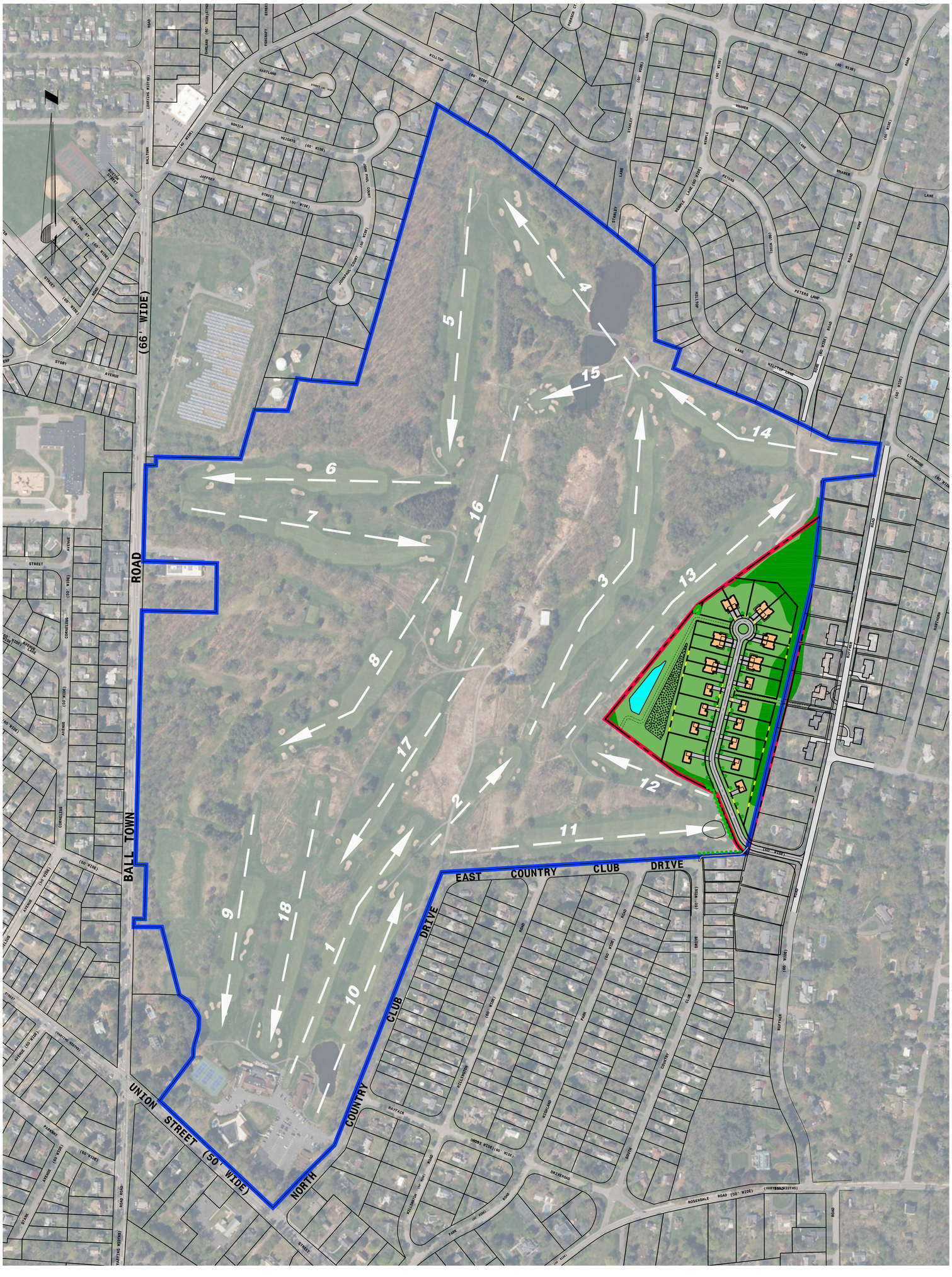
1851 UNION STREET

TOWN OF NISKAYUNA | COUNTY OF SCHENECTADY

STATE OF NEW YORK

ABD ENGINEERS & SURVEYORS
411 Union Street Schenectady, N.Y. 12305
518-377-0315 Fax.518-377-0379
www.abdeng.com

DATE:	SCALE:	DWG.	SHEET OF
DECEMBER 6, 2022	1" = 60'	5429A-S11 AVG	1 1



OVERALL COURSE MAP

AVERAGE DENSITY DEVELOPMENT

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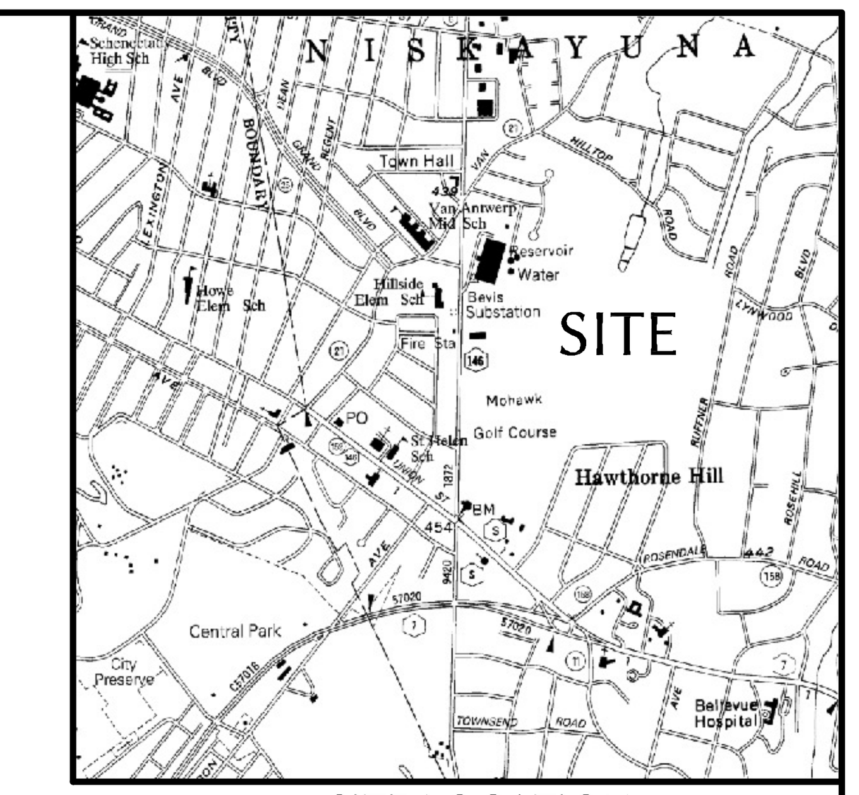

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ALTERATION OF THIS DOCUMENT EXCEPT BY A LICENSED PROFESSIONAL ENGINEER IS ILLEGAL

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PROGRESS PRINT 5/17/2023

JOSEPH J. BIANCHINE, P.E.
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DECEMBER 6, 2022	1" = 60'	5429A-S11 AVG	1	1

May 5, 2023

Weston & Sampson, PE, LS, LA, ARCHITECTS, PC
1 Winners Circle, Suite 130, Albany, NY 12205
Tel: 518.463.4400

Ms. Laura Robertson, Planner
Town of Niskayuna
One Niskayuna Circle
Niskayuna, New York 12309-4381

Re: Mohawk Golf Course Subdivision – Ruffner Road - Special Use Permit Second Review
Applicant: Mathew Moberg (MGC Golf Operations, LLC)
Town of Niskayuna, NY

Dear Ms. Robertson:

As requested, we have performed a Town Designated Engineer (TDE) review of the above-referenced project (Project) based on the following additional information made available to Weston & Sampson, PE, LS, LA, Architects, P.C. (Weston & Sampson, W&S) by the Town:

- Comment Response Letter for Mohawk Golf Club Subdivision by ABD, dated April 21, 2023
- Site plan entitled Sketch 22-Lot Subdivision, Average Density Development, Mohawk Golf Club, 1851 Union Street, prepared by Joseph Bianchine, PE of ABD Engineers, LLP, revised March 15, 2026.
- Site plan entitled Sketch 22-Lot Subdivision, Average Density Development – Alternative Layouts, Mohawk Golf Club, 1851 Union Street, prepared by Joseph Bianchine, PE, of ABD Engineers, LLP, dated February 8, 2023.
- Alternatives Table, Mohawk Golf Club – Average Density Development, 1851 Union Street, by ABD dated February 16, 2023.

Based on our technical review of the comment response letter and available information listed above for a Special Use Permit, please accept the following review comments for the Planning Board's consideration of this Project.

1. Overall Comments
   a. The Applicant should have a wetland delineation of the project site completed (including proposed utility and access corridors).
      Applicant Response: Wetlands on site were delineated by William H. Smart Engineering, PLLC in summer 2022, they will be updated this spring to include the new access corridor. The wetlands on site are believed to be USACOE isolated wetlands, because they drain to a closed municipal storm sewer.
      TDE Response: Applicant shall provide Wetland Delineation report and verification/ confirmation from NYSDEC and/or USACOE confirming status of wetlands.

   b. The Applicant should have a tree survey completed, including location, species, and general condition of all trees of significance (greater than 10" DBH), with the intent of preserving them to the greatest extent possible.
      Applicant Response: It is the developer's intent to preserve as many existing mature trees as possible; however, in order to grade the site, it is likely that most of the 10± acre grading limits shown on the plan will be cleared. On the other hand, everything outside the grading limits (including the 2.72± acre open space area) will remain.

TDE Response: Applicant did not address comment requesting tree survey, noting trees of significance per Town of Niskayuna Code: § 189-24 (5): Major Subdivision Preliminary Plat. The location of existing property lines, easements, buildings, watercourses, marshes, rock outcrops, wooded areas, single trees with a diameter of five inches or more as measured three feet above the base of the trunk and other significant existing features for the proposed subdivision and adjacent property.

In addition, applicant shall dedicate to the Town usable land equal in size to 10% or more of the subdivider's tract. This land shall be used by the Town for parks, playgrounds or for other specific public recreational uses as deemed desirable by the Planning Board. Preservation of natural features.

Also per § 189-21: Subdivision of Land – Parks, Open Spaces, and Natural Features: Applicant shall establish the preservation of all natural features which add value to residential developments and to the community, such as large trees or groves, watercourses and falls, beaches, historic spots, vistas and similar irreplaceable assets. No tree with a diameter of eight inches or more as measured three feet above the base of the trunk shall be removed unless such tree is within the right-of-way of a street as shown on the final subdivision plat.

c. Public Utilities to serve the proposed development need further study to fully understand the constraints and opportunities in the existing systems, as noted below.
Applicant Response: Acknowledged, see responses below.
TDE Response: Comments provided below.

d. Determination of Archaeological Significance of the project site - to be determined. Applicant should contact SHPO and complete a CRIS (Cultural Resource Information System) review of the project site. A dialogue with SHPO should be initiated to determine the archaeological sensitivity of the site.
Applicant Response: The project area is not within the archaeological buffer area according to CRIS, however, the project will still be referred to SHPO for a determination of no-effect.
TDE Response: Applicant to contact SHPO for project review.

e. Applicant should contact the local Fire Department that will provide fire protection for this project to initiate a project review. Specifically, a review of the length of the proposed road with one entrance and their ability to adequately protect the proposed development is necessary.
Applicant Response: The plans will be forwarded to Niskayuna Fire District #1 for review during the Major Subdivision review process.
TDE Response: Plans shall be reviewed by Fire Department and Town Engineer as noted above for fire access along proposed roadway and emergency egress route.

f. It is recommended that the applicant analyze the potential impacts to golf course hole configurations, alignments, and modifications as a result of proposed development.
TDE Response: No Response Provided.

2. Full Environmental Assessment Form – dated March 26, 2023 by ABD Engineers
   a. *Existing Wastewater Treatment Facilities (further noted below)*
      - Verify adequate capacity exists with documentation.
      - Verify the ability of the existing piped system has capacity to accept proposed flows.

      Applicant Response: We anticipate the proposed connection to the Town's southern 18" trunk line can adequately accept flows from this project. We will work with the Town engineer to confirm capacity.

      TDE Response: Proposed connection to be reviewed with Town Engineer to confirm capacity and configuration.

   b. *Stormwater Flow to Adjacent Properties (yes) (further noted below)*
      - Study/document stormwater management flows in the existing condition and the proposed condition

      Applicant Response: A full Stormwater Management Report will be prepared, demonstrating no increase in off-site discharge.

      TDE Response: TDE to review SWPPP once submitted.

   c. *Peak Traffic Expected in Morning (further noted below)*
      - Consider evening trips (returns home) as well.

      Applicant Response: The form has been updated to consider evening trips, as shown in the traffic summary. The updated EAF will be included with the submission to the Town Board.

      TDE Response: Applicant to submit updated EAF.

   d. *Proposed Outdoor Lighting*
      - Residential building lighting has been identified. Roadway lighting?

      Applicant Response: No roadway lighting is proposed.

      TDE Response: No comment.

   e. *Extensive Tree Clearing is proposed (further noted below)*
      - Minimizing tree removal has many benefits, including improving aesthetic character and property value, mitigation of heat island effect, providing wildlife habitat, maintaining neighborhood character, golf course boundary identification, screening views and noise, etc.

      Applicant Response: Tree clearing is proposed to be minimized to the extent possible. The implementation of the ADD layout will result in the preservation of a minimum of 2.72 acres of green area.

      TDE Response: Applicant shall complete tree survey per Town of Niskayuna Code: § 189-24 (5): Major Subdivision Preliminary Plat with intent of preserving trees of significance within development area.

3. Traffic Analysis/Alternatives
   a. *Ruffner Road Connection:* This option includes a single vehicular access from Ruffner Road to the proposed residential subdivision, and pedestrian connections between East Country Club Drive, Rowe Road and Ruffner Road. This option provides a single vehicular access point under stop sign control onto Ruffner Road. This option could also potentially include additional traffic control on the two Ruffner Road approaches and the existing easement/private driveway. It is anticipated that the volume of proposed vehicle trips generated from this subdivision during peak hours would result in a minimal increase in the

existing traffic volumes along Ruffner Road.
Applicant Response: Acknowledged, this is the access option preferred by the Planning Board and will be utilized.
TDE Response: Proposed roadway alignment extends adjacent to existing Hole #11, creating unsafe condition for roadway users traveling along proposed roadway. As noted previously, plans shall be reviewed by Fire Department and Town Engineer as noted above for fire access along proposed roadway and emergency egress route via existing easement to Ruffner Road.

b. *East Country Club Dr and Rowe Road Connection:* This option includes vehicular connections to both East Country Club Drive and Rowe Road, and pedestrian connections to Ruffner Road at Lynnwood Drive and East Country Club Drive. This option provides two connections to the proposed subdivision to the adjoining neighborhoods adjacent to the golf course. As a flow-thru alignment, these options could potentially create more cut-through traffic within the proposed development and adjacent neighborhoods since there currently are no direct connections between East Country Club Drive and Rowe Road. If these connections are provided, then additional traffic control measures should be considered to try to reduce the volume of cut-through traffic.

- As noted, if this option is chosen, it is estimated that there will be an increase in cut through traffic to and from the adjacent neighborhoods. Therefore, the applicant should develop estimates of the anticipated volumes of cut-through traffic and determine the impacts this would have on the adjacent roadway network and intersections with major streets, such as Rosendale Road, and Angelina Drive respectively.
  Applicant Response: This is not the preferred access option and will not be utilized.
  TDE Response: No Comment.

c. *Trip Generation:*
- The trip generation estimates provided utilized an outdated version of the Institute of Transportation Engineers (ITE) Trip Generation Manual. All trip generation estimates shall utilize the 11th Edition of the ITE Trip Generation Manual.
  Applicant Response: Given the relatively low traffic impact, we believe the trip generation values from the 9th edition are accurate enough for the purposes of this project.
  TDE Response: Applicant shall provide trip generation values from 11th Edition of ITE Trip Generation Manual to ensure most accurate trip volumes are utilized for the project.

- The trip generation estimates provided assume that all of the proposed housing unit types are the same. However according to the proposed development plan some of the units are single family homes and some are condo/townhomes. According to ITE data these two residential unit types have different trip generation rates based on the description in Land Use Codes (LUC): LUC 210 Single Family Detached Housing and LUC 215 Single Family Attached Housing. It appears the Applicant utilized LUC 210 to determine the total number of new vehicle trips for the entire development. A quick review of the trip generation rates for these two LUC's indicates that utilizing LUC 210 for the entire development results in a more conservative (worse case) estimate of the new vehicle trips.
  Applicant Response: The traffic statistics shown are accurately broken down by single family detached and single family attached uses.

TDE Response: Applicant shall provide trip generation values from 11th Edition of ITE Trip Generation Manual to ensure most accurate trip volumes are utilized for the project.

d. *General Comments:*

- As an alternative, providing a single connection between the proposed subdivision and either East Country Club Drive or Rowe Road should be evaluated. Either of these revised connections would still provide a vehicular connection to the existing neighborhood roadway network, however it would eliminate the potential cut-through traffic between the existing roadways through the new subdivision.
  Applicant Response: These alternatives have been analyzed in a 12-sheet alternate layout exhibit, and proved to have a greater impact than what is currently proposed.
  TDE Response: The 12-sheet alternatives have been reviewed, each with advantages and disadvantages.

- The Town Subdivision Regulations § 189-17. Street design - *Culs-de-sac*. [Amended 6-1-2004 by L.L. No. 11-2004] to be considered.
  Where culs-de-sac are designed to be permanent, they should, in general, *not exceed 500 feet in length* and shall terminate in a circular turnaround having a minimum right-of-way radius of 60 feet and pavement radius of 45 feet. (see additional notes below)

  Applicant Response: The cul-de-sac does exceed 500 feet; however, a second emergency access route will be provided to Ruffner road, which results in the "dead end" portion of the cul-de-sac being less than 300 feet. In addition to this, the turnaround radius at the end of the cul-de-sac exceeds the Town minimum pavement radius of 45'; it will be 48', to comply with NYS fire code.
  TDE Response: Secondary access route shall be in compliance with Town design standards, including ROW width and radius for fire apparatus to maneuver to cul-de-sac.

- A secondary access point for emergency egress is recommended and should be reviewed by the Fire Department.
  Applicant Response: A secondary emergency access route is provided to Ruffner road, via an existing 20' Town ROW. Said ROW was platted between 1241 and 1245 Ruffner Road for access to a water tower on the Golf Course property, which no longer exists.
  TDE Response: Secondary access route shall be in compliance with Town design standards, including ROW width and radius for fire apparatus to maneuver to cul-de-sac.

- Based upon the information provided, a roundabout along Ruffner Road may not be the most cost-effective means for mitigating speeding along Ruffner Road. It is recommended that a 72-hour speed study be performed ruing an average weekday and weekend along Ruffner Road at the proposed driveway to determine actual travel speeds along the roadway. With this data in hand, a determination can be made if there is a speeding concern along Ruffner Road, and if alternative traffic control measures should be investigated as a part of any of the alternatives under consideration.

Applicant Response: The roundabout at the intersection of Ruffner Road is no longer proposed. We are willing to work with the Town to participate in a speed study if they determine it is needed.
TDE Response: A speed study along Ruffner Road is recommended.

- In addition to the traffic conditions, each of these alignments should consider the potential environmental disturbances and visual impacts to the existing land areas. Potential existing wetlands, forested areas, and steep slopes should be reviewed and evaluated thoroughly relative to the golf course, and adjacent properties prior to determining which option is most preferable.
  Applicant Response: Multiple alternatives have been analyzed in a 12-sheet alternate layout exhibit, and the proposed layout has been determined to have the least impact with respect to the considerations above.
  TDE Response: Comments regarding Applicant Preferred Concept are provided above.

4. Stormwater Management
   a. Existing soil conditions/ infiltration rates shall be determined for all proposed on-site stormwater management facilities to determine feasibility of infiltration practices.
   Applicant Response: Test pits will be performed on site prior to final stormwater design.
   TDE Response: Applicant to provide SWPPP once complete.

   b. Pre-treatment practices are recommended for stormwater ponds.
   Applicant Response: A pre-treatment area will be included in the stormwater management practice.
   TDE Response: Applicant to provide SWPPP once complete.

   c. Locating stormwater practices outside of existing forested areas shall be reviewed and considered to minimize disturbance of forested areas for stormwater facilities.
   Applicant Response: Alternate locations within the existing golf course will be considered for the stormwater management area.
   TDE Response: Applicant shall provide alternative locations for stormwater management areas to be located outside of existing forested areas to minimize disturbance.

   d. Off-site facilities/downstream conditions of shall be investigated, including:
      - Potential discharge locations within the golf course or existing stormwater facilities shall be explored.
        Applicant Response: Acknowledged. The present plan is to contain all added stormwater runoff in the on-site bio-retention area and pond, with emergency discharge to the existing Golf Course storm piping.
        TDE Response: Applicant shall provide alternative layouts for stormwater management features to be located outside of existing forested areas to minimize disturbance of forest areas.

      - Assessment of off-site drainage piping within golf course which may receive discharge from the proposed stormwater pond shall be completed to determine condition, size and capacity.

Applicant Response: The size and condition of the existing piping will be confirmed and upgraded or repaired if needed.
TDE Response: Applicant to provide downstream assessment for review.

- Any off-site stormwater management practices receiving stormwater shall be analyzed to determine storage capacity available.
  Applicant Response: No off-site stormwater management practices will see additional stormwater runoff rates.
  TDE Response: Applicant to provide downstream assessment for review, including channels, ponds, or storage areas.

5. Sanitary Sewer
   a. Sanitary flows from the proposed 22 single-family home subdivision will need to be conveyed through the existing town sanitary sewer collection system. On-site septic systems are not recommended and should be avoided, as the town typically has poor infiltrating soils. As a result, there are three potential routes that the sewer flows may follow to reach a wastewater treatment plant. Each is described below:
      Applicant Response: Acknowledged, see responses below. Septic systems are not proposed.
      TDE Response: No Comment.

   b. North Trunk Sewer: The north trunk sewer is understood to be at or near maximum capacity. Other previously approved subdivisions in the town may have priority to send sanitary flows to this trunkline. The NYSDEC has required that a recently approved subdivision perform flow monitoring to prove that the sewer does not exceed capacity after full build-out of the subdivision. It is therefore recommended that the applicant for this project be required to either wait for the results of the flow study on the north trunk sewer that will be completed by others or the applicant may perform their own flow study which would include any future flows of already approved subdivisions. As a result, flows should only be sent to the north trunk sewer if there is sufficient capacity available.
      Applicant Response: This is not the proposed or preferred route for sewer flows. We have requested the Town provide us with the most recent reports from DEC and the developer on this sewer main, but to date have not received anything.
      TDE Response: Town to provide most recent reporting when available.

   c. South Trunk Sewer: The south trunk sewer potentially has the capacity to handle flows from the proposed subdivision. Sanitary sewer flows could be directed to the south trunk sewer by either an on-site gravity sewer collection system with a pump station or low-pressure force main collection system. Based upon initial review, an entirely gravity collection system does not appear to be possible considering existing topography within the project area. The nearest manhole to direct flows to the south trunk sewer is approximately 1,200 feet from the proposed subdivision. As a result, it is recommended that the applicant perform a sewer capacity analysis to determine if sufficient capacity exists. Flow monitoring is recommended if a connection to this system is completed. In addition, if a low pressure force main collection system is selected, there will need to be careful consideration to the private ownership of the associated pump system.
      Applicant Response: This is the proposed and preferred route for sewer flow, as shown on the plans. A LPSS will be designed and installed to Town standards. We are willing to work

with the Town to confirm capacity for this route, but based on initial discussions, we have no reason to believe there are any constraints.
TDE Response: Applicant shall complete capacity analysis. Town only accepts LPSS if no feasible gravity alternative exists. Applicant has not provided sufficient data to date documenting that a gravity alternative is not feasible..

d. City of Schenectady Sewer: The sanitary sewer flows from this subdivision could be directed to the sanitary sewer located on East Country Club Drive. The flows from this collection system flow to the City of Schenectady Wastewater Treatment Plant. A capacity analysis and approval from the City would be required for this option. Flow monitoring is recommended if a connection to this system is completed.
Applicant Response: This is not the proposed or preferred route for sewer flows.
TDE Response: No Comment.

6. Water System
   a. The proposed subdivision would receive potable water from the Town's 450,000-gallon elevated water tank. A capacity analysis is recommended to determine if sufficient water storage exists in the elevated tank to serve the new homes.
   Applicant Response: Acknowledged. Based on initial discussions with the Town engineer, we do not believe the Town has any general storage capacity or pressure constraints that would affect this proposal.
   TDE Response: Town does not have recent pressure and flow data for the existing water system within the project area. Applicant shall complete pressure and flow test in coordination with Town Engineer to operate all valves and hydrants.

   b. The mainline along Ruffner Road, which would serve the proposed subdivision is believed to be undersized. As a result, a capacity analysis on the distribution system is recommended as well to determine if sufficient pressure and flows exist within the area.
   Applicant Response: Acknowledged. Based on initial discussions with the Town engineer, we believe the nearby infrastructure is sufficient to support this proposal.
   TDE Response: Town does not have recent pressure and flow data for the existing water system within the project area. Applicant shall complete pressure and flow test in coordination with Town Engineer to operate all valves and hydrants.

7. Special Use Permit Standards:
   a. Special Use Permits – Section 220-60 states, permits may be authorized by the Town Board upon satisfaction of conditions:
      i. General Character, height and use of land, buildings or structures;
      ii. Provision of surrounding Open Space and the treatment of grounds;
      iii. General fitness of the structure or use to its proposed location;
      iv. Provisions for automobile parking or storage;
      v. Street capacity and use;
      vi. Safeguarding of Public Health and convenience;
      vii. Preservation of the general character of the neighborhood in which such use, buildings or structures is to be placed or such use is to be conducted.

   Applicant Response: We believe this proposal satisfies all the conditions listed above.

TDE Response:

- ii – Applicant shall address parkland requirements per Town of Niskayuna Code § 189-21, to dedicate lands to the Town.
- iii thru vii – Applicant shall provide more open space to blend proposed development into surrounding context, while preserving existing forested areas, which are usable for public use, as well as maximize scenic qualities and vistas of project parcel and surrounding golf course.
  Per Town of Niskayuna Code § 189-21: Subdivision of Land – Parks, Open Spaces, and Natural Features: Applicant shall establish the preservation of all natural features which add value to residential developments and to the community, such as large trees or groves, watercourses and falls, beaches, historic spots, vistas and similar irreplaceable assets. No tree with a diameter of eight inches or more as measured three feet above the base of the trunk shall be removed unless such tree is within the right-of-way of a street as shown on the final subdivision plat.

b. Average Density Development (ADD) Special Use Permit - Average Density Development Special Use Permits are a specific type of special use permit that *allows for variation in lot size and housing type in suitable areas in order to encourage flexibility of design, facilitate the adequate and economic provisions of streets and utilities and preserve the natural and scenic qualities of open space.*
   Applicant Response: Noted, this is the intent of the proposal.
   TDE Response: No comment.

c. Review of the Average Density Development (ADD) Site Plan – last revised 3/15/23
   Upon we have the following general comments:
   i. The architectural style of the proposed residential units should be compatible with the general character of the surrounding residential neighborhood.
   Applicant Response: The architectural style of the proposed units will be compatible with the general character of the neighborhood to the extent possible; however, they will be modern style homes, and generally not visible from Ruffner Road.
   TDE Response: Architectural style to be reviewed once complete to ensure proposed residential units to be compatible with surrounding residential neighborhood.

   ii. The proposed development should retain as much open space and preserve the general natural and scenic qualities of the open space, as well as preserve the neighborhood character to the extent feasible.
   Applicant Response: Acknowledged. The proposal seeks to preserve approximately 19% of the project area as forever-wild green space, while another 17%± will be reserved as a landscaped stormwater area. In all, the entire project area will be approximately 80% green space.
   TDE Response: Applicant has not provided alternatives illustrating relocation of stormwater management system into golf course area and to help preserve forested areas for open space preservation.

iii. The proposed ADD site plan is based on the conventional subdivision prepared, showing 22 lots. The conventional site plan has one access and a cul-de-sac length of approximately 1,750+ feet (much greater than the Town standard (500' max) and International Fire Code (2021) (750').
Applicant Response: In the case of the conventional subdivision plan, secondary emergency access route(s) could either be added through the Golf Course to Rowe Road, or to Ruffner Road, as shown on the ADD plan.
TDE Response: Applicant shall illustrate additional access routes to be considered for review.

If you have any questions regarding this correspondence, please contact me directly by phone at 518-463-4400 or email Biggsd@wseinc.com.

Sincerely,
WESTON & SAMPSON PE, LS, LA, Architects, P.C.

Daniel Biggs, RLA, ISA, CERP
Associate | Regional Manager

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ABD ENGINEERS SURVEYORS
411 Union Street Schenectady, N.Y. 12305
518-377-0315 Fax.518-377-0379
www.abdeng.com

PARTNERS
JOSEPH J. BIANCHINE, P.E.
LUIGI A. PALLESCHI, P.E.
ROBERT D. DAVIS, JR., P.L.S.

DEDICATED
RESPONSIVE
PROFESSIONAL

April 21, 2023

Re: Mohawk Golf Club Subdivision
1849 Union St
Town of Niskayuna
Project #5429A ____

Laura Robertson, Town Planner
Town of Niskayuna
One Niskayuna Circle
Niskayuna, NY 12309-4381

Dear Laura:

In response to the comments provided by the Town Designated Engineer, Daniel Biggs, RLA, ISA, CERP (Weston & Sampson PE, LS, LA, Architects, P.C.) on the above referenced project (*in italics*) we offer the following responses (**in bold**):

1. Overall Comments

a) *The Applicant should have a wetland delineation of the project site completed (including proposed utility and access corridors).*
Wetlands on site were delineated by William H. Smart Engineering, PLLC in summer 2022, they will be updated this spring to include the new access corridor. The wetlands on site are believed to be USACOE isolated wetlands, because they drain to a closed municipal storm sewer.

b) *The Applicant should have a tree survey completed, including location, species, and general condition of all trees of significance (greater than 10" DBH), with the intent of preserving them to the greatest extent possible.*
It is the developer's intent to preserve as many existing mature trees as possible; however, in order to grade the site, it is likely that most of the 10± acre grading limits shown on the plan will be cleared. On the other hand, everything outside the grading limits (including the 2.72± acre open space area) will remain.

c) *Public Utilities to serve the proposed development need further study to fully understand the constraints and opportunities in the existing systems, as noted below.*
Acknowledged, see responses below.

d) *Determination of Archaeological Significance of the project site - to be determined. Applicant should contact SHPO and complete a CRIS (Cultural Resource Information System) review of the project site. A dialogue with SHPO should be initiated to determine the archaeological sensitivity of the site.*
The project area is not within the archaeological buffer area according to CRIS, however, the project will still be referred to SHPO for a determination of no-effect.

e) *Applicant should contact the local Fire Department that will provide fire protection for this project to initiate a project review. Specifically, a review of the length of the proposed road with one entrance and their ability to adequately protect the proposed development is necessary.*
The plans will be forwarded to Niskayuna Fire District #1 for review during the Major Subdivision review process.

2. Full Environmental Assessment Form

a) *Existing Wastewater Treatment Facilities (further noted below)*
- *Verify adequate capacity exists with documentation.*
- *Verify the ability of the existing piped system has capacity to accept proposed flows.*
We anticipate the proposed connection to the Town's southern 18" trunk line can adequately accept flows from this project. We will work with the Town engineer to confirm capacity.

b) *Stormwater Flow to Adjacent Properties (yes) (further noted below).*
- *Study/document stormwater management flows in the existing condition and the proposed condition.*
A full Stormwater Management Report will be prepared, demonstrating no increase in off-site discharge.

c) *Peak Traffic Expected in Morning (further noted below)*
- *Consider evening trips (returns home) as well.*
The form has been updated to consider evening trips, as shown in the traffic summary. The updated EAF will be included with the submission to the Town Board.

d) *Proposed Outdoor Lighting*
- *Residential building lighting has been identified. Roadway lighting?*
No roadway lighting is proposed.

e) *Extensive Tree Clearing is proposed (further noted below)*
- *Minimizing tree removal has many benefits, including improving aesthetic character and property value, mitigation of heat island effect, providing wildlife habitat, maintaining neighborhood character, golf course boundary identification, screening views and noise, etc.*
Tree clearing is proposed to be minimized to the extent possible. The implementation of the ADD layout will result in the preservation of a minimum of 2.72 acres of green area.

3. Traffic Analysis/Alternatives

a) *Ruffner Road Connection: This option includes a single vehicular access from Ruffner Road to the proposed residential subdivision, and pedestrian connections between East Country Club Drive, Rowe Road and Ruffner Road. This option provides a single vehicular access point under stop sign control onto Ruffner Road. This option could also potentially include additional traffic control on the two Ruffner Road approaches and the existing easement/private driveway. It is anticipated that the volume of proposed vehicle trips generated from this subdivision during peak hours would result in a minimal increase in the existing traffic volumes along Ruffner Road.*
Acknowledged, this is the access option preferred by the Planning Board and will be utilized.

b) *East Country Club Dr and Rowe Road Connection: This option includes vehicular connections to both East Country Club Drive and Rowe Road, and pedestrian connections to Ruffner Road at Lynnwood Drive and East Country Club Drive. This option provides two connections to the proposed subdivision to the adjoining neighborhoods adjacent to the golf course. As a flow-thru alignment, these options could potentially create more cut-through traffic within the proposed development and adjacent neighborhoods since there currently are no direct connections between East Country Club Drive and Rowe Road. If these connections are provided, then additional traffic control measures should be considered to try to reduce the volume of cut-through traffic.*

- *As noted, if this option is chosen, it is estimated that there will be an increase in cut through traffic to and from the adjacent neighborhoods. Therefore, the applicant should develop estimates of the anticipated volumes of cut-through traffic and determine the impacts this would have on the adjacent roadway network and intersections with major streets, such as Rosendale Road, and Angelina Drive respectively.*
  This is not the preferred access option and will not be utilized.

c) *Trip Generation:*

- *The trip generation estimates provided utilized an outdated version of the Institute of Transportation Engineers (ITE) Trip Generation Manual. All trip generation estimates shall utilize the 11th Edition of the ITE Trip Generation Manual.*
  Given the relatively low traffic impact, we believe the trip generation values from the 9th edition are accurate enough for the purposes of this project.

- *The trip generation estimates provided assume that all of the proposed housing unit types are the same. However according to the proposed development plan some of the units are single family homes and some are condo/townhomes. According to ITE data these two residential unit types have different trip generation rates based on the description in Land Use Codes (LUC): LUC 210 Single Family Detached Housing and LUC 215 Single Family Attached Housing. It appears the Applicant utilized LUC 210 to determine the total number of new vehicle trips for the entire development. A quick review of the trip generation rates for these two LUC's indicates that utilizing LUC 210 for the entire development results in a more conservative (worse case) estimate of the new vehicle trips.*
  The traffic statistics shown are accurately broken down by single family detached and single family attached uses.

d) *General Comments:*

- *As an alternative, providing a single connection between the proposed subdivision and either East Country Club Drive or Rowe Road should be evaluated. Either of these revised connections would still provide a vehicular connection to the existing neighborhood roadway network, however it would eliminate the potential cut-through traffic between the existing roadways through the new subdivision.*
  These alternatives have been analyzed in a 12-sheet alternate layout exhibit, and proved to have a greater impact than what is currently proposed.

- *The Town Subdivision Regulations § 189-17. Street design - Culs-de-sac. [Amended 6-1- 2004 by L.L. No. 11-2004] to be considered.*
  - *Where culs-de-sac are designed to be permanent, they should, in general, not exceed 500 feet in length and shall terminate in a circular turnaround having a minimum right-of-way radius of 60 feet and pavement radius of 45 feet. (see additional notes below)*
    The cul-de-sac does exceed 500 feet; however, a second emergency access route will be provided to Ruffner road, which results in the "dead end" portion of the cul-de-sac being less than 300 feet. In addition to this, the turnaround radius at the end of the cul-de-sac exceeds the Town minimum pavement radius of 45'; it will be 48', to comply with NYS fire code.

- *A secondary access point for emergency egress is recommended and should be reviewed by the Fire Department.*
  A secondary emergency access route is provided to Ruffner road, via an existing 20' Town ROW. Said ROW was platted between 1241 and 1245 Ruffner Road for access to a water tower on the Golf Course property, which no longer exists.

- *Based upon the information provided, a roundabout along Ruffner Road may not be the most cost-effective means for mitigating speeding along Ruffner Road. It is recommended that a 72-hour speed study be performed ruing an average weekday and weekend along Ruffner Road at the proposed driveway to determine actual travel speeds along the roadway. With this data in hand, a determination can be made if there is a speeding concern along Ruffner Road, and if alternative traffic control measures should be investigated as a part of any of the alternatives under consideration.*
  The roundabout at the intersection of Ruffner Road is no longer proposed. We are willing to work with the Town to participate in a speed study if they determine it is needed.

- *In addition to the traffic conditions, each of these alignments should consider the potential environmental disturbances and visual impacts to the existing land areas. Potential existing wetlands, forested areas, and steep slopes should be reviewed and evaluated thoroughly relative to the golf course, and adjacent properties prior to determining which option is most preferable.*
  Multiple alternatives have been analyzed in a 12-sheet alternate layout exhibit, and the proposed layout has been determined to have the least impact with respect to the considerations above.

4. Stormwater Management

a) *Existing soil conditions/ infiltration rates shall be determined for all proposed on-site stormwater management facilities to determine feasibility of infiltration practices.*
Test pits will be performed on site prior to final stormwater design.

b) *Pre-treatment practices are recommended for stormwater ponds.*
A pre-treatment area will be included in the stormwater management practice.

c) *Locating stormwater practices outside of existing forested areas shall be reviewed and considered to minimize disturbance of forested areas for stormwater facilities.*
Alternate locations within the existing golf course will be considered for the stormwater management area.

d) *Off-site facilities/downstream conditions of shall be investigated, including:*

- *Potential discharge locations within the golf course or existing stormwater facilities shall be explored.*
  Acknowledged. The present plan is to contain all added stormwater runoff in the on-site bio-retention area and pond, with emergency discharge to the existing Golf Course storm piping.

- *Assessment of off-site drainage piping within golf course which may receive discharge from the proposed stormwater pond shall be completed to determine condition, size and capacity.*
  The size and condition of the existing piping will be confirmed and upgraded or repaired if needed.

- *Any off-site stormwater management practices receiving stormwater shall be analyzed to determine storage capacity available.*
  No off-site stormwater management practices will see additional stormwater runoff rates.

5. Sanitary Sewer

a) *Sanitary flows from the proposed 22 single-family home subdivision will need to be conveyed through the existing town sanitary sewer collection system. On-site septic systems are not recommended and should be avoided, as the town typically has poor infiltrating soils. As a result, there are three potential routes that the sewer flows may follow to reach a wastewater treatment plant. Each is described below.*
Acknowledged, see responses below. Septic systems are not proposed.

b) *North Trunk Sewer: The north trunk sewer is understood to be at or near maximum capacity. Other previously approved subdivisions in the town may have priority to send sanitary flows to this trunkline. The NYSDEC has required that a recently approved subdivision perform flow monitoring to prove that the sewer does not exceed capacity after full build-out of the subdivision. It is therefore recommended that the applicant for this project be required to either wait for the results of the flow study on the north trunk sewer that will be completed by others or the applicant may perform their own flow study which would include any future flows of already approved subdivisions. As a result, flows should only be sent to the north trunk sewer if there is sufficient capacity available.*
This is not the proposed or preferred route for sewer flows. We have requested the Town provide us with the most recent reports from DEC and the developer on this sewer main, but to date have not received anything.

c) *South Trunk Sewer: The south trunk sewer potentially has the capacity to handle flows from the proposed subdivision. Sanitary sewer flows could be directed to the south trunk sewer by either an on-site gravity sewer collection system with a pump station or low-pressure force main collection system. Based upon initial review, an entirely gravity collection system does not appear to be possible considering existing topography within the project area. The nearest manhole to direct flows to the south trunk sewer is approximately 1,200 feet from the proposed subdivision. As a result, it is recommended that the applicant perform a sewer capacity analysis to determine if sufficient capacity exists. Flow monitoring is recommended if a connection to this system is completed. In addition, if a low pressure force main collection system is selected, there will need to be careful consideration to the private ownership of the associated pump system.*
This is the proposed and preferred route for sewer flow, as shown on the plans. A LPSS will be designed and installed to Town standards. We are willing to work with

the Town to confirm capacity for this route, but based on initial discussions, we have no reason to believe there are any constraints.

d) *City of Schenectady Sewer: The sanitary sewer flows from this subdivision could be directed to the sanitary sewer located on East Country Club Drive. The flows from this collection system flow to the City of Schenectady Wastewater Treatment Plant. A capacity analysis and approval from the City would be required for this option. Flow monitoring is recommended if a connection to this system is completed.*
This is not the proposed or preferred route for sewer flows.

6. Water System

a) *The proposed subdivision would receive potable water from the Town's 450,000-gallon elevated water tank. A capacity analysis is recommended to determine if sufficient water storage exists in the elevated tank to serve the new homes.*
Acknowledged. Based on initial discussions with the Town engineer, we do not believe the Town has any general storage capacity or pressure constraints that would affect this proposal.

b) *The mainline along Ruffner Road, which would serve the proposed subdivision is believed to be undersized. As a result, a capacity analysis on the distribution system is recommended as well to determine if sufficient pressure and flows exist within the area.*
Acknowledged. Based on initial discussions with the Town engineer, we believe the nearby infrastructure is sufficient to support this proposal.

7. Special Use Permit Standards

a) *Special Use Permits – Section 220-60 states, permits may be authorized by the Town Board upon satisfaction of conditions:*
   i. *General Character, height and use of land, buildings or structures;*
   ii. *Provision of surrounding Open Space and the treatment of grounds;*
   iii. *General fitness of the structure or use to its proposed location;*
   iv. *Provisions for automobile parking or storage;*
   v. *Street capacity and use;*
   vi. *Safeguarding of Public Health and convenience;*
   vii. *Preservation of the general character of the neighborhood In which such use, buildings or structures is to be placed or such use is to be conducted.*

We believe this proposal satisfies all the conditions listed above.

b) *Average Density Development (ADD) Special Use Permit - Average Density Development Special Use Permits are a specific type of special use permit that allows for variation in lot size and housing type in suitable areas in order to encourage flexibility of design, facilitate the adequate and economic provisions of streets and utilities and preserve the natural and scenic qualities of open space.*
Noted, this is the intent of the proposal.

c) *Review of the Average Density Development (ADD) Site Plan – last revised 3/15/23 Upon we have the following general comments:*
   i. *The architectural style of the proposed residential units should be compatible with the general character of the surrounding residential neighborhood.*
   The architectural style of the proposed units will be compatible with the general character of the neighborhood to the extent possible; however, they will be modern style homes, and generally not visible from Ruffner Road.

ii. *The proposed development should retain as much open space and preserve the general natural and scenic qualities of the open space, as well as preserve the neighborhood character to the extent feasible.*
Acknowledged. The proposal seeks to preserve approximately 19% of the project area as forever-wild green space, while another 17%± will be reserved as a landscaped stormwater area. In all, the entire project area will be approximately 80% green space.

iii. *The proposed ADD siteplan is based on the conventional subdivision prepared, showing 22 lots. The conventional site plan has one access and a cul-de-sac length of approximately 1,750+ feet (much greater than the Town standard (500' max) and International Fire Code (2021) (750').*
In the case of the conventional subdivision plan, secondary emergency access route(s) could either be added through the Golf Course to Rowe Road, or to Ruffner Road, as shown on the ADD plan.

We look forward to discussion on a resolution for this project at the May 8, 2023 Planning Board meeting. Should you have any questions or need anything further, please do not hesitate to contact me.

Very truly yours,

ABD ENGINEERS & SURVEYORS, LLP

Joseph J. Bianchine, P.E.
Partner

JJB:dmk
encls.
cc: Daniel Biggs (Weston & Sampson) w/encl. (via email)
Bill Sweet w/encl. (via email)
5429A-2023-04-21

April 17, 2023

Weston & Sampson, PE, LS, LA, ARCHITECTS, PC
1 Winners Circle, Suite 130, Albany, NY 12205
Tel: 518.463.4400

Ms. Laura Robertson, Planner
Town of Niskayuna
One Niskayuna Circle
Niskayuna, New York 12309-4381

Re: Mohawk Golf Course Subdivision – Ruffner Road - Special Use Permit Review
Applicant: Mathew Moberg (MGC Golf Operations, LLC)
Town of Niskayuna, NY

Dear Ms. Robertson:

As requested, we have performed a Town Designated Engineer (TDE) review of the above-referenced project (Project) based on the following information made available to Weston & Sampson, PE, LS, LA, Architects, P.C. (Weston & Sampson, W&S) by the Town:

- Full Environmental Assessment Form Re: Mohawk Golf Club Subdivision – Ruffner Road
- Town of Niskayuna Planning Board and Zoning Commission Agenda Statement; Item Title: DISCUSSION: 1851 Union St / 1245 Ruffner Road – Mohawk Golf Club – application for sketch plan approval including a Special Use Permit for a 22-lot Average Density Development (ADD) subdivision consisting of 10 single-family detached homes and 12 townhomes.
- Site plan entitled Sketch 22-Lot Subdivision, Average Density Development, Mohawk Golf Club, 1851 Union Street, prepared by Joseph Bianchine, PE of ABD Engineers, LLP, dated December 6, 2022.
- Site plan entitled Sketch 22-Lot Subdivision, Conventional Single Family, Mohawk Golf Club, 1851 Union Street, prepared by Joseph Bianchine, PE, of ABD Engineers, LLP, dated March 13, 2023
- Site plan entitled Overall Stormwater Map, Average Density Development, Mohawk Golf Club, 1851 Union Street & 1245 Ruffner Road, prepared by ABD Engineers, LLP, dated February 15, 2023.
- Three sheet Traffic Impact Plan set entitled, Mohawk Golf Club, 1851 Union Street & 1245 Ruffner Road, prepared by ABD Engineers, LLP, dated January 4, 2023

Based on our initial technical review of the available information listed above for a Special Use Permit, please accept the following review comments for the Planning Board's consideration of this Project.

1. Overall Comments
   a. The Applicant should have a wetland delineation of the project site completed (including proposed utility and access corridors).

   b. The Applicant should have a tree survey completed, including location, species, and general condition of all trees of significance (greater than 10" DBH), with the intent of preserving them to the greatest extent possible.

   c. Public Utilities to serve the proposed development need further study to fully understand the constraints and opportunities in the existing systems, as noted below.

d. Determination of Archaeological Significance of the project site - to be determined. Applicant should contact SHPO and complete a CRIS (Cultural Resource Information System) review of the project site. A dialogue with SHPO should be initiated to determine the archaeological sensitivity of the site.

e. Applicant should contact the local Fire Department that will provide fire protection for this project to initiate a project review. Specifically, a review of the length of the proposed road with one entrance and their ability to adequately protect the proposed development is necessary.

f. It is recommended that the applicant analyze the potential impacts to golf course hole configurations, alignments, and modifications as a result of proposed development.

2. Full Environmental Assessment Form – dated March 26, 2023 by ABD Engineers
   a. *Existing Wastewater Treatment Facilities (further noted below)*
      - Verify adequate capacity exists with documentation.
      - Verify the ability of the existing piped system has capacity to accept proposed flows.

   b. *Stormwater Flow to Adjacent Properties (yes) (further noted below)*
      - Study/document stormwater management flows in the existing condition and the proposed condition

   c. *Peak Traffic Expected in Morning (further noted below)*
      - Consider evening trips (returns home) as well.

   d. *Proposed Outdoor Lighting*
      - Residential building lighting has been identified. Roadway lighting?

   e. *Extensive Tree Clearing is proposed (further noted below)*
      - Minimizing tree removal has many benefits, including improving aesthetic character and property value, mitigation of heat island effect, providing wildlife habitat, maintaining neighborhood character, golf course boundary identification, screening views and noise, etc.

3. Traffic Analysis/Alternatives
   a. *Ruffner Road Connection:* This option includes a single vehicular access from Ruffner Road to the proposed residential subdivision, and pedestrian connections between East Country Club Drive, Rowe Road and Ruffner Road. This option provides a single vehicular access point under stop sign control onto Ruffner Road. This option could also potentially include additional traffic control on the two Ruffner Road approaches and the existing easement/private driveway. It is anticipated that the volume of proposed vehicle trips generated from this subdivision during peak hours would result in a minimal increase in the existing traffic volumes along Ruffner Road.

   b. *East Country Club Dr and Rowe Road Connection:* This option includes vehicular connections to both East Country Club Drive and Rowe Road, and pedestrian connections to Ruffner Road at Lynnwood Drive and East Country Club Drive. This option provides two connections to the proposed subdivision to the adjoining neighborhoods adjacent to the golf course. As a flow-thru alignment, these options could potentially create more cut-

through traffic within the proposed development and adjacent neighborhoods since there currently are no direct connections between East Country Club Drive and Rowe Road. If these connections are provided, then additional traffic control measures should be considered to try to reduce the volume of cut-through traffic.

- As noted, if this option is chosen, it is estimated that there will be an increase in cut through traffic to and from the adjacent neighborhoods. Therefore, the applicant should develop estimates of the anticipated volumes of cut-through traffic and determine the impacts this would have on the adjacent roadway network and intersections with major streets, such as Rosendale Road, and Angelina Drive respectively.

c. *Trip Generation:*
   - The trip generation estimates provided utilized an outdated version of the Institute of Transportation Engineers (ITE) Trip Generation Manual. All trip generation estimates shall utilize the 11th Edition of the ITE Trip Generation Manual.
   - The trip generation estimates provided assume that all of the proposed housing unit types are the same. However according to the proposed development plan some of the units are single family homes and some are condo/townhomes. According to ITE data these two residential unit types have different trip generation rates based on the description in Land Use Codes (LUC): LUC 210 Single Family Detached Housing and LUC 215 Single Family Attached Housing. It appears the Applicant utilized LUC 210 to determine the total number of new vehicle trips for the entire development. A quick review of the trip generation rates for these two LUC's indicates that utilizing LUC 210 for the entire development results in a more conservative (worse case) estimate of the new vehicle trips.

d. *General Comments:*
   - As an alternative, providing a single connection between the proposed subdivision and either East Country Club Drive or Rowe Road should be evaluated. Either of these revised connections would still provide a vehicular connection to the existing neighborhood roadway network, however it would eliminate the potential cut-through traffic between the existing roadways through the new subdivision.
   - The Town Subdivision Regulations § 189-17. Street design - *Culs-de-sac.* [Amended 6-1-2004 by L.L. No. 11-2004] to be considered.
     - Where culs-de-sac are designed to be permanent, they should, in general, *not exceed 500 feet in length* and shall terminate in a circular turnaround having a minimum right-of-way radius of 60 feet and pavement radius of 45 feet. (see additional notes below)
   - A secondary access point for emergency egress is recommended and should be reviewed by the Fire Department.
   - Based upon the information provided, a roundabout along Ruffner Road may not be the most cost-effective means for mitigating speeding along Ruffner Road. It is recommended that a 72-hour speed study be performed ruing an average weekday and weekend along Ruffner Road at the proposed driveway to determine actual travel speeds along the roadway. With this data in hand, a determination can be made if there is a speeding concern along Ruffner Road, and if alternative traffic control measures should be investigated as a part of any of the alternatives under consideration.

- In addition to the traffic conditions, each of these alignments should consider the potential environmental disturbances and visual impacts to the existing land areas. Potential existing wetlands, forested areas, and steep slopes should be reviewed and evaluated thoroughly relative to the golf course, and adjacent properties prior to determining which option is most preferable.

4. Stormwater Management
   a. Existing soil conditions/ infiltration rates shall be determined for all proposed on-site stormwater management facilities to determine feasibility of infiltration practices.

   b. Pre-treatment practices are recommended for stormwater ponds.

   c. Locating stormwater practices outside of existing forested areas shall be reviewed and considered to minimize disturbance of forested areas for stormwater facilities.

   d. Off-site facilities/downstream conditions of shall be investigated, including:
      - Potential discharge locations within the golf course or existing stormwater facilities shall be explored.
      - Assessment of off-site drainage piping within golf course which may receive discharge from the proposed stormwater pond shall be completed to determine condition, size and capacity.
      - Any off-site stormwater management practices receiving stormwater shall be analyzed to determine storage capacity available.

5. Sanitary Sewer
   a. Sanitary flows from the proposed 22 single-family home subdivision will need to be conveyed through the existing town sanitary sewer collection system. On-site septic systems are not recommended and should be avoided, as the town typically has poor infiltrating soils. As a result, there are three potential routes that the sewer flows may follow to reach a wastewater treatment plant. Each is described below:

   b. North Trunk Sewer: The north trunk sewer is understood to be at or near maximum capacity. Other previously approved subdivisions in the town may have priority to send sanitary flows to this trunkline. The NYSDEC has required that a recently approved subdivision perform flow monitoring to prove that the sewer does not exceed capacity after full build-out of the subdivision. It is therefore recommended that the applicant for this project be required to either wait for the results of the flow study on the north trunk sewer that will be completed by others or the applicant may perform their own flow study which would include any future flows of already approved subdivisions. As a result, flows should only be sent to the north trunk sewer if there is sufficient capacity available.

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if a connection to this system is completed. In addition, if a low pressure force main collection system is selected, there will need to be careful consideration to the private ownership of the associated pump system.

d. City of Schenectady Sewer: The sanitary sewer flows from this subdivision could be directed to the sanitary sewer located on East Country Club Drive. The flows from this collection system flow to the City of Schenectady Wastewater Treatment Plant. A capacity analysis and approval from the City would be required for this option. Flow monitoring is recommended if a connection to this system is completed.

6. Water System
   a. The proposed subdivision would receive potable water from the Town's 450,000-gallon elevated water tank. A capacity analysis is recommended to determine if sufficient water storage exists in the elevated tank to serve the new homes.

   b. The mainline along Ruffner Road, which would serve the proposed subdivision is believed to be undersized. As a result, a capacity analysis on the distribution system is recommended as well to determine if sufficient pressure and flows exist within the area.

7. Special Use Permit Standards:
   a. Special Use Permits – Section 220-60 states, permits may be authorized by the Town Board upon satisfaction of conditions:
      i. General Character, height and use of land, buildings or structures;
      ii. Provision of surrounding Open Space and the treatment of grounds;
      iii. General fitness of the structure or use to its proposed location;
      iv. Provisions for automobile parking or storage;
      v. Street capacity and use;
      vi. Safeguarding of Public Health and convenience;
      vii. Preservation of the general character of the neighborhood In which such use, buildings or structures is to be placed or such use is to be conducted.

   b. Average Density Development (ADD) Special Use Permit - Average Density Development Special Use Permits are a specific type of special use permit that *allows for variation in lot size and housing type in suitable areas in order to encourage flexibility of design, facilitate the adequate and economic provisions of streets and utilities and preserve the natural and scenic qualities of open space.*

   c. Review of the Average Density Development (ADD) Site Plan – last revised 3/15/23
      Upon we have the following general comments:
      i. The architectural style of the proposed residential units should be compatible with the general character of the surrounding residential neighborhood.
      ii. The proposed development should retain as much open space and preserve the general natural and scenic qualities of the open space, as well as preserve the neighborhood character to the extent feasible.
      iii. The proposed ADD siteplan is based on the conventional subdivision prepared, showing 22 lots. The conventional site plan has one access and a cul-de-sac length of approximately 1,750+ feet (much greater than the Town standard (500' max) and International Fire Code (2021) (750').

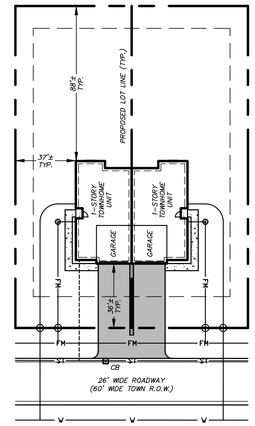
If you have any questions regarding this correspondence, please contact me directly by phone at 518-463-4400 or email Biggsd@wseinc.com.

Sincerely,
WESTON & SAMPSON PE, LS, LA, Architects, P.C.

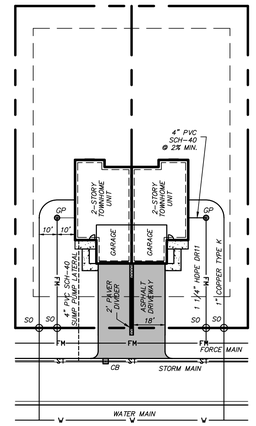
Daniel Biggs, RLA, ISA, CERP
Associate | Regional Manager

P:\NY\Niskayuna, NY\TDE Reviews\ENG23-0403-Mohawk Golf Club Subdivision\Technical\2023.04.17 Mohawk GC Subdivision - SpecialUsePermit-Prelim Review-re1.docx

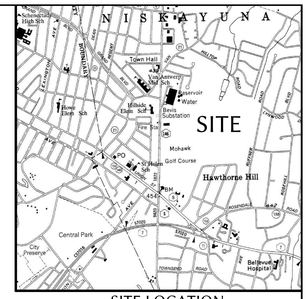
THE SIZE, LOCATION, AND LAYOUT OF THE PROPOSED STRUCTURES AND PAVEMENT SHOWN ON THIS PLAN MAY VARY BASED ON FUTURE LOT OWNERS' PREFERENCES. THESE DETAILS, AND ASSOCIATED SITE GRADING, MAY BE ADJUSTED BY A LICENSED DESIGN PROFESSIONAL PRIOR TO CONSTRUCTION, WITHIN THE LIMITS OF LOCAL, STATE, AND FEDERAL REGULATIONS.



TYPICAL TOWNHOME LOT "A"
SCALE: 1"=40'
(WITH SETBACK DETAILS)



TYPICAL TOWNHOME LOT "B"
SCALE: 1"=40'
(WITH UTILITY AND DRIVEWAY DETAILS)



SITE LOCATION

GENERAL NOTES:

1. BASE MAPPING PREPARED BY ABD ENGINEERS, LLP FROM A FIELD SURVEY COMPLETED IN JUNE 2021, AND GIS INFORMATION.
2. THE PLANS SHOW SOME KNOWN SUBSURFACE STRUCTURES, ABOVEGROUND STRUCTURES AND/OR UTILITIES BELIEVED TO EXIST WITHIN THE WORKING AREA. EXACT LOCATION OF WHICH MAY VARY FROM THE LOCATIONS INDICATED. IN PARTICULAR, THE CONTRACTOR IS WARNED THAT THE EXACT OR EVEN APPROXIMATE LOCATION OF SUCH PIPE LINES, SUBSURFACE STRUCTURES AND/OR UTILITIES IN THE ARE MAY BE DIFFERENT FROM THAT SHOWN OR MAY NOT BE SHOWN AND IT SHALL BE HIS OR HER RESPONSIBILITY TO PROCEED WITH GREAT CARE IN EXECUTING ANY WORK. PROVIDE (48) HOURS BEFORE YOU DIG, DRILL OR BLAST, CALL U.F.P.O. (1-800-962-7962).
3. EXISTING AND PROPOSED GAS, ELECTRIC, AND TELECOMMUNICATIONS SERVICE LAYOUTS ARE SCHEMATIC ONLY. ALL REMOVALS, FINAL LOCATIONS, AND INSTALLATION REQUIREMENTS SHALL BE COORDINATED WITH ALL UTILITY COMPANIES.

ZONING:	R-1 (LOW DENSITY RESIDENTIAL) – SINGLE FAMILY DWELLINGS	
	REQUIRED (CONVENTIONAL ZONING)	REQUIRED (AVG. DENSITY DEVELOPMENT)
LOT AREA:	18,000 SF MIN.	9,000 SF MIN.
LOT WIDTH:	100' MIN.	50' MIN.
LOT DEPTH:	125' MIN.	62.5' MIN.
LOT COVERAGE:	25% MAX.	25% MAX.
YARD DIMENSIONS:		
FRONT:	35' MIN.	17.5' MIN.
SIDE:	20' MIN.	10' MIN.
REAR:	25' MIN.	12.5' MIN.

APPROXIMATE SITE STATISTICS	PROPOSED	
BUILDINGS:	38,000± SF	6.1%
PAVEMENT:	72,000± SF	11.5%
GREEN SPACE:	514,781± SF	82.4%
TOTAL	624,781± SF (14.34± AC)	100.0%

OPEN SPACE STATISTICS	
STANDARD TOTAL LOT AREA (18,000 SF X 22):	396,000 SF
PROPOSED TOTAL LOT AREA:	328,795 SF
PERCENT REDUCTION [(396,000-328,795)/396,000)]:	17.0%
TOTAL PROJECT AREA:	624,781 SF
PROPOSED OPEN SPACE:	118,678 SF
PERCENT OPEN SPACE (118,678/624,781) (SHALL BE GREATER THAN OR EQUAL TO PERCENT REDUCTION)	19.0%

OWNER:
MGC GOLF OPERATIONS, LLC
8 AIRLINE DRIVE
ALBANY, NY 12205

1851 UNION STREET
TAX MAP #: 50.00-1-4.11
AREA: 190± ACRES

NO.	REVISION	BY	DATE
4.	P.B. PUBLIC HEARING	DK	3.15.23
3.	CHANGED ENTRANCE POINT	DK	3.6.23
2.	REMOVED ROUNDABOUT	DK	2.16.23
1.	ADDED ROUNDABOUT	DK	1.5.23

JOSEPH J. BIANCHINE, P.E.
N.Y.S. LICENSE NO. 50226

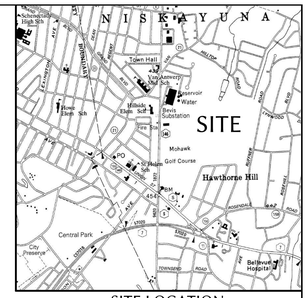
SKETCH 22-LOT SUBDIVISION
AVERAGE DENSITY DEVELOPMENT
MOHAWK GOLF CLUB
1851 UNION STREET

TOWN OF NISKAYUNA | COUNTY OF SCHENECTADY
STATE OF NEW YORK

ABD ENGINEERS, LLP
411 Union Street
Schenectady, NY 12305
518-377-0315 Fax 518-377-0379
www.abdeng.com

DATE:	SCALE:	DWG.	SHEET OF
DECEMBER 6, 2022	1" = 60'	5429A-S10 AVG	1 1

THE PURPOSE OF THIS PLAN IS SOLELY TO SATISFY THE REQUIREMENTS OF § 220-28F(3)(a) OF THE NISKAYUNA TOWN CODE, PROVIDING A SKETCH PLAN TO DEMONSTRATE THE MAXIMUM NUMBER OF DWELLINGS FOR THE PROJECT AREA. IT IS NOT INTENDED FOR DEVELOPMENT.



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1851 UNION STREET
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AREA: 190± ACRES

ALTERATION OF THIS DOCUMENT EXCEPT BY A LICENSED PROFESSIONAL ENGINEER IS ILLEGAL

JOSEPH J. BIANCHINE, P.E.
N.Y.S. LICENSE NO. 50226

SKETCH 22-LOT SUBDIVISION
CONVENTIONAL SINGLE FAMILY
MOHAWK GOLF CLUB
1851 UNION STREET

TOWN OF NISKAYUNA | COUNTY OF SCHENECTADY
STATE OF NEW YORK

ABD ENGINEERS, LLP
411 Union Street
Schenectady, NY 12305
518-377-0315 Fax 518-377-0379
www.abdeng.com

DATE:	SCALE:	DWG.	SHEET OF
MARCH 13, 2023	1" = 60'	5429A-S10 CONVENTIONAL	1 1

TOWN OF NISKAYUNA
PLANNING BOARD AND ZONING COMMISSION

AGENDA STATEMENT

AGENDA ITEM NO. VIII. 1 MEETING DATE: 5/22/2023

ITEM TITLE: DISCUSSION: Antonia Park / Polsinelli Dr. (40.-1-54.11) -- An application for plat plan approval for a 2-lot minor subdivision and lot line adjustment.

PROJECT LEAD: Ms. Gold

APPLICANT: Fred Polsinelli, Executor of the owner

SUBMITTED BY: Laura Robertson, Town Planner

REVIEWED BY:
■ Conservation Advisory Council (CAC) ☐ Zoning Board of Appeals (ZBA) ☐ Town Board ☐ OTHER:

ATTACHMENTS:
☐ Resolution ■ Site Plan ☐ Map ☐ Report ☐ Other:

SUMMARY STATEMENT:

Fred Polsinelli, Executor for the estate of Vincenza Polsinelli, submitted an Application for Site Plan Review for a 2-Lot minor subdivision including a lot line adjustment for Homestead Place at Antonia Park (parcel 40.-1-54.11).

BACKGROUND INFORMATION

The property is located within the R-1 Low Density Residential zoning district.

A site plan drawing entitled “Homestead Place at Antonia Park Section 9” authored by Gilbert VanGuilder Land Surveyor, PLLC” dated 10/17/22 with a most recent revision date of 12/5/22 was included with the application. The drawing shows the original 8.43 Acre property being divided as noted below.

1. Lot 1 – is a new lot that is 3.10 Acres is size
2. Lot 2 – is a new lot that is 3.02 Acres in size
3. Remaining Area – is 2.31 Acres in size and will be annexed to Lecce Development Corp.

Access to a Town water line is available at the end of the stub road (Polsinelli Dr.). Access to a Town sewer line is available at the intersection of the stub road and Rosehill Blvd.

The Planning Department will work with the applicant on previous wetland delineations on the property to ensure wetlands are properly identified and documented. The PD also recommends adding contours to the sketch plan to make sure drainage channels are properly identified.

The lands to the south of this parcel are deed restricted for no further development – the lands to the west are not. It would be good to discuss whether or not the back parcel of this property

can be deed restricted when it is transferred to the adjacent property owner, Lecce Development Corp.

1/9/23 Planning Board meeting – Mr. Polsinelli appeared before the Board and explained his proposed project. The Planning Office and Planning Board requested that the following be added to the sketch plan drawing.

1. Contour lines so that drainage channels are properly identified.
2. Deed restrictions to prevent subsequent subdivision.
3. Water and sewer connections.

A revised site plan drawing with a revision date of 1/20/23 was provided to the Planning Office.

2/1/23 Conservation Advisory Council (CAC) meeting – The CAC reviewed the project and made the following recommendations.

1. Include the delineation of all wetlands on the property on the site plan drawing.
2. Include provisions that the newly created lots shall not be subdivided.
3. Have a TDE review the utility service and drainage for the property.

On 2/6/23 the applicant's engineer provided the following 6-page sketch plan drawing set to the Planning Office.

Page No.	Title	Author	Rev
1	Homestead Place at Antonia Park	Gilbert VanGuilder Land Surveyor, PLLC	1/20/23
2	Overall Site Plan	Brett Steenburgh, P.E. PLLC	2/3/23
3	Detailed Grading & Utility Plan	Brett Steenburgh, P.E. PLLC	2/3/23
4	E & SC Plan	Brett Steenburgh, P.E. PLLC	2/3/23
5	Details	Brett Steenburgh, P.E. PLLC	2/3/23
6	Details	Brett Steenburgh, P.E. PLLC	2/3/23

The Planning Office reviewed the 6-page drawing set relative to the PB and CAC requests listed above and noted the following.

No.	Description of Request	Status
1	Add contour lines and drainage paths	Contour lines added to pg. 3 but proposed drainage plan adds a new catch basin feeding an existing closed pipe Town storm water system that is already at maximum capacity
2	Deed restrict additional subdivision	A future subdivision note is included on pg. 3 but it only refers to "lot 4", two different lots are also identified as lot 2.
3	Show water and sewer connections	Shown on dwg. but an analysis should be performed to assure that the existing town utility systems can support the proposed connections.
4	Include wetland delineation	Wetlands are shown in the back lot but a reference note indicates the delineation is from a survey performed in 2006. A more recent survey is appropriate.

2/13/23 Planning Board (PB) meeting – Brett Steenburgh, P.E., the applicant's engineer, attended the meeting. He explained that Mr. Lecce disagreed with deed restricting potential future subdivision of the land that will be annexed to his property via. lot line adjustment. After a short discussion it was agreed that the same "Future Subdivision Note" that is included in the 4-

Lot Vincenzo Drive subdivision drawing will be added to the Antonia Park / Polsinelli Dr. 2-Lot subdivision drawing. The note reads as follows.

> "*Any future subdivision of the unrestricted lands of Lot 4 will require a major subdivision review as required under the Town of Niskayuna subdivision law at that time*".

Ms. Robertson asked Mr. Steenburgh to reach out to the Town's Engineering Department immediately to discuss utilities because there were issues with sewer and drainage. The Board called for a resolution for sketch plan approval, SEQR determination and call for a public hearing for the 2/27/23 PB meeting.

2/27/23 Planning Board (PB) meeting – The PB discussed Resolution 2023-06 thereby approving the sketch plan, directing the Town Planner to file a Negative SEQR declaration with (4) comments from the Conservation Advisory Council (CAC) included and calling for a public hearing to be held on March 13, 2023.

Mr. Polsinelli spoke with the Planning Board at the 2/27/2023 and requested that the public hearing be postponed to 3/27/2023. The Planning Department did not file the public hearing in time for this meeting – therefore the resolution should be amended to call for a public hearing at the next available Planning Board meeting, April 17, 2023. The Planning Board took action on this resolution prior to the discussion item this evening.

Due to the unintentional delay and the unusual circumstance of only one PB meeting in April – the Planning Department recommends also calling for a tentative resolution for approval at the April 17, 2023, which can be tabled if there is significant public comment requiring additional items to be addressed. The Planning Department will work on hiring a TDE by April 17 for this project.

The applicant had a meeting with the Engineering Department discussing the issues with connecting into the Town Sewer line. The Engineering Department is currently working on flow metering of the sewer line and is communicating with the DEC on these two potential connections to this line. Because this is an outstanding item, the Planning Board can consider a condition in the resolution that delays the allowance of any building permit until the sewer connections can be made (subject to Town Attorney approval).

3/27/23 Planning Board (PB) meeting – The Board quickly reviewed the project, called for a public hearing to be held at the 4/17/23. The Planning Office noted that a Town Designated Engineer (TDE) had been selected.

Although the Board stated they would be okay calling for a tentative resolution –based on the timeline for selecting the TDE, the Planning Department has delayed this proposed action until it and the Board have time to digest the TDE comments and public concerns. Therefore no resolution is proposed for the Board meeting at the April 17 meeting.

The TDE Comment letter indicates comments and clarifications on the SEAF, requests clearly delineating the wetland 25 foot buffer on the plan, requests confirmation from the applicant on some water and sewer details and well as confirmation from the Town Engineering Department on any existing downstream drainage issues, requests contours along the northern lot line to understand drainage there and requests additional details in the storm water management report. The letter is attached.

The Planning Department also had an internal meeting with the Highway Department, who requested snow removal areas be delineated on the drawings as well as more separation of the

driveways from the initial end of the Town owned street (for maintenance and snow removal purposes).

4/17/23 Planning Board (PB) meeting - A public hearing was held for the subdivision, with several residents in attendance who spoke about concerns with existing and proposed drainage, as well as utility capacity. The Planning Office reviewed the drainage concerns with the TDE, who has completed and initial letter and review of the developer's response letter. At this time, the Town and TDE still have concerns over the infiltration trenches and underground retention areas. More data is necessary to be sure they are sized appropriately to handle the proposed development. Some of the outstanding concerns are listed below in addition to the second TDE letter (attached).

--- Infiltration trenches
  --- Types of soils needed
  --- Test pits to validate soil type & ground water
  --- Can they be use on inclines?
  --- Are they appropriate near roads?
  --- How are they sized?
  --- Work should be shown by design engineer for calculating the size

Planning Office (PO) researched infiltration trenches in surrounding areas, found recommendations that:
  --- Ground water level should be referenced to the bottom of the trench
  --- May not be appropriate for slopes
  --- May not be appropriate near roads
  --- Dependent upon soil type

The PO is scheduling a meeting with the developer's engineer early next week. The Planning Board should discuss the drainage findings and concerns at this meeting.

5/8/23 Planning Board (PB) meeting –

5/16/23 Applicant's engineer provided updated site plan drawing and storm water management report, attached to the PB packet.

The TDE informed the Planning Office that we need to amend their scope of work to perform another review. The Planning Office, TDE and applicant's engineer still need to hold a meeting to update the TDE proposal to complete their technical review.

In an email dated 5/19/2023, the TDE indicated that there is a stormwater outlet control structure for each underground basin, the detail for which was missing in the original design. He stated the applicant's engineer was able to model the detention basins to handle the Cornell extreme storm event upper confidence levels. He has asked the applicant's engineer to estimate the number of years it would take before maintenance would be required and he has asked the Town to look into a deed restriction requiring the maintenance of the systems. The TDE thought perhaps there could be a separate permit that the Town could issue to the property owners that has reporting requirements on the stormwater system.

With the new data, the Planning Office will need to update the engineering review escrow, schedule a meeting between the Planning Office, TDE and applicant's engineer, and finalize the stormwater calculations and deed restrictions/maintenance requirements. Based upon the outcome of this engineering/legal meeting, the Planning Office recommends preparing a Resolution for subdivision approval at the next PB meeting (June 12).

Laura Robertson

From: bsteenburghpe@gmail.com
Sent: Tuesday, May 16, 2023 12:58 PM
To: 'Fred Polsinelli'; 'Laura Robertson'; 'Doug Cole'
Cc: 'Clark Henry'; 'Matthew Yetto'; 'Daniel Bolke'; 'Nicholas Blowers'; 'Trisha Bergami'; 'Leslie Gold'; 'Chris LaFlamme'; 'Kevin Walsh'
Subject: [EXTERNAL] RE: [EXTERNAL] RE: [EXTERNAL] RE: [EXTERNAL] RE: Homestead Pl
Attachments: Storm Water Management Report New Design.pdf; Polsinelli Final Plans.pdf; Responses May 15, 2023.pdf; SEQR.pdf

All,
Please find attached our response letter, revised plans, storm water report and SEQR for the Polsinelli two lot subdivision.

As per my previous email, I did discuss some technical issues with Doug over the phone on Friday before making the changes which are noted in my response letter. However, I would like to highlight some of the plan changes made:

- The houses shown were provided from the purchaser as a realistic potential for the footprint. I will note this is a very large footprint shown it has a 4-car garage with additional storage in the garage.
- The drainage calculations also added an area for future hardscape around the house
- We have minimized the maintenance for the roof drainage system by directly piping into the storm water management system and noted on the plan that the houses require gutters with leaf guards.
- In lieu of the two 15' driveways we are now proposing less one 18' driveway 9' on each property with shared maintenance meaning less pavement.
- The storm water management system has been designed to reduce the runoff off site from the development for ALL storm events including but not limited to the 7.44 in Cornell Upper Confidence Rainfall 100 year event, the largest 24 hour rainfall event recorded at Albany County Airport since 1939 (5.6 inches) as well as the 1, 2, 10 and 100 year Cornell Extreme Precipitation Values.
- We have re-configured the stone attenuation basins with cleanouts and a control structure to improve ease of maintenance for the homeowner.

Brett Steenburgh PE

Brett L. Steenburgh PE PLLC
2832 Rosendale Road
Niskayuna, NY 12309
bsteenburghpe@gmail.com
Mobile Phone: (518) 365-0675

From: Fred Polsinelli <fgp414v@hotmail.com>
Sent: Tuesday, May 16, 2023 9:44 AM
To: Laura Robertson <lrobertson@niskayuna.org>; bsteenburghpe@gmail.com; Doug Cole <dcole@primeeng.com>
Cc: Clark Henry <chenry2@niskayuna.org>; Matthew Yetto <myetto@niskayuna.org>; Daniel Bolke <dbolke@niskayuna.org>; Nicholas Blowers <nblowers@niskayuna.org>; Trisha Bergami <tbergami@niskayuna.org>; Leslie Gold <ellau18@outlook.com>; Chris LaFlamme <chris@bleugroup.com>; Kevin Walsh <cormarkev@aol.com>
Subject: Re: [EXTERNAL] RE: [EXTERNAL] RE: [EXTERNAL] RE: Homestead Pl

Brett L. Steenburgh, P.E., PLLC

2832 Rosendale Road
Niskayuna, NY 12309
(518) 365-0675

May 15, 2023

Town of Niskayuna
One Niskayuna Circle
Niskayuna, NY 12309

Re: Polsinelli Subdivision

Attn: Ms. Laura Robertson
Town Planner

Dear Ms. Robertson:

This office has reviewed the comments provided Prime Engineering dated May 3, 2023 Based upon those comments we offer the following responses:

General:
The applicant has spoken to the potential purchaser of the subdivision. They provided him with a house footprint likely to be constructed on these lots. This has been shown on the latest plans. In addition, within the storm water drainage study we have included additional impervious area for future hardscape around the houses. The applicant has also agreed to provide construct one 18' wide driveway in lieu of the two 15' wide driveways to decrease impervious area on the parcel.

Specific responses to the Prime Comments.

ShortEnvironmentalAssessmentForm:

1. The SEQRA Form has been updated and submitted.

CACSEQRFindingsEAF:

1. The wetlands have been shown on the overall map. The wetland boundary was identified by Kevin Weed of Van Guilder Associates. He has determined that there are no wetlands within the development area.

2. A 25' buffer is shown on the wetlands identified.

Site Plan:

1. No response necessary.

2. No response necessary.

3. The proposed design decreases the storm water runoff from the parcel for all storm events including the 7.44 inch upper confidence limit of the Cornell Extreme Precipitation Data. Therefore, the proposed development will not have an adverse effect on the downstream infrastructure. We are happy to meet with the Town Engineering staff to review the calculations and design.

4. We are continuing to work with Engineering regarding the water and sewer connections. They are completing the studies on the sewer main and working with the NYSDEC.

5. No response necessary.

6. Due to a substantial design change this comment is no longer valid

StormwaterManagementReport:

1. A test pit has been performed in the area of the attenuation basins. The data and location are shown on the grading plan. Dry swales were not considered due to the pitch of the slopes. It is our believe that the stone trenches will better capture and convey the stormwater to the basins without the potential for overflow during short duration high volume storm events.

2. No response necessary.

3. The system has been re designed for easier maintenance. Each underdrain will have a cleanout at one end and the catch basin at the other to allow for snaking and jetting of the underdrains if necessary. The maintenance should be managed through a deed restriction. We believe that the underground system is the best system for this site to minimize tree clearing and grading operations that will cause further disturbance.

4. As stated above the pitch is too steep for dry swales to be effective. Most of the stormwater entering the system will be through stone and a filter fabric minimizing sediment from entering the system. The roof gutters will connect directly to the system; however, we a note on the plan requiring leaf guards has been added.

5. Due to a substantial design change this comment is no longer valid.

6. Sizing and calculations for the storm water management system can be found in the Storm Water Management Report and HydroCAD calculations.

7. The footing drains will be connected directly to the system. However, we do not anticipate the ground water to be above the sump.

If you have any questions or require additional information please do not hesitate to call.

Sincerely

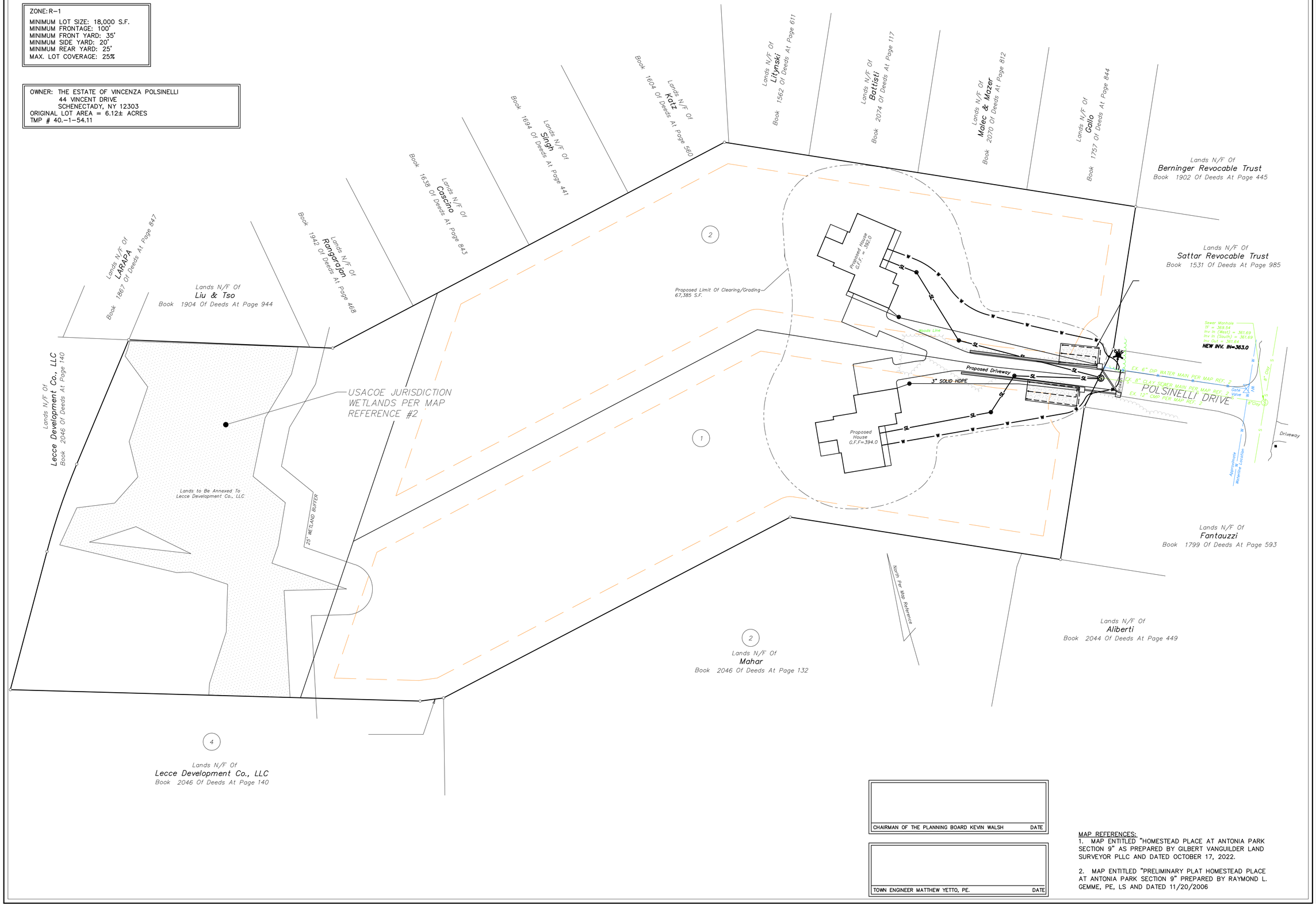
Brett L. Steenburgh, P.E.
President

SITE ZONING

ZONE: R-1

MINIMUM LOT SIZE: 18,000 S.F.
MINIMUM FRONTAGE: 100'
MINIMUM FRONT YARD: 35'
MINIMUM SIDE YARD: 20'
MINIMUM REAR YARD: 25'
MAX. LOT COVERAGE: 25%

OWNER: THE ESTATE OF VINCENZA POLSINELLI
44 VINCENT DRIVE
SCHENECTADY, NY 12303
ORIGINAL LOT AREA = 6.12± ACRES
TMP # 40.-1-54.11



CHAIRMAN OF THE PLANNING BOARD KEVIN WALSH DATE

TOWN ENGINEER MATTHEW YETTO, PE. DATE

MAP REFERENCES:
1. MAP ENTITLED "HOMESTEAD PLACE AT ANTONIA PARK SECTION 9" AS PREPARED BY GILBERT VANGUILDER LAND SURVEYOR PLLC AND DATED OCTOBER 17, 2022.

2. MAP ENTITLED "PRELIMINARY PLAT HOMESTEAD PLACE AT ANTONIA PARK SECTION 9" PREPARED BY RAYMOND L. GEMME, PE, LS AND DATED 11/20/2006

NO.	DATE:	REVISIONS:	BY:
3	5-12-23	MODIFIED AS PER TDE AND BOARD COMMENTS	
2	4-25-23	MODIFIED AS PER TDE AND BOARD COMMENTS	
1	2-6-23	WATER & SEWER DISTRICT MANAGEMENT	

Dig safely. New York Call 811 before you dig

Scaling off these drawings shall be done only for review and approval purposes. Contractors shall use dimensions and electronic data only for layout and construction.

STATE OF NEW YORK
BRETT L. STEENBURGH
LICENSED PROFESSIONAL ENGINEER
BRETT L. STEENBURGH, P.E.
N.Y.S. LICENSE NO. 075309

BRETT L. STEENBURGH, P.E. PLLC
2832 Rosendale Road
Niskayuna, NY 12309
(518) 365-0675
bsteenburghpe@gmail.com

ENGINEERING THAT TRANSFORMS IMAGINATION INTO REALITY

OVERALL SITE PLAN
FRED POLSINELLI
POLSINELLI DRIVE
TOWN OF NISKAYUNA
COUNTY OF SCHENECTADY
STATE OF NEW YORK

DRAWN BY: BLS
CHKD BY: BLS
DATE: FEBRUARY 3, 2023
CASE NO.:
SCALE: 1" = 40'
SHEET C-1

WATER SERVICE NOTES:
A. ALL WATER SERVICES SHALL BE A MIN. OF 5 FEET DEEP FROM FINISHED GRADE TO THE TOP OF THE PIPE. THE CONTRACTOR SHALL CONSTRUCT THE WATER LINE SO THAT ALL CROSSINGS WITH OTHER UTILITIES HAVE THE REQUIRED CLEARANCES. INVERTS AT THE WATER AND SEWER CROSSINGS ARE NOTED ON THE PLANS

B. WATER LINES SHALL BE LAID AT LEAST 10 FT. HORIZONTALLY FROM ANY EXISITNG OR PROPOSED SEWER. WATER MAINS CROSSINGS SEWERS SHALL BE LAID TO PROVIDE A MINIMUM VERITICAL DISTANCE OF 18 IN. BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF THE SEWER. THIS SHALL BE THE CASE WHERE THE WATER MAIN IS EITHER ABOVE OR BELOW THE SEWER

C. HDPE WATER SERVICES SHALL BE INSTALLED WITH TRACER WIRE.

WATER NOTES:
A. THE TOWN OF NISKAYUNA SHALL BE NOTIFIED 72 HOURS PRIOR TO INSTALLATION DISINFECTION AND TESTING OF THE WATER MAIN.

SEWER NOTES:
A. EXISTING MANHOLE SHALL BE RAISED USING A 3 FOOT HIGH BARREL SECTION. THE NEW SECTION SHALL HAVE POLYMER STEPS. THE EXISTING CONE SECTION SHALL BE REMOVED AND THE BARREL SECTION INSTALLED USING NEW BUTYL SEALS. TWO LAYERS OF ASPHALT SEALANT SHALL BE APPLIED TO THE NEW SECTION. THE EXISTING CONE SECTION SHALL BE RE-USED. ALL STEPS SHALL BE ALIGNED.

B. UPON RAISING THE MANHOLE RIM, A POSITIVE PITCH OF THE FINISHED GRADE AWAY FROM THE MANHOLE IN ALL DIRECTIONS SHALL BE ESTABLISHED.

GENERAL NOTES

1. IT IS THE INTENT OF THESE PLANS TO BE IN STRICT CONFORMANCE WITH ALL TOWN OF NISKAYUNA, COUNTY OF SCHENECTADY, STATE OF NEW YORK, AND APPLICABLE FEDERAL RULES REGULATIONS, AND LAWS. IF CONFLICTS ARE NOTED BETWEEN THE ABOVE, AND THESE PLANS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER AND THE TOWN ENGINEER.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, GRADES, ELEVATIONS, AND MATERIALS GIVEN ON THE PLANS.
3. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR ANY DAMAGE DONE OUTSIDE OF THE PROJECT AREA OR LIMITS OF CLEARING.
4. EXCESS BUILDING MATERIAL AND CLEARING DEBRIS SHALL BE DISPOSED OF OFF SITE.
5 UNDERGROUND UTILITIES IF SHOWN HEREON ARE BASED ON VISIBLE PHYSICAL EVIDENCE. THEY SHOULD BE CONSIDERED SCHEMATIC ONLY AND ARE SHOWN TO DEPICT GENERAL UTILITY CONNECTIONS RATHER THAN EXACT UNDERGROUND LOCATIONS.
6. SURVEY BASE MAPPING HAS BEEN PROVIDED BY OTHERS BRETT L. STEENBURGH, P.E., LLC MAKES NO CERTIFICATION AS TO THE ACCURACY AND COMPLETENESS OF SAID MAPPING.
7. CONFLICTS SHOWN ON PLANS OR BETWEEN THE PLANS AND SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER, OWNER REPRESENTATIVE AND/OR ENGINEER.

GENERAL NOTES:
1. BY ISSUANCE OF A BUILDING PERMIT, THE TOWN OF NISKAYUNA DOES NOT ASSUME ANY LIABILITY FOR STORM WATER DAMAGE BY GENERAL APPROVAL OF THESE PLANS. THE OWNER MUST ASSUME ANY AND ALL LIABILITIES FOR DAMAGE CLAIMED ARISING OUT OF INCREASED STORM WATER FLOW.
2. ALL ON-SITE SANITATION AND WATER FACILITIES SHALL BE DESIGNED TO MEET THE MINIMUM SPECIFICATIONS OF THE STATE HEALTH DEPARTMENT.

SOIL EROSION AND SEDIMENT CONTROL MEASURES:
1. DAMAGE TO SURFACE WATERS RESULTING FROM EROSION AND SEDIMENTATION SHALL BE MINIMIZED BY STABILIZING DISTURBED AREAS AND BY REMOVING SEDIMENT FROM CONSTRUCTION SITE DISCHARGES.
2. INSOFAR AS PRACTICABLE, EXISTING VEGETATION SHALL BE PRESERVED.
3. SITE PREPARATION ACTIVITIES SHALL BE PLANNED TO MINIMIZE THE AREA AND DURATION OF SOIL DISRUPTION.
4. PERMANENT TRAFFIC CORRIDORS SHALL BE ESTABLISHED AND "ROUTES OF CONVENIENCE" SHALL BE AVOIDED.
5. CONSTRUCTION TRAFFIC SHALL NOT CROSS STREAMS OR DITCHES EXCEPT AT SUITABLE CROSSING FACILITIES, AND SHALL NOT OPERATE UNNECESSARILY WITHIN WATERWAYS OR DRAINAGE DITCHES.

MAINTENANCE OF EROSION CONTROL MEASURES:
1. THE DEVELOPER/CONTRACTOR OR HIS BUILDER SHALL INSPECT AND MAINTAIN THE INTEGRITY AND FUNCTION OF ALL TEMPORARY EROSION CONTROL MEASURES THROUGHOUT THE DURATION OF THE DEVELOPMENT PROCESS. TO ASSURE PROPER FUNCTION, SILTATION BARRIERS SHALL BE MAINTAINED IN GOOD CONDITION AND REINFORCED, EXTENDED, REPAIRED, RE-SEEDED AND PROTECTED FROM FURTHER EROSION. ALL ACCUMULATED SEDIMENT SHALL BE REMOVED AND CONTAINED IN APPROPRIATE SPOIL AREAS, WATER SHALL BE APPLIED TO NEWLY SEEDED AREAS AS NEEDED UNTIL GRASS COVER IS WELL ESTABLISHED.

FUTURE SUBDIVISION NOTE:
ANY FUTURE SUBDIVISION OF THE UNRESTRICTED LANDS OF LOT 4 WILL REQUIRE A MAJOR SUBDIVISION REVIEW AS REQUIRED UNDER THE TOWN OF NISKAYUNA SUBDIVISION LAW AT THAT TIME.

Tree Preservation Policy

- *Subdivision approval by the Planning Board authorizes grading and clearing within the road right-of-way and easements only. The applicant shall submit plans for individual lot grading to be approved as part of the building permit application.*
- *The grading plan submitted for the building permit shall identify all trees with a diameter of 5 inches or more as measured 3 feet above the base of the trunk and indicate those that are proposed to be removed and the reason why such removal is necessary.*
- *Any trees removed from a lot in a manner that is not consistent with the approved grading plan for that lot shall be replaced at the expense of the developer before the issuance of the certificate of occupancy. Replacement trees shall be of a type and size satisfactory to the Town Engineer.*
- *The grading plan shall be consistent with the purposes of the Soil Erosion and Sediment Control Ordinance. In particular, erodible materials shall not be stockpiled within the drip line of trees to be preserved.*

Grading Notes

- *The applicant shall treat the grading plan—submitted for the subdivision as advisory only, and shall submit grading plans for review by the Building Inspector on a lot-by-lot basis that are consistent with the Planning Board requirements for tree preservation.*

SOIL TEST

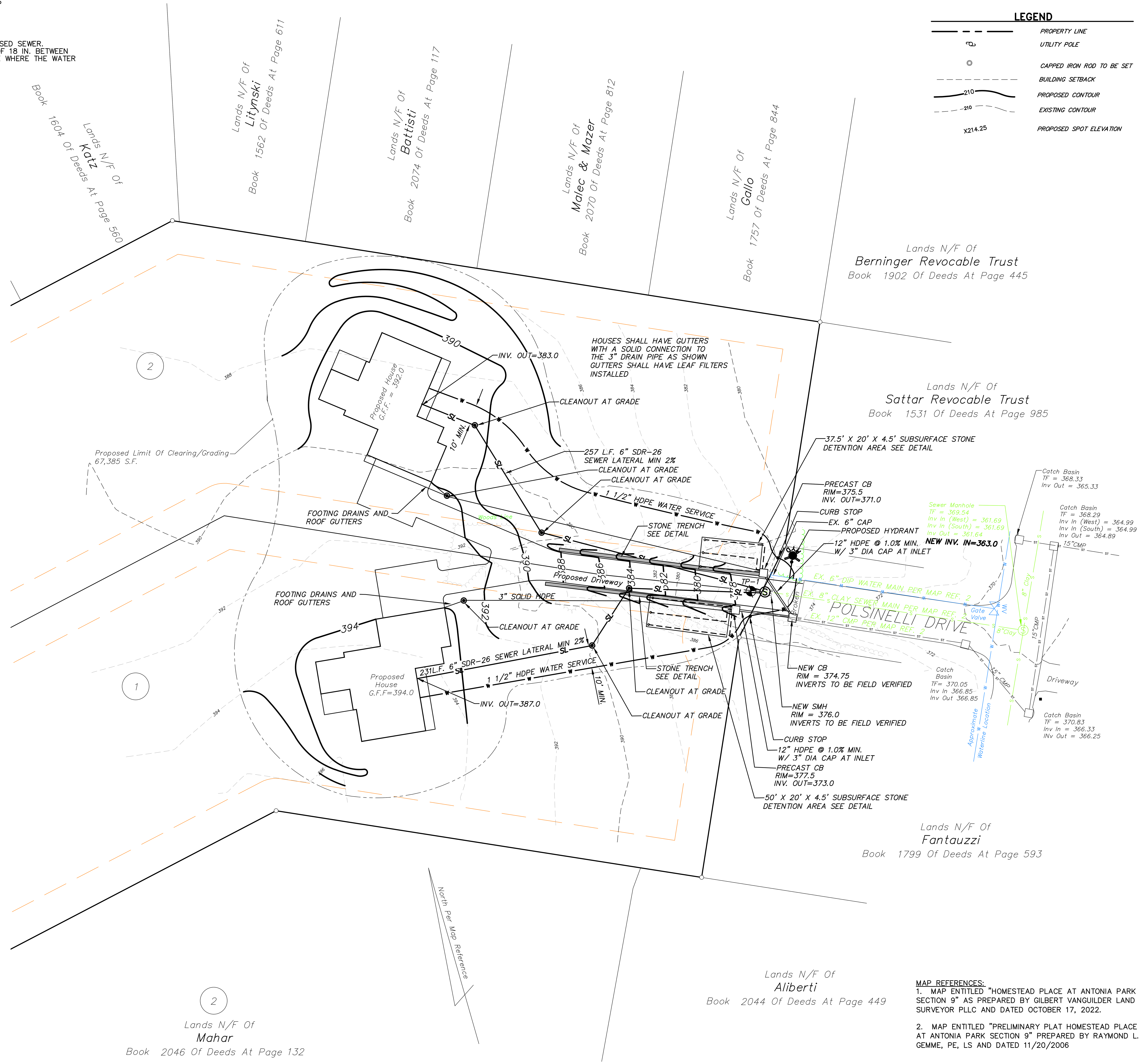
TP-1
0-6" TOPSOIL AND ORGANICS
6" - 36" BR. SANDY SILT DRY
36" - 90" GRAY FIRM CLAY (HARDPAN) DRY

NO GROUNDWATER
NO MOTTLING

TEST PIT PERFORMED ON 5/12/2023 AND WITNESSED BY BRETT L. STEENBURGH P.E.

CHAIRMAN OF THE PLANNING BOARD KEVIN WALSH DATE

TOWN ENGINEER MATTHEW YETTO, PE. DATE



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NO.	DATE	REVISIONS	BY
3	5-12-23	MODIFIED AS PER TDE AND BOARD COMMENTS	
2	4-25-23	MODIFIED AS PER TDE AND BOARD COMMENTS	
1	4-4-23	MODIFIED STORM WATER MANAGEMENT	

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Scaling off these drawings shall be done only for review and approved purposes. Contractors shall use dimensions and electronic data only for layout and construction.

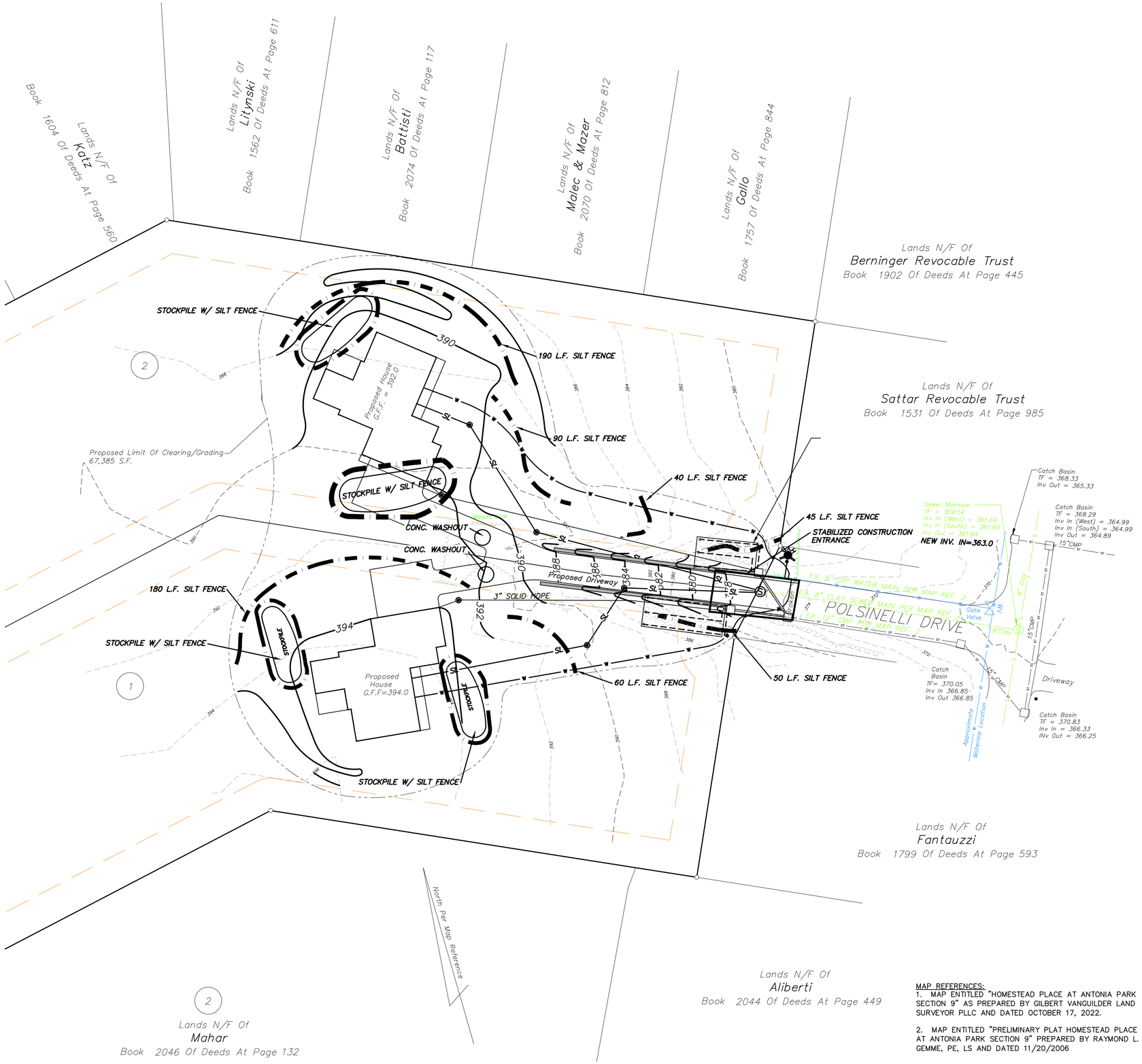
BRETT L. STEENBURGH, P.E. PLLC
2832 Rosendale Road
Niskayuna, NY 12309
(518) 365-0675
bsteenburghpe@gmail.com

ENGINEERING THAT TRANSFORMS IMAGINATION INTO REALITY

DETAILED GRADING AND UTILITY PLAN

FRED POLSINELLI
POLSINELLI DRIVE
TOWN OF NISKAYUNA
COUNTY OF SCHENECTADY
STATE OF NEW YORK

DRAWN BY: BLS
CADD FILE:
DATE: FEBRUARY 3, 2023
CHECKED BY:
JOB NO.
SCALE: 1" = 30'
SHEET C-2



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CHAIRMAN OF THE PLANNING BOARD KEVIN WALSH DATE

TOWN ENGINEER MATTHEW YETTO, PE. DATE

NO.	DATE:	REVISIONS:	BY:
3	5-12-23	MODIFIED AS PER TOE AND BOARD COMMENTS	
2	4-24-23	MODIFIED AS PER TOE AND BOARD COMMENTS	
1	1-4-23	MODIFIED DUE TO NEW MANAGEMENT	

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BRETT L. STEENBURGH, P.E. PLLC

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Niskayuna, NY 12309
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ENGINEERING THAT TRANSFORMS IMAGINATION INTO REALITY

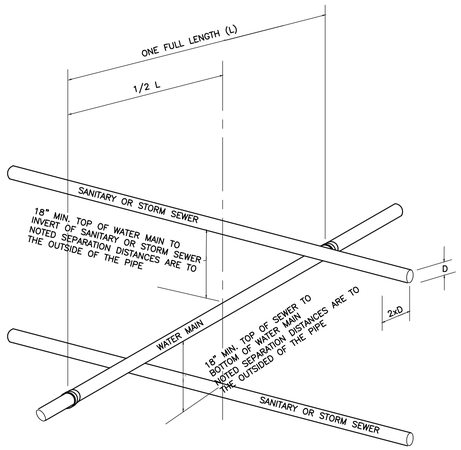
E & SC PLAN
FRED POLSINELLI
POLSINELLI DRIVE
TOWN OF NISKAYUNA
COUNTY OF SCHENECTADY STATE OF NEW YORK

DRAWN BY: BLS
CHECKED BY:
JOB NO:

SCALE: 1" = 30'

DATE: FEBRUARY 3, 2023

SHEET C-3



VERTICAL PIPE CROSSING DETAIL
(NOT TO SCALE)

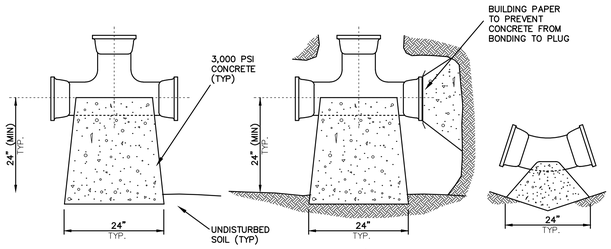


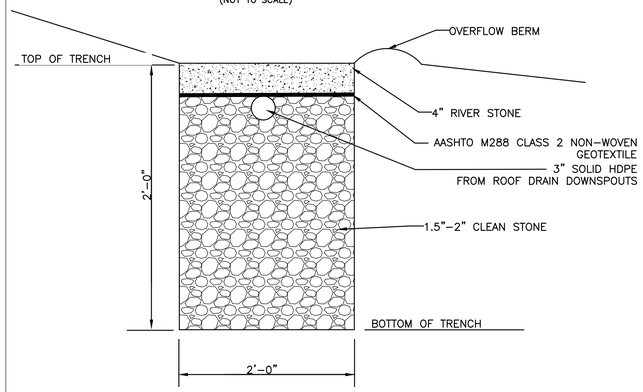
TABLE 1		
SAFE BEARING LOADS OF SOILS & MULTIPLICATION FACTORS FOR MODIFICATION OF THRUST BLOCK AREAS (TABLE 2)		
SOIL	SOIL BEARING CAPACITY (LB/FT²)	FACTOR
MUCK PEAT	0	–
SOFT CLAY	300	4.00
SAND	1000	2.00
SAND & GRAVEL	1500	1.33
SAND & GRAVEL w/CLAY	2000	1.00
SHALE	5000	0.40

TABLE 2					
BEARING AREAS (FT²) FOR CONCRETE THRUST BLOCKS					
PIPE SIZE	TEE	90° BEND	45° BEND	22.5° BEND	11.25° BEND
100 P.S.I.G. INTERNAL PRESSURE					
3" & 4"	1	1	1	1	–
6"	2	2	1	1	–
8"	3	3	2	1	1
10"	6	8	3	2	1
12"	6	8	4	2	1
14"	11	11	6	3	1
16"	14	14	8	4	2
18"	18"	18	10	5	3
20"	22	22	12	7	3
24"	32	32	17	9	4

NOTE: BEARING AREAS SHOWN IN TABLE 2 SHALL BE MULTIPLIED BY FACTORS NOTED IN TABLE 1 TO ESTABLISH REQUIRED BEARING AREAS FOR SOIL CONDITIONS.

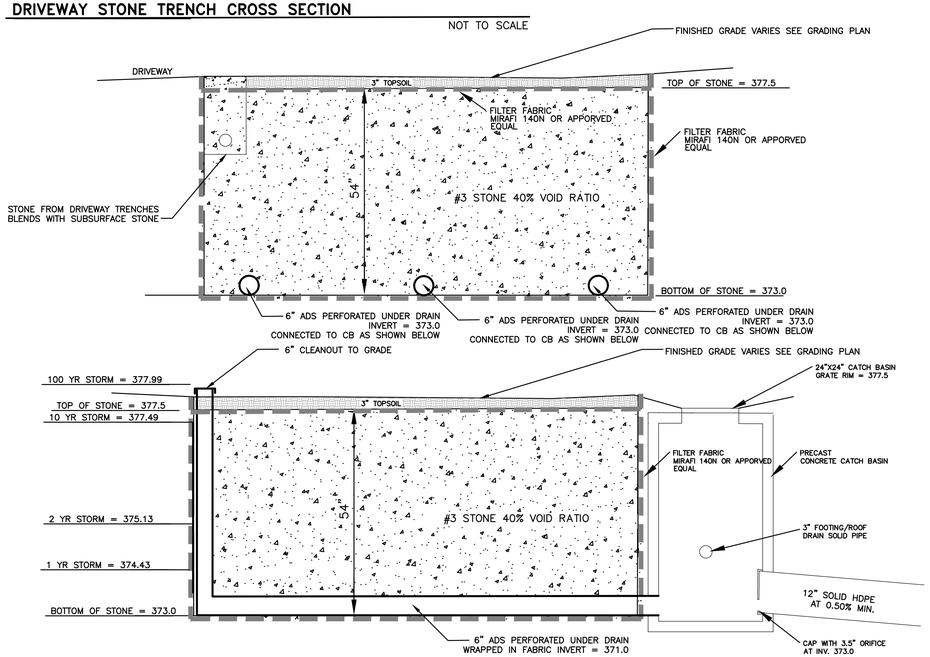
TYPICAL HORIZONTAL THRUST BLOCK DETAIL

N.T.S.



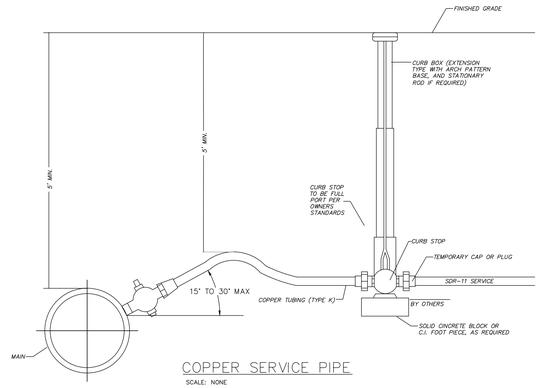
DRIVEWAY STONE TRENCH CROSS SECTION

NOT TO SCALE



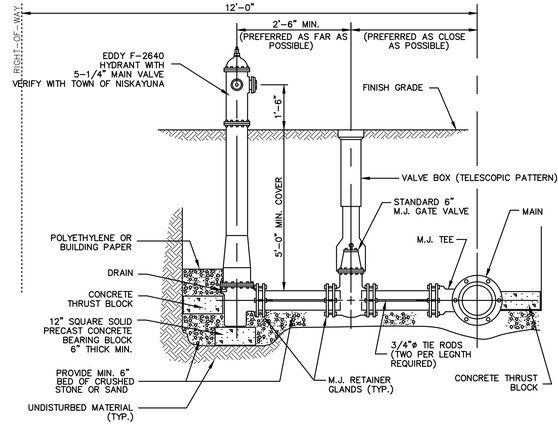
SUBSURFACE DETENTION AREA DETAILS LOT 1

N.T.S.



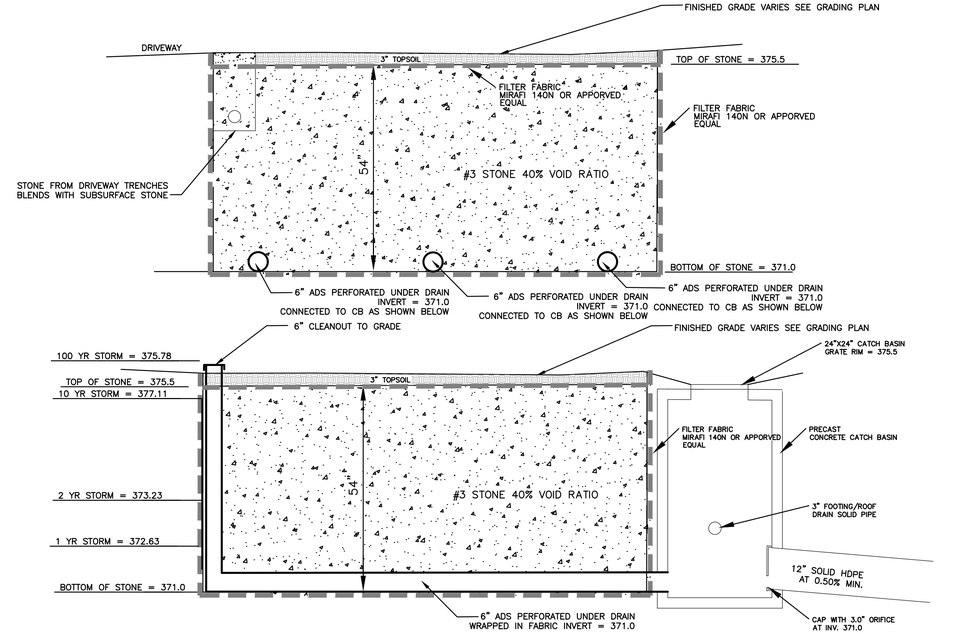
COPPER SERVICE PIPE

SCALE: NONE



HYDRANT INSTALLATION DETAIL

N.T.S.



SUBSURFACE DETENTION AREA DETAILS LOT 1

N.T.S.

CHAIRMAN OF THE PLANNING BOARD KEVIN WALSH DATE

TOWN ENGINEER MATTHEW YETTO, PE. DATE

NO.	DATE:	REVISIONS:	BY:
3	5-12-23	MODIFIED AS PER TOE AND BOARD COMMENTS	
2	4-25-23	MODIFIED AS PER TOWN MANAGER	

Dig Safely. New York Call 811 before you dig

Scaling off these drawings shall be done only for review and approval purposes. Contractors shall use dimensions and electronic data only for layout and construction.

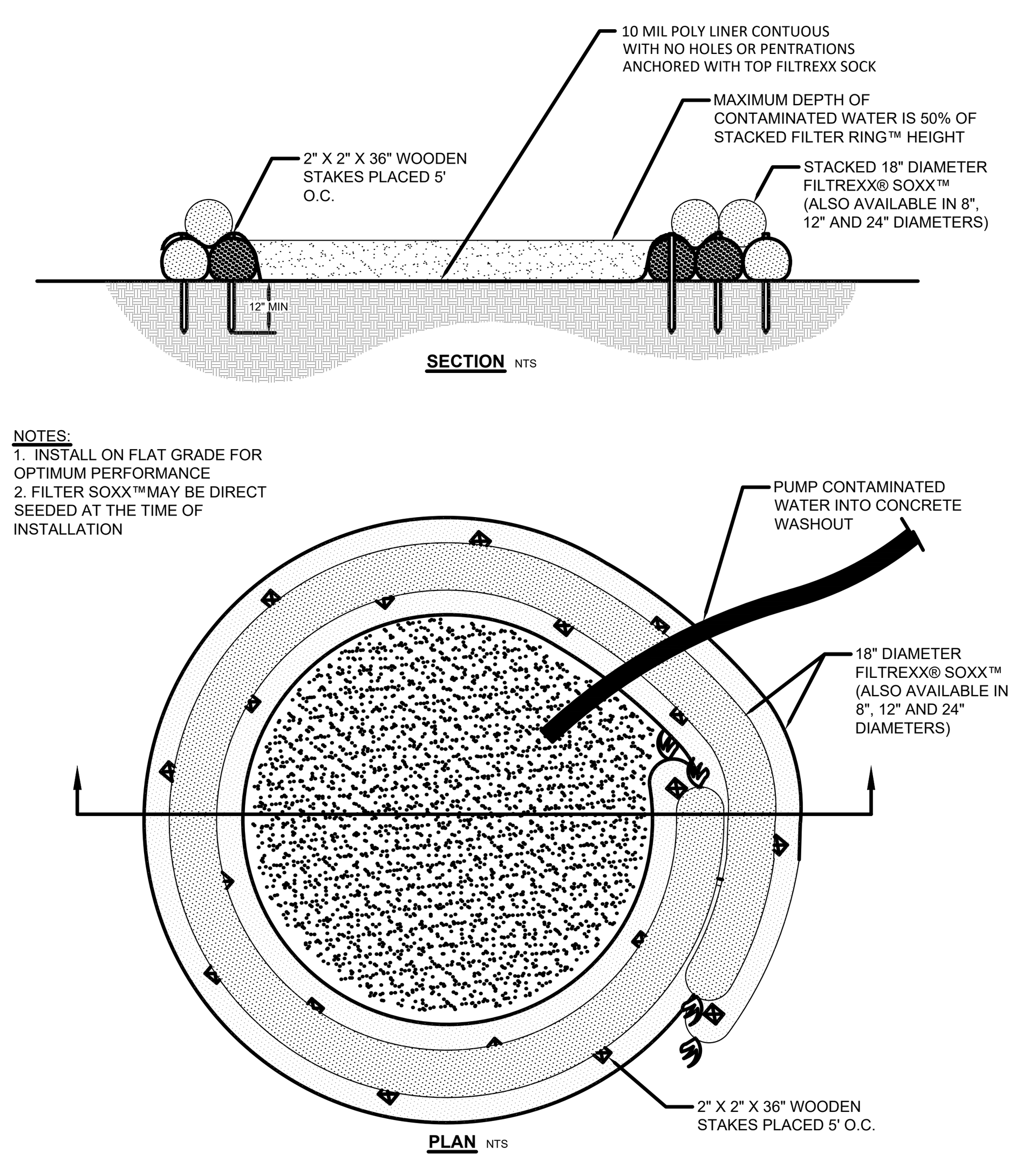
BRETT L. STEENBURGH, P.E. PLLC

2832 Rosendale Road
Niskayuna, NY 12309
(518) 365-0675
bsteenburghpe@gmail.com

ENGINEERING THAT TRANSFORMS IMAGINATION INTO REALITY

DETAILS
FRED POLSINELLI
POLSINELLI DRIVE
TOWN OF NISKAYUNA
COUNTY OF SCHENECTADY
STATE OF NEW YORK

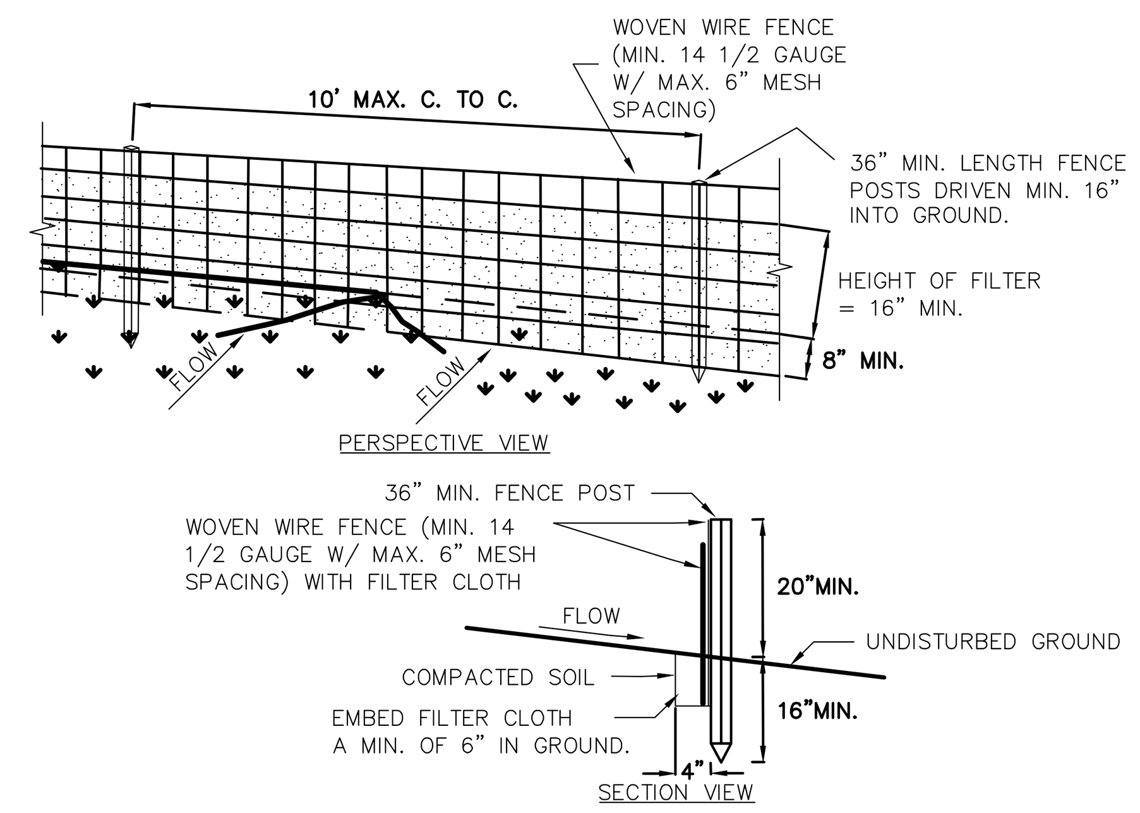
DRAWN BY: BLS
CHECKED BY: BLS
JOB NO.
DATE: FEBRUARY 3, 2023
SCALE: AS NOTED
SHEET C-4



NOTES:
1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE
2. FILTER SOXX™ MAY BE DIRECT SEEDED AT THE TIME OF INSTALLATION

FILTREXX® CONCRETE WASHOUT

NTS

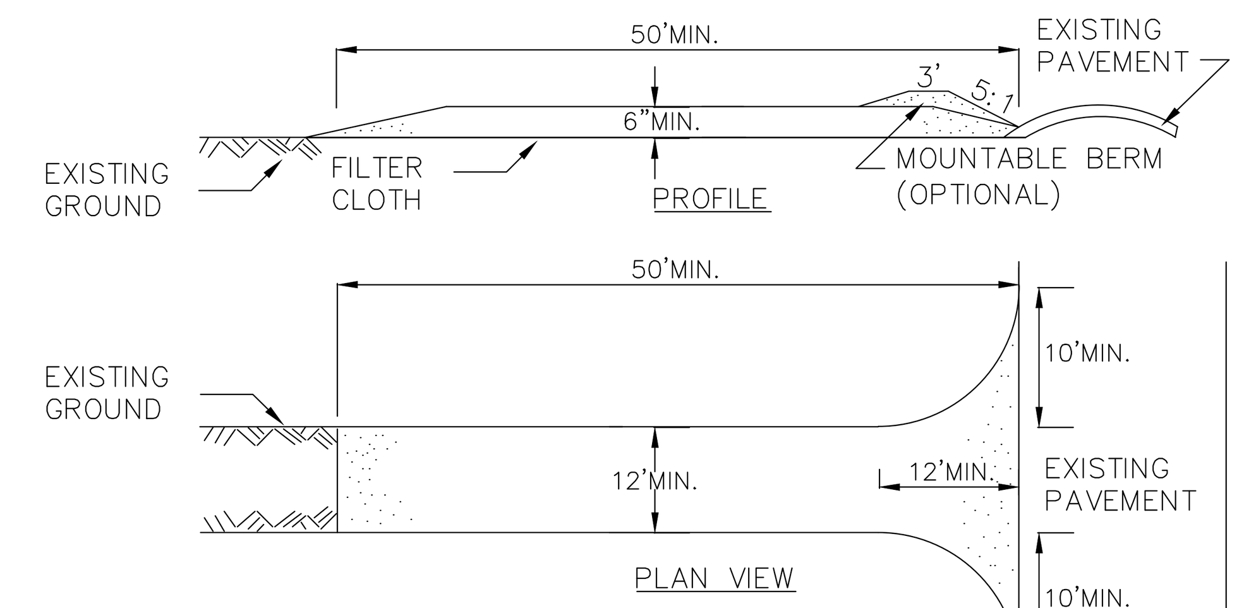


CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE OR HARDWOOD.
2. FILTER CLOTH TO BE TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 12 1/2 GAUGE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVER-LAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL BE GEOFAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

SILT FENCE DETAIL

(NOT TO SCALE)

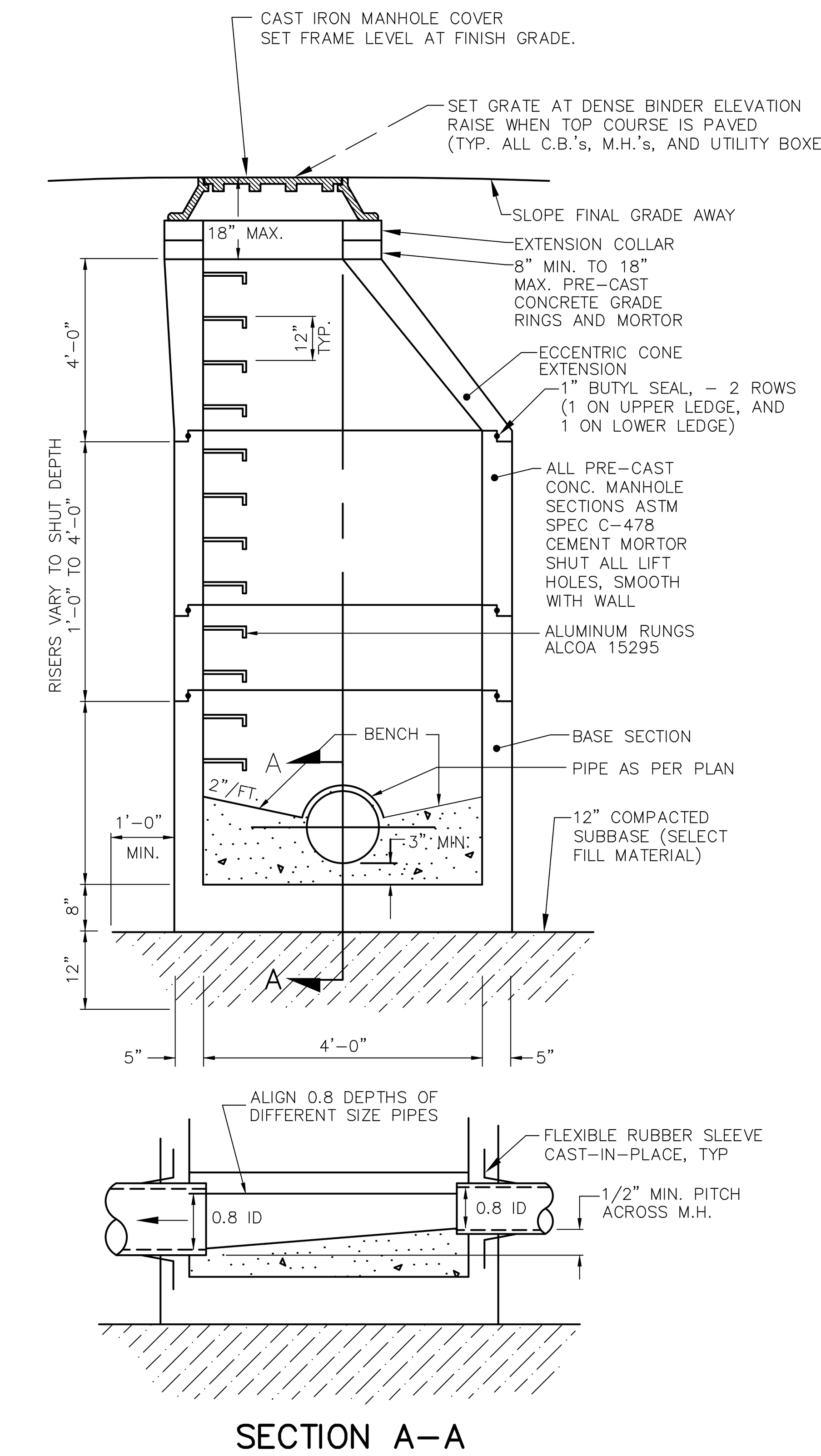


CONSTRUCTION SPECIFICATIONS

1. STONE SIZE – USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH – NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS – NOT LESS THAN SIX (6) INCHES.
4. WIDTH – TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CON-STRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACTED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE DETAIL

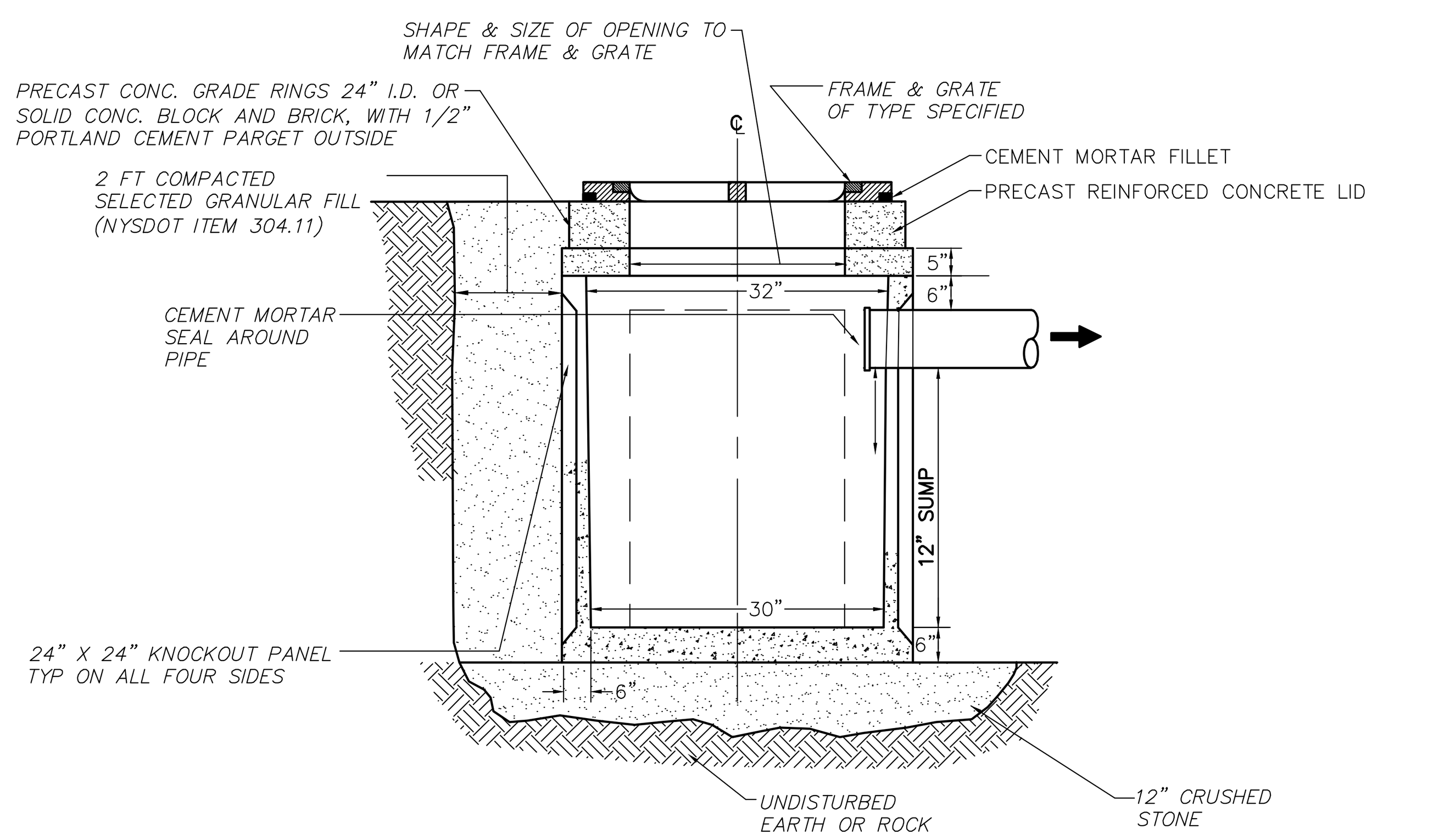
(NOT TO SCALE)



SECTION A–A

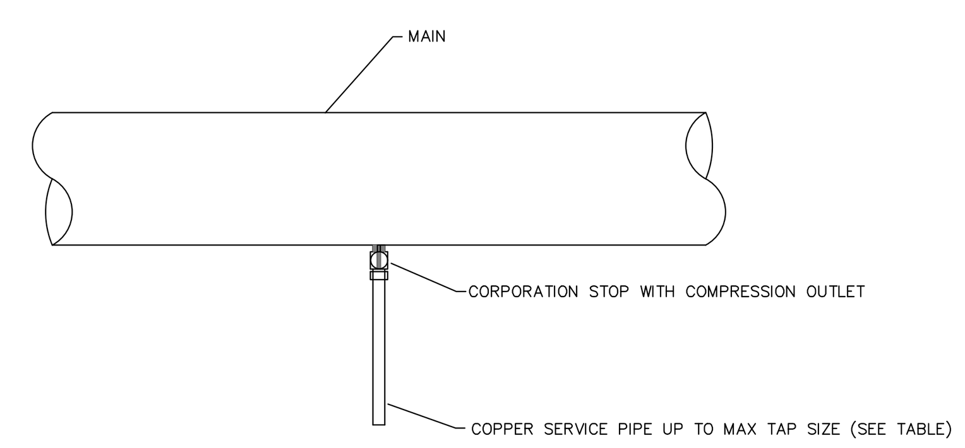
TYPICAL PRE-CAST CONCRETE MANHOLE

(NOT TO SCALE)



STANDARD SQUARE PRECAST CONCRETE CATCH BASIN (TYPE 2)

(NOT TO SCALE)



MIN. SIZE (IN)	3	4	6	8	10	12 & LARGER
MAX. TAP SIZE (IN)	1/2	3/4	1	1-1/4	1-1/2	2

NOTE: THE MAXIMUM TAP SIZE OF AN 8" WATER MAIN IS 1-1/4"

TYPICAL COPPER SERVICE PIPE CONNECTION DETAIL

SCALE: NONE

TESTING OF WATER SERVICE MAIN NOTES

1. AFTER TRENCH HAS BEEN BACKFILLED, HYDROSTATIC ACCEPTANCE TESTS, CONSISTING OF A PRESSURE TEST AND A LEAKAGE TEST, SHALL BE PERFORMED ON ALL SECTIONS OF WATER MAINS INSTALLED. LEAKAGE TEST SHALL BE CONDUCTED CONCURRENTLY WITH PRESSURE TEST. TEST SECTION SHALL BE LIMITED TO ABOUT 2000 FT. (MAX.) UNLESS OTHERWISE APPROVED BY ENGINEER.

2. ALL TESTS, INSPECTIONS ETC. SHALL BE PERFORMED AND EVIDENCE OR COMPLIANCE SHALL BE FORWARDED TO OWNER/ENGINEER AND THE MUNICIPALITY PRIOR TO ACCEPTANCE.

3. ALL WATER FOR TESTS SHALL BE FURNISHED AND DISPOSED OF BY CONTRACTOR AT HIS EXPENSE. SOURCE AND/OR QUALITY OF WATER WHICH CONTRACTOR PROPOSES TO USE IN TESTING LINES SHALL BE ACCEPTABLE TO ENGINEER.

4. HYDROSTATIC PRESUMPTIVE TESTS MAY BE PERFORMED WHEN SYSTEM IS PARTIALLY BACKFILLED TO SIMPLY CHECK WORK, BUT ACCEPTANCE OF SYSTEM SHALL BE BASED ON HYDROSTATIC TESTS RUN ON FINISHED SYSTEM AFTER IT HAS BEEN COMPLETELY BACKFILLED. ALL HYDROSTATIC TESTS SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 4 OF AWWA STANDARD C600-93, AS MODIFIED HEREIN.

5. FOR THE PRESSURE TEST, SYSTEM SHALL BE PRESSURIZED AND MAINTAINED AT A MINIMUM OF 150 POUNDS PER SQUARE INCH, OR 1.5 TIMES THE WORKING PRESSURE, WHICH EVER IS GREATER, BASED ON ELEVATION OF LOWEST POINT IN SECTION BEING TESTED AND CORRECTED TO ELEVATION OF GAUGE. PROVISIONS SHALL BE MADE TO RELIEVE AIR TRAPPED AT HIGH POINTS IN SYSTEM THROUGH ADJACENT HYDRANTS OR THROUGH TAPS AND CORPORATION STOPS INSTALLED FOR THIS PURPOSE BY CONTRACTOR. AFTER THIS PRESSURE HAS BEEN MAINTAINED SUCCESSFULLY, WITH FURTHER PUMPING AS REQUIRED, FOR A PERIOD OF AT LEAST TWO HOURS, THE SECTION UNDER TEST SHALL BE CONSIDERED TO HAVE PASSED THE PRESSURE TEST.

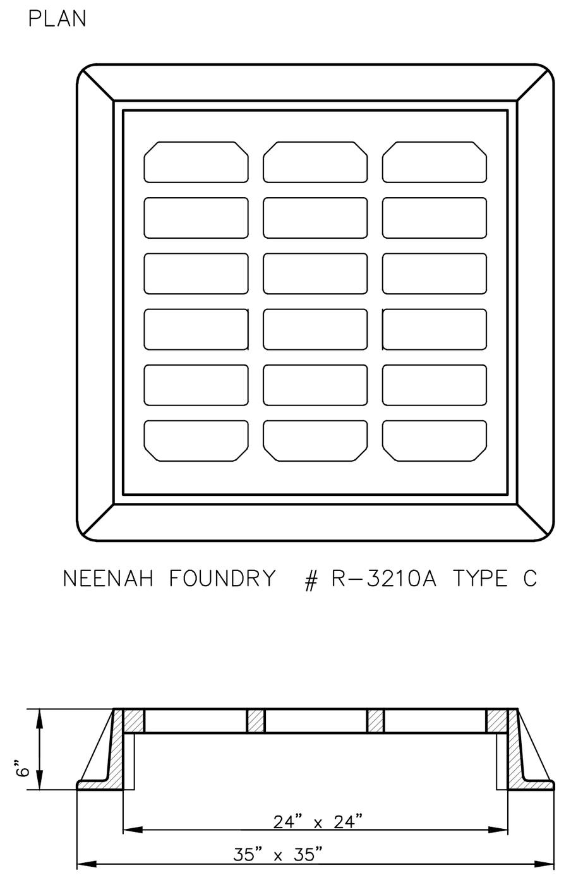
6. LEAKAGE TEST SHALL BE PERFORMED CONCURRENTLY USING A MINIMUM TEST PRESSURE OF 150 POUNDS PER SQUARE INCH, OR 1.5 TIMES THE WORKING PRESSURE, WHICHEVER IS GREATER, BASED ON ELEVATION OF LOWEST POINT IN SECTION UNDER TEST AND CORRECTED TO ELEVATION OF GAUGE. LEAKAGE TEST DURATION SHALL BE A MIN. OF 2 HOURS AFTER LEAKAGE RATE HAS STABILIZED.

7. MAXIMUM ALLOWABLE LEAKAGE SHALL BE AS SHOWN IN THE FOLLOWING TABLE:
ALLOWABLE LEAKAGE PER 100 FT. OF PIPELINE * AVG. TEST PRESSURE NOMINAL PIPE DIAMETER-IN.

PSI (BAR)	6	8
250 (17)	0.71	0.95
225 (16)	0.68	0.90
200 (14)	0.64	0.85
175 (12)	0.59	0.80
150 (10)	0.55	0.75
125 (9)	0.50	0.67
100 (7)	0.45	0.60

8. IF LEAKAGE IN SYSTEM EXCEEDS SPECIFIED AMOUNT, CONTRACTOR SHALL (AT NO ADDED COST TO OWNER) LOCATE, REPAIR, AND/OR REPLACE DEFECT(S) AND RETEST PIPING SYSTEM.

PLAN



NOTES:
1. CEMENT MORTAR ALL AROUND FRAME.
2. FRAMES AND COVERS BY NEENAH FOUNDRY

INLET STRUCTURE FRAME & COVER

(NOT TO SCALE)

CHAIRMAN OF THE PLANNING BOARD KEVIN WALSH DATE

TOWN ENGINEER MATTHEW YETTO, PE. DATE

NO.	DATE	REVISIONS	BY:
3	5-12-23	MODIFIED AS PER TDE AND BOARD COMMENTS	
2	4-25-23	MODIFIED AS PER TDE AND BOARD COMMENTS	
1	4-4-23	MODIFIED STORM WATER MANAGEMENT	

Dig Safely. New York Call 811 before you dig

BRETT L. STEENBURGH, P.E. N.Y.S. LIC. NO. 075408

BRETT L. STEENBURGH, P.E. PLLC
2832 Rosendale Road
Niskayuna, NY 12309
(518) 365-0675
bsteenburghpe@gmail.com

ENGINEERING THAT TRANSFORMS IMAGINATION INTO REALITY

DETAILS
FRED POLSINELLI
POLSINELLI DRIVE

COUNTY OF SCHENECTADY TOWN OF NISKAYUNA STATE OF NEW YORK

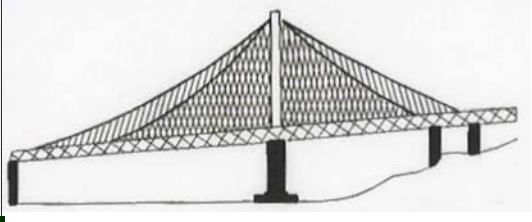
DRAWN BY: BLS CHECKED BY:
CADD FILE: JOB NO.
DATE: FEBRUARY 3, 2023
SCALE: AS NOTED
SHEET C-5

STORMWATER MANAGEMENT REPORT

LOCATION
Polsinelli Drive
Town of Niskayuna
State of New York

PREPARED FOR
Fred Polsinelli

Date Prepared
April 7, 2023
Revised April 25, 2023
Revised May 12, 2023



Brett L. Steenburgh, P.E. PLLC
2832 Rosendale Road
Niskayuna, NY 12309
(518) 365-0675
Civil ♦ environmental ♦ structural Engineering

1.0 PROJECT DESCRIPTION

The parcel is located at the terminus of Polsinelli Drive in the Town of Niskayuna. The parcel is owned by The Estate of Vincenza Polsinelli and is 6.12 Acres in size. The parcel is vacant and wooded with minimal underbrush.

It is proposed to develop two residential building lots off the terminus of Polsinelli Drive. One 18' shared driveway will be shared for both lots separating at the top of the hill to each house

1.1 NATURE OF CONSTRUCTION

The project will consist of the disturbance 1.37 acres and stabilization of approximately 1.37 acres of land. There will be minimal clearing along the side lines of the proposed lots.

1.2 AREA OF DISTURBANCE

The project will consist of the disturbance 1.37 acres of land. Since the area of disturbance is less than five acres for a residential development, the project does not require a NYSDEC SPDES permit for construction activity.

1.3 SOILS

Although the Web Soil Survey indicates gravely silt present on the subject parcel test pits performed on the parcel for a previous subdivision indicated hardpan and silt near Polsinelli Drive with some areas of silty gravel at the top of the hill. A site walk confirmed that there is minimal infiltration into the existing soils, therefore hydrologic soil group D has been used in all drainage calculations.

2.0 STORMWATER MANAGEMENT OBJECTIVES

The stormwater objectives for this development are a function of limited downstream capacity issues. The town and residents along Rowe Road have expressed concerns regarding the capacity of the storm sewer along Rowe Road as well as other downstream issues. Therefore, even though the proposed development is minimal it is necessary to attenuate stormwater on the parcel before discharge off site. The objective is to maintain or reduce the stormwater off site for the proposed two lots.

Under the existing conditions, stormwater from the proposed area of development leaves the site at three locations. Location A is the terminus of Polsinelli Drive. Location B is the rear of the adjoining residential properties near the northeast property corner of the development and location C is at the northerly property boundary with the residential properties. Each of these locations have been identified as analysis points for the stomwater runoff calculations.

Under the proposed conditions, all stormwater from developed impervious areas will be directed to analysis point A at the terminus of Polsinelli Drive. Portions of the yard and undeveloped areas will discharge to analysis points B and C. Since the overall runoff curve number for the parcel has increased through the development of impervious areas (rooftops and driveways) it is necessary to attenuate storm water on the parcel before discharge off site into the storm sewer system in Polsinelli Drive.

The proposed houses will be constructed gutters with leaf guards to capture roof runoff. The gutters will be directed with the footing drains to the proposed storm water management practices for attenuation.

In order to capture the storm water produced on the driveway a stone trench will be constructed along the edge of the driveway for each house. To maintain pre-development conditions, it is necessary to attenuate the stormwater conveyed to this trench. The trench will flow along the edge of the driveway to a subsurface stone attenuation basin. The attenuation basin will be an off line practice controlled by a catch basin structure. The roof drains and footing drains will connect directly to the catch basin. The catch basin will have a 12" outlet pipe with cap. The cap will have an orifice cut into it to allow storm water to back up into a gallery of (3) 6" underdrains in the subsurface stone basin. Water will be stored in the stone basin until the engineered orifice allows it to drain off site into the Town of Niskayuna Storm Sewer. Each basin and orifice have been designed to manage all storm events from the 1 year 24-hour storm to an extreme flood storm of 7.44 inches in 24 hours without exceeding pre development runoff rates.

The underdrain pipes have been designed with cleanouts at each end for easy long-term maintenance.

A completed HydroCAD analysis has been performed to evaluate the effect of the development on downstream infrastructure at each analysis point. The analysis has been completed for the 1, 2, 10- and 100-year storm events. The Cornell extreme precipitation values have been utilized for each storm event as follows:

1 Year Storm = 2.18
2 Year Storm = 2.57 in
10 Year Storm = 3.65 in
100 Year Storm = 6.07 in

In addition to the Cornell extreme precipitation, we analyzed the system using the charts in the NYSSDM which have been deemed as outdated as well as the peak 24-hour rainfall to occur at Albany County Airport since 1939.

1 Year Storm = 2.18
10 Year Storm = 3.9 in
100 Year Storm = 6.4 in

100 Year Cornell Upper Limit = 7.44 in
Peak Rainfall at ALB = 5.6 in (9/16/99)

From the HydroCAD analysis we have been able to determine the peak rate of runoff off from the parcel in both the pre and post development conditions. The following tables document the peak runoff rate to each of the analysis points for each of the calculated storm events:

Analysis Point A - Cornell

Storm Event	Existing Runoff (CFS)	Proposed Runoff (CFS)	Percent Reduction
1 Year = 2.18 in	0.62	0.44	29%
2 Year = 2.57in	0.90	0.54	40%
10 Year = 3.65 in	1.79	0.77	57%
100 Year = 6.07 in	4.03	3.93	3%

Analysis Point B - Cornell

Storm Event	Existing Runoff (CFS)	Proposed Runoff (CFS)	Percent Reduction
1 Year = 2.18 in	0.45	0.43	0%
2 Year = 2.57in	0.65	0.63	0%
10 Year = 3.65 in	1.28	1.23	0%
100 Year = 6.07 in	2.86	2.74	2%

Analysis Point C - Cornell

Storm Event	Existing Runoff (CFS)	Proposed Runoff (CFS)	Percent Reduction
1 Year = 2.18 in	0.78	0.74	5%
2 Year = 2.57in	1.13	1.08	4%
10 Year = 3.65 in	2.24	2.14	5%
100 Year = 6.07 in	5.03	4.81	10%

Analysis Point A - NYSSDM

Storm Event	Existing Runoff (CFS)	Proposed Runoff (CFS)	Percent Reduction
1 Year = 2.18 in	0.62	0.44	29%
10 Year = 3.9 in	2.01	1.19	41%
100 Year = 6.4 in	4.34	4.25	2%
100 Year Cornell – upper limit 7.44in	5.35	5.19	3%
Alb MAX = 5.6 in	3.58	3.44	4%

Analysis Point B - NYSSDM

Storm Event	Existing Runoff (CFS)	Proposed Runoff (CFS)	Percent Reduction
1 Year = 2.18 in	0.45	0.43	0%
10 Year = 3.9 in	1.43	1.38	1%
100 Year = 6.4 in	3.08	2.96	4%
100 Year Cornell – upper limit 7.44in	3.78	3.63	4%
Alb MAX = 5.6 in	2.54	2.44	4%

Analysis Point C - NYSSDM

Storm Event	Existing Runoff (CFS)	Proposed Runoff (CFS)	Percent Reduction
1 Year = 2.18 in	0.78	0.74	5%
10 Year = 3.9 in	2.52	2.41	4%
100 Year = 6.4 in	5.42	5.19	4%
100 Year Cornell – upper limit 7.44in	6.67	6.38	4%
Alb MAX = 5.6 in	4.47	4.28	4%

Based on the above information and supporting calculations, it is our professional opinion that the proposed development will not have an adverse impact on downstream infrastructure.

3.0 EROSION AND SEDIMENT CONTROL SEQUENCE:

The erosion and sediment control practices shown on the design plans shall be implemented in the following sequence:

1. All silt fence and stabilized construction entrance shall be installed prior clearing.
2. Clear the areas of disturbance (no grubbing)
3. Excavate areas for the subsurface stone storage areas
4. Install catch basin in Polsinelli Drive with pipes to subsurface storage areas.
5. Install temporary wrapped underdrain in bottom of storage area
6. Grub site and grade to direct runoff to the storage areas
7. Excavate foundations any stockpiles shall be surrounded completely by silt fence
8. Construct homes
9. Rough grade driveways to subbase level
10. Install trenches along driveways and all piping from houses
11. Pave driveways

12. Stabilize all disturbed areas as per blue book
13. Construct the subsurface basins (stone piping etc.)
14. Remove all erosion control practices upon establishment of vegetation per blue book.

The operator shall initiate stabilization measures as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently been ceased. This requirement does not apply to the following:

- Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceased is precluded by snow cover or frozen ground conditions, stabilization measures shall be initiated as soon as practicable.

- Where construction activity on a portion of the site is temporarily ceased, and earth-disturbing activities will be resumed within 7 days, temporary stabilization measures need not be initiated on that portion of the site.

4.0 Operation and Maintenance

Maintenance of Stone Trenches

Inspections:

The homeowner should inspect the stone trenches both around the house and along the driveway annually. Inspections should include (but are not limited to):

- Washing away of stone
- Clogging with yard debris
- Ponding at surface between storms
- Erosion of any kind
- Ponding within the basins

Maintenance:

The homeowner shall replace the surface stone if ponding in the trenches is noted between storms. The stone shall be removed and filter fabric replaced. Stone can be re-used if washed thoroughly.

Maintenance of Subsurface System

Inspections:

The homeowner shall open the cleanout annually. If water is noted ponding in the cleanout between storm events more than 12" deep, or if

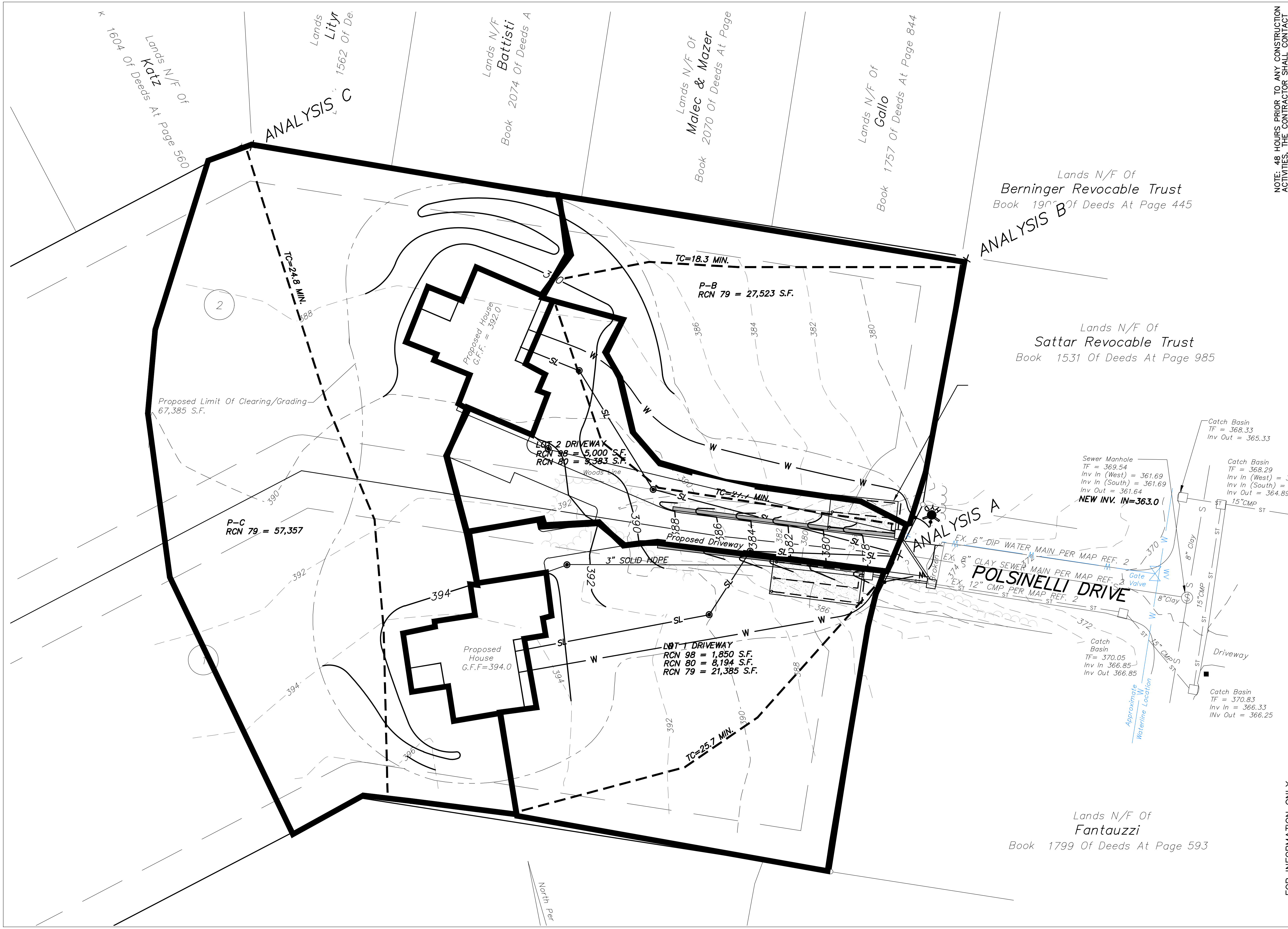
the catch basin is surcharging during small storm events the system shall be cleaned as noted below in the maintenance section

Maintenance:

If water is noted ponding the cleanout between storm events as noted above, the system shall be cleaned using a jet vacuum system. The stone underdrain and overflow shall be cleaned. The piping to the catch basin shall also be cleaned.

Appendix A

Storm Water Management Calculations



Lands N/F Of
Katz
Book 1604 Of Deeds At Page 560
Lands N/F Of
Battisti
Book 2074 Of Deeds At
Lands N/F Of
Malec & Mazer
Book 2070 Of Deeds At Page
Lands N/F Of
Gallo
Book 1757 Of Deeds At Page 844
Lands N/F Of
Berninger Revocable Trust
Lands N/F Of
Sattar Revocable Trust
Book 1531 Of Deeds At Page 985
Lands N/F Of
Fantauzzi
Book 1799 Of Deeds At Page 593
ANALYSIS C
ANALYSIS B
ANALYSIS A
TC=24.8 MIN.
TC=18.3 MIN.
TC=25.7 MIN.
P-B
RCN 79 = 27,523 S.F.
P-C
RCN 79 = 57,357
Proposed Limit Of Clearing/Grading
67,385 S.F.
Proposed House
G.F.F. = 392.0
Proposed House
G.F.F=394.0
LOT 2 DRIVEWAY
RCN 98 = 5,000 S.F.
RCN 80 = 9,383 S.F.
LOT 1 DRIVEWAY
RCN 98 = 1,850 S.F.
RCN 80 = 8,194 S.F.
RCN 79 = 21,385 S.F.
Woods Line
Proposed Driveway
3" SOLID HDPE
POLSINELLI DRIVE
EX. 6" DIP WATER MAIN PER MAP REF. 2
EX. 8" CLAY SEWER MAIN PER MAP REF. 2
EX. 12" CMP PER MAP REF. 2
Gate Valve
Sewer Manhole
TF = 369.54
Inv In (West) = 361.69
Inv In (South) = 361.69
Inv Out = 361.64
NEW INV. IN=363.0
Catch Basin
TF = 368.33
Inv Out = 365.33
Catch Basin
TF = 368.29
Inv In (West) = 364
Inv In (South) = 36
Inv Out = 364.89
Catch Basin
TF= 370.05
Inv In 366.85
Inv Out 366.85
Catch Basin
TF = 370.83
Inv In = 366.33
INv Out = 366.25
15"CMP
8" Clay
8"Clay
Driveway
Approximate Waterline Location
North Per

NOTE: 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL CONTACT THE U.F.P.O. TO LOCATE ALL UNDERGROUND UTILITIES. 1-800-962-7962

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

NO.	DATE:	REVISIONS	BY:

BRETT L. STEENBURGH, P.E.
N.Y.S. LIC. NO. 075458

BRETT L. STEENBURGH, P.E. PLLC
2832 ROSENDALE ROAD
NISKAYUNA, NY 12309
(518) 365-0675
bsteenburghpe@yahoo.com
CIVIL ENVIRONMENTAL STRUCTURAL ENGINEERING

PROPOSED DRAINAGE

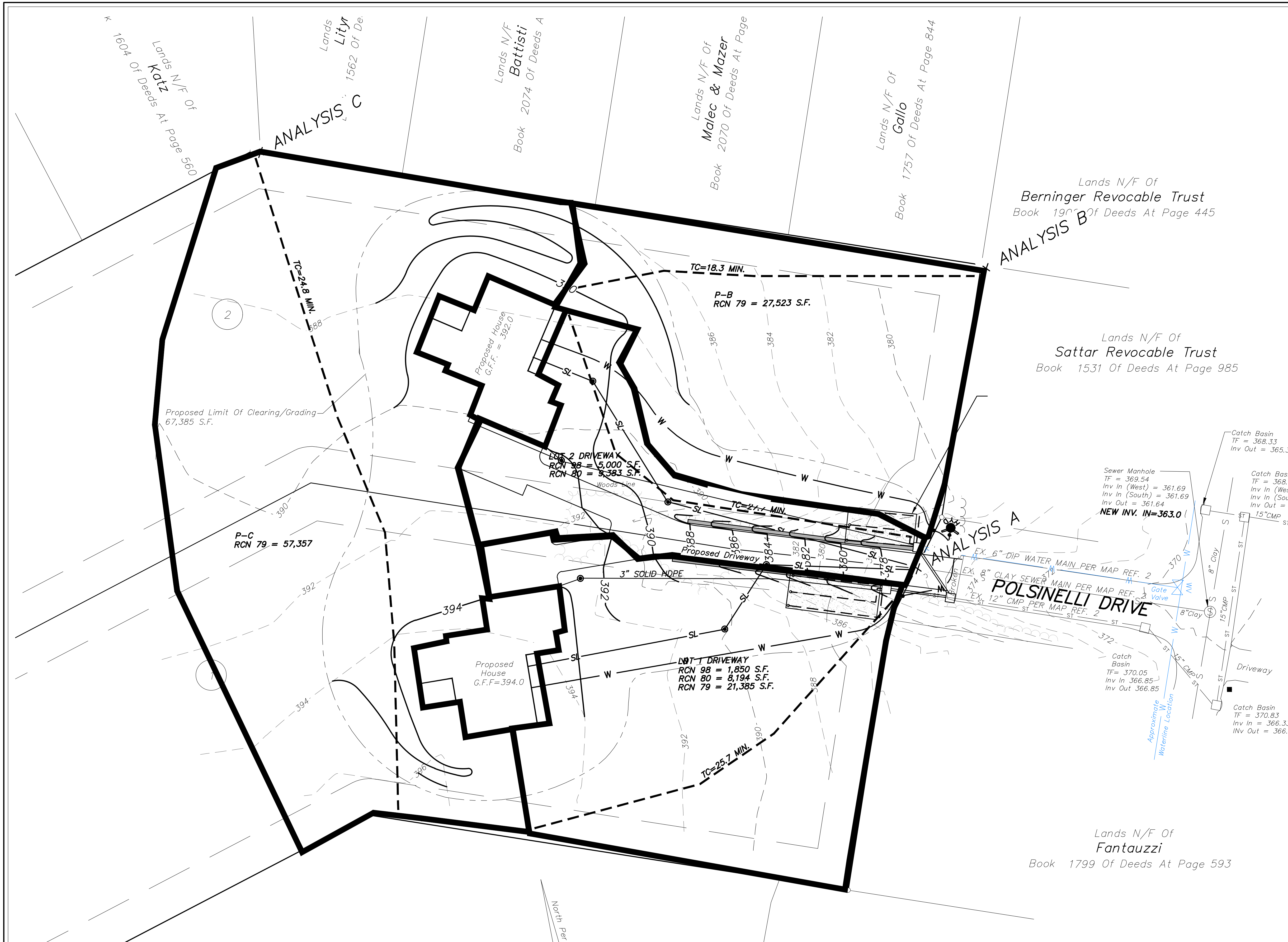
FRED POLSINELLI
POLSINELLI DRIVE

TOWN OF NISKAYUNA
COUNTY OF SCHENECTADY STATE OF NEW YORK

DRAWN BY:
CADD FILE:
CHECKED BY:
JOB NO.
DATE:

SCALE: 1" = 50'

SHEET 1 OF 1



Lands N/F Of
Katz
Book 1604 Of Deeds At Page 560
Lands N/F Of
Battisti
Book 2074 Of Deeds At Page
Lands N/F Of
Malec & Mazer
Book 2070 Of Deeds At Page
Lands N/F Of
Gallo
Book 1757 Of Deeds At Page 844
Lands N/F Of
Berninger Revocable Trust
Lands N/F Of
Sattar Revocable Trust
Book 1531 Of Deeds At Page 985
Lands N/F Of
Fantauzzi
Book 1799 Of Deeds At Page 593
ANALYSIS C
ANALYSIS B
ANALYSIS A
TC=24.8 MIN.
TC=18.3 MIN.
TC=25.7 MIN.
P-B
RCN 79 = 27,523 S.F.
P-C
RCN 79 = 57,357
Proposed Limit Of Clearing/Grading
67,385 S.F.
Proposed House
G.F.F. = 392.0
Proposed House
G.F.F.=394.0
LOT 2 DRIVEWAY
RCN 98 = 5,000 S.F.
RCN 80 = 9,383 S.F.
LOT 1 DRIVEWAY
RCN 98 = 1,850 S.F.
RCN 80 = 8,194 S.F.
RCN 79 = 21,385 S.F.
Proposed Driveway
3" SOLID HDPE
Woods Line
POLSINELLI DRIVE
EX. 6" DIP WATER MAIN PER MAP REF. 2
EX. 8" CLAY SEWER MAIN PER MAP REF. 2
EX. 12" CMP PER MAP REF. 2
Gate Valve
Sewer Manhole
TF = 369.54
Inv In (West) = 361.69
Inv In (South) = 361.69
Inv Out = 361.64
NEW INV. IN=363.0
Catch Basin
TF = 368.33
Inv Out = 365.33
Catch Basin
TF = 368.29
Inv In (West) = 364
Inv In (South) = 36
Inv Out = 364.89
Catch Basin
TF= 370.05
Inv In 366.85
Inv Out 366.85
Catch Basin
TF = 370.83
Inv In = 366.33
INv Out = 366.25
15"CMP
8" Clay
Driveway
Approximate Waterline Location

NOTE: 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL CONTACT THE U.F.P.O. TO LOCATE ALL UNDERGROUND UTILITIES. 1-800-962-7962

FOR INFORMATION ONLY
NOT FOR CONSTRUCTION

NO.	DATE:	REVISIONS	BY:

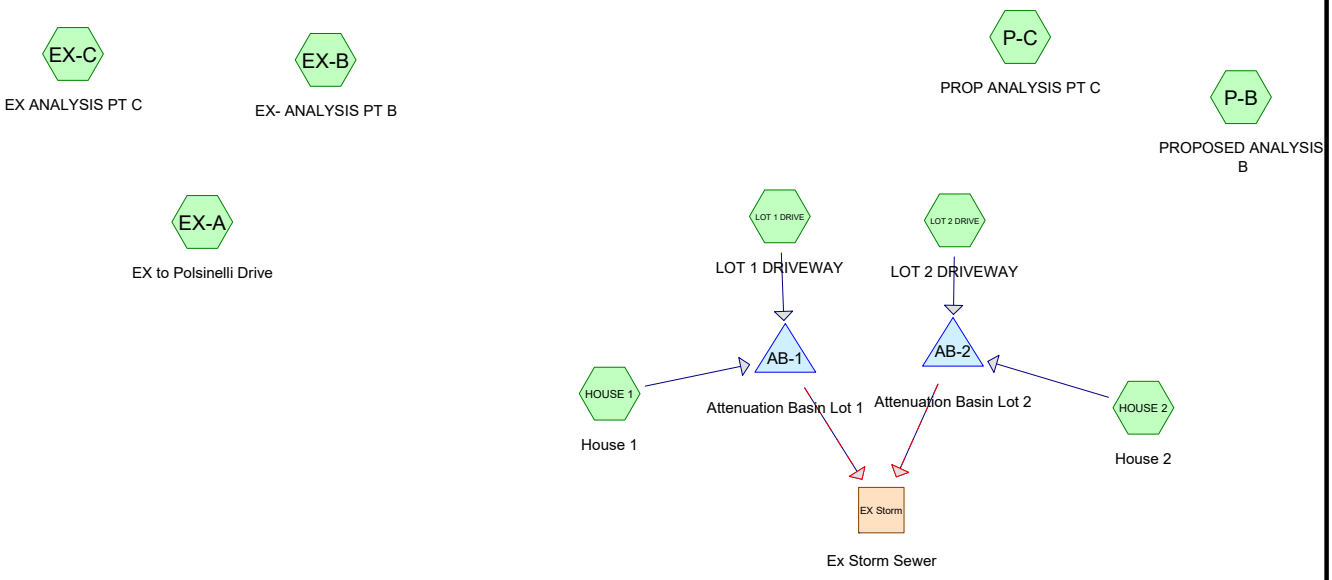
BRETT L. STEENBURGH, P.E.
N.Y.S. LIC. NO. 075458

BRETT L. STEENBURGH, P.E. PLLC
2832 ROSENDALE ROAD
NISKAYUNA, NY 12309
(518) 365-0675
bsteenburghpe@yahoo.com
CIVIL ENVIRONMENTAL STRUCTURAL ENGINEERING

PROPOSED DRAINAGE

FRED POLSINELLI
POLSINELLI DRIVE
TOWN OF NISKAYUNA
COUNTY OF SCHENECTADY STATE OF NEW YORK

DRAWN BY:
CAD FILE:
DATE:
CHECKED BY:
JOB NO.
SCALE: 1" = 50'
SHEET 1 OF 1



Subcat Reach Pond Link

Routing Diagram for Pollsinelli
Prepared by HP, Printed 5/12/2023

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.404	80	>75% Grass cover, Good, HSG D (LOT 1 DRIVE, LOT 2 DRIVE)
0.023	98	Hardscape allowance (HOUSE 1, HOUSE 2)
0.192	98	House Footprint (HOUSE 1, HOUSE 2)
0.157	98	Paved parking, HSG A (LOT 1 DRIVE, LOT 2 DRIVE)
4.539	79	Woods, Fair, HSG D (EX-A, EX-B, EX-C, P-C)
1.123	79	Woods/grass comb., Good, HSG D (LOT 1 DRIVE, P-B)
6.438	**80**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.157	HSG A	LOT 1 DRIVE, LOT 2 DRIVE
0.000	HSG B	
0.000	HSG C	
6.066	HSG D	EX-A, EX-B, EX-C, LOT 1 DRIVE, LOT 2 DRIVE, P-B, P-C
0.215	Other	HOUSE 1, HOUSE 2
6.438		**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	0.404	0.000	0.404	>75% Grass cover, Good	LOT 1 DRIVE, LOT 2 DRIVE
0.000	0.000	0.000	0.000	0.023	0.023	Hardscape allowance	HOUSE 1, HOUSE 2
0.000	0.000	0.000	0.000	0.192	0.192	House Footprint	HOUSE 1, HOUSE 2
0.157	0.000	0.000	0.000	0.000	0.157	Paved parking	LOT 1 DRIVE, LOT 2 DRIVE
0.000	0.000	0.000	4.539	0.000	4.539	Woods, Fair	EX-A, EX-B, EX-C, P-C
0.000	0.000	0.000	1.123	0.000	1.123	Woods/grass comb., Good	LOT 1 DRIVE, P-B
0.157	**0.000**	**0.000**	**6.066**	**0.215**	**6.438**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	EX Storm	0.00	-5.00	100.0	0.0500	0.012	0.0	12.0	0.0
2	AB-1	373.00	372.85	30.0	0.0050	0.012	0.0	3.5	0.0
3	AB-2	371.00	370.85	30.0	0.0050	0.012	0.0	3.0	0.0

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-A: EX to Polsinelli Drive Runoff Area=50,100 sf 0.00% Impervious Runoff Depth>0.56"
Flow Length=300' Tc=26.5 min CN=79 Runoff=0.62 cfs 0.054 af

Subcatchment EX-B: EX- ANALYSIS PT B Runoff Area=30,008 sf 0.00% Impervious Runoff Depth>0.56"
Flow Length=240' Tc=19.9 min CN=79 Runoff=0.45 cfs 0.032 af

Subcatchment EX-C: EX ANALYSIS PT C Runoff Area=60,108 sf 0.00% Impervious Runoff Depth>0.56"
Flow Length=372' Tc=24.8 min CN=79 Runoff=0.78 cfs 0.064 af

Subcatchment HOUSE 1: House 1 Runoff Area=4,683 sf 100.00% Impervious Runoff Depth>1.82"
Tc=6.0 min CN=98 Runoff=0.32 cfs 0.016 af

Subcatchment HOUSE 2: House 2 Runoff Area=4,683 sf 100.00% Impervious Runoff Depth>1.82"
Tc=6.0 min CN=98 Runoff=0.32 cfs 0.016 af

Subcatchment LOT 1 DRIVE: LOT 1 Runoff Area=31,429 sf 5.89% Impervious Runoff Depth>0.60"
Flow Length=240' Tc=25.7 min CN=80 Runoff=0.43 cfs 0.036 af

Subcatchment LOT 2 DRIVE: LOT 2 Runoff Area=14,383 sf 34.76% Impervious Runoff Depth>0.90"
Flow Length=240' Tc=27.7 min CN=86 Runoff=0.29 cfs 0.025 af

Subcatchment P-B: PROPOSED ANALYSIS Runoff Area=27,523 sf 0.00% Impervious Runoff Depth>0.56"
Flow Length=220' Tc=18.3 min CN=79 Runoff=0.43 cfs 0.030 af

Subcatchment P-C: PROP ANALYSIS PT C Runoff Area=57,515 sf 0.00% Impervious Runoff Depth>0.56"
Flow Length=372' Tc=24.8 min CN=79 Runoff=0.74 cfs 0.062 af

Reach EX Storm: Ex Storm Sewer Avg. Flow Depth=0.15' Max Vel=5.77 fps Inflow=0.44 cfs 0.092 af
12.0" Round Pipe n=0.012 L=100.0' S=0.0500 '/' Capacity=8.63 cfs Outflow=0.44 cfs 0.092 af

Pond AB-1: Attenuation Basin Lot 1 Peak Elev=374.43' Storage=571 cf Inflow=0.48 cfs 0.052 af
Primary=0.26 cfs 0.052 af Secondary=0.00 cfs 0.000 af Outflow=0.26 cfs 0.052 af

Pond AB-2: Attenuation Basin Lot 2 Peak Elev=372.63' Storage=489 cf Inflow=0.43 cfs 0.041 af
Primary=0.19 cfs 0.040 af Secondary=0.00 cfs 0.000 af Outflow=0.19 cfs 0.040 af

Total Runoff Area = 6.438 ac Runoff Volume = 0.335 af Average Runoff Depth = 0.62"
94.22% Pervious = 6.066 ac 5.78% Impervious = 0.372 ac

Summary for Subcatchment EX-A: EX to Polsinelli Drive

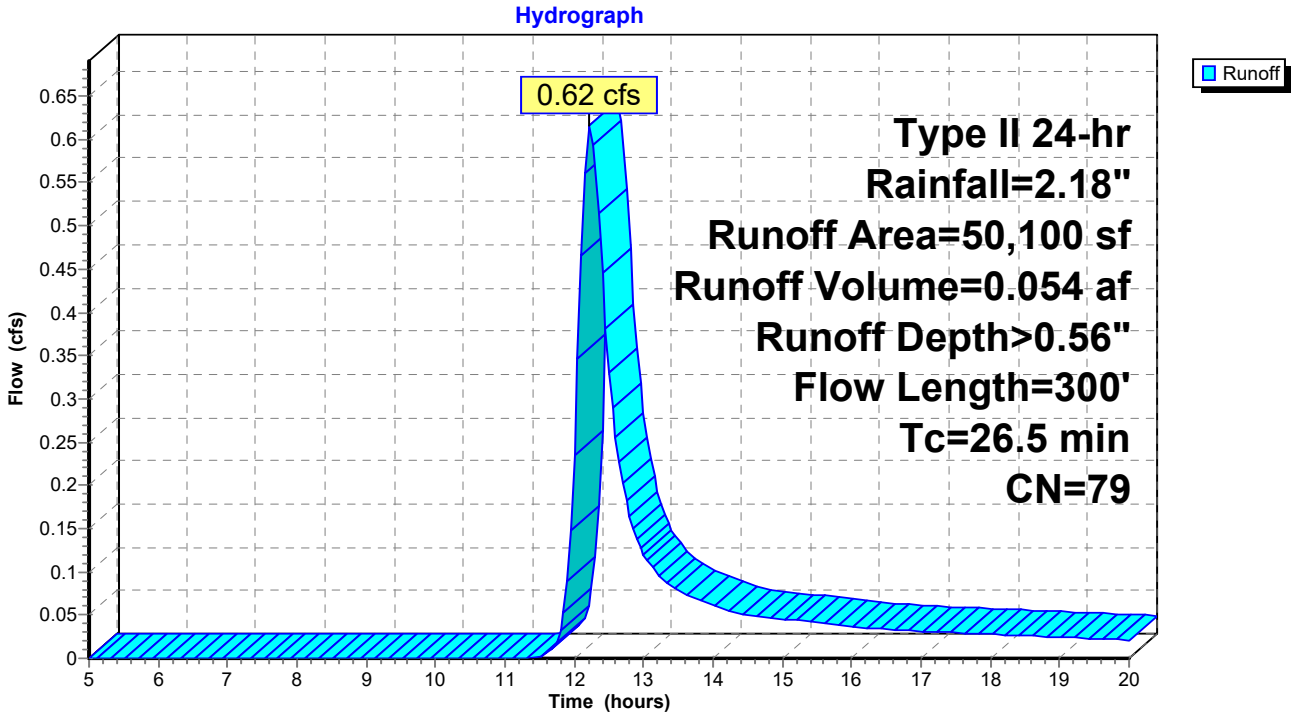
Runoff = 0.62 cfs @ 12.23 hrs, Volume= 0.054 af, Depth> 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=2.18"

Area (sf)	CN	Description
50,100	79	Woods, Fair, HSG D
50,100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.8	100	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
2.7	200	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
26.5	300	Total			

Subcatchment EX-A: EX to Polsinelli Drive



Summary for Subcatchment EX-B: EX- ANALYSIS PT B

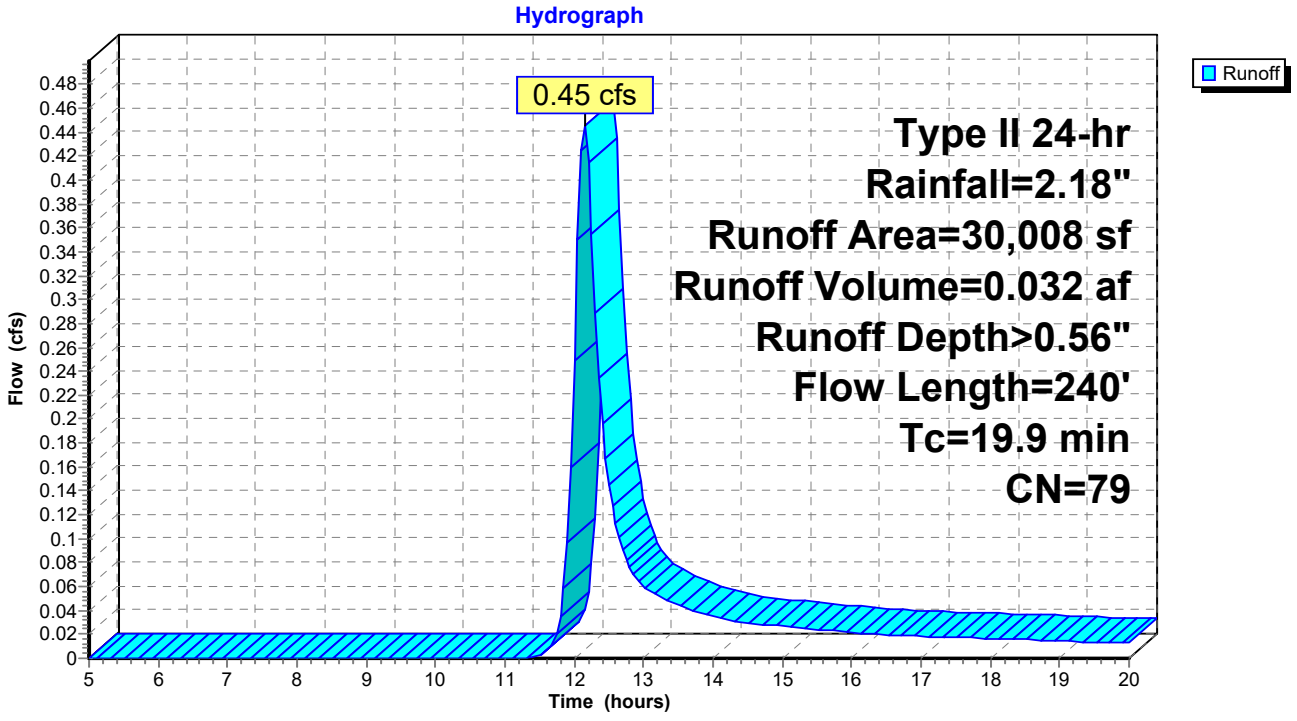
Runoff = 0.45 cfs @ 12.15 hrs, Volume= 0.032 af, Depth> 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=2.18"

Area (sf)	CN	Description
30,008	79	Woods, Fair, HSG D
30,008		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	100	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
1.8	140	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.9	240	Total			

Subcatchment EX-B: EX- ANALYSIS PT B



Summary for Subcatchment EX-C: EX ANALYSIS PT C

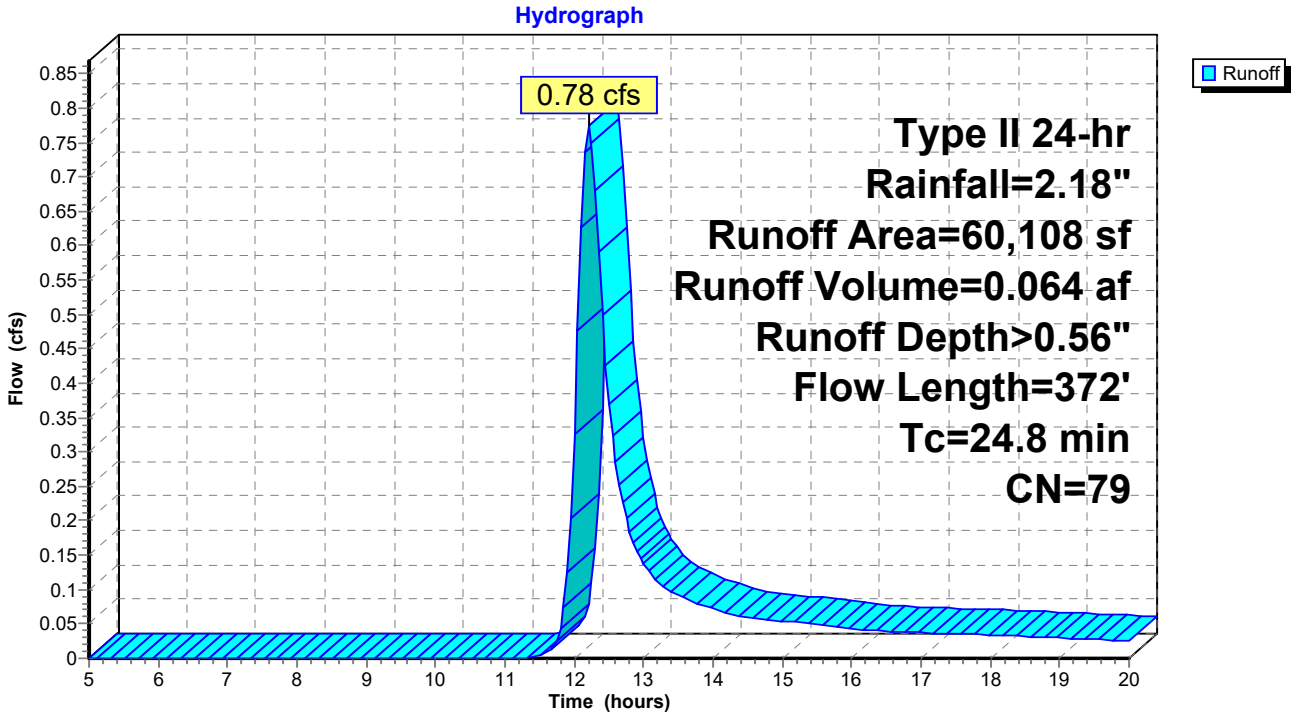
Runoff = 0.78 cfs @ 12.21 hrs, Volume= 0.064 af, Depth> 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=2.18"

Area (sf)	CN	Description
60,108	79	Woods, Fair, HSG D
60,108		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.3	100	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
4.5	272	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.8	372	Total			

Subcatchment EX-C: EX ANALYSIS PT C



Summary for Subcatchment HOUSE 1: House 1

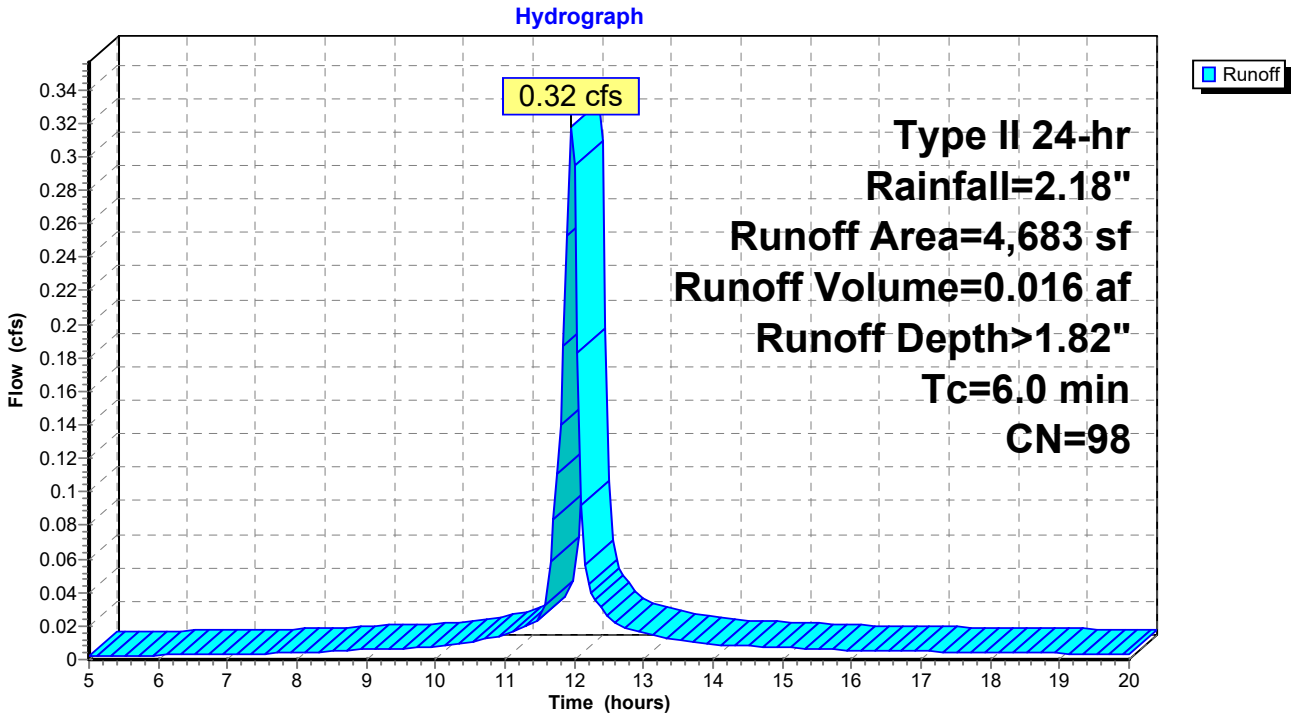
Runoff = 0.32 cfs @ 11.96 hrs, Volume= 0.016 af, Depth> 1.82"
Routed to Pond AB-1 : Attenuation Basin Lot 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=2.18"

	Area (sf)	CN	Description
*	4,183	98	House Footprint
*	500	98	Hardscape allowance
	4,683	98	Weighted Average
	4,683		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min.**

Subcatchment HOUSE 1: House 1



Summary for Subcatchment HOUSE 2: House 2

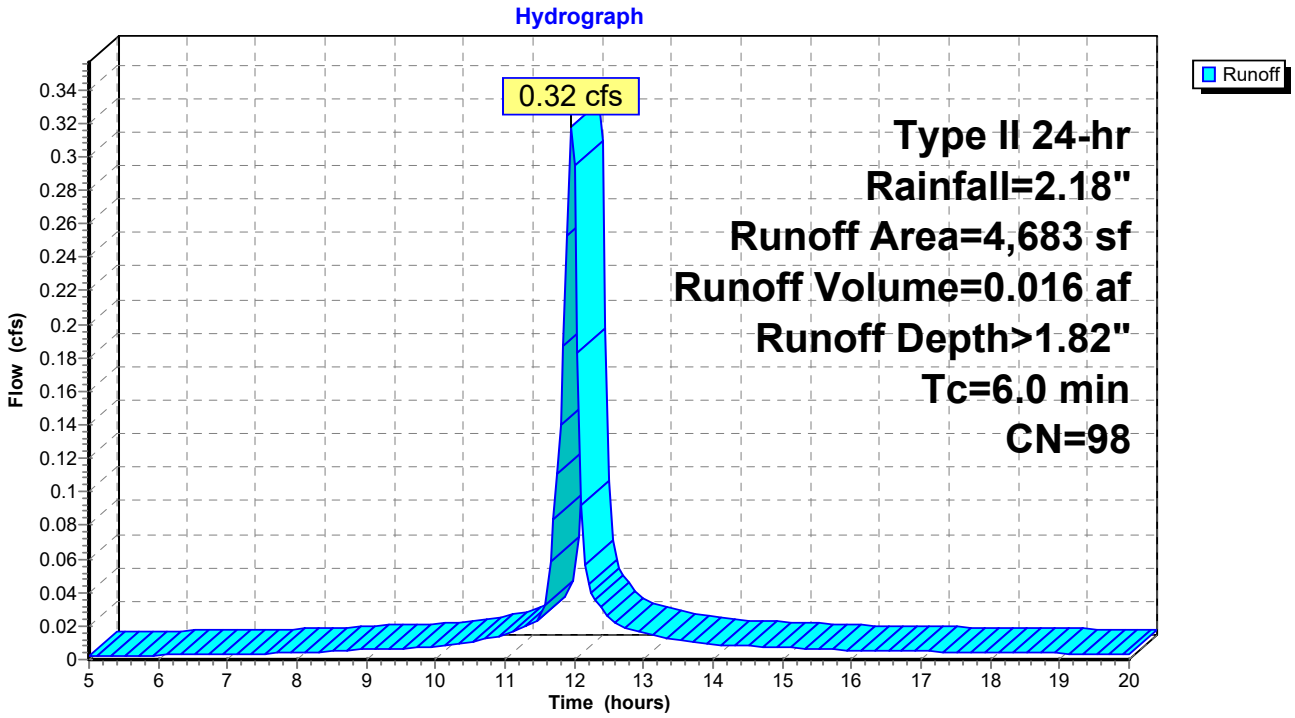
Runoff = 0.32 cfs @ 11.96 hrs, Volume= 0.016 af, Depth> 1.82"
Routed to Pond AB-2 : Attenuation Basin Lot 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=2.18"

	Area (sf)	CN	Description
*	4,183	98	House Footprint
*	500	98	Hardscape allowance
	4,683	98	Weighted Average
	4,683		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min.**

Subcatchment HOUSE 2: House 2



Summary for Subcatchment LOT 1 DRIVE: LOT 1 DRIVEWAY

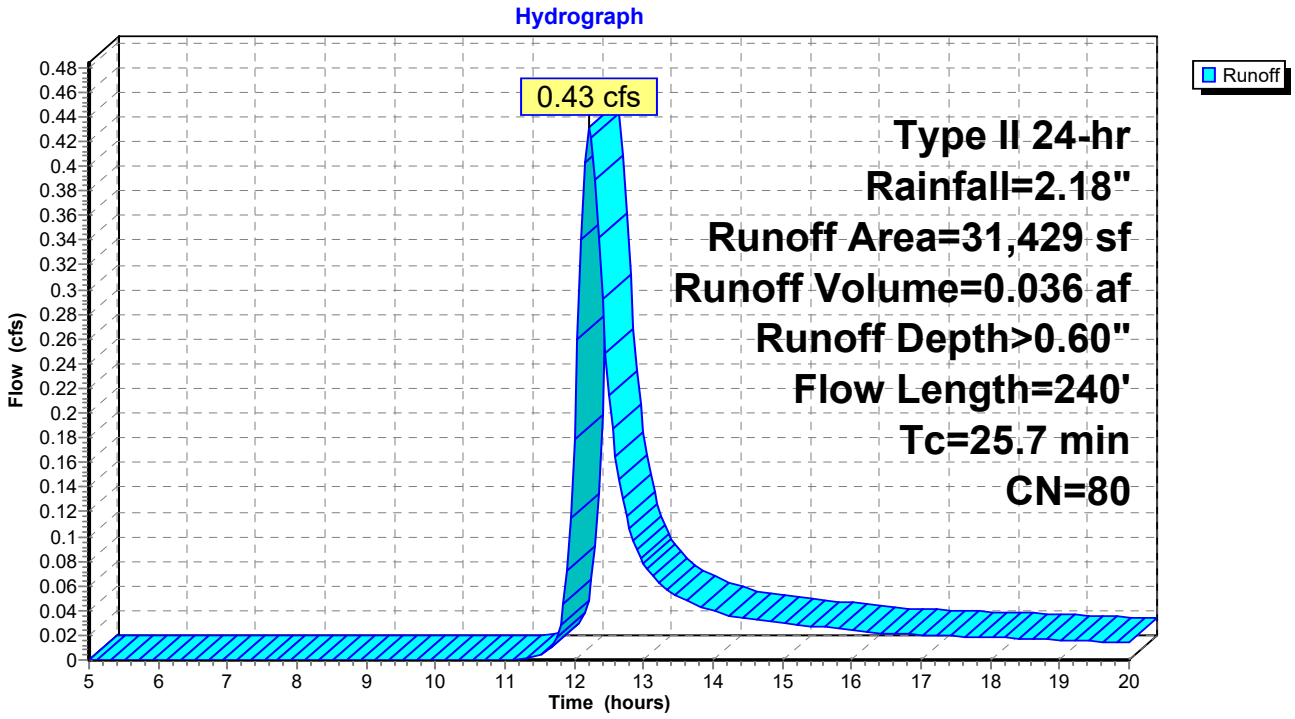
Runoff = 0.43 cfs @ 12.21 hrs, Volume= 0.036 af, Depth> 0.60"
Routed to Pond AB-1 : Attenuation Basin Lot 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=2.18"

Area (sf)	CN	Description
1,850	98	Paved parking, HSG A
8,194	80	>75% Grass cover, Good, HSG D
21,385	79	Woods/grass comb., Good, HSG D
31,429	80	Weighted Average
29,579		94.11% Pervious Area
1,850		5.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.8	100	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
1.9	140	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
25.7	240	Total			

Subcatchment LOT 1 DRIVE: LOT 1 DRIVEWAY



Summary for Subcatchment LOT 2 DRIVE: LOT 2 DRIVEWAY

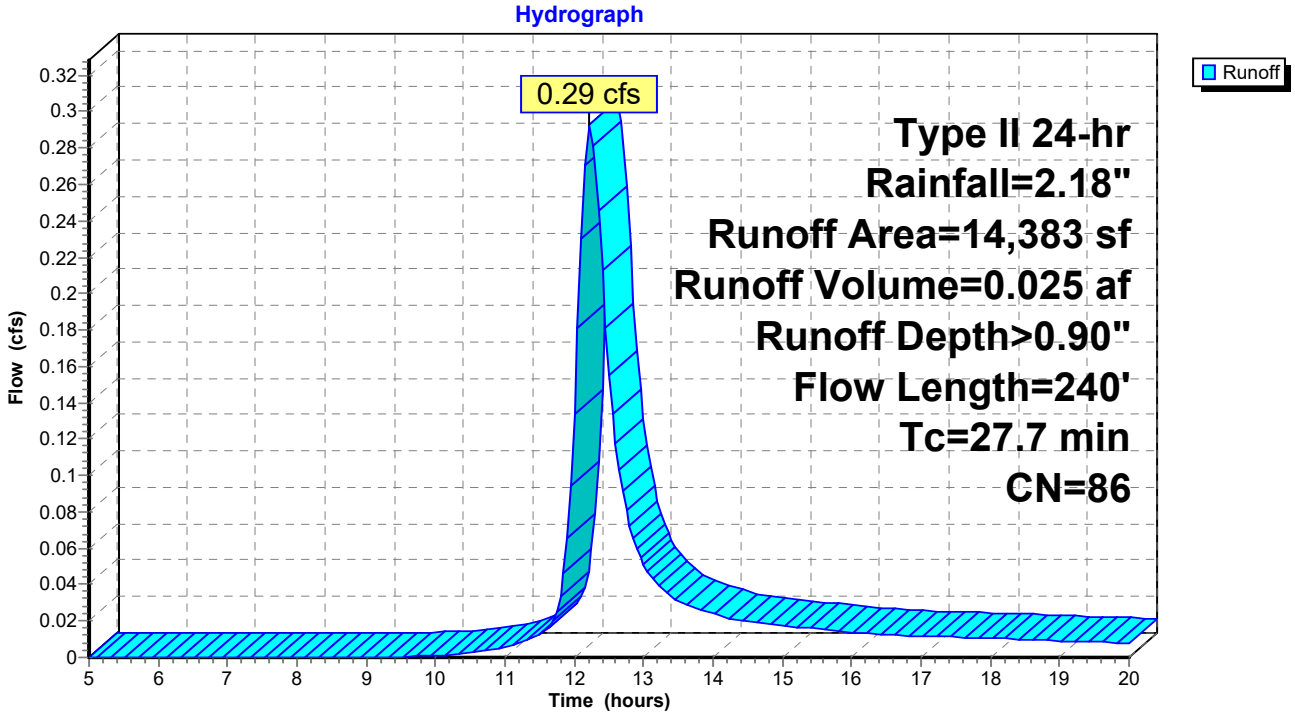
Runoff = 0.29 cfs @ 12.22 hrs, Volume= 0.025 af, Depth> 0.90"
Routed to Pond AB-2 : Attenuation Basin Lot 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=2.18"

Area (sf)	CN	Description
5,000	98	Paved parking, HSG A
9,383	80	>75% Grass cover, Good, HSG D
14,383	86	Weighted Average
9,383		65.24% Pervious Area
5,000		34.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.3	100	0.0150	0.06		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.60"
0.4	140	0.1000	6.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
27.7	240	Total			

Subcatchment LOT 2 DRIVE: LOT 2 DRIVEWAY



Summary for Subcatchment P-B: PROPOSED ANALYSIS B

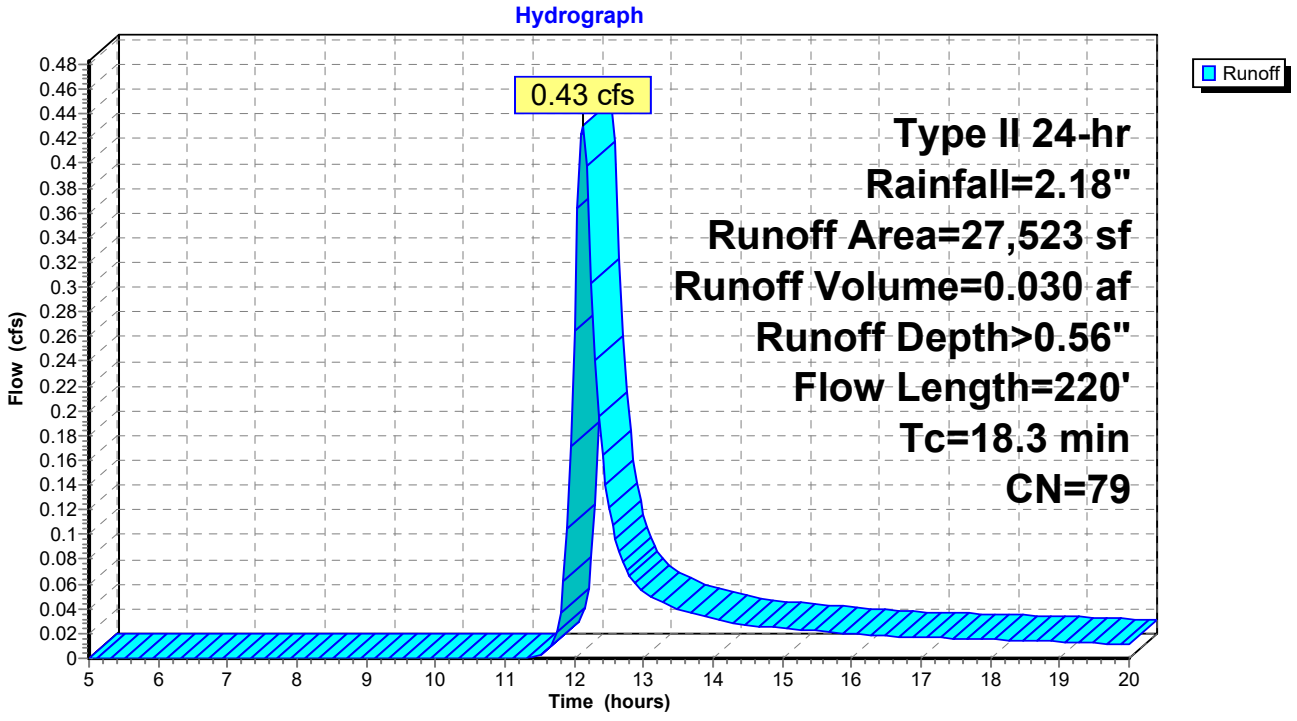
Runoff = 0.43 cfs @ 12.12 hrs, Volume= 0.030 af, Depth> 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=2.18"

Area (sf)	CN	Description
27,523	79	Woods/grass comb., Good, HSG D
27,523		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0500	0.10		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.60"
1.5	120	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.3	220	Total			

Subcatchment P-B: PROPOSED ANALYSIS B



Summary for Subcatchment P-C: PROP ANALYSIS PT C

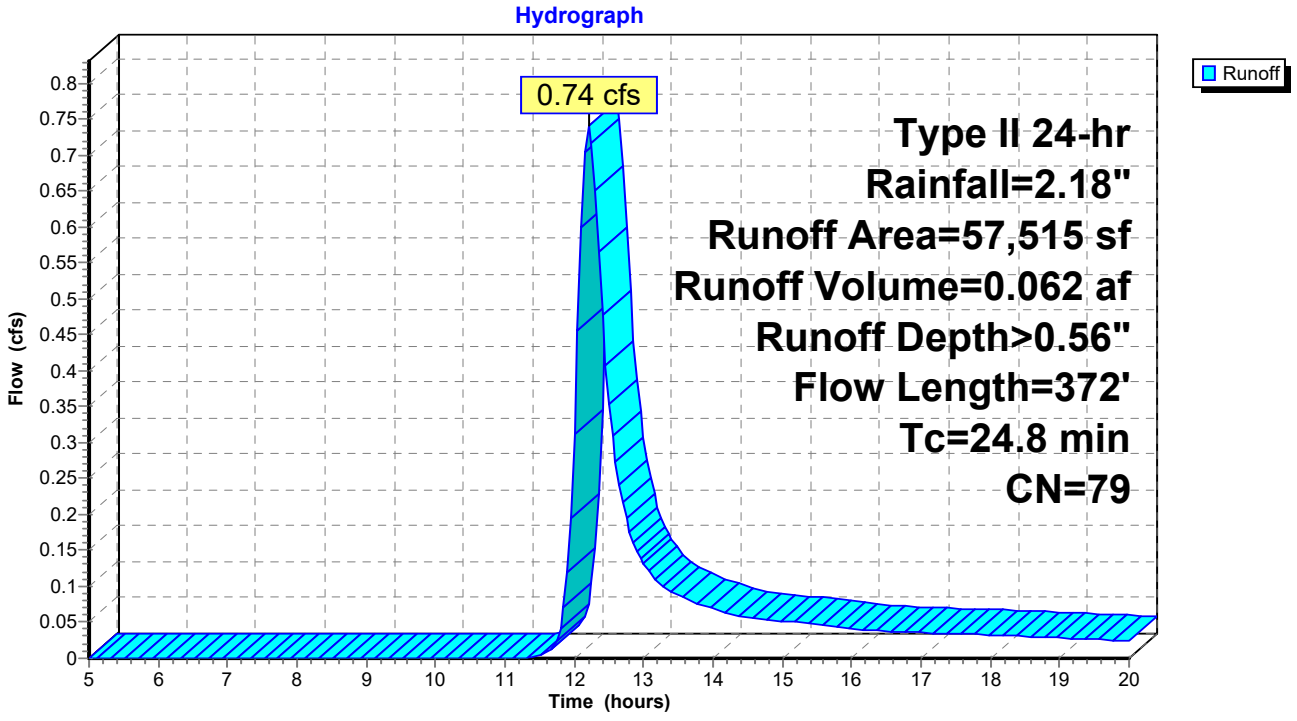
Runoff = 0.74 cfs @ 12.21 hrs, Volume= 0.062 af, Depth> 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=2.18"

Area (sf)	CN	Description
57,515	79	Woods, Fair, HSG D
57,515		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.3	100	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
4.5	272	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.8	372	Total			

Subcatchment P-C: PROP ANALYSIS PT C



Summary for Reach EX Storm: Ex Storm Sewer

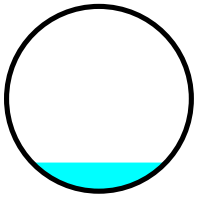
[52] Hint: Inlet/Outlet conditions not evaluated
[65] Warning: Inlet elevation not specified

Inflow Area = 1.267 ac, 29.39% Impervious, Inflow Depth > 0.87"
Inflow = 0.44 cfs @ 12.48 hrs, Volume= 0.092 af
Outflow = 0.44 cfs @ 12.49 hrs, Volume= 0.092 af, Atten= 0%, Lag= 0.5 min

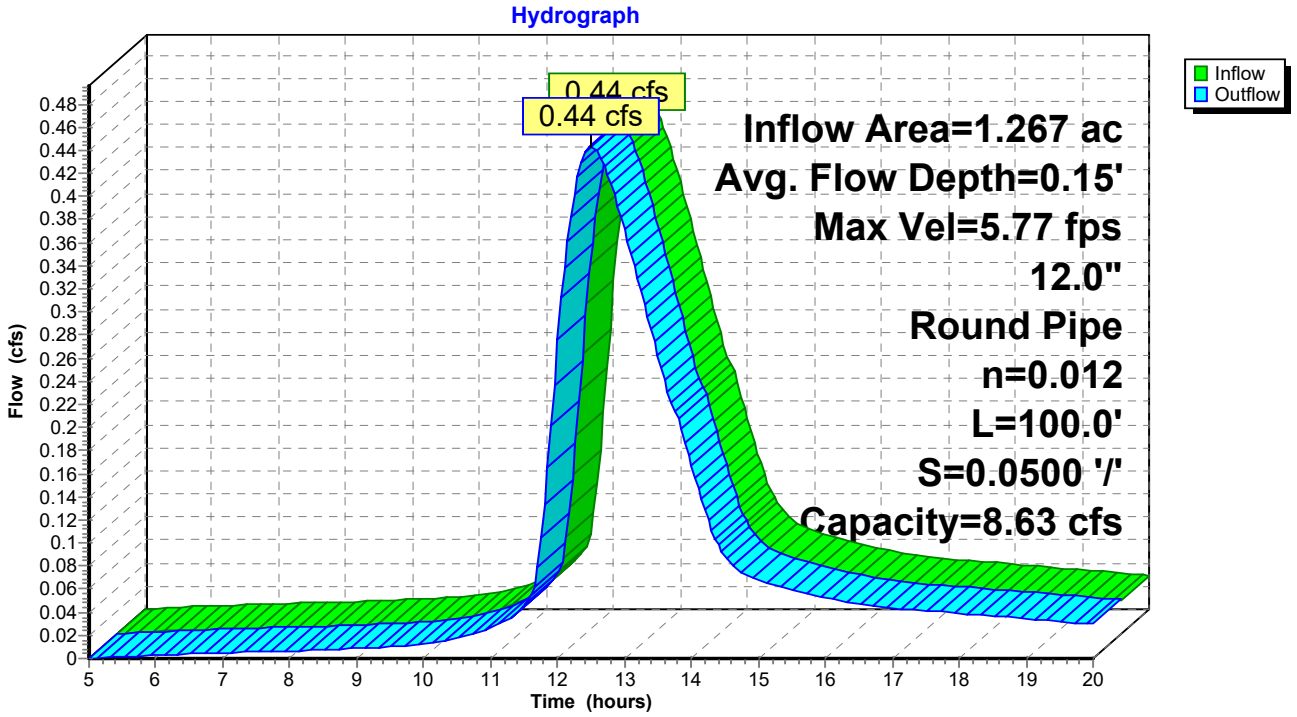
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.77 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.77 fps, Avg. Travel Time= 0.6 min

Peak Storage= 8 cf @ 12.48 hrs
Average Depth at Peak Storage= 0.15' , Surface Width= 0.72'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 8.63 cfs

12.0" Round Pipe
n= 0.012
Length= 100.0' Slope= 0.0500 '/'
Inlet Invert= 0.00', Outlet Invert= -5.00'



Reach EX Storm: Ex Storm Sewer



Summary for Pond AB-1: Attenuation Basin Lot 1

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.829 ac, 18.09% Impervious, Inflow Depth > 0.76"
Inflow = 0.48 cfs @ 12.20 hrs, Volume= 0.052 af
Outflow = 0.26 cfs @ 12.48 hrs, Volume= 0.052 af, Atten= 46%, Lag= 16.6 min
Primary = 0.26 cfs @ 12.48 hrs, Volume= 0.052 af
Routed to Reach EX Storm : Ex Storm Sewer
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach EX Storm : Ex Storm Sewer

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 374.43' @ 12.48 hrs Surf.Area= 1,000 sf Storage= 571 cf

Plug-Flow detention time= 32.0 min calculated for 0.052 af (98% of inflow)
Center-of-Mass det. time= 24.7 min (822.7 - 798.0)

Volume	Invert	Avail.Storage	Storage Description
#1	373.00'	7,300 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 18,250 cf Overall x 40.0% Voids

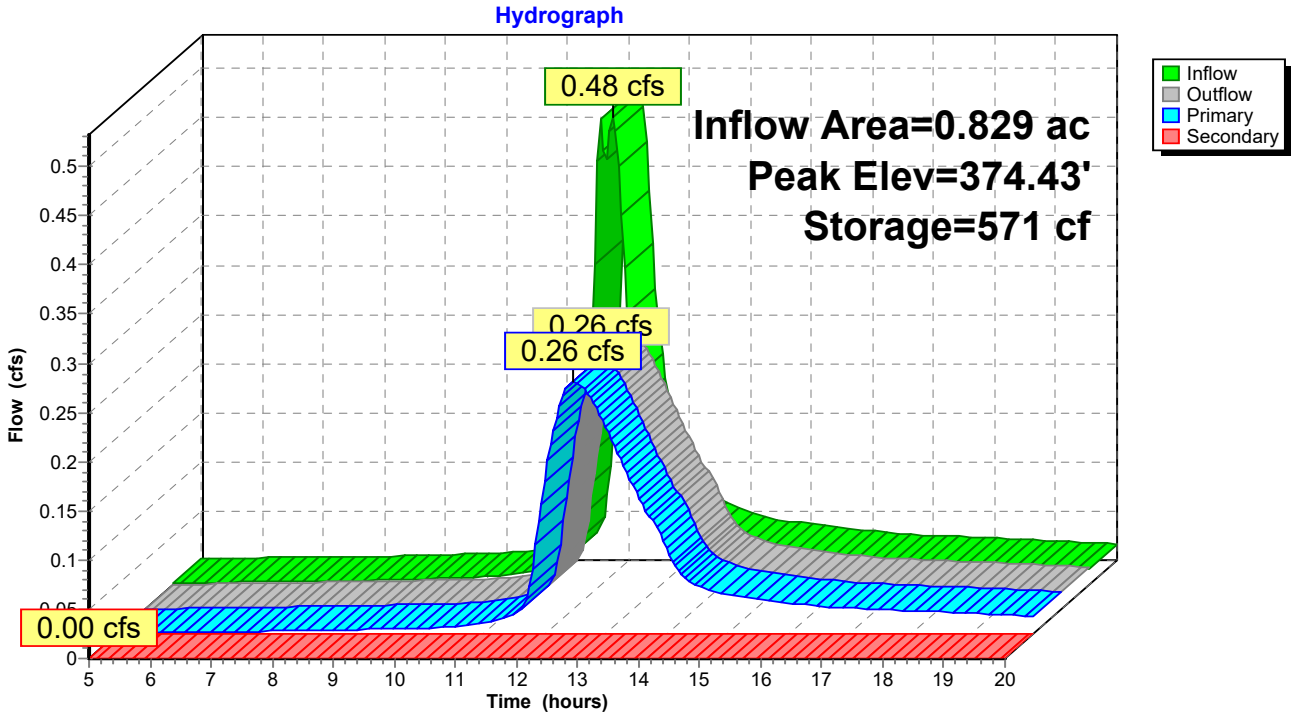
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
373.00	1,000	0	0
374.00	1,000	1,000	1,000
375.00	1,000	1,000	2,000
376.00	1,000	1,000	3,000
377.00	1,000	1,000	4,000
377.50	1,000	500	4,500
380.00	10,000	13,750	18,250

Device	Routing	Invert	Outlet Devices
#1	Primary	373.00'	**3.5" Round Culvert** L= 30.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 373.00' / 372.85' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.07 sf
#2	Secondary	377.50'	**24.0" W x 24.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.26 cfs @ 12.48 hrs HW=374.43' (Free Discharge)
1=Culvert (Barrel Controls 0.26 cfs @ 3.83 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=373.00' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond AB-1: Attenuation Basin Lot 1



Summary for Pond AB-2: Attenuation Basin Lot 2

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.438 ac, 50.79% Impervious, Inflow Depth > 1.12"
Inflow = 0.43 cfs @ 11.99 hrs, Volume= 0.041 af
Outflow = 0.19 cfs @ 12.49 hrs, Volume= 0.040 af, Atten= 57%, Lag= 30.2 min
Primary = 0.19 cfs @ 12.49 hrs, Volume= 0.040 af
Routed to Reach EX Storm : Ex Storm Sewer
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach EX Storm : Ex Storm Sewer

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 372.63' @ 12.49 hrs Surf.Area= 750 sf Storage= 489 cf

Plug-Flow detention time= 34.4 min calculated for 0.040 af (98% of inflow)
Center-of-Mass det. time= 28.2 min (809.3 - 781.0)

Volume	Invert	Avail.Storage	Storage Description
#1	371.00'	2,425 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 6,063 cf Overall x 40.0% Voids

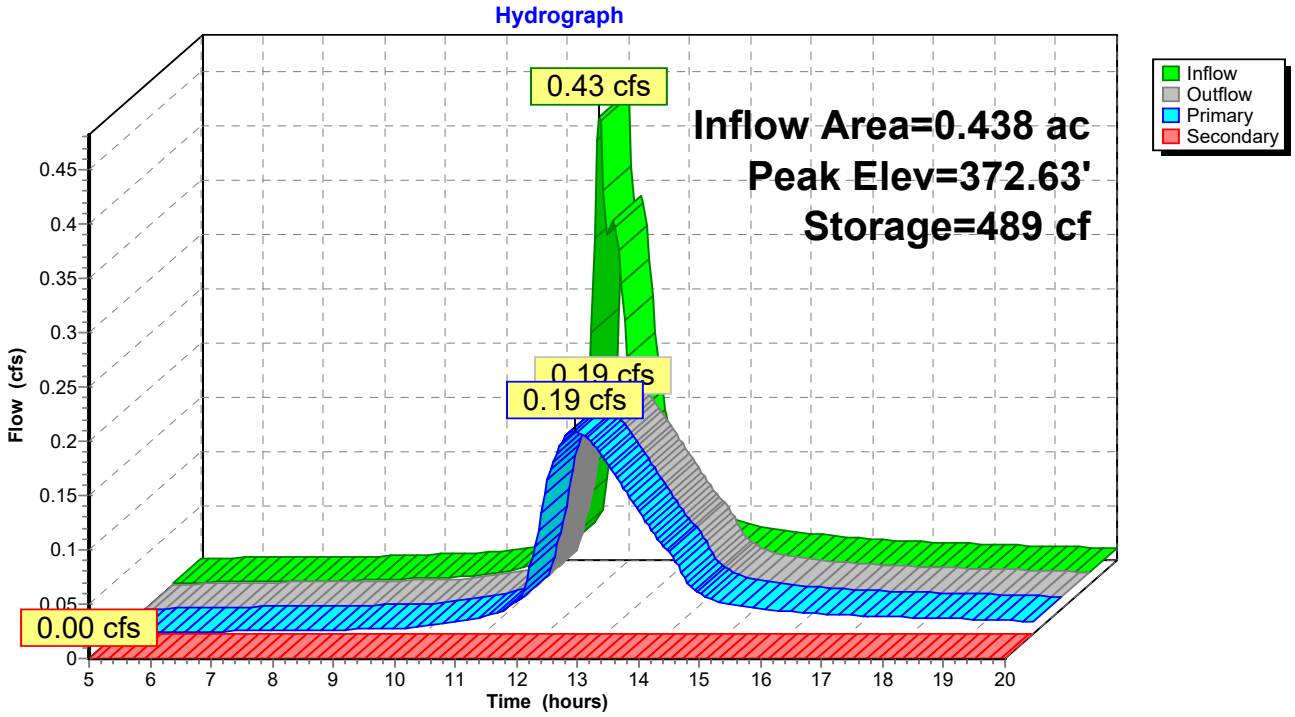
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
371.00	750	0	0
372.00	750	750	750
373.00	750	750	1,500
374.00	750	750	2,250
375.00	750	750	3,000
375.50	750	375	3,375
376.00	10,000	2,688	6,063

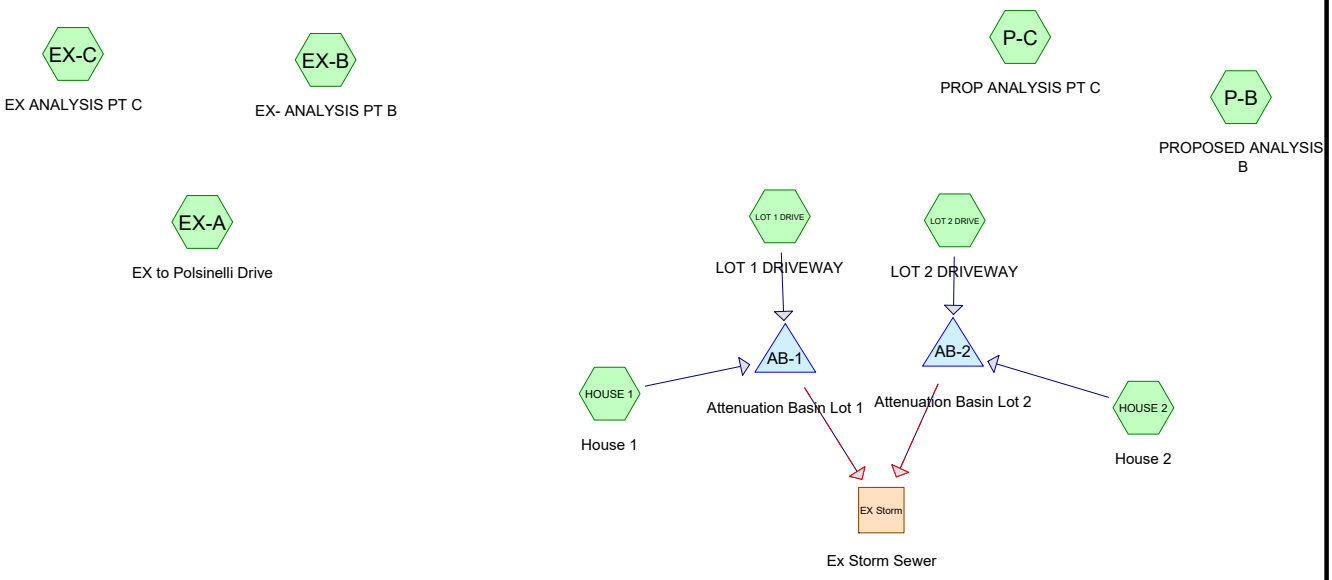
Device	Routing	Invert	Outlet Devices
#1	Primary	371.00'	**3.0" Round Culvert** L= 30.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 371.00' / 370.85' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.05 sf
#2	Secondary	375.50'	**24.0" W x 24.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.19 cfs @ 12.49 hrs HW=372.63' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.19 cfs @ 3.81 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=371.00' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond AB-2: Attenuation Basin Lot 2





Subcat Reach Pond Link

Routing Diagram for Pollsinelli
Prepared by HP, Printed 5/12/2023

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.404	80	>75% Grass cover, Good, HSG D (LOT 1 DRIVE, LOT 2 DRIVE)
0.023	98	Hardscape allowance (HOUSE 1, HOUSE 2)
0.192	98	House Footprint (HOUSE 1, HOUSE 2)
0.157	98	Paved parking, HSG A (LOT 1 DRIVE, LOT 2 DRIVE)
4.539	79	Woods, Fair, HSG D (EX-A, EX-B, EX-C, P-C)
1.123	79	Woods/grass comb., Good, HSG D (LOT 1 DRIVE, P-B)
6.438	**80**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.157	HSG A	LOT 1 DRIVE, LOT 2 DRIVE
0.000	HSG B	
0.000	HSG C	
6.066	HSG D	EX-A, EX-B, EX-C, LOT 1 DRIVE, LOT 2 DRIVE, P-B, P-C
0.215	Other	HOUSE 1, HOUSE 2
6.438		**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	0.404	0.000	0.404	>75% Grass cover, Good	LOT 1 DRIVE, LOT 2 DRIVE
0.000	0.000	0.000	0.000	0.023	0.023	Hardscape allowance	HOUSE 1, HOUSE 2
0.000	0.000	0.000	0.000	0.192	0.192	House Footprint	HOUSE 1, HOUSE 2
0.157	0.000	0.000	0.000	0.000	0.157	Paved parking	LOT 1 DRIVE, LOT 2 DRIVE
0.000	0.000	0.000	4.539	0.000	4.539	Woods, Fair	EX-A, EX-B, EX-C, P-C
0.000	0.000	0.000	1.123	0.000	1.123	Woods/grass comb., Good	LOT 1 DRIVE, P-B
0.157	**0.000**	**0.000**	**6.066**	**0.215**	**6.438**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	EX Storm	0.00	-5.00	100.0	0.0500	0.012	0.0	12.0	0.0
2	AB-1	373.00	372.85	30.0	0.0050	0.012	0.0	3.5	0.0
3	AB-2	371.00	370.85	30.0	0.0050	0.012	0.0	3.0	0.0

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-A: EX to Polsinelli Drive Runoff Area=50,100 sf 0.00% Impervious Runoff Depth>0.79"
Flow Length=300' Tc=26.5 min CN=79 Runoff=0.90 cfs 0.076 af

Subcatchment EX-B: EX- ANALYSIS PT B Runoff Area=30,008 sf 0.00% Impervious Runoff Depth>0.80"
Flow Length=240' Tc=19.9 min CN=79 Runoff=0.65 cfs 0.046 af

Subcatchment EX-C: EX ANALYSIS PT C Runoff Area=60,108 sf 0.00% Impervious Runoff Depth>0.79"
Flow Length=372' Tc=24.8 min CN=79 Runoff=1.13 cfs 0.091 af

Subcatchment HOUSE 1: House 1 Runoff Area=4,683 sf 100.00% Impervious Runoff Depth>2.17"
Tc=6.0 min CN=98 Runoff=0.38 cfs 0.019 af

Subcatchment HOUSE 2: House 2 Runoff Area=4,683 sf 100.00% Impervious Runoff Depth>2.17"
Tc=6.0 min CN=98 Runoff=0.38 cfs 0.019 af

Subcatchment LOT 1 DRIVE: LOT 1 Runoff Area=31,429 sf 5.89% Impervious Runoff Depth>0.84"
Flow Length=240' Tc=25.7 min CN=80 Runoff=0.62 cfs 0.051 af

Subcatchment LOT 2 DRIVE: LOT 2 Runoff Area=14,383 sf 34.76% Impervious Runoff Depth>1.19"
Flow Length=240' Tc=27.7 min CN=86 Runoff=0.39 cfs 0.033 af

Subcatchment P-B: PROPOSED ANALYSIS Runoff Area=27,523 sf 0.00% Impervious Runoff Depth>0.80"
Flow Length=220' Tc=18.3 min CN=79 Runoff=0.63 cfs 0.042 af

Subcatchment P-C: PROP ANALYSIS PT C Runoff Area=57,515 sf 0.00% Impervious Runoff Depth>0.79"
Flow Length=372' Tc=24.8 min CN=79 Runoff=1.08 cfs 0.087 af

Reach EX Storm: Ex Storm Sewer Avg. Flow Depth=0.17' Max Vel=6.12 fps Inflow=0.54 cfs 0.121 af
12.0" Round Pipe n=0.012 L=100.0' S=0.0500 '/' Capacity=8.63 cfs Outflow=0.54 cfs 0.120 af

Pond AB-1: Attenuation Basin Lot 1 Peak Elev=375.13' Storage=851 cf Inflow=0.67 cfs 0.070 af
Primary=0.32 cfs 0.069 af Secondary=0.00 cfs 0.000 af Outflow=0.32 cfs 0.069 af

Pond AB-2: Attenuation Basin Lot 2 Peak Elev=373.23' Storage=669 cf Inflow=0.54 cfs 0.052 af
Primary=0.22 cfs 0.051 af Secondary=0.00 cfs 0.000 af Outflow=0.22 cfs 0.051 af

Total Runoff Area = 6.438 ac Runoff Volume = 0.465 af Average Runoff Depth = 0.87"
94.22% Pervious = 6.066 ac 5.78% Impervious = 0.372 ac

Summary for Subcatchment EX-A: EX to Polsinelli Drive

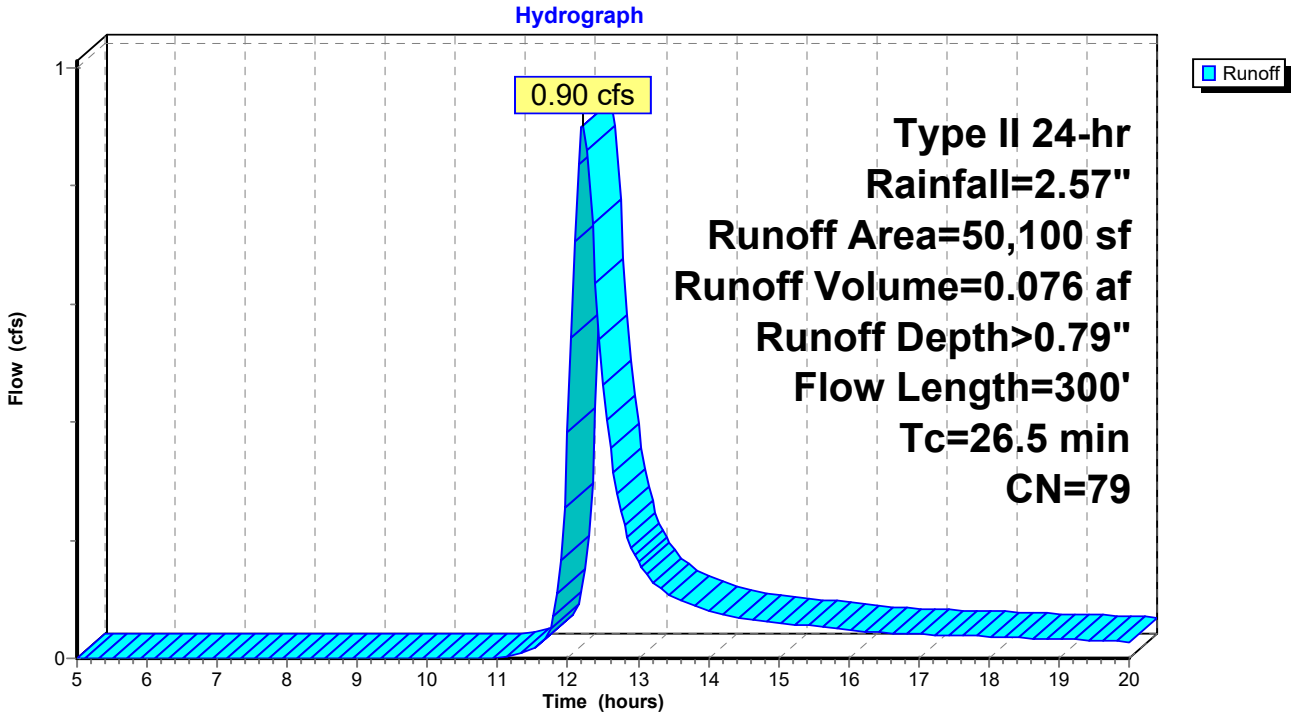
Runoff = 0.90 cfs @ 12.22 hrs, Volume= 0.076 af, Depth> 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=2.57"

Area (sf)	CN	Description
50,100	79	Woods, Fair, HSG D
50,100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.8	100	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
2.7	200	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
26.5	300	Total			

Subcatchment EX-A: EX to Polsinelli Drive



Summary for Subcatchment EX-B: EX- ANALYSIS PT B

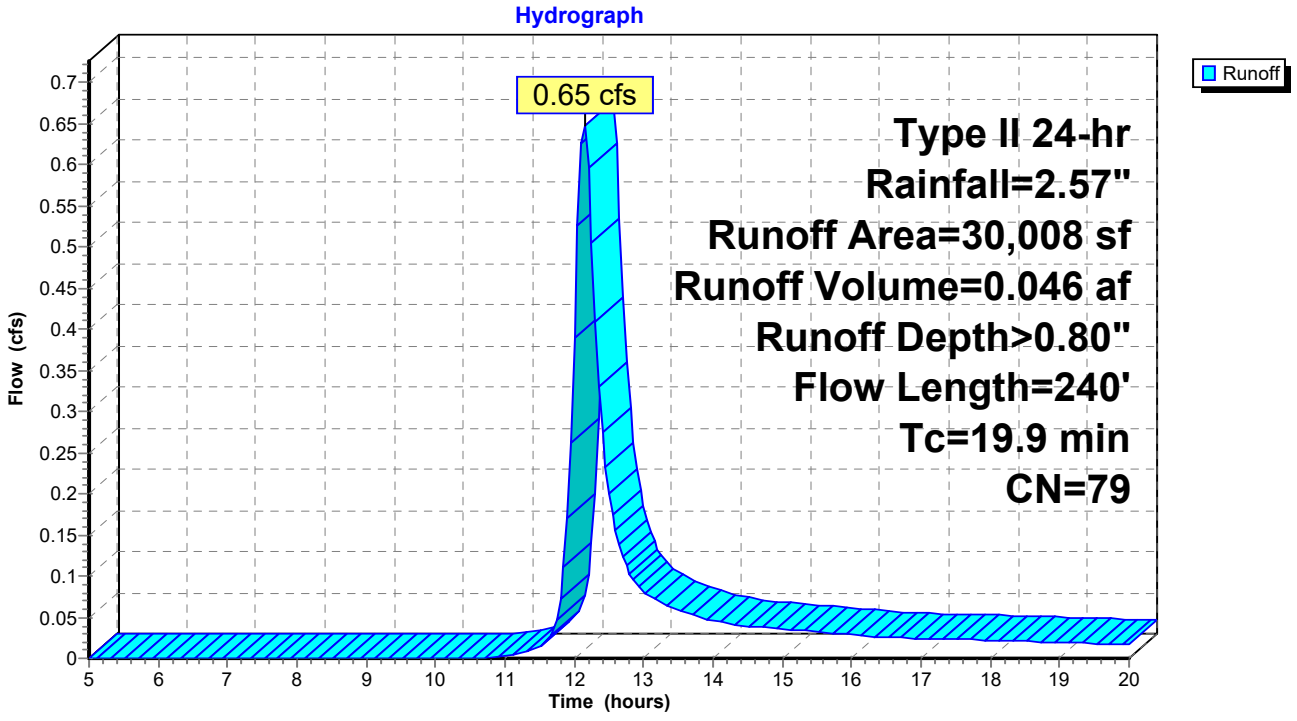
Runoff = 0.65 cfs @ 12.14 hrs, Volume= 0.046 af, Depth> 0.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=2.57"

Area (sf)	CN	Description
30,008	79	Woods, Fair, HSG D
30,008		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	100	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
1.8	140	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.9	240	Total			

Subcatchment EX-B: EX- ANALYSIS PT B



Summary for Subcatchment EX-C: EX ANALYSIS PT C

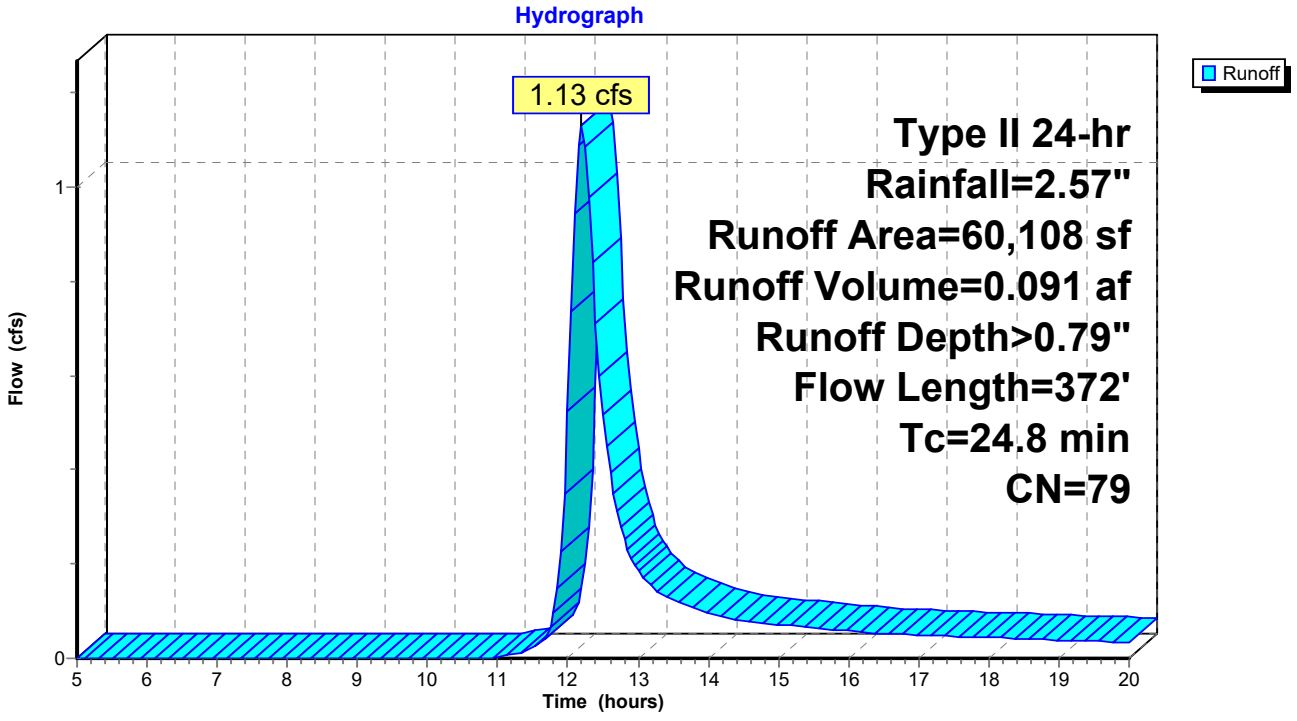
Runoff = 1.13 cfs @ 12.20 hrs, Volume= 0.091 af, Depth> 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=2.57"

Area (sf)	CN	Description
60,108	79	Woods, Fair, HSG D
60,108		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.3	100	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
4.5	272	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.8	372	Total			

Subcatchment EX-C: EX ANALYSIS PT C



Summary for Subcatchment HOUSE 1: House 1

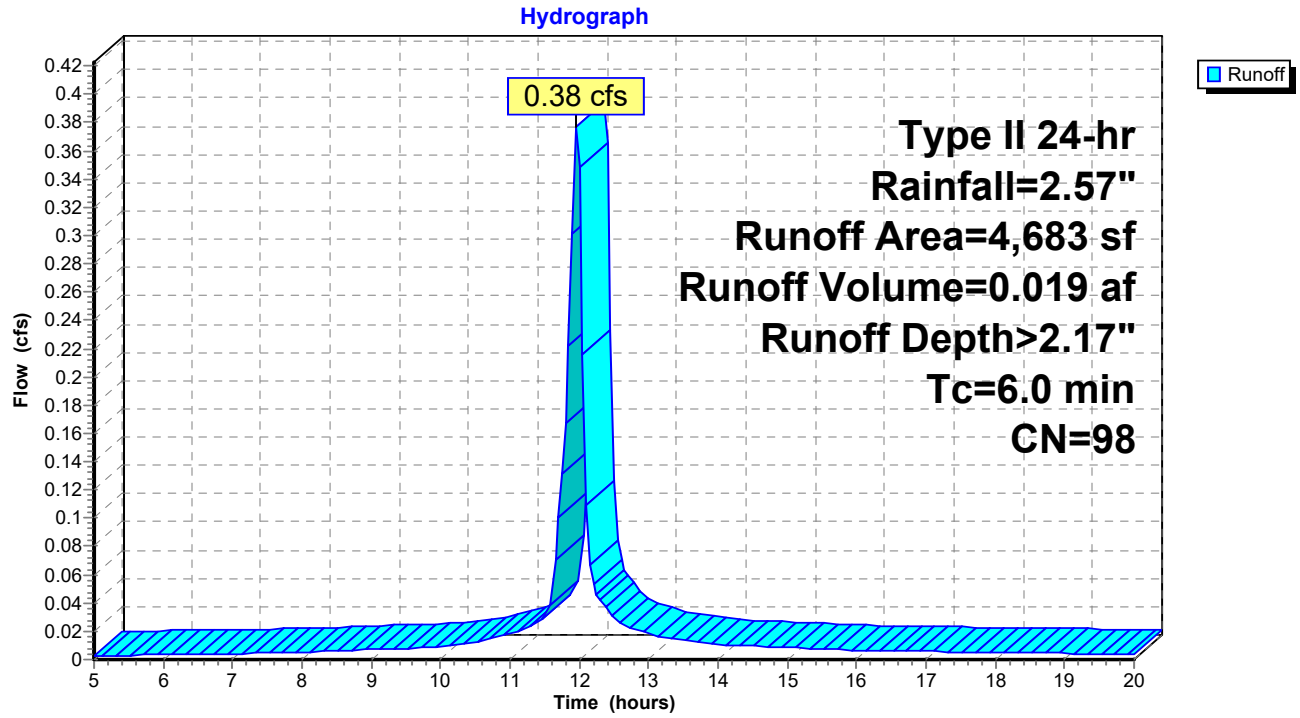
Runoff = 0.38 cfs @ 11.96 hrs, Volume= 0.019 af, Depth> 2.17"
Routed to Pond AB-1 : Attenuation Basin Lot 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=2.57"

	Area (sf)	CN	Description
*	4,183	98	House Footprint
*	500	98	Hardscape allowance
	4,683	98	Weighted Average
	4,683		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min.**

Subcatchment HOUSE 1: House 1



Summary for Subcatchment HOUSE 2: House 2

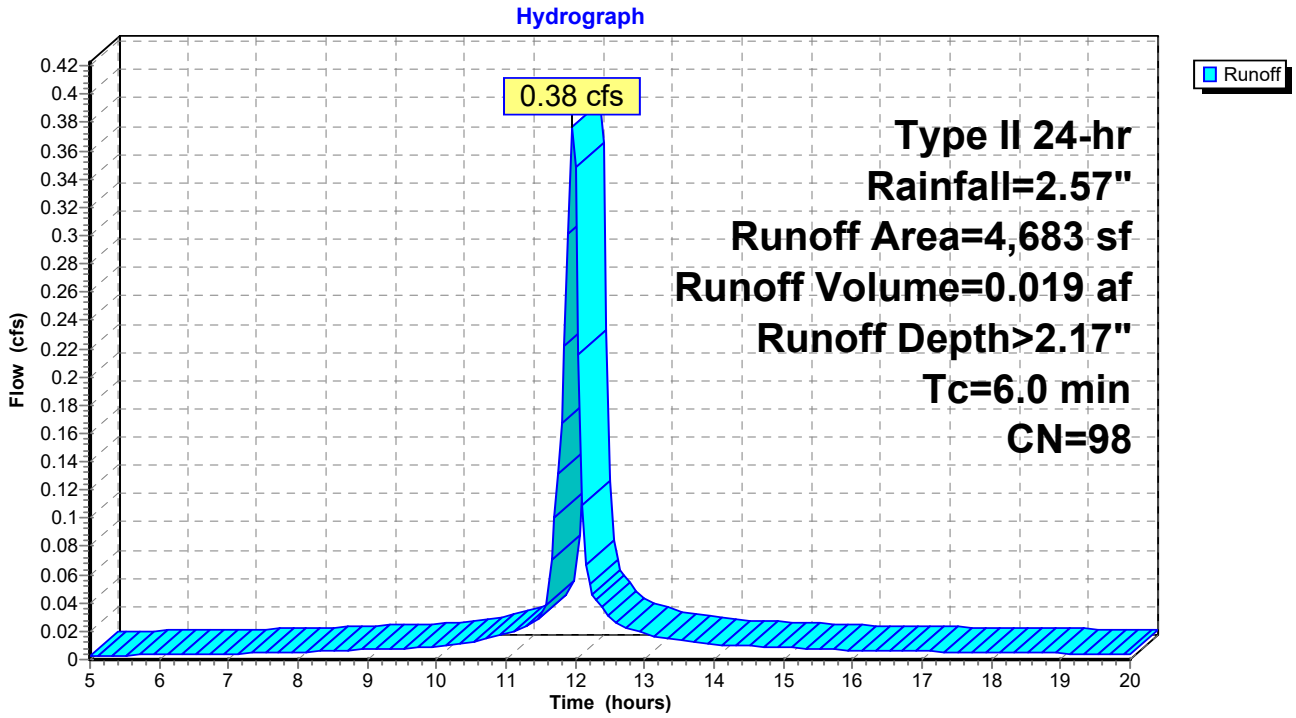
Runoff = 0.38 cfs @ 11.96 hrs, Volume= 0.019 af, Depth> 2.17"
Routed to Pond AB-2 : Attenuation Basin Lot 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=2.57"

	Area (sf)	CN	Description
*	4,183	98	House Footprint
*	500	98	Hardscape allowance
	4,683	98	Weighted Average
	4,683		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min.**

Subcatchment HOUSE 2: House 2



Summary for Subcatchment LOT 1 DRIVE: LOT 1 DRIVEWAY

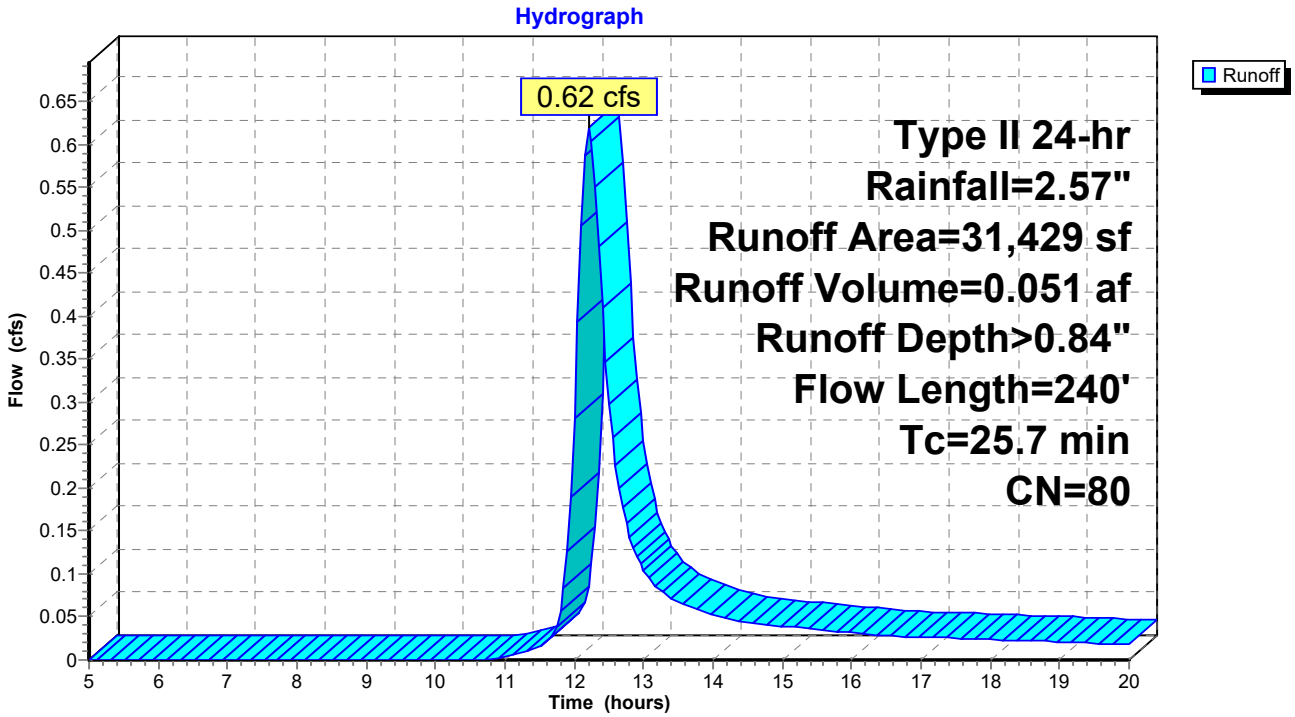
Runoff = 0.62 cfs @ 12.21 hrs, Volume= 0.051 af, Depth> 0.84"
Routed to Pond AB-1 : Attenuation Basin Lot 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=2.57"

Area (sf)	CN	Description
1,850	98	Paved parking, HSG A
8,194	80	>75% Grass cover, Good, HSG D
21,385	79	Woods/grass comb., Good, HSG D
31,429	80	Weighted Average
29,579		94.11% Pervious Area
1,850		5.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.8	100	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
1.9	140	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
25.7	240	Total			

Subcatchment LOT 1 DRIVE: LOT 1 DRIVEWAY



Summary for Subcatchment LOT 2 DRIVE: LOT 2 DRIVEWAY

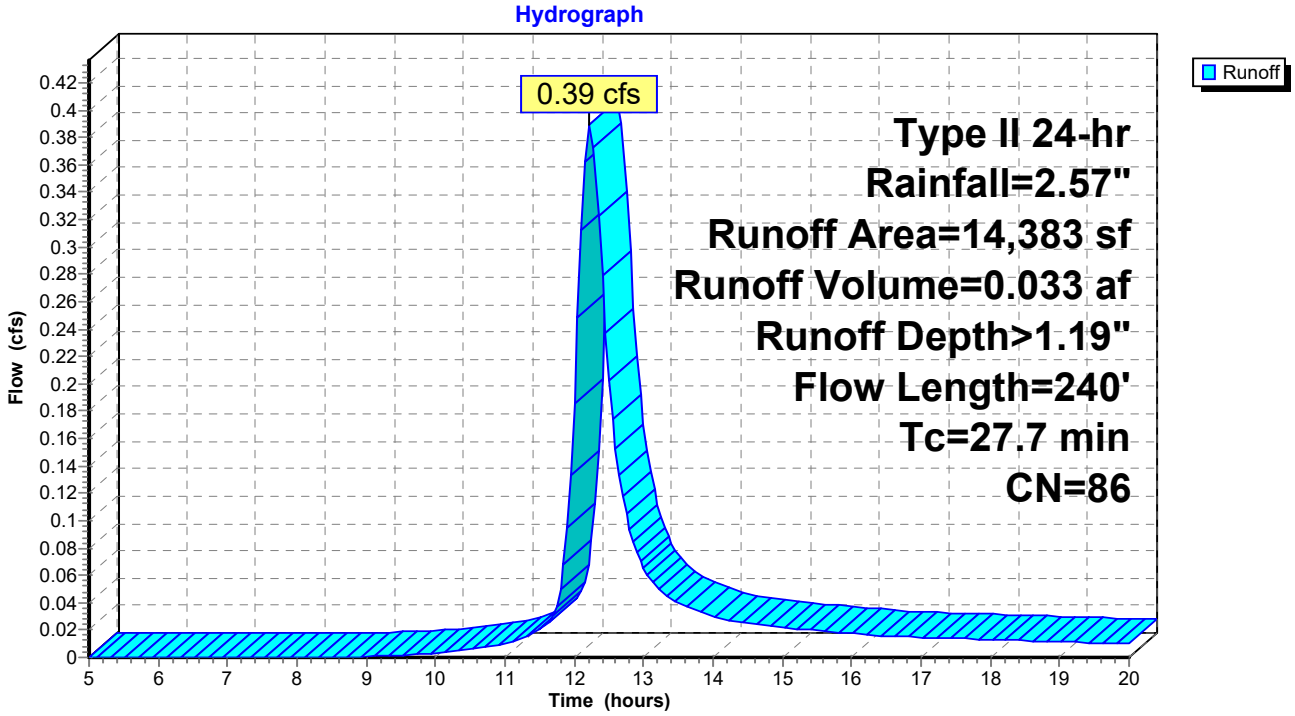
Runoff = 0.39 cfs @ 12.22 hrs, Volume= 0.033 af, Depth> 1.19"
Routed to Pond AB-2 : Attenuation Basin Lot 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=2.57"

Area (sf)	CN	Description
5,000	98	Paved parking, HSG A
9,383	80	>75% Grass cover, Good, HSG D
14,383	86	Weighted Average
9,383		65.24% Pervious Area
5,000		34.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.3	100	0.0150	0.06		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.60"
0.4	140	0.1000	6.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
27.7	240	Total			

Subcatchment LOT 2 DRIVE: LOT 2 DRIVEWAY



Summary for Subcatchment P-B: PROPOSED ANALYSIS B

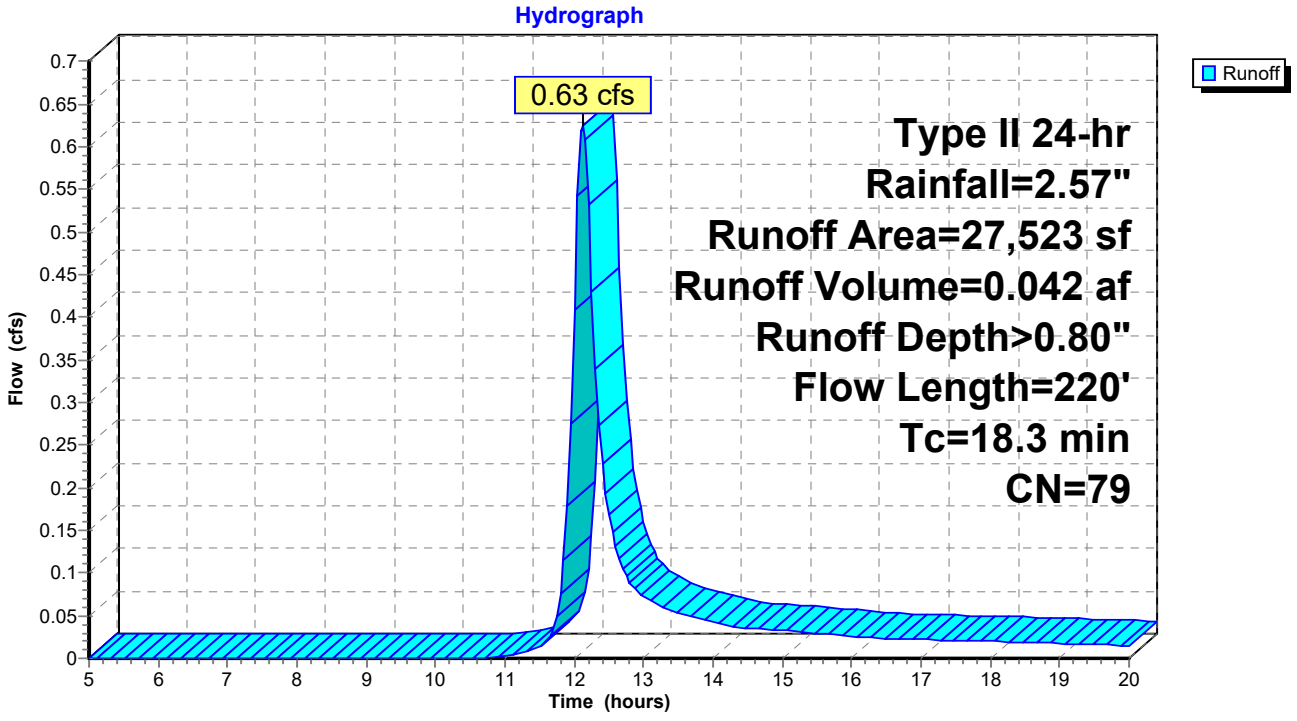
Runoff = 0.63 cfs @ 12.12 hrs, Volume= 0.042 af, Depth> 0.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=2.57"

Area (sf)	CN	Description
27,523	79	Woods/grass comb., Good, HSG D
27,523		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0500	0.10		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.60"
1.5	120	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.3	220	Total			

Subcatchment P-B: PROPOSED ANALYSIS B



Summary for Subcatchment P-C: PROP ANALYSIS PT C

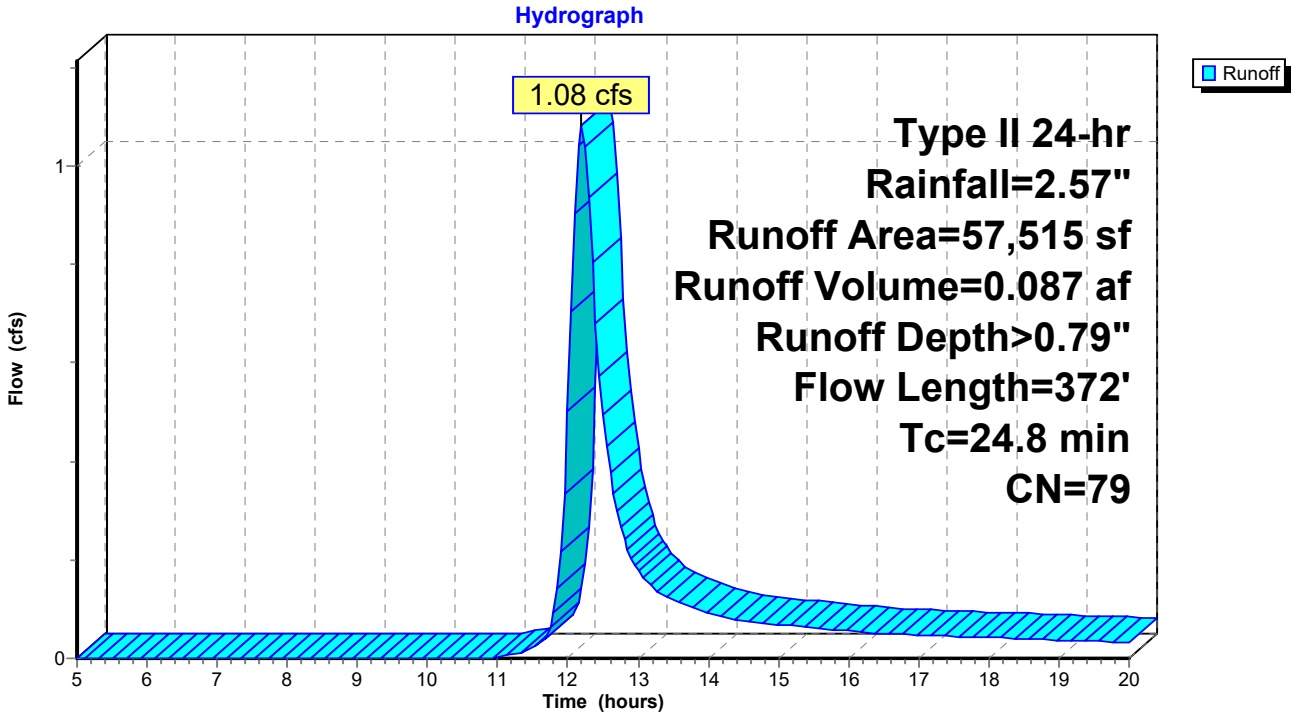
Runoff = 1.08 cfs @ 12.20 hrs, Volume= 0.087 af, Depth> 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=2.57"

Area (sf)	CN	Description
57,515	79	Woods, Fair, HSG D
57,515		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.3	100	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
4.5	272	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.8	372	Total			

Subcatchment P-C: PROP ANALYSIS PT C



Summary for Reach EX Storm: Ex Storm Sewer

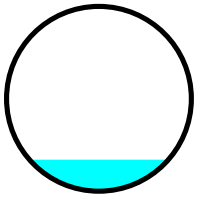
[52] Hint: Inlet/Outlet conditions not evaluated
[65] Warning: Inlet elevation not specified

Inflow Area = 1.267 ac, 29.39% Impervious, Inflow Depth > 1.14"
Inflow = 0.54 cfs @ 12.52 hrs, Volume= 0.121 af
Outflow = 0.54 cfs @ 12.52 hrs, Volume= 0.120 af, Atten= 0%, Lag= 0.4 min

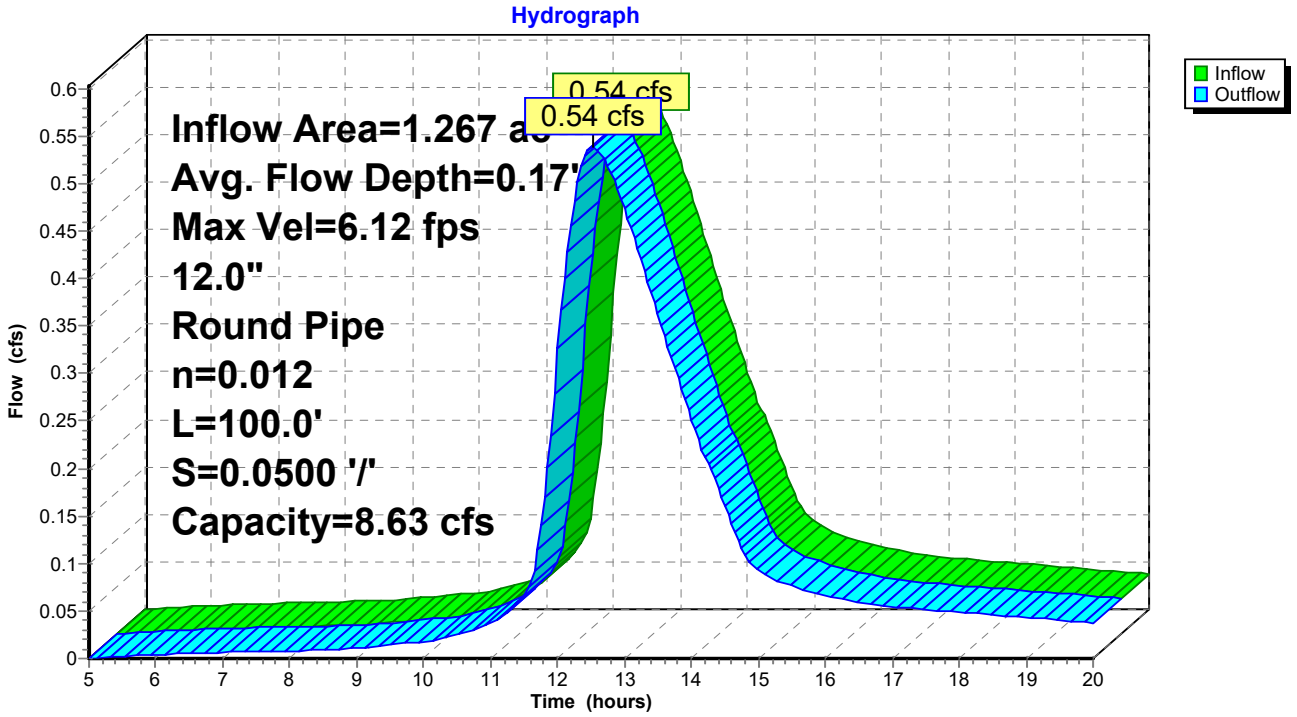
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.12 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 3.01 fps, Avg. Travel Time= 0.6 min

Peak Storage= 9 cf @ 12.52 hrs
Average Depth at Peak Storage= 0.17' , Surface Width= 0.75'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 8.63 cfs

12.0" Round Pipe
n= 0.012
Length= 100.0' Slope= 0.0500 '/'
Inlet Invert= 0.00', Outlet Invert= -5.00'



Reach EX Storm: Ex Storm Sewer



Summary for Pond AB-1: Attenuation Basin Lot 1

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.829 ac, 18.09% Impervious, Inflow Depth > 1.02"
Inflow = 0.67 cfs @ 12.20 hrs, Volume= 0.070 af
Outflow = 0.32 cfs @ 12.51 hrs, Volume= 0.069 af, Atten= 53%, Lag= 19.0 min
Primary = 0.32 cfs @ 12.51 hrs, Volume= 0.069 af
Routed to Reach EX Storm : Ex Storm Sewer
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach EX Storm : Ex Storm Sewer

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 375.13' @ 12.51 hrs Surf.Area= 1,000 sf Storage= 851 cf

Plug-Flow detention time= 34.6 min calculated for 0.069 af (98% of inflow)
Center-of-Mass det. time= 28.2 min (823.5 - 795.3)

Volume	Invert	Avail.Storage	Storage Description
#1	373.00'	7,300 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 18,250 cf Overall x 40.0% Voids

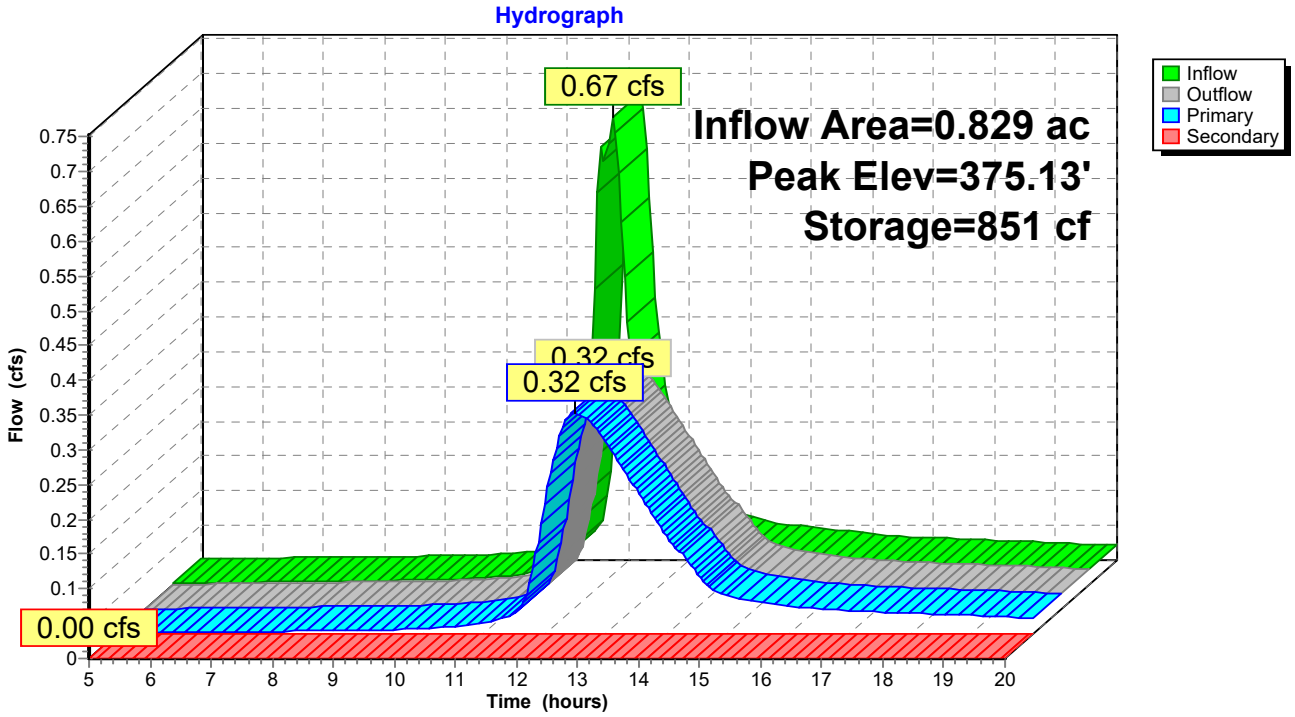
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
373.00	1,000	0	0
374.00	1,000	1,000	1,000
375.00	1,000	1,000	2,000
376.00	1,000	1,000	3,000
377.00	1,000	1,000	4,000
377.50	1,000	500	4,500
380.00	10,000	13,750	18,250

Device	Routing	Invert	Outlet Devices
#1	Primary	373.00'	**3.5" Round Culvert** L= 30.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 373.00' / 372.85' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.07 sf
#2	Secondary	377.50'	**24.0" W x 24.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.32 cfs @ 12.51 hrs HW=375.13' (Free Discharge)
1=Culvert (Barrel Controls 0.32 cfs @ 4.76 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=373.00' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond AB-1: Attenuation Basin Lot 1



Summary for Pond AB-2: Attenuation Basin Lot 2

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.438 ac, 50.79% Impervious, Inflow Depth > 1.43"
Inflow = 0.54 cfs @ 11.99 hrs, Volume= 0.052 af
Outflow = 0.22 cfs @ 12.52 hrs, Volume= 0.051 af, Atten= 59%, Lag= 31.8 min
Primary = 0.22 cfs @ 12.52 hrs, Volume= 0.051 af
Routed to Reach EX Storm : Ex Storm Sewer
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach EX Storm : Ex Storm Sewer

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 373.23' @ 12.52 hrs Surf.Area= 750 sf Storage= 669 cf

Plug-Flow detention time= 37.2 min calculated for 0.051 af (98% of inflow)
Center-of-Mass det. time= 31.7 min (810.1 - 778.4)

Volume	Invert	Avail.Storage	Storage Description
#1	371.00'	2,425 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 6,063 cf Overall x 40.0% Voids

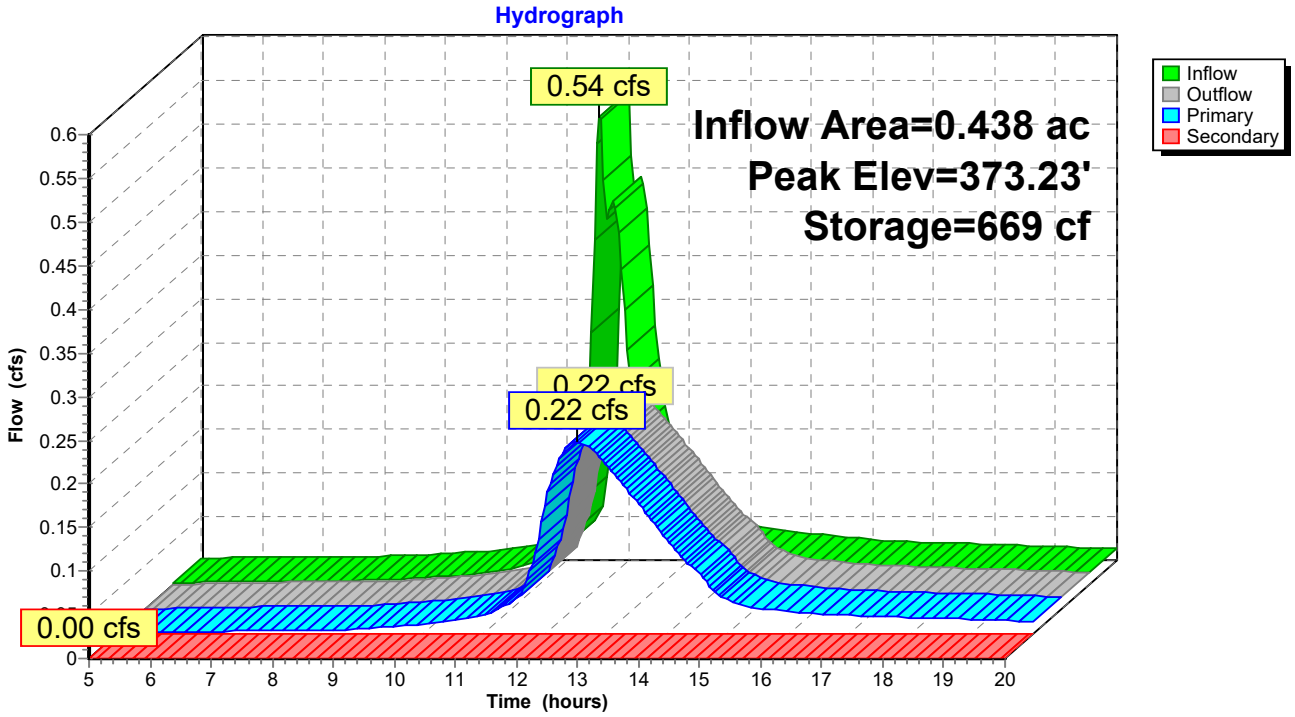
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
371.00	750	0	0
372.00	750	750	750
373.00	750	750	1,500
374.00	750	750	2,250
375.00	750	750	3,000
375.50	750	375	3,375
376.00	10,000	2,688	6,063

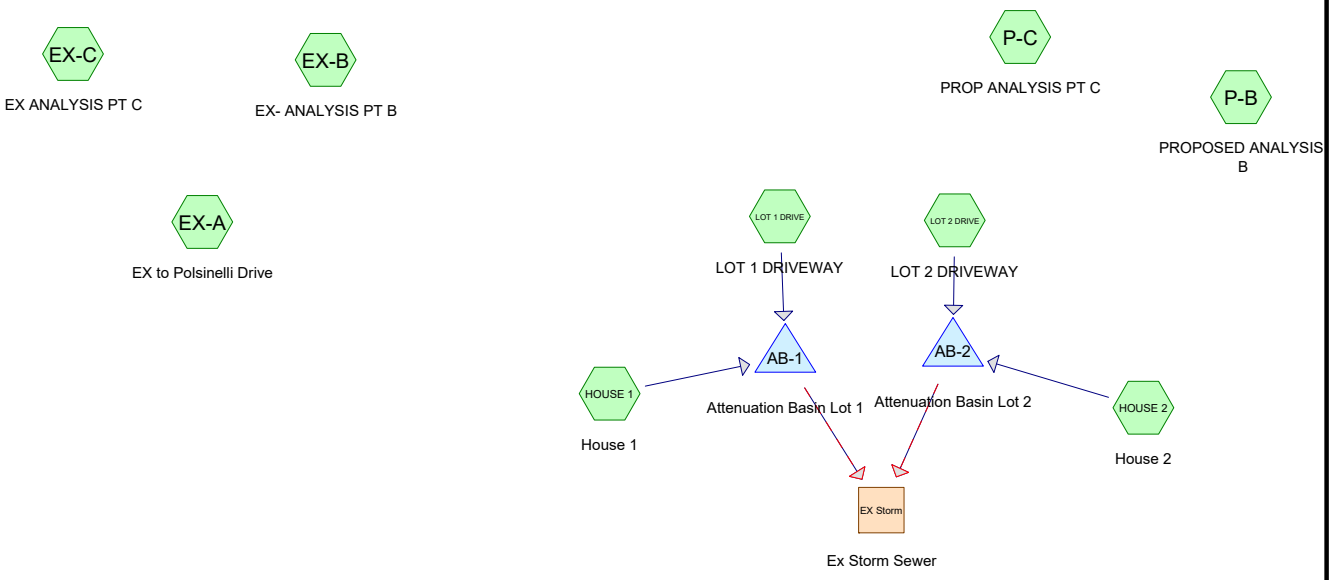
Device	Routing	Invert	Outlet Devices
#1	Primary	371.00'	**3.0" Round Culvert** L= 30.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 371.00' / 370.85' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.05 sf
#2	Secondary	375.50'	**24.0" W x 24.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.22 cfs @ 12.52 hrs HW=373.23' (Free Discharge)
↑**1=Culvert** (Barrel Controls 0.22 cfs @ 4.49 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=371.00' (Free Discharge)
↑**2=Orifice/Grate** (Controls 0.00 cfs)

Pond AB-2: Attenuation Basin Lot 2





Subcat Reach Pond Link

Routing Diagram for Pollsinelli
Prepared by HP, Printed 5/12/2023

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.404	80	>75% Grass cover, Good, HSG D (LOT 1 DRIVE, LOT 2 DRIVE)
0.023	98	Hardscape allowance (HOUSE 1, HOUSE 2)
0.192	98	House Footprint (HOUSE 1, HOUSE 2)
0.157	98	Paved parking, HSG A (LOT 1 DRIVE, LOT 2 DRIVE)
4.539	79	Woods, Fair, HSG D (EX-A, EX-B, EX-C, P-C)
1.123	79	Woods/grass comb., Good, HSG D (LOT 1 DRIVE, P-B)
6.438	**80**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.157	HSG A	LOT 1 DRIVE, LOT 2 DRIVE
0.000	HSG B	
0.000	HSG C	
6.066	HSG D	EX-A, EX-B, EX-C, LOT 1 DRIVE, LOT 2 DRIVE, P-B, P-C
0.215	Other	HOUSE 1, HOUSE 2
6.438		**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	0.404	0.000	0.404	>75% Grass cover, Good	LOT 1 DRIVE, LOT 2 DRIVE
0.000	0.000	0.000	0.000	0.023	0.023	Hardscape allowance	HOUSE 1, HOUSE 2
0.000	0.000	0.000	0.000	0.192	0.192	House Footprint	HOUSE 1, HOUSE 2
0.157	0.000	0.000	0.000	0.000	0.157	Paved parking	LOT 1 DRIVE, LOT 2 DRIVE
0.000	0.000	0.000	4.539	0.000	4.539	Woods, Fair	EX-A, EX-B, EX-C, P-C
0.000	0.000	0.000	1.123	0.000	1.123	Woods/grass comb., Good	LOT 1 DRIVE, P-B
0.157	**0.000**	**0.000**	**6.066**	**0.215**	**6.438**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	EX Storm	0.00	-5.00	100.0	0.0500	0.012	0.0	12.0	0.0
2	AB-1	373.00	372.85	30.0	0.0050	0.012	0.0	3.5	0.0
3	AB-2	371.00	370.85	30.0	0.0050	0.012	0.0	3.0	0.0

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-A: EX to Polsinelli Drive Runoff Area=50,100 sf 0.00% Impervious Runoff Depth>1.53"
Flow Length=300' Tc=26.5 min CN=79 Runoff=1.79 cfs 0.147 af

Subcatchment EX-B: EX- ANALYSIS PT B Runoff Area=30,008 sf 0.00% Impervious Runoff Depth>1.54"
Flow Length=240' Tc=19.9 min CN=79 Runoff=1.28 cfs 0.088 af

Subcatchment EX-C: EX ANALYSIS PT C Runoff Area=60,108 sf 0.00% Impervious Runoff Depth>1.53"
Flow Length=372' Tc=24.8 min CN=79 Runoff=2.24 cfs 0.176 af

Subcatchment HOUSE 1: House 1 Runoff Area=4,683 sf 100.00% Impervious Runoff Depth>3.15"
Tc=6.0 min CN=98 Runoff=0.54 cfs 0.028 af

Subcatchment HOUSE 2: House 2 Runoff Area=4,683 sf 100.00% Impervious Runoff Depth>3.15"
Tc=6.0 min CN=98 Runoff=0.54 cfs 0.028 af

Subcatchment LOT 1 DRIVE: LOT 1 Runoff Area=31,429 sf 5.89% Impervious Runoff Depth>1.60"
Flow Length=240' Tc=25.7 min CN=80 Runoff=1.20 cfs 0.096 af

Subcatchment LOT 2 DRIVE: LOT 2 Runoff Area=14,383 sf 34.76% Impervious Runoff Depth>2.06"
Flow Length=240' Tc=27.7 min CN=86 Runoff=0.67 cfs 0.057 af

Subcatchment P-B: PROPOSED ANALYSIS Runoff Area=27,523 sf 0.00% Impervious Runoff Depth>1.54"
Flow Length=220' Tc=18.3 min CN=79 Runoff=1.23 cfs 0.081 af

Subcatchment P-C: PROP ANALYSIS PT C Runoff Area=57,515 sf 0.00% Impervious Runoff Depth>1.53"
Flow Length=372' Tc=24.8 min CN=79 Runoff=2.14 cfs 0.169 af

Reach EX Storm: Ex Storm Sewer Avg. Flow Depth=0.20' Max Vel=6.81 fps Inflow=0.77 cfs 0.207 af
12.0" Round Pipe n=0.012 L=100.0' S=0.0500 '/' Capacity=8.63 cfs Outflow=0.77 cfs 0.207 af

Pond AB-1: Attenuation Basin Lot 1 Peak Elev=377.49' Storage=1,798 cf Inflow=1.28 cfs 0.125 af
Primary=0.47 cfs 0.123 af Secondary=0.00 cfs 0.000 af Outflow=0.47 cfs 0.123 af

Pond AB-2: Attenuation Basin Lot 2 Peak Elev=375.11' Storage=1,233 cf Inflow=0.84 cfs 0.085 af
Primary=0.30 cfs 0.084 af Secondary=0.00 cfs 0.000 af Outflow=0.30 cfs 0.084 af

Total Runoff Area = 6.438 ac Runoff Volume = 0.870 af Average Runoff Depth = 1.62"
94.22% Pervious = 6.066 ac 5.78% Impervious = 0.372 ac

Summary for Subcatchment EX-A: EX to Polsinelli Drive

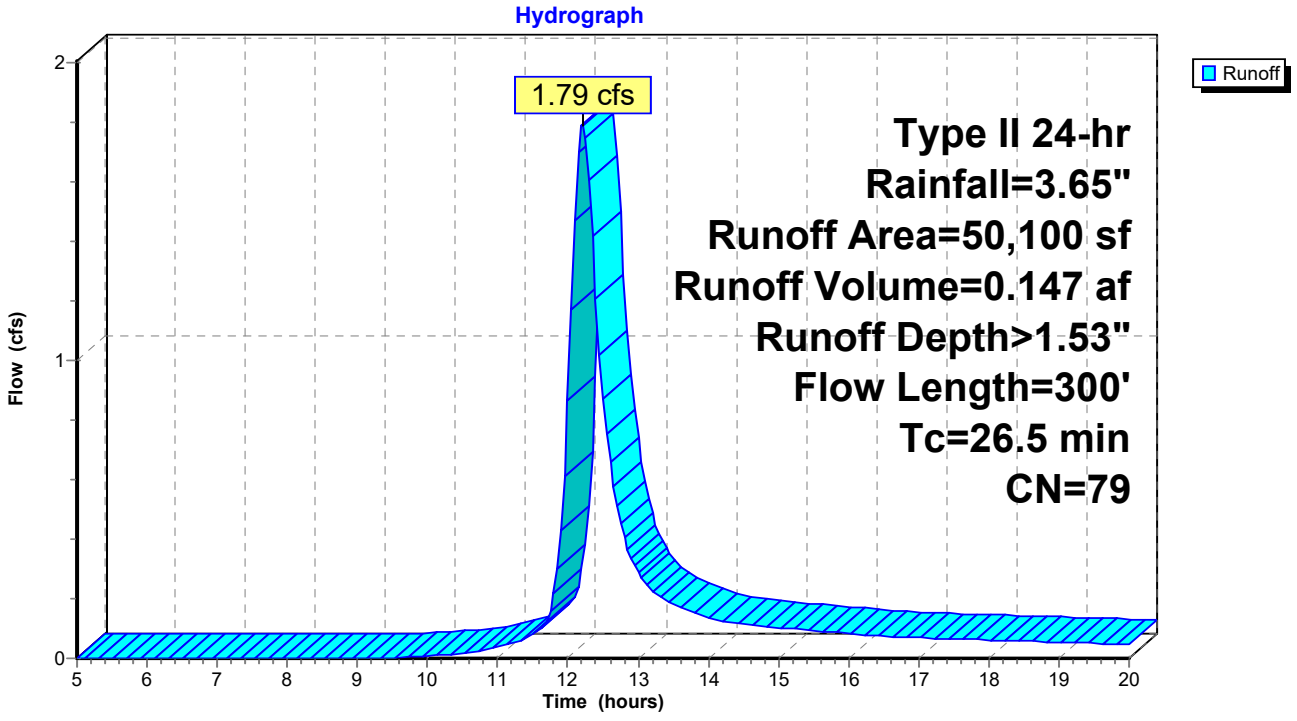
Runoff = 1.79 cfs @ 12.21 hrs, Volume= 0.147 af, Depth> 1.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=3.65"

Area (sf)	CN	Description
50,100	79	Woods, Fair, HSG D
50,100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.8	100	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
2.7	200	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
26.5	300	Total			

Subcatchment EX-A: EX to Polsinelli Drive



Summary for Subcatchment EX-B: EX- ANALYSIS PT B

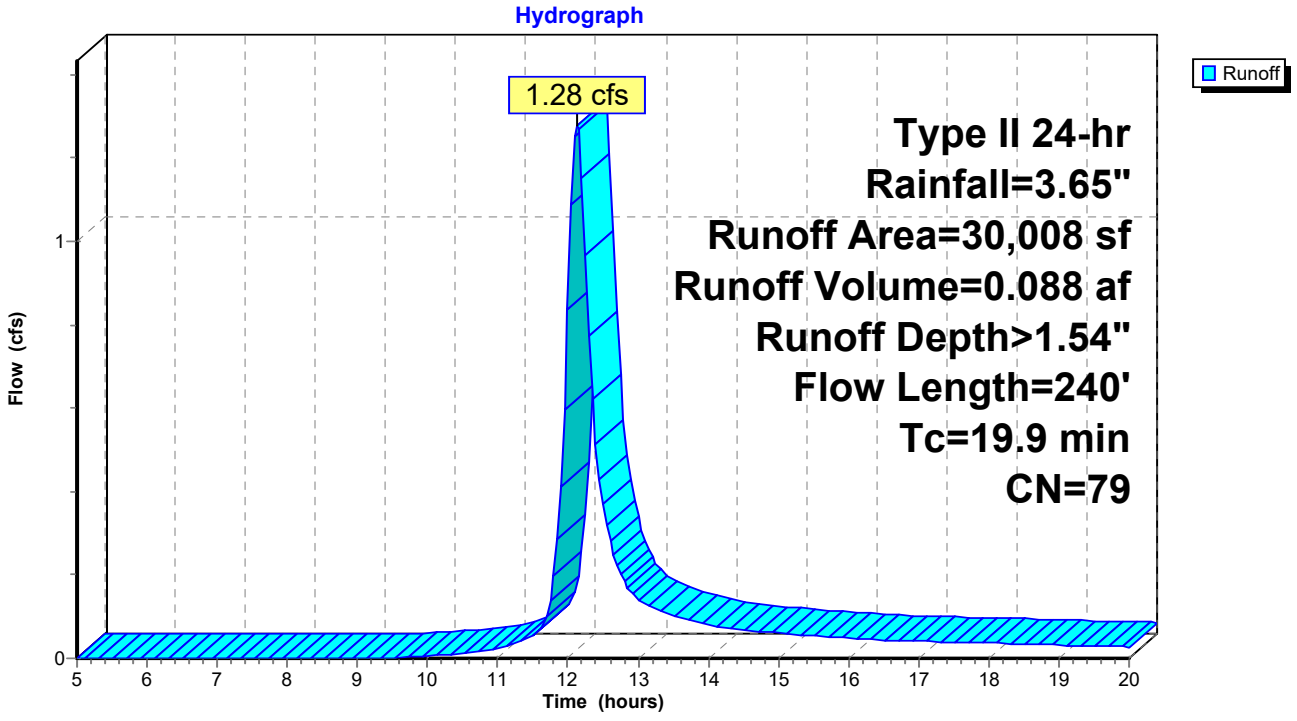
Runoff = 1.28 cfs @ 12.13 hrs, Volume= 0.088 af, Depth> 1.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=3.65"

Area (sf)	CN	Description
30,008	79	Woods, Fair, HSG D
30,008		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	100	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
1.8	140	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.9	240	Total			

Subcatchment EX-B: EX- ANALYSIS PT B



Summary for Subcatchment EX-C: EX ANALYSIS PT C

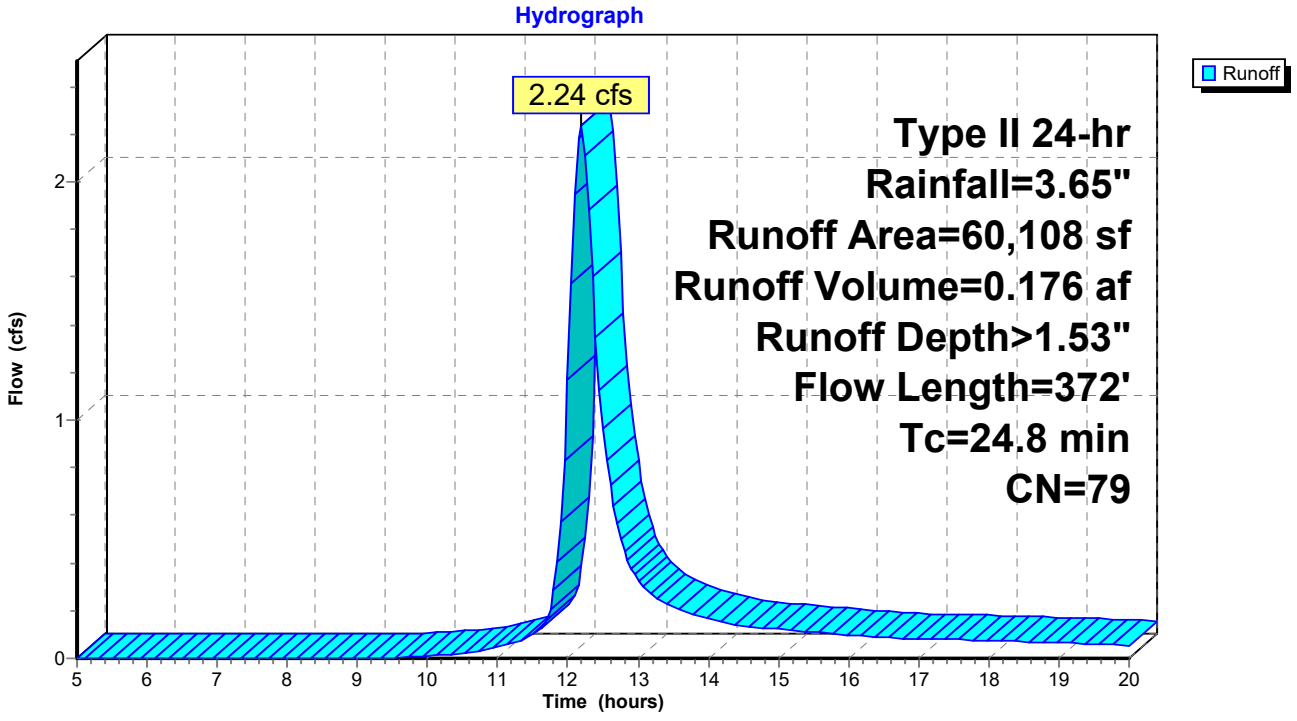
Runoff = 2.24 cfs @ 12.19 hrs, Volume= 0.176 af, Depth> 1.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=3.65"

Area (sf)	CN	Description
60,108	79	Woods, Fair, HSG D
60,108		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.3	100	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
4.5	272	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.8	372	Total			

Subcatchment EX-C: EX ANALYSIS PT C



Summary for Subcatchment HOUSE 1: House 1

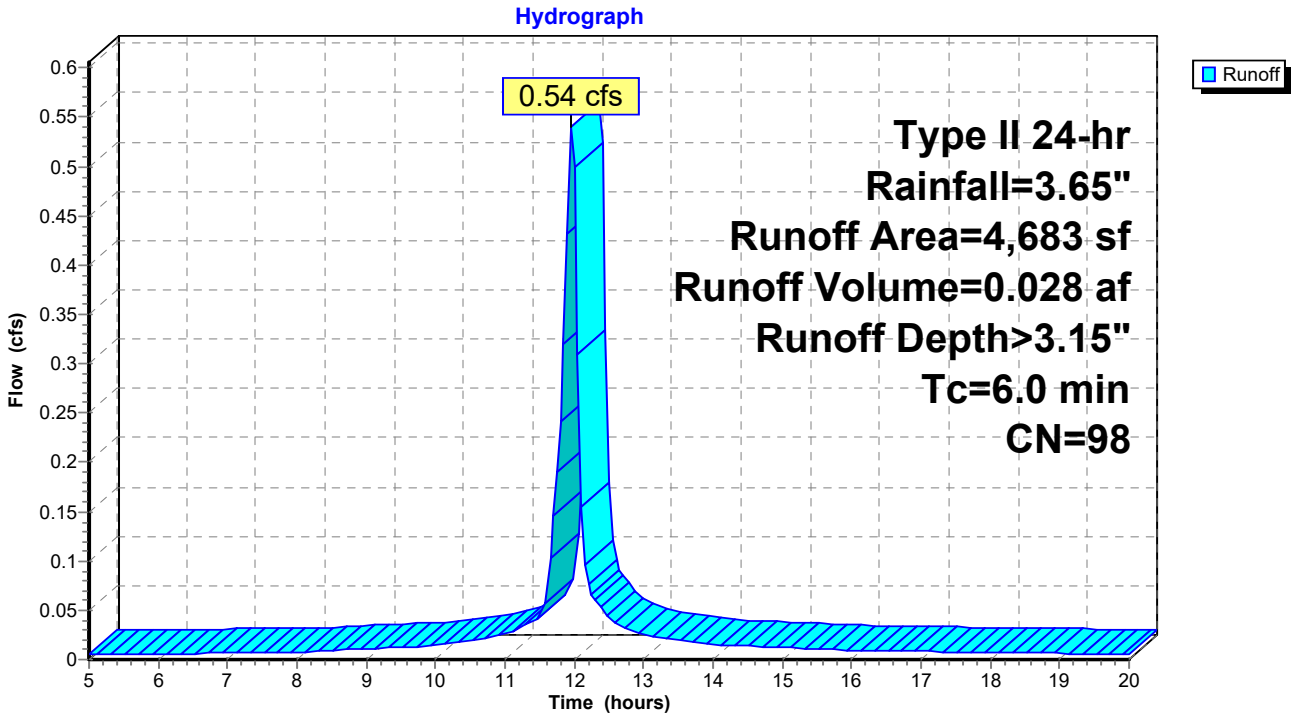
Runoff = 0.54 cfs @ 11.96 hrs, Volume= 0.028 af, Depth> 3.15"
Routed to Pond AB-1 : Attenuation Basin Lot 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=3.65"

	Area (sf)	CN	Description
*	4,183	98	House Footprint
*	500	98	Hardscape allowance
	4,683	98	Weighted Average
	4,683		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min.**

Subcatchment HOUSE 1: House 1



Summary for Subcatchment HOUSE 2: House 2

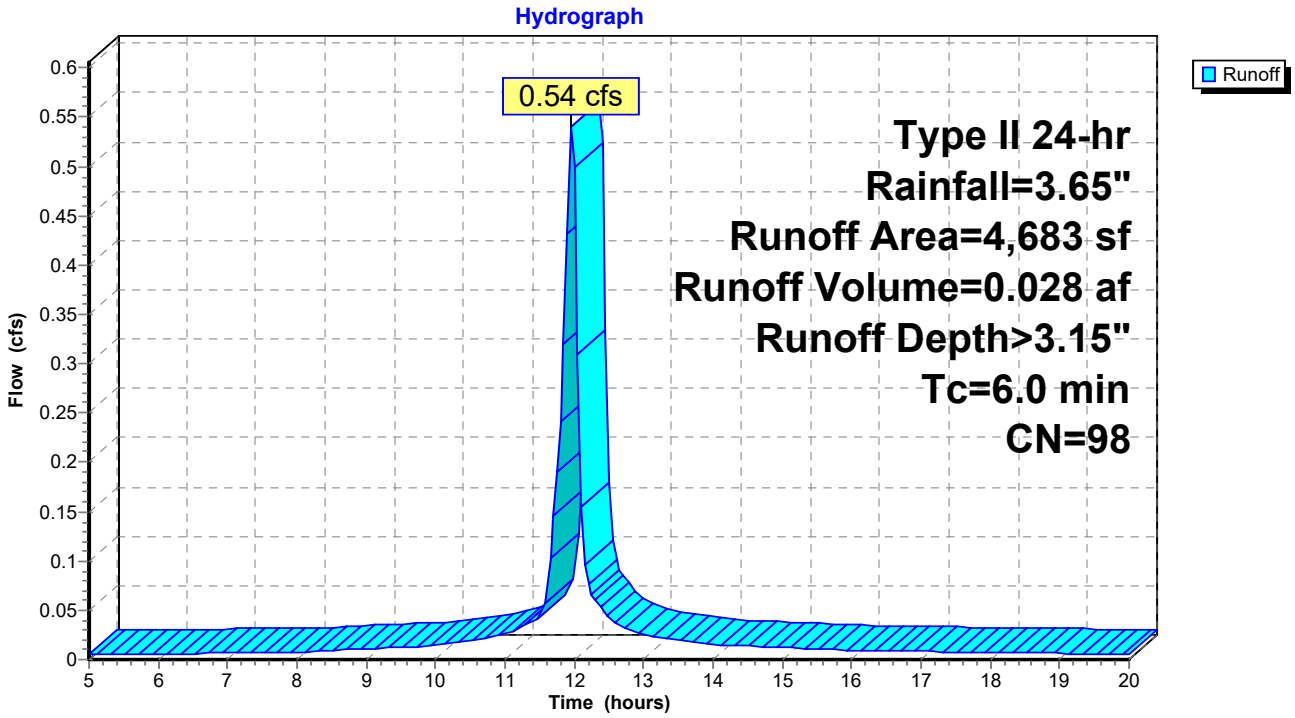
Runoff = 0.54 cfs @ 11.96 hrs, Volume= 0.028 af, Depth> 3.15"
Routed to Pond AB-2 : Attenuation Basin Lot 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=3.65"

	Area (sf)	CN	Description
*	4,183	98	House Footprint
*	500	98	Hardscape allowance
	4,683	98	Weighted Average
	4,683		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min.**

Subcatchment HOUSE 2: House 2



Summary for Subcatchment LOT 1 DRIVE: LOT 1 DRIVEWAY

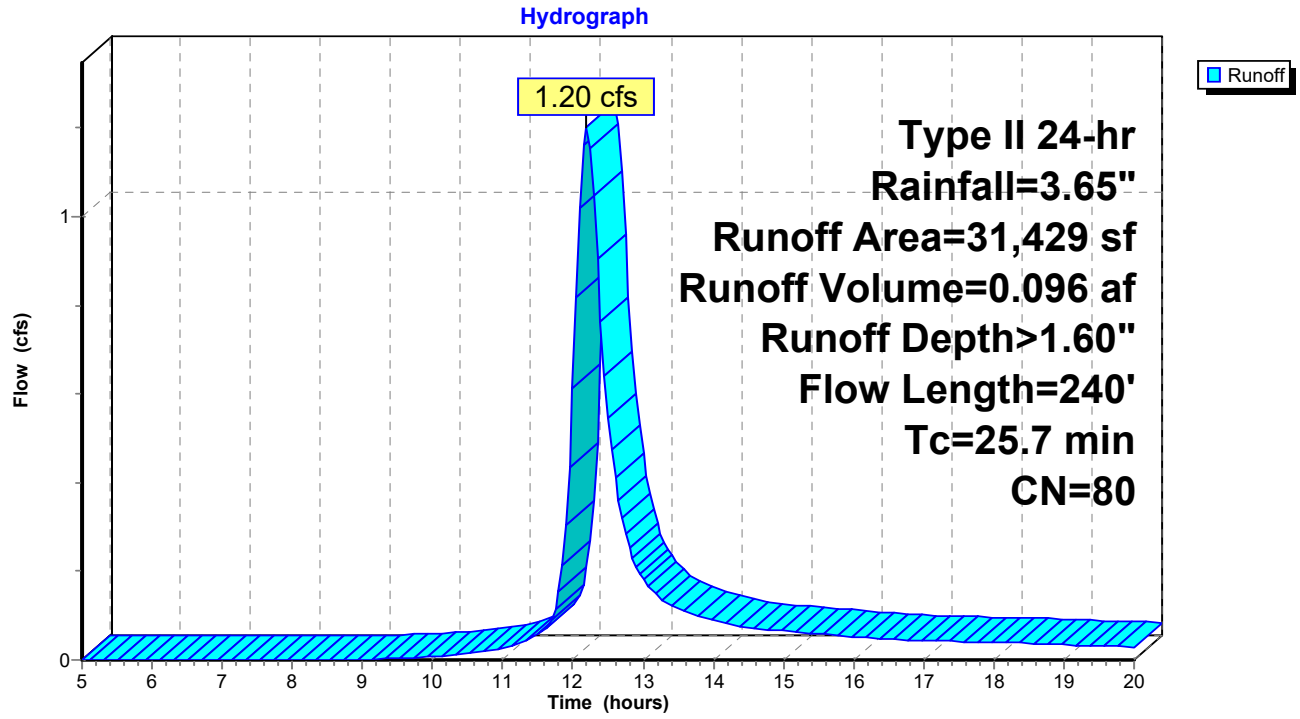
Runoff = 1.20 cfs @ 12.20 hrs, Volume= 0.096 af, Depth> 1.60"
Routed to Pond AB-1 : Attenuation Basin Lot 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=3.65"

Area (sf)	CN	Description
1,850	98	Paved parking, HSG A
8,194	80	>75% Grass cover, Good, HSG D
21,385	79	Woods/grass comb., Good, HSG D
31,429	80	Weighted Average
29,579		94.11% Pervious Area
1,850		5.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.8	100	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
1.9	140	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
25.7	240	Total			

Subcatchment LOT 1 DRIVE: LOT 1 DRIVEWAY



Summary for Subcatchment LOT 2 DRIVE: LOT 2 DRIVEWAY

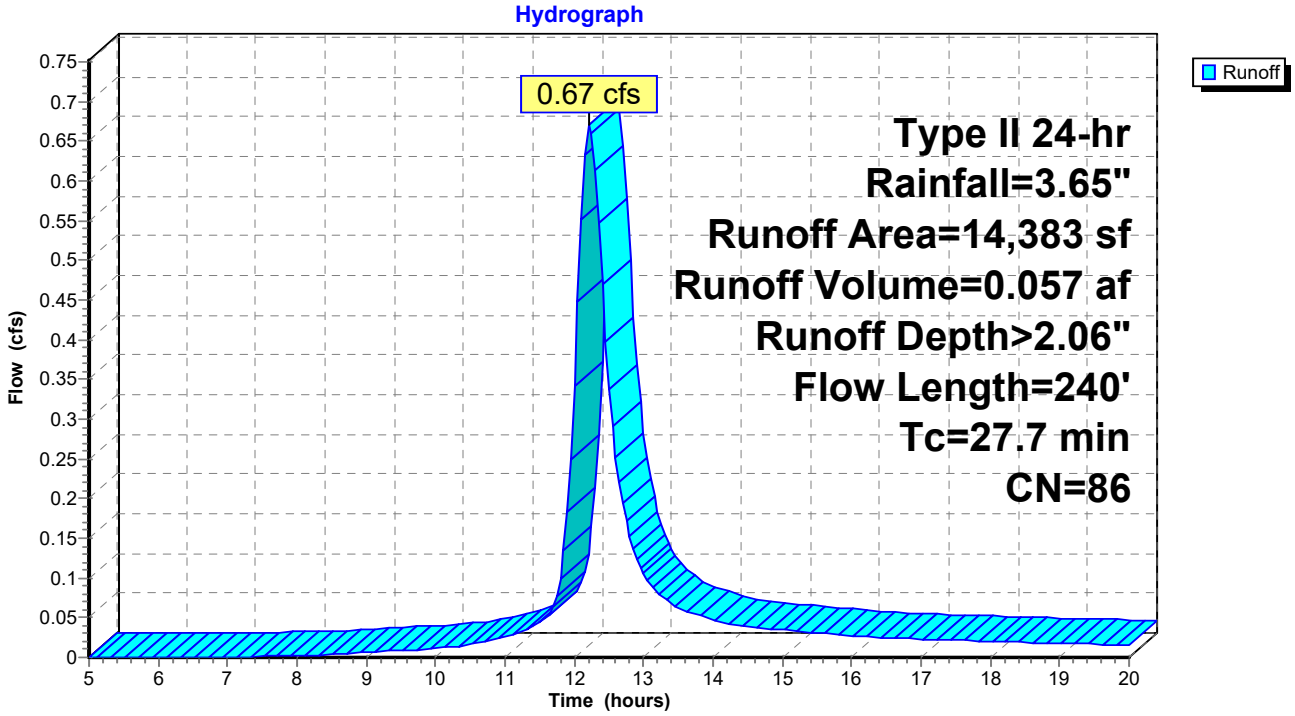
Runoff = 0.67 cfs @ 12.21 hrs, Volume= 0.057 af, Depth> 2.06"
Routed to Pond AB-2 : Attenuation Basin Lot 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=3.65"

Area (sf)	CN	Description
5,000	98	Paved parking, HSG A
9,383	80	>75% Grass cover, Good, HSG D
14,383	86	Weighted Average
9,383		65.24% Pervious Area
5,000		34.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.3	100	0.0150	0.06		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.60"
0.4	140	0.1000	6.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
27.7	240	Total			

Subcatchment LOT 2 DRIVE: LOT 2 DRIVEWAY



Summary for Subcatchment P-B: PROPOSED ANALYSIS B

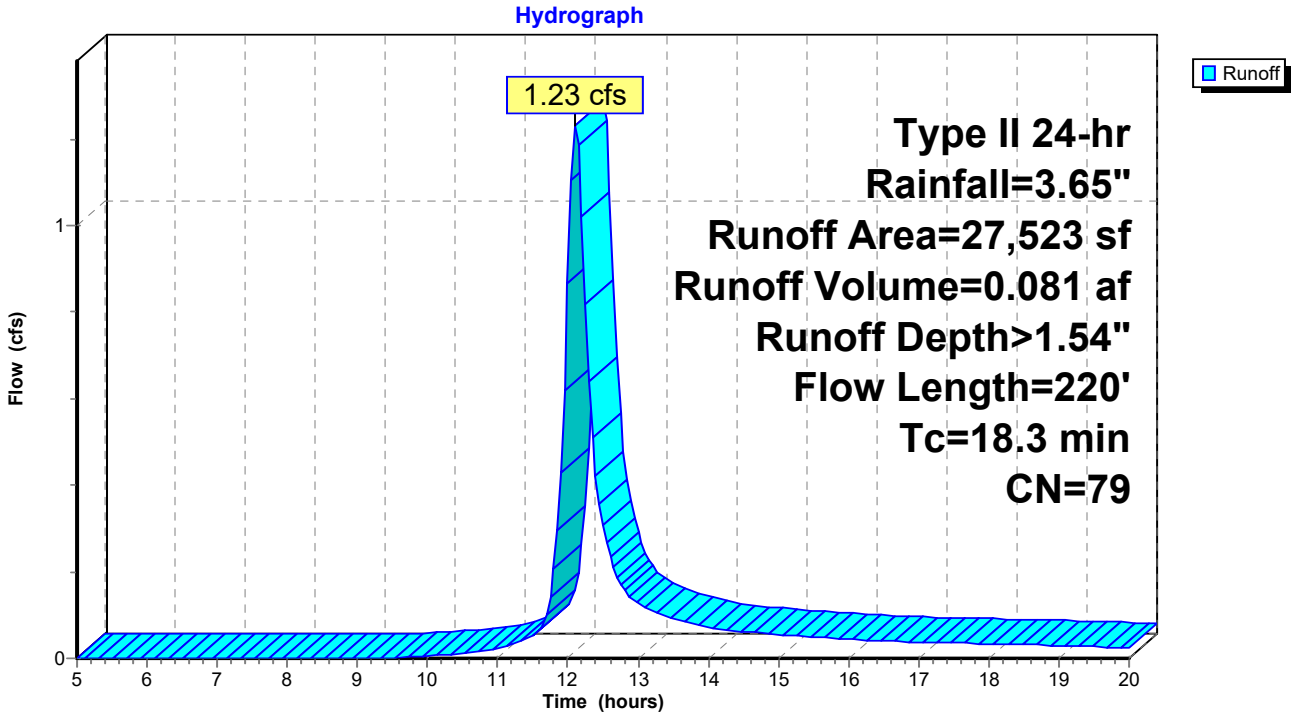
Runoff = 1.23 cfs @ 12.11 hrs, Volume= 0.081 af, Depth> 1.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=3.65"

Area (sf)	CN	Description
27,523	79	Woods/grass comb., Good, HSG D
27,523		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0500	0.10		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.60"
1.5	120	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.3	220	Total			

Subcatchment P-B: PROPOSED ANALYSIS B



Summary for Subcatchment P-C: PROP ANALYSIS PT C

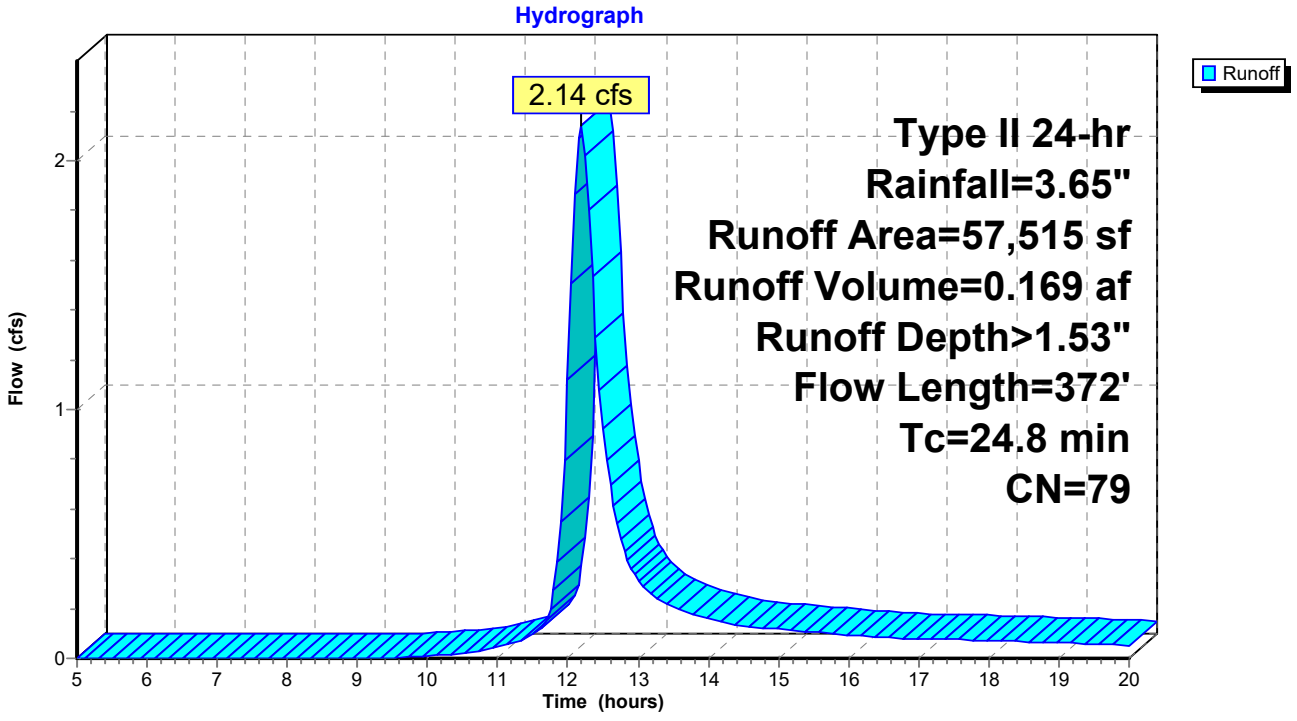
Runoff = 2.14 cfs @ 12.19 hrs, Volume= 0.169 af, Depth> 1.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=3.65"

Area (sf)	CN	Description
57,515	79	Woods, Fair, HSG D
57,515		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.3	100	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
4.5	272	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.8	372	Total			

Subcatchment P-C: PROP ANALYSIS PT C



Summary for Reach EX Storm: Ex Storm Sewer

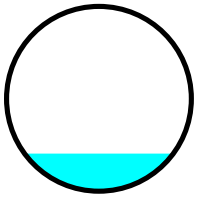
[52] Hint: Inlet/Outlet conditions not evaluated
[65] Warning: Inlet elevation not specified

Inflow Area = 1.267 ac, 29.39% Impervious, Inflow Depth > 1.96"
Inflow = 0.77 cfs @ 12.58 hrs, Volume= 0.207 af
Outflow = 0.77 cfs @ 12.59 hrs, Volume= 0.207 af, Atten= 0%, Lag= 0.5 min

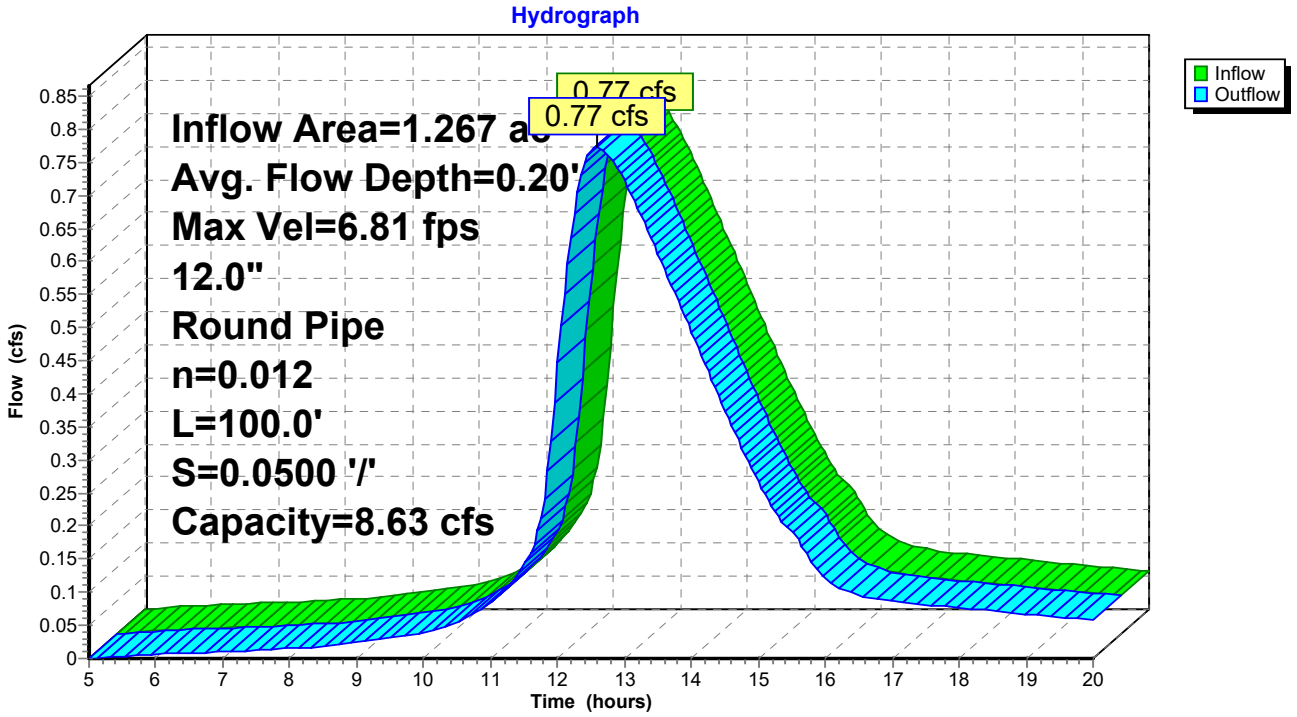
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.81 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 3.59 fps, Avg. Travel Time= 0.5 min

Peak Storage= 11 cf @ 12.59 hrs
Average Depth at Peak Storage= 0.20' , Surface Width= 0.80'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 8.63 cfs

12.0" Round Pipe
n= 0.012
Length= 100.0' Slope= 0.0500 '/'
Inlet Invert= 0.00', Outlet Invert= -5.00'



Reach EX Storm: Ex Storm Sewer



Summary for Pond AB-1: Attenuation Basin Lot 1

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.829 ac, 18.09% Impervious, Inflow Depth > 1.80"
Inflow = 1.28 cfs @ 12.19 hrs, Volume= 0.125 af
Outflow = 0.47 cfs @ 12.58 hrs, Volume= 0.123 af, Atten= 63%, Lag= 23.6 min
Primary = 0.47 cfs @ 12.58 hrs, Volume= 0.123 af
Routed to Reach EX Storm : Ex Storm Sewer
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach EX Storm : Ex Storm Sewer

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 377.49' @ 12.58 hrs Surf.Area= 1,000 sf Storage= 1,798 cf

Plug-Flow detention time= 43.6 min calculated for 0.123 af (99% of inflow)
Center-of-Mass det. time= 38.8 min (827.4 - 788.6)

Volume	Invert	Avail.Storage	Storage Description
#1	373.00'	7,300 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 18,250 cf Overall x 40.0% Voids

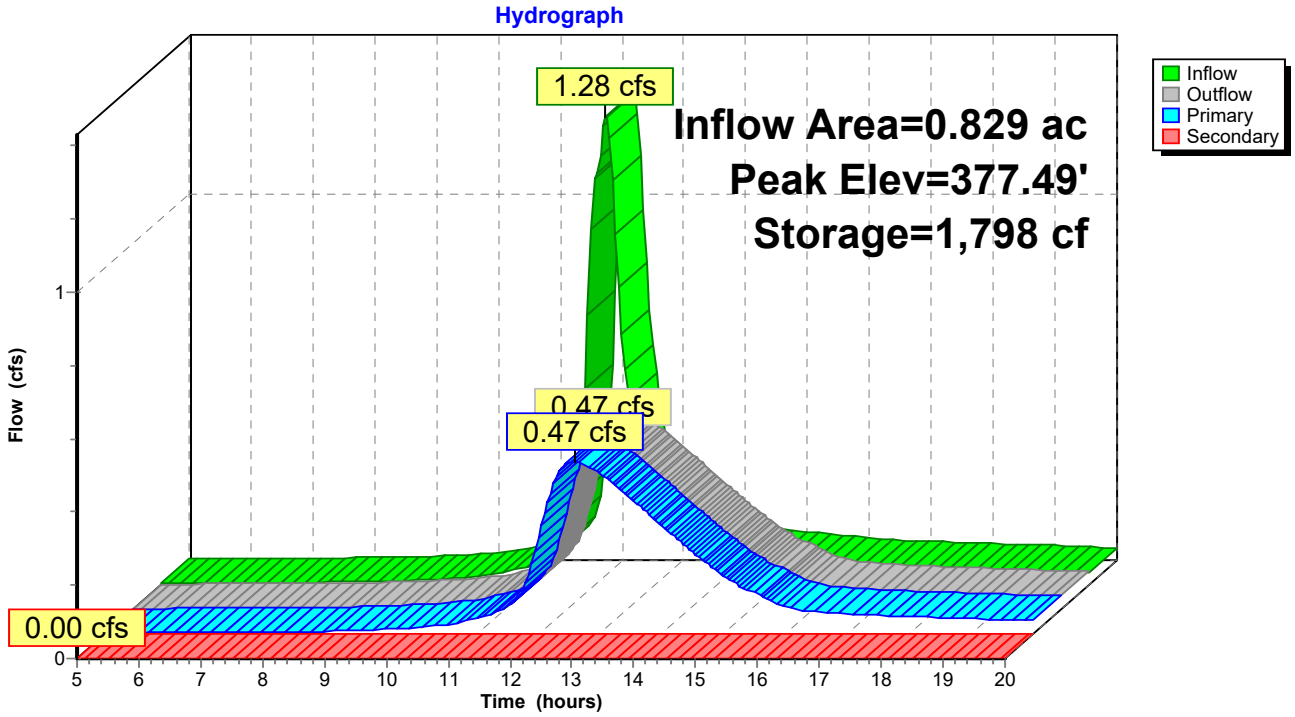
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
373.00	1,000	0	0
374.00	1,000	1,000	1,000
375.00	1,000	1,000	2,000
376.00	1,000	1,000	3,000
377.00	1,000	1,000	4,000
377.50	1,000	500	4,500
380.00	10,000	13,750	18,250

Device	Routing	Invert	Outlet Devices
#1	Primary	373.00'	**3.5" Round Culvert** L= 30.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 373.00' / 372.85' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.07 sf
#2	Secondary	377.50'	**24.0" W x 24.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.47 cfs @ 12.58 hrs HW=377.49' (Free Discharge)
↑**1=Culvert** (Barrel Controls 0.47 cfs @ 7.04 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=373.00' (Free Discharge)
↑**2=Orifice/Grate** (Controls 0.00 cfs)

Pond AB-1: Attenuation Basin Lot 1



Summary for Pond AB-2: Attenuation Basin Lot 2

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.438 ac, 50.79% Impervious, Inflow Depth > 2.33"
Inflow = 0.84 cfs @ 11.99 hrs, Volume= 0.085 af
Outflow = 0.30 cfs @ 12.58 hrs, Volume= 0.084 af, Atten= 64%, Lag= 35.3 min
Primary = 0.30 cfs @ 12.58 hrs, Volume= 0.084 af
Routed to Reach EX Storm : Ex Storm Sewer
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach EX Storm : Ex Storm Sewer

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 375.11' @ 12.58 hrs Surf.Area= 750 sf Storage= 1,233 cf

Plug-Flow detention time= 45.4 min calculated for 0.084 af (99% of inflow)
Center-of-Mass det. time= 40.9 min (813.2 - 772.2)

Volume	Invert	Avail.Storage	Storage Description
#1	371.00'	2,425 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 6,063 cf Overall x 40.0% Voids

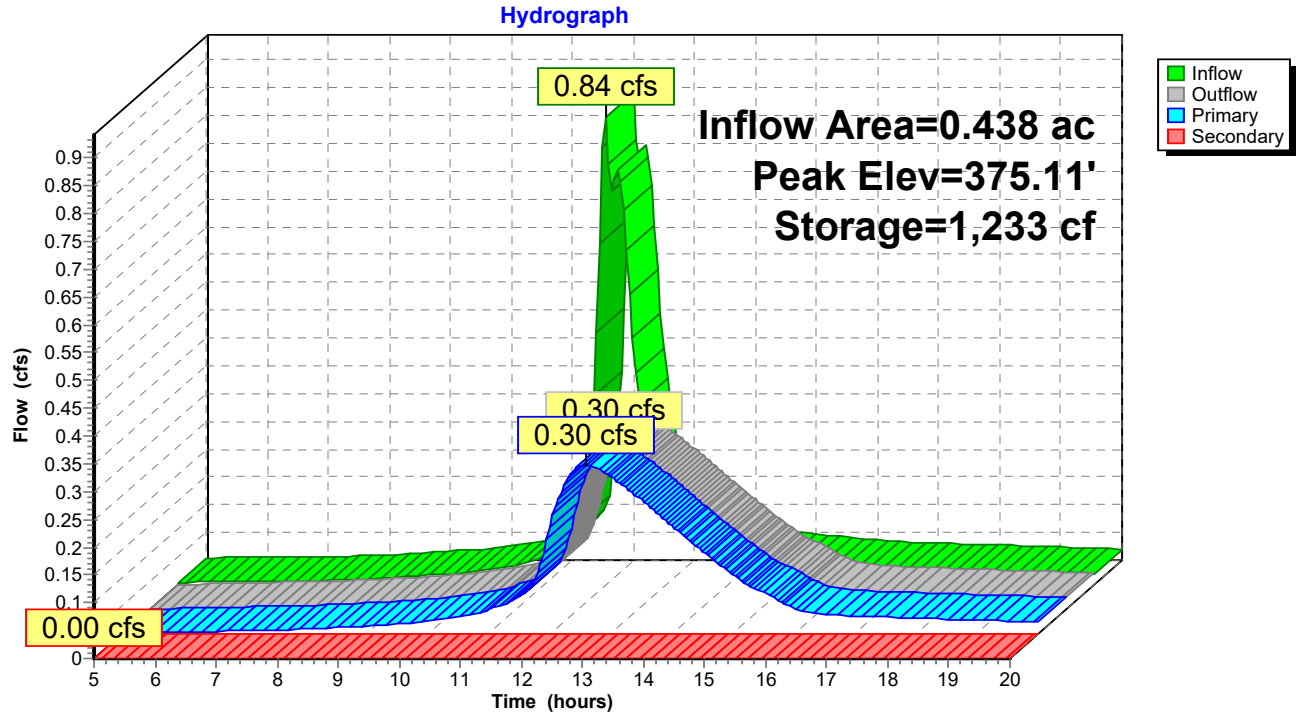
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
371.00	750	0	0
372.00	750	750	750
373.00	750	750	1,500
374.00	750	750	2,250
375.00	750	750	3,000
375.50	750	375	3,375
376.00	10,000	2,688	6,063

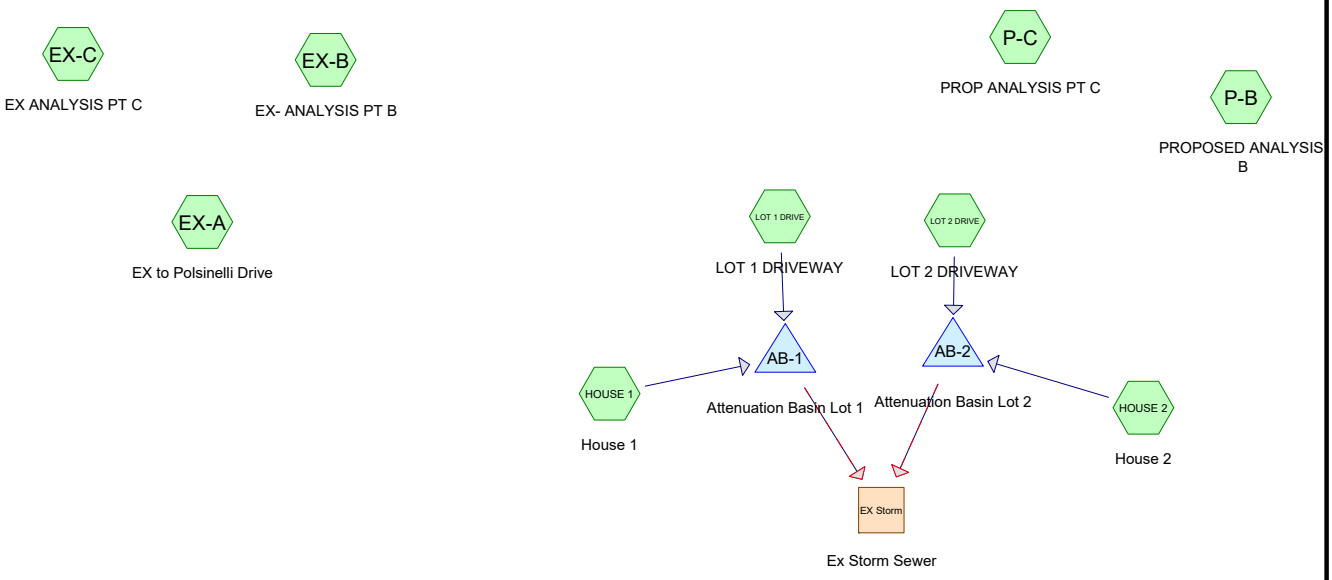
Device	Routing	Invert	Outlet Devices
#1	Primary	371.00'	**3.0" Round Culvert** L= 30.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 371.00' / 370.85' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.05 sf
#2	Secondary	375.50'	**24.0" W x 24.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.30 cfs @ 12.58 hrs HW=375.11' (Free Discharge)
1=Culvert (Barrel Controls 0.30 cfs @ 6.16 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=371.00' (Free Discharge)
2=Orifice/Grate (Controls 0.00 cfs)

Pond AB-2: Attenuation Basin Lot 2





Subcat Reach Pond Link

Routing Diagram for Pollsinelli
Prepared by HP, Printed 5/12/2023

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.404	80	>75% Grass cover, Good, HSG D (LOT 1 DRIVE, LOT 2 DRIVE)
0.023	98	Hardscape allowance (HOUSE 1, HOUSE 2)
0.192	98	House Footprint (HOUSE 1, HOUSE 2)
0.157	98	Paved parking, HSG A (LOT 1 DRIVE, LOT 2 DRIVE)
4.539	79	Woods, Fair, HSG D (EX-A, EX-B, EX-C, P-C)
1.123	79	Woods/grass comb., Good, HSG D (LOT 1 DRIVE, P-B)
6.438	**80**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.157	HSG A	LOT 1 DRIVE, LOT 2 DRIVE
0.000	HSG B	
0.000	HSG C	
6.066	HSG D	EX-A, EX-B, EX-C, LOT 1 DRIVE, LOT 2 DRIVE, P-B, P-C
0.215	Other	HOUSE 1, HOUSE 2
6.438		**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	0.404	0.000	0.404	>75% Grass cover, Good	LOT 1 DRIVE, LOT 2 DRIVE
0.000	0.000	0.000	0.000	0.023	0.023	Hardscape allowance	HOUSE 1, HOUSE 2
0.000	0.000	0.000	0.000	0.192	0.192	House Footprint	HOUSE 1, HOUSE 2
0.157	0.000	0.000	0.000	0.000	0.157	Paved parking	LOT 1 DRIVE, LOT 2 DRIVE
0.000	0.000	0.000	4.539	0.000	4.539	Woods, Fair	EX-A, EX-B, EX-C, P-C
0.000	0.000	0.000	1.123	0.000	1.123	Woods/grass comb., Good	LOT 1 DRIVE, P-B
0.157	**0.000**	**0.000**	**6.066**	**0.215**	**6.438**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	EX Storm	0.00	-5.00	100.0	0.0500	0.012	0.0	12.0	0.0
2	AB-1	373.00	372.85	30.0	0.0050	0.012	0.0	3.5	0.0
3	AB-2	371.00	370.85	30.0	0.0050	0.012	0.0	3.0	0.0

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EX-A: EX to Polsinelli Drive Runoff Area=50,100 sf 0.00% Impervious Runoff Depth>3.45"
Flow Length=300' Tc=26.5 min CN=79 Runoff=4.03 cfs 0.331 af

Subcatchment EX-B: EX- ANALYSIS PT B Runoff Area=30,008 sf 0.00% Impervious Runoff Depth>3.46"
Flow Length=240' Tc=19.9 min CN=79 Runoff=2.86 cfs 0.199 af

Subcatchment EX-C: EX ANALYSIS PT C Runoff Area=60,108 sf 0.00% Impervious Runoff Depth>3.46"
Flow Length=372' Tc=24.8 min CN=79 Runoff=5.03 cfs 0.397 af

Subcatchment HOUSE 1: House 1 Runoff Area=4,683 sf 100.00% Impervious Runoff Depth>5.33"
Tc=6.0 min CN=98 Runoff=0.90 cfs 0.048 af

Subcatchment HOUSE 2: House 2 Runoff Area=4,683 sf 100.00% Impervious Runoff Depth>5.33"
Tc=6.0 min CN=98 Runoff=0.90 cfs 0.048 af

Subcatchment LOT 1 DRIVE: LOT 1 Runoff Area=31,429 sf 5.89% Impervious Runoff Depth>3.55"
Flow Length=240' Tc=25.7 min CN=80 Runoff=2.65 cfs 0.214 af

Subcatchment LOT 2 DRIVE: LOT 2 Runoff Area=14,383 sf 34.76% Impervious Runoff Depth>4.17"
Flow Length=240' Tc=27.7 min CN=86 Runoff=1.33 cfs 0.115 af

Subcatchment P-B: PROPOSED ANALYSIS Runoff Area=27,523 sf 0.00% Impervious Runoff Depth>3.46"
Flow Length=220' Tc=18.3 min CN=79 Runoff=2.74 cfs 0.182 af

Subcatchment P-C: PROP ANALYSIS PT C Runoff Area=57,515 sf 0.00% Impervious Runoff Depth>3.46"
Flow Length=372' Tc=24.8 min CN=79 Runoff=4.81 cfs 0.380 af

Reach EX Storm: Ex Storm Sewer Avg. Flow Depth=0.47' Max Vel=10.74 fps Inflow=3.89 cfs 0.421 af
12.0" Round Pipe n=0.012 L=100.0' S=0.0500 '/' Capacity=8.63 cfs Outflow=3.93 cfs 0.420 af

Pond AB-1: Attenuation Basin Lot 1 Peak Elev=377.99' Storage=2,167 cf Inflow=2.78 cfs 0.261 af
Primary=0.50 cfs 0.187 af Secondary=2.20 cfs 0.073 af Outflow=2.69 cfs 0.259 af

Pond AB-2: Attenuation Basin Lot 2 Peak Elev=375.78' Storage=1,713 cf Inflow=1.55 cfs 0.162 af
Primary=0.33 cfs 0.125 af Secondary=0.93 cfs 0.036 af Outflow=1.26 cfs 0.161 af

Total Runoff Area = 6.438 ac Runoff Volume = 1.914 af Average Runoff Depth = 3.57"
94.22% Pervious = 6.066 ac 5.78% Impervious = 0.372 ac

Summary for Subcatchment EX-A: EX to Polsinelli Drive

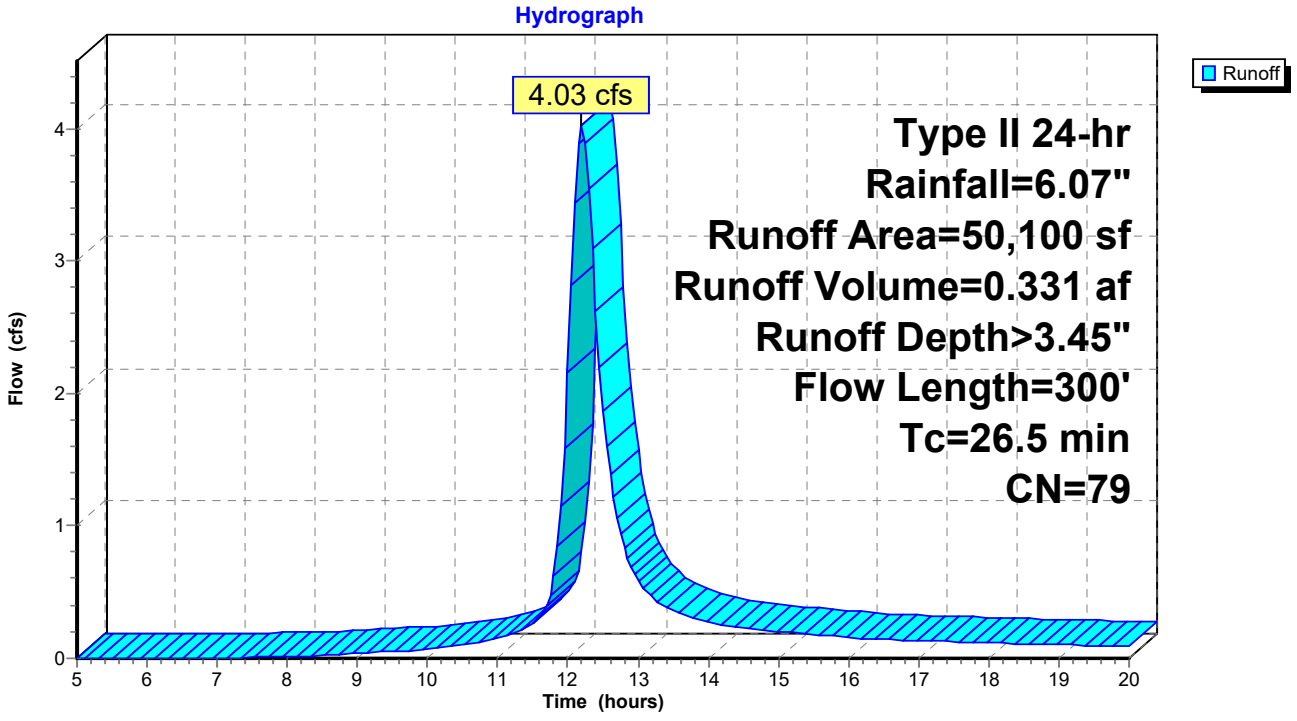
Runoff = 4.03 cfs @ 12.20 hrs, Volume= 0.331 af, Depth> 3.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=6.07"

Area (sf)	CN	Description
50,100	79	Woods, Fair, HSG D
50,100		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.8	100	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
2.7	200	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
26.5	300	Total			

Subcatchment EX-A: EX to Polsinelli Drive



Summary for Subcatchment EX-B: EX- ANALYSIS PT B

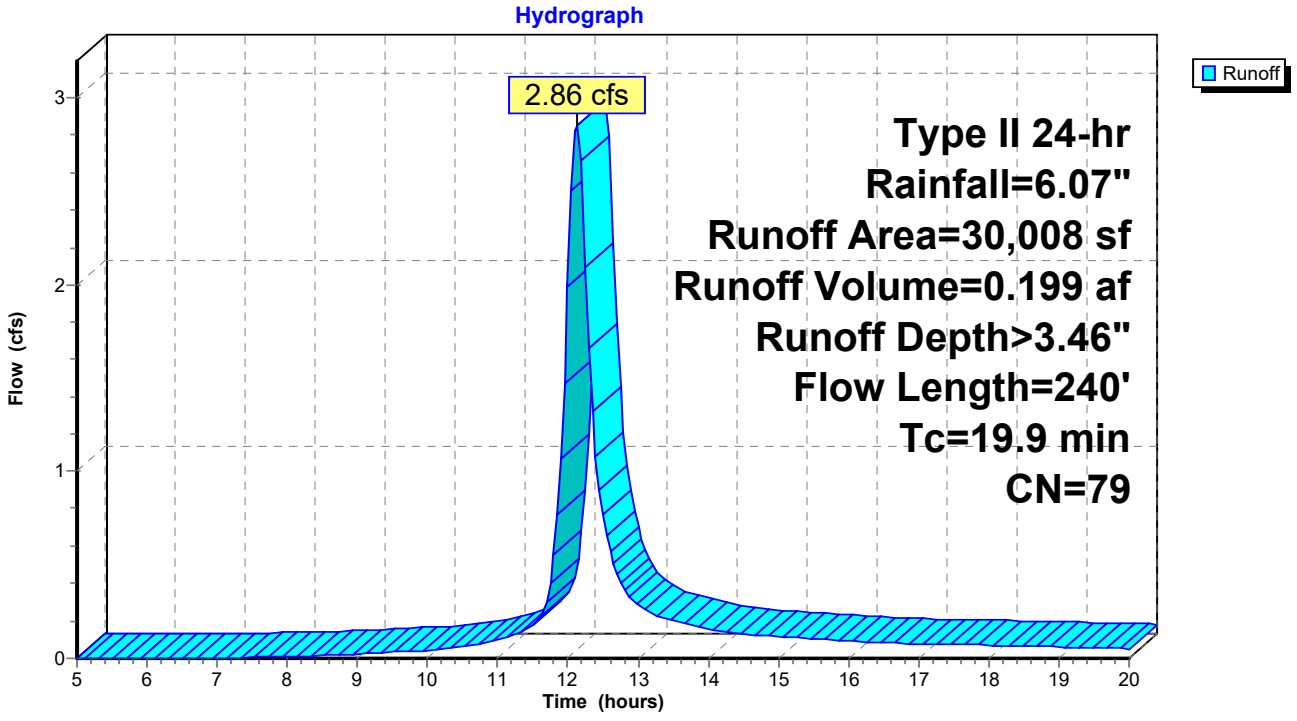
Runoff = 2.86 cfs @ 12.12 hrs, Volume= 0.199 af, Depth> 3.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=6.07"

Area (sf)	CN	Description
30,008	79	Woods, Fair, HSG D
30,008		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.1	100	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
1.8	140	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
19.9	240	Total			

Subcatchment EX-B: EX- ANALYSIS PT B



Summary for Subcatchment EX-C: EX ANALYSIS PT C

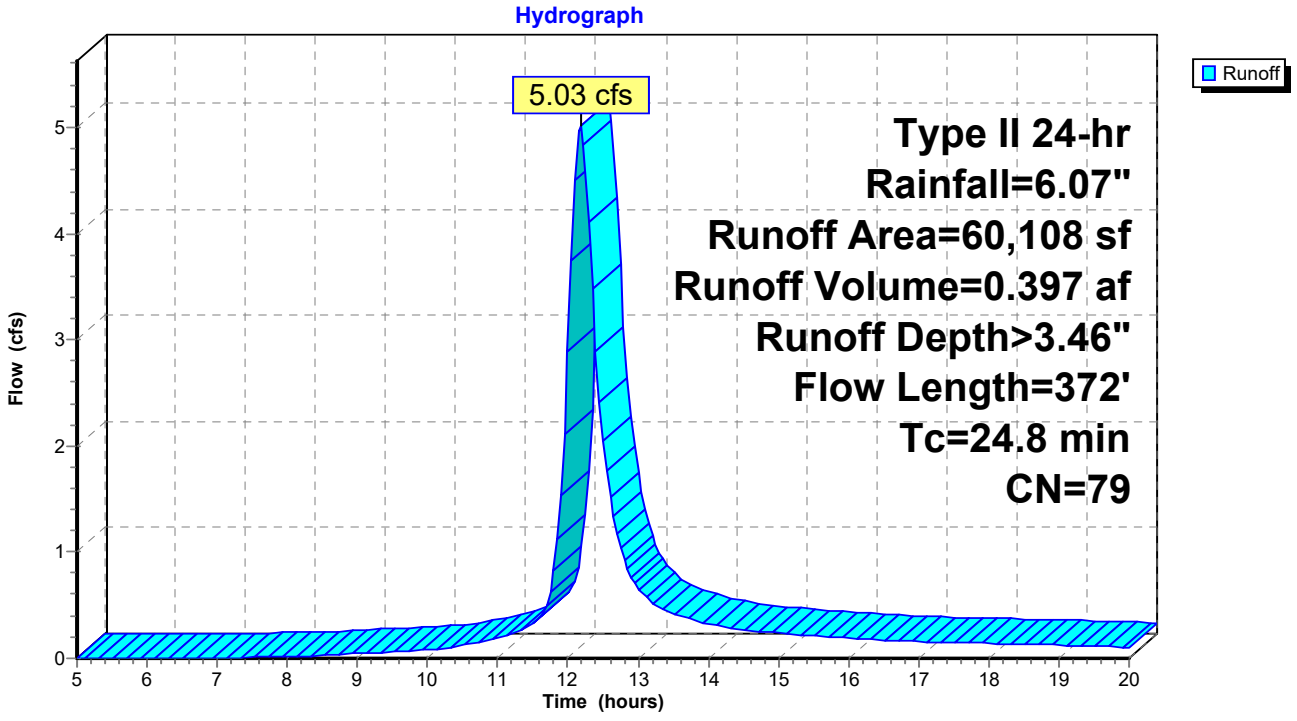
Runoff = 5.03 cfs @ 12.18 hrs, Volume= 0.397 af, Depth> 3.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=6.07"

Area (sf)	CN	Description
60,108	79	Woods, Fair, HSG D
60,108		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.3	100	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
4.5	272	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.8	372	Total			

Subcatchment EX-C: EX ANALYSIS PT C



Summary for Subcatchment HOUSE 1: House 1

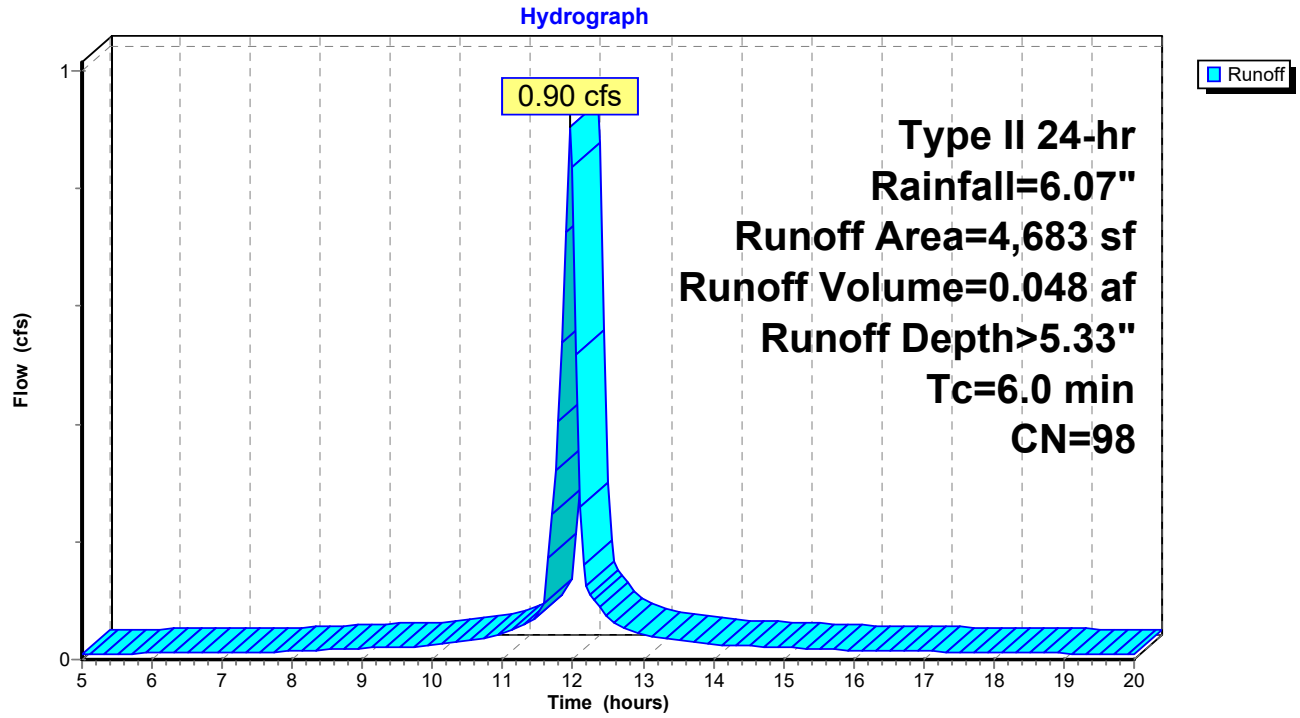
Runoff = 0.90 cfs @ 11.96 hrs, Volume= 0.048 af, Depth> 5.33"
Routed to Pond AB-1 : Attenuation Basin Lot 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=6.07"

	Area (sf)	CN	Description
*	4,183	98	House Footprint
*	500	98	Hardscape allowance
	4,683	98	Weighted Average
	4,683		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min.**

Subcatchment HOUSE 1: House 1



Summary for Subcatchment HOUSE 2: House 2

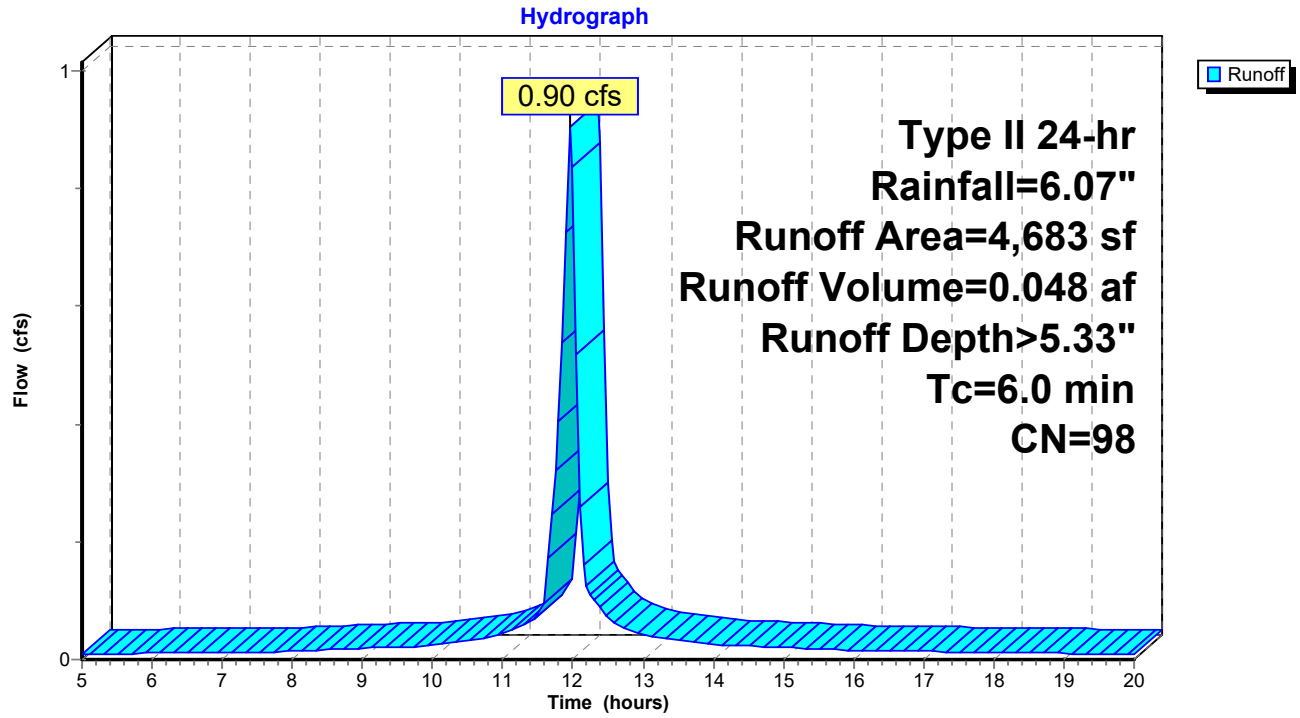
Runoff = 0.90 cfs @ 11.96 hrs, Volume= 0.048 af, Depth> 5.33"
Routed to Pond AB-2 : Attenuation Basin Lot 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=6.07"

	Area (sf)	CN	Description
*	4,183	98	House Footprint
*	500	98	Hardscape allowance
	4,683	98	Weighted Average
	4,683		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, TR-55 Min.**

Subcatchment HOUSE 2: House 2



Summary for Subcatchment LOT 1 DRIVE: LOT 1 DRIVEWAY

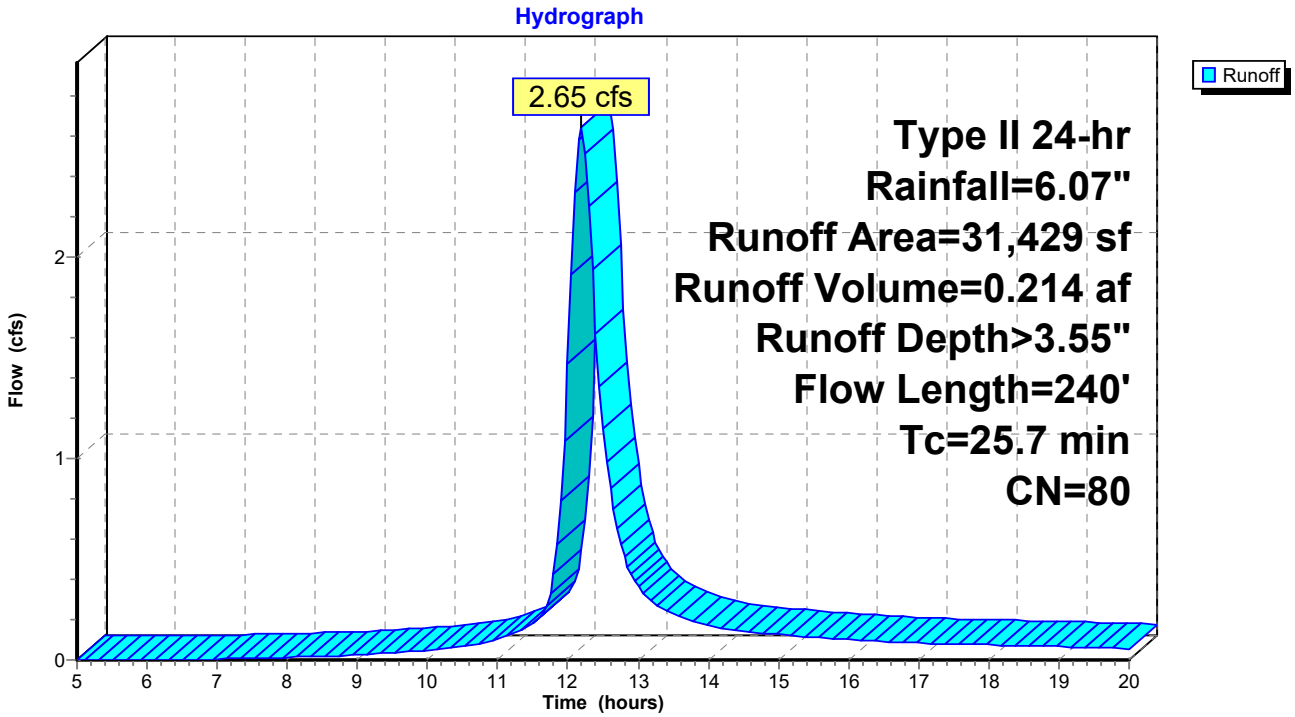
Runoff = 2.65 cfs @ 12.19 hrs, Volume= 0.214 af, Depth> 3.55"
Routed to Pond AB-1 : Attenuation Basin Lot 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=6.07"

Area (sf)	CN	Description
1,850	98	Paved parking, HSG A
8,194	80	>75% Grass cover, Good, HSG D
21,385	79	Woods/grass comb., Good, HSG D
31,429	80	Weighted Average
29,579		94.11% Pervious Area
1,850		5.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.8	100	0.0200	0.07		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
1.9	140	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
25.7	240	Total			

Subcatchment LOT 1 DRIVE: LOT 1 DRIVEWAY



Summary for Subcatchment LOT 2 DRIVE: LOT 2 DRIVEWAY

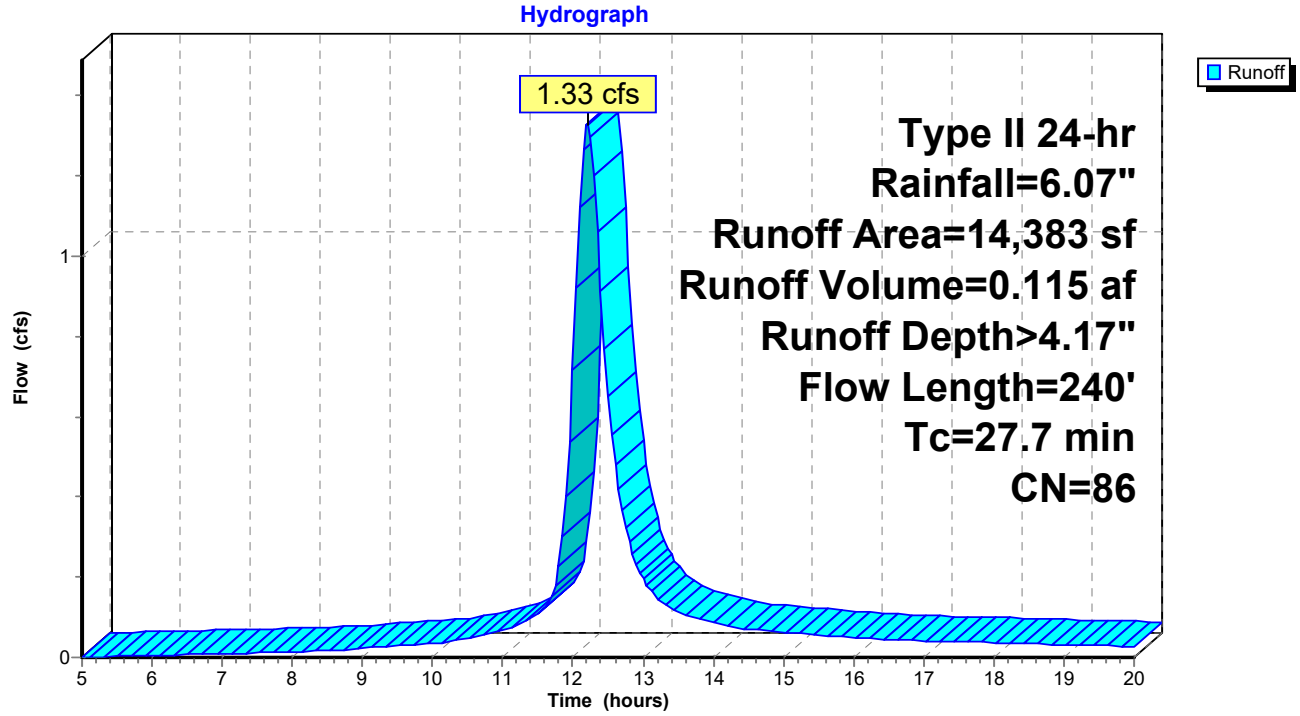
Runoff = 1.33 cfs @ 12.21 hrs, Volume= 0.115 af, Depth> 4.17"
Routed to Pond AB-2 : Attenuation Basin Lot 2

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=6.07"

Area (sf)	CN	Description
5,000	98	Paved parking, HSG A
9,383	80	>75% Grass cover, Good, HSG D
14,383	86	Weighted Average
9,383		65.24% Pervious Area
5,000		34.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.3	100	0.0150	0.06		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.60"
0.4	140	0.1000	6.42		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
27.7	240	Total			

Subcatchment LOT 2 DRIVE: LOT 2 DRIVEWAY



Summary for Subcatchment P-B: PROPOSED ANALYSIS B

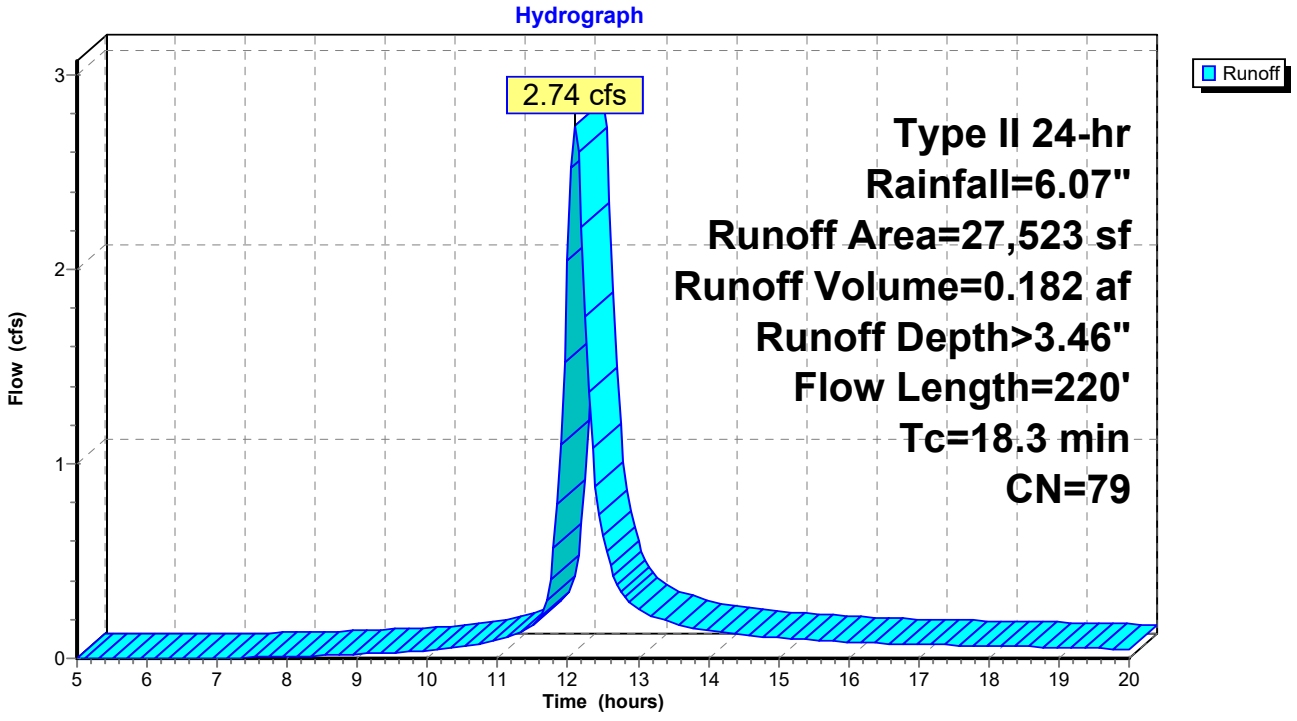
Runoff = 2.74 cfs @ 12.11 hrs, Volume= 0.182 af, Depth> 3.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=6.07"

Area (sf)	CN	Description
27,523	79	Woods/grass comb., Good, HSG D
27,523		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.8	100	0.0500	0.10		**Sheet Flow,** Grass: Bermuda n= 0.410 P2= 2.60"
1.5	120	0.0700	1.32		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.3	220	Total			

Subcatchment P-B: PROPOSED ANALYSIS B



Summary for Subcatchment P-C: PROP ANALYSIS PT C

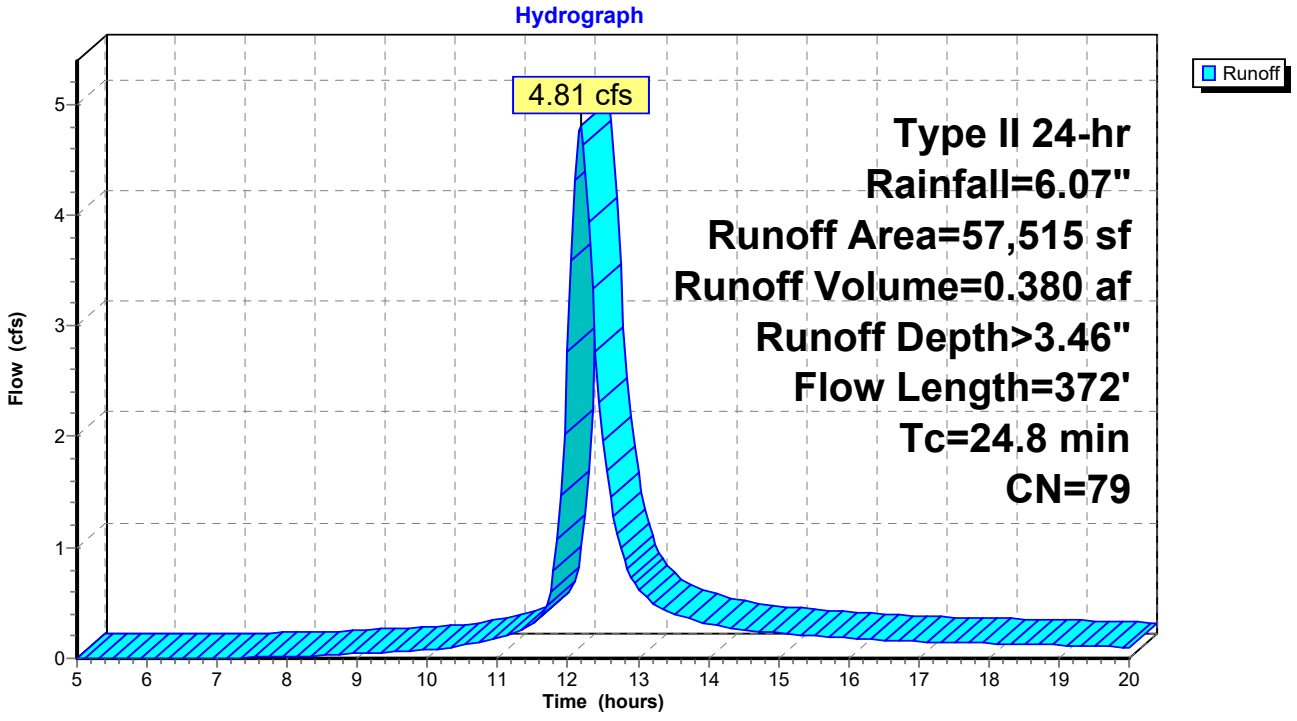
Runoff = 4.81 cfs @ 12.18 hrs, Volume= 0.380 af, Depth> 3.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr Rainfall=6.07"

Area (sf)	CN	Description
57,515	79	Woods, Fair, HSG D
57,515		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.3	100	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
4.5	272	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.8	372	Total			

Subcatchment P-C: PROP ANALYSIS PT C



Summary for Reach EX Storm: Ex Storm Sewer

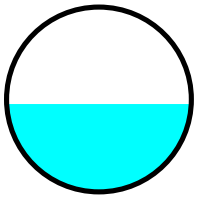
[52] Hint: Inlet/Outlet conditions not evaluated
[65] Warning: Inlet elevation not specified
[88] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 1.267 ac, 29.39% Impervious, Inflow Depth > 3.98"
Inflow = 3.89 cfs @ 12.25 hrs, Volume= 0.421 af
Outflow = 3.93 cfs @ 12.26 hrs, Volume= 0.420 af, Atten= 0%, Lag= 0.1 min

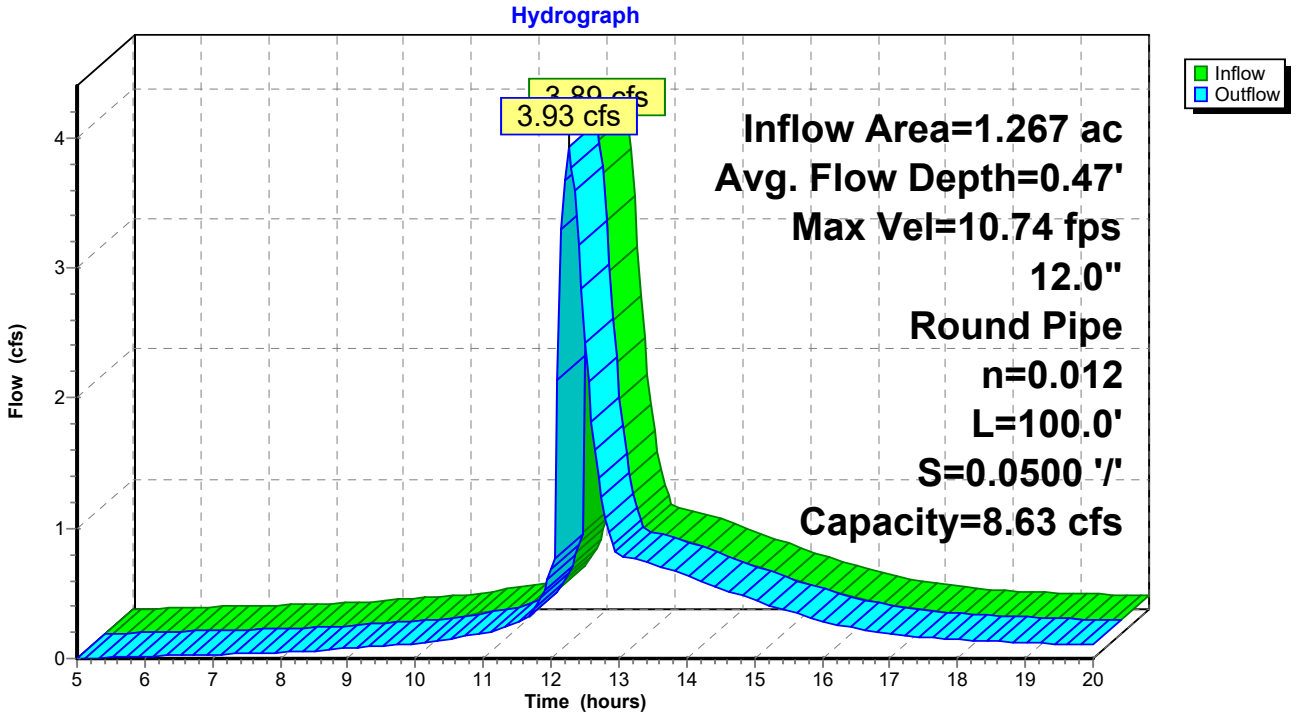
Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Max. Velocity= 10.74 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 4.47 fps, Avg. Travel Time= 0.4 min

Peak Storage= 37 cf @ 12.25 hrs
Average Depth at Peak Storage= 0.47' , Surface Width= 1.00'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 8.63 cfs

12.0" Round Pipe
n= 0.012
Length= 100.0' Slope= 0.0500 '/'
Inlet Invert= 0.00', Outlet Invert= -5.00'



Reach EX Storm: Ex Storm Sewer



Summary for Pond AB-1: Attenuation Basin Lot 1

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.829 ac, 18.09% Impervious, Inflow Depth > 3.79"
Inflow = 2.78 cfs @ 12.18 hrs, Volume= 0.261 af
Outflow = 2.69 cfs @ 12.23 hrs, Volume= 0.259 af, Atten= 3%, Lag= 3.1 min
Primary = 0.50 cfs @ 12.23 hrs, Volume= 0.187 af
Routed to Reach EX Storm : Ex Storm Sewer
Secondary = 2.20 cfs @ 12.23 hrs, Volume= 0.073 af
Routed to Reach EX Storm : Ex Storm Sewer

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 377.99' @ 12.23 hrs Surf.Area= 2,759 sf Storage= 2,167 cf

Plug-Flow detention time= 32.5 min calculated for 0.258 af (99% of inflow)
Center-of-Mass det. time= 29.0 min (806.4 - 777.3)

Volume	Invert	Avail.Storage	Storage Description
#1	373.00'	7,300 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 18,250 cf Overall x 40.0% Voids

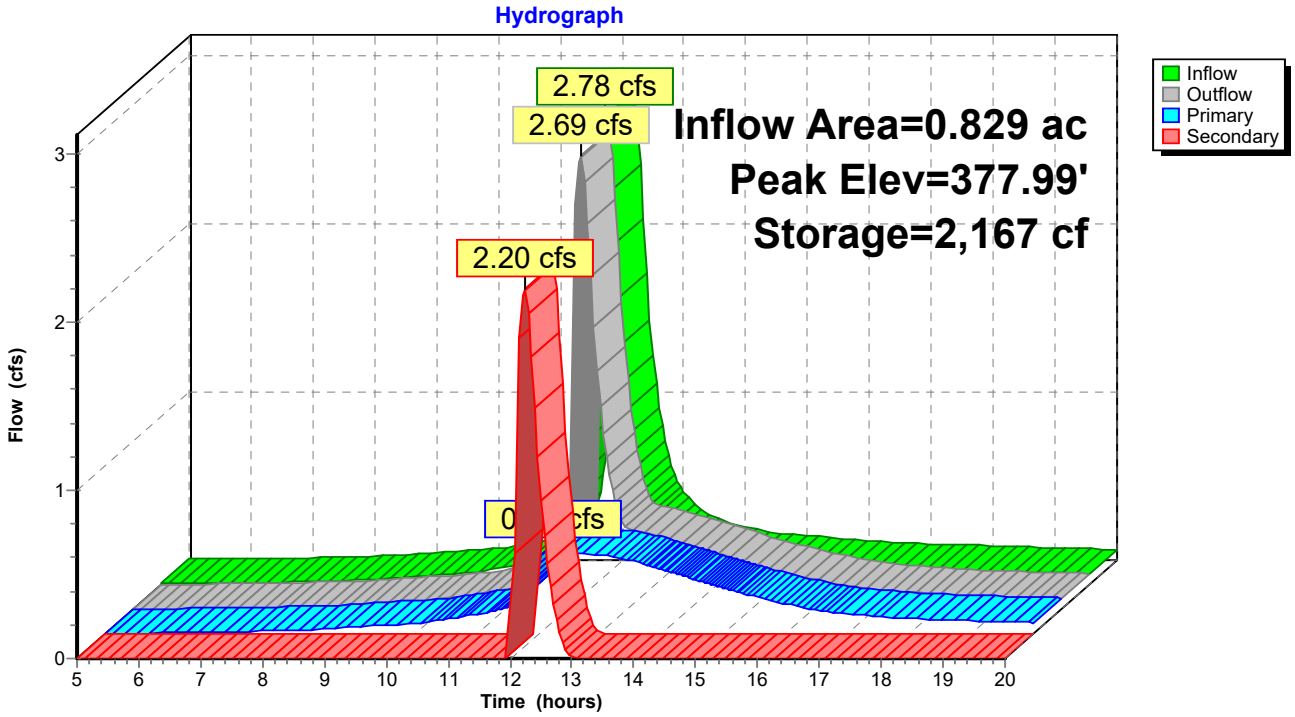
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
373.00	1,000	0	0
374.00	1,000	1,000	1,000
375.00	1,000	1,000	2,000
376.00	1,000	1,000	3,000
377.00	1,000	1,000	4,000
377.50	1,000	500	4,500
380.00	10,000	13,750	18,250

Device	Routing	Invert	Outlet Devices
#1	Primary	373.00'	**3.5" Round Culvert** L= 30.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 373.00' / 372.85' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.07 sf
#2	Secondary	377.50'	**24.0" W x 24.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.50 cfs @ 12.23 hrs HW=377.99' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.50 cfs @ 7.43 fps)

Secondary OutFlow Max=2.17 cfs @ 12.23 hrs HW=377.99' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 2.17 cfs @ 2.24 fps)

Pond AB-1: Attenuation Basin Lot 1



Summary for Pond AB-2: Attenuation Basin Lot 2

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.438 ac, 50.79% Impervious, Inflow Depth > 4.45"
Inflow = 1.55 cfs @ 12.00 hrs, Volume= 0.162 af
Outflow = 1.26 cfs @ 12.32 hrs, Volume= 0.161 af, Atten= 19%, Lag= 19.0 min
Primary = 0.33 cfs @ 12.32 hrs, Volume= 0.125 af
Routed to Reach EX Storm : Ex Storm Sewer
Secondary = 0.93 cfs @ 12.32 hrs, Volume= 0.036 af
Routed to Reach EX Storm : Ex Storm Sewer

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 375.78' @ 12.32 hrs Surf.Area= 5,843 sf Storage= 1,713 cf

Plug-Flow detention time= 38.1 min calculated for 0.161 af (99% of inflow)
Center-of-Mass det. time= 34.7 min (797.0 - 762.4)

Volume	Invert	Avail.Storage	Storage Description
#1	371.00'	2,425 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 6,063 cf Overall x 40.0% Voids

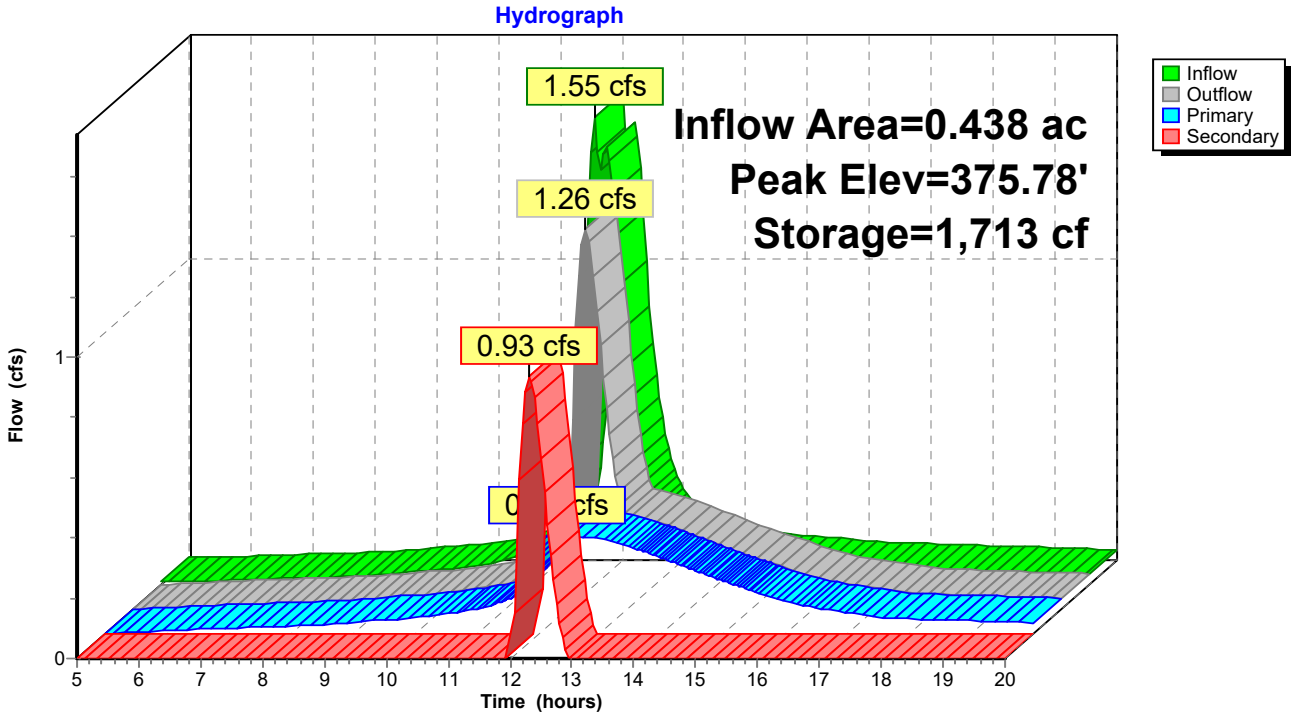
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
371.00	750	0	0
372.00	750	750	750
373.00	750	750	1,500
374.00	750	750	2,250
375.00	750	750	3,000
375.50	750	375	3,375
376.00	10,000	2,688	6,063

Device	Routing	Invert	Outlet Devices
#1	Primary	371.00'	**3.0" Round Culvert** L= 30.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 371.00' / 370.85' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.05 sf
#2	Secondary	375.50'	**24.0" W x 24.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.33 cfs @ 12.32 hrs HW=375.77' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.33 cfs @ 6.66 fps)

Secondary OutFlow Max=0.92 cfs @ 12.32 hrs HW=375.77' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.92 cfs @ 1.68 fps)

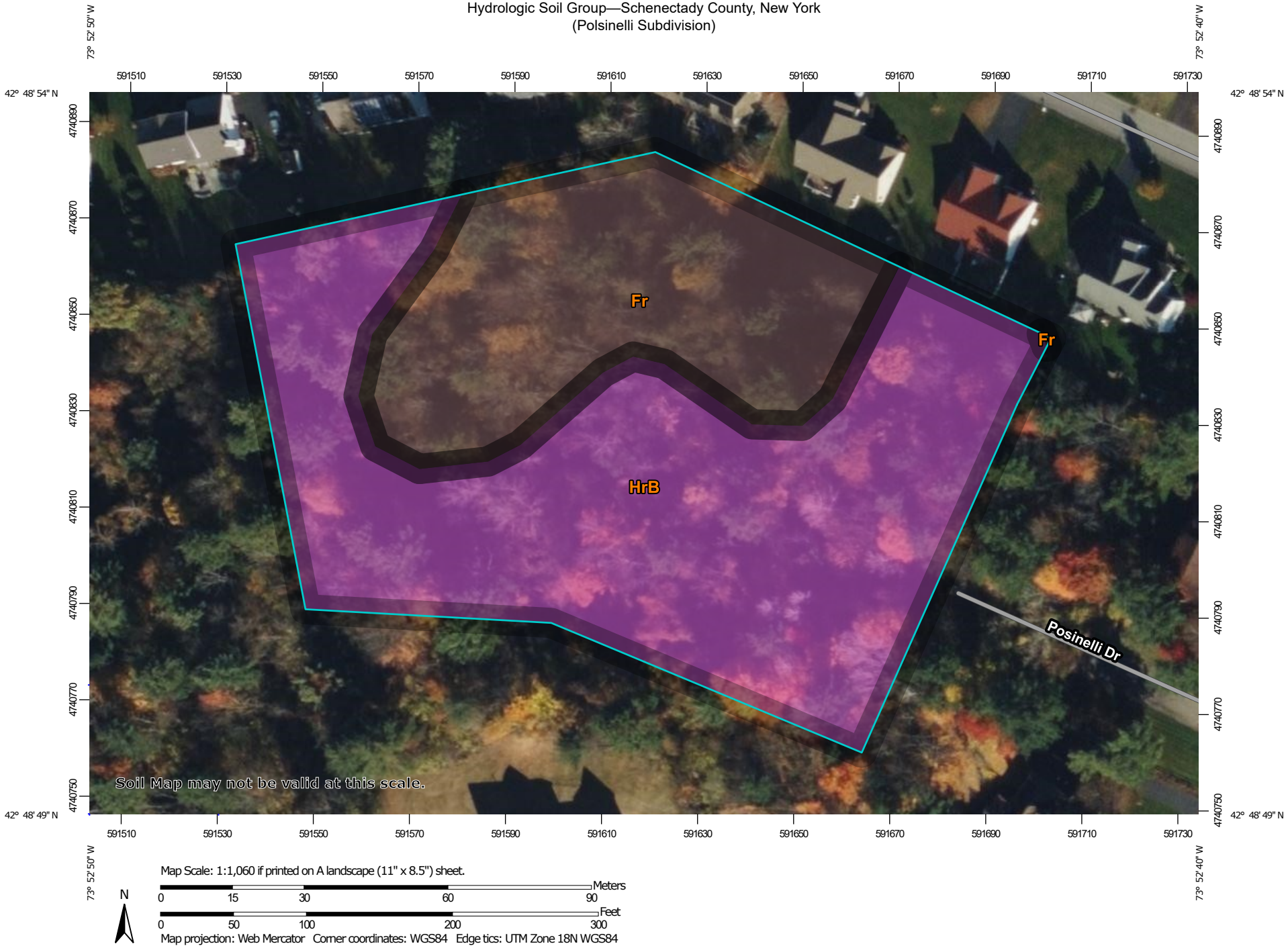
Pond AB-2: Attenuation Basin Lot 2



Appendix B

Soils Report

Hydrologic Soil Group—Schenectady County, New York
(Polsinelli Subdivision)



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Water Features

Streams and Canals

Transportation

Rails
Interstate Highways
US Routes
Major Roads
Local Roads

Background

Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Schenectady County, New York
Survey Area Data: Version 21, Sep 10, 2022

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

Date(s) aerial images were photographed: Aug 15, 2021—Nov 8, 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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Fr	Fredon silt loam	B/D	1.1	33.6%
HrB	Howard gravelly silt loam, 3 to 8 percent slopes	A	2.3	66.4%
Totals for Area of Interest			**3.4**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Appendix C

Attenuation Basin Stage Storage Tables

Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	AB-1	373.00	372.85	30.0	0.0050	0.012	0.0	3.5	0.0

Summary for Pond AB-1: Attenuation Basin Lot 1

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.829 ac, 18.09% Impervious, Inflow Depth > 1.95"
Inflow = 1.28 cfs @ 12.19 hrs, Volume= 0.135 af
Outflow = 0.47 cfs @ 12.58 hrs, Volume= 0.133 af, Atten= 63%, Lag= 23.6 min
Primary = 0.47 cfs @ 12.58 hrs, Volume= 0.133 af
Routed to Reach EX Storm : Ex Storm Sewer
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach EX Storm : Ex Storm Sewer

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 377.49' @ 12.58 hrs Surf.Area= 1,000 sf Storage= 1,798 cf

Plug-Flow detention time= 42.7 min calculated for 0.133 af (99% of inflow)
Center-of-Mass det. time= 36.8 min (865.3 - 828.4)

Volume	Invert	Avail.Storage	Storage Description
#1	373.00'	7,300 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 18,250 cf Overall x 40.0% Voids

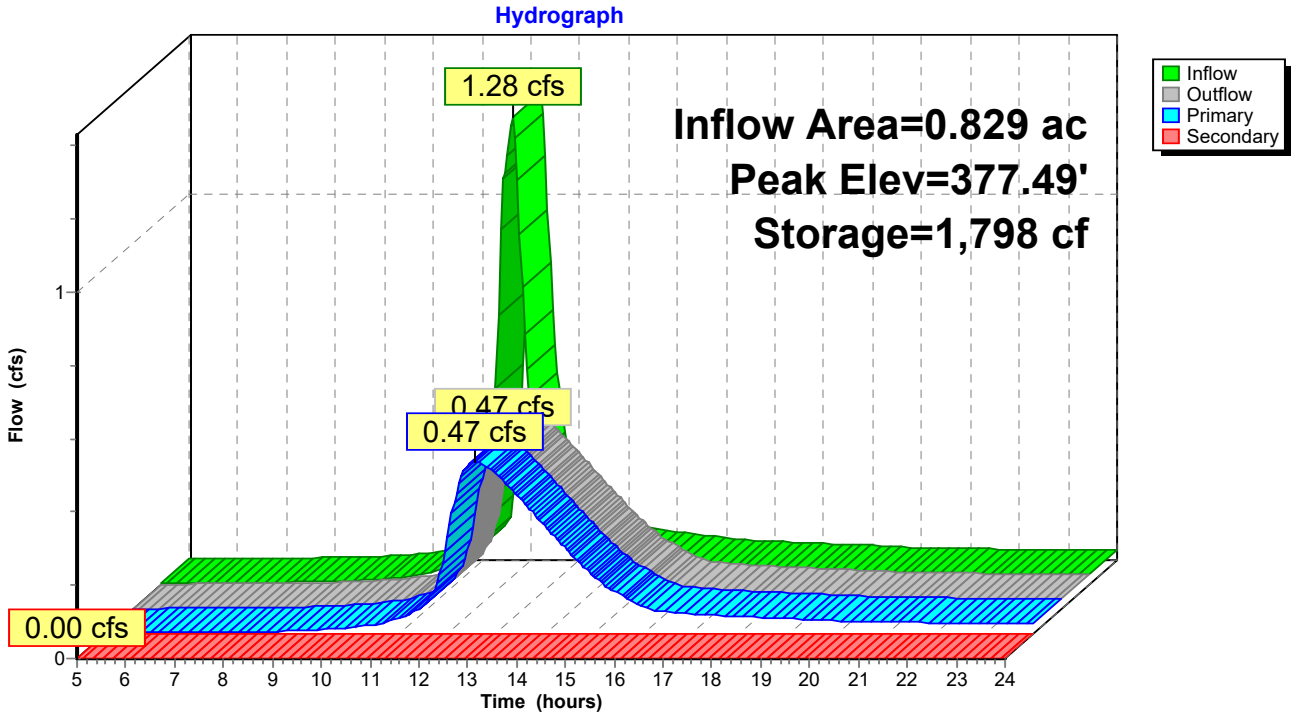
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
373.00	1,000	0	0
374.00	1,000	1,000	1,000
375.00	1,000	1,000	2,000
376.00	1,000	1,000	3,000
377.00	1,000	1,000	4,000
377.50	1,000	500	4,500
380.00	10,000	13,750	18,250

Device	Routing	Invert	Outlet Devices
#1	Primary	373.00'	**3.5" Round Culvert** L= 30.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 373.00' / 372.85' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.07 sf
#2	Secondary	377.50'	**24.0" W x 24.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

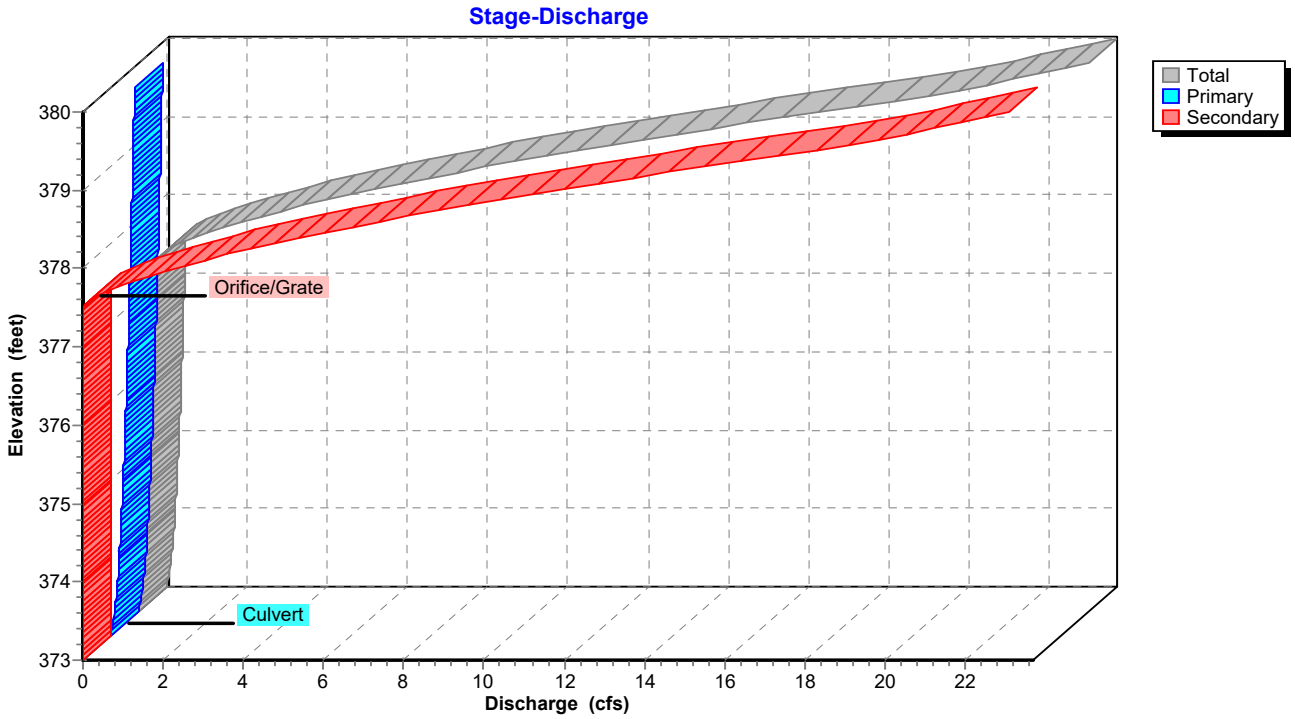
Primary OutFlow Max=0.47 cfs @ 12.58 hrs HW=377.49' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.47 cfs @ 7.04 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=373.00' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

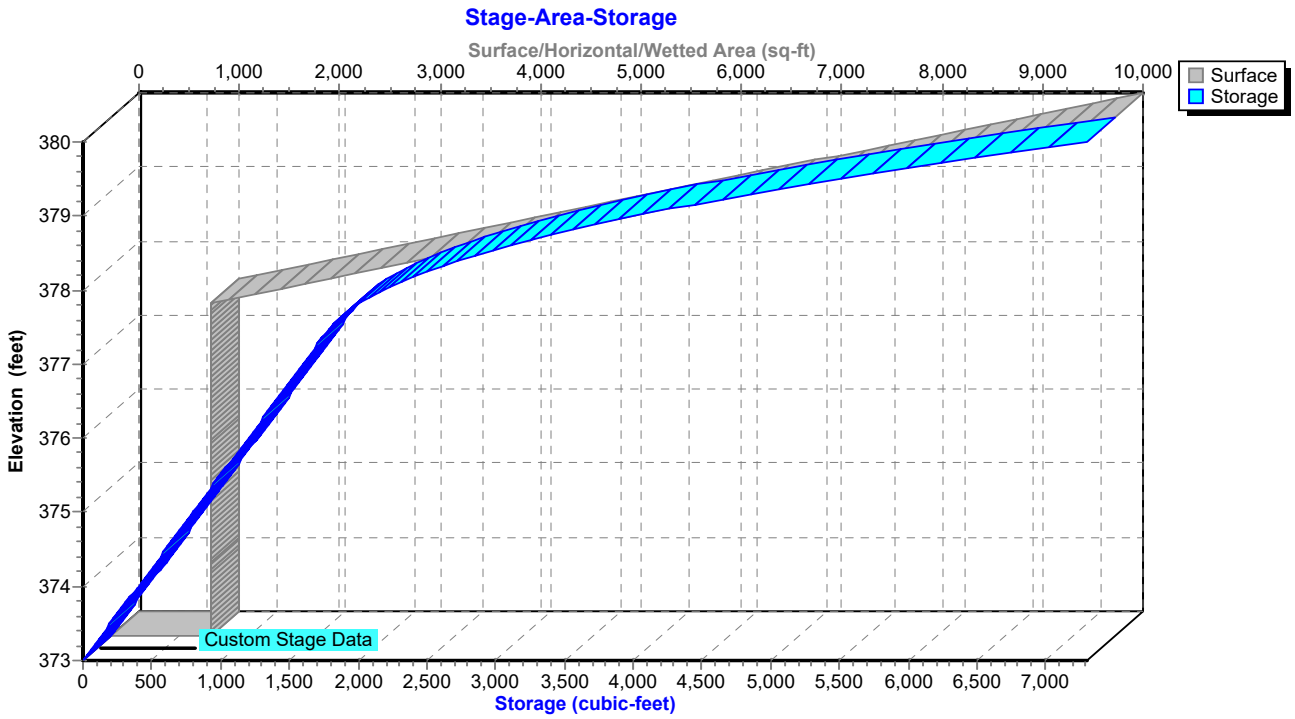
Pond AB-1: Attenuation Basin Lot 1



Pond AB-1: Attenuation Basin Lot 1



Pond AB-1: Attenuation Basin Lot 1



Hydrograph for Pond AB-1: Attenuation Basin Lot 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
5.00	0.00	0	373.00	0.00	0.00	**0.00**
5.50	0.01	7	373.02	0.00	0.00	0.00
6.00	0.01	12	373.03	0.00	0.00	0.00
6.50	0.01	16	373.04	0.00	0.00	0.00
7.00	0.01	19	373.05	0.00	0.00	0.00
7.50	0.01	22	373.06	0.01	0.01	0.00
8.00	0.01	25	373.06	0.01	0.01	0.00
8.50	0.01	28	373.07	0.01	0.01	0.00
9.00	0.01	31	373.08	0.01	0.01	0.00
9.50	0.01	35	373.09	0.01	0.01	0.00
10.00	0.02	41	373.10	0.02	0.02	0.00
10.50	0.03	53	373.13	0.03	0.03	0.00
11.00	0.05	70	373.17	0.04	0.04	0.00
11.50	0.10	100	373.25	0.08	0.08	0.00
12.00	**1.11**	607	374.52	0.26	0.26	0.00
12.50	**0.59**	**1,781**	**377.45**	**0.47**	**0.47**	0.00
13.00	0.21	**1,568**	**376.92**	**0.44**	**0.44**	0.00
13.50	0.13	1,134	375.83	0.37	0.37	0.00
14.00	0.10	747	374.87	0.30	0.30	0.00
14.50	0.09	450	374.12	0.22	0.22	0.00
15.00	0.08	255	373.64	0.16	0.16	0.00
15.50	0.07	149	373.37	0.12	0.12	0.00
16.00	0.06	99	373.25	0.07	0.07	0.00
16.50	0.06	86	373.22	0.06	0.06	0.00
17.00	0.05	81	373.20	0.05	0.05	0.00
17.50	0.05	78	373.20	0.05	0.05	0.00
18.00	0.05	75	373.19	0.05	0.05	0.00
18.50	0.04	72	373.18	0.05	0.05	0.00
19.00	0.04	70	373.17	0.04	0.04	0.00
19.50	0.04	67	373.17	0.04	0.04	0.00
20.00	0.03	64	373.16	0.04	0.04	0.00
20.50	0.03	61	373.15	0.03	0.03	0.00
21.00	0.03	60	373.15	0.03	0.03	0.00
21.50	0.03	59	373.15	0.03	0.03	0.00
22.00	0.03	59	373.15	0.03	0.03	0.00
22.50	0.03	58	373.15	0.03	0.03	0.00
23.00	0.03	58	373.14	0.03	0.03	0.00
23.50	0.03	57	373.14	0.03	0.03	0.00
24.00	0.03	57	373.14	0.03	0.03	0.00

Stage-Discharge for Pond AB-1: Attenuation Basin Lot 1

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
373.00	0.00	0.00	0.00
373.10	0.01	0.01	0.00
373.20	0.05	0.05	0.00
373.30	0.10	0.10	0.00
373.40	0.11	0.11	0.00
373.50	0.14	0.14	0.00
373.60	0.15	0.15	0.00
373.70	0.17	0.17	0.00
373.80	0.18	0.18	0.00
373.90	0.20	0.20	0.00
374.00	0.21	0.21	0.00
374.10	0.22	0.22	0.00
374.20	0.23	0.23	0.00
374.30	0.24	0.24	0.00
374.40	0.25	0.25	0.00
374.50	0.26	0.26	0.00
374.60	0.27	0.27	0.00
374.70	0.28	0.28	0.00
374.80	0.29	0.29	0.00
374.90	0.30	0.30	0.00
375.00	0.31	0.31	0.00
375.10	0.32	0.32	0.00
375.20	0.32	0.32	0.00
375.30	0.33	0.33	0.00
375.40	0.34	0.34	0.00
375.50	0.35	0.35	0.00
375.60	0.35	0.35	0.00
375.70	0.36	0.36	0.00
375.80	0.37	0.37	0.00
375.90	0.37	0.37	0.00
376.00	0.38	0.38	0.00
376.10	0.39	0.39	0.00
376.20	0.39	0.39	0.00
376.30	0.40	0.40	0.00
376.40	0.41	0.41	0.00
376.50	0.41	0.41	0.00
376.60	0.42	0.42	0.00
376.70	0.43	0.43	0.00
376.80	0.43	0.43	0.00
376.90	0.44	0.44	0.00
377.00	0.44	0.44	0.00
377.10	0.45	0.45	0.00
377.20	0.45	0.45	0.00
377.30	0.46	0.46	0.00
377.40	0.47	0.47	0.00
377.50	0.47	0.47	0.00
377.60	0.68	0.48	0.20
377.70	1.06	0.48	0.57
377.80	1.54	0.49	1.05
377.90	2.12	0.49	1.62
378.00	2.77	0.50	2.27
378.10	3.49	0.50	2.98
378.20	4.27	0.51	3.76
378.30	5.11	0.51	4.59
378.40	6.00	0.52	5.48
378.50	6.94	0.52	6.42
378.60	7.93	0.53	7.41
378.70	8.97	0.53	8.44
378.80	10.05	0.54	9.52
378.90	11.18	0.54	10.63
379.00	12.34	0.55	11.79
379.10	13.54	0.55	12.99
379.20	14.79	0.56	14.23
379.30	16.06	0.56	15.50
379.40	17.38	0.56	16.81
379.50	18.73	0.57	18.16
379.60	19.91	0.57	19.33
379.70	20.95	0.58	20.37
379.80	21.92	0.58	21.34
379.90	22.83	0.59	22.25
380.00	**23.70**	**0.59**	**23.11**

Stage-Area-Storage for Pond AB-1: Attenuation Basin Lot 1

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
373.00	1,000	0
373.10	1,000	40
373.20	1,000	80
373.30	1,000	120
373.40	1,000	160
373.50	1,000	200
373.60	1,000	240
373.70	1,000	280
373.80	1,000	320
373.90	1,000	360
374.00	1,000	400
374.10	1,000	440
374.20	1,000	480
374.30	1,000	520
374.40	1,000	560
374.50	1,000	600
374.60	1,000	640
374.70	1,000	680
374.80	1,000	720
374.90	1,000	760
375.00	1,000	800
375.10	1,000	840
375.20	1,000	880
375.30	1,000	920
375.40	1,000	960
375.50	1,000	1,000
375.60	1,000	1,040
375.70	1,000	1,080
375.80	1,000	1,120
375.90	1,000	1,160
376.00	1,000	1,200
376.10	1,000	1,240
376.20	1,000	1,280
376.30	1,000	1,320
376.40	1,000	1,360
376.50	1,000	1,400
376.60	1,000	1,440
376.70	1,000	1,480
376.80	1,000	1,520
376.90	1,000	1,560
377.00	1,000	1,600
377.10	1,000	1,640
377.20	1,000	1,680
377.30	1,000	1,720
377.40	1,000	1,760
377.50	1,000	1,800
377.60	1,360	1,847
377.70	1,720	1,909
377.80	2,080	1,985
377.90	2,440	2,075
378.00	2,800	2,180
378.10	3,160	2,299
378.20	3,520	2,433
378.30	3,880	2,581
378.40	4,240	2,743
378.50	4,600	2,920
378.60	4,960	3,111
378.70	5,320	3,317
378.80	5,680	3,537
378.90	6,040	3,771
379.00	6,400	4,020
379.10	6,760	4,283
379.20	7,120	4,561
379.30	7,480	4,853
379.40	7,840	5,159
379.50	8,200	5,480
379.60	8,560	5,815
379.70	8,920	6,165
379.80	9,280	6,529
379.90	9,640	6,907
380.00	**10,000**	**7,300**

Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	AB-2	371.00	370.85	30.0	0.0050	0.012	0.0	3.0	0.0

Summary for Pond AB-2: Attenuation Basin Lot 2

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.438 ac, 50.79% Impervious, Inflow Depth > 2.49"
Inflow = 0.84 cfs @ 11.99 hrs, Volume= 0.091 af
Outflow = 0.30 cfs @ 12.58 hrs, Volume= 0.090 af, Atten= 64%, Lag= 35.3 min
Primary = 0.30 cfs @ 12.58 hrs, Volume= 0.090 af
Routed to Reach EX Storm : Ex Storm Sewer
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach EX Storm : Ex Storm Sewer

Routing by Stor-Ind method, Time Span= 5.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 375.11' @ 12.58 hrs Surf.Area= 750 sf Storage= 1,233 cf

Plug-Flow detention time= 44.6 min calculated for 0.090 af (99% of inflow)
Center-of-Mass det. time= 39.2 min (847.1 - 807.9)

Volume	Invert	Avail.Storage	Storage Description
#1	371.00'	2,425 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc) 6,063 cf Overall x 40.0% Voids

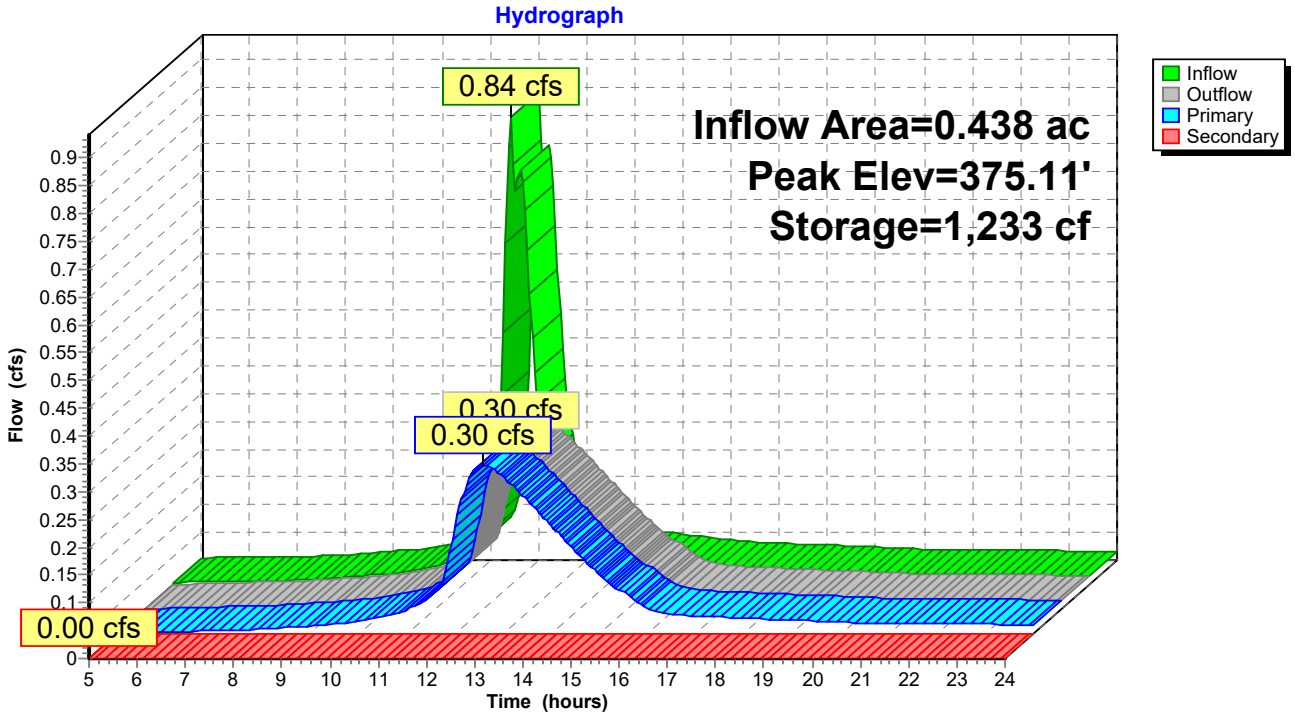
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
371.00	750	0	0
372.00	750	750	750
373.00	750	750	1,500
374.00	750	750	2,250
375.00	750	750	3,000
375.50	750	375	3,375
376.00	10,000	2,688	6,063

Device	Routing	Invert	Outlet Devices
#1	Primary	371.00'	**3.0" Round Culvert** L= 30.0' CMP, mitered to conform to fill, Ke= 0.700 Inlet / Outlet Invert= 371.00' / 370.85' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.05 sf
#2	Secondary	375.50'	**24.0" W x 24.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

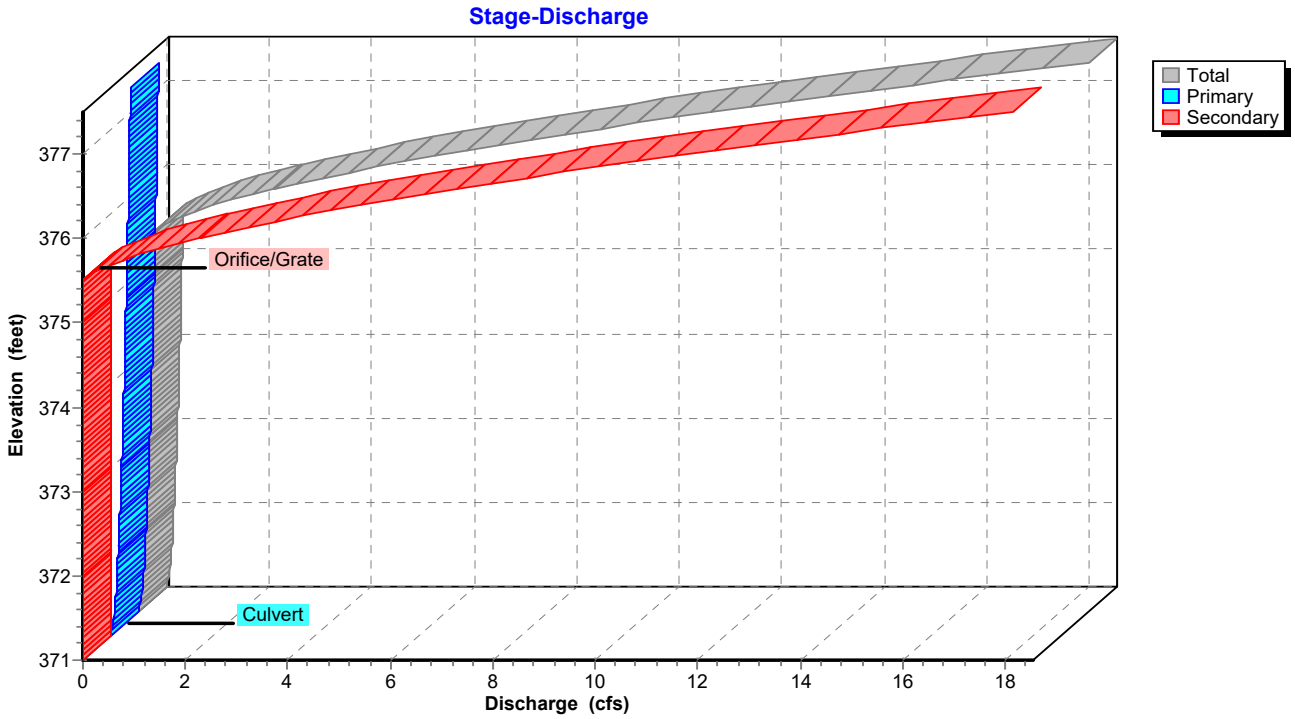
Primary OutFlow Max=0.30 cfs @ 12.58 hrs HW=375.11' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.30 cfs @ 6.16 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=371.00' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

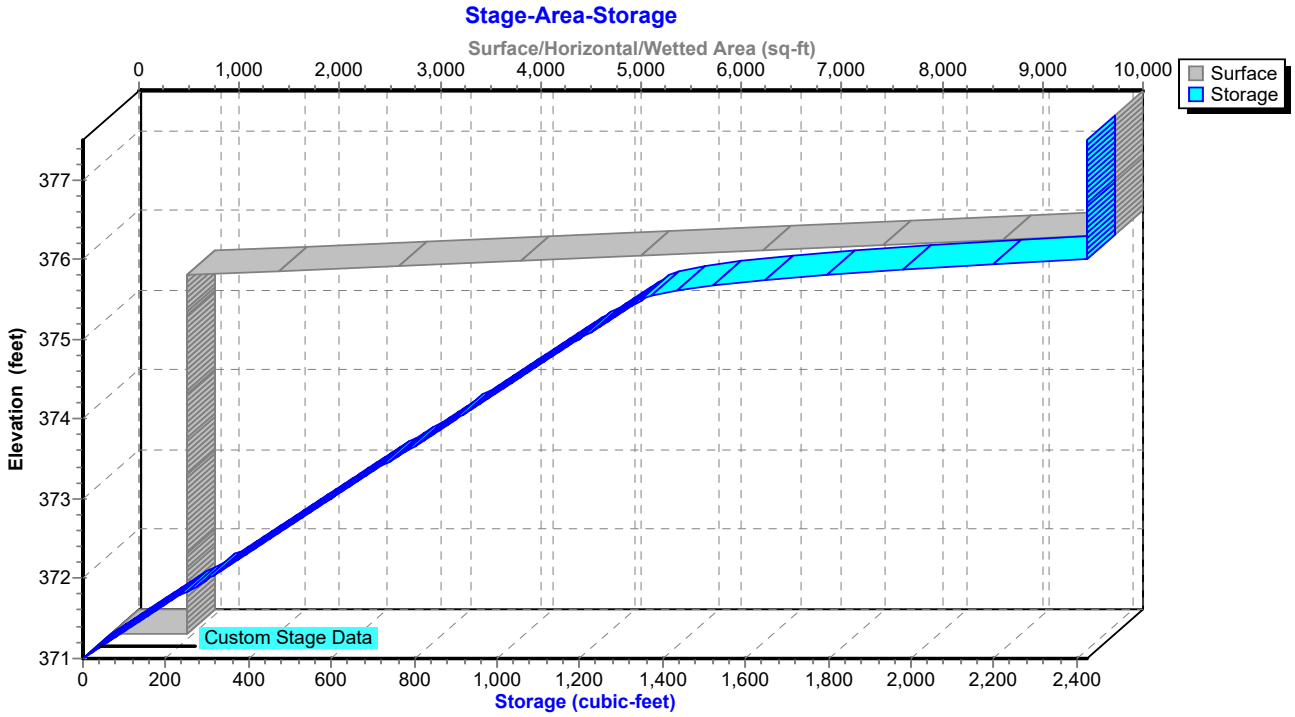
Pond AB-2: Attenuation Basin Lot 2



Pond AB-2: Attenuation Basin Lot 2



Pond AB-2: Attenuation Basin Lot 2



Hydrograph for Pond AB-2: Attenuation Basin Lot 2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
5.00	0.00	0	371.00	0.00	0.00	**0.00**
5.50	0.01	7	371.02	0.00	0.00	0.00
6.00	0.01	12	371.04	0.00	0.00	0.00
6.50	0.01	15	371.05	0.00	0.00	0.00
7.00	0.01	18	371.06	0.01	0.01	0.00
7.50	0.01	21	371.07	0.01	0.01	0.00
8.00	0.01	23	371.08	0.01	0.01	0.00
8.50	0.01	26	371.09	0.01	0.01	0.00
9.00	0.02	30	371.10	0.01	0.01	0.00
9.50	0.02	35	371.12	0.02	0.02	0.00
10.00	0.03	40	371.13	0.02	0.02	0.00
10.50	0.04	47	371.16	0.03	0.03	0.00
11.00	0.05	59	371.20	0.04	0.04	0.00
11.50	0.09	82	371.27	0.07	0.07	0.00
12.00	**0.84**	520	372.73	0.19	0.19	0.00
12.50	0.38	**1,222**	**375.07**	**0.30**	**0.30**	0.00
13.00	0.13	**1,083**	**374.61**	**0.28**	**0.28**	0.00
13.50	0.08	793	373.64	0.24	0.24	0.00
14.00	0.06	530	372.77	0.20	0.20	0.00
14.50	0.05	323	372.08	0.15	0.15	0.00
15.00	0.05	181	371.60	0.11	0.11	0.00
15.50	0.04	99	371.33	0.08	0.08	0.00
16.00	0.04	61	371.20	0.05	0.05	0.00
16.50	0.03	52	371.17	0.04	0.04	0.00
17.00	0.03	49	371.16	0.03	0.03	0.00
17.50	0.03	47	371.16	0.03	0.03	0.00
18.00	0.03	45	371.15	0.03	0.03	0.00
18.50	0.03	44	371.15	0.03	0.03	0.00
19.00	0.02	42	371.14	0.02	0.02	0.00
19.50	0.02	41	371.14	0.02	0.02	0.00
20.00	0.02	39	371.13	0.02	0.02	0.00
20.50	0.02	37	371.12	0.02	0.02	0.00
21.00	0.02	36	371.12	0.02	0.02	0.00
21.50	0.02	36	371.12	0.02	0.02	0.00
22.00	0.02	35	371.12	0.02	0.02	0.00
22.50	0.02	35	371.12	0.02	0.02	0.00
23.00	0.02	34	371.11	0.02	0.02	0.00
23.50	0.02	34	371.11	0.02	0.02	0.00
24.00	0.02	33	371.11	0.02	0.02	0.00

Stage-Discharge for Pond AB-2: Attenuation Basin Lot 2

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
371.00	0.00	0.00	0.00
371.10	0.01	0.01	0.00
371.20	0.04	0.04	0.00
371.30	0.07	0.07	0.00
371.40	0.08	0.08	0.00
371.50	0.10	0.10	0.00
371.60	0.11	0.11	0.00
371.70	0.12	0.12	0.00
371.80	0.13	0.13	0.00
371.90	0.14	0.14	0.00
372.00	0.14	0.14	0.00
372.10	0.15	0.15	0.00
372.20	0.16	0.16	0.00
372.30	0.17	0.17	0.00
372.40	0.17	0.17	0.00
372.50	0.18	0.18	0.00
372.60	0.19	0.19	0.00
372.70	0.19	0.19	0.00
372.80	0.20	0.20	0.00
372.90	0.20	0.20	0.00
373.00	0.21	0.21	0.00
373.10	0.21	0.21	0.00
373.20	0.22	0.22	0.00
373.30	0.22	0.22	0.00
373.40	0.23	0.23	0.00
373.50	0.23	0.23	0.00
373.60	0.24	0.24	0.00
373.70	0.24	0.24	0.00
373.80	0.25	0.25	0.00
373.90	0.25	0.25	0.00
374.00	0.26	0.26	0.00
374.10	0.26	0.26	0.00
374.20	0.27	0.27	0.00
374.30	0.27	0.27	0.00
374.40	0.27	0.27	0.00
374.50	0.28	0.28	0.00
374.60	0.28	0.28	0.00
374.70	0.29	0.29	0.00
374.80	0.29	0.29	0.00
374.90	0.29	0.29	0.00
375.00	0.30	0.30	0.00
375.10	0.30	0.30	0.00
375.20	0.31	0.31	0.00
375.30	0.31	0.31	0.00
375.40	0.31	0.31	0.00
375.50	0.32	0.32	0.00
375.60	0.52	0.32	0.20
375.70	0.90	0.32	0.57
375.80	1.38	0.33	1.05
375.90	1.96	0.33	1.62
376.00	2.60	0.33	2.27
376.10	3.32	0.34	2.98
376.20	4.10	0.34	3.76
376.30	4.94	0.34	4.59
376.40	5.83	0.35	5.48
376.50	6.77	0.35	6.42
376.60	7.76	0.35	7.41
376.70	8.80	0.36	8.44
376.80	9.88	0.36	9.52
376.90	11.00	0.36	10.63
377.00	12.16	0.37	11.79
377.10	13.36	0.37	12.99
377.20	14.60	0.37	14.23
377.30	15.88	0.38	15.50
377.40	17.19	0.38	16.81
377.50	**18.54**	**0.38**	**18.16**

Stage-Area-Storage for Pond AB-2: Attenuation Basin Lot 2

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
371.00	750	0
371.10	750	30
371.20	750	60
371.30	750	90
371.40	750	120
371.50	750	150
371.60	750	180
371.70	750	210
371.80	750	240
371.90	750	270
372.00	750	300
372.10	750	330
372.20	750	360
372.30	750	390
372.40	750	420
372.50	750	450
372.60	750	480
372.70	750	510
372.80	750	540
372.90	750	570
373.00	750	600
373.10	750	630
373.20	750	660
373.30	750	690
373.40	750	720
373.50	750	750
373.60	750	780
373.70	750	810
373.80	750	840
373.90	750	870
374.00	750	900
374.10	750	930
374.20	750	960
374.30	750	990
374.40	750	1,020
374.50	750	1,050
374.60	750	1,080
374.70	750	1,110
374.80	750	1,140
374.90	750	1,170
375.00	750	1,200
375.10	750	1,230
375.20	750	1,260
375.30	750	1,290
375.40	750	1,320
375.50	750	1,350
375.60	2,600	1,417
375.70	4,450	1,558
375.80	6,300	1,773
375.90	8,150	2,062
376.00	**10,000**	**2,425**
376.10	10,000	2,425
376.20	10,000	2,425
376.30	10,000	2,425
376.40	10,000	2,425
376.50	10,000	2,425
376.60	10,000	2,425
376.70	10,000	2,425
376.80	10,000	2,425
376.90	10,000	2,425
377.00	10,000	2,425
377.10	10,000	2,425
377.20	10,000	2,425
377.30	10,000	2,425
377.40	10,000	2,425
377.50	10,000	2,425

Short Environmental Assessment Form
Part 1 - Project Information

Instructions for Completing

Part 1 – Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 – Project and Sponsor Information

Name of Action or Project:

Polsinelli 3 Lot Homestead Place at Antonia Park Section 9

Project Location (describe, and attach a location map):

Homestead Place at Antonia Park Section 9, Niskayuna, NY 12309

Brief Description of Proposed Action:

3 Lot Subdivision, 2 Building Lots with remaining 2.32 +/- acres of land to be annexted to Lecce Development Co. LLC.

Name of Applicant or Sponsor:	Telephone: 518-928-6449
The Estate of Vincenza Polsinelli	E-Mail: fgp414v@hotmail.com

Address:

414 Vincent Drive

City/PO:	State:	Zip Code:
Schenectady	NY	12303

	NO	YES
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.	☑	☐
2. Does the proposed action require a permit, approval or funding from any other government Agency? If Yes, list agency(s) name and permit or approval:	☑	☐

3. a. Total acreage of the site of the proposed action? 8.43 acres
   b. Total acreage to be physically disturbed? 1.37 +/- acres
   c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 8.43 acres

4. Check all land uses that occur on, are adjoining or near the proposed action:

5. ☐ Urban ☐ Rural (non-agriculture) ☐ Industrial ☐ Commercial ☑ Residential (suburban)
   ☑ Forest ☐ Agriculture ☐ Aquatic ☐ Other(Specify):
   ☐ Parkland

	NO	YES	N/A
5. Is the proposed action,			
a. A permitted use under the zoning regulations?	☐	☑	☐
b. Consistent with the adopted comprehensive plan?	☐	☑	☐

	NO	YES
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	☐	☑

	NO	YES
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area?		
If Yes, identify: _____	☑	☐

	NO	YES
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	☑	☐
b. Are public transportation services available at or near the site of the proposed action?	☑	☐
c. Are any pedestrian accommodations or bicycle routes available on or near the site of the proposed action?	☑	☐

	NO	YES
9. Does the proposed action meet or exceed the state energy code requirements?		
If the proposed action will exceed requirements, describe design features and technologies: _____ _____	☐	☑

	NO	YES
10. Will the proposed action connect to an existing public/private water supply?		
If No, describe method for providing potable water: _____ _____	☐	☑

	NO	YES
11. Will the proposed action connect to existing wastewater utilities?		
If No, describe method for providing wastewater treatment: _____ _____	☐	☑

	NO	YES
12. a. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places?	☑	☐
b. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory?	☐	☑

	NO	YES
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?	☐	☑
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody?	☑	☐
If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: _____ _____ _____		

14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:

☐ Shoreline ☑ Forest ☐ Agricultural/grasslands ☐ Early mid-successional

☑ Wetland ☐ Urban ☑ Suburban

	NO	YES
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered?	☑	☐
16. Is the project site located in the 100-year flood plan?	☑	☐
17. Will the proposed action create storm water discharge, either from point or non-point sources?	☐	☑
If Yes,		
a. Will storm water discharges flow to adjacent properties?	☑	☐
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)?	☐	☑
If Yes, briefly describe: Storm Water will be attenuated on site and discharged into the Town of Niskayuna Storm Sewer. Existing flows off site towards adjacent properties will be the same or less than existing conditions.		
18. Does the proposed action include construction or other activities that would result in the impoundment of water or other liquids (e.g., retention pond, waste lagoon, dam)?	☑	☐
If Yes, explain the purpose and size of the impoundment:		
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility?	☑	☐
If Yes, describe:		
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste?	☑	☐
If Yes, describe:		

I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

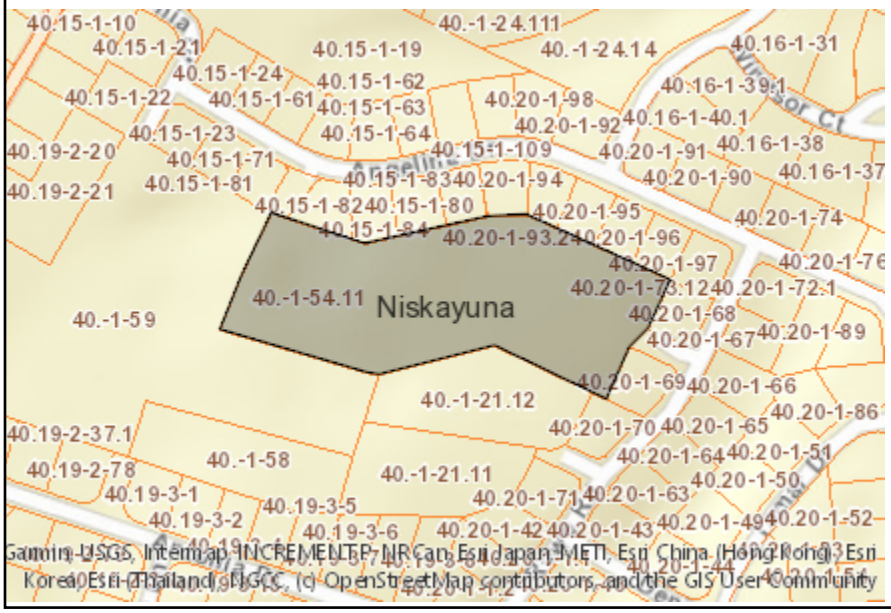
Applicant/sponsor/name: Brett L. Steenburgh Date: 04/25/2023

Signature: _____ Title: Engineer For Applicant

PRINT FORM

EAF Mapper Summary Report

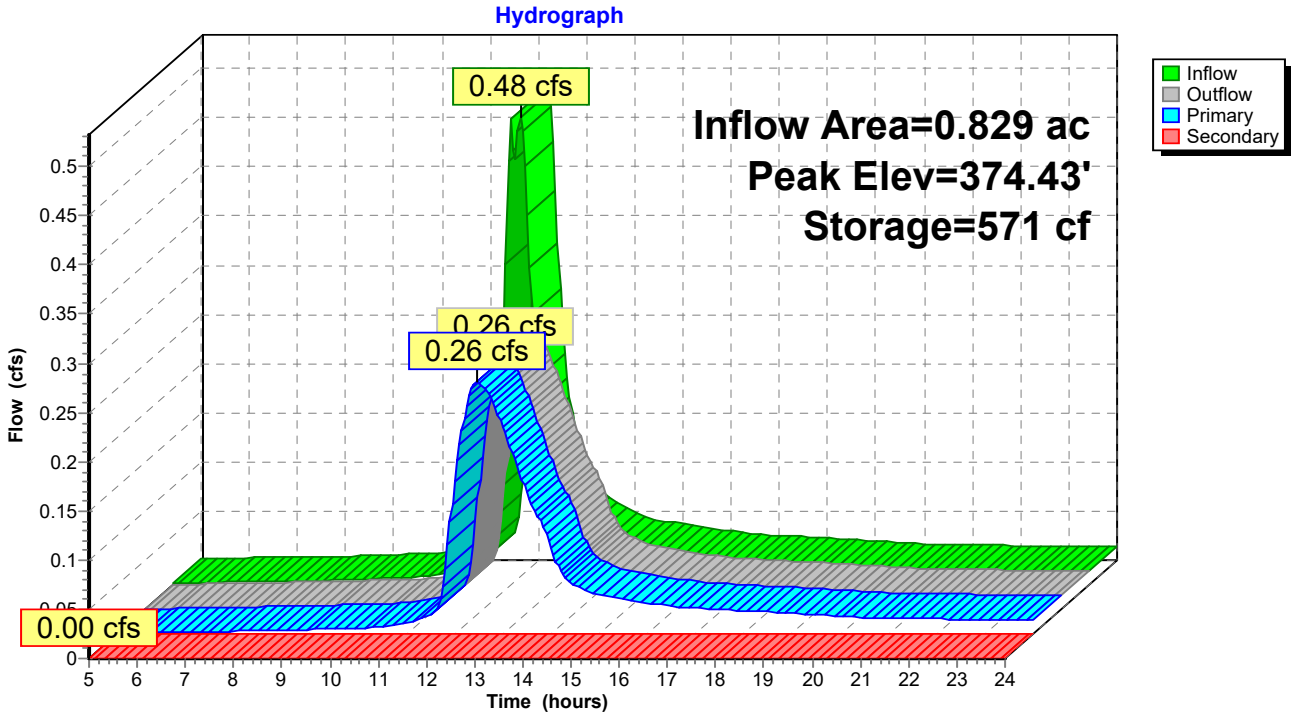
Tuesday, April 25, 2023 12:54 PM



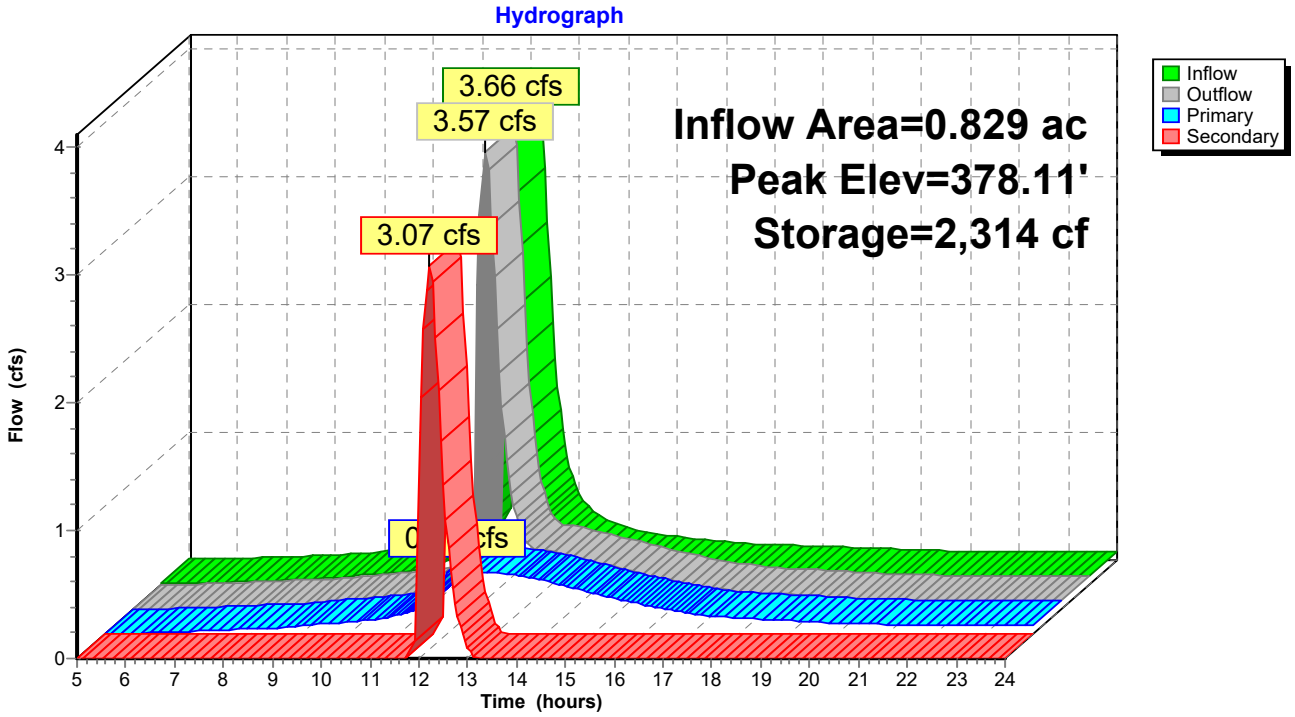
Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.

Part 1 / Question 7 [Critical Environmental Area]	No
Part 1 / Question 12a [National or State Register of Historic Places or State Eligible Sites]	No
Part 1 / Question 12b [Archeological Sites]	Yes
Part 1 / Question 13a [Wetlands or Other Regulated Waterbodies]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
Part 1 / Question 15 [Threatened or Endangered Animal]	No
Part 1 / Question 16 [100 Year Flood Plain]	No
Part 1 / Question 20 [Remediation Site]	No

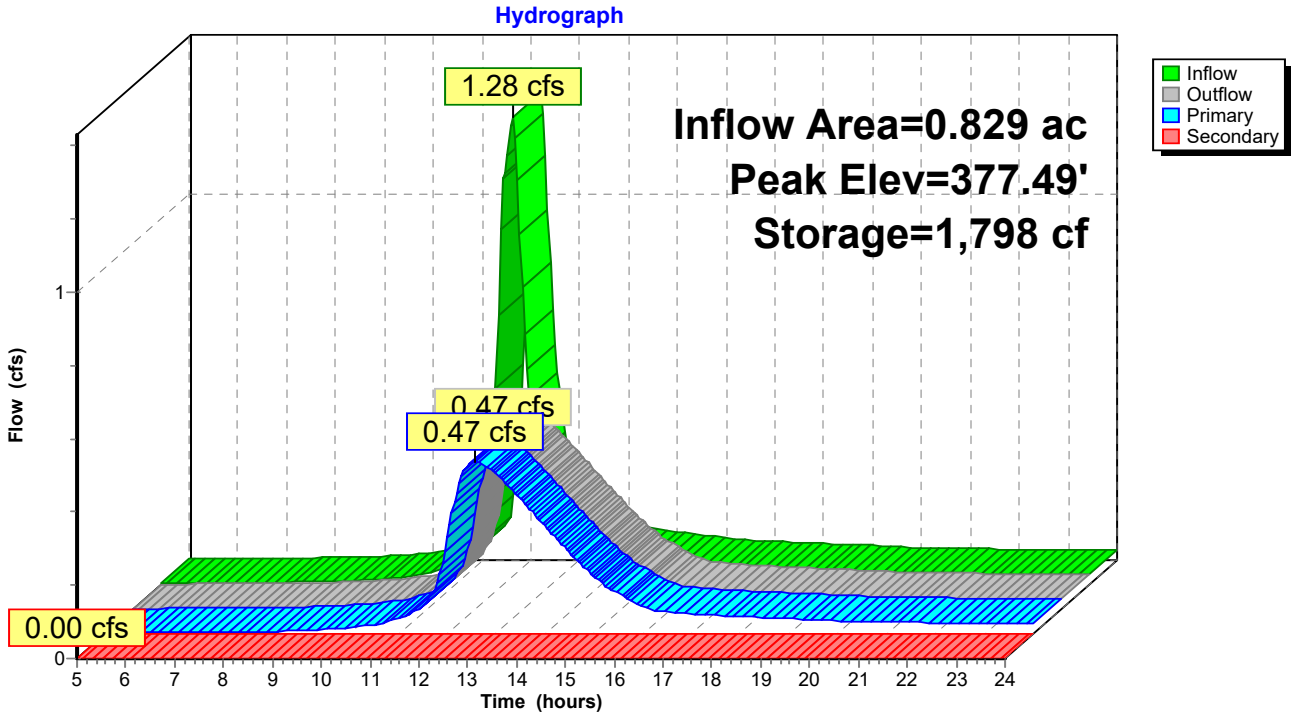
Pond AB-1: Attenuation Basin Lot 1



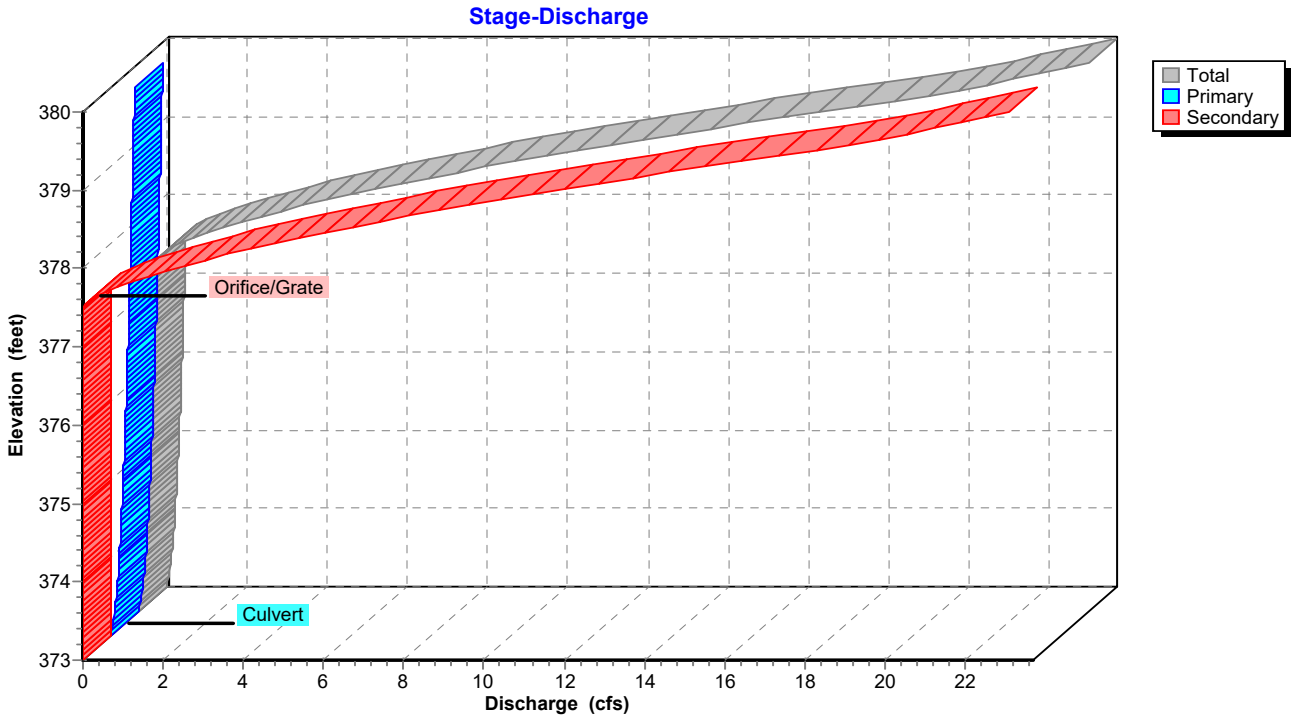
Pond AB-1: Attenuation Basin Lot 1



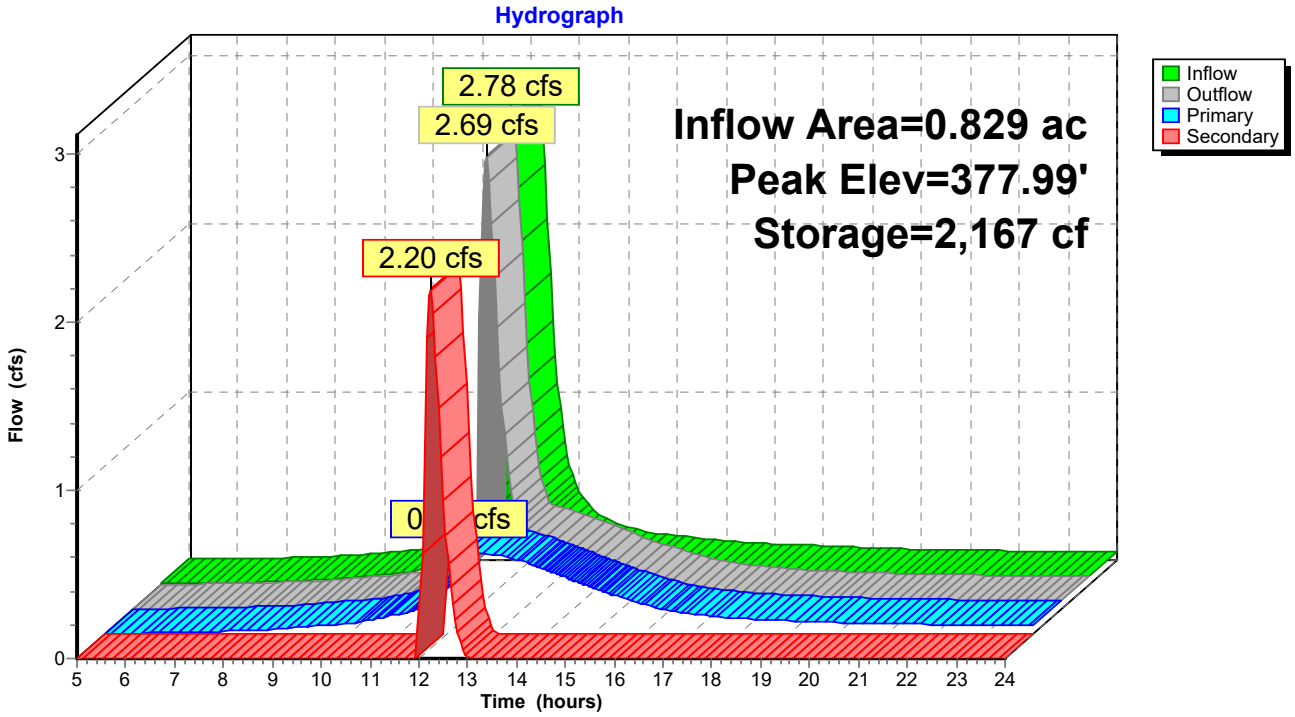
Pond AB-1: Attenuation Basin Lot 1



Pond AB-1: Attenuation Basin Lot 1



Pond AB-1: Attenuation Basin Lot 1



Hydrograph for Pond AB-1: Attenuation Basin Lot 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
5.00	0.00	0	373.00	0.00	0.00	**0.00**
5.50	0.00	3	373.01	0.00	0.00	0.00
6.00	0.00	6	373.01	0.00	0.00	0.00
6.50	0.00	8	373.02	0.00	0.00	0.00
7.00	0.00	9	373.02	0.00	0.00	0.00
7.50	0.00	11	373.03	0.00	0.00	0.00
8.00	0.00	12	373.03	0.00	0.00	0.00
8.50	0.00	14	373.04	0.00	0.00	0.00
9.00	0.01	17	373.04	0.00	0.00	0.00
9.50	0.01	20	373.05	0.01	0.01	0.00
10.00	0.01	22	373.06	0.01	0.01	0.00
10.50	0.01	27	373.07	0.01	0.01	0.00
11.00	0.01	33	373.08	0.01	0.01	0.00
11.50	0.03	44	373.11	0.02	0.02	0.00
12.00	**0.47**	248	373.62	0.16	0.16	0.00
12.50	**0.24**	**571**	**374.43**	**0.26**	**0.26**	0.00
13.00	0.09	405	374.01	0.21	0.21	0.00
13.50	0.06	220	373.55	0.14	0.14	0.00
14.00	0.05	110	373.28	0.09	0.09	0.00
14.50	0.04	76	373.19	0.05	0.05	0.00
15.00	0.04	68	373.17	0.04	0.04	0.00
15.50	0.03	63	373.16	0.04	0.04	0.00
16.00	0.03	60	373.15	0.03	0.03	0.00
16.50	0.03	56	373.14	0.03	0.03	0.00
17.00	0.03	54	373.13	0.03	0.03	0.00
17.50	0.02	52	373.13	0.02	0.02	0.00
18.00	0.02	50	373.13	0.02	0.02	0.00
18.50	0.02	48	373.12	0.02	0.02	0.00
19.00	0.02	46	373.12	0.02	0.02	0.00
19.50	0.02	45	373.11	0.02	0.02	0.00
20.00	0.02	43	373.11	0.02	0.02	0.00
20.50	0.02	41	373.10	0.02	0.02	0.00
21.00	0.02	40	373.10	0.02	0.02	0.00
21.50	0.02	39	373.10	0.02	0.02	0.00
22.00	0.02	39	373.10	0.02	0.02	0.00
22.50	0.01	39	373.10	0.01	0.01	0.00
23.00	0.01	38	373.10	0.01	0.01	0.00
23.50	0.01	38	373.09	0.01	0.01	0.00
24.00	0.01	37	373.09	0.01	0.01	0.00

Hydrograph for Pond AB-1: Attenuation Basin Lot 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
5.00	0.01	1	373.00	0.00	0.00	0.00
5.50	0.01	18	373.04	0.00	0.00	0.00
6.00	0.02	31	373.08	0.01	0.01	0.00
6.50	0.02	42	373.10	0.02	0.02	0.00
7.00	0.03	50	373.13	0.02	0.02	0.00
7.50	0.04	59	373.15	0.03	0.03	0.00
8.00	0.04	66	373.16	0.04	0.04	0.00
8.50	0.05	74	373.19	0.05	0.05	0.00
9.00	0.07	89	373.22	0.06	0.06	0.00
9.50	0.09	104	373.26	0.08	0.08	0.00
10.00	0.11	118	373.29	0.09	0.09	0.00
10.50	0.14	151	373.38	0.12	0.12	0.00
11.00	0.21	233	373.58	0.15	0.15	0.00
11.50	0.35	401	374.00	0.21	0.21	0.00
12.00	**3.01**	**1,908**	**377.70**	**1.05**	**0.48**	**0.57**
12.50	**1.58**	**2,033**	**377.85**	**1.85**	**0.49**	**1.36**
13.00	0.52	1,825	377.56	0.56	0.47	0.09
13.50	0.33	1,686	377.21	0.46	0.46	0.00
14.00	0.25	1,417	376.54	0.42	0.42	0.00
14.50	0.21	1,119	375.80	0.37	0.37	0.00
15.00	0.19	855	375.14	0.32	0.32	0.00
15.50	0.17	641	374.60	0.27	0.27	0.00
16.00	0.15	471	374.18	0.23	0.23	0.00
16.50	0.13	342	373.85	0.19	0.19	0.00
17.00	0.12	257	373.64	0.16	0.16	0.00
17.50	0.12	206	373.52	0.14	0.14	0.00
18.00	0.11	175	373.44	0.12	0.12	0.00
18.50	0.10	152	373.38	0.12	0.12	0.00
19.00	0.09	129	373.32	0.10	0.10	0.00
19.50	0.09	117	373.29	0.09	0.09	0.00
20.00	0.08	108	373.27	0.08	0.08	0.00
20.50	0.08	102	373.26	0.08	0.08	0.00
21.00	0.07	100	373.25	0.07	0.07	0.00
21.50	0.07	98	373.25	0.07	0.07	0.00
22.00	0.07	97	373.24	0.07	0.07	0.00
22.50	0.07	96	373.24	0.07	0.07	0.00
23.00	0.07	94	373.24	0.07	0.07	0.00
23.50	0.07	93	373.23	0.07	0.07	0.00
24.00	0.07	92	373.23	0.07	0.07	0.00

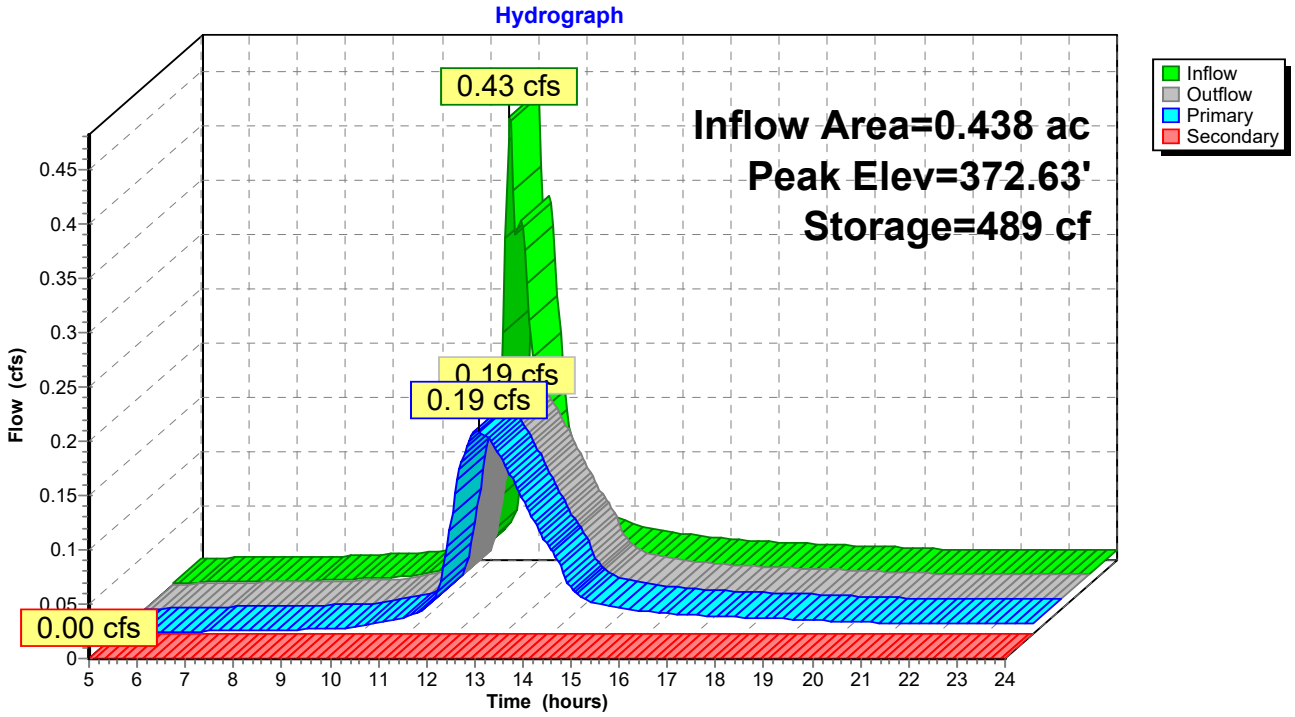
Hydrograph for Pond AB-1: Attenuation Basin Lot 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
5.00	0.00	0	373.00	0.00	0.00	**0.00**
5.50	0.01	7	373.02	0.00	0.00	0.00
6.00	0.01	12	373.03	0.00	0.00	0.00
6.50	0.01	16	373.04	0.00	0.00	0.00
7.00	0.01	19	373.05	0.00	0.00	0.00
7.50	0.01	22	373.06	0.01	0.01	0.00
8.00	0.01	25	373.06	0.01	0.01	0.00
8.50	0.01	28	373.07	0.01	0.01	0.00
9.00	0.01	31	373.08	0.01	0.01	0.00
9.50	0.01	35	373.09	0.01	0.01	0.00
10.00	0.02	41	373.10	0.02	0.02	0.00
10.50	0.03	53	373.13	0.03	0.03	0.00
11.00	0.05	70	373.17	0.04	0.04	0.00
11.50	0.10	100	373.25	0.08	0.08	0.00
12.00	**1.11**	607	374.52	0.26	0.26	0.00
12.50	**0.59**	**1,781**	**377.45**	**0.47**	**0.47**	0.00
13.00	0.21	**1,568**	**376.92**	**0.44**	**0.44**	0.00
13.50	0.13	1,134	375.83	0.37	0.37	0.00
14.00	0.10	747	374.87	0.30	0.30	0.00
14.50	0.09	450	374.12	0.22	0.22	0.00
15.00	0.08	255	373.64	0.16	0.16	0.00
15.50	0.07	149	373.37	0.12	0.12	0.00
16.00	0.06	99	373.25	0.07	0.07	0.00
16.50	0.06	86	373.22	0.06	0.06	0.00
17.00	0.05	81	373.20	0.05	0.05	0.00
17.50	0.05	78	373.20	0.05	0.05	0.00
18.00	0.05	75	373.19	0.05	0.05	0.00
18.50	0.04	72	373.18	0.05	0.05	0.00
19.00	0.04	70	373.17	0.04	0.04	0.00
19.50	0.04	67	373.17	0.04	0.04	0.00
20.00	0.03	64	373.16	0.04	0.04	0.00
20.50	0.03	61	373.15	0.03	0.03	0.00
21.00	0.03	60	373.15	0.03	0.03	0.00
21.50	0.03	59	373.15	0.03	0.03	0.00
22.00	0.03	59	373.15	0.03	0.03	0.00
22.50	0.03	58	373.15	0.03	0.03	0.00
23.00	0.03	58	373.14	0.03	0.03	0.00
23.50	0.03	57	373.14	0.03	0.03	0.00
24.00	0.03	57	373.14	0.03	0.03	0.00

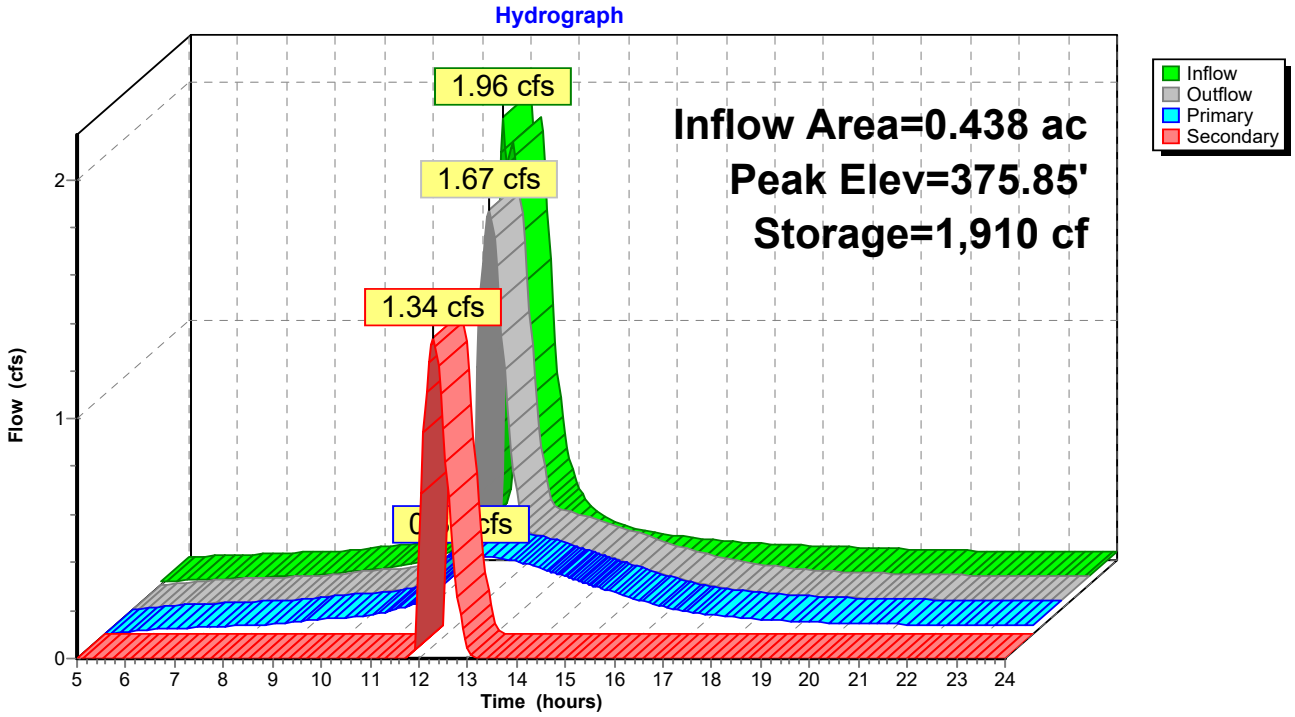
Hydrograph for Pond AB-1: Attenuation Basin Lot 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
5.00	0.01	1	373.00	0.00	0.00	0.00
5.50	0.01	14	373.03	0.00	0.00	0.00
6.00	0.01	23	373.06	0.01	0.01	0.00
6.50	0.01	30	373.08	0.01	0.01	0.00
7.00	0.02	35	373.09	0.01	0.01	0.00
7.50	0.02	41	373.10	0.02	0.02	0.00
8.00	0.03	48	373.12	0.02	0.02	0.00
8.50	0.03	56	373.14	0.03	0.03	0.00
9.00	0.05	67	373.17	0.04	0.04	0.00
9.50	0.06	79	373.20	0.05	0.05	0.00
10.00	0.07	90	373.22	0.06	0.06	0.00
10.50	0.10	110	373.27	0.09	0.09	0.00
11.00	0.15	149	373.37	0.12	0.12	0.00
11.50	0.25	259	373.65	0.16	0.16	0.00
12.00	**2.30**	**1,416**	**376.54**	**0.42**	**0.42**	**0.00**
12.50	**1.22**	**1,966**	**377.78**	**1.42**	**0.49**	**0.93**
13.00	0.41	1,795	377.49	0.47	0.47	0.00
13.50	0.26	1,546	376.86	0.44	0.44	0.00
14.00	0.20	1,215	376.04	0.38	0.38	0.00
14.50	0.16	897	375.24	0.33	0.33	0.00
15.00	0.15	638	374.60	0.27	0.27	0.00
15.50	0.13	445	374.11	0.22	0.22	0.00
16.00	0.12	308	373.77	0.18	0.18	0.00
16.50	0.10	217	373.54	0.14	0.14	0.00
17.00	0.10	165	373.41	0.12	0.12	0.00
17.50	0.09	131	373.33	0.11	0.11	0.00
18.00	0.09	116	373.29	0.09	0.09	0.00
18.50	0.08	108	373.27	0.08	0.08	0.00
19.00	0.08	103	373.26	0.08	0.08	0.00
19.50	0.07	98	373.24	0.07	0.07	0.00
20.00	0.06	93	373.23	0.07	0.07	0.00
20.50	0.06	88	373.22	0.06	0.06	0.00
21.00	0.06	86	373.21	0.06	0.06	0.00
21.50	0.06	85	373.21	0.06	0.06	0.00
22.00	0.06	84	373.21	0.06	0.06	0.00
22.50	0.06	83	373.21	0.06	0.06	0.00
23.00	0.05	82	373.20	0.05	0.05	0.00
23.50	0.05	81	373.20	0.05	0.05	0.00
24.00	0.05	80	373.20	0.05	0.05	0.00

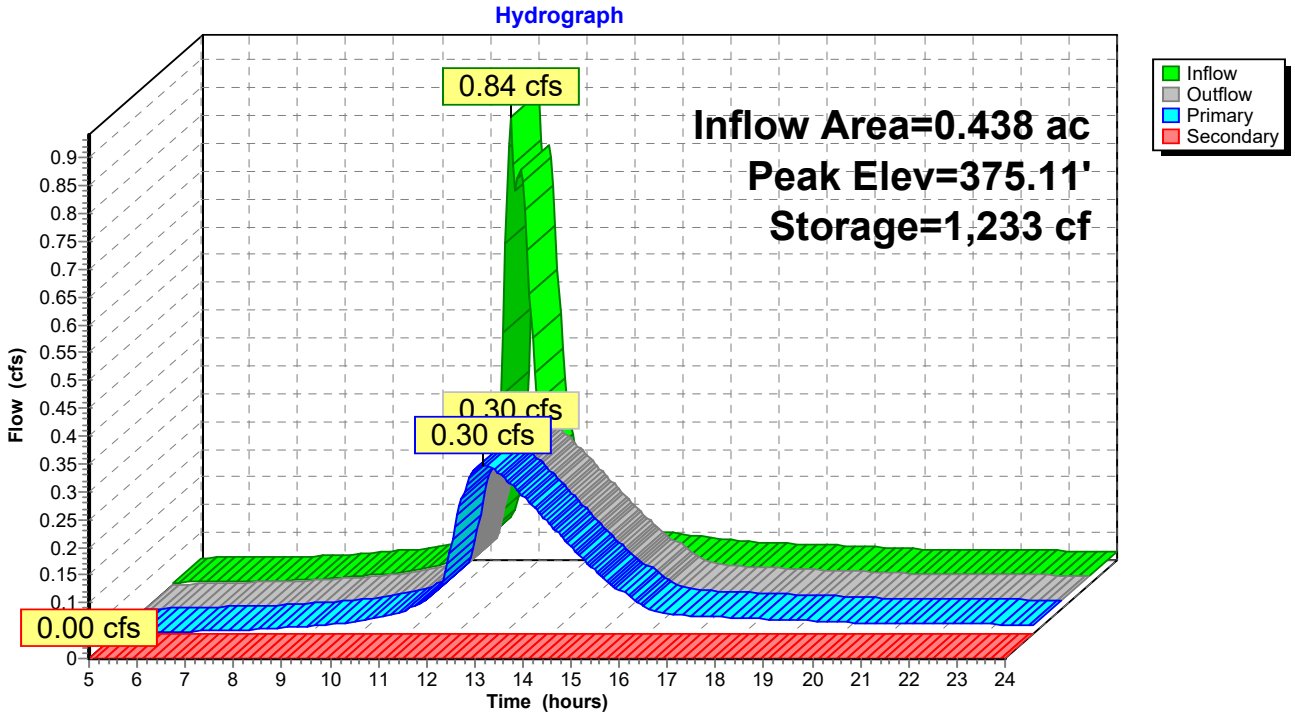
Pond AB-2: Attenuation Basin Lot 2



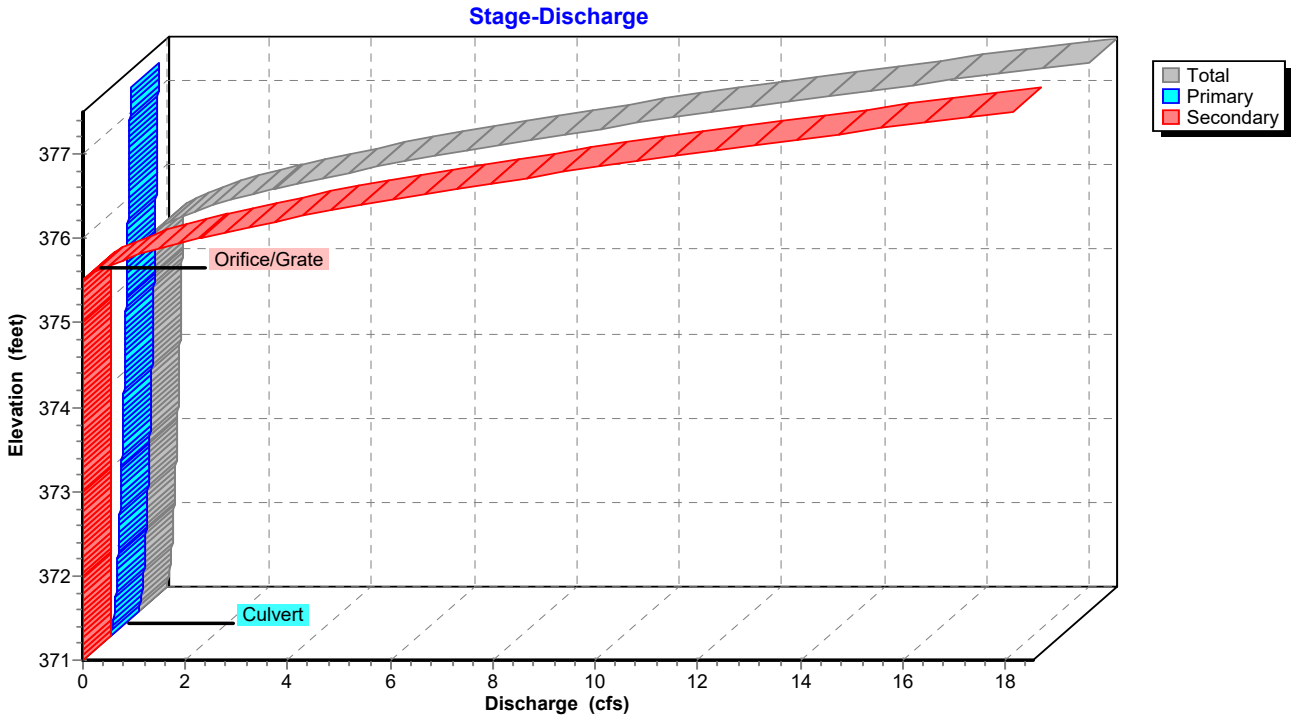
Pond AB-2: Attenuation Basin Lot 2



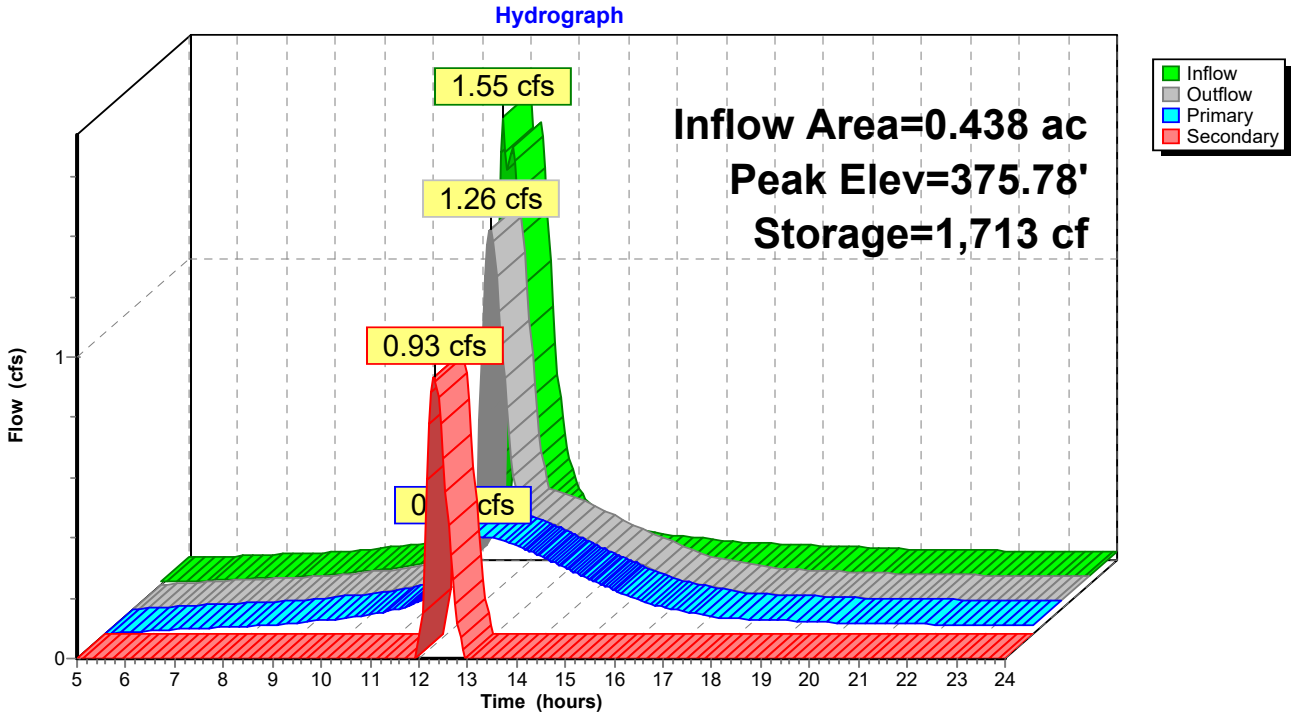
Pond AB-2: Attenuation Basin Lot 2



Pond AB-2: Attenuation Basin Lot 2



Pond AB-2: Attenuation Basin Lot 2



Hydrograph for Pond AB-2: Attenuation Basin Lot 2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
5.00	0.00	0	371.00	0.00	0.00	**0.00**
5.50	0.00	3	371.01	0.00	0.00	0.00
6.00	0.00	5	371.02	0.00	0.00	0.00
6.50	0.00	7	371.02	0.00	0.00	0.00
7.00	0.00	9	371.03	0.00	0.00	0.00
7.50	0.00	10	371.03	0.00	0.00	0.00
8.00	0.00	11	371.04	0.00	0.00	0.00
8.50	0.00	13	371.04	0.00	0.00	0.00
9.00	0.01	15	371.05	0.00	0.00	0.00
9.50	0.01	18	371.06	0.01	0.01	0.00
10.00	0.01	21	371.07	0.01	0.01	0.00
10.50	0.01	25	371.08	0.01	0.01	0.00
11.00	0.02	32	371.11	0.02	0.02	0.00
11.50	0.04	45	371.15	0.03	0.03	0.00
12.00	**0.43**	248	371.83	0.13	0.13	0.00
12.50	0.18	**489**	**372.63**	**0.19**	**0.19**	0.00
13.00	0.07	365	372.22	0.16	0.16	0.00
13.50	0.04	210	371.70	0.12	0.12	0.00
14.00	0.03	104	371.35	0.08	0.08	0.00
14.50	0.03	55	371.18	0.04	0.04	0.00
15.00	0.02	44	371.15	0.03	0.03	0.00
15.50	0.02	41	371.14	0.02	0.02	0.00
16.00	0.02	39	371.13	0.02	0.02	0.00
16.50	0.02	36	371.12	0.02	0.02	0.00
17.00	0.02	34	371.11	0.02	0.02	0.00
17.50	0.02	33	371.11	0.02	0.02	0.00
18.00	0.01	32	371.11	0.02	0.02	0.00
18.50	0.01	30	371.10	0.01	0.01	0.00
19.00	0.01	29	371.10	0.01	0.01	0.00
19.50	0.01	28	371.09	0.01	0.01	0.00
20.00	0.01	27	371.09	0.01	0.01	0.00
20.50	0.01	26	371.09	0.01	0.01	0.00
21.00	0.01	25	371.08	0.01	0.01	0.00
21.50	0.01	25	371.08	0.01	0.01	0.00
22.00	0.01	25	371.08	0.01	0.01	0.00
22.50	0.01	25	371.08	0.01	0.01	0.00
23.00	0.01	24	371.08	0.01	0.01	0.00
23.50	0.01	24	371.08	0.01	0.01	0.00
24.00	0.01	24	371.08	0.01	0.01	0.00

Hydrograph for Pond AB-2: Attenuation Basin Lot 2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
5.00	0.02	1	371.00	0.00	0.00	0.00
5.50	0.02	24	371.08	0.01	0.01	0.00
6.00	0.02	35	371.12	0.02	0.02	0.00
6.50	0.03	41	371.14	0.02	0.02	0.00
7.00	0.03	45	371.15	0.03	0.03	0.00
7.50	0.03	49	371.16	0.03	0.03	0.00
8.00	0.04	53	371.18	0.04	0.04	0.00
8.50	0.05	58	371.19	0.04	0.04	0.00
9.00	0.06	67	371.22	0.05	0.05	0.00
9.50	0.07	77	371.26	0.06	0.06	0.00
10.00	0.08	88	371.29	0.07	0.07	0.00
10.50	0.11	117	371.39	0.08	0.08	0.00
11.00	0.15	175	371.58	0.11	0.11	0.00
11.50	0.24	292	371.97	0.14	0.14	0.00
12.00	**1.96**	**1,401**	**375.58**	**0.47**	**0.32**	**0.15**
12.50	0.91	**1,731**	**375.78**	**1.29**	**0.33**	**0.96**
13.00	0.30	1,364	375.53	0.36	0.32	0.04
13.50	0.18	1,211	375.04	0.30	0.30	0.00
14.00	0.14	984	374.28	0.27	0.27	0.00
14.50	0.12	756	373.52	0.24	0.24	0.00
15.00	0.10	560	372.87	0.20	0.20	0.00
15.50	0.09	403	372.34	0.17	0.17	0.00
16.00	0.08	282	371.94	0.14	0.14	0.00
16.50	0.07	194	371.65	0.11	0.11	0.00
17.00	0.07	139	371.46	0.09	0.09	0.00
17.50	0.06	107	371.36	0.08	0.08	0.00
18.00	0.06	85	371.28	0.07	0.07	0.00
18.50	0.06	74	371.25	0.06	0.06	0.00
19.00	0.05	69	371.23	0.05	0.05	0.00
19.50	0.05	65	371.22	0.05	0.05	0.00
20.00	0.04	62	371.21	0.05	0.05	0.00
20.50	0.04	58	371.19	0.04	0.04	0.00
21.00	0.04	57	371.19	0.04	0.04	0.00
21.50	0.04	56	371.19	0.04	0.04	0.00
22.00	0.04	55	371.18	0.04	0.04	0.00
22.50	0.04	55	371.18	0.04	0.04	0.00
23.00	0.04	54	371.18	0.04	0.04	0.00
23.50	0.04	53	371.18	0.04	0.04	0.00
24.00	0.04	52	371.17	0.04	0.04	0.00

Hydrograph for Pond AB-2: Attenuation Basin Lot 2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
5.00	0.00	0	371.00	0.00	0.00	**0.00**
5.50	0.01	7	371.02	0.00	0.00	0.00
6.00	0.01	12	371.04	0.00	0.00	0.00
6.50	0.01	15	371.05	0.00	0.00	0.00
7.00	0.01	18	371.06	0.01	0.01	0.00
7.50	0.01	21	371.07	0.01	0.01	0.00
8.00	0.01	23	371.08	0.01	0.01	0.00
8.50	0.01	26	371.09	0.01	0.01	0.00
9.00	0.02	30	371.10	0.01	0.01	0.00
9.50	0.02	35	371.12	0.02	0.02	0.00
10.00	0.03	40	371.13	0.02	0.02	0.00
10.50	0.04	47	371.16	0.03	0.03	0.00
11.00	0.05	59	371.20	0.04	0.04	0.00
11.50	0.09	82	371.27	0.07	0.07	0.00
12.00	**0.84**	520	372.73	0.19	0.19	0.00
12.50	0.38	**1,222**	**375.07**	**0.30**	**0.30**	0.00
13.00	0.13	**1,083**	**374.61**	**0.28**	**0.28**	0.00
13.50	0.08	793	373.64	0.24	0.24	0.00
14.00	0.06	530	372.77	0.20	0.20	0.00
14.50	0.05	323	372.08	0.15	0.15	0.00
15.00	0.05	181	371.60	0.11	0.11	0.00
15.50	0.04	99	371.33	0.08	0.08	0.00
16.00	0.04	61	371.20	0.05	0.05	0.00
16.50	0.03	52	371.17	0.04	0.04	0.00
17.00	0.03	49	371.16	0.03	0.03	0.00
17.50	0.03	47	371.16	0.03	0.03	0.00
18.00	0.03	45	371.15	0.03	0.03	0.00
18.50	0.03	44	371.15	0.03	0.03	0.00
19.00	0.02	42	371.14	0.02	0.02	0.00
19.50	0.02	41	371.14	0.02	0.02	0.00
20.00	0.02	39	371.13	0.02	0.02	0.00
20.50	0.02	37	371.12	0.02	0.02	0.00
21.00	0.02	36	371.12	0.02	0.02	0.00
21.50	0.02	36	371.12	0.02	0.02	0.00
22.00	0.02	35	371.12	0.02	0.02	0.00
22.50	0.02	35	371.12	0.02	0.02	0.00
23.00	0.02	34	371.11	0.02	0.02	0.00
23.50	0.02	34	371.11	0.02	0.02	0.00
24.00	0.02	33	371.11	0.02	0.02	0.00

Hydrograph for Pond AB-2: Attenuation Basin Lot 2

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Primary (cfs)	Secondary (cfs)
5.00	0.01	1	371.00	0.00	0.00	0.00
5.50	0.01	16	371.05	0.00	0.00	0.00
6.00	0.01	26	371.09	0.01	0.01	0.00
6.50	0.02	32	371.11	0.02	0.02	0.00
7.00	0.02	36	371.12	0.02	0.02	0.00
7.50	0.02	40	371.13	0.02	0.02	0.00
8.00	0.03	43	371.14	0.03	0.03	0.00
8.50	0.03	47	371.16	0.03	0.03	0.00
9.00	0.04	54	371.18	0.04	0.04	0.00
9.50	0.05	62	371.21	0.05	0.05	0.00
10.00	0.06	68	371.23	0.05	0.05	0.00
10.50	0.08	83	371.28	0.07	0.07	0.00
11.00	0.11	118	371.39	0.08	0.08	0.00
11.50	0.18	200	371.67	0.11	0.11	0.00
12.00	**1.55**	**1,069**	**374.56**	**0.28**	**0.28**	**0.00**
12.50	0.72	**1,597**	**375.72**	**0.99**	**0.32**	**0.66**
13.00	0.24	1,335	375.45	0.32	0.32	0.00
13.50	0.15	1,120	374.73	0.29	0.29	0.00
14.00	0.11	863	373.88	0.25	0.25	0.00
14.50	0.09	627	373.09	0.21	0.21	0.00
15.00	0.08	434	372.45	0.18	0.18	0.00
15.50	0.07	291	371.97	0.14	0.14	0.00
16.00	0.06	190	371.63	0.11	0.11	0.00
16.50	0.06	125	371.42	0.09	0.09	0.00
17.00	0.05	87	371.29	0.07	0.07	0.00
17.50	0.05	70	371.23	0.06	0.06	0.00
18.00	0.05	65	371.22	0.05	0.05	0.00
18.50	0.05	62	371.21	0.05	0.05	0.00
19.00	0.04	59	371.20	0.04	0.04	0.00
19.50	0.04	56	371.19	0.04	0.04	0.00
20.00	0.04	53	371.18	0.04	0.04	0.00
20.50	0.03	51	371.17	0.03	0.03	0.00
21.00	0.03	50	371.17	0.03	0.03	0.00
21.50	0.03	49	371.16	0.03	0.03	0.00
22.00	0.03	48	371.16	0.03	0.03	0.00
22.50	0.03	48	371.16	0.03	0.03	0.00
23.00	0.03	47	371.16	0.03	0.03	0.00
23.50	0.03	47	371.16	0.03	0.03	0.00
24.00	0.03	46	371.15	0.03	0.03	0.00