

AGENDA PACKET

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JANUARY 19, 2021 MEETING

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No new materials	Cal #14-19SW	N/A
<u>Cal #04-20WV</u>	Cal #04-20WV	
N/A		N/A

<u>COMPREHENSIVE PLAN</u>		
No new materials		N/A

TOWN OF LEWISBORO
Westchester County, New York



Planning Board
79 Bouton Road
South Salem, New York 10590

Tel: (914) 763-5592
Fax: (914) 875-9148
Email: planning@lewisborogov.com

AGENDA

Tuesday, January 19, 2021

Meeting will start at 7:30 p.m. and end at or before 11:00 p.m.

Via Zoom videoconferencing and live streaming to Lewisboro TV YouTube channel

Join Zoom Meeting at <https://zoom.us/j/93055289269?pwd=eDBTdktcEhsRXozRnJUd2JwazFRQT09>

Meeting ID: 930 5528 9269 Passcode 529058

You may call in to the Zoom meeting at 1-929-205-6099 when prompted, enter 930 5528 9269

<https://www.youtube.com/channel/UCNUNE5gXs5rnHcyR4l6dikA>

I. EXTENSION OF TIME

Cal# 8-14PB, Cal# 95-14WP, Cal# 20-14SW

Goldens Bridge Village Center, NYS Route 22, Goldens Bridge, NY 10526, Sheet 4, Block 11126, Lot 07 (Stephen Cipes, owner of record) - Request for Extension of Site Development Plan, Wetland and Stormwater Permit Approvals.

II. PUBLIC HEARING, CONTINUATION

Cal #03-20PB, Cal #37-20WP

Gossett Brothers Nursery, 1202 Route 35, South Salem, NY 10590, Sheet 31 Block 10805 Lot 46 (Thomas Gossett for T. Gossett Revocable Trust – owner of record) - Application for Site Development Plan Approval and Wetland Activity Permit Approval for an existing nursery.

III. SKETCH PLAN REVIEWS

Cal #01-18PB

Apex Personal Training, 20 North Salem Road, Cross River NY 10518, Sheet 17, Block 10533, Lot 89 (EK Cross River, owner of record) - Application for Change of Use/Waiver of Site Development Plan Procedures.

Cal #06-17PB

Wolf Conservation Center, Buck Run, South Salem, NY 10590, Sheet 21, Block 10803, Lots 3, 65, 67, 81, 82, 83, 86 & 88 (Wolf Conservation Center, owner of record) - Application for a Subdivision and Special Use Permit associated with a private nature preserve.

IV. WETLAND PERMIT REVIEW

Cal #57-20WP, Cal #09-20SW

Schwartz Residence, 0 Twin Lakes Road, South Salem, NY 10590, Sheet 34B, Block 11831 Lot 35 (Michael Schwartz, owner of record) - Application for the construction of a one-bedroom house/studio.

Cal#60-20WP

McGuinness Residence, 17 Schoolhouse Road, Waccabuc, NY 10597, Sheet 22, Block 10802, Lot 35 (Annette and Peter McGuinness, owners of record) - Application for the construction of a greenhouse, covered dining area, spa and extension of an existing patio.

V. WETLAND VIOLATIONS

Cal #02-19WV, Cal #60-19WP, Cal #14-19SW

Kullman Residence, 12 Red Coat Lane, Waccabuc, NY 10597, Sheet 26, Block 11155, Lot 92 (Michael and Susan Kullman, owners of record)

Cal #04-20WV

VI. DISCUSSION

Comprehensive Plan

VII. MINUTES OF December 15, 2020

VIII. NEXT MEETING DATE: February 23, 2021.

TO: The Town of Lewisboro Planning Boar
FROM: Lewisboro Conservation Advisory Council
SUBJECT: **McGuiness Residence, 17 Schoolhouse Road**
South Salem, NY 10590
DATE: January 13, 2021

The Conservation Advisory Council (CAC) has reviewed the materials recently submitted by the applicant, including the December 29, 2020 Letter to the Planning Board from J. D. Barrett & Associates responding to the concerns raised in our November 10, 2020 memo. The CAC has the following remaining concerns and questions:

- The CAC notes that the plans call for the greenhouse to be built near but not actually on the footprint of the existing shed that is to be removed in the paddock. Though the CAC realizes that the applicant would prefer the greenhouse to be located near the wildflower garden, can the building in fact be placed outside the buffer nearby, in order to reduce the amount of construction within the buffer?
- The CAC would like to see the list of plantings in the wildflower garden when it is available, in the interest of including and combining plantings with native flora.

December 29, 2020

Ms. Janet Anderson, Chair
Town of Lewisboro Planning Board (PB)
79 Bouton Road
South Salem, NY 10590-1430

**Re: McGuinness Property / Proposed Outdoor Improvements
17 School House Road – 23.261 Acres, R-4A Zone
Tax Parcel ID: 22-10802-35**

Dear Chair Anderson & Members of the PB:

On behalf of Peter and Annette McGuinness, we provide the following materials in support of a Wetland Permit Application for the above project, portions of which occur within the outer reaches of the 150-foot wetland setback on the property. Information provided at this time responds to project review comments noted in the Town Planner's memorandum for the project, dated November 12, 2020. We enclose three sets of the following information (one additional set sent directly to Jan Johannessen-Town Planner), including:

- This explanatory **Cover Letter**, prepared by J.D. Barrett & Associates, LLC, dated December 29, 2020.
- A copy of the **ZBA Resolution of Approval** for the project Cal No. 12-20-BZ summarizing the variances granted for the project.
- **Town of Lewisboro Stormwater Permit Application**, prepared by ALP Engineering, dated December 24, 2020.
- **Engineering Response Letter**, prepared by ALP Engineering, dated December 28, 2020.
- **Stormwater Management Report**, (two copies) prepared by ALP Engineering, dated December 24, 2020, and attached draft **NOI** and **MS-4 Acceptance Form**.
- **Engineering Plans**, prepared by ALP Engineering, dated December 24, 2020, including:
 - SW-0 – Existing Conditions Stormwater Analysis
 - SW-1 – Future Conditions Stormwater Plan
- **Revised Site Plans**, prepared by J.D. Barrett & Associates, LLC, dated December 29, 2020, including:
 - Sheet 1 of 4 – Overall Property & Existing Conditions Plan
 - Sheet 2 of 4 – Site Plan-Subject Area 1
 - Sheet 3 of 4 – Grading Plan
 - Sheet 3 of 4 – Erosion Control & Site Mitigation Plan, Subject Areas 1 and 2
- **Topographic Survey Map**, prepared by Jeffrey DeRosa, LS, dated December 14, 2016.
- *(Architectural Plans, prepared by Patrick M. Croke, dated October 9, 2020 were previously submitted to the PB in October 2020, and unchanged, including:)*
 - *Sheet A-1 Site Plan and General Notes*
 - *Sheet A-2 Site Plan and Landscape Plan*
 - *Sheet A-3 Architectural Plan*

- *Sheet A-4 Architectural Plan*
- *Sheet A-5 Elevations*
- *Sheet A-6 Elevations*
- *Sheet A-7 Elevations*
- *Sheet A-8 Sections*
- *Sheet A-9 Sections and Details*

New Information Prepared

The project team has prepared new and revised information in response to comments noted in the Town Planner's (TP) project review memorandum, dated November 12, 2020. The following information responds to the "Comments" section of the memorandum beginning on page 2 of 4. We offer the following responses to the TP's memo.

1. Comment #1 regarding ZBA Approval. The project team appeared before the Zoning Board of Appeals (ZBA) in July 2020 to request and receive Area Variances 1-10. A copy of the ZBA's Resolution of Approval, dated September 21, 2020, is attached to this information. The variances granted are also now listed on the Variance Legend on the Grading Plan, Sheet 3 of 4, dated December 29, 2020. The variances are keyed 1-10 on the plan to the Legend. We note that the area variances were requested in order to site the proposed improvements in the north central portion of the property adjacent to the existing house and accessory structures and within the eastern side yard building setback. This was done in order to locate the proposed improvements as far away from the onsite wetland system that generally occurs at the western property area.
2. Comment #2 regarding Bulk Zoning Table. The architectural plans that were approved by the ZBA contain the Bulk Zoning Table. This table has now been copied onto the Grading Plan, Sheet 3 of 4 for ease of plan review.
3. Comment #3 regarding Minimum Required Zoning Setback Lines. The minimum zoning building setback lines have now been added to the site plans.
4. Comment #4 regarding Wetland Mitigation. Installation of the proposed improvements will result in approximately 7651 SF of wetland buffer disturbance, where there is approximately 6078 SF of site disturbance in subject area #1 at the backyard and approximately 1573 SF of site disturbance in subject area #2 from the proposed greenhouse installation in the front yard. It is proposed that approximately 7700 SF of proposed wetland planting mitigation be proposed to offset the unavoidable wetland buffer disturbance that will occur to install the improvements. We have now updated Sheet 4 of 4, entitled Erosion Control & Site Mitigation Plan, to show the areas of proposed new and additional planting mitigation. The proposed planted areas will cover at least 7700 SF to satisfy the 1:1 planting mitigation requirement. The planting plan is prepared over the As-Built Planting Plan previously prepared for an earlier phase of this project. This plan shows how new plantings will be added to and interspersed with existing wetland mitigation plantings to bolster the plantings and provide a greater degree of stormwater filtration and nesting and foraging opportunities for local wildlife. In

addition, we note here that the project engineer has developed a comprehensive stormwater management plan to further mitigate stormwater runoff.

5. Comment #5 regarding NYSDEC Wetland Permit. It is acknowledged that a NYSDEC Wetland Permit shall be required for this project, as portions of the proposed improvements will occur within the 100' NYSDEC wetland buffer. We have taken every effort to keep any proposed structures at least 50' away from the NYSDEC wetland line and we have been successful in that regard. This was done to qualify the project for a NYSDEC (expedited) Administrative Wetland Permit Review and Approval (Administrative Permit). However, the NYSDEC Administrative Wetland Review process also states that to qualify for the Administrative Permit that total project related site disturbance must be less than one-quarter acre (10,890 SF). We have attempted to limit site related disturbance for the project to less than one-quarter acre, but we note that is not possible given the extent of re-grading that occurs within the grading limit line (gll) to install the project. We note that site disturbance for Subject Area 1, the improvements adjacent to the house and outbuildings, including the pool, is approximately 12,443 SF. Site disturbance at the proposed greenhouse area at Subject Area 2 is 1573 SF. Together, subject Areas 1 and 2 will disturb approximately 14,016 SF. Attempts to reduce site disturbance to less than one-quarter acre were not practical. The applicant will be filing a Wetland Permit Application with NYSDEC in the early weeks of January 2021. The PB shall be copied with the Wetland Permit Application.
6. Comment #6 regarding Town Stormwater Permit Application. The project engineer, ALP Engineering, shall be providing the Town Stormwater Permit Application to the PB and TE for review. See information provided by ALP Engineering included with this submittal.
7. Comment #7 regarding SPDES General Permit. See stormwater management engineering information provided by ALP Engineering included with this submittal.
8. Comment # 8 regarding SWPPP. See stormwater management engineering information provided by ALP Engineering included with this submittal.
9. Comment #9 regarding Soil Testing. See stormwater management engineering information provided by ALP Engineering included with this submittal.
10. Comment #10 regarding Topographic Survey. We enclose a copy of a survey entitled Topographic Map, prepared for Peter & Annette McGuinness, dated December 14, 2016, prepared by Insite Engineering & Surveying, Carmel, NY. This survey shows the topography for the subject area.
11. Comment #11 regarding Professional Seals of Plans. All final plans shall bear the professional seal of the professional who prepared them.
12. Comment #12 regarding Parking Court Size. The proposed gravel parking court area dimensions are now shown on the Grading Plan, Sheet 3 of 4. The gravel parking court area measures approximately 45' x 45'.

13. Comment #13 regarding Wall Elevations. Retaining wall elevations are shown on the Grading Plan, Sheet 3 of 4. All proposed retaining walls shown on the plan are a maximum of 4' height or less. A typical retaining wall detail has been added to the plan.
14. Comment #14 regarding Pool/Spa Fence. The proposed pool/spa shall be equipped with a safety cover that will be kept closed when the pool is not in use. Keeping the cover closed helps maintain pool water temperature and decreases pool water and pool chemical evaporation. It also helps keep yard debris (sticks, leaves) out of the pool. The safety cover will also support the weight of a person who may accidentally fall onto the cover. The safety auto-cover will be installed in addition to a pool fence to meet minimum NYS Building Code.

The Grading Plan, Sheet 3 of 4, shows the location of the proposed pool fence. The pool fence shall enclose the pool and patio area behind the activity barn. The fence will be tied off on the east and west side of the activity barn. Access gates and maintenance gates are also shown on the plan. A typical chain-link pool fence is shown on the plan as a "place holder", until the owner makes a final fence style selection.
15. Comment #15 regarding Utilities. The location of the septic system, potable well, propane tank and electrical service lines are shown on Sheet 1 of 4, Overall Property & Existing Conditions Plan.
16. Comment #16 regarding Construction Details. The final project plans shall show all relevant construction details on the Architectural, Civil Engineering and Landscape Architecture Plans.

Conservation Advisory Council Review Memorandum

We are in receipt of project review comments provided by the Lewisboro Conservation Advisory Council (CAC), dated November 10, 2020. We offer the following responses to address questions/comments included in the CAC memo, as follows:

Comment A regarding Work in the Wetland Buffer.

Wetlands - The project site is constrained by wetlands and associated 150' wetland buffers. Inasmuch, large portions of the property are considered regulated areas. The site plan has been prepared to limit intrusion into the wetland buffer, as practical. Currently, approximately 5399 SF of improvements occur outside of the wetland buffer and approximately 7044 SF of improvements occur within the wetland buffer. There are no direct wetland impacts.

Pool - We note here that the proposed pool is not a saltwater pool. We apologize that this was inadvertently stated in the original application to the PB. The pool/spa shall be a state-of-the-art, one-piece shotcrete pool. It will be equipped with a safety auto-cover to conserve pool water heat and limit evaporation of pool water. The filtration system shall be a cartridge-type filter that requires no backwashing, only periodic rinsing of the cartridge. Pool water sterilization shall be accomplished by a state-of-the-art combination of ultra-violet light and ozone pool water purification. The pool water is sterilized as it passes through the above noted sterilization

process. The pool will also be equipped with a brominator that will dispense very minor amounts of bromine into the pool water, as bromine will have a residual effect in the pool water to keep the water within the pool sanitized. The pool location is positioned in the backyard adjacent to the recreation barn for privacy reasons. This area is within the wetland buffer and the temporary impact from installing the pool is unavoidable.

Greenhouse - The proposed greenhouse will replace the existing shed in the original lamb paddock on the west side of the driveway. This area is situated in the 150' wetland buffer. The greenhouse will be centrally located in the existing paddock in order to be best positioned to the adjacent flower gardens that are proposed to be installed in this paddock area.

Comment B regarding Stormwater Management. ALP Engineering has developed a Stormwater Management Plan to collect and direct stormwater from the new impervious surfaces associated with the project. It is noted that much of the proposed improvements occur over existing impervious surfaces, including the driveway area and existing rear patio. A fully detailed Stormwater Management Report and supporting plans have been provide to successfully mitigate any potential stormwater impacts that may result from this project.

Comment C regarding 1:1 Wetland Mitigation Plantings. See response #4 above regarding wetland mitigation

Comment D regarding Legend for Proposed Plantings. Once the wetland planting mitigation concept is reviewed with the PB and the areas are agreed upon, we will then detail the planting plan with specific plantings of trees, shrubs, groundcovers, ferns, forbs and perennials to create a dense and enhanced wetland mitigation planting area. Botanical and common names, plant sizes and quantities, with representative plant photographs will be shown on the final wetland buffer planting plan.

Comment E regarding Effective Mitigation. We believe that creating denser plantings in wetland buffer filter strips, like those shown on the western side of the property, to be a viable practice to creating a more effective wetland buffer/filter strip. Filter strips function when installed plantings send out their roots to anchor the plants and absorb moisture and nutrients to sustain the plants. Adding additional plantings to the existing plantings will increase the root mass in the soil horizon throughout the filter strip. This not only helps stabilize the soils in the buffer, but it is the root mass that will absorb the stormwater runoff and associated pollutant loads in the stormwater, i.e., nitrogen, phosphorus and potassium. The filter strip plantings function where the suspended pollutants in the stormwater runoff are bound to the soil particles as the water passes through the soils. Eventually the pollutants are absorbed into the plants as nutrients to maintain plant growth. When the plant dies, it decomposes and the nutrients are returned to the soil. Hence, adding more plants and their associated root systems to the wetland buffer enhancement plantings/filter strips will serve to increase the absorption of stormwater borne pollutants into the plantings before the pollutants can enter the wetland. In our opinion, the additional mitigation plantings added to the existing mitigation plantings/filter strips, will have a beneficial effect by improving the efficiency of the filter strips and, thereby, protecting the wetland from excessive pollutant loading resulting from stormwater runoff.

Comment F regarding Wildflower Garden as Mitigation. We believe that the proposed wildflower garden down slope of the proposed new greenhouse will provide effective mitigation as the wildflower garden shall serve as a filter strip for stormwater runoff traveling toward the wetlands. As previously noted to the PB during earlier project discussions, wildflowers and prairie type grasses are known to have extensive fibrous root systems that can travel through the soil for depths of 1'-10'. This allows them to penetrate the soil to various depths to absorb moisture and nutrients. Inasmuch, wildflowers and prairie type grasses make for excellent filter strip plantings. Once the mitigation concept is agreed to, we will fully detail the wildflower meadow planting down slope of the proposed greenhouse. We attach to this document, for the PB's and CAC's information, a cut sheet showing the relative depths that some typical wildflowers and prairie grasses extend their root systems into the soil.

Comment G regarding Pool Overflow. As noted above, a saltwater pool is not proposed. Rather, the pool/spa water will be sterilized via an ultra-violet light and ozone system combination and a cartridge type filter that require no backwashing. A small amount of bromine will be dispensed into the pool water to sterilize the water within the pool. At the time of pool/spa winterization, i.e., early January, the pool shall be drawn down approximately 12"-18" so that the pool water falls beneath the 6" tile band just under the coping. Pool water is drawn down so that freezing water doesn't get behind the tile band and "pop" the tiles off the pool wall via frost action. The pool water draw down will be connected to the proposed stormwater infiltration system located adjacent to the proposed pool site. Therefore, there shall be no discharge of pool water on the ground surface.

Comment H regarding Tree Removals. The site plan has been developed to disturb the smallest amount of land possible to install the improvements. The proposed plan will remove four trees, including an 18" maple, 17" maple, 12" maple and 28" ash. The Maples are in fair condition and the Ash is in poor condition. New tree plantings will be included in the final planting mitigation plan.

Summary

We trust that the above information will be helpful to the PB's understanding and review of the project. We look forward to discussing the project with the PB at the January 2021 meeting.

Respectfully submitted,

Jeri Barrett

Jeri D. Barrett, R.L.A.

JDB:lj

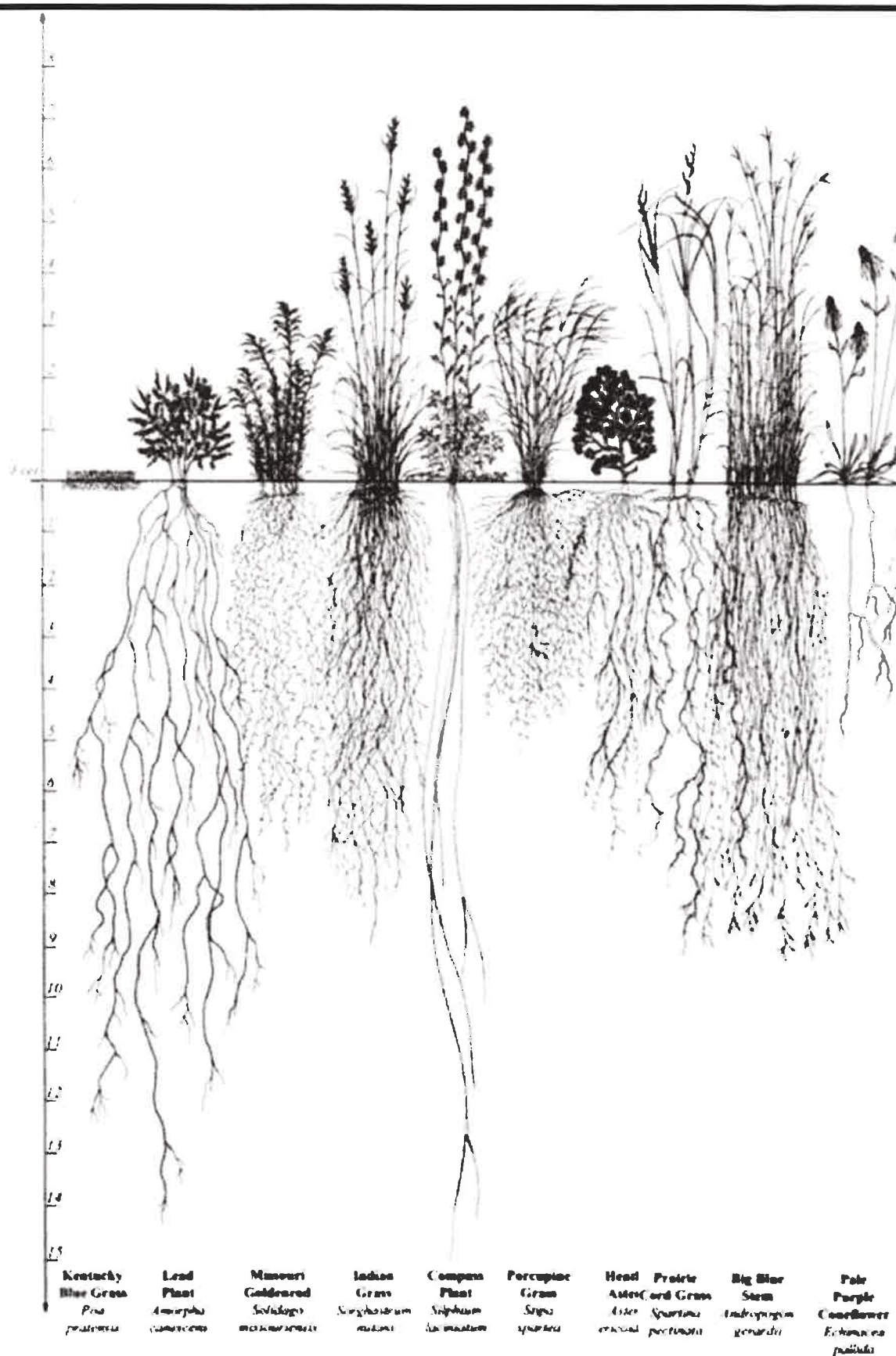
Enc.

cc: Mr. & Mrs. McGuinness

Michael Sirignano, Esq.

Patrick Croke, RA

Alan Pilch, PE, RLA



Root Systems of Prairie Plants



ALP Engineering
& Landscape Architecture, PLLC

December 28, 2020

Hon. Janet Andersen, Chairwoman and Members of the Planning Board
Town of Lewisboro
79 Bouton Road
South Salem, NY 10590

**Re: 17 School House Road
Sheet 22, Block 10802, Lot 35
Application for Wetland Permit and Stormwater Permit**

Dear Chairwoman Andersen and Members of the Planning Board:

This letter is submitted in responding to stormwater management comments in the November 12, 2020 memorandum to the Planning Board regarding the above noted application for a Wetland Permit and Stormwater Permit. Each of the comments from the above-noted memorandum is presented below in italics; the response to the comment follows.

Enclosed are three copies of the following drawings and documents:

<u>Drawing No.:</u>	<u>Drawing Title:</u>	<u>Date:</u>
SW-0	Existing Conditions Stormwater Analysis	12/24/2020
SW-1	Future Conditions Stormwater Analysis	12/24/2020

- SWPPP Report for 17 School House Road, dated 12/24/2020.
- Stormwater Permit Application Form, dated 12/24/2020.
- Notice of Intent Form for coverage under SPDES General Permit (Draft), undated.
- MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form (Draft), undated.

Electronic files of the submission materials are also being forwarded to the Planning Board and Town Consulting Planner and Engineer.

6. The applicant shall submit the Town Stormwater Permit Application Form.

P.O. Box 843 Ridgefield, CT 06877
EAEC Office: 162 Falls Road Bethany, CT 06524
Direct: (475) 215-5343 Mobile: (203) 710-0587
EAEC Tel: (203) 393-0690 x114
Email: alan@eaec-inc.com



Response: The Town Stormwater Permit Application form is attached to this letter.

7. Land disturbance is proposed to exceed 5,000 s.f. and will, therefore, require conformance with New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit (GP-0-20-001) and filing of a Notice of Intent (NOI) and MS4 Acceptance Form with the NYSDEC. Submit draft copies to this office for review.

Response: Attached to this letter is the draft Notice of Intent form and the MS4 Acceptance form for your review.

8. The applicant shall prepare and submit a Stormwater Pollution Prevention Plan (SWPPP), prepared in compliance with Chapter 189, Stormwater Management and Erosion and Sediment Control, as well as the NYSDEC SPDES General Permit (GP-0-20-001) and the NYSDEC Stormwater Management Design Manual. The applicant shall provide stormwater mitigation and design calculations for the runoff generated by the net increase in impervious surface for the 25-year, 24-hour storm event. Provide details of the stormwater mitigation system.

Response: Enclosed is the Stormwater Pollution Prevention Plan report for the project. The project engineer is proposing to install subsurface chambers to attenuate the peak rate of runoff from the property. As is described in the report, the proposed chambers will ensure that the peak rate of runoff from the property is less than the existing peak rate of runoff for all storm events up to the 25-year recurrence interval, as required. Details of the stormwater mitigation system may be found on sheet SW-1 and SW-2, which are enclosed with this submission.

9. The applicant shall perform deep and percolation soil testing in the vicinity of the proposed mitigation system to be witnessed by the Town Engineer. The test locations and results shall be shown on the plan. Contact this office to schedule the testing.

Response: A deep hole test was performed on December 15, 2020 within the footprint of the proposed stormwater mitigation system. The location of the deep hole test is on sheet SW-1. The details of the deep hole test's findings may be found in the attached SWPPP report and on drawing SW-1. The deep hole test was witnessed by Kellard Sessions Consulting.

10. The applicant shall submit a topographic survey of the project area, signed and sealed by a NYS Licensed Land Surveyor.



Response: The applicant has prepared a topographic survey of the project area, as requested, and is submitted under the cover letter of JD Barrett and Associates.

11. All plans shall be signed/sealed by the Design Professional.

Response: The plans have been signed and sealed by the respective design professional.

We look forward to your review of the submitted materials. If you have any comments or questions, or require additional printed materials, please feel free to contact us at (475) 215-5343.

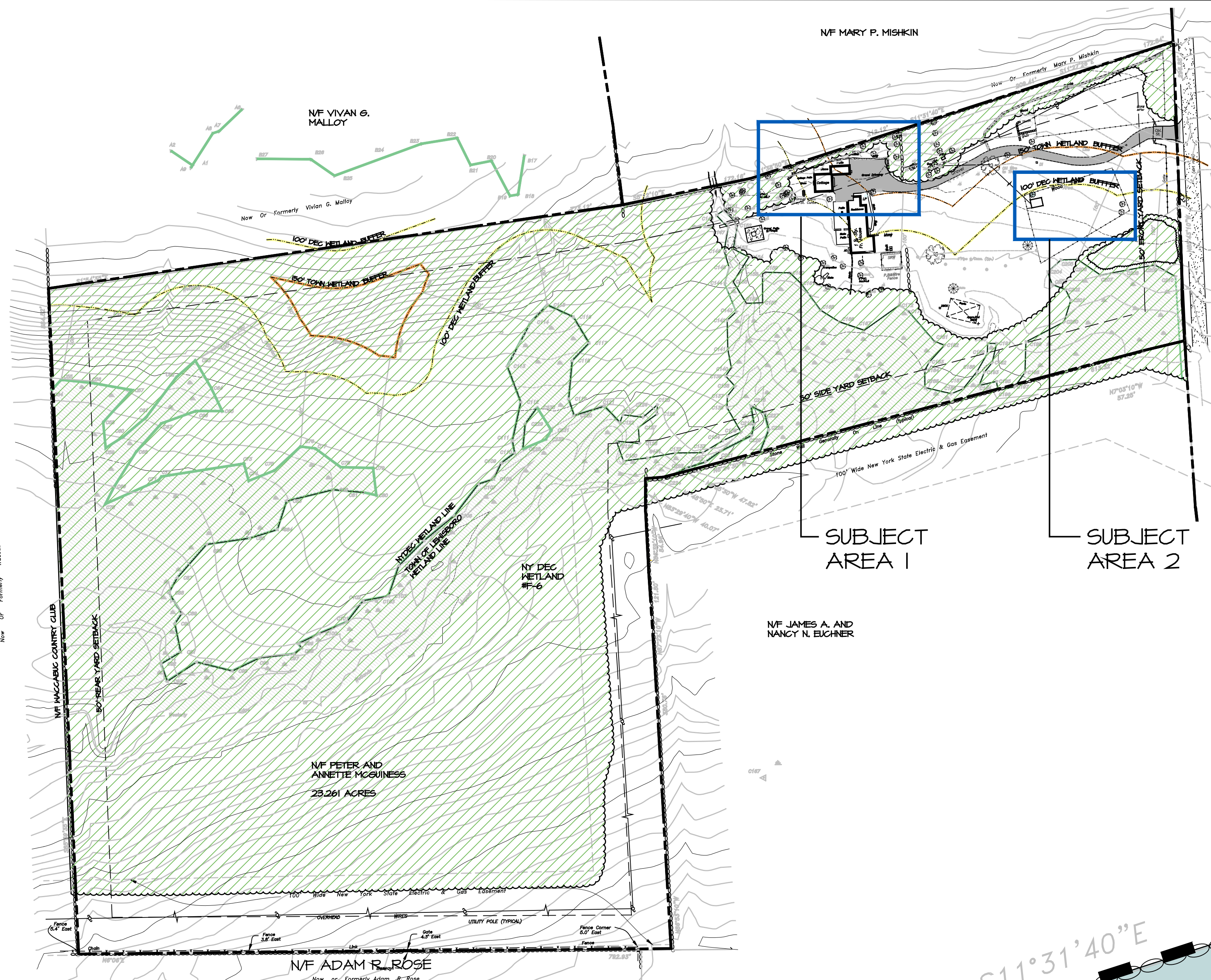
Sincerely,

ALP ENGINEERING & LANDSCAPE ARCHITECTURE, PLLC

A handwritten signature in black ink, appearing to read "Alan L. Pilch".

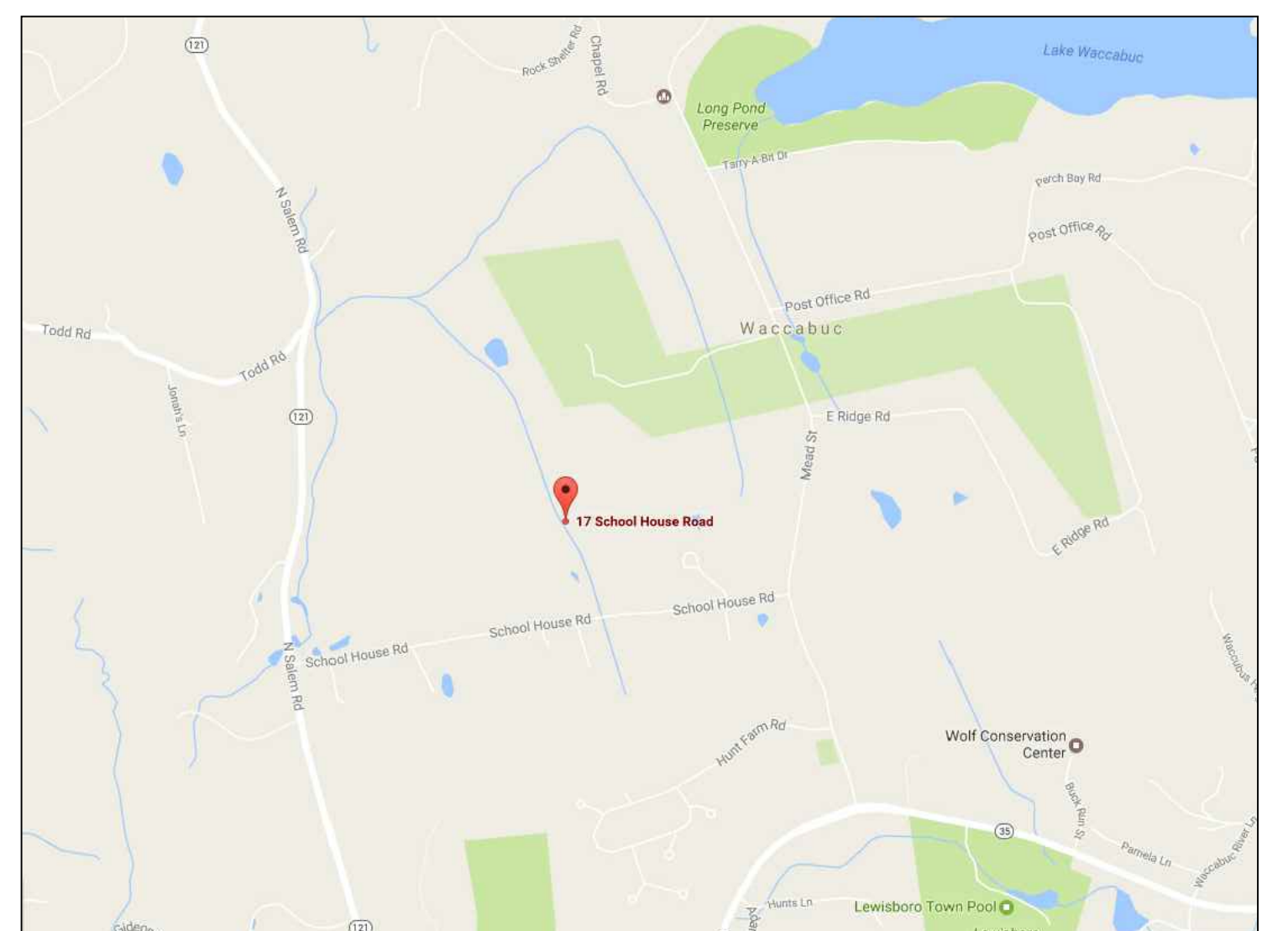
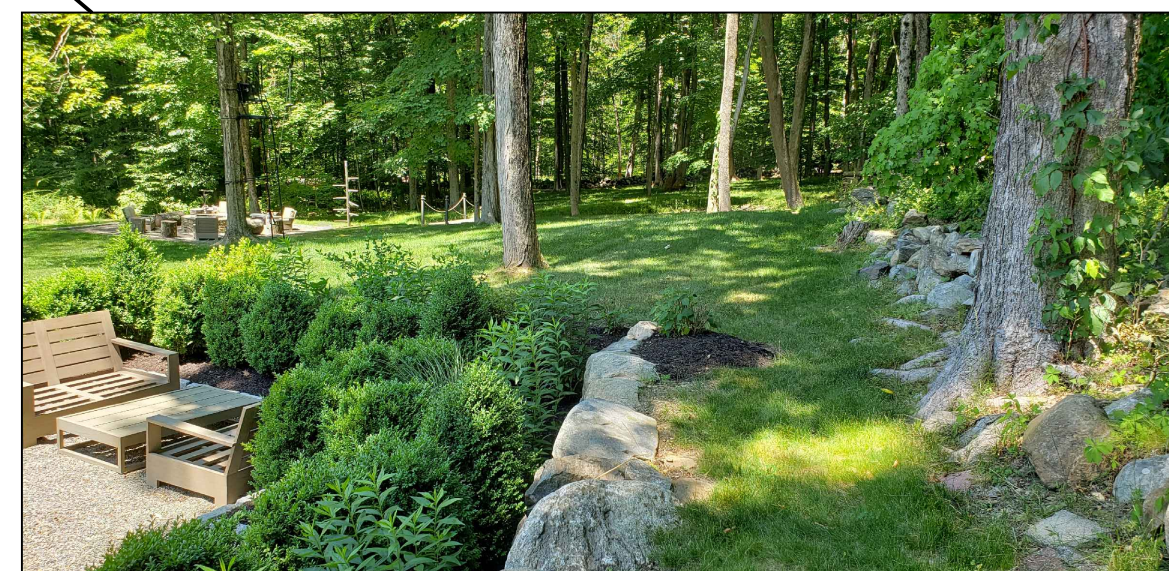
Alan L. Pilch, P.E., R.L.A.
Principal

cc: Jan Johannessen, AICP and Joseph Cermele, PE
Peter and Annette McGuinness
Jeri D. Barrett, RLA



OVERALL PROPERTY MAP

Scale: 1" = 100'



SITE LOCATION (GOOGLE MAPS)

NTS



GENERAL NOTES

1. THESE PLANS ARE PREPARED IN SUPPORT OF AN APPLICATION TO THE TOWN OF LEWISBORO FOR A WETLAND ACTIVITY PERMIT.
2. PROPERTY OWNERS, CONTACTS AND APPLICANTS FOR THIS APPLICATION ARE PETER AND ANNETTE MCGUINNESS, 17 SCHOOL HOUSE ROAD, WACCABUG, NY.
3. TOWN OF LEWISBORO AND NYSDEC REGULATED WETLANDS OCCUR ON AND OFF SITE. IMPROVEMENTS OCCUR PARTIALLY WITHIN THE REGULATED WETLAND SETBACK AND REVIEW AND APPROVAL BY THE TOWN OF LEWISBORO IS REQUIRED FOR THIS PROJECT.
4. SURVEY INFORMATION FOR THE PROJECT HAS BEEN PREPARED BY INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C. 3 GARRETT PLACE, CARMEL, NEW YORK.
5. WETLANDS IN THE PROJECT AREA WERE EVALUATED BY PAUL JAEHNIG, P.O. BOX 1071, RIDGEFIELD, CT.
6. SITE PLANS HAVE BEEN PREPARED BY J.D. BARRETT & ASSOCIATES, LLC, EASTON, CT, LANDSCAPE ARCHITECTS AND ENVIRONMENTAL PLANNERS.

DRAWING INDEX

- | | |
|------------|---|
| SH. 1 OF 4 | OVERALL PROPERTY & EXISTING CONDITIONS PLAN |
| SH. 2 OF 4 | SITE PLAN - SUBJECT AREA 1 |
| SH. 3 OF 4 | GRADING PLAN |
| SH. 4 OF 4 | EROSION CONTROL AND SITE MITIGATION PLAN - SUBJECT AREA 1 & 2 |

OVERALL PROPERTY & EXISTING CONDITIONS PLAN

Prepared For :
MR & MRS MCGUINNESS
17 SCHOOL HOUSE ROAD
WACCABUG, NY 10541
Tax Parcel ID 22-10802-35
23.261 Acres

Prepared by:
Landscape Architect/Environmental Planner:
J. D. BARRETT & ASSOCIATES, LLC
109 SPORT HILL ROAD
EASTON, CONNECTICUT 06612
Tel. 203.312.5805 Fax 203.312.0499

Attorney:
MICHAEL FULLER SIRIGNANO
OLD POST ROAD PROFESSIONAL BUILDING
842 ROUTE 35, PO BOX 784
CROSS RIVER, NY 10518
Tel. 914-763-5500

Wetland and Soil Scientist:
PAUL JAEHNIG
PO BOX 1071
RIDGEFIELD, CT 06871
Tel. 203.428.9993

Environmental Consultant:
STEPHEN W. COLEMAN ENV. CONSULTING
3 ASPEN COURT
OSSING, NY 10562
Tel. 914.762. 7288

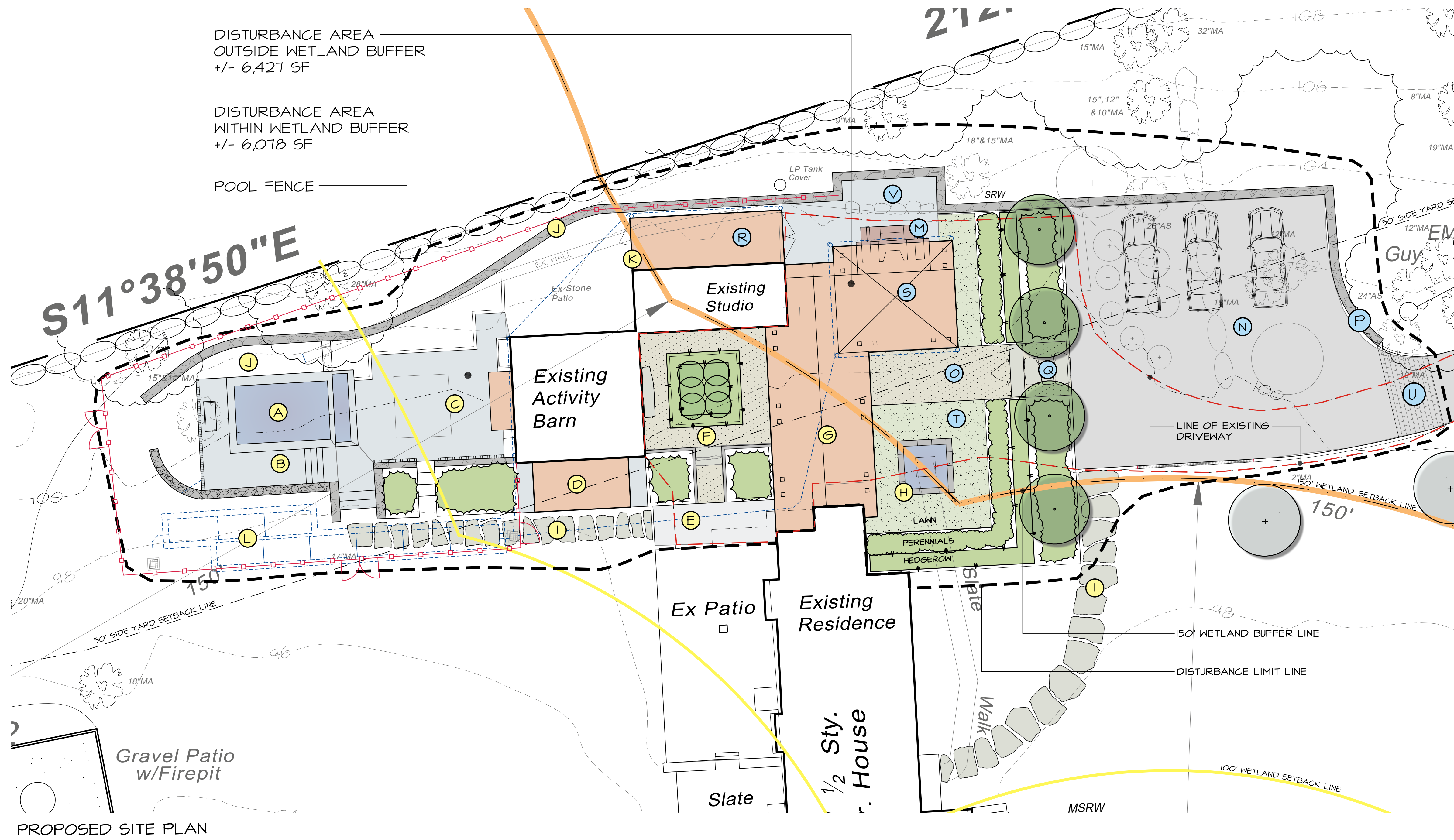
Engineer/Surveyor:
INSITE ENGINEERING, SURVEYING &
LANDSCAPE ARCHITECTURE, P.C.
3 GARRETT PLACE
CARMEL, NY 10512
Tel. 845-225-4690

Stormwater Engineer:
ALP ENGINEERING & LANDSCAPE
ARCHITECTURE, PLLC
P.O. Box 843
RIDGEFIELD, CT 06871
Tel. 475.215.5343

Scale : 1" = 20'

EXISTING CONDITIONS MAP

Scale: 1" = 20'



PROPOSED ACTIVITIES LOCATED WITHIN OR PARTIALLY WITHIN WETLAND BUFFER

- (A) PROPOSED 10' x 15' SALT WATER SPA W/ PLUNGE POOL
- (B) PROPOSED BLUESTONE SPA PATIO
- (C) EXISTING GRAVEL PATIO TO BE CONVERTED TO BLUESTONE PAVING
- (D) PROPOSED BARN ROOF OVERHANG EXPANSION TO PROVIDE NEW COVERED SITTING AREA/ PORCH
- (E) PROPOSED REAR PATIO EXPANSION
- (F) EXISTING GRAVEL DRIVEWAY TO BE CONVERTED TO FORMAL GARDEN WITH PEA GRAVEL WALKWAYS
- (G) PROPOSED COVERED DINING PATIO REPLACES PORTION OF EXISTING GRAVEL DRIVEWAY
- (H) PROPOSED GARDEN AREA WITH ORNAMENTAL WATER FEATURE OVER EXISTING DRIVEWAY AND MOWED LAWN
- (I) PROPOSED STEPPING STONES OVER EXISTING LAWN AREA
- (J) PROPOSED NEW OR REALIGNED STONE RETAINING WALL
- (K) NEW COVERED STORAGE SHED OVER EXISTING STONE PATIO (SMALL PORTION LOCATED W/ IN WETLAND BUFFER)
- (L) STORMWATER MANAGEMENT AREA

PROPOSED ACTIVITIES LOCATED OUTSIDE REGULATED WETLAND BUFFER

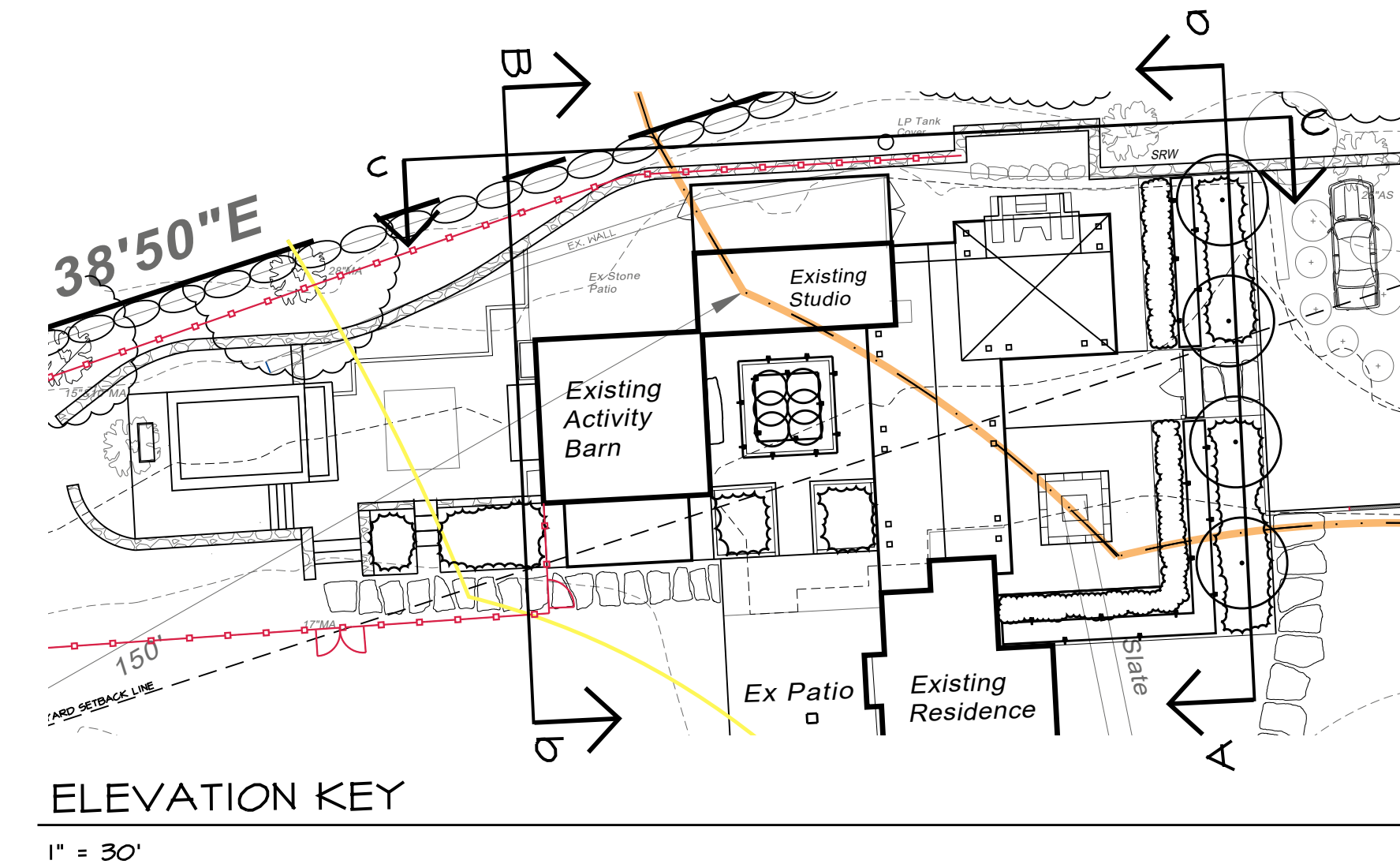
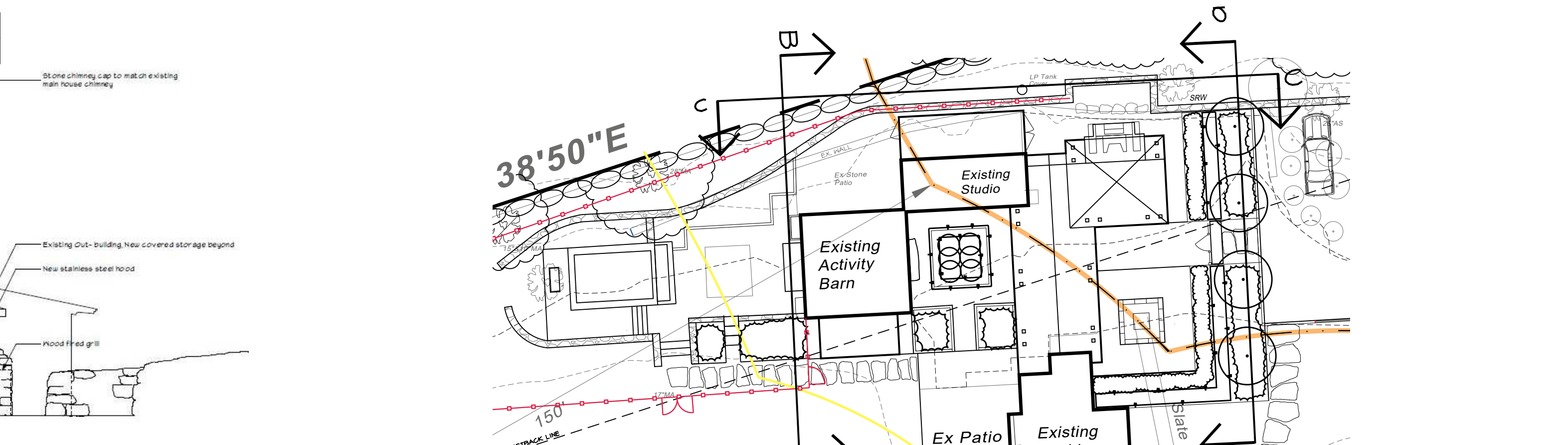
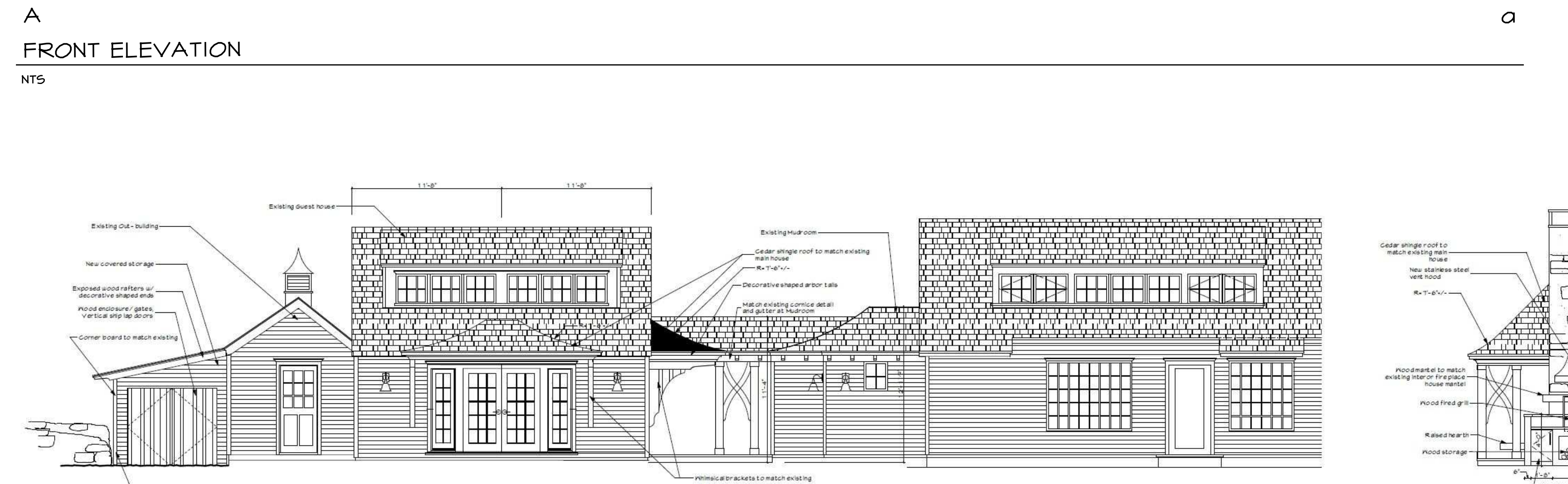
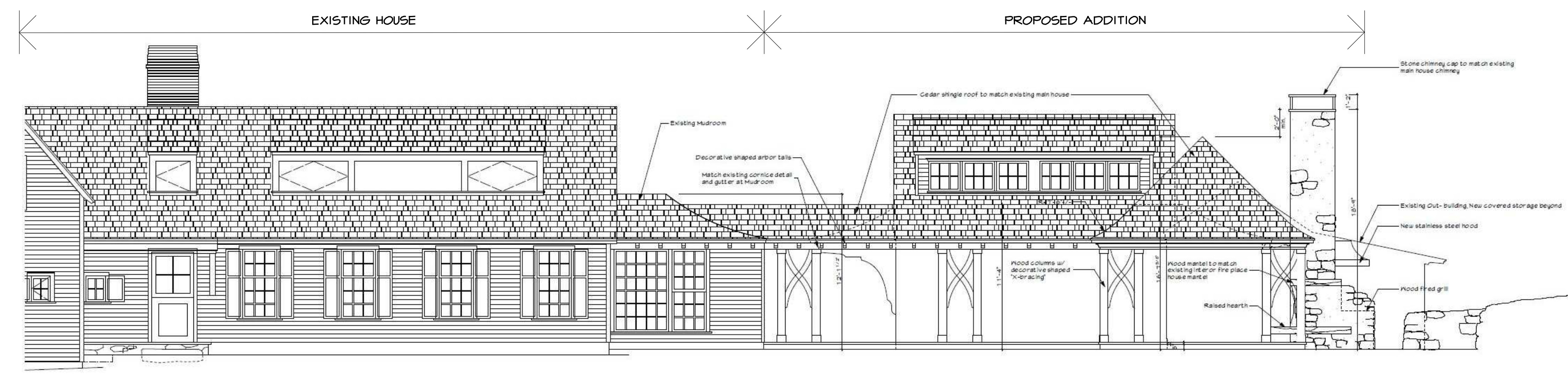
- (M) PROPOSED GRILL AND FIREPLACE
- (N) EXPANSION OF EXISTING GRAVEL DRIVEWAY TO SERVE AS PARKING AND TURNAROUND AREA
- (O) PROPOSED PEA GRAVEL AND STEPPING STONE WALKWAY OVER EXISTING GRAVEL DRIVEWAY
- (P) PROPOSED STONE RETAINING WALL AT PARKING AREA
- (Q) PROPOSED STEPPING STONE AND PEA GRAVEL OVER EXISTING GRAVEL DRIVEWAY
- (R) PROPOSED SPA EQUIPMENT TO BE LOCATED WITHIN NEW STORAGE SHED
- (S) PROPOSED COVERED SITTING FOLLY
- (T) PROPOSED GRASS AREA SURROUNDED BY PERENNIALS AND LOW EVERGREEN HEDGE
- (U) RUMBLE STRIP
- (V) PROPOSED BLUESTONE PATIO AND REALIGNED WALL EAST OF GRILL AREA

DISTURBANCE AREA SUMMARY

LOT AREA	23.261 Acres (1,013,241 SF)
SUBJECT AREA 1	
DISTURBANCE WITHIN WETLAND BUFFER	+/- 6,078 SF
DISTURBANCE OUTSIDE WETLAND BUFFER	+/- 6,427 SF
TOTAL DISTURBANCE @ SUBJECT AREA 1	+/- 12,505 SF
SUBJECT AREA 2 (Sheet 4 of 4)	
DISTURBANCE WITHIN WETLAND BUFFER	+/- 1,573 SF
DISTURBANCE OUTSIDE WETLAND BUFFER	+/- 0 SF
TOTAL DISTURBANCE @ SUBJECT AREA 2	+/- 1,573 SF
TOTAL DISTURBANCE @ SUBJECT AREA 1 + 2	+/- 14,078 SF
TOTAL DISTURBANCE AREA 1 + 2 WITHIN WETLAND BUFFER	+/- 7,651 SF
TOTAL PROPOSED WETLAND MITIGATION PLANTING AREA	+/- 7,700 SF

COVER-TYPE LEGEND

- NEW ROOF
- GRAVEL DRIVEWAY
- PEA GRAVEL WALKWAY
- BLUESTONE PATIO ON CONCRETE
- STEPPING STONES
- GRASS
- PLANTINGS



SITE PLAN - SUBJECT AREA 1

Prepared For:
MR & MRS MCGUINNESS
17 SCHOOL HOUSE ROAD
WACCAHUG, NY 10547
Tax Parcel ID 22-10802-35
23.261 Acres

Prepared by:
Landscape Architect/Environmental Planner:
J. D. BARRETT & ASSOCIATES, LLC
109 SPORT HILL ROAD
EASTON, CONNECTICUT 06612
Tel. 203.312.5805 Fax 203.312.0499

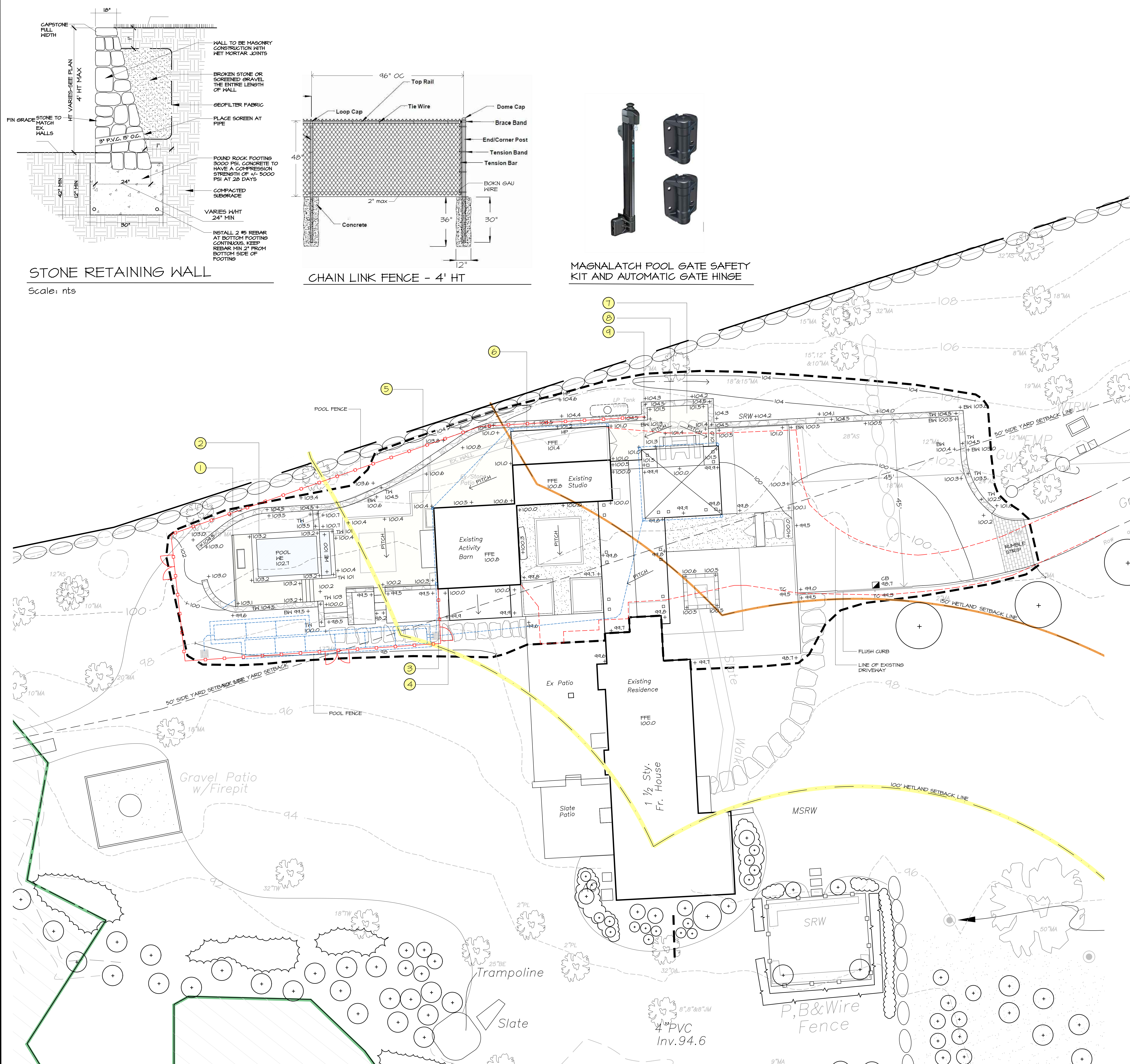
Attorney:
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CROSS RIVER, NY 10518
Tel. 914-763-5500

Wetland and Soil Scientist:
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PO BOX 1071
RIDGEFIELD, CT 06877
Tel. 203.438.9943

Environmental Consultant:
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3 GARRETT PLACE
CARMEL, NY 10512
Tel. 845-225-9610

Stormwater Engineer:
ALP ENGINEERING & LANDSCAPE ARCHITECTURE, PLLC
P.O. Box 843
RIDGEFIELD, CT 06877
Tel. 475.215.5343
Scale: 1" = 10'



Zoning analysis
Proposal for site renovations
17 School House Road Waccabuc, NY

Parcel ID: 42.2-1-21
Zone: R-4a
Lot size (acres): 23.261
Lot size (square feet): 1,013,241

Regulation	Minimum	Maximum	Actual (Existing)	Proposed	Remarks
Min. lot size (Acres)	4		23.261	23.261	
Width/Circle (Feet)	250		296.000	296.000	
Front yard (Feet)	50		407	407	
Side yard -1 (Feet)	50		16	6	
Side yard -2 (Feet)	50		224	224	
Rear yard (Feet)	50		937	937	
Max. height, stories		2 1/2	2	2	
Max. height, feet		35'	23	23	
Building coverage		6%	0.30%	0.42%	Percentage
		60,794	3,052	4,278	Square feet

Remarks: ABOVE INFORMATION TAKEN FROM ZBA APPROVED ARCHITECTURAL PLANS PREPARED BY PATRICK CROKE, ARCHITECT, DATED 7-8-20

Variances Recently Granted by the ZBA, 07/29/20

	Proposed Condition	Required per Article IV Sec. 220-23(E)	Area Variance Request
1	Variance #1 Installation of pool deck 10'-0" from NE side yard lot line	50'	40'-0"
2	Variance #2 Installation of pool 11'-0" from NE side yard lot line	50'	39'-0"
3	Variance #3 Installation of recreation cottage west side patio 39'-6" from NE side yard lot line	50'	10'-6"
4	Variance #4 Installation of recreation cottage west side overhang 39'-6" from NE side yard lot line	50'	10'-6"
5	Variance #5 Installation of recreation cottage north side overhang 23'-6" from NE side yard lot line	50'	26'-6"
6	Variance #6 Installation of east side storage enclosure 6'-0" from NE side yard lot line	50'	44'-0"
7	Variance #7 Installation of patio on east side of fireplace/grill 12'-0" from NE side yard lot line	50'	38'-0"
8	Variance #8 Installation of fireplace/grill 20'-0" from NE side yard lot line	50'	30'-0"
9	Variance #9 Installation of covered dining/sitting folly 23'-0" from NE side yard lot line	50'	27'-0"
10	Variance #10 Installation of pool equipment 10'-0" from NE side yard lot line	50'	40'-0"

GRADING PLAN

Prepared For:
MR. & MRS. MCGUINNESS
17 SCHOOL HOUSE ROAD
WACCABUC, NY 10547
Tax Parcel ID 22-10802-35
23.261 Acres

Prepared by:
Landscape Architect/Environmental Planner:
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EASTON, CONNECTICUT 06612
Tel. 203.312.5809 Fax 203.312.0499

Attorney:
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Tel. 914-763-5500

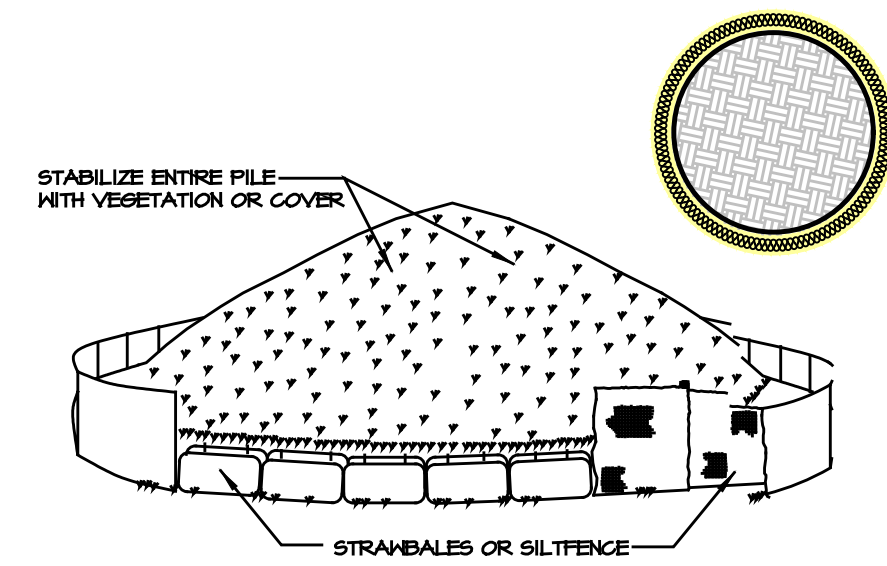
Wetland and Soil Scientist:
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Stormwater Engineer:
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P.O. Box 843
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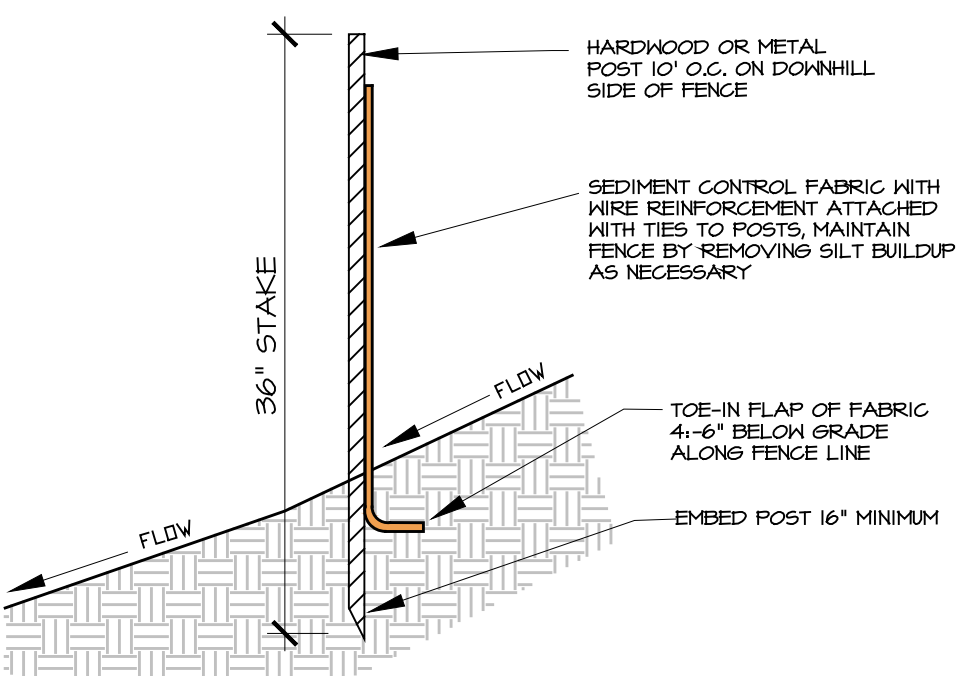
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Date: December 29, 2020



- INSTALLATION NOTES**
1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE.
 2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1:2.
 3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR STRAWBALES, THEN STABILIZED WITH VEGETATION OR COVERED.
 4. SEE SPECIFICATIONS THIS MANUAL FOR INSTALLATION OF SILTENCE.

TOPSOIL STOCKPILE

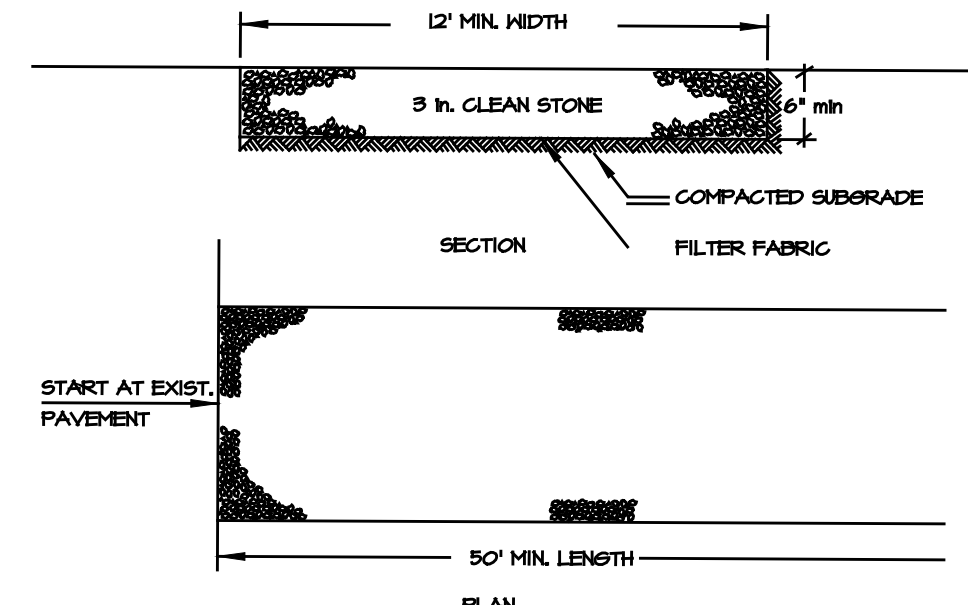
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- INSTALLATION NOTES**
1. WIRE REINFORCED SILT FENCING FABRIC TO BE FASTENED SECURELY TO POSTS WITH WIRES OR STAPLES, POSTS SHALL BE STEEL, EITHER 1" OR 1 1/2" SHAPE TYPE OR HARDWOOD.
 2. WHEN TWO SECTIONS OF FABRIC CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
 3. PREFABRICATED UNITS SHALL BE GEOTAB, ENVIROFENCE, OR APPROVED EQUIVALENT.
 4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

ORANGE SILT FENCE

SCALE: NTS



- INSTALLATION NOTES**
1. STONE SIZE - USE 6-8" SURGE STONE OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
 2. LENGTH - AS REQUIRED 50' MIN. SEE PLAN.
 3. THICKNESS - NOT LESS THAN SIX (6) INCHES.
 4. WIDTH - 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCUR.
 5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE. FILTER CLOTH WILL NOT BE REQUIRED ON A SINGLE FAMILY RESIDENCE LOT.
 6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION 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 RIGHT OF WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT OF WAY MUST BE REMOVED IMMEDIATELY.
 8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS PERFORMED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE. TIRE WASHING REQUIRED BEFORE VEHICLE ENTERS PUBLIC ROAD.
 9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

STABILIZED CONSTRUCTION ENTRANCE

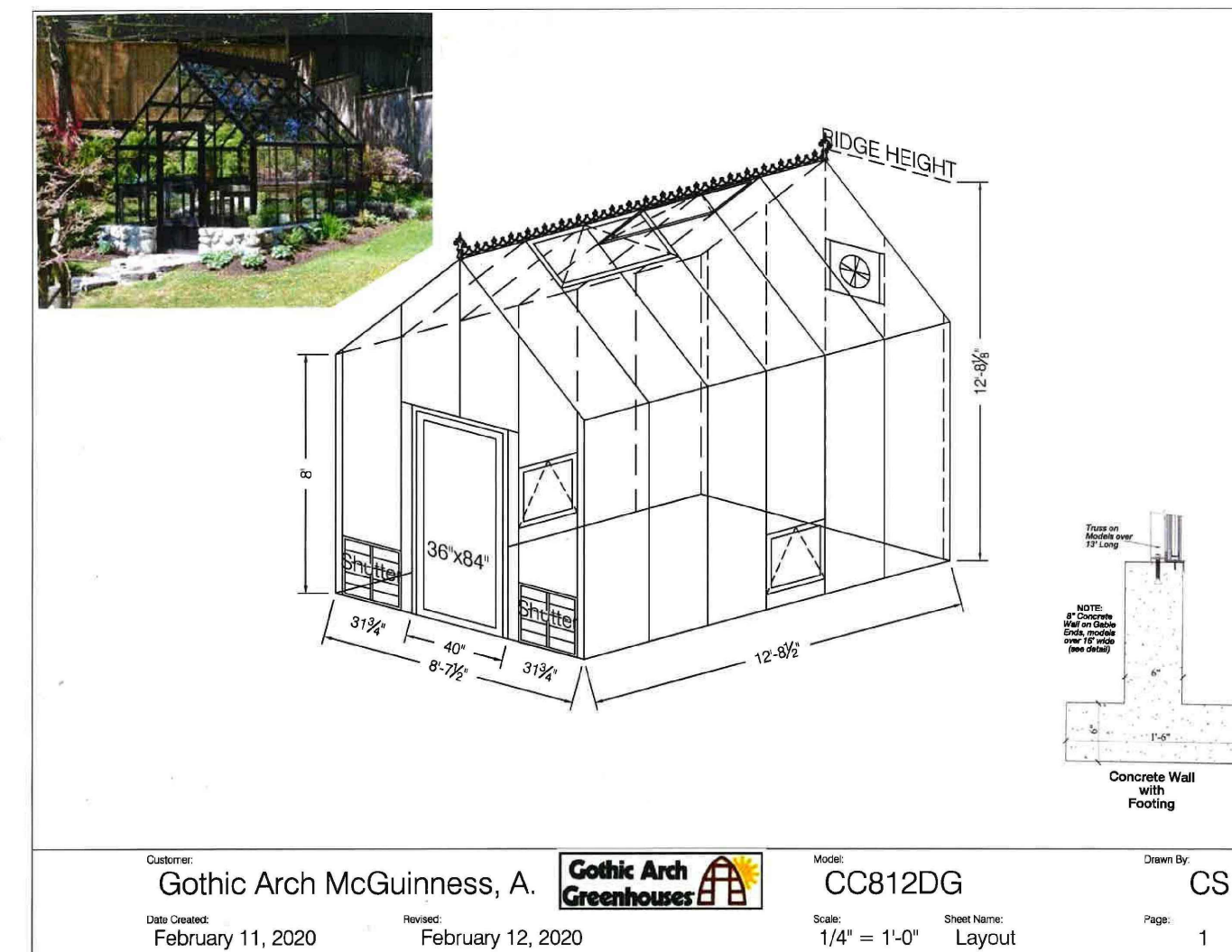
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EROSION CONTROL NOTES

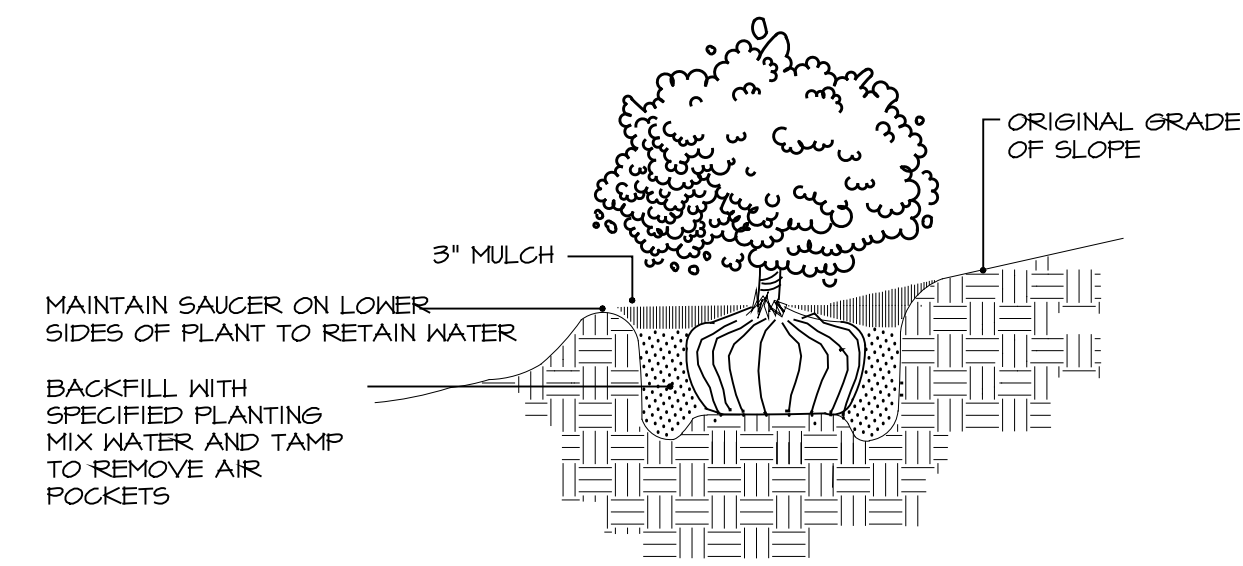
1. CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL SEDIMENT AND EROSION CONTROL PRACTICES. THE SEDIMENT AND EROSION CONTROL PRACTICES ARE TO BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCES, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED.
2. TIMELY MAINTENANCE OF SEDIMENT CONTROL STRUCTURES IS THE RESPONSIBILITY OF THE CONTRACTOR. ALL STRUCTURES SHALL BE MAINTAINED IN GOOD WORKING ORDER AT ALL TIMES. THE SEDIMENT LEVEL IN ALL SEDIMENT TRAPS SHALL BE CLOSELY MONITORED AND SEDIMENT REMOVED PROMPTLY WHEN MAXIMUM LEVELS ARE REACHED OR AS ORDERED BY THE ENVIRONMENTAL CONSULTANT. ALL SEDIMENT CONTROL STRUCTURES SHALL BE INSPECTED ON A REGULAR BASIS, AND AFTER EACH HEAVY RAIN TO INSURE PROPER OPERATION AS DESIGNED. AN INSPECTION SCHEDULE SHALL BE SET FORTH PRIOR TO THE START OF CONSTRUCTION.
3. THE LOCATIONS AND THE INSTALLATION TIMES OF THE SEDIMENT CAPTURING STANDARDS SHALL BE AS GROSSER BY THE ENVIRONMENTAL CONSULTANT, AND IN ACCORDANCE WITH THE STANDARDS SET FORTH PER LOCAL CODES.
4. ALL TOPSOIL NOT TO BE USED FOR FINAL GRADING SHALL BE STRIPPED FROM THE WORK AREA FIRST AND PLACED IN A STABILIZED STOCKPILE OR FILL AREA. ALL TOPSOIL REQUIRED FOR FINAL GRADING AND STORED ON SITE SHALL BE LINED, FERTILIZED, TEMPORARILY SEEDED AND MULCHED WITHIN 14 DAYS.
5. ALL INACTIVE DISTURBED AREAS NOT SUBJECT TO CONSTRUCTION TRAFFIC SHALL RECEIVE TEMPORARY SEEDINGS WITHIN SEVEN DAYS. MULCH SHALL BE USED IF THE SEASON PREVENTS THE ESTABLISHMENT OF A TEMPORARY COVER. DISTURBED AREAS SHALL BE LINED AND FERTILIZED PRIOR TO SEEDING. FINAL STABILIZATION SHALL BE APPLIED UPON COMPLETION OF FINAL GRADING AND SOIL RESTORATION WITHIN 1 DAYS.
6. ALL DISTURBED AREAS WITHIN 500 FEET OF AN INHABITED DWELLING SHALL BE NETTED AS NECESSARY TO PROVIDE DUST CONTROL.
7. THE CONTRACTOR SHALL KEEP THE ROADWAYS WITHIN THE PROJECT CLEAR OF SOIL AND DEBRIS AND IS RESPONSIBLE FOR ANY STREET CLEANING NECESSARY DURING THE COURSE OF THE PROJECT. SEE NOTE NUMBER 8 BELOW ON ANTI TRACKING PAD DETAIL.
8. SEDIMENT AND EROSION CONTROL PRACTICES SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED BY PERMANENT MEASURES.
9. EROSION CONTROL MEASURES SHALL BE INSPECTED BY ENVIRONMENTAL CONSULTANT ON A WEEKLY BASIS WHILE EARTHWORK ACTIVITY IS ON GOING AND UP UNTIL VEGETATIVE STABILIZATION OCCURS ON ALL DISTURBED AREAS.



EXISTING SHED TO BE REMOVED AT SUBJECT AREA 2



PROPOSED GREENHOUSE CONCEPT AT SUBJECT AREA 2



SHRUB PLANTING DETAIL

NTS

PLANT LIST

QTY.	KEY	BOTANICAL NAME	COMMON NAME	SIZE
2	DG	Cornus florida	FLOWERING DOGWOOD	10 GAL
2	SB	Amelanchier canadensis	SERVICEBERRY	10 GAL
18	SP	Lindera benzoin	SPICEBUSH	3 GAL
10	WH	Hamamelis virginiana	WITCHHAZEL	3 GAL
12	RC	Aronia arbutifolia	RED CHOKEBERRY	3 GAL
14	RD	Cornus sericea	REDTIG DOGWOOD	3 GAL
12	YD	Cornus sericea 'Flaviramea'	YELLOWING DOGWOOD	3 GAL
28	IB	Ilex glabra	INKBERRY	3 GAL
200	CF	ONOCLEA SENSIBILIS	CINNAMON FERN	1 GAL
170	OF	MATTEUCCIA STRUTHIOPTERIS	OSTRICH FERN	1 GAL

ERNMX-168 NORTHEAST ANNUAL + PERENNIAL WILDFLOWER MIX



EROSION CONTROL & SITE MITIGATION PLAN

Prepared For:
MR & MRS MCGUINNESS
17 SCHOOL HOUSE ROAD
WACCABUC, NY 10597
Tax Parcel ID 22-10802-35
23.261 Acres

Prepared by:
Landscape Architect/Environmental Planner:
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EASTON, CONNECTICUT 06612
Tel. 203.312.5809 Fax 203.312.0444

Attorney:
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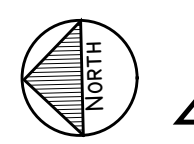
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8 GARRETT PLACE
CARMEL, NY 10512
Tel. 845-225-4640

Stormwater Engineer:
ALP ENGINEERING & LANDSCAPE ARCHITECTURE, PLLC
P.O. Box 843
RIDGEFIELD, CT 06871
Tel. 475.215.5343

Scale: 1" = 20'

0' 20' 40'

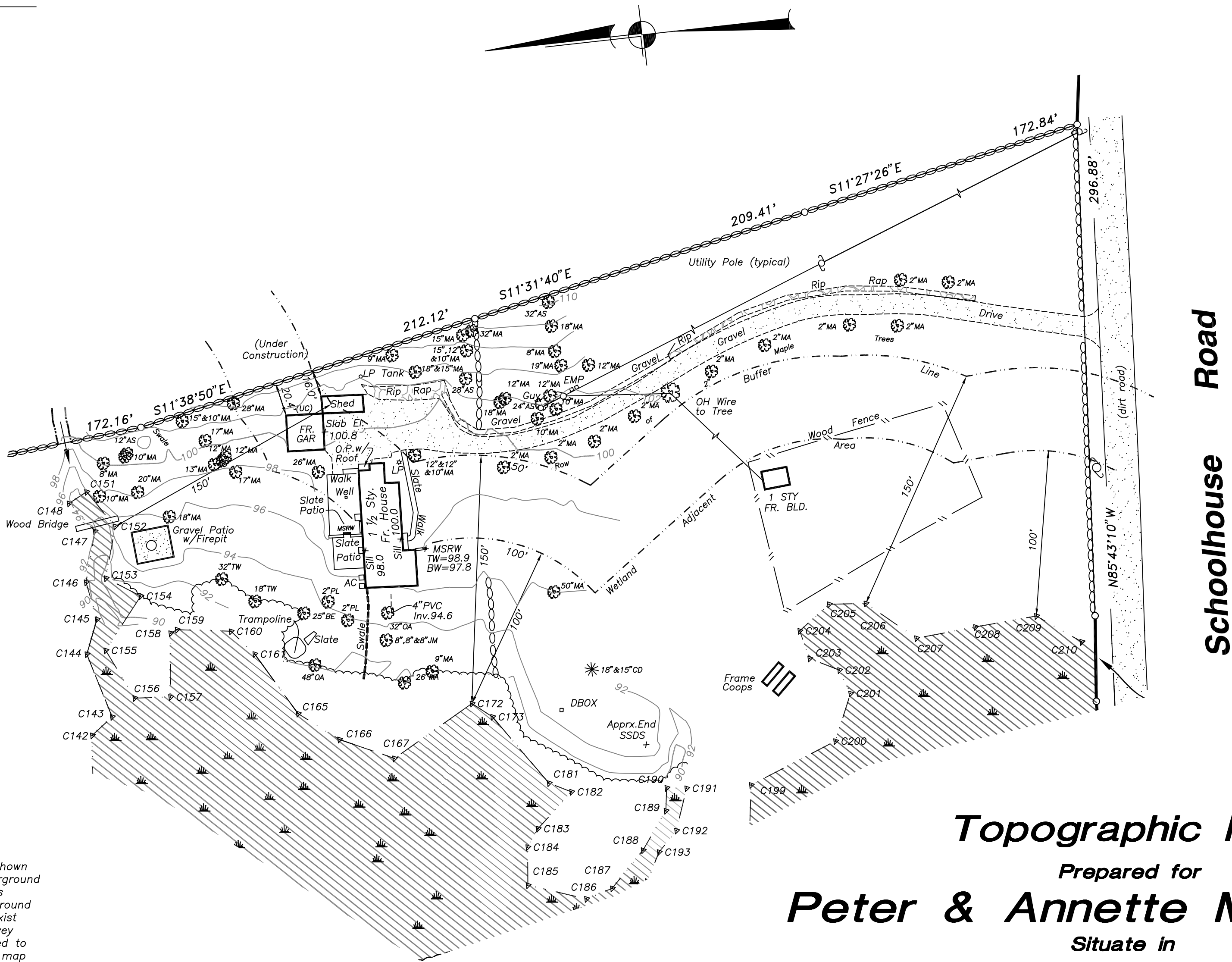
Date: October 4, 2020
Rev: December 24, 2020



TREE LEGEND

- Deciduous Tree
Evergreen Tree

- AS Ash
BE Beech
CD Cedar
MA Maple
NU Nut
OA Oak
PL Plum



FIELDWORK COMPLETED: DECEMBER 14, 2016

Underground structures, if any exist, are not shown hereon, except as noted. The location of underground improvements or encroachments are not always known and often must be estimated. If underground improvements, easements, or encroachments exist and are neither visible during normal field survey operations nor described in instruments provided to this surveyor, they may not be shown on this map and are not certified.

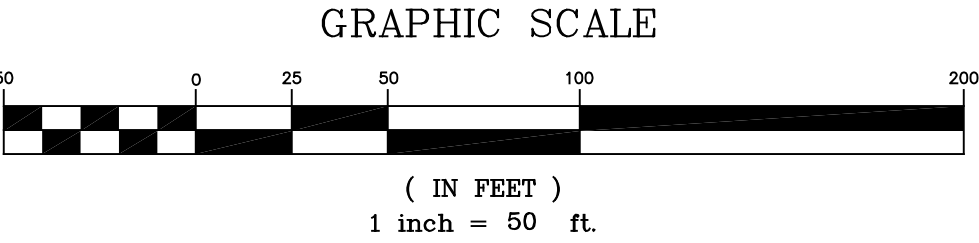
Only copies from the original of this survey marked with the surveyor's embossed seal are genuine, true and correct copies of the surveyor's original work and opinion. A copy of this document without a proper application of the surveyor's embossed seal should be assumed to be an unauthorized copy.

INSITE
ENGINEERING, SURVEYING &
LANDSCAPE ARCHITECTURE, P.C.
3 Garrett Place • Carmel, New York 10512
Phone (845) 225-9690 • Fax (845) 225-9717
www.insite-eng.com

JEFFREY B. DeROSA, LS
New York State License No. 050749

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Datum: Assumed



Application No.: _____
Fee: _____ Date: _____

**TOWN OF LEWISBORO
STORMWATER PERMIT APPLICATION**

79 Bouton Road, South Salem, NY 10590
Phone: (914) 763-5592
Fax: (914) 875-9148

Project Address: 17 School House Road, Waccabuc, NY 10597

Sheet: 22 Block: 10802 Lot(s): 35

Project Description (describe overall project including all proposed land development activities):

Various modifications including: construction of a spa with plunge pool, bluestone patio construction, modifications to existing gravel driveway construction of covered dining patio, new covered storage shed, new grill and fireplace, new stone walkways and new covered sitting folly.

Owner's Name: Peter and Annette McGuinness Phone: (917) 434-1826

Owner's Address: 17 School House Road Email: anm.mcguinness@gmail.com

Applicant's Name (if different): _____ Phone: _____

Applicant's Address: _____ Email: _____

Agent's Name (if applicable): Alan L. Pilch, PE, RLA Phone: (475) 215-5343

Agent's Address: P.O. Box 843, Ridgefield, CT 06877 Email: alan@eaec-inc.com

TO BE COMPLETED BY OWNER/APPLICANT

The approval authority is? (see §189-5 of the Town Code)

☐ Town Engineer and Stormwater Management Officer ☒ Planning Board

Is the project located within the NYCDEP Watershed? ☒ Yes ☐ No

Total area of proposed disturbance: ☒ 5,000 s.f. - < 1 acre ☐ ≥1 acre

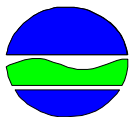
Will the project require coverage under the NYSDEC General Permit for Stormwater Discharges from Construction Activity? ☒ Yes ☐ No ☐ Requires post-construction stormwater practice

Does the proposed action require any other permits/approvals from other agencies/departments? (Wetland Inspector, Planning Board, Town Board, Zoning Board of Appeals, Building Department, Town Highway, ACARC, NYSDEC, NYCDEP, WCDOH, NYSDOT, etc): Identify all other permits/approvals required: Wetland Permit (Planning Board), NYSDEC (Article 24 Permit, SPDES General Permit), Building Permit (Building Department)

Note: The applicant, owner and/or agent is responsible for reviewing and complying with Chapter 189, "Stormwater Management and Erosion and Sediment Control," of the Town Code. This application must be submitted with all applicable plans, reports and documentation specified under §189-8, "SWPPP requirements," of the Town Code; all SWPPP's shall be prepared in conformance with Chapter 189 and shall be prepared by a qualified professional, as defined therein. The provision for obtaining a Town Stormwater Permit is in addition to the requirement of obtaining coverage under the SPDES General Permit for Stormwater Discharges from Construction Activity, if applicable.

Owner Signature: Peter and Annette McGuinness (APR) Date: 12/24/2020
Alan Pilch (Alan L. Pilch, agent for owner)

NOTICE OF INTENT



New York State Department of Environmental Conservation

Division of Water

625 Broadway, 4th Floor

Albany, New York 12233-3505

NYR

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_____
(for DEC use only)

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Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-20-001

All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

- IMPORTANT -

RETURN THIS FORM TO THE ADDRESS ABOVE

OWNER/OPERATOR MUST SIGN FORM

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)

[illegible]

Owner/Operator Contact Person Last Name (NOT CONSULTANT)

[illegible]

Owner/Operator Contact Person First Name

[illegible]

Owner/Operator Mailing Address

[illegible]

City

[illegible]

State

--	--

Zip

					-				
--	--	--	--	--	---	--	--	--	--

Phone (Owner/Operator)

--	--	--	--

Fax (Owner/Operator)

			-				-			
--	--	--	---	--	--	--	---	--	--	--

Email (Owner/Operator)

[illegible][illegible]

FED TAX ID

		-							
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(not required for individuals)

Project Site Information

Project/Site Name

[illegible]

Street Address (NOT P.O. BOX)

[illegible]

Side of Street

☐ North ☐ South ☐ East ☐ West

City/Town/Village (THAT ISSUES BUILDING PERMIT)

[illegible]

State

--	--

Zip

--	--	--	--	--

—

--	--	--	--

County

[illegible]DEC Region

--	--

Name of Nearest Cross Street

[illegible]

Distance to Nearest Cross Street (Feet)

--	--	--	--	--

Project In Relation to Cross Street

☐ North ☐ South ☐ East ☐ West

Tax Map Numbers

Section-Block-Parcel

[illegible]

Tax Map Numbers

[illegible]

1. Provide the Geographic Coordinates for the project site in NYTM Units. To do this you **must** go to the NYSDEC Stormwater Interactive Map on the DEC website at:

www.dec.ny.gov/imsmaps/stormwater/viewer.htm

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located your project site, go to the tool boxes on the top and choose "i"(identify). Then click on the center of your site and a new window containing the X, Y coordinates in UTM will pop up. Transcribe these coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting)

--	--	--	--	--	--

Y Coordinates (Northing)

--	--	--	--	--	--	--

2. What is the nature of this construction project?

- New Construction

- Redevelopment with increase in impervious area

- Redevelopment with no increase in impervious area

3. Select the predominant land use for both pre and post development conditions.

SELECT ONLY ONE CHOICE FOR EACH

**Pre-Development
Existing Land Use**

- ☐ FOREST
☐ PASTURE/OPEN LAND
☐ CULTIVATED LAND
☐ SINGLE FAMILY HOME
☐ SINGLE FAMILY SUBDIVISION
☐ TOWN HOME RESIDENTIAL
☐ MULTIFAMILY RESIDENTIAL
☐ INSTITUTIONAL/SCHOOL
☐ INDUSTRIAL
☐ COMMERCIAL
☐ ROAD/HIGHWAY
☐ RECREATIONAL/SPORTS FIELD
☐ BIKE PATH/TRAIL
☐ LINEAR UTILITY
☐ PARKING LOT
☐ OTHER

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**Post-Development
Future Land Use**

- ☐ SINGLE FAMILY HOME
☐ SINGLE FAMILY SUBDIVISION
☐ TOWN HOME RESIDENTIAL
☐ MULTIFAMILY RESIDENTIAL
☐ INSTITUTIONAL/SCHOOL
☐ INDUSTRIAL
☐ COMMERCIAL
☐ MUNICIPAL
☐ ROAD/HIGHWAY
☐ RECREATIONAL/SPORTS FIELD
☐ BIKE PATH/TRAIL
☐ LINEAR UTILITY (water, sewer, gas, etc.)
☐ PARKING LOT
☐ CLEARING/GRADING ONLY
☐ DEMOLITION, NO REDEVELOPMENT
☐ WELL DRILLING ACTIVITY *(Oil, Gas, etc.)
☐ OTHER

Number of Lots

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***Note:** for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area Within Disturbed Area
<div> <div></div><div></div><div></div><div></div><div></div> </div> <div> <div></div><div></div><div></div><div></div><div></div> </div> <div> <div></div><div></div><div></div><div></div><div></div> </div>	<div> <div></div><div></div><div></div><div></div><div></div> </div> <div> <div></div><div></div><div></div><div></div><div></div> </div> <div> <div></div><div></div><div></div><div></div><div></div> </div>	<div> <div></div><div></div><div></div><div></div><div></div> </div> <div> <div></div><div></div><div></div><div></div><div></div> </div> <div> <div></div><div></div><div></div><div></div><div></div> </div>	<div> <div></div><div></div><div></div><div></div><div></div> </div> <div> <div></div><div></div><div></div><div></div><div></div> </div> <div> <div></div><div></div><div></div><div></div><div></div> </div>

5. Do you plan to disturb more than 5 acres of soil at any one time? ☐ Yes ☐ No

6. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

A	B	C	D
<div> <div></div><div></div><div></div><div></div> </div> <div> <div></div><div></div><div></div><div></div> </div>	<div> <div></div><div></div><div></div><div></div> </div> <div> <div></div><div></div><div></div><div></div> </div>	<div> <div></div><div></div><div></div><div></div> </div> <div> <div></div><div></div><div></div><div></div> </div>	<div> <div></div><div></div><div></div><div></div> </div> <div> <div></div><div></div><div></div><div></div> </div>

7. Is this a phased project? ☐ Yes ☐ No

8. Enter the planned start and end dates of the disturbance activities.

Start Date	End Date
<div> <div></div><div></div><div></div><div></div> </div> <div> <div></div><div></div><div></div><div></div> </div> <div> <div></div><div></div><div></div><div></div> </div>	<div> <div></div><div></div><div></div><div></div> </div> <div> <div></div><div></div><div></div><div></div> </div> <div> <div></div><div></div><div></div><div></div> </div>

[illegible]

☐ Wetland / State Jurisdiction On Site (Answer 9b)
☐ Wetland / State Jurisdiction Off Site
☐ Wetland / Federal Jurisdiction On Site (Answer 9b)
☐ Wetland / Federal Jurisdiction Off Site
☐ Stream / Creek On Site
☐ Stream / Creek Off Site
☐ River On Site
☐ River Off Site
☐ Lake On Site
☐ Lake Off Site
☐ Other Type On Site
☐ Other Type Off Site

- ☐ Regulatory Map
- ☐ Delineated by Consultant
- ☐ Delineated by Army Corps of Engineers
- ☐ Other (identify)

[illegible][illegible]

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-20-001? ☐ **Yes** ☐ **No**

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as an E or F on the USDA Soil Survey? ☐ Yes ☐ No

If Yes, what is the acreage to be disturbed?

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Page 4 of 14

15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)? ☐ Yes ☐ No ☐ Unknown

- [illegible]

17. Does any runoff from the site enter a sewer classified as a Combined Sewer? ☐ **Yes** ☐ **No** ☐ **Unknown**

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law? ☐ Yes ☐ No

19. Is this property owned by a state authority, state agency, federal government or local government? ☐ Yes ☐ No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) ☐ **Yes** ☐ **No**

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)? ☐ Yes ☐ No

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)? ☐ **Yes** ☐ **No**
- If No, skip questions 23 and 27-39.**

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual? ☐ Yes ☐ No

24. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:

- ☐ Professional Engineer (P.E.)
- ☐ Soil and Water Conservation District (SWCD)
- ☐ Registered Landscape Architect (R.L.A.)
- ☐ Certified Professional in Erosion and Sediment Control (CPESC)
- ☐ Owner/Operator
- ☐ Other

[illegible]

SWPPP Preparer

[illegible]

Contact Name (Last, Space, First)

[illegible]

Mailing Address

[illegible]

City

[illegible]

State Zip

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Phone

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Fax

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Email

[illegible][illegible]

SWPPP Preparer Certification

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) for this project has been prepared in accordance with the terms and conditions of the GP-0-20-001. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of this permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

First Name

[illegible]

MI

7

Last Name

[illegible]

Signature

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Date _____

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25. Has a construction sequence schedule for the planned management practices been prepared? ☐ Yes ☐ No

☐ Yes ☐ No

26. Select **all** of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural

- ☐ Check Dams
- ☐ Construction Road Stabilization
- ☐ Dust Control
- ☐ Earth Dike
- ☐ Level Spreader
- ☐ Perimeter Dike/Swale
- ☐ Pipe Slope Drain
- ☐ Portable Sediment Tank
- ☐ Rock Dam
- ☐ Sediment Basin
- ☐ Sediment Traps
- ☐ Silt Fence
- ☐ Stabilized Construction Entrance
- ☐ Storm Drain Inlet Protection
- ☐ Straw/Hay Bale Dike
- ☐ Temporary Access Waterway Crossing
- ☐ Temporary Stormdrain Diversion
- ☐ Temporary Swale
- ☐ Turbidity Curtain
- ☐ Water bars

Biotechnical

- Brush Matting
- Wattling

Other

[illegible]

Vegetative Measures

- ☐ Brush Matting
- ☐ Dune Stabilization
- ☐ Grassed Waterway
- ☐ Mulching
- ☐ Protecting Vegetation
- ☐ Recreation Area Improvement
- ☐ Seeding
- ☐ Sodding
- ☐ Straw/Hay Bale Dike
- ☐ Streambank Protection
- ☐ Temporary Swale
- ☐ Topsoiling
- ☐ Vegetating Waterways

Permanent Structural

- ☐ Debris Basin
- ☐ Diversion
- ☐ Grade Stabilization Structure
- ☐ Land Grading
- ☐ Lined Waterway (Rock)
- ☐ Paved Channel (Concrete)
- ☐ Paved Flume
- ☐ Retaining Wall
- ☐ Riprap Slope Protection
- ☐ Rock Outlet Protection
- ☐ Streambank Protection

Post-construction Stormwater Management Practice (SMP) Requirements

Important: Completion of Questions 27-39 is not required if response to Question 22 is No.

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

- ☐ Preservation of Undisturbed Areas
- ☐ Preservation of Buffers
- ☐ Reduction of Clearing and Grading
- ☐ Locating Development in Less Sensitive Areas
- ☐ Roadway Reduction
- ☐ Sidewalk Reduction
- ☐ Driveway Reduction
- ☐ Cul-de-sac Reduction
- ☐ Building Footprint Reduction
- ☐ Parking Reduction

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

- ☐ All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).
- ☐ Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

Total WQv Required

. acre-feet

29. Identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required(#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

Table 1 - Runoff Reduction (RR) Techniques
and Standard Stormwater Management
Practices (SMPs)

RR Techniques (Area Reduction)	Total Contributing Area (acres)	Total Contributing Impervious Area(acres)
○ Conservation of Natural Areas (RR-1) ...	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	and/or <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
○ Sheetflow to Riparian Buffers/Filters Strips (RR-2)	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	and/or <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
○ Tree Planting/Tree Pit (RR-3)	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	and/or <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
○ Disconnection of Rooftop Runoff (RR-4) ..	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	and/or <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<u>RR Techniques (Volume Reduction)</u>		
○ Vegetated Swale (RR-5)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Rain Garden (RR-6)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Stormwater Planter (RR-7)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Rain Barrel/Cistern (RR-8)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Porous Pavement (RR-9)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Green Roof (RR-10)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<u>Standard SMPs with RRv Capacity</u>		
○ Infiltration Trench (I-1)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Infiltration Basin (I-2)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Dry Well (I-3)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Underground Infiltration System (I-4)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Bioretention (F-5)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Dry Swale (O-1)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
<u>Standard SMPs</u>		
○ Micropool Extended Detention (P-1)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Wet Pond (P-2)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Wet Extended Detention (P-3)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Multiple Pond System (P-4)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Pocket Pond (P-5)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Surface Sand Filter (F-1)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Underground Sand Filter (F-2)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Perimeter Sand Filter (F-3)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Organic Filter (F-4)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Shallow Wetland (W-1)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Extended Detention Wetland (W-2)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Pond/Wetland System (W-3)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Pocket Wetland (W-4)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>
○ Wet Swale (O-2)	<input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/>

Table 2 - Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)																												
<u>Alternative SMP</u>	<u>Total Contributing Impervious Area(acres)</u>																											
<input type="radio"/> Hydrodynamic	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table> ÷ <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>																											
<input type="radio"/> Wet Vault	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table> ÷ <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>																											
<input type="radio"/> Media Filter	<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table> ÷ <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>																											
<input type="radio"/> Other <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>																<table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table> ÷ <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>												

Provide the name and manufacturer of the Alternative SMPs (i.e.
proprietary practice(s)) being used for WQv treatment.

Name	<table border="1" style="width: 100%; height: 20px;"></table>
Manufacturer	<table border="1" style="width: 100%; height: 20px;"></table>

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

[illegible]

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 acre-feet

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acre-feet

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33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

Note: Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

- 33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29.

WQv Provided

. acre-feet

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRv provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).

.

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)? ☐ Yes ☐ No

If Yes, go to question 36.

If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable.

CPv Required

. acre-feet

CPv Provided

. acre-feet

- 36a. The need to provide channel protection has been waived because:

- ☐ Site discharges directly to tidal waters or a fifth order or larger stream.
- ☐ Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

Total Overbank Flood Control Criteria (Qp)

Pre-Development

. CFS

Post-development

. CFS

Total Extreme Flood Control Criteria (Qf)

Pre-Development

. CFS

Post-development

. CFS

37a. The need to meet the Qp and Qf criteria has been waived because:

- ☐ Site discharges directly to tidal waters or a fifth order or larger stream.
- ☐ Downstream analysis reveals that the Qp and Qf controls are not required

- Site discharges directly to tidal waters or a fifth order or larger stream.
- Downstream analysis reveals that the Qp and Qf controls are not required

☐ Yes ☐ No

If Yes, Identify the entity responsible for the long term
Operation and Maintenance

[illegible]

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required(#28). (See question 32a)
This space can also be used for other pertinent project information.

40. Identify other DEC permits, existing and new, that are required for this project/facility.

○ Air Pollution Control

○ Coastal Erosion

☐ Hazardous Waste

○ Long Island Wells

○ Mined Land Reclamation

○ Solid Waste

○ Navigable Waters Protection / Article 15

○ Water Quality Certificate

○ Dam Safety

○ Water Supply

○ Freshwater Wetlands/Article 24

○ Tidal Wetlands

○ Wild, Scenic and Recreational Rivers

○ Stream Bed or Bank Protection / Article 15

○ Endangered or Threatened Species(Incidental Take Permit)

- Individual SPDES

○ SPDES Multi-Sector GP								
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☐ Other

☐ None

41. Does this project require a US Army Corps of Engineers Wetland Permit? ☐ ☐ ☐ ☐ ☐ ☐

☐ Yes ☐ No

If Yes, Indicate Size of Impact.				
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42. Is this project subject to the requirements of a regulated, traditional land use control MS4?
(If No, skip question 43)

☐ Yes ☐ No

43. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI?

☐ Yes ☐ No

44. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned.

Owner/Operator Certification	
<p>I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.</p>	
Print First Name <div style="border: 1px solid black; height: 30px; width: 100%; position: relative;"> <div style="position: absolute; top: 0; left: 0; right: 0; bottom: 0; border: 1px solid black; display: flex; flex-wrap: wrap;"> <!-- 20 empty boxes for first name --> </div> </div>	MI <div style="border: 1px solid black; height: 30px; width: 100%; position: relative;"> <div style="position: absolute; top: 0; left: 0; right: 0; bottom: 0; border: 1px solid black; display: flex; flex-wrap: wrap;"> <!-- 2 empty boxes for MI --> </div> </div>
Print Last Name <div style="border: 1px solid black; height: 30px; width: 100%; position: relative;"> <div style="position: absolute; top: 0; left: 0; right: 0; bottom: 0; border: 1px solid black; display: flex; flex-wrap: wrap;"> <!-- 20 empty boxes for last name --> </div> </div>	
Owner/Operator Signature <div style="border: 1px solid black; height: 60px; width: 100%;"></div>	
<div style="display: flex; justify-content: flex-end; align-items: center;"> <div style="text-align: center; margin-right: 20px;"> Date <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> </div> <div style="margin: 0 5px;">/</div> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> </div> <div style="margin: 0 5px;">/</div> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> </div> <div style="border: 1px solid black; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> </div> </div> </div> </div>	

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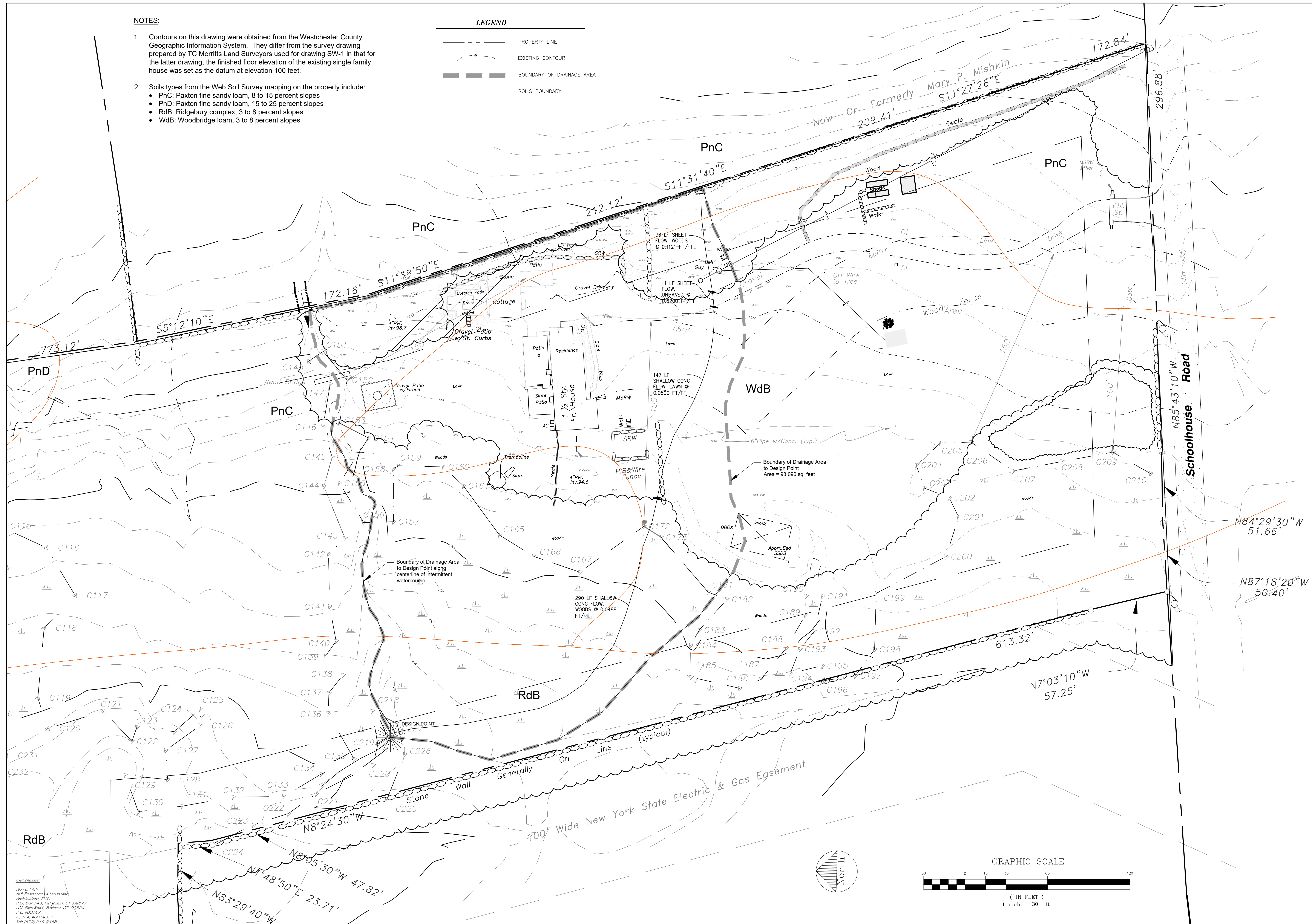
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 - PnD: Paxton fine sandy loam, 15 to 25 percent slopes
 - RdB: Ridgebury complex, 3 to 8 percent slopes
 - WdB: Woodbridge loam, 3 to 8 percent slopes



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SWPPP Figure 3

STORM PIPE TABLE									
STRUCTURE		PIPE PARAMETERS						Invert	Invert
Upper Structure	Lower Structure	Finished Grade	Size (in.)	Slope %	Length (ft)	Fall (ft)		Upper Structure	Lower Structure
KEY C	KEY B	101.00	6	1.57	25.5	0.40		98.90	98.50
KEY B	KEY A	101.00	6	4.07	29.5	1.20		98.50	97.30
KEY A	CB-1	100.40	6	1.50	33.3	0.50		97.30	96.80
KEY G	KEY F	101.00	4	2.08	21.6	0.45		99.25	98.80
KEY F	KEY E	101.00	4	1.55	19.3	0.30		98.80	98.50
KEY E	KEY D	99.80	6	1.57	26.6	0.42		98.42	98.00
KEY D	CB-1	99.75	6	2.48	48.4	1.20		98.00	96.80
KEY H	KEY E	99.80	6	1.44	20.9	0.30		98.80	98.50
CB-1	CHAMBERS	98.50	4	2.50	2.0	0.05		96.80	96.75
CHAMBERS	CB-2 / OCS	98.30	4	0.00	3.0	0.00		96.50	96.50

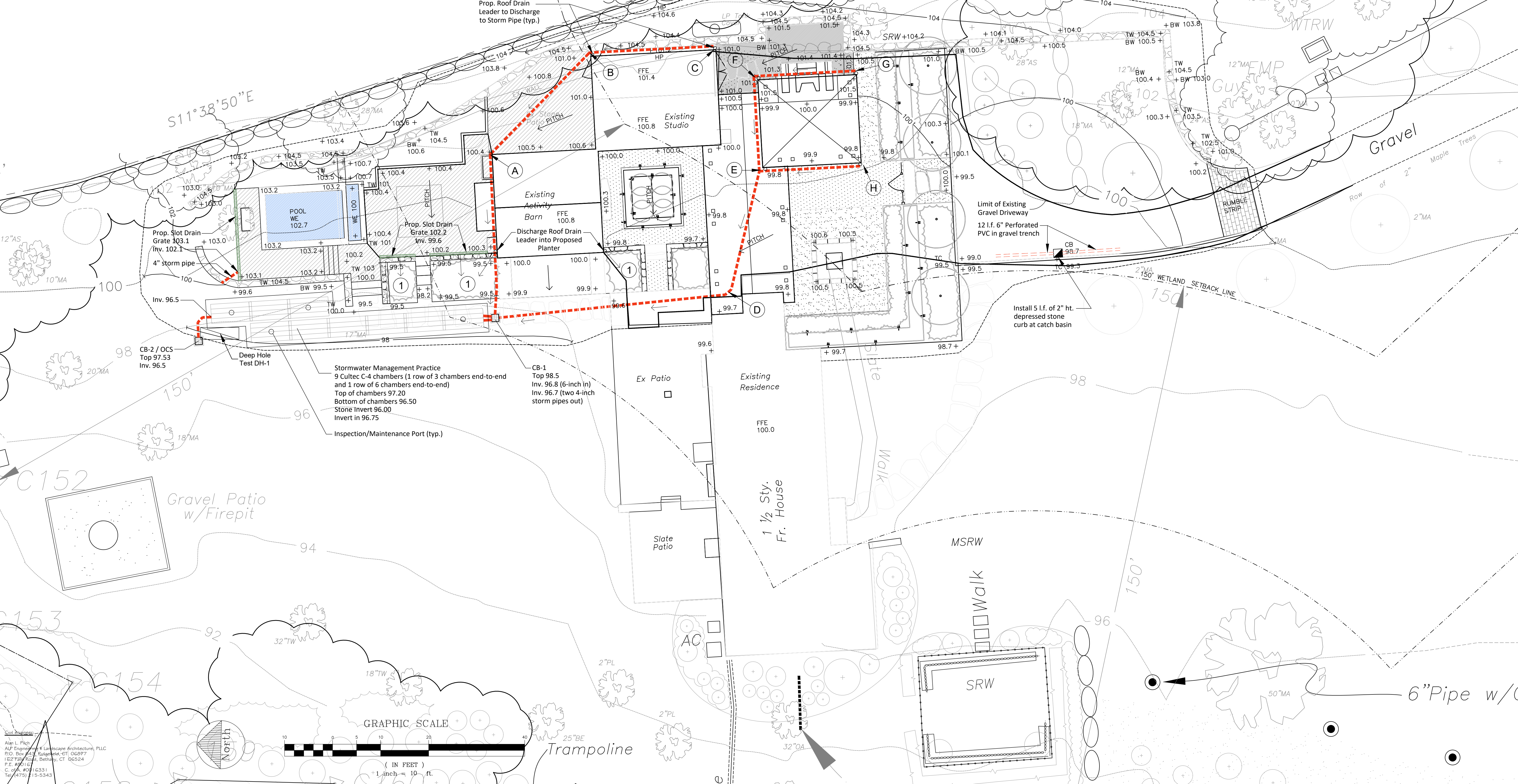
KEY TO STORM STRUCTURES
RDL = Roof Drain Leader
(B) = Lettered key location
OCS = Outlet Control Structure
CB = Catch basin

NOTES:

- Runoff from bluestone paved areas to be conveyed via sheet flow into proposed planters. The storm key number (1) shows the planters into which runoff will be conveyed.
- Deep hole test DH-1, performed on 12/15/2020 and witnessed by a representative of the Town Consultant found the following: 12" topsoil, followed by 2 feet of silty loam, followed by 3 feet of fine sandy loam. Seep into the deep hole was at 42" below grade. No bedrock or ledge was uncovered. Deep hole test was dug to 6 feet below grade.

LEGEND

- PROPERTY LINE
--- EXISTING CONTOUR
--- DEEP HOLE TEST LOCATION
--- STORM DRAINAGE PIPE
--- STORM DRAINAGE FLOW DIRECTION
--- STORM DRAINAGE KEY (SEE TABLE)
--- CATCH BASIN / OUTLET CONTROL STRUCTURE
--- DRAINAGE AREA TO CHAMBERS



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SURVEYOR:
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ISSUED:

OWNERSHIP AND USE OF DOCUMENTS

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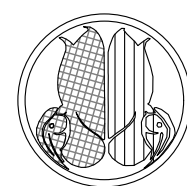
No part of these drawings shall be copied, disclosed to others or used in connection with any work or project other than for which they have been prepared without the express written consent of the licensed professional who prepared the document.

SEAL:



PROJECT NAME:
McGUINNIS PROPERTY
17 School House Road
Waccabuc, New York

ENGINEER & LANDSCAPE ARCHITECT:
ALP ENGINEERING & LANDSCAPE ARCHITECTURE, PLLC



P.O. Box 843 Ridgefield, CT 06877
Direct Tel: (475) 215-5343 Cell: (203) 710-0587

Drawing Title:

**Future Conditions
Stormwater Plan**

Date: December 24, 2020

Dwn. by: alp

ID: McGuinness Site 12.24.20

SW-1

Sheet 1 of 2



Department of
Environmental
Conservation

NYS Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information

1. Owner/Operator Name: Peter and Annette McGuinness

2. Contact Person: Annette McGuinness

3. Street Address: 17 School House Road

4. City/State/Zip: Waccabuc, NY 10597

II. Project Site Information

5. Project/Site Name: McGuinness Property

6. Street Address: 17 School House Road

7. City/State/Zip: Waccabuc, NY 10597

III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information

8. SWPPP Reviewed by:

9. Title/Position:

10. Date Final SWPPP Reviewed and Accepted:

IV. Regulated MS4 Information

11. Name of MS4:

12. MS4 SPDES Permit Identification Number: NYR20A

13. Contact Person:

14. Street Address:

15. City/State/Zip:

16. Telephone Number:

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s). Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

VI. Additional Information

**STORMWATER MANAGEMENT REPORT
FOR 17 SCHOOL HOUSE ROAD
WACCABUC, NEW YORK**

Date: December 24, 2020

PREPARED BY: ALAN L. PILCH, PE, RLA
ALP ENGINEERING & LANDSCAPE ARCHITECTURE, PLLC

Report Contents:

- 1) Existing Site Conditions
- 2) Stormwater Management Design Criteria and Plan
- 3) Stormwater Analysis
- 4) Stormwater Modeling – Peak Rate Attenuation

Figures

Supporting Documentation

Appendix A Hydrographs and Routings

This Stormwater Management Report is submitted in support of the application of the owner of the above-noted property for the construction of various modification to an existing property. The proposed changes include (refer to Site Plan – Subject Area 1, Sheet 2 of 3 by Jeri D. Barrett and Associates) the following. The letters below correspond to the lettering on the above-noted Sheet 2 of 3:

- A. Construction of a new 10' x 15' salt water spa with plunge pool
- B. Construction of a bluestone patio for the spa
- C. Conversion of an existing gravel surface patio to bluestone paving
- D. Construction of an overhang on the east side of the existing activity barn building overhang
- E. Expansion of the existing upper rear patio
- F. Removal of a portion of the existing gravel driveway and its conversion to a formal garden with pea gravel walkways
- G. Construction of a covered dining patio area (replacing a portion of the gravel driveway)
- H. Construction of a garden area with a water feature (replacing a portion of the gravel driveway)
- I. Construction of new stepping stones to the front door of the house (replacing the existing walkway from the driveway to the house)
- J. Realigned stone retaining wall.
- K. New covered storage shed to be built on the west side of the existing studio
- L. New bluestone patio
- M. New grill and fireplace
- N. Modification of the existing gravel driveway
- O. New pea gravel and stepping stone walkway.
- P. New stone retaining wall adjacent to modified gravel driveway.
- Q. New stepping stones to link bluestone patio and covered dining patio

- R. Installation of spa equipment in covered storage shed.
- S. New covered sitting folly.

1) Existing Site Conditions:

The subject property is 23.261 acres in size and is located on the north side of School House Road (see **Figure 1**). There is an existing 1-1/2 story residence on the lot, as well as an existing frame barn and attached studio building. An upper and lower patio is present on the rear side of the house, and a stone patio on the west side of the barn and studio building. Finally, there is a gravel surfaced patio and gravel surfaced patio with a fire pit in the rear yard. and flagstone walkways and the typical residential landscape of mown lawn and shrubs. The majority of the property consists of dense woods. Only in the area near the house is there the typical residential landscape of lawn, trees and shrubs. The property is located in the Cross River Basin watershed. All of the runoff from the property is conveyed generally west and then to the north.

Soils - According to the Web Soil Survey, the soils in the area of the proposed work are mapped as WdB, Woodbridge loam and PnC, Paxton fine sandy loam (see **Figure 2**). The survey reports that Woodbridge loam and Paxton fine sandy loam soils are very deep, well drained, and consist of a gravelly fine sandy loam and fine sandy loam to a depth of about 65 inches. These soils are classified as hydrologic soils group C. Both soils feature a depth of about 20” to 39” to densic material. The deep hole test performed on 12/15/2020 within the footprint of the proposed stormwater management practice found a seep at a depth of 42” below grade.

2) Stormwater Management Design Criteria and Plan

The project includes the various construction activities noted above.

PROPOSED CONSTRUCTION / MODIFICATION	Existing Ground Surface	Future Condition
Construction of a new 10' x 15' salt water spa with plunge pool	Lawn	Concrete surface
Construction of a bluestone patio for the spa	Lawn	Bluestone
Conversion of an existing gravel surface patio to bluestone paving	Gravel	Bluestone
Construction of an overhang on the east side of the existing activity barn building overhang	Lawn	Roof
Expansion of the existing upper rear patio	Bluestone	Gravel driveway
Removal of a portion of the existing gravel driveway and its conversion to a formal garden with pea gravel walkways	Gravel driveway	Pea gravel and landscaping

PROPOSED CONSTRUCTION / MODIFICATION	Existing Ground Surface	Future Condition
Construction of a covered dining patio area (replacing a portion of the gravel driveway)	Gravel driveway and lawn	Roof
Construction of a garden area with a water feature (replacing a portion of the gravel driveway)	Gravel driveway	Pea gravel / concrete
Construction of new stepping stones to the front door of the house (replacing the existing walkway from the driveway to the house)	Stone	Lawn
Realigned stone retaining wall.	Woods, lawn	Stone
New covered storage shed to be built on the west side of the existing studio	Flagstone	Roof
New bluestone patio	Stone wall and woods	Bluestone patio
New grill and fireplace	Gravel Driveway	Impervious
Modification of the existing gravel driveway	Gravel Driveway and Lawn/Woods	Gravel driveway
New pea gravel and stepping stone walkway	Gravel Driveway	Pea gravel / stone
New stone retaining wall adjacent to modified gravel driveway	Lawn and Woods	Stone
New stepping stones to link bluestone patio and covered dining patio	Gravel Driveway	Stone and pea gravel
Installation of spa equipment in covered storage shed	Flagstone	Roof

With the proposed construction, the amount of impervious surfaces that convey runoff to the design point will increase, from 4,830 s.f. at present to 8,091 s.f. in the future. Some of these impervious surfaces are being constructed over existing semi-pervious surfaces (gravel or pea stone). Semi-pervious surfaces within the drainage area to the design point will decrease from 4,891 s.f. to 3,213 s.f.

Given the dispersed changes to the property that are being proposed – the work is spread out over about 200 feet along the western boundary of the property – and the fact that the runoff from both the front and rear yards is conveyed in a easterly direction, a design point was established along the eastern property line where all of the runoff from the portions of the property to be modified is conveyed to an existing intermittent watercourse that is present just south of the area of the proposed work. The drainage area to the design point is calculated to be 93,090 square feet (2.137 acres).

The stormwater management plan for the property has been designed to meet the requirements of the Town of Lewisboro. To this end, the project will provide peak rate attenuation for all storm events up to the 25-year storm. It is proposed to direct runoff from portions of the areas to be modified into a subsurface stormwater management facility to consist of 9 Cultec C-4 chambers in order to provide peak rate attenuation.

Deep hole testing within the footprint of the proposed chambers was done on December 15, 2020. The deep hole test revealed 12" of topsoil, followed by 2' of silty loam, and then 3'-0" of fine sandy loam. The hole was dug to a depth of 6 feet, or about elevation 91.75 feet. A seep was present 42" below grade. No bedrock was encountered. The deep hole test was performed at elevation 97.5 feet. Therefore, the seep was noted at elevation 94 feet. This would place the seep 2 feet below the proposed invert elevation of the stone under the chambers and 2'-6" below the bottom of the chambers. Percolation testing has not been performed.

3) Stormwater Analysis

As noted above, the runoff from the property drains in general to the east. The runoff from the proposed addition drains to the southwest toward an existing 12" culvert pipe under Todd Road North.

An analysis was first done to determine the composite curve number under the existing and future conditions to the design point. This analysis showed that in the existing condition, the drainage area to the design point has a curve number of 74. In the future condition, with all of the changes described above, the composite curve number of the drainage area to the design point would increase to 75.

In order to attenuate this increase, it is proposed to convey runoff from some of the new impervious surfaces into proposed subsurface chambers for peak rate of runoff attenuation purposes. The chambers, by virtue of infiltration of runoff into the soils, will also provide some water quality improvement. As is noted above, the changes to the property include: new impervious surfaces over existing lawn, new impervious surfaces over existing stone and gravel surfaces, new semi-pervious surfaces (stone or pea gravel) over existing gravel, new semi-pervious surfaces (stone or pea gravel) over existing lawn. The land cover changes with the most potential to impact downstream flows (either rate of runoff or water quality) is the construction of new impervious surfaces over existing lawn areas. For this reason, given that the proposed new construction will have minimal impact on the peak rate of runoff at the design point, it is proposed to direct runoff from impervious surfaces from an area in excess of the new impervious surfaces that will be constructed over existing lawn areas into proposed chambers for peak rate attenuation and for water quality improvement.

The calculations show that the new impervious surfaces that will be constructed over existing lawn areas is equal to 1,262 square feet. To mitigate the impacts, it is proposed to convey runoff from 1,776 square feet of impervious surfaces (see **drawing SW-1**) into the proposed chambers in

subsurface storm drainage pipes. This area is to consist of: the covered sitting folly (376 square feet), the proposed covered dining patio (637 s.f.), and the existing Studio building, covered storage shed and western half of the existing activity building (763 s.f.).

In the HydroCAD modeling, the drainage area to the proposed chambers is defined as Future Condition Drainage Area #2 (FDA-2). The remainder of the drainage area to the design point is named Future Condition Drainage Area #1 (FDA-1).

In addition, the runoff from the proposed bluestone paving area between the new pool and existing activity building (479 s.f.), and the eastern half of the existing activity barn (230 s.f.) will be directed into the proposed planters to be constructed to the east of these features (see **drawing SW-1**). To be conservative, the attenuation of the peak rate of runoff from directing the runoff into the proposed planters is not modeled.

The proposed pool is 15' in length x 10 feet in width. A 6-inch drawdown of the pool corresponds to a volume of (15' x 10' x 0.5') 75 cubic feet. The proposed 9 Cultec C-4 chambers have a storage volume of about 360 cubic feet, well in excess of the drawdown volume. The proposed subsurface stormwater management facility is located in the side yard, to the east of the proposed spa in an area which is presently a mown lawn.

4) Stormwater Modeling – Peak Rate Attenuation and Water Quality Improvement

The peak rate of runoff to the design point has been calculated for the 1-year through 25-year storm events. The analysis was performed in accordance with the methodology of the United States Department of Agriculture Soil Conservation Service (now Natural Resources Conservation Service) publication *Urban Hydrology for Small Watersheds, Technical Release 55 (TR-55)*, 1986. To calculate the peak rate of runoff, the following information used in the analysis: (i) Runoff depths for the 24-hour design storms used in the calculations were as follows: 2.82" for the one-year storm, 5.07" for the ten-year storm, and 6.37" for the 25-year storm, based on the data from the Northeast Regional Climate Center for the property; (ii) A 24-hour rainfall duration was used in calculating the hydrographs, (iii) a Type III storm distribution was used in the analysis. Finally, hydrographs and pond routings were created using the computer program *HydroCAD* (ver. 10.10-4b), by HydroCAD Software Solutions, LLC.

The calculations show that at the design point, the peak rate of runoff at the design point will drop slightly when compared to the existing condition. This is summarized in **Table 1**, below.

Table 1. Peak Rates of Runoff to Design Point

(all flows in cubic feet per second)

<i>Drainage Area/ Storm Interval</i>	<i>1 year</i>	<i>10 year</i>	<i>25 year</i>
<i>Existing Condition</i>			
<i>Flows to Design Point</i>	1.42	4.71	6.86
<i>Future Condition</i>			
<i>Flows to Design Point</i>	1.39	4.62	6.73

In the modeling, the runoff that is discharged from the outlet control structure from the chambers is conveyed in reaches to the Design Point. Reach #1 is flow across the lawn in the rear yard; Reach #2 is the flow across the existing wooded area, and finally Reach #3 is the flow in the existing intermittent channel which traverses the rear yard.

Water Quality Improvement – Chapter 4 of the 2015 *Stormwater Management Design Manual* provides the methodology for calculating the water quality volume. As noted in the Design Manual, “the water quality volume (denoted as the WQv) is intended to improve water quality by capturing and treating runoff from small, frequent storm events that tend to contain higher pollutant levels.” Within the New York City Water Supply Watershed, New York State has defined the WQv as the volume of runoff generated from the one year storm event, which is equal to 2.82” of precipitation.

Runoff from 1,776 square feet of impervious surfaces will be directed in subsurface storm pipes into the proposed chambers. The calculations show that the water quality volume (using a precipitation depth of 2.82 inches), would result in a runoff volume of 383 cubic feet.

The proposed 9 Cultec C-4 chambers would have a storage volume of 389.8 cubic feet, in excess of the water quality volume. At the elevation of the proposed grate, the total volume of runoff in the chambers would be about 360 cubic feet, or nearly the entire water quality volume without infiltration into the soil being taken into account. The proposed chambers will thus provide, in addition to peak rate of runoff attenuation, improvement to the quality of the runoff being discharged from the property. It will also reduce slightly the volume of runoff that is discharged.

5) Summary:

The proposed stormwater management facility to consist of 9 Cultec C-4 chambers which will peak rate attenuation of the runoff from the property over the 1-year through 25-year storm events. It will also provide water quality improvement from the area that exceeds the area of the new impervious surfaces that will be constructed over existing lawn surfaces.

FIGURES

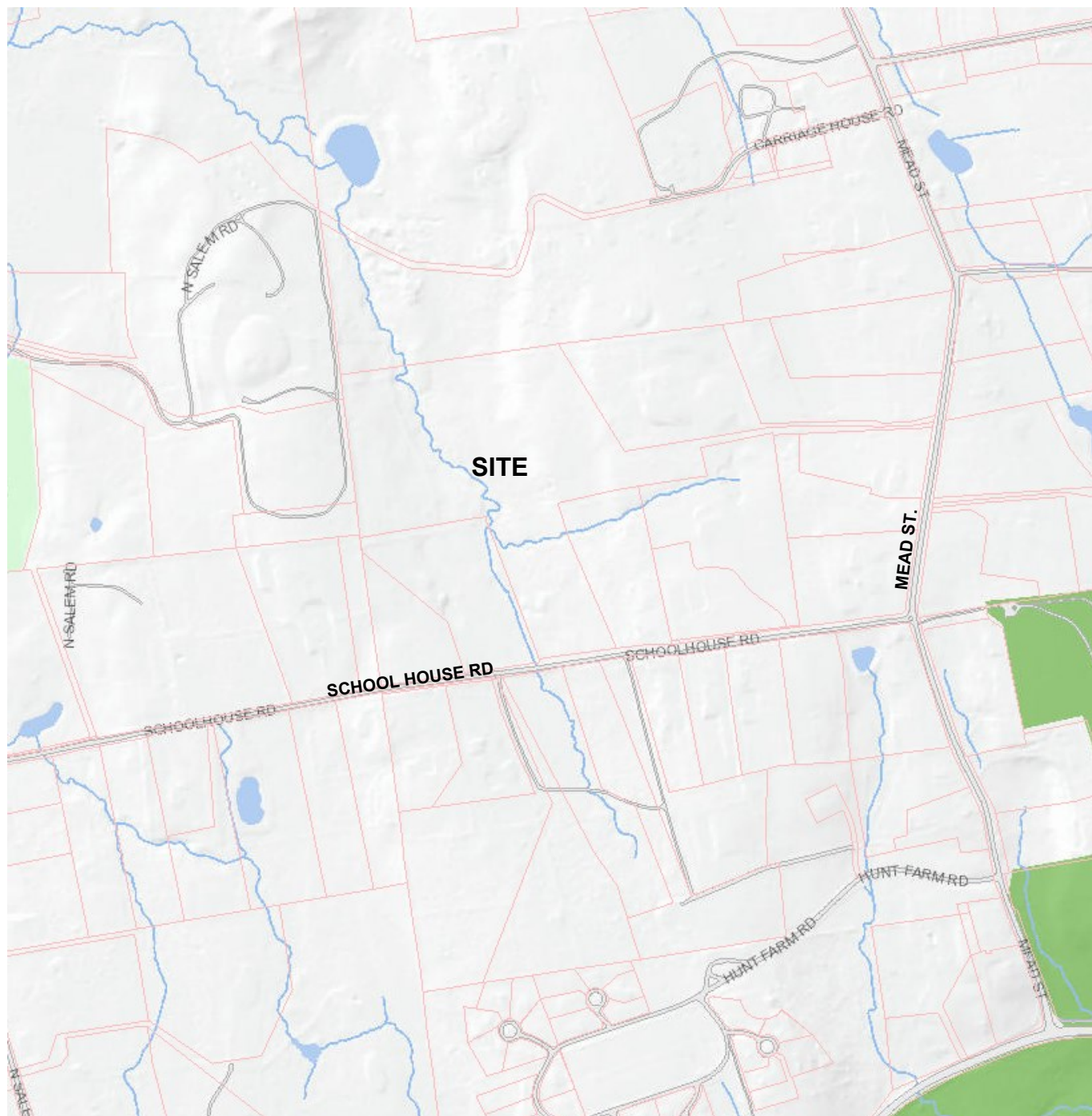
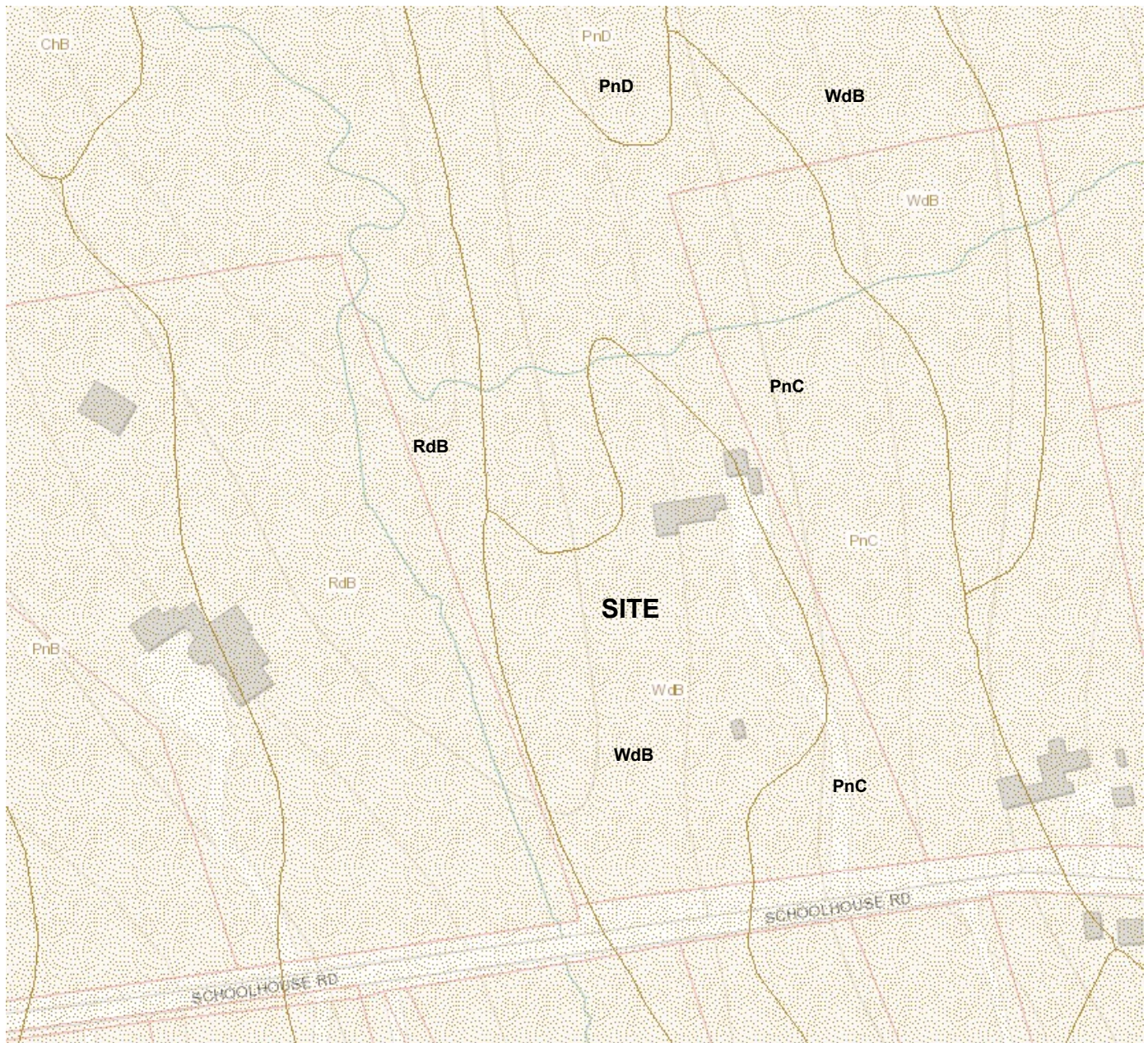


Figure 1
SITE LOCATION MAP
Scale: Not to Scale



SOILS:

PnC: Paxton fine sandy loam, 8 to 15 percent slopes

PnD: Paxton fine sandy loam, 15 to 25 percent slopes

RdB: Ridgebury complex, 3 to 8 percent slopes

WdB: Woodbridge loam, 3 to 8 percent slopes

Figure 2

SOILS MAP

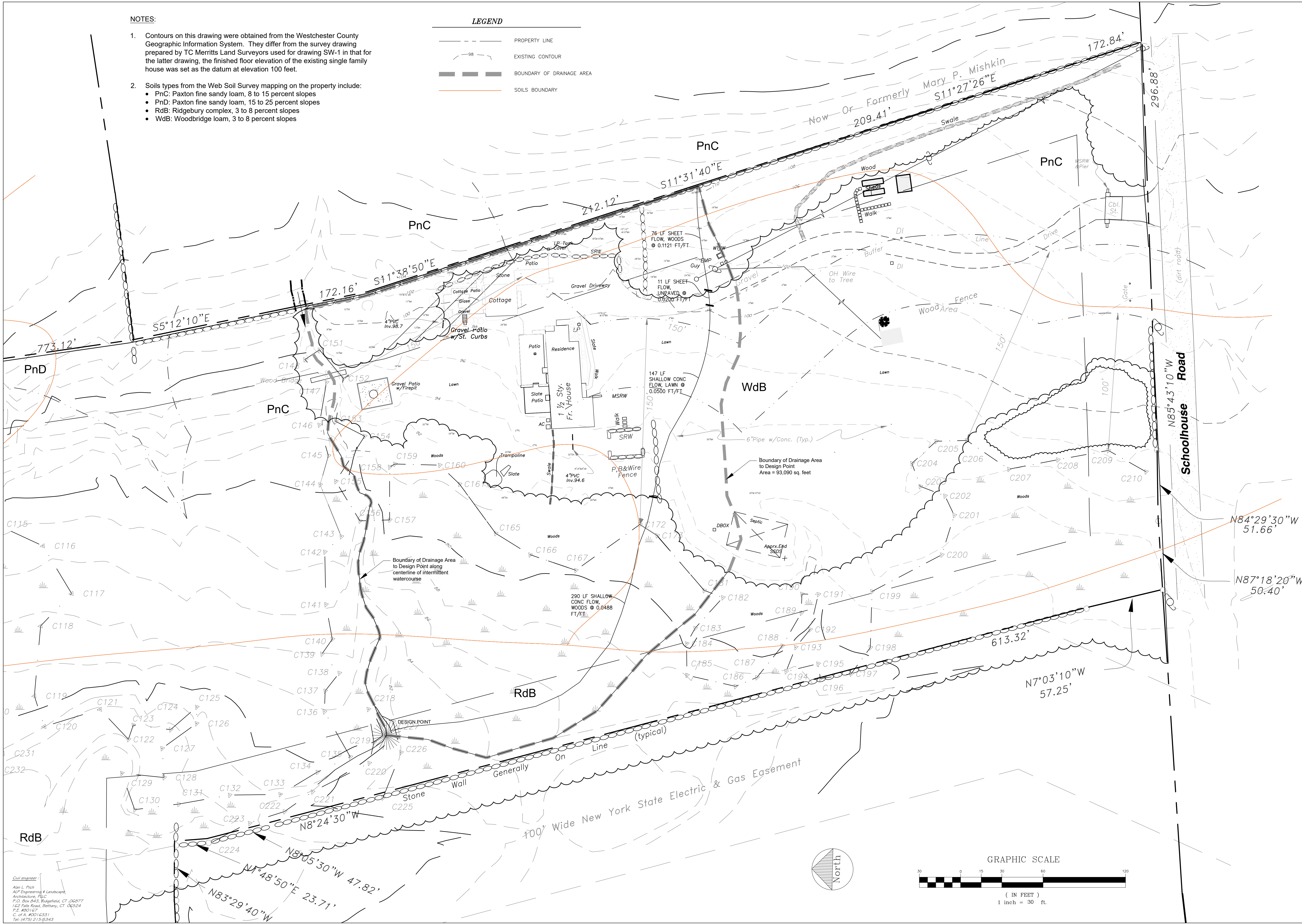
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 - RdB: Ridgebury complex, 3 to 8 percent slopes
 - WdB: Woodbridge loam, 3 to 8 percent slopes

LEGEND

- PROPERTY LINE
- - - - - EXISTING CONTOUR
- BOUNDARY OF DRAINAGE AREA
- SOILS BOUNDARY



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SURVEYOR:
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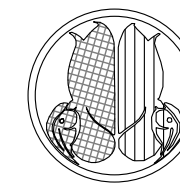
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SEAL:



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MC GUINNESS PROPERTY
17 School House Road
Waccabuc, New York

ENGINEER & LANDSCAPE ARCHITECT:
ALP ENGINEERING & LANDSCAPE ARCHITECTURE, PLLC



Drawing Title:

**Existing Conditions
Stormwater Analysis**

Date: December 24, 2020

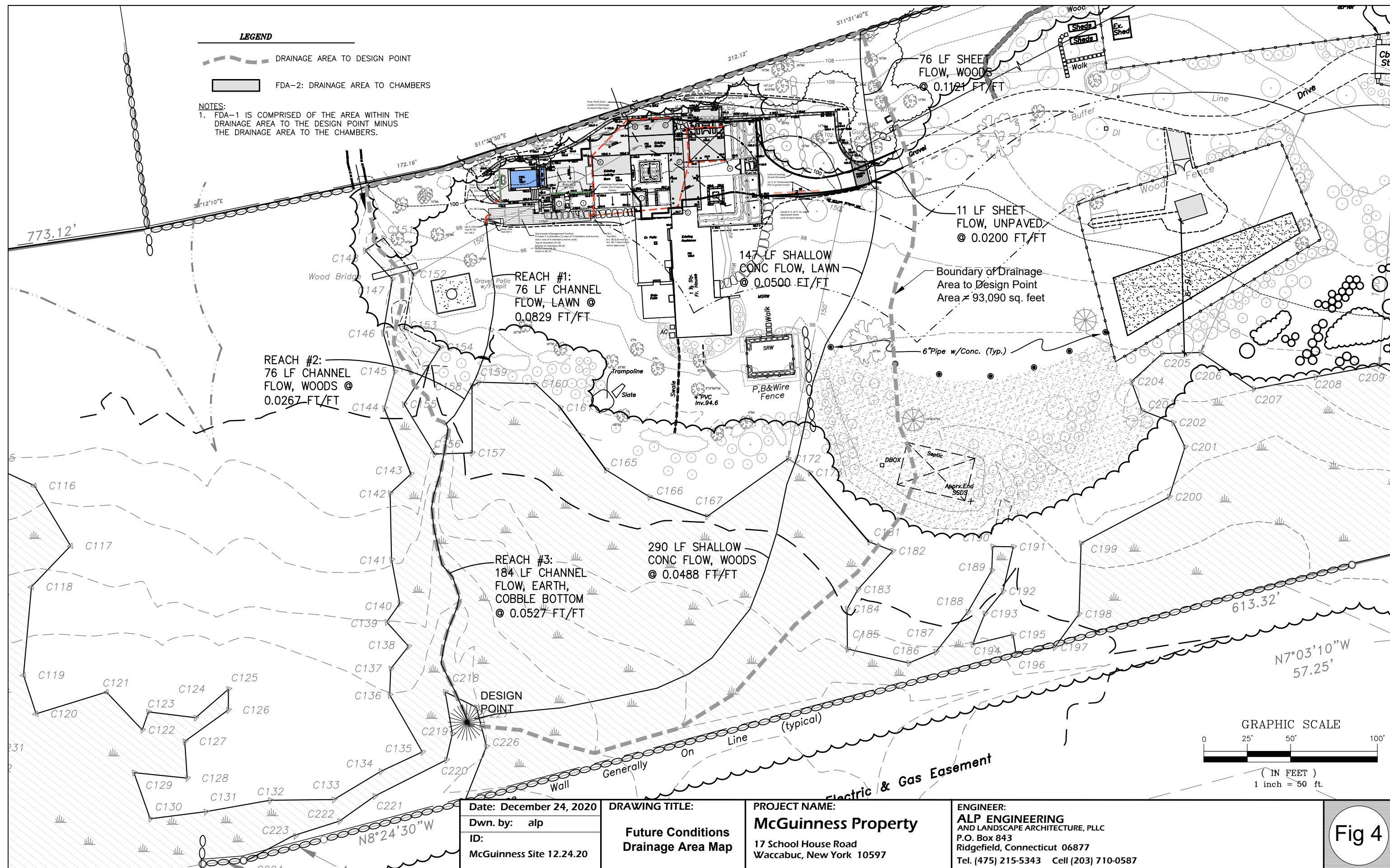
Dwn. by: alp

ID: Existing_Conditions_Analysis

SW-0

Sheet 1 of 1

SWPPP Figure 3



Date: December 24, 2020
Dwn. by: alp
ID:
McGuinness Site 12.24.20

DRAWING TITLE:
**Future Conditions
Drainage Area Map**

PROJECT NAME:
McGuinness Property
17 School House Road
Waccabuc, New York 10597

ENGINEER:
**ALP ENGINEERING
AND LANDSCAPE ARCHITECTURE, PLLC**
P.O. Box 843
Ridgefield, Connecticut 06877
Tel. (475) 215-5343 Cell (203) 710-0587

Fig 4

SUPPORTING DOCUMENTATION

Extreme Precipitation Tables

Northeast Regional Climate Center

Data represents point estimates calculated from partial duration series. All precipitation amounts are displayed in inches.

Smoothing	No
State	New York
Location	
Longitude	73.603 degrees West
Latitude	41.285 degrees North
Elevation	0 feet
Date/Time	Sun, 13 Dec 2020 08:32:52 -0500

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.33	0.51	0.63	0.84	1.04	1.25	1yr	0.89	1.22	1.43	1.82	2.29	2.82	3.18	1yr	2.49	3.05	3.53	4.22	4.86	1yr
2yr	0.39	0.61	0.75	1.02	1.25	1.50	2yr	1.08	1.46	1.71	2.19	2.75	3.40	3.81	2yr	3.01	3.66	4.20	4.96	5.62	2yr
5yr	0.46	0.71	0.89	1.21	1.54	1.84	5yr	1.33	1.80	2.10	2.72	3.42	4.27	4.81	5yr	3.78	4.63	5.34	6.21	6.98	5yr
10yr	0.53	0.81	1.00	1.40	1.81	2.16	10yr	1.56	2.11	2.46	3.20	4.02	5.07	5.75	10yr	4.49	5.53	6.41	7.36	8.23	10yr
25yr	0.63	0.96	1.19	1.70	2.24	2.66	25yr	1.93	2.60	3.02	3.97	5.00	6.37	7.27	25yr	5.64	7.00	8.16	9.22	10.23	25yr
50yr	0.72	1.09	1.36	1.96	2.63	3.13	50yr	2.27	3.06	3.54	4.67	5.89	7.58	8.70	50yr	6.71	8.36	9.80	10.93	12.06	50yr
100yr	0.83	1.25	1.57	2.26	3.10	3.67	100yr	2.68	3.59	4.15	5.51	6.94	9.03	10.40	100yr	7.99	10.00	11.77	12.97	14.23	100yr
200yr	0.95	1.43	1.81	2.63	3.66	4.31	200yr	3.16	4.22	4.86	6.51	8.19	10.75	12.45	200yr	9.51	11.97	14.15	15.39	16.79	200yr
500yr	1.16	1.72	2.21	3.21	4.57	5.34	500yr	3.94	5.22	6.01	8.12	10.20	13.55	15.79	500yr	11.99	15.18	18.07	19.29	20.91	500yr

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.24	0.37	0.45	0.61	0.75	0.98	1yr	0.65	0.96	1.21	1.58	2.03	2.54	2.79	1yr	2.24	2.68	3.28	3.71	4.55	1yr
2yr	0.38	0.59	0.73	0.98	1.21	1.46	2yr	1.05	1.42	1.66	2.12	2.69	3.30	3.69	2yr	2.92	3.55	4.08	4.82	5.46	2yr
5yr	0.42	0.65	0.80	1.10	1.40	1.70	5yr	1.21	1.67	1.94	2.51	3.14	3.93	4.44	5yr	3.48	4.27	4.93	5.72	6.44	5yr
10yr	0.45	0.70	0.86	1.21	1.56	1.92	10yr	1.34	1.87	2.19	2.86	3.54	4.48	5.08	10yr	3.97	4.88	5.69	6.49	7.28	10yr
25yr	0.49	0.74	0.93	1.32	1.74	2.20	25yr	1.50	2.15	2.55	3.39	4.13	5.33	6.05	25yr	4.71	5.82	6.87	7.68	8.54	25yr
50yr	0.51	0.78	0.97	1.40	1.89	2.42	50yr	1.63	2.37	2.89	3.87	4.65	6.08	6.93	50yr	5.38	6.66	7.93	8.73	9.63	50yr
100yr	0.54	0.82	1.03	1.49	2.04	2.66	100yr	1.76	2.61	3.27	4.43	5.15	6.95	7.92	100yr	6.15	7.62	9.20	9.92	10.88	100yr
200yr	0.57	0.86	1.09	1.58	2.21	2.93	200yr	1.91	2.87	3.71	5.09	5.79	7.93	9.11	200yr	7.02	8.76	10.70	11.27	12.30	200yr
500yr	0.61	0.91	1.17	1.70	2.42	3.34	500yr	2.09	3.27	4.40	6.15	6.76	9.45	10.99	500yr	8.37	10.57	13.09	13.40	14.45	500yr

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.37	0.57	0.70	0.94	1.15	1.39	1yr	1.00	1.36	1.58	2.03	2.54	3.06	3.42	1yr	2.71	3.29	3.79	4.50	5.18	1yr
2yr	0.42	0.65	0.80	1.08	1.34	1.56	2yr	1.15	1.52	1.78	2.27	2.85	3.51	3.99	2yr	3.11	3.83	4.37	5.16	5.83	2yr
5yr	0.50	0.77	0.96	1.32	1.67	1.98	5yr	1.45	1.93	2.28	2.94	3.68	4.61	5.22	5yr	4.08	5.02	5.76	6.72	7.50	5yr
10yr	0.59	0.90	1.12	1.57	2.02	2.38	10yr	1.75	2.33	2.75	3.57	4.49	5.68	6.43	10yr	5.03	6.19	7.13	8.24	9.13	10yr
25yr	0.74	1.13	1.40	2.00	2.64	3.07	25yr	2.28	3.00	3.55	4.62	5.85	7.49	8.51	25yr	6.62	8.19	9.44	10.76	11.83	25yr
50yr	0.88	1.34	1.66	2.39	3.22	3.73	50yr	2.78	3.64	4.30	5.61	7.16	9.23	10.51	50yr	8.17	10.11	11.67	13.20	14.41	50yr
100yr	1.05	1.59	1.99	2.88	3.95	4.53	100yr	3.41	4.43	5.21	6.83	9.27	11.39	12.99	100yr	10.08	12.49	14.39	16.19	17.56	100yr
200yr	1.26	1.89	2.40	3.48	4.85	5.50	200yr	4.18	5.37	6.30	8.28	11.43	14.04	16.05	200yr	12.43	15.43	17.79	19.84	21.40	200yr
500yr	1.62	2.41	3.10	4.50	6.40	7.10	500yr	5.53	6.94	8.12	10.70	15.16	18.51	21.23	500yr	16.38	20.41	23.45	25.91	27.76	500yr

Table 1
17 School House Road
Existing Condition to Design Point

DRAINAGE AREA TO DESIGN POINT		93,090 SF
Woods, good, HSG C	43,125	
	10,293	
TOTAL		53,418
Impervious Surfaces		
House	1,837	
Patio (upper patio rear of house)	645	
Patio (lower patio rear of house)	357	
Entry (to front door)	33	
Walkway (from gravel driveway to front door)	168	
Cottage (exist activity barn and exist studio)	809	
Patio (bluestone adjacent to barn & studio)	481	
Wall (west side of driveway, patio)	241	
Wall (near gravel driveway)	206	
Steps (down from gravel area)	25	
Fire Pit	28	
TOTAL		4,830
Semi-Pervious Surfaces		
Gravel Driveway	3,897	
Gravel Driveway	140	
Gravel Walkway (at south end)	471	
TOTAL		4,508
Lawn/Landscape, HSG C		30,334

Table 2
17 School House Road
Future Condition to Design Point

FUTURE DRAINAGE CONDITIONS - AREA TO DESIGN POINT		93,090 SF
Woods, good, HSG C	42,890	
	10,293	
	TOTAL	53,183
Impervious Surfaces		
House	1,837	
Patio (upper patio rear of house)	645	
Patio (lower patio rear of house)	357	
Patio (new over existing gravel driveway)	158	
Entry (to front door)	33	
Walkway (new stone walk to front door over existing lawn)	345	
Cottage (exist activity barn and exist studio)	809	
Patio (bluestone patio over existing gravel)	378	
Patio (bluestone patio over existing lawn)	100	
Pool and Patio (over existing lawn)	400	
Bluestone Patio (west of activity barn and studio)	481	
Wall (to south of pool and patio over existing lawn)	15	
Wall (to east of pool and patio over existing lawn)	48	
Wall (to east of patio over existing lawn)	18	
Wall (east of pea gravel walkway over existing gravel driveway)	17	
Wall (east of pea gravel walkway over existing gravel driveway)	17	
Wall (new wall on west side)	363	
Wall (new wall on west side)	241	
Existing Wall	82	
Wall (new wall on west side)	49	
Steps (from rear patio addition to pool over existing lawn)	180	
Steps (from gravel driveway to new pea gravel walkway over ex gravel driveway)	57	
Bluestone walk near pool	98	
Covered Dining Patio and Sitting Folly (over existing gravel driveway)	1,047	
Bluestone Patio (over existing lawn)	120	
Water Feature (over existing gravel surface)	87	
Bluestone Step (over existing gravel surface to rear patio addition)	14	
Wall (to east of bluestone patio over existing lawn)	17	
Bluestone Steps (over existing lawn)	19	
Covered Storage Shed (additional impervious to bluestone patio west of activ barn)	31	
Fire Pit	28	
	TOTAL	8,091

Table 2
17 School House Road
Future Condition to Design Point

Semi-Pervious Surfaces		
Gravel Driveway	2,522	
Gravel Driveway	53	
Pea Gravel Walkway	219	
Pea Gravel Adjacent to Walkway	36	
Fire Pit Surface	383	
	TOTAL	3,213
Lawn/Landscape, HSG C		28,603

Table 3
17 School House Road
Water Quality Volume Calculation

Under the Watershed Regulations, the requirement is to capture and treat the runoff from the 1-year, 24 hour storm event which is equal to 2.79 inches of precipitation, or the water quality volume, whichever is greater. The following calculates the treatment volume of runoff from the 1-year storm (using TR-55 in accordance with the New York Stormwater Management Design Manual) and the Water Quality Volume - 1.5" of precipitation (using the 90% Rule).

1-year, 24 hour precipitation =

2.82

 inches
 90% rule precipitation depth =

1.5

 inches

<i>Drainage Area</i>	<i>Area (in sq feet)</i>	<i>Area (in acres)</i>	<i>CN Value</i>	<i>Runoff Depth (inches)</i>	<i>1 yr, 24 hr storm Treatment Vol. (cu feet)</i>	<i>90% Rule Treatment Vol. (cu feet)</i>
Impervious Surfaces to Proposed Chambers	1,776	0.041	98			
TOTALS / WEIGHTED CN	1,776	0.041	98	2.59	383	211

% impervious = 100
 Rv = 0.95



CULTEC Stormwater Design Calculator

Date: December 18, 2020

Project Information:

McGuinness Property
17 School House Rd
Waccabuc
New York

Project Number: FIELD A

Calculations Performed By:

Alan Pilch, PE, RLA
ALP Engineering & Land Arch
P.O. Box 845
Ridgefield CT
06877

(475) 215-5343
alan@eaec-inc.com

CONTACTOR FIELD DRAIN C-4HD



Contactor Field Drain C-4HD Chamber Specifications

Height	8.5	inches
Width	48.0	inches
Length	8.50	feet
Installed Length	8.00	feet
Bare Chamber Volume	13.54	cu. feet
Installed Chamber Volume	32.72	cu. feet

Breakdown of Storage Provided by Contactor Field Drain C-4HD Stormwater System

Within Chambers	41.45	cu. feet
Within Feed Connectors	-	cu. feet
Within Stone	92.07	cu. feet
Total Storage Provided	133.5	cu. feet
Total Storage Required	115.00	cu. feet

Materials List

Contactor Field Drain C-4HD

Total Number of Chambers Required	3	pieces
Starter Chambers	1	pieces
End Chambers	2	pieces
HVLV FC-48 Feed Connectors	0	pieces
CULTEC No. 410 Non-Woven Geotextile	60	sq. yards
CULTEC No. 4800 Woven Geotextile	12	feet
Stone	9	cu. yards

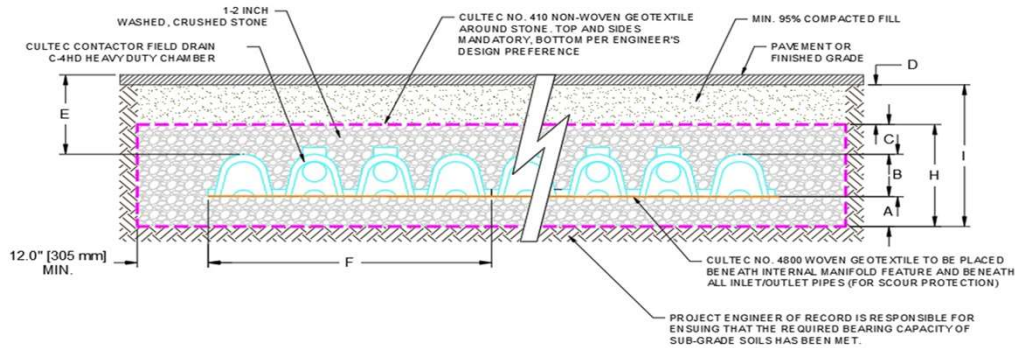
Bed Detail



Bed Layout Information

Number of Rows Wide	1	pieces
Number of Chambers Long	3	pieces
Chamber Row Width	4.00	feet
Chamber Row Length	24.50	feet
Bed Width	6.00	feet
Bed Length	26.50	feet
Bed Area Required	159.00	sq. feet
Length of Separator Row	N/A	feet

Bed detail for reference only. Not project specific. Not to scale.



Conceptual graphic only. Not job specific.

Cross Section Table Reference

A	Depth of Stone Base	6.0	inches
B	Chamber Height	8.5	inches
C	Depth of Stone Above Units	6.0	inches
D	Depth of 95% Compacted Fill	8.0	inches
E	Max. Depth Allowed Above the Chamber	12.00	feet
F	Chamber Width	48.0	inches
G	Center to Center Spacing	4.50	feet
H	Effective Depth	1.71	feet
I	Bed Depth	2.38	feet



CULTEC Stormwater Design Calculator

Date: December 18, 2020

Project Information:

McGuinness Property
17 School House Rd
Waccabuc
New York

Project Number: FIELD B

Calculations Performed By:

Alan Pilch, PE, RLA
ALP Engineering & Land Arch
P.O. Box 845
Ridgefield CT
06877

(475) 215-5343
alan@eaec-inc.com

CONTACTOR FIELD DRAIN C-4HD



Contactor Field Drain C-4HD Chamber Specifications

Height	8.5	inches
Width	48.0	inches
Length	8.50	feet
Installed Length	8.00	feet
Bare Chamber Volume	13.54	cu. feet
Installed Chamber Volume	32.72	cu. feet

Breakdown of Storage Provided by Contactor Field Drain C-4HD Stormwater System

Within Chambers	82.06	cu. feet
Within Feed Connectors	-	cu. feet
Within Stone	174.23	cu. feet
Total Storage Provided	256.3	cu. feet
Total Storage Required	230.00	cu. feet

Materials List

Contactor Field Drain C-4HD

Total Number of Chambers Required	6	pieces
Starter Chambers	1	pieces
End Chambers	5	pieces
HVLV FC-48 Feed Connectors	0	pieces
CULTEC No. 410 Non-Woven Geotextile	111	sq. yards
CULTEC No. 4800 Woven Geotextile	12	feet
Stone	16	cu. yards

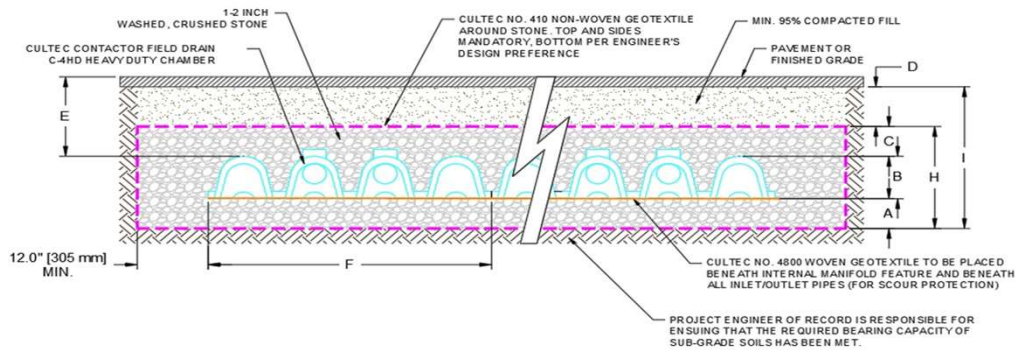
Bed Detail



Bed detail for reference only. Not project specific. Not to scale.

Bed Layout Information

Number of Rows Wide	1	pieces
Number of Chambers Long	6	pieces
Chamber Row Width	4.00	feet
Chamber Row Length	48.50	feet
Bed Width	6.00	feet
Bed Length	50.50	feet
Bed Area Required	303.00	sq. feet
Length of Separator Row	N/A	feet



Conceptual graphic only. Not job specific.

Cross Section Table Reference

A	Depth of Stone Base	6.0	inches
B	Chamber Height	8.5	inches
C	Depth of Stone Above Units	6.0	inches
D	Depth of 95% Compacted Fill	8.0	inches
E	Max. Depth Allowed Above the Chamber	12.00	feet
F	Chamber Width	48.0	inches
G	Center to Center Spacing	4.50	feet
H	Effective Depth	1.71	feet
I	Bed Depth	2.38	feet

ALP ENGINEERING LANDSCAPE ARCHITECTURE, PLLC

P.O. Box 843, Ridgefield CT 06877

17 School House Road, Waccabuc, N.Y.

TEST DATA REQUIRED TO BE SUBMITTED WITH APPLICATION
DESCRIPTION OF SOILS ENCOUNTERED IN TEST HOLES

DEPTH	HOLE DH-1	HOLE # _____	HOLE # _____	HOLE # _____
GROUND				
0'-6"				
1'-0"	Topsoil			
1'-6"				
2'-0"	Silty loam			
2'-6"				
3'-0"				
3'-6"				
4'-0"				
4'-6"	Fine sandy			
5'-0"	loam			
5'-6"				
6'-0"				
6'-6"				
7'-0"				
7'-6"				
8'-0"				
8'-6"				
G.W.	Seep at 42"			
ROCK	No bedrock			

TESTS MADE BY: Alan L. Pilch, PE, RLA

DATE: 12/15/2020

NAME: ALP ENGINEERING

SIGNATURE:

ADDRESS: P.O. BOX 843

SEAL:

RIDGEFIELD, CT 06877

Appendix A

***Stormwater Management Report
Hydrographs and Routings***



Existing Condition to
Design Point



XDA-1 to Design Point



Future Condition
Drainage Area to
Design Point



FDA-1 to Design Point



FDA-2 to Chambers



Cultec C-4 Chambers



Reach 1 Lawn



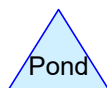
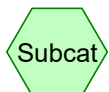
Reach 2 Woods



Reach 3 Intermittent
Channel



Design Point



Routing Diagram for 17 School House Rd SW Mgmt_12-24-2020.1
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17 School House Rd SW Mgmt_12-24-2020.1

Prepared by ALP Engineering & Land. Arch. PLLC

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Page 2

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-year	Type III 24-hr		Default	24.00	1	2.82	2
2	10-year	Type III 24-hr		Default	24.00	1	5.07	2
3	25-year	Type III 24-hr		Default	24.00	1	6.37	2

17 School House Rd SW Mgmt_12-24-2020.1

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Page 3

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.688	74	>75% Grass cover, Good, HSG C (1S, 2S, 8S, 9S)
0.372	96	Gravel surface driveway, HSG C (1S, 2S, 8S, 9S)
0.552	98	Impervious Surfaces (1S, 2S, 8S, 9S)
0.041	98	Unconnected pavement, HSG B (3S)
4.894	70	Woods, Good, HSG C (1S, 2S, 8S, 9S)
8.548	74	TOTAL AREA

17 School House Rd SW Mgmt_12-24-2020.1

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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	2.688	0.000	0.000	2.688	>75% Grass cover, Good	1S, 2S, 8S, 9S
0.000	0.000	0.372	0.000	0.000	0.372	Gravel surface driveway	1S, 2S, 8S, 9S
0.000	0.000	0.000	0.000	0.552	0.552	Impervious Surfaces	1S, 2S, 8S, 9S
0.000	0.041	0.000	0.000	0.000	0.041	Unconnected pavement	3S
0.000	0.000	4.894	0.000	0.000	4.894	Woods, Good	1S, 2S, 8S, 9S
0.000	0.041	7.955	0.000	0.552	8.548	TOTAL AREA	

Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 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 1S: XDA-1 to Design Point Runoff Area=93,090 sf 5.19% Impervious Runoff Depth=0.80"
Flow Length=524' Tc=13.7 min CN=74 Runoff=1.42 cfs 0.142 af

Subcatchment 2S: FDA-1 to Design Point Runoff Area=91,314 sf 6.92% Impervious Runoff Depth=0.80"
Flow Length=524' Tc=13.7 min CN=74 Runoff=1.39 cfs 0.139 af

Subcatchment 3S: FDA-2 to Chambers Runoff Area=1,776 sf 100.00% Impervious Runoff Depth=2.59"
Tc=6.0 min CN=98 Runoff=0.11 cfs 0.009 af

Subcatchment 8S: Existing Condition to Runoff Area=93,090 sf 5.19% Impervious Runoff Depth=0.80"
Flow Length=524' Tc=13.7 min CN=74 Runoff=1.42 cfs 0.142 af

Subcatchment 9S: Future Condition Runoff Area=93,090 sf 8.69% Impervious Runoff Depth=0.85"
Flow Length=524' Tc=13.7 min CN=75 Runoff=1.53 cfs 0.151 af

Reach 4R: Reach 1 Lawn Avg. Flow Depth=0.00' Max Vel=0.04 fps Inflow=0.00 cfs 0.001 af
n=0.240 L=76.0' S=0.0829 '/' Capacity=0.49 cfs Outflow=0.00 cfs 0.001 af

Reach 5R: Reach 2 Woods Avg. Flow Depth=0.01' Max Vel=0.02 fps Inflow=0.00 cfs 0.001 af
n=0.400 L=43.0' S=0.0267 '/' Capacity=0.21 cfs Outflow=0.00 cfs 0.001 af

Reach 6R: Reach 3 Intermittent Channel Avg. Flow Depth=0.00' Max Vel=0.81 fps Inflow=0.00 cfs 0.001 af
n=0.040 L=184.0' S=0.0527 '/' Capacity=367.70 cfs Outflow=0.00 cfs 0.001 af

Pond 4P: Cultec C-4 Chambers Peak Elev=97.53' Storage=356 cf Inflow=0.11 cfs 0.009 af
Outflow=0.00 cfs 0.001 af

Link 7L: Design Point Inflow=1.39 cfs 0.140 af
Primary=1.39 cfs 0.140 af

Total Runoff Area = 8.548 ac Runoff Volume = 0.582 af Average Runoff Depth = 0.82"
93.06% Pervious = 7.955 ac 6.94% Impervious = 0.593 ac

Summary for Subcatchment 1S: XDA-1 to Design Point

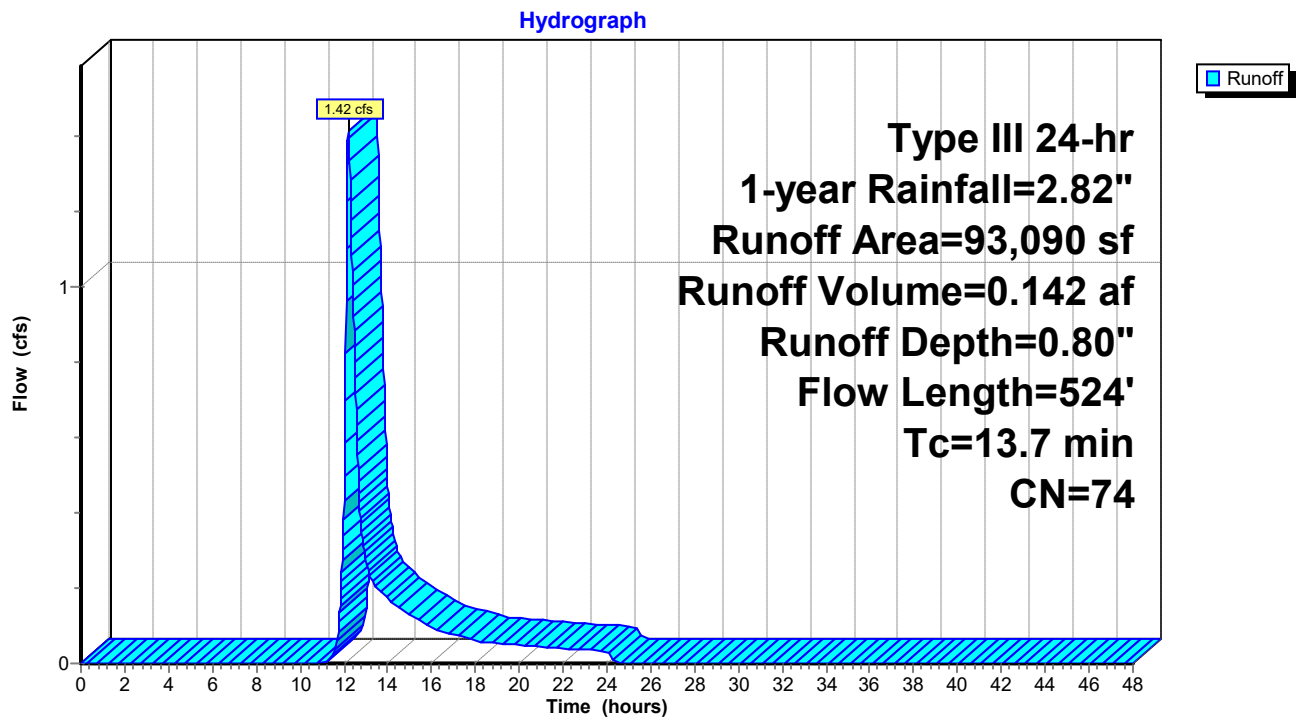
Runoff = 1.42 cfs @ 12.21 hrs, Volume= 0.142 af, Depth= 0.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 1-year Rainfall=2.82"

	Area (sf)	CN	Description
*	4,830	98	Impervious Surfaces
	53,418	70	Woods, Good, HSG C
	29,951	74	>75% Grass cover, Good, HSG C
*	4,891	96	Gravel surface driveway, HSG C
	93,090	74	Weighted Average
	88,260		94.81% Pervious Area
	4,830		5.19% Impervious Area

	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	8.4	76	0.1121	0.15		Sheet Flow, A-B
						Woods: Light underbrush n= 0.400 P2= 3.40"
	0.2	11	0.0200	0.91		Sheet Flow, B-C
						Smooth surfaces n= 0.011 P2= 3.40"
	0.7	147	0.0500	3.35		Shallow Concentrated Flow, C-D
						Grassed Waterway Kv= 15.0 fps
	4.4	290	0.0488	1.10		Shallow Concentrated Flow, D-E
						Woodland Kv= 5.0 fps
	13.7	524	Total			

Subcatchment 1S: XDA-1 to Design Point



Summary for Subcatchment 2S: FDA-1 to Design Point

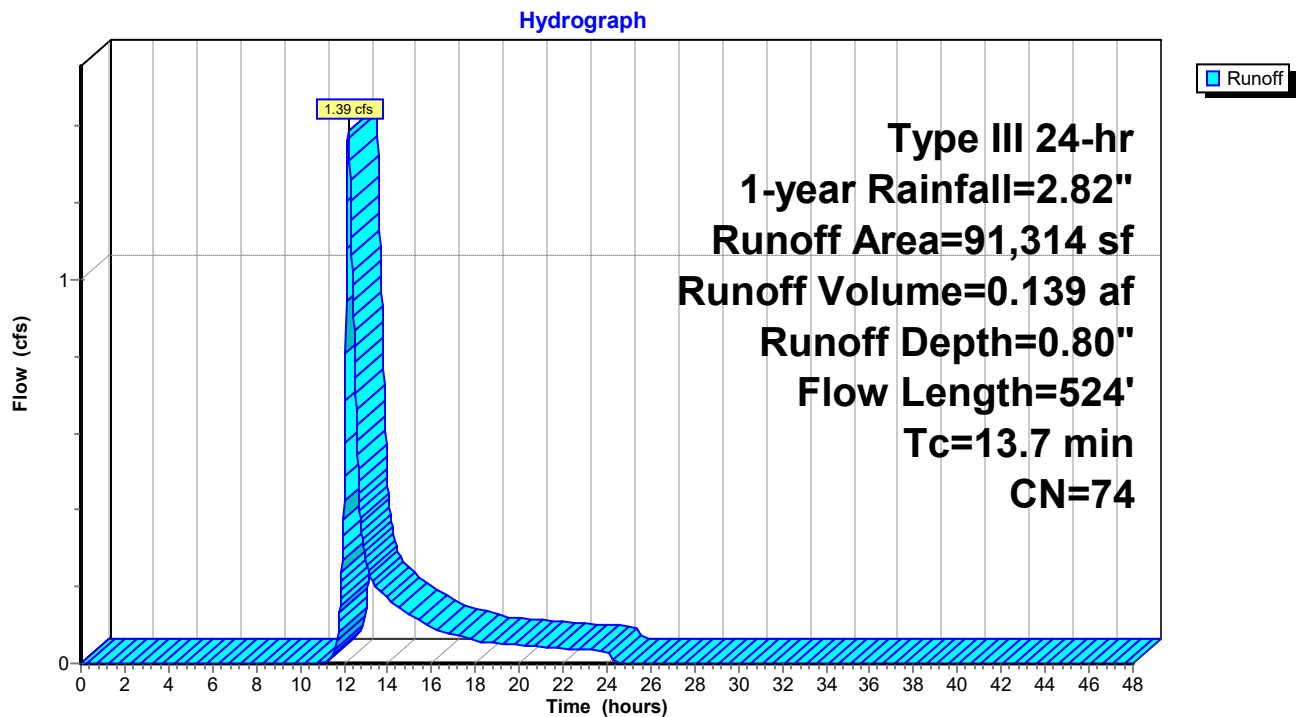
Runoff = 1.39 cfs @ 12.21 hrs, Volume= 0.139 af, Depth= 0.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 1-year Rainfall=2.82"

	Area (sf)	CN	Description
*	6,315	98	Impervious Surfaces
	53,183	70	Woods, Good, HSG C
	28,603	74	>75% Grass cover, Good, HSG C
*	3,213	96	Gravel surface driveway, HSG C
	91,314	74	Weighted Average
	84,999		93.08% Pervious Area
	6,315		6.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	76	0.1121	0.15		Sheet Flow, A-B
					Woods: Light underbrush n= 0.400 P2= 3.40"
0.2	11	0.0200	0.91		Sheet Flow, B-C
					Smooth surfaces n= 0.011 P2= 3.40"
0.7	147	0.0500	3.35		Shallow Concentrated Flow, C-D
					Grassed Waterway Kv= 15.0 fps
4.4	290	0.0488	1.10		Shallow Concentrated Flow, D-E
					Woodland Kv= 5.0 fps
13.7	524	Total			

Subcatchment 2S: FDA-1 to Design Point



Summary for Subcatchment 3S: FDA-2 to Chambers

Runoff = 0.11 cfs @ 12.08 hrs, Volume= 0.009 af, Depth= 2.59"

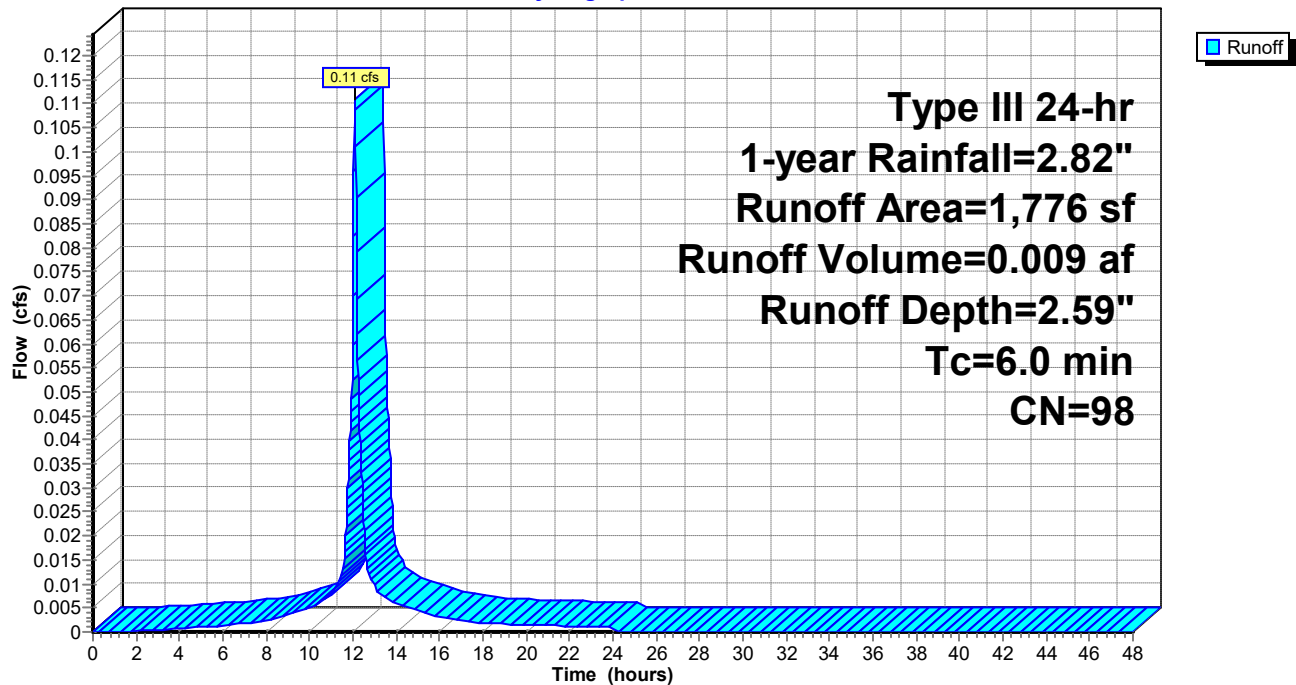
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 1-year Rainfall=2.82"

Area (sf)	CN	Description
1,776	98	Unconnected pavement, HSG B
1,776		100.00% Impervious Area
1,776		100.00% Unconnected

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

Subcatchment 3S: FDA-2 to Chambers

Hydrograph



Summary for Subcatchment 8S: Existing Condition to Design Point

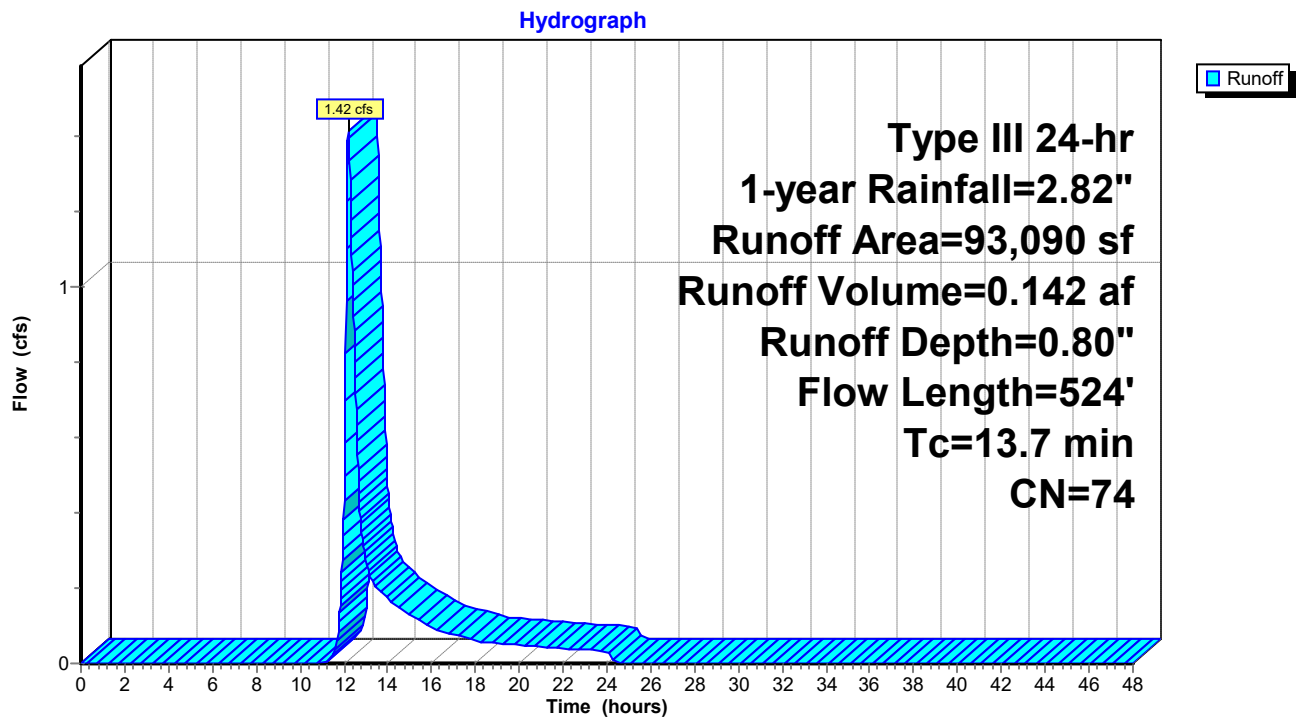
Runoff = 1.42 cfs @ 12.21 hrs, Volume= 0.142 af, Depth= 0.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 1-year Rainfall=2.82"

	Area (sf)	CN	Description
*	4,830	98	Impervious Surfaces
	53,418	70	Woods, Good, HSG C
	29,951	74	>75% Grass cover, Good, HSG C
*	4,891	96	Gravel surface driveway, HSG C
	93,090	74	Weighted Average
	88,260		94.81% Pervious Area
	4,830		5.19% Impervious Area

	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	8.4	76	0.1121	0.15		Sheet Flow, A-B
						Woods: Light underbrush n= 0.400 P2= 3.40"
	0.2	11	0.0200	0.91		Sheet Flow, B-C
						Smooth surfaces n= 0.011 P2= 3.40"
	0.7	147	0.0500	3.35		Shallow Concentrated Flow, C-D
						Grassed Waterway Kv= 15.0 fps
	4.4	290	0.0488	1.10		Shallow Concentrated Flow, D-E
						Woodland Kv= 5.0 fps
	13.7	524	Total			

Subcatchment 8S: Existing Condition to Design Point



Summary for Subcatchment 9S: Future Condition Drainage Area to Design Point

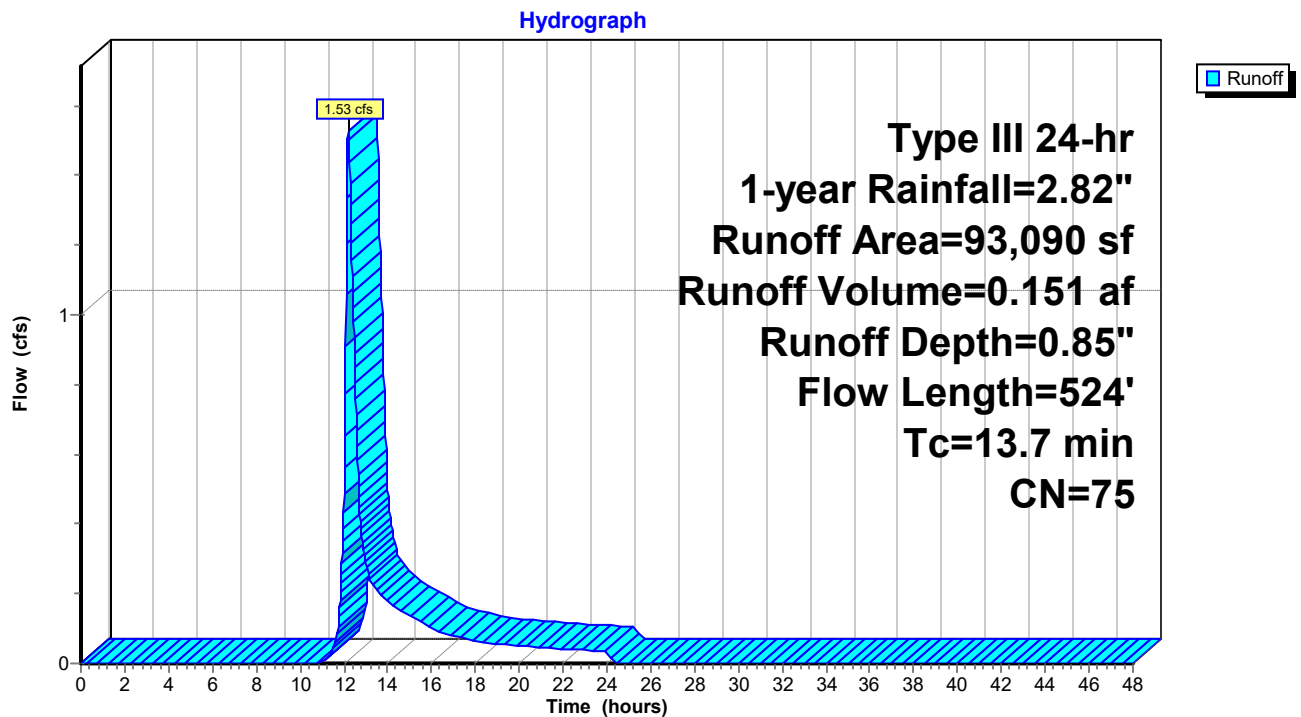
Runoff = 1.53 cfs @ 12.21 hrs, Volume= 0.151 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 1-year Rainfall=2.82"

	Area (sf)	CN	Description
*	8,091	98	Impervious Surfaces
	53,183	70	Woods, Good, HSG C
	28,603	74	>75% Grass cover, Good, HSG C
*	3,213	96	Gravel surface driveway, HSG C
	93,090	75	Weighted Average
	84,999		91.31% Pervious Area
	8,091		8.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	76	0.1121	0.15		Sheet Flow, A-B
					Woods: Light underbrush n= 0.400 P2= 3.40"
0.2	11	0.0200	0.91		Sheet Flow, B-C
					Smooth surfaces n= 0.011 P2= 3.40"
0.7	147	0.0500	3.35		Shallow Concentrated Flow, C-D
					Grassed Waterway Kv= 15.0 fps
4.4	290	0.0488	1.10		Shallow Concentrated Flow, D-E
					Woodland Kv= 5.0 fps
13.7	524	Total			

Subcatchment 9S: Future Condition Drainage Area to Design Point



Summary for Reach 4R: Reach 1 Lawn

Inflow Area = 0.041 ac, 100.00% Impervious, Inflow Depth = 0.19" for 1-year event
 Inflow = 0.00 cfs @ 18.71 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 20.41 hrs, Volume= 0.001 af, Atten= 11%, Lag= 102.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Max. Velocity= 0.04 fps, Min. Travel Time= 32.2 min

Avg. Velocity= 0.03 fps, Avg. Travel Time= 47.6 min

Peak Storage= 3 cf @ 19.88 hrs

Average Depth at Peak Storage= 0.00', Surface Width= 12.13'

Bank-Full Depth= 0.10' Flow Area= 1.4 sf, Capacity= 0.49 cfs

12.00' x 0.10' deep channel, n= 0.240 Sheet flow over Dense Grass

Side Slope Z-value= 20.0 '/' Top Width= 16.00'

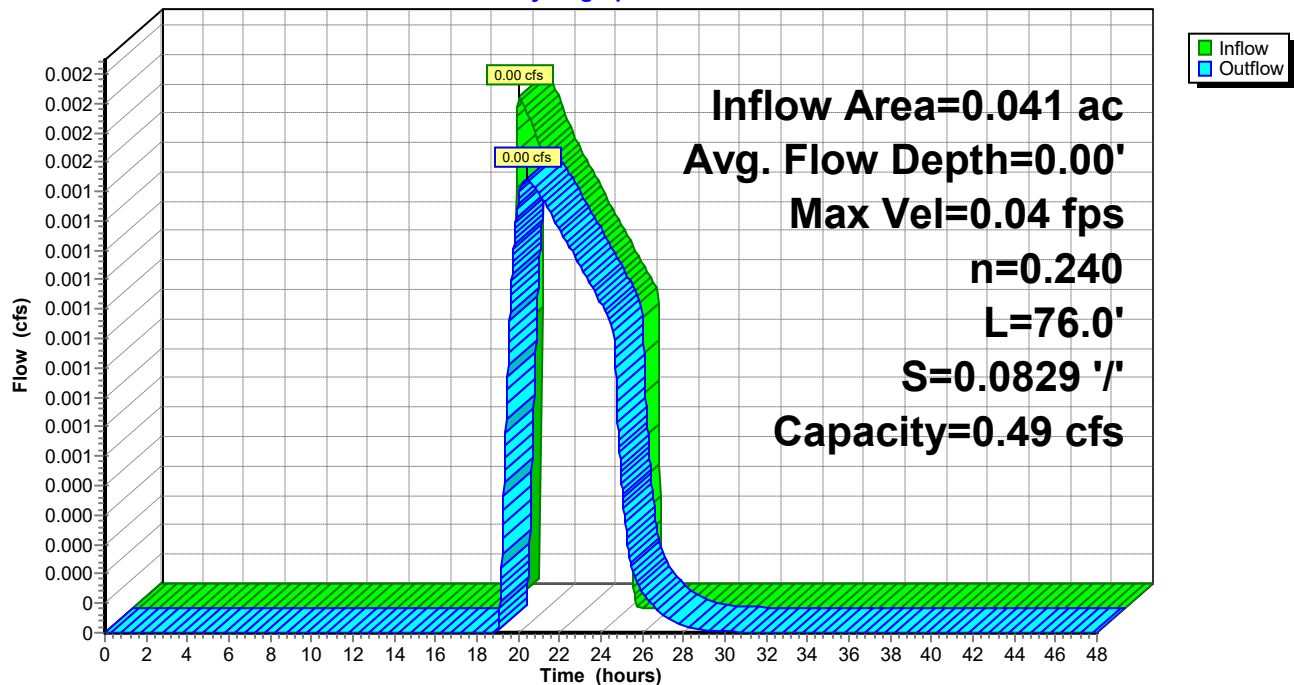
Length= 76.0' Slope= 0.0829 '/'

Inlet Invert= 97.30', Outlet Invert= 91.00'

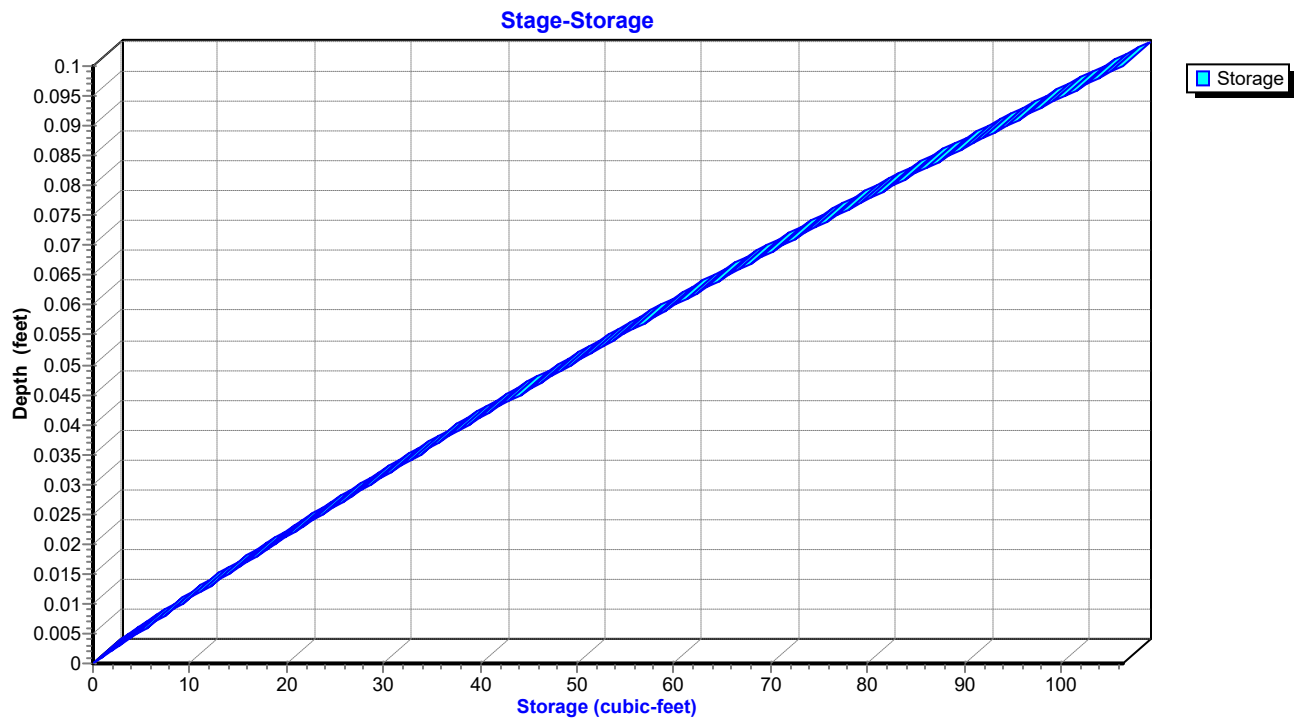


Reach 4R: Reach 1 Lawn

Hydrograph



Reach 4R: Reach 1 Lawn



Summary for Reach 5R: Reach 2 Woods

Inflow Area = 0.041 ac, 100.00% Impervious, Inflow Depth = 0.19" for 1-year event
 Inflow = 0.00 cfs @ 20.41 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 21.94 hrs, Volume= 0.001 af, Atten= 6%, Lag= 91.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Max. Velocity= 0.02 fps, Min. Travel Time= 39.0 min

Avg. Velocity= 0.01 fps, Avg. Travel Time= 74.6 min

Peak Storage= 3 cf @ 21.28 hrs

Average Depth at Peak Storage= 0.01', Surface Width= 15.21'

Bank-Full Depth= 0.10' Flow Area= 1.7 sf, Capacity= 0.21 cfs

15.00' x 0.10' deep channel, n= 0.400 Sheet flow: Woods+light brush

Side Slope Z-value= 20.0 '/' Top Width= 19.00'

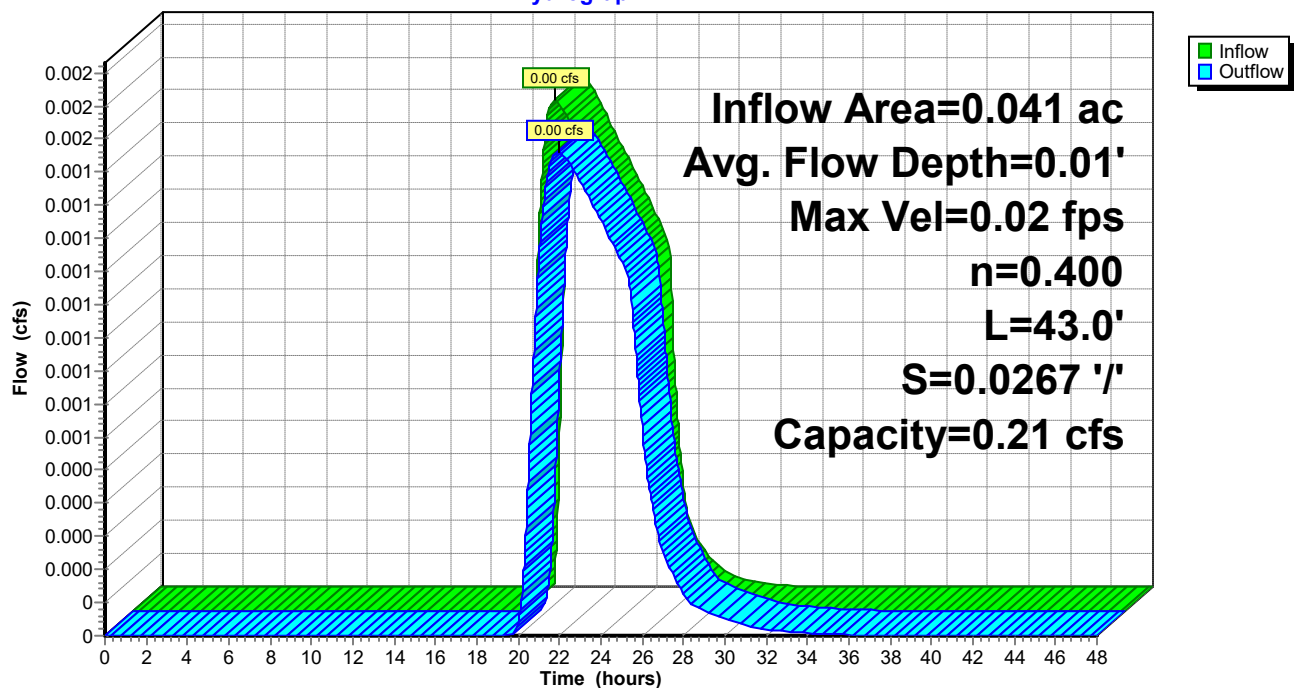
Length= 43.0' Slope= 0.0267 '/'

Inlet Invert= 90.90', Outlet Invert= 89.75'

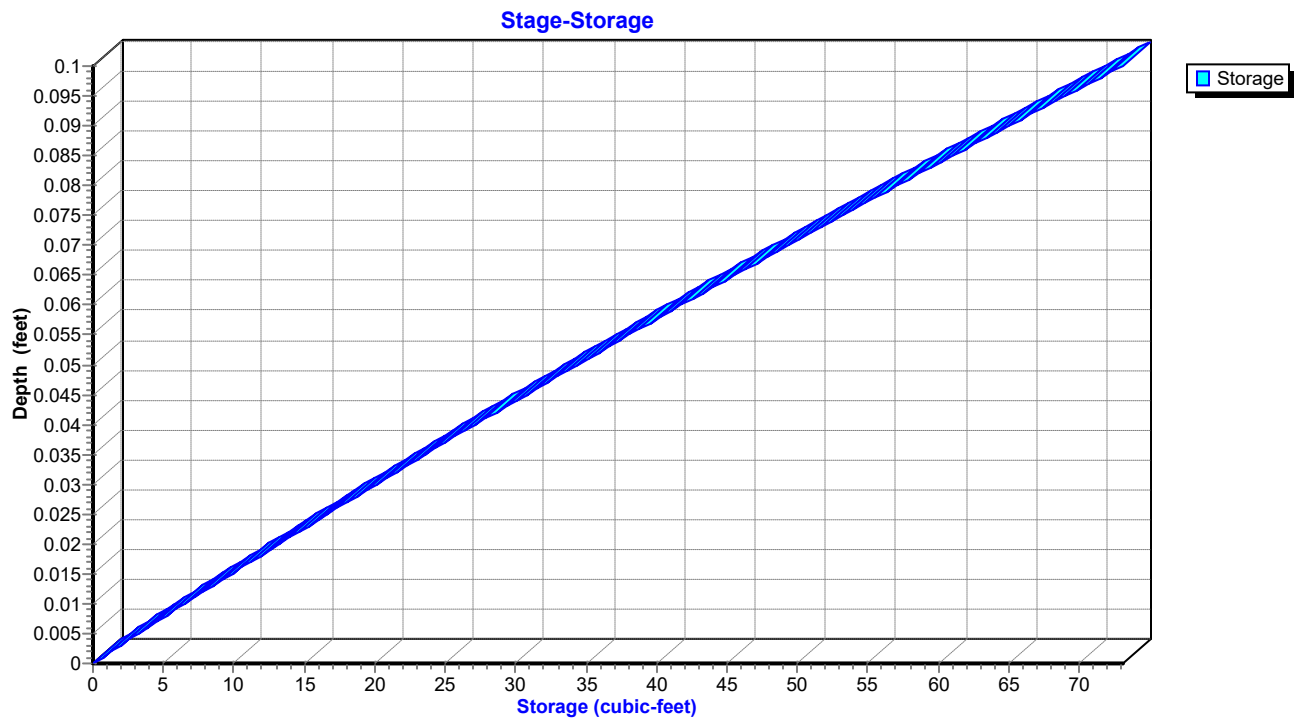


Reach 5R: Reach 2 Woods

Hydrograph



Reach 5R: Reach 2 Woods



Summary for Reach 6R: Reach 3 Intermittent Channel

Inflow Area = 0.041 ac, 100.00% Impervious, Inflow Depth = 0.19" for 1-year event
 Inflow = 0.00 cfs @ 21.94 hrs, Volume= 0.001 af
 Outflow = 0.00 cfs @ 22.07 hrs, Volume= 0.001 af, Atten= 0%, Lag= 7.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Max. Velocity= 0.81 fps, Min. Travel Time= 3.8 min

Avg. Velocity = 0.81 fps, Avg. Travel Time= 3.8 min

Peak Storage= 0 cf @ 22.00 hrs

Average Depth at Peak Storage= 0.00' , Surface Width= 4.00'

Bank-Full Depth= 3.00' Flow Area= 30.0 sf, Capacity= 367.70 cfs

4.00' x 3.00' deep channel, n= 0.040 Earth, cobble bottom, clean sides

Side Slope Z-value= 2.0 ' ' Top Width= 16.00'

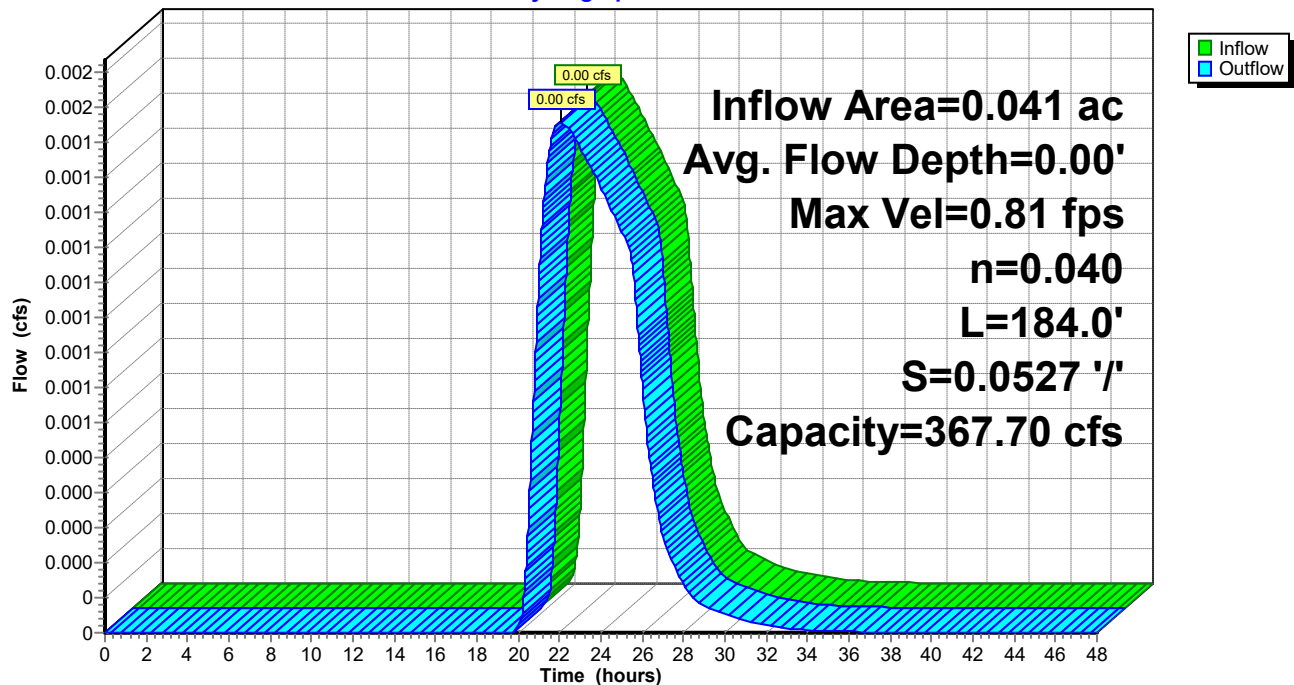
Length= 184.0' Slope= 0.0527 ' '

Inlet Invert= 89.70', Outlet Invert= 80.00'

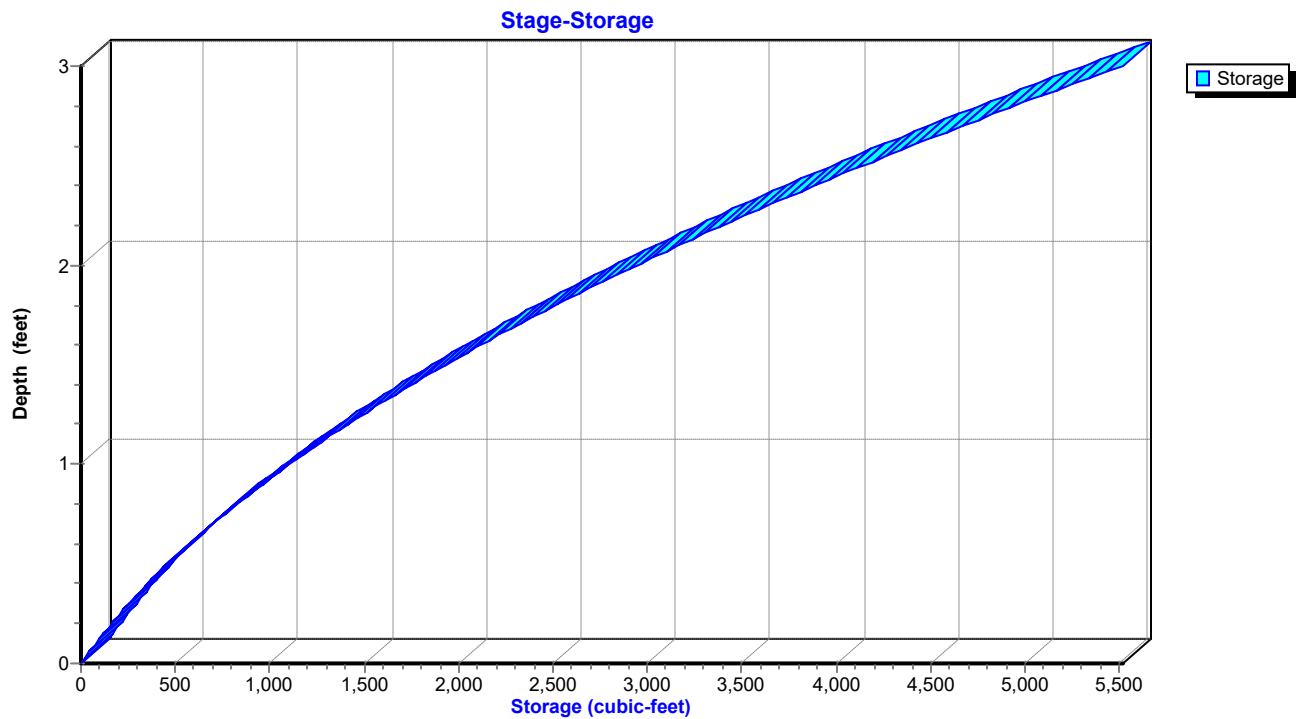


Reach 6R: Reach 3 Intermittent Channel

Hydrograph



Reach 6R: Reach 3 Intermittent Channel



Summary for Pond 4P: Cultec C-4 Chambers

Inflow Area = 0.041 ac, 100.00% Impervious, Inflow Depth = 2.59" for 1-year event
 Inflow = 0.11 cfs @ 12.08 hrs, Volume= 0.009 af
 Outflow = 0.00 cfs @ 18.71 hrs, Volume= 0.001 af, Atten= 98%, Lag= 397.6 min
 Primary = 0.00 cfs @ 18.71 hrs, Volume= 0.001 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
 Peak Elev= 97.53' @ 18.71 hrs Surf.Area= 462 sf Storage= 356 cf

Plug-Flow detention time= 884.5 min calculated for 0.001 af (7% of inflow)
 Center-of-Mass det. time= 504.2 min (1,263.3 - 759.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	96.00'	92 cf	6.00'W x 26.50'L x 1.71'H Field A 272 cf Overall - 41 cf Embedded = 231 cf x 40.0% Voids
#2A	96.50'	41 cf	Cultec FD C-4 x 3 Inside #1 Effective Size= 42.0"W x 8.0"H => 1.67 sf x 8.00'L = 13.3 cf Overall Size= 48.0"W x 8.5"H x 8.50'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.67 sf x 1 rows
#3B	96.00'	175 cf	6.00'W x 50.50'L x 1.71'H Field B 518 cf Overall - 81 cf Embedded = 437 cf x 40.0% Voids
#4B	96.50'	81 cf	Cultec FD C-4 x 6 Inside #3 Effective Size= 42.0"W x 8.0"H => 1.67 sf x 8.00'L = 13.3 cf Overall Size= 48.0"W x 8.5"H x 8.50'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.67 sf x 1 rows
		389 cf	Total Available Storage

Storage Group A created with Chamber Wizard
 Storage Group B created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	97.53'	12.0" x 12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.00 cfs @ 18.71 hrs HW=97.53' (Free Discharge)
 ↑ **1=Orifice/Grate** (Weir Controls 0.00 cfs @ 0.13 fps)

Pond 4P: Cultec C-4 Chambers - Chamber Wizard Field A

Chamber Model = Cultec FD C-4 (Cultec Contactor® Field Drain C-4)

Effective Size= 42.0"W x 8.0"H => 1.67 sf x 8.00'L = 13.3 cf

Overall Size= 48.0"W x 8.5"H x 8.50'L with 0.50' Overlap

Row Length Adjustment= +0.50' x 1.67 sf x 1 rows

3 Chambers/Row x 8.00' Long +0.50' Row Adjustment = 24.50' Row Length +12.0" End Stone x 2 = 26.50' Base Length

1 Rows x 48.0" Wide + 12.0" Side Stone x 2 = 6.00' Base Width

6.0" Stone Base + 8.5" Chamber Height + 6.0" Stone Cover = 1.71' Field Height

3 Chambers x 13.3 cf +0.50' Row Adjustment x 1.67 sf x 1 Rows = 40.8 cf Chamber Storage

271.6 cf Field - 40.8 cf Chambers = 230.8 cf Stone x 40.0% Voids = 92.3 cf Stone Storage

Chamber Storage + Stone Storage = 133.1 cf = 0.003 af

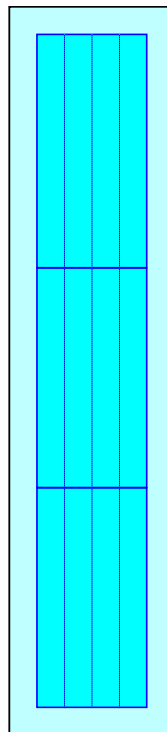
Overall Storage Efficiency = 49.0%

Overall System Size = 26.50' x 6.00' x 1.71'

3 Chambers

10.1 cy Field

8.5 cy Stone



Pond 4P: Cultec C-4 Chambers - Chamber Wizard Field B

Chamber Model = Cultec FD C-4 (Cultec Contactor® Field Drain C-4)

Effective Size= 42.0"W x 8.0"H => 1.67 sf x 8.00'L = 13.3 cf

Overall Size= 48.0"W x 8.5"H x 8.50'L with 0.50' Overlap

Row Length Adjustment= +0.50' x 1.67 sf x 1 rows

6 Chambers/Row x 8.00' Long +0.50' Row Adjustment = 48.50' Row Length +12.0" End Stone x 2 = 50.50' Base Length

1 Rows x 48.0" Wide + 12.0" Side Stone x 2 = 6.00' Base Width

6.0" Stone Base + 8.5" Chamber Height + 6.0" Stone Cover = 1.71' Field Height

6 Chambers x 13.3 cf +0.50' Row Adjustment x 1.67 sf x 1 Rows = 80.8 cf Chamber Storage

517.6 cf Field - 80.8 cf Chambers = 436.8 cf Stone x 40.0% Voids = 174.7 cf Stone Storage

Chamber Storage + Stone Storage = 255.5 cf = 0.006 af

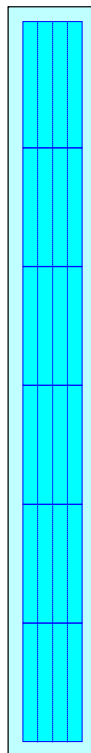
Overall Storage Efficiency = 49.4%

Overall System Size = 50.50' x 6.00' x 1.71'

6 Chambers

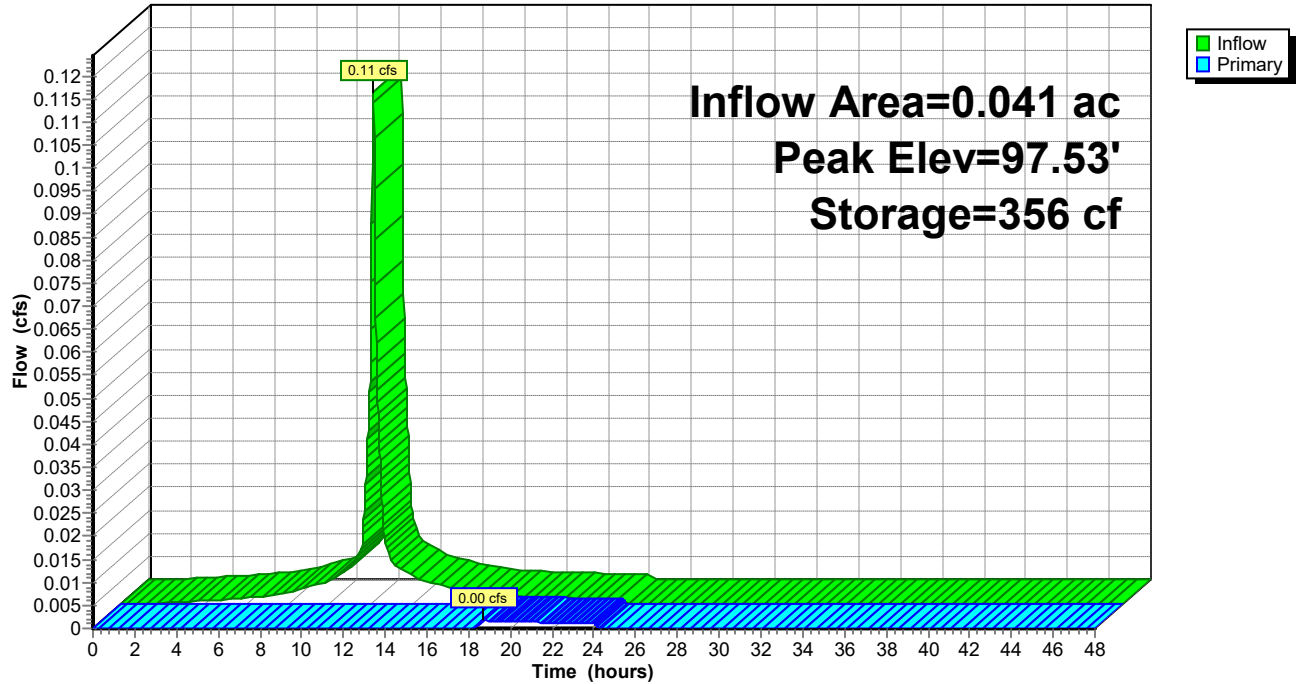
19.2 cy Field

16.2 cy Stone



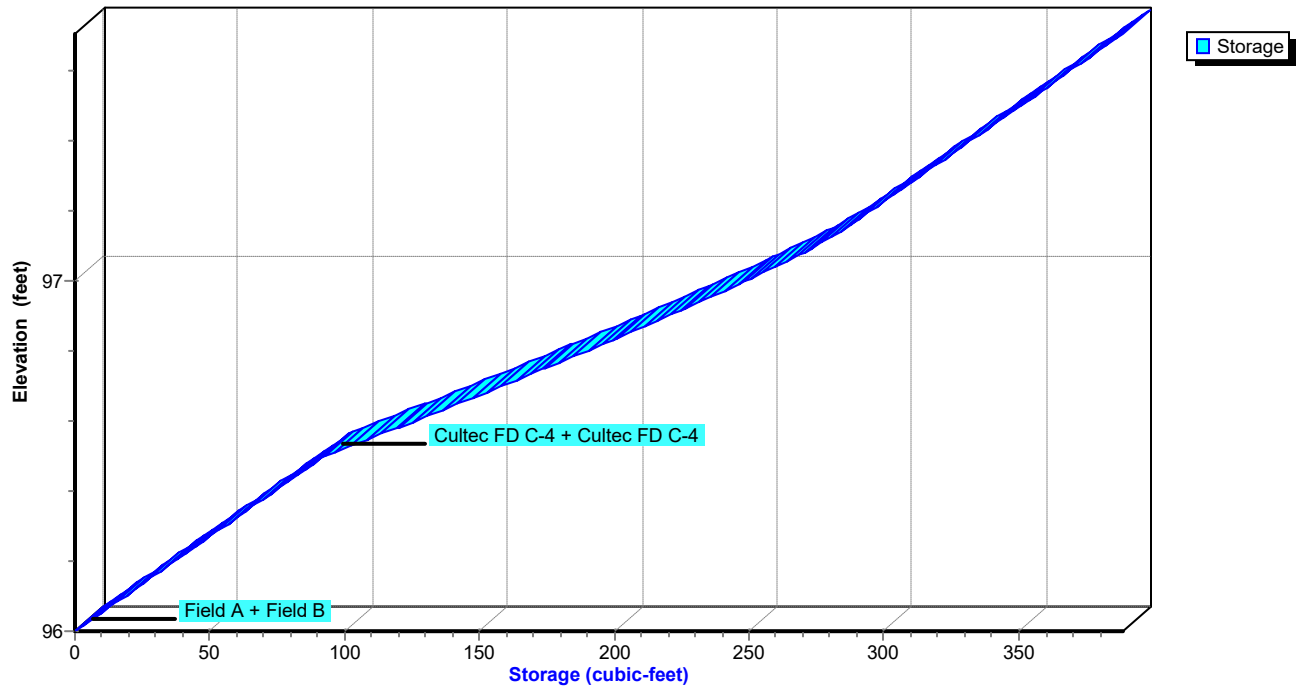
Pond 4P: Cultec C-4 Chambers

Hydrograph



Pond 4P: Cultec C-4 Chambers

Stage-Area-Storage

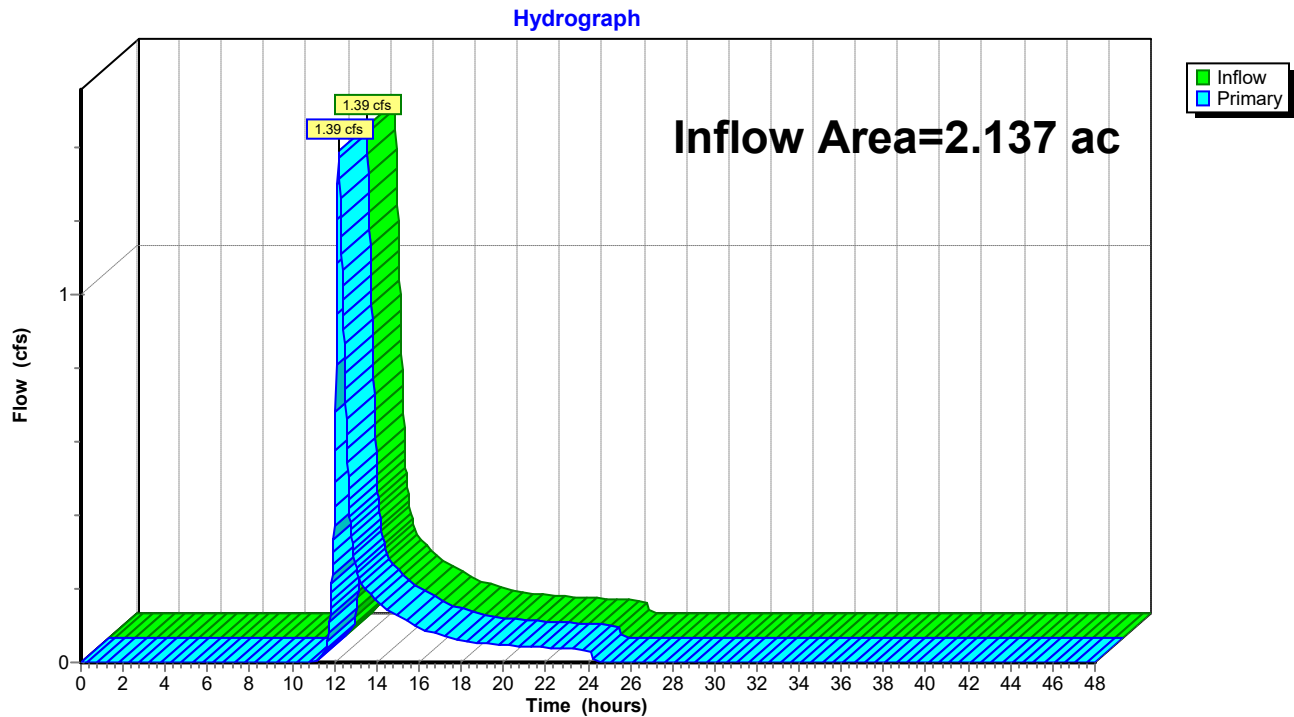


Summary for Link 7L: Design Point

Inflow Area = 2.137 ac, 8.69% Impervious, Inflow Depth = 0.78" for 1-year event
Inflow = 1.39 cfs @ 12.21 hrs, Volume= 0.140 af
Primary = 1.39 cfs @ 12.21 hrs, Volume= 0.140 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Link 7L: Design Point



Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 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 1S: XDA-1 to Design Point Runoff Area=93,090 sf 5.19% Impervious Runoff Depth=2.42"
Flow Length=524' Tc=13.7 min CN=74 Runoff=4.71 cfs 0.431 af

Subcatchment 2S: FDA-1 to Design Point Runoff Area=91,314 sf 6.92% Impervious Runoff Depth=2.42"
Flow Length=524' Tc=13.7 min CN=74 Runoff=4.62 cfs 0.423 af

Subcatchment 3S: FDA-2 to Chambers Runoff Area=1,776 sf 100.00% Impervious Runoff Depth=4.83"
Tc=6.0 min CN=98 Runoff=0.20 cfs 0.016 af

Subcatchment 8S: Existing Condition to Runoff Area=93,090 sf 5.19% Impervious Runoff Depth=2.42"
Flow Length=524' Tc=13.7 min CN=74 Runoff=4.71 cfs 0.431 af

Subcatchment 9S: Future Condition Runoff Area=93,090 sf 8.69% Impervious Runoff Depth=2.51"
Flow Length=524' Tc=13.7 min CN=75 Runoff=4.89 cfs 0.446 af

Reach 4R: Reach 1 Lawn Avg. Flow Depth=0.04' Max Vel=0.19 fps Inflow=0.17 cfs 0.008 af
n=0.240 L=76.0' S=0.0829 '/' Capacity=0.49 cfs Outflow=0.09 cfs 0.008 af

Reach 5R: Reach 2 Woods Avg. Flow Depth=0.05' Max Vel=0.08 fps Inflow=0.09 cfs 0.008 af
n=0.400 L=43.0' S=0.0267 '/' Capacity=0.21 cfs Outflow=0.07 cfs 0.008 af

Reach 6R: Reach 3 Intermittent Channel Avg. Flow Depth=0.02' Max Vel=0.81 fps Inflow=0.07 cfs 0.008 af
n=0.040 L=184.0' S=0.0527 '/' Capacity=367.70 cfs Outflow=0.07 cfs 0.008 af

Pond 4P: Cultec C-4 Chambers Peak Elev=97.58' Storage=365 cf Inflow=0.20 cfs 0.016 af
Outflow=0.17 cfs 0.008 af

Link 7L: Design Point Inflow=4.62 cfs 0.431 af
Primary=4.62 cfs 0.431 af

Total Runoff Area = 8.548 ac Runoff Volume = 1.748 af Average Runoff Depth = 2.45"
93.06% Pervious = 7.955 ac 6.94% Impervious = 0.593 ac

Summary for Subcatchment 1S: XDA-1 to Design Point

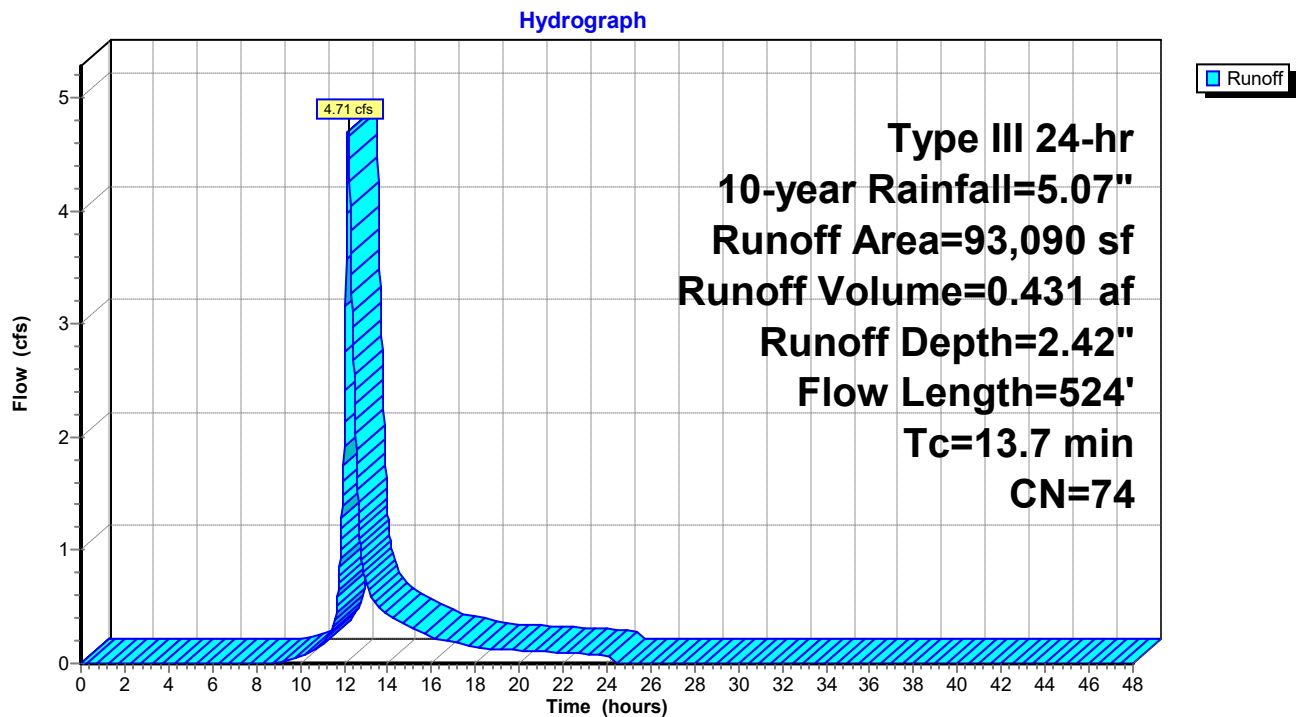
Runoff = 4.71 cfs @ 12.19 hrs, Volume= 0.431 af, Depth= 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-year Rainfall=5.07"

	Area (sf)	CN	Description
*	4,830	98	Impervious Surfaces
	53,418	70	Woods, Good, HSG C
	29,951	74	>75% Grass cover, Good, HSG C
*	4,891	96	Gravel surface driveway, HSG C
	93,090	74	Weighted Average
	88,260		94.81% Pervious Area
	4,830		5.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	76	0.1121	0.15		Sheet Flow, A-B
					Woods: Light underbrush n= 0.400 P2= 3.40"
0.2	11	0.0200	0.91		Sheet Flow, B-C
					Smooth surfaces n= 0.011 P2= 3.40"
0.7	147	0.0500	3.35		Shallow Concentrated Flow, C-D
					Grassed Waterway Kv= 15.0 fps
4.4	290	0.0488	1.10		Shallow Concentrated Flow, D-E
					Woodland Kv= 5.0 fps
13.7	524	Total			

Subcatchment 1S: XDA-1 to Design Point



Summary for Subcatchment 2S: FDA-1 to Design Point

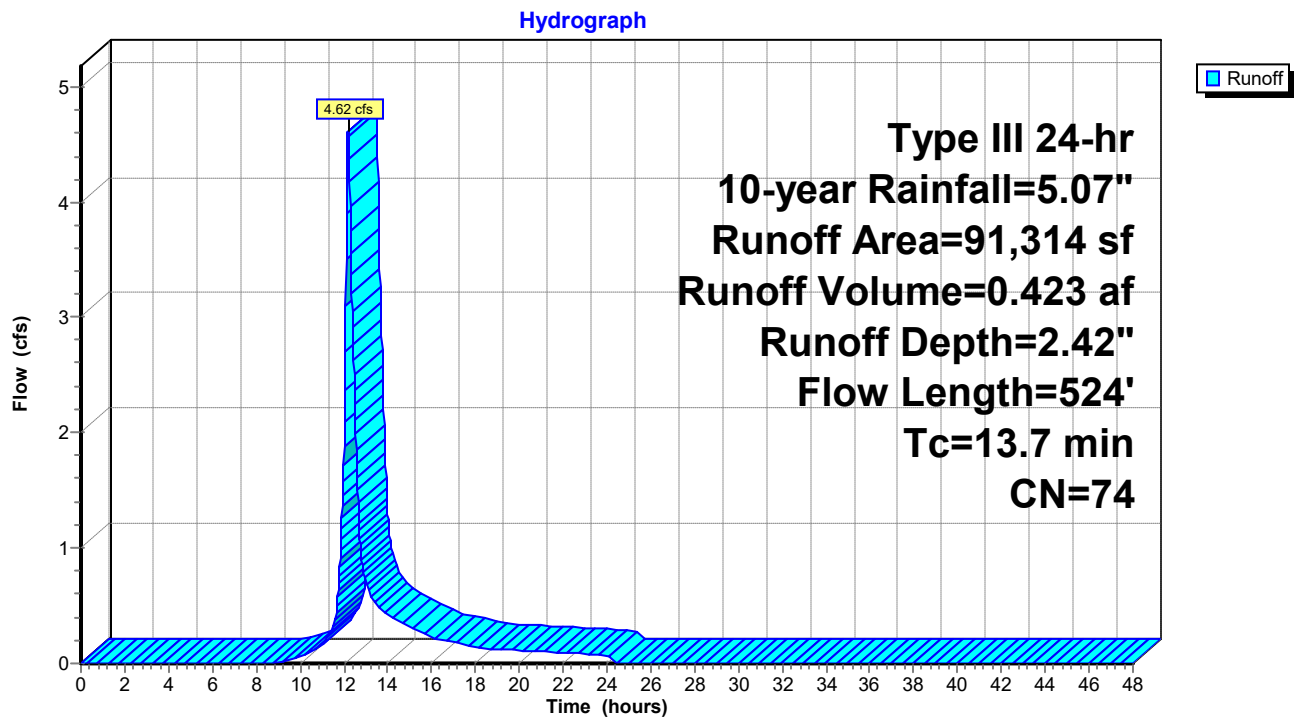
Runoff = 4.62 cfs @ 12.19 hrs, Volume= 0.423 af, Depth= 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-year Rainfall=5.07"

	Area (sf)	CN	Description
*	6,315	98	Impervious Surfaces
	53,183	70	Woods, Good, HSG C
	28,603	74	>75% Grass cover, Good, HSG C
*	3,213	96	Gravel surface driveway, HSG C
	91,314	74	Weighted Average
	84,999		93.08% Pervious Area
	6,315		6.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	76	0.1121	0.15		Sheet Flow, A-B
					Woods: Light underbrush n= 0.400 P2= 3.40"
0.2	11	0.0200	0.91		Sheet Flow, B-C
					Smooth surfaces n= 0.011 P2= 3.40"
0.7	147	0.0500	3.35		Shallow Concentrated Flow, C-D
					Grassed Waterway Kv= 15.0 fps
4.4	290	0.0488	1.10		Shallow Concentrated Flow, D-E
					Woodland Kv= 5.0 fps
13.7	524	Total			

Subcatchment 2S: FDA-1 to Design Point



Summary for Subcatchment 3S: FDA-2 to Chambers

Runoff = 0.20 cfs @ 12.08 hrs, Volume= 0.016 af, Depth= 4.83"

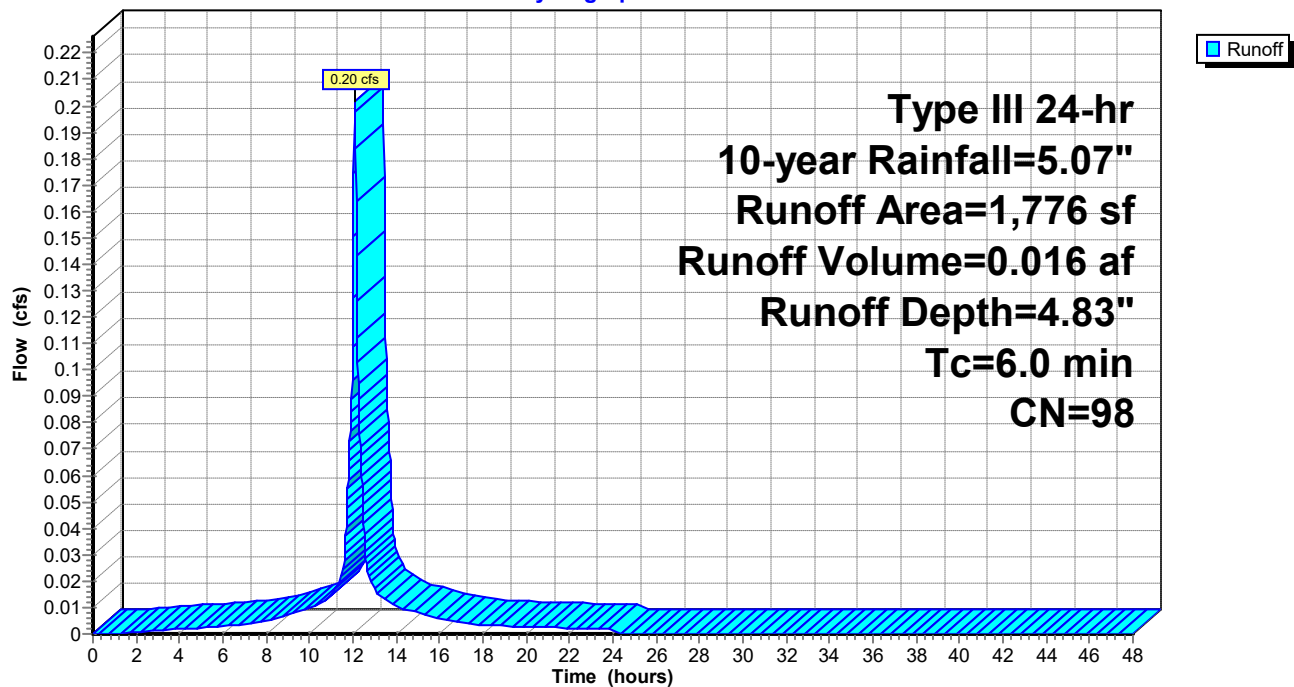
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-year Rainfall=5.07"

Area (sf)	CN	Description
1,776	98	Unconnected pavement, HSG B
1,776		100.00% Impervious Area
1,776		100.00% Unconnected

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

Subcatchment 3S: FDA-2 to Chambers

Hydrograph



Summary for Subcatchment 8S: Existing Condition to Design Point

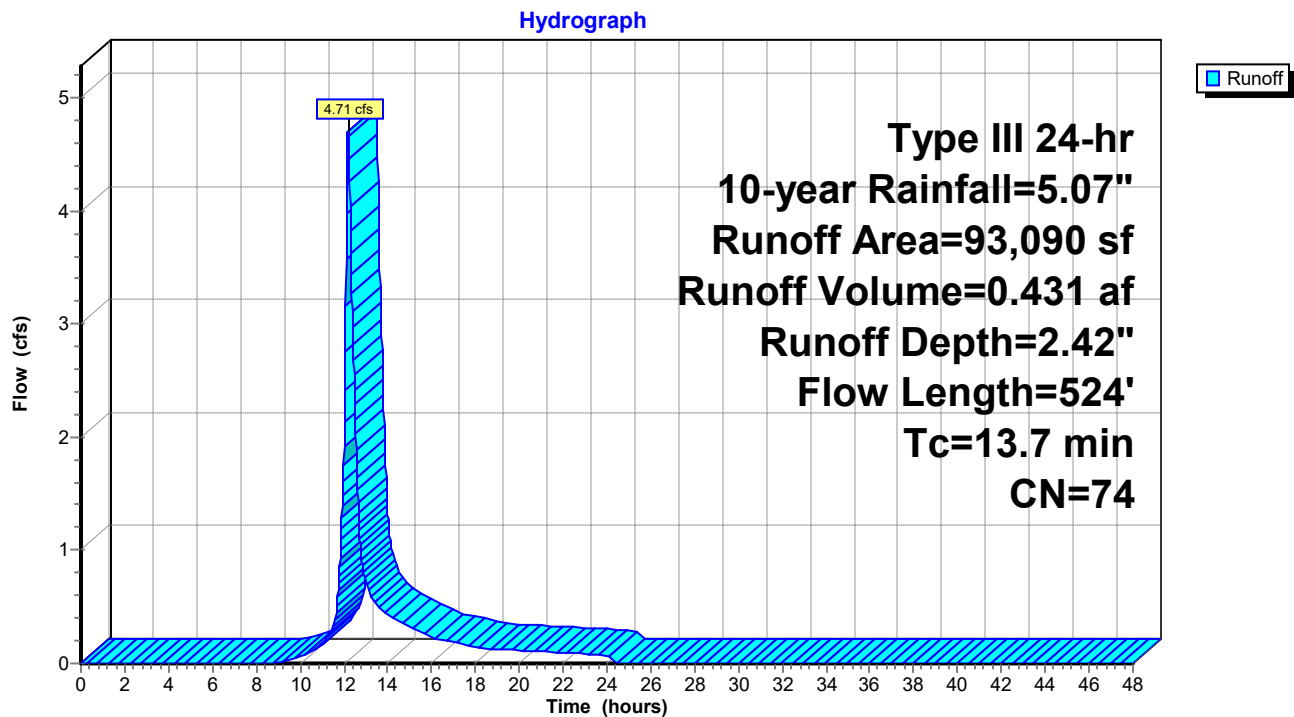
Runoff = 4.71 cfs @ 12.19 hrs, Volume= 0.431 af, Depth= 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-year Rainfall=5.07"

	Area (sf)	CN	Description
*	4,830	98	Impervious Surfaces
	53,418	70	Woods, Good, HSG C
	29,951	74	>75% Grass cover, Good, HSG C
*	4,891	96	Gravel surface driveway, HSG C
	93,090	74	Weighted Average
	88,260		94.81% Pervious Area
	4,830		5.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	76	0.1121	0.15		Sheet Flow, A-B
					Woods: Light underbrush n= 0.400 P2= 3.40"
0.2	11	0.0200	0.91		Sheet Flow, B-C
					Smooth surfaces n= 0.011 P2= 3.40"
0.7	147	0.0500	3.35		Shallow Concentrated Flow, C-D
					Grassed Waterway Kv= 15.0 fps
4.4	290	0.0488	1.10		Shallow Concentrated Flow, D-E
					Woodland Kv= 5.0 fps
13.7	524	Total			

Subcatchment 8S: Existing Condition to Design Point



Summary for Subcatchment 9S: Future Condition Drainage Area to Design Point

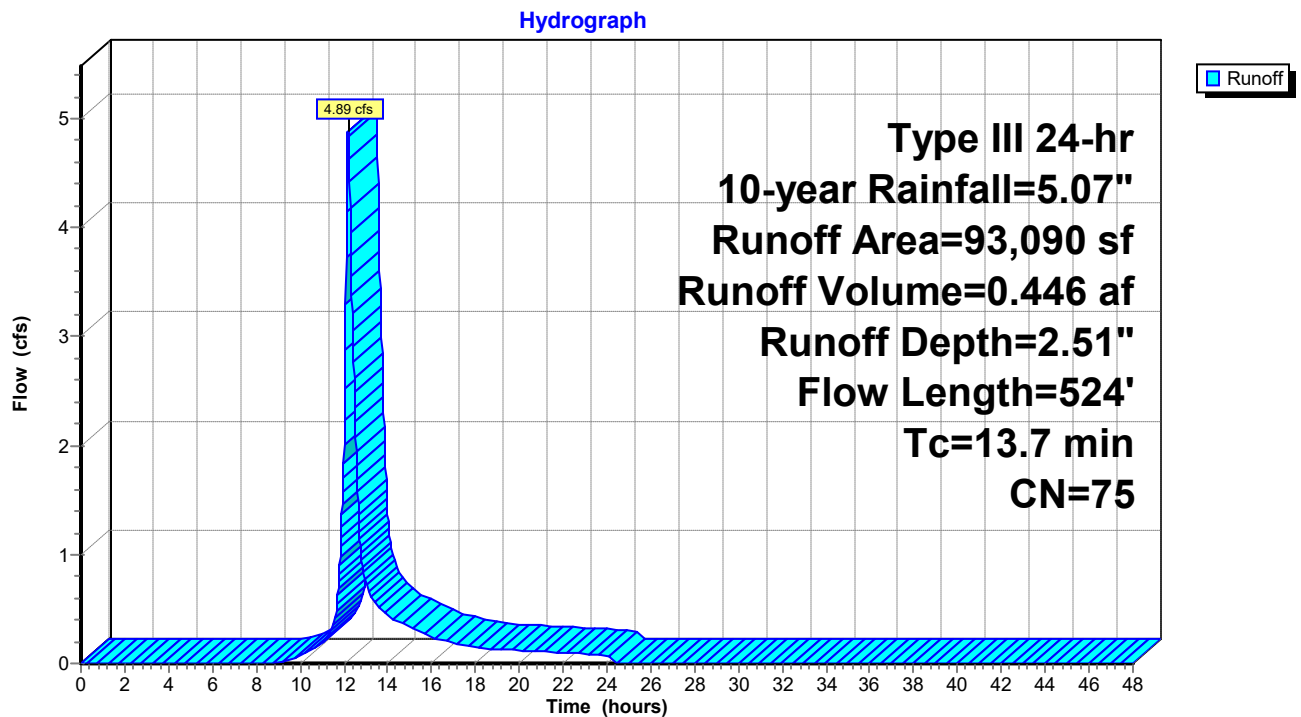
Runoff = 4.89 cfs @ 12.19 hrs, Volume= 0.446 af, Depth= 2.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 10-year Rainfall=5.07"

	Area (sf)	CN	Description
*	8,091	98	Impervious Surfaces
	53,183	70	Woods, Good, HSG C
	28,603	74	>75% Grass cover, Good, HSG C
*	3,213	96	Gravel surface driveway, HSG C
	93,090	75	Weighted Average
	84,999		91.31% Pervious Area
	8,091		8.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	76	0.1121	0.15		Sheet Flow, A-B
					Woods: Light underbrush n= 0.400 P2= 3.40"
0.2	11	0.0200	0.91		Sheet Flow, B-C
					Smooth surfaces n= 0.011 P2= 3.40"
0.7	147	0.0500	3.35		Shallow Concentrated Flow, C-D
					Grassed Waterway Kv= 15.0 fps
4.4	290	0.0488	1.10		Shallow Concentrated Flow, D-E
					Woodland Kv= 5.0 fps
13.7	524	Total			

Subcatchment 9S: Future Condition Drainage Area to Design Point



Summary for Reach 4R: Reach 1 Lawn

Inflow Area = 0.041 ac, 100.00% Impervious, Inflow Depth = 2.43" for 10-year event
 Inflow = 0.17 cfs @ 12.15 hrs, Volume= 0.008 af
 Outflow = 0.09 cfs @ 12.39 hrs, Volume= 0.008 af, Atten= 47%, Lag= 14.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Max. Velocity= 0.19 fps, Min. Travel Time= 6.7 min

Avg. Velocity= 0.05 fps, Avg. Travel Time= 25.7 min

Peak Storage= 36 cf @ 12.28 hrs

Average Depth at Peak Storage= 0.04', Surface Width= 13.48'

Bank-Full Depth= 0.10' Flow Area= 1.4 sf, Capacity= 0.49 cfs

12.00' x 0.10' deep channel, n= 0.240 Sheet flow over Dense Grass

Side Slope Z-value= 20.0 ' ' Top Width= 16.00'

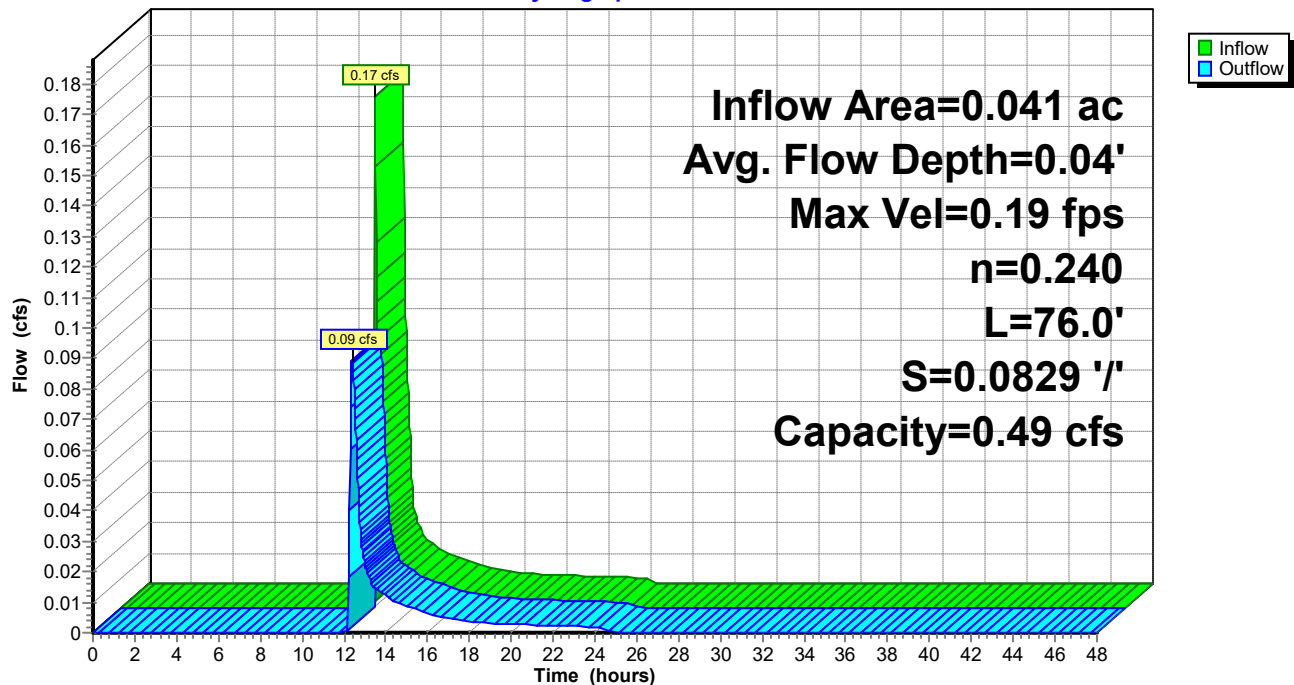
Length= 76.0' Slope= 0.0829 ' '

Inlet Invert= 97.30', Outlet Invert= 91.00'

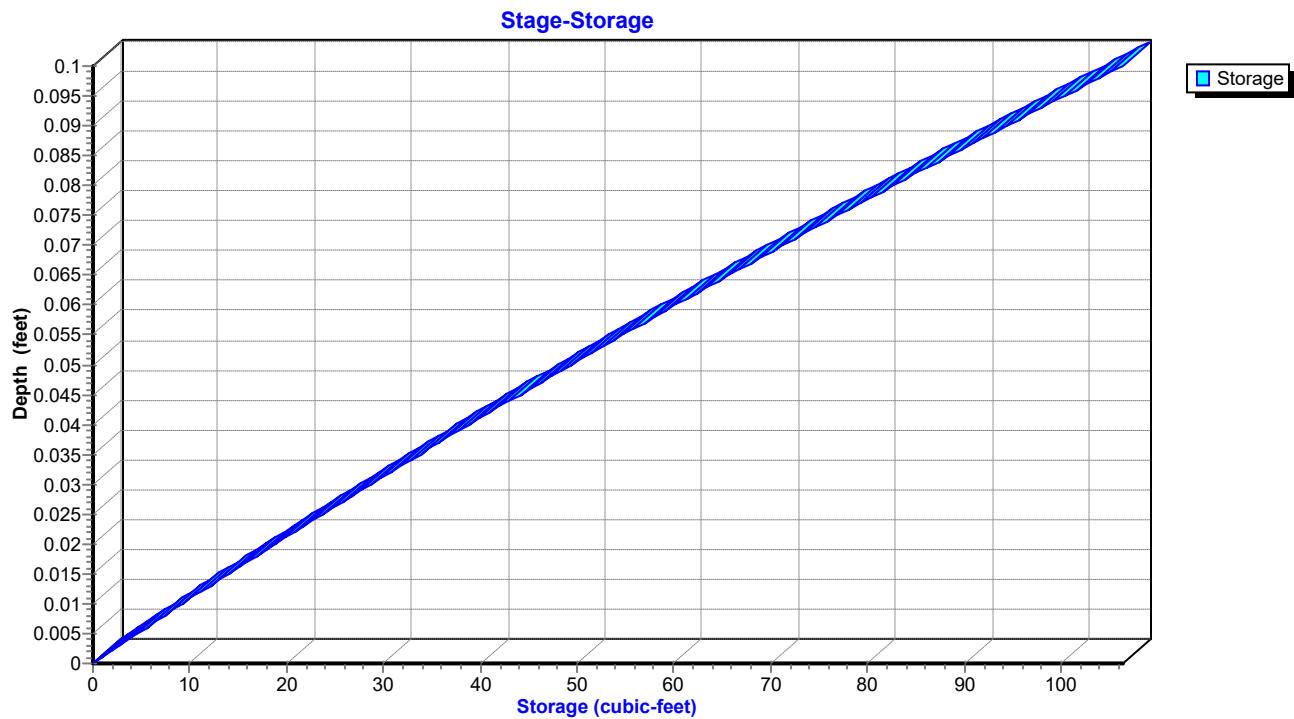


Reach 4R: Reach 1 Lawn

Hydrograph



Reach 4R: Reach 1 Lawn



Summary for Reach 5R: Reach 2 Woods

Inflow Area = 0.041 ac, 100.00% Impervious, Inflow Depth = 2.43" for 10-year event
 Inflow = 0.09 cfs @ 12.39 hrs, Volume= 0.008 af
 Outflow = 0.07 cfs @ 12.68 hrs, Volume= 0.008 af, Atten= 21%, Lag= 17.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Max. Velocity= 0.08 fps, Min. Travel Time= 8.7 min

Avg. Velocity = 0.02 fps, Avg. Travel Time= 38.5 min

Peak Storage= 37 cf @ 12.54 hrs

Average Depth at Peak Storage= 0.05', Surface Width= 17.13'

Bank-Full Depth= 0.10' Flow Area= 1.7 sf, Capacity= 0.21 cfs

15.00' x 0.10' deep channel, n= 0.400 Sheet flow: Woods+light brush

Side Slope Z-value= 20.0 '/' Top Width= 19.00'

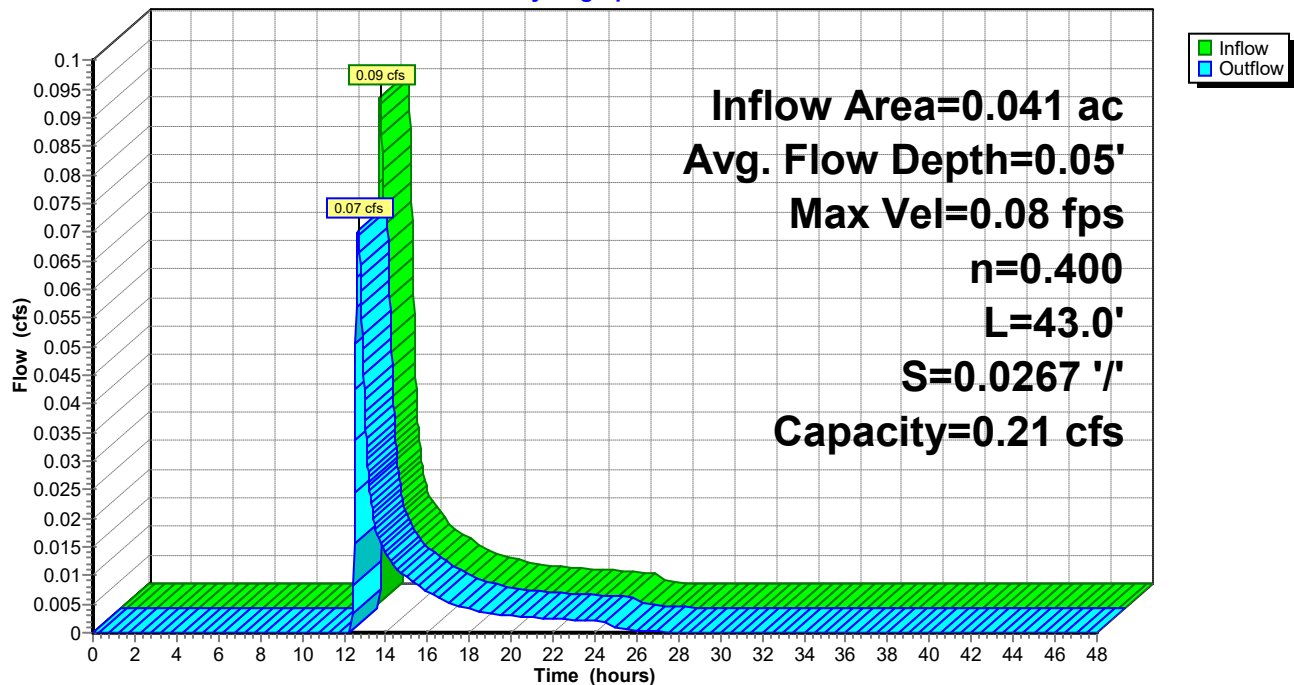
Length= 43.0' Slope= 0.0267 '/'

Inlet Invert= 90.90', Outlet Invert= 89.75'

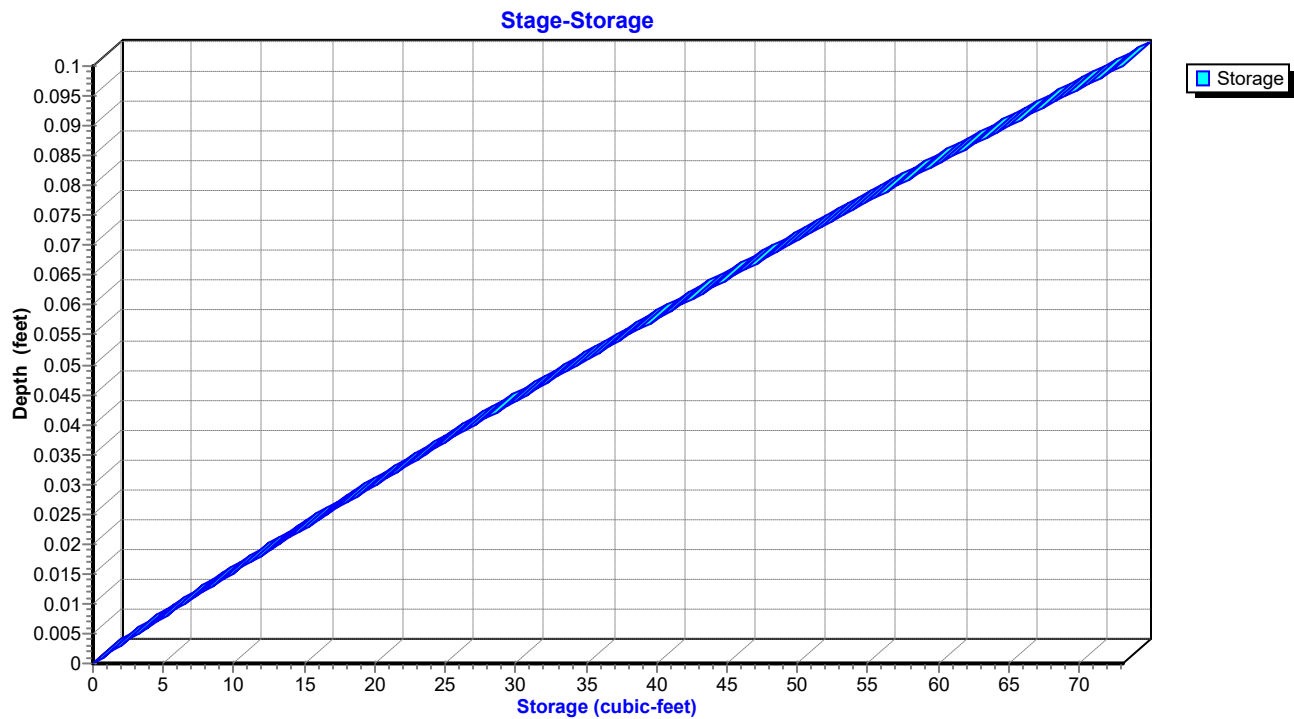


Reach 5R: Reach 2 Woods

Hydrograph



Reach 5R: Reach 2 Woods



Summary for Reach 6R: Reach 3 Intermittent Channel

Inflow Area = 0.041 ac, 100.00% Impervious, Inflow Depth = 2.43" for 10-year event
 Inflow = 0.07 cfs @ 12.68 hrs, Volume= 0.008 af
 Outflow = 0.07 cfs @ 12.82 hrs, Volume= 0.008 af, Atten= 6%, Lag= 8.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Max. Velocity= 0.81 fps, Min. Travel Time= 3.8 min

Avg. Velocity= 0.81 fps, Avg. Travel Time= 3.8 min

Peak Storage= 15 cf @ 12.76 hrs

Average Depth at Peak Storage= 0.02' , Surface Width= 4.08'

Bank-Full Depth= 3.00' Flow Area= 30.0 sf, Capacity= 367.70 cfs

4.00' x 3.00' deep channel, n= 0.040 Earth, cobble bottom, clean sides

Side Slope Z-value= 2.0 '/' Top Width= 16.00'

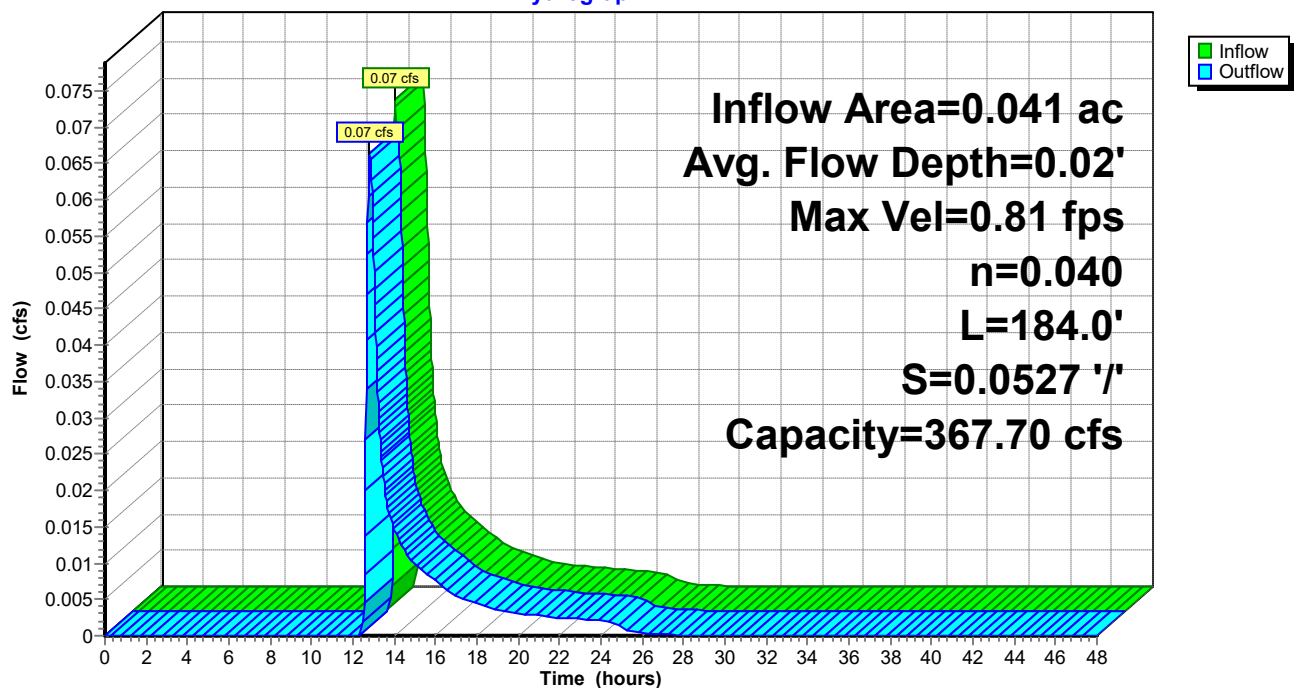
Length= 184.0' Slope= 0.0527 '/'

Inlet Invert= 89.70', Outlet Invert= 80.00'

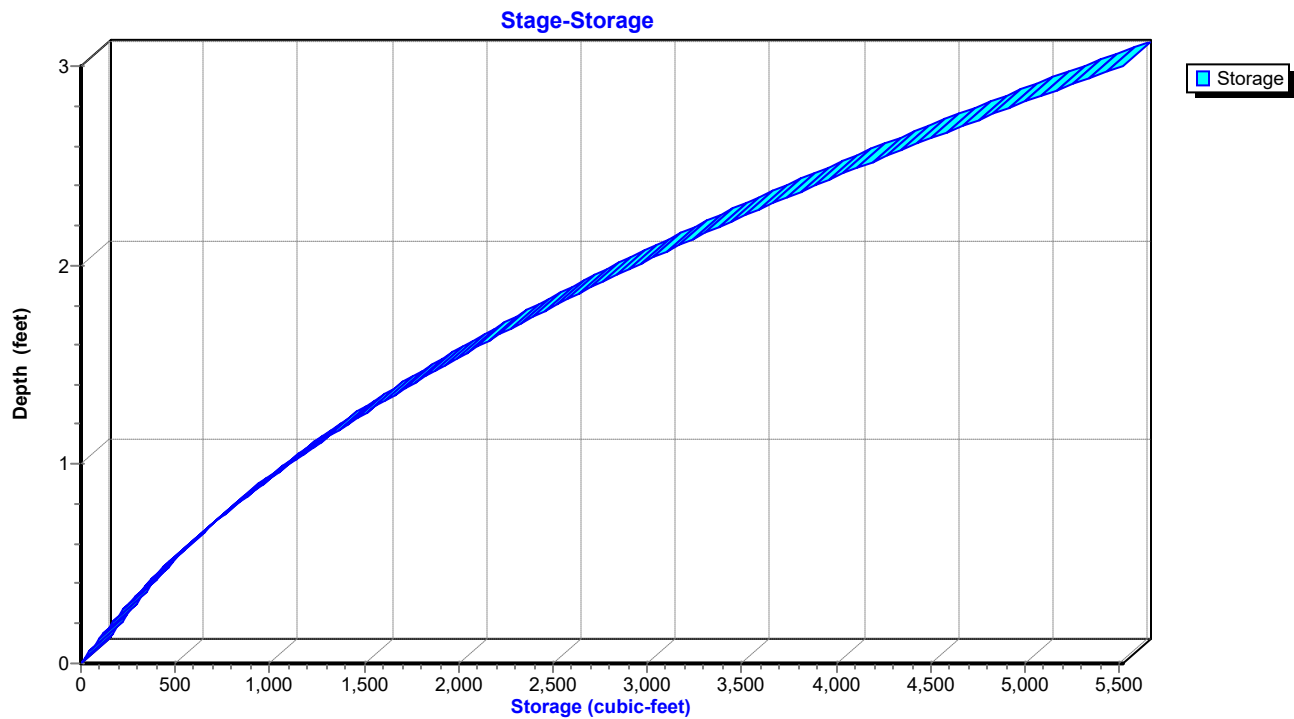


Reach 6R: Reach 3 Intermittent Channel

Hydrograph



Reach 6R: Reach 3 Intermittent Channel



Summary for Pond 4P: Cultec C-4 Chambers

Inflow Area = 0.041 ac, 100.00% Impervious, Inflow Depth = 4.83" for 10-year event
 Inflow = 0.20 cfs @ 12.08 hrs, Volume= 0.016 af
 Outflow = 0.17 cfs @ 12.15 hrs, Volume= 0.008 af, Atten= 17%, Lag= 4.0 min
 Primary = 0.17 cfs @ 12.15 hrs, Volume= 0.008 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
 Peak Elev= 97.58' @ 12.14 hrs Surf.Area= 462 sf Storage= 365 cf

Plug-Flow detention time= 260.0 min calculated for 0.008 af (50% of inflow)
 Center-of-Mass det. time= 131.0 min (878.8 - 747.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	96.00'	92 cf	6.00'W x 26.50'L x 1.71'H Field A 272 cf Overall - 41 cf Embedded = 231 cf x 40.0% Voids
#2A	96.50'	41 cf	Cultec FD C-4 x 3 Inside #1 Effective Size= 42.0"W x 8.0"H => 1.67 sf x 8.00'L = 13.3 cf Overall Size= 48.0"W x 8.5"H x 8.50'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.67 sf x 1 rows
#3B	96.00'	175 cf	6.00'W x 50.50'L x 1.71'H Field B 518 cf Overall - 81 cf Embedded = 437 cf x 40.0% Voids
#4B	96.50'	81 cf	Cultec FD C-4 x 6 Inside #3 Effective Size= 42.0"W x 8.0"H => 1.67 sf x 8.00'L = 13.3 cf Overall Size= 48.0"W x 8.5"H x 8.50'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.67 sf x 1 rows
		389 cf	Total Available Storage

Storage Group A created with Chamber Wizard
 Storage Group B created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	97.53'	12.0" x 12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.15 cfs @ 12.15 hrs HW=97.58' (Free Discharge)
 ↑ **1=Orifice/Grate** (Weir Controls 0.15 cfs @ 0.74 fps)

Pond 4P: Cultec C-4 Chambers - Chamber Wizard Field A

Chamber Model = Cultec FD C-4 (Cultec Contactor® Field Drain C-4)

Effective Size= 42.0"W x 8.0"H => 1.67 sf x 8.00'L = 13.3 cf

Overall Size= 48.0"W x 8.5"H x 8.50'L with 0.50' Overlap

Row Length Adjustment= +0.50' x 1.67 sf x 1 rows

3 Chambers/Row x 8.00' Long +0.50' Row Adjustment = 24.50' Row Length +12.0" End Stone x 2 = 26.50' Base Length

1 Rows x 48.0" Wide + 12.0" Side Stone x 2 = 6.00' Base Width

6.0" Stone Base + 8.5" Chamber Height + 6.0" Stone Cover = 1.71' Field Height

3 Chambers x 13.3 cf +0.50' Row Adjustment x 1.67 sf x 1 Rows = 40.8 cf Chamber Storage

271.6 cf Field - 40.8 cf Chambers = 230.8 cf Stone x 40.0% Voids = 92.3 cf Stone Storage

Chamber Storage + Stone Storage = 133.1 cf = 0.003 af

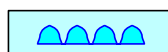
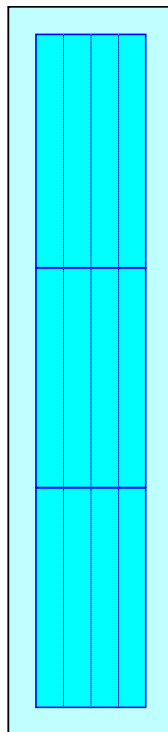
Overall Storage Efficiency = 49.0%

Overall System Size = 26.50' x 6.00' x 1.71'

3 Chambers

10.1 cy Field

8.5 cy Stone



Pond 4P: Cultec C-4 Chambers - Chamber Wizard Field B

Chamber Model = Cultec FD C-4 (Cultec Contactor® Field Drain C-4)

Effective Size= 42.0"W x 8.0"H => 1.67 sf x 8.00'L = 13.3 cf

Overall Size= 48.0"W x 8.5"H x 8.50'L with 0.50' Overlap

Row Length Adjustment= +0.50' x 1.67 sf x 1 rows

6 Chambers/Row x 8.00' Long +0.50' Row Adjustment = 48.50' Row Length +12.0" End Stone x 2 = 50.50' Base Length

1 Rows x 48.0" Wide + 12.0" Side Stone x 2 = 6.00' Base Width

6.0" Stone Base + 8.5" Chamber Height + 6.0" Stone Cover = 1.71' Field Height

6 Chambers x 13.3 cf +0.50' Row Adjustment x 1.67 sf x 1 Rows = 80.8 cf Chamber Storage

517.6 cf Field - 80.8 cf Chambers = 436.8 cf Stone x 40.0% Voids = 174.7 cf Stone Storage

Chamber Storage + Stone Storage = 255.5 cf = 0.006 af

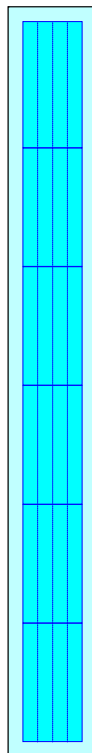
Overall Storage Efficiency = 49.4%

Overall System Size = 50.50' x 6.00' x 1.71'

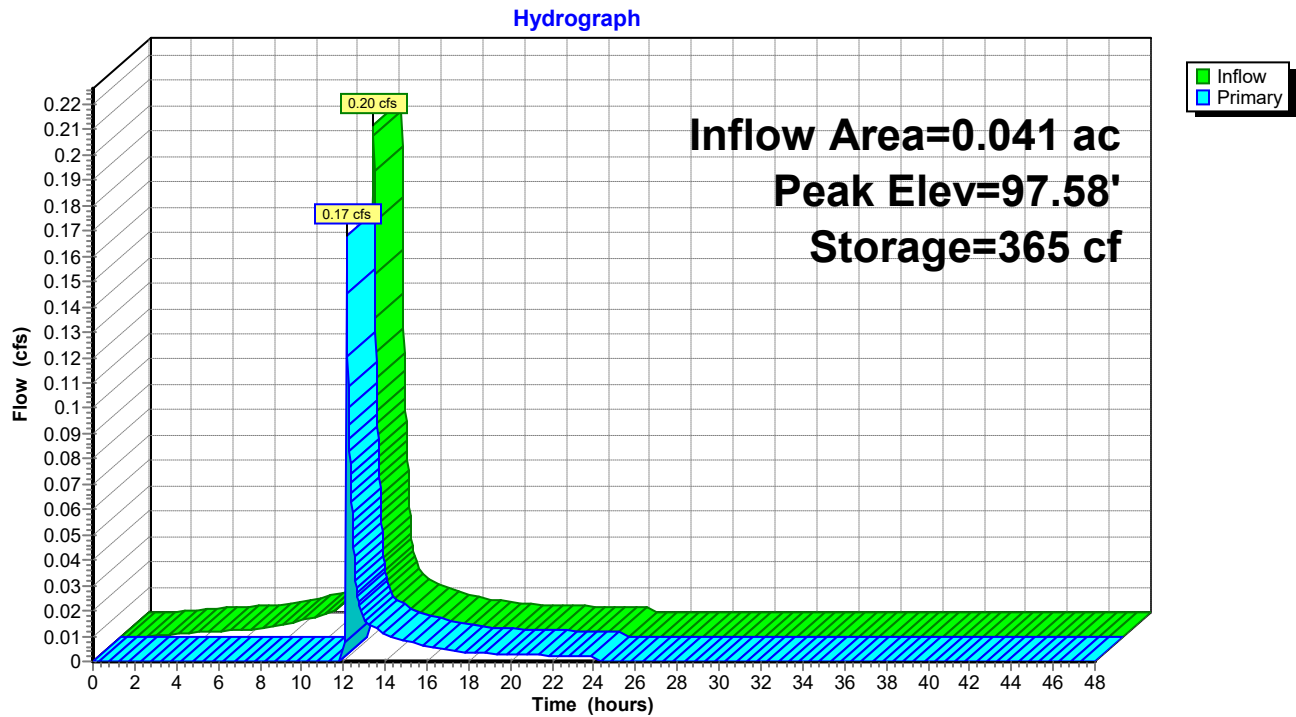
6 Chambers

19.2 cy Field

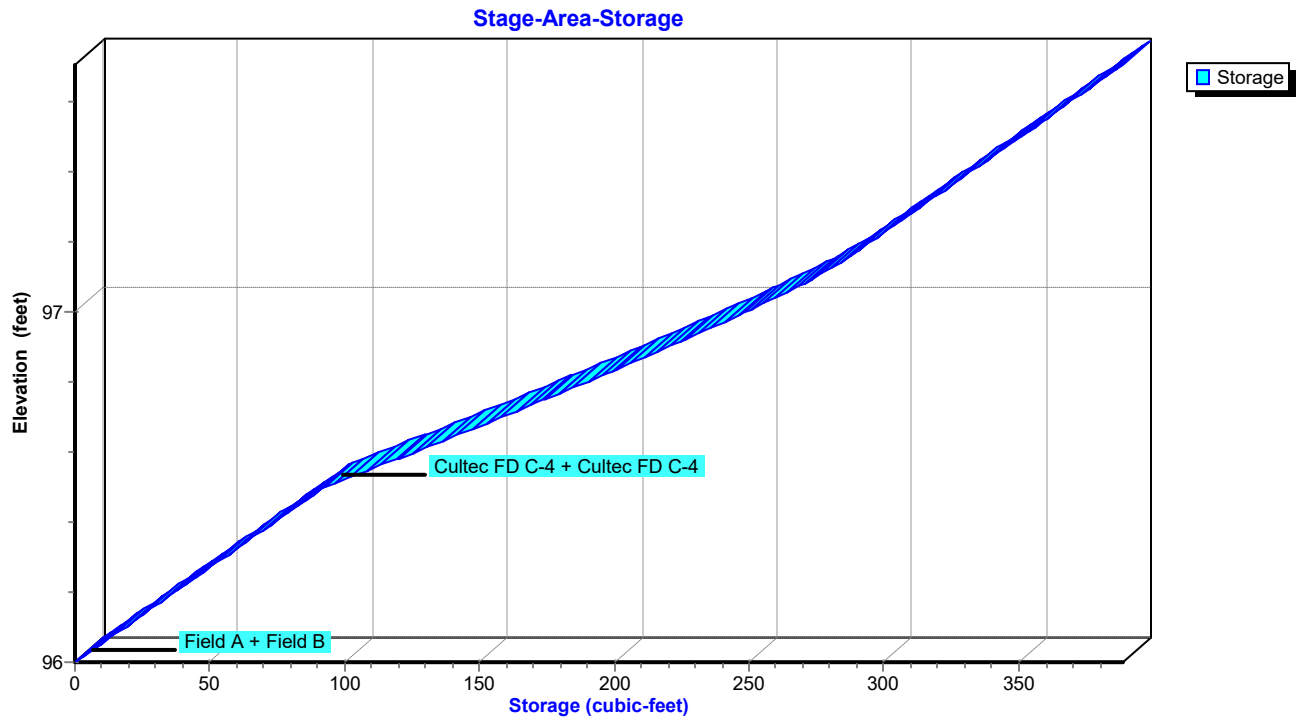
16.2 cy Stone



Pond 4P: Cultec C-4 Chambers



Pond 4P: Cultec C-4 Chambers

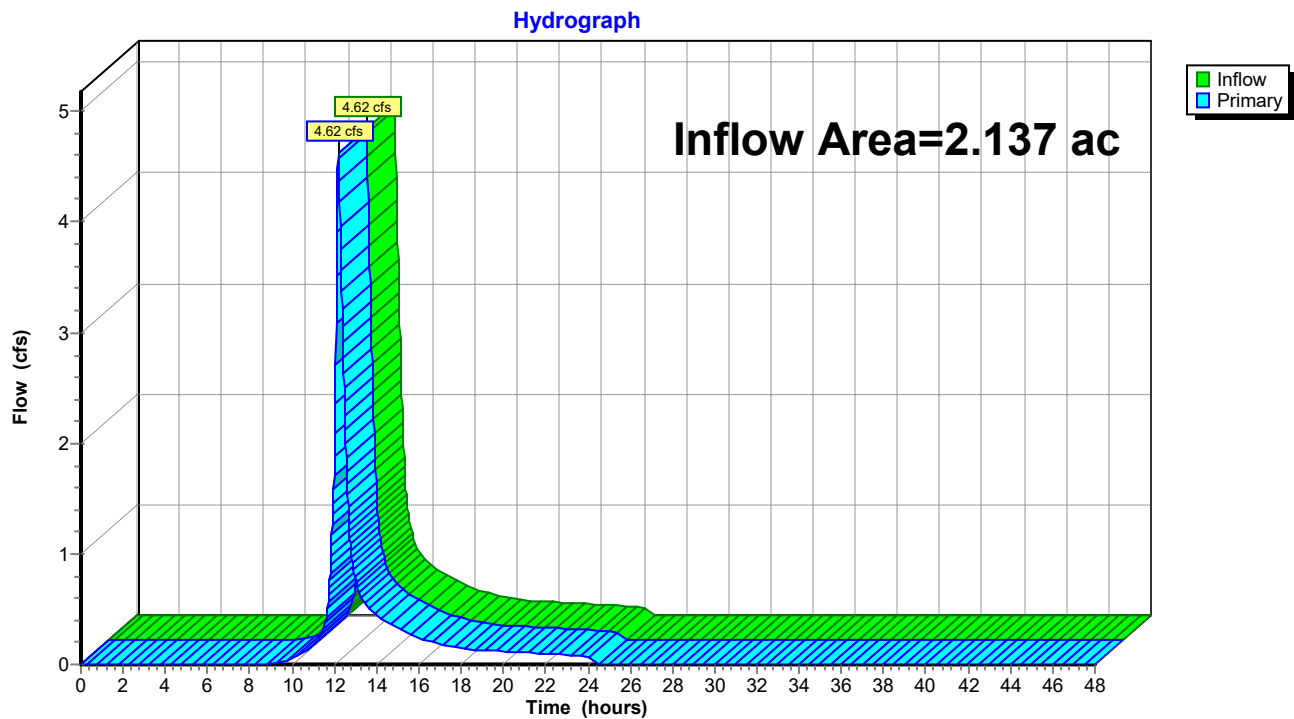


Summary for Link 7L: Design Point

Inflow Area = 2.137 ac, 8.69% Impervious, Inflow Depth = 2.42" for 10-year event
Inflow = 4.62 cfs @ 12.19 hrs, Volume= 0.431 af
Primary = 4.62 cfs @ 12.19 hrs, Volume= 0.431 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Link 7L: Design Point



Time span=0.00-48.00 hrs, dt=0.02 hrs, 2401 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 1S: XDA-1 to Design Point Runoff Area=93,090 sf 5.19% Impervious Runoff Depth=3.50"
Flow Length=524' Tc=13.7 min CN=74 Runoff=6.86 cfs 0.623 af

Subcatchment 2S: FDA-1 to Design Point Runoff Area=91,314 sf 6.92% Impervious Runoff Depth=3.50"
Flow Length=524' Tc=13.7 min CN=74 Runoff=6.73 cfs 0.611 af

Subcatchment 3S: FDA-2 to Chambers Runoff Area=1,776 sf 100.00% Impervious Runoff Depth=6.13"
Tc=6.0 min CN=98 Runoff=0.25 cfs 0.021 af

Subcatchment 8S: Existing Condition to Runoff Area=93,090 sf 5.19% Impervious Runoff Depth=3.50"
Flow Length=524' Tc=13.7 min CN=74 Runoff=6.86 cfs 0.623 af

Subcatchment 9S: Future Condition Runoff Area=93,090 sf 8.69% Impervious Runoff Depth=3.60"
Flow Length=524' Tc=13.7 min CN=75 Runoff=7.06 cfs 0.641 af

Reach 4R: Reach 1 Lawn Avg. Flow Depth=0.06' Max Vel=0.26 fps Inflow=0.25 cfs 0.013 af
n=0.240 L=76.0' S=0.0829 '/' Capacity=0.49 cfs Outflow=0.20 cfs 0.013 af

Reach 5R: Reach 2 Woods Avg. Flow Depth=0.08' Max Vel=0.11 fps Inflow=0.20 cfs 0.013 af
n=0.400 L=43.0' S=0.0267 '/' Capacity=0.21 cfs Outflow=0.16 cfs 0.013 af

Reach 6R: Reach 3 Intermittent Channel Avg. Flow Depth=0.04' Max Vel=0.99 fps Inflow=0.16 cfs 0.013 af
n=0.040 L=184.0' S=0.0527 '/' Capacity=367.70 cfs Outflow=0.15 cfs 0.013 af

Pond 4P: Cultec C-4 Chambers Peak Elev=97.60' Storage=369 cf Inflow=0.25 cfs 0.021 af
Outflow=0.25 cfs 0.013 af

Link 7L: Design Point Inflow=6.73 cfs 0.624 af
Primary=6.73 cfs 0.624 af

Total Runoff Area = 8.548 ac Runoff Volume = 2.519 af Average Runoff Depth = 3.54"
93.06% Pervious = 7.955 ac 6.94% Impervious = 0.593 ac

Summary for Subcatchment 1S: XDA-1 to Design Point

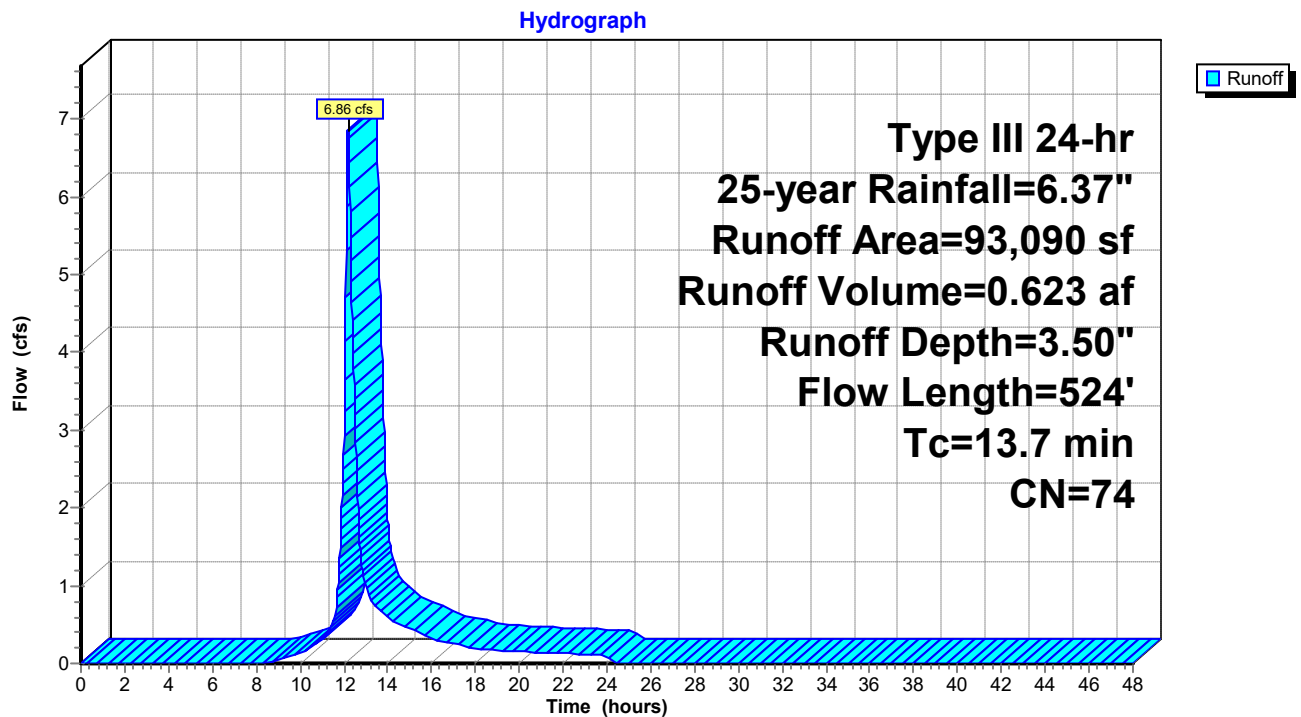
Runoff = 6.86 cfs @ 12.19 hrs, Volume= 0.623 af, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-year Rainfall=6.37"

	Area (sf)	CN	Description
*	4,830	98	Impervious Surfaces
	53,418	70	Woods, Good, HSG C
	29,951	74	>75% Grass cover, Good, HSG C
*	4,891	96	Gravel surface driveway, HSG C
	93,090	74	Weighted Average
	88,260		94.81% Pervious Area
	4,830		5.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	76	0.1121	0.15		Sheet Flow, A-B
					Woods: Light underbrush n= 0.400 P2= 3.40"
0.2	11	0.0200	0.91		Sheet Flow, B-C
					Smooth surfaces n= 0.011 P2= 3.40"
0.7	147	0.0500	3.35		Shallow Concentrated Flow, C-D
					Grassed Waterway Kv= 15.0 fps
4.4	290	0.0488	1.10		Shallow Concentrated Flow, D-E
					Woodland Kv= 5.0 fps
13.7	524	Total			

Subcatchment 1S: XDA-1 to Design Point



Summary for Subcatchment 2S: FDA-1 to Design Point

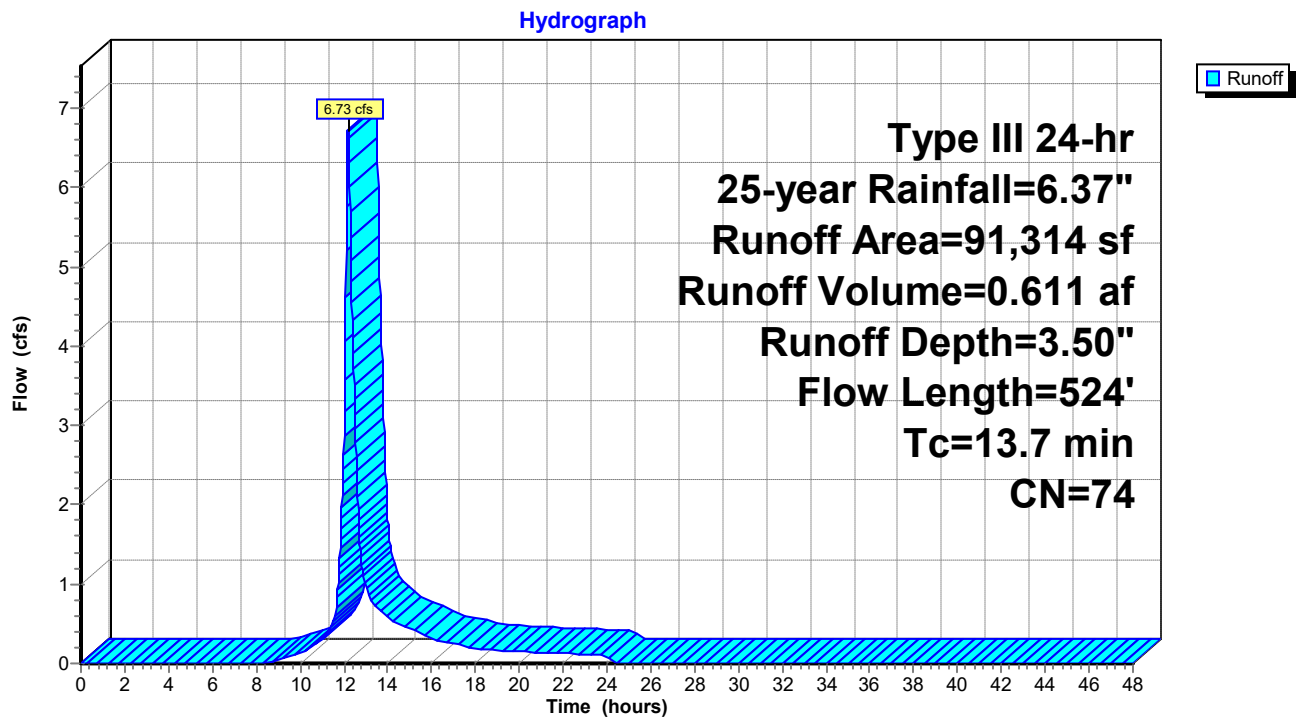
Runoff = 6.73 cfs @ 12.19 hrs, Volume= 0.611 af, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-year Rainfall=6.37"

	Area (sf)	CN	Description
*	6,315	98	Impervious Surfaces
	53,183	70	Woods, Good, HSG C
	28,603	74	>75% Grass cover, Good, HSG C
*	3,213	96	Gravel surface driveway, HSG C
	91,314	74	Weighted Average
	84,999		93.08% Pervious Area
	6,315		6.92% Impervious Area

	Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
	8.4	76	0.1121	0.15		Sheet Flow, A-B
						Woods: Light underbrush n= 0.400 P2= 3.40"
	0.2	11	0.0200	0.91		Sheet Flow, B-C
						Smooth surfaces n= 0.011 P2= 3.40"
	0.7	147	0.0500	3.35		Shallow Concentrated Flow, C-D
						Grassed Waterway Kv= 15.0 fps
	4.4	290	0.0488	1.10		Shallow Concentrated Flow, D-E
						Woodland Kv= 5.0 fps
	13.7	524	Total			

Subcatchment 2S: FDA-1 to Design Point



Summary for Subcatchment 3S: FDA-2 to Chambers

Runoff = 0.25 cfs @ 12.08 hrs, Volume= 0.021 af, Depth= 6.13"

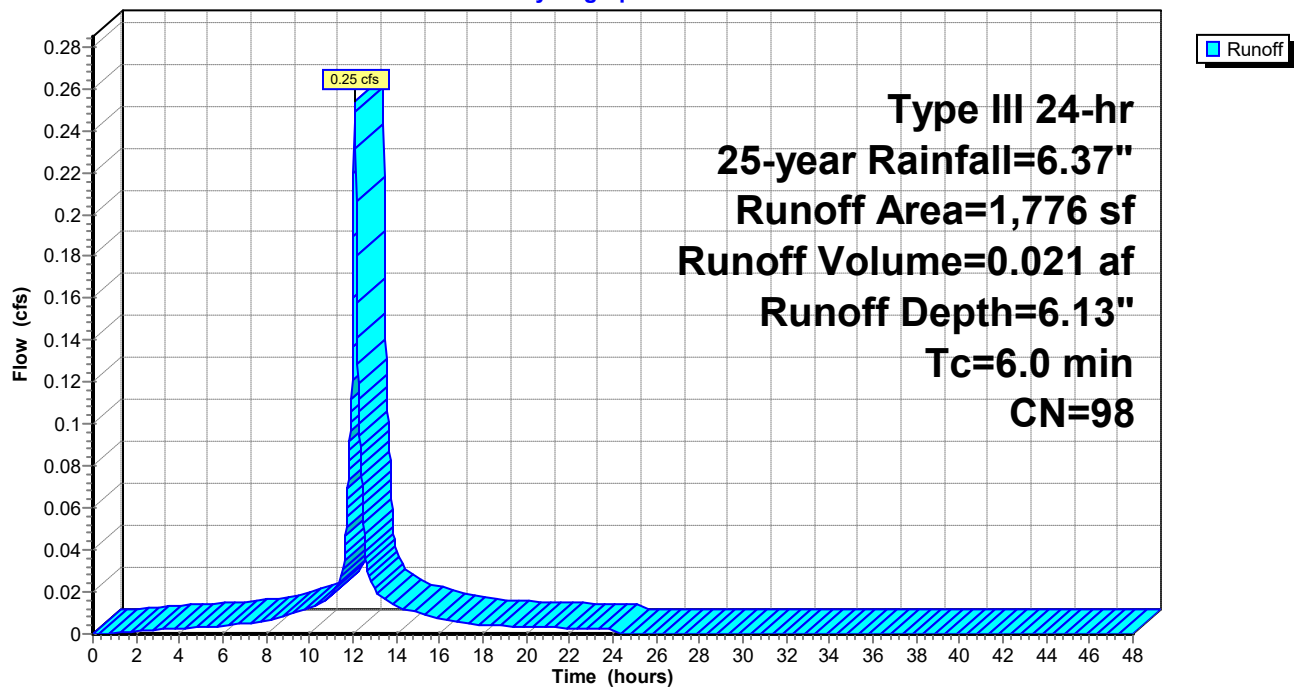
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-year Rainfall=6.37"

Area (sf)	CN	Description
1,776	98	Unconnected pavement, HSG B
1,776		100.00% Impervious Area
1,776		100.00% Unconnected

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

Subcatchment 3S: FDA-2 to Chambers

Hydrograph



Summary for Subcatchment 8S: Existing Condition to Design Point

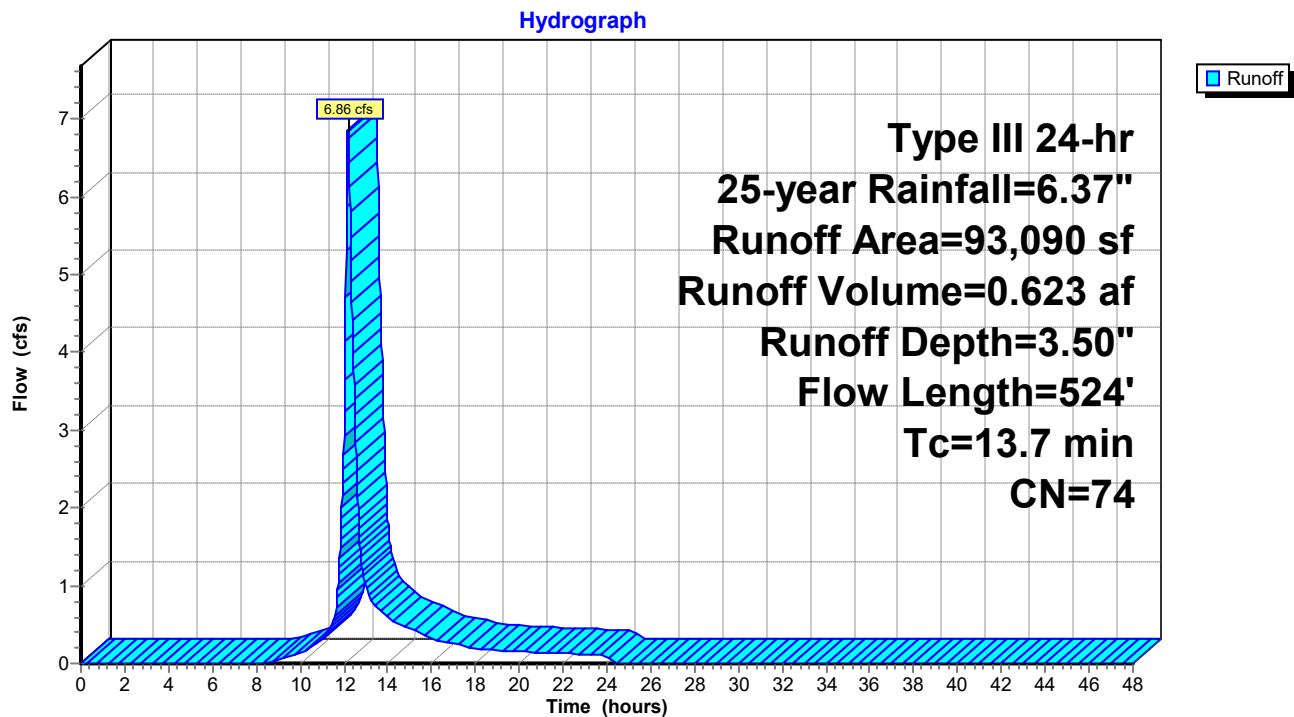
Runoff = 6.86 cfs @ 12.19 hrs, Volume= 0.623 af, Depth= 3.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-year Rainfall=6.37"

	Area (sf)	CN	Description
*	4,830	98	Impervious Surfaces
	53,418	70	Woods, Good, HSG C
	29,951	74	>75% Grass cover, Good, HSG C
*	4,891	96	Gravel surface driveway, HSG C
	93,090	74	Weighted Average
	88,260		94.81% Pervious Area
	4,830		5.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	76	0.1121	0.15		Sheet Flow, A-B
					Woods: Light underbrush n= 0.400 P2= 3.40"
0.2	11	0.0200	0.91		Sheet Flow, B-C
					Smooth surfaces n= 0.011 P2= 3.40"
0.7	147	0.0500	3.35		Shallow Concentrated Flow, C-D
					Grassed Waterway Kv= 15.0 fps
4.4	290	0.0488	1.10		Shallow Concentrated Flow, D-E
					Woodland Kv= 5.0 fps
13.7	524	Total			

Subcatchment 8S: Existing Condition to Design Point



Summary for Subcatchment 9S: Future Condition Drainage Area to Design Point

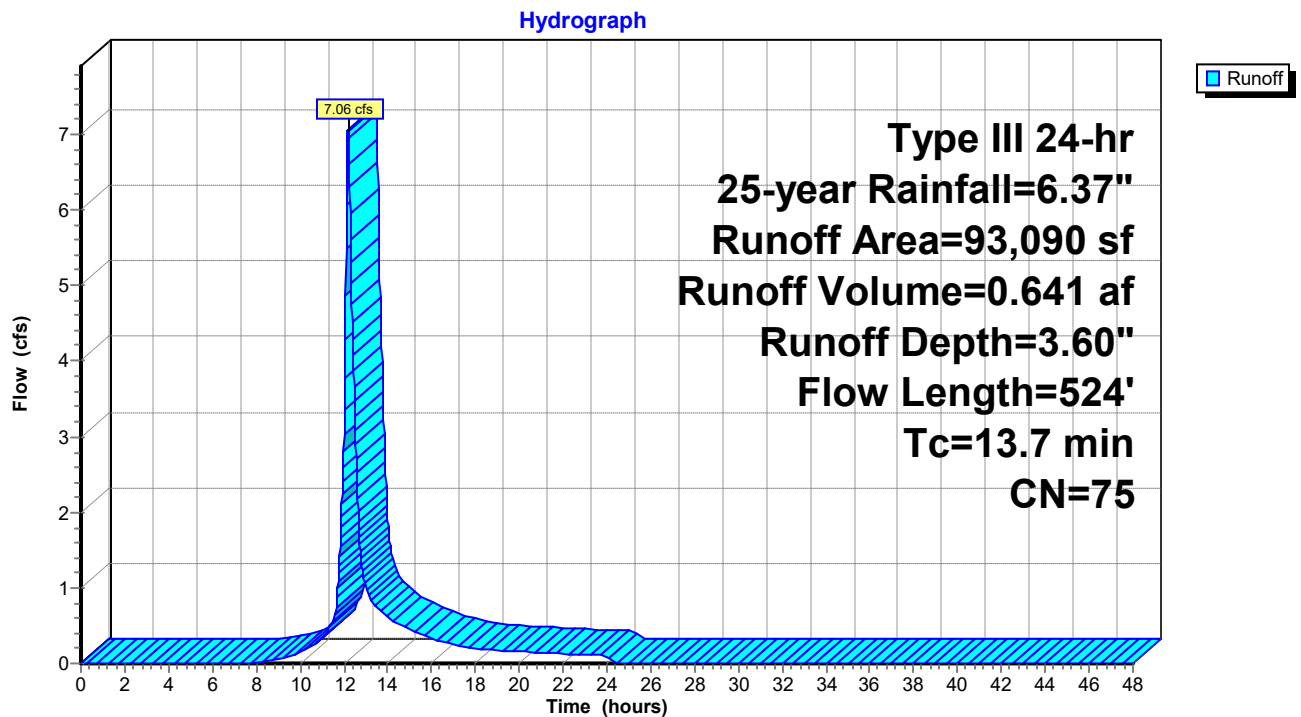
Runoff = 7.06 cfs @ 12.19 hrs, Volume= 0.641 af, Depth= 3.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
Type III 24-hr 25-year Rainfall=6.37"

	Area (sf)	CN	Description
*	8,091	98	Impervious Surfaces
	53,183	70	Woods, Good, HSG C
	28,603	74	>75% Grass cover, Good, HSG C
*	3,213	96	Gravel surface driveway, HSG C
	93,090	75	Weighted Average
	84,999		91.31% Pervious Area
	8,091		8.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	76	0.1121	0.15		Sheet Flow, A-B
					Woods: Light underbrush n= 0.400 P2= 3.40"
0.2	11	0.0200	0.91		Sheet Flow, B-C
					Smooth surfaces n= 0.011 P2= 3.40"
0.7	147	0.0500	3.35		Shallow Concentrated Flow, C-D
					Grassed Waterway Kv= 15.0 fps
4.4	290	0.0488	1.10		Shallow Concentrated Flow, D-E
					Woodland Kv= 5.0 fps
13.7	524	Total			

Subcatchment 9S: Future Condition Drainage Area to Design Point



Summary for Reach 4R: Reach 1 Lawn

Inflow Area = 0.041 ac, 100.00% Impervious, Inflow Depth = 3.73" for 25-year event
 Inflow = 0.25 cfs @ 12.09 hrs, Volume= 0.013 af
 Outflow = 0.20 cfs @ 12.24 hrs, Volume= 0.013 af, Atten= 20%, Lag= 8.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Max. Velocity= 0.26 fps, Min. Travel Time= 4.9 min

Avg. Velocity= 0.05 fps, Avg. Travel Time= 23.2 min

Peak Storage= 60 cf @ 12.15 hrs

Average Depth at Peak Storage= 0.06', Surface Width= 14.39'

Bank-Full Depth= 0.10' Flow Area= 1.4 sf, Capacity= 0.49 cfs

12.00' x 0.10' deep channel, n= 0.240 Sheet flow over Dense Grass

Side Slope Z-value= 20.0 ' ' Top Width= 16.00'

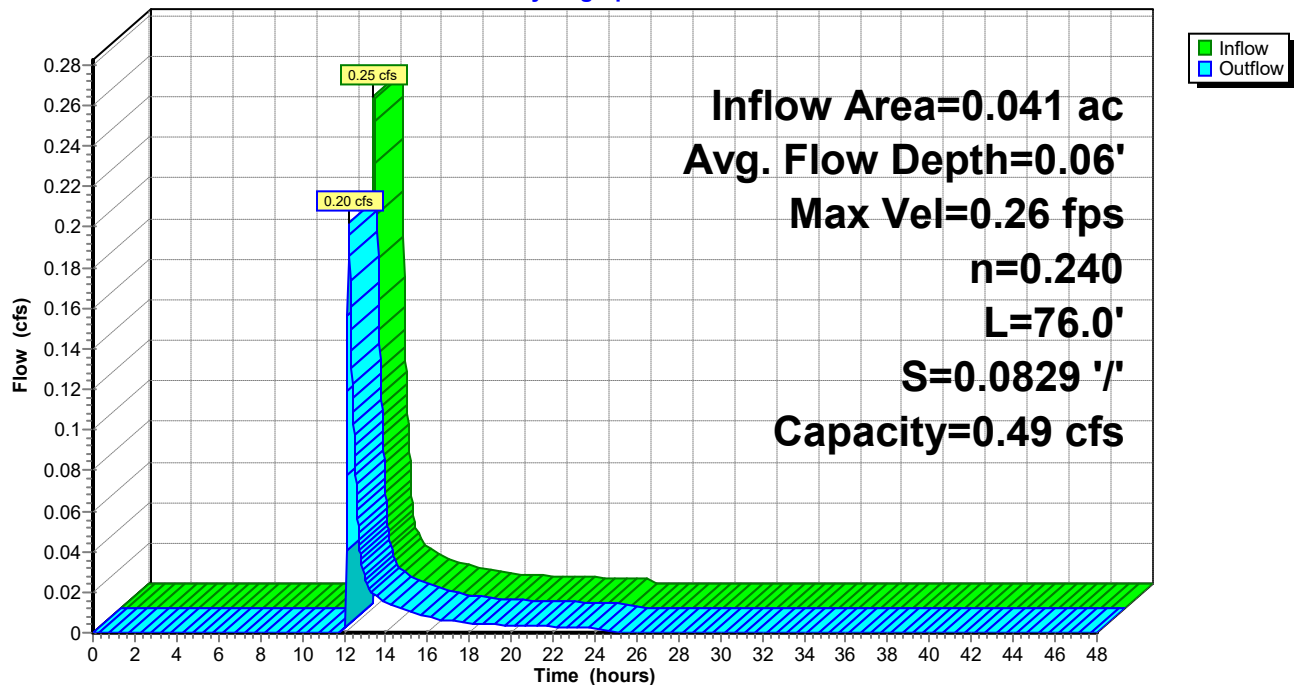
Length= 76.0' Slope= 0.0829 ' '

Inlet Invert= 97.30', Outlet Invert= 91.00'

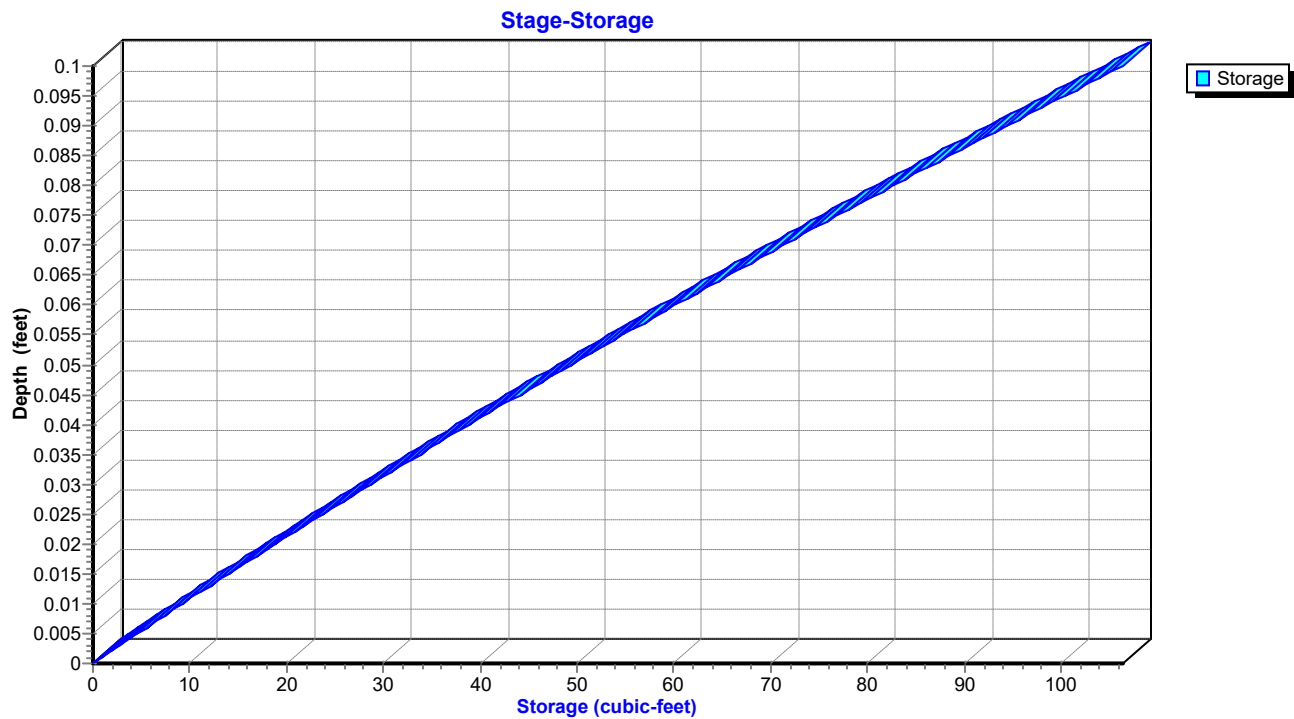


Reach 4R: Reach 1 Lawn

Hydrograph



Reach 4R: Reach 1 Lawn



Summary for Reach 5R: Reach 2 Woods

Inflow Area = 0.041 ac, 100.00% Impervious, Inflow Depth = 3.73" for 25-year event
 Inflow = 0.20 cfs @ 12.24 hrs, Volume= 0.013 af
 Outflow = 0.16 cfs @ 12.44 hrs, Volume= 0.013 af, Atten= 23%, Lag= 12.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Max. Velocity= 0.11 fps, Min. Travel Time= 6.5 min

Avg. Velocity= 0.02 fps, Avg. Travel Time= 34.9 min

Peak Storage= 61 cf @ 12.33 hrs

Average Depth at Peak Storage= 0.08', Surface Width= 18.40'

Bank-Full Depth= 0.10' Flow Area= 1.7 sf, Capacity= 0.21 cfs

15.00' x 0.10' deep channel, n= 0.400 Sheet flow: Woods+light brush

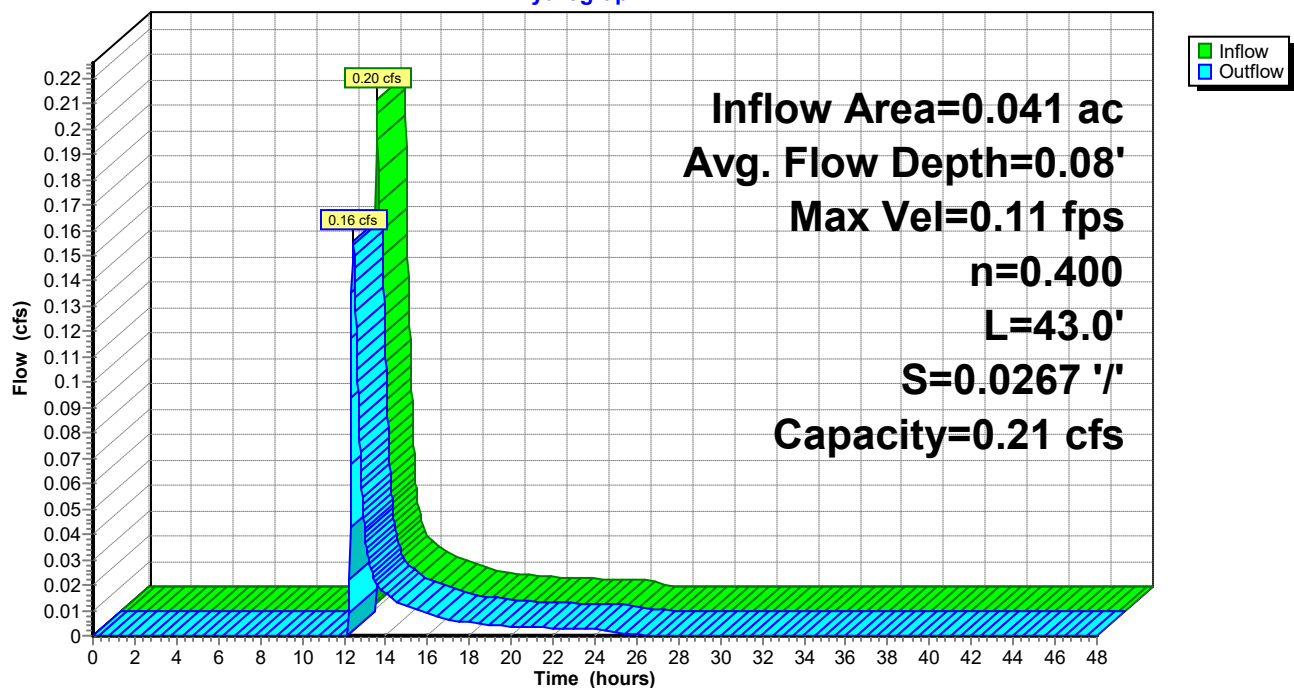
Side Slope Z-value= 20.0 '/' Top Width= 19.00'

Length= 43.0' Slope= 0.0267 '/'

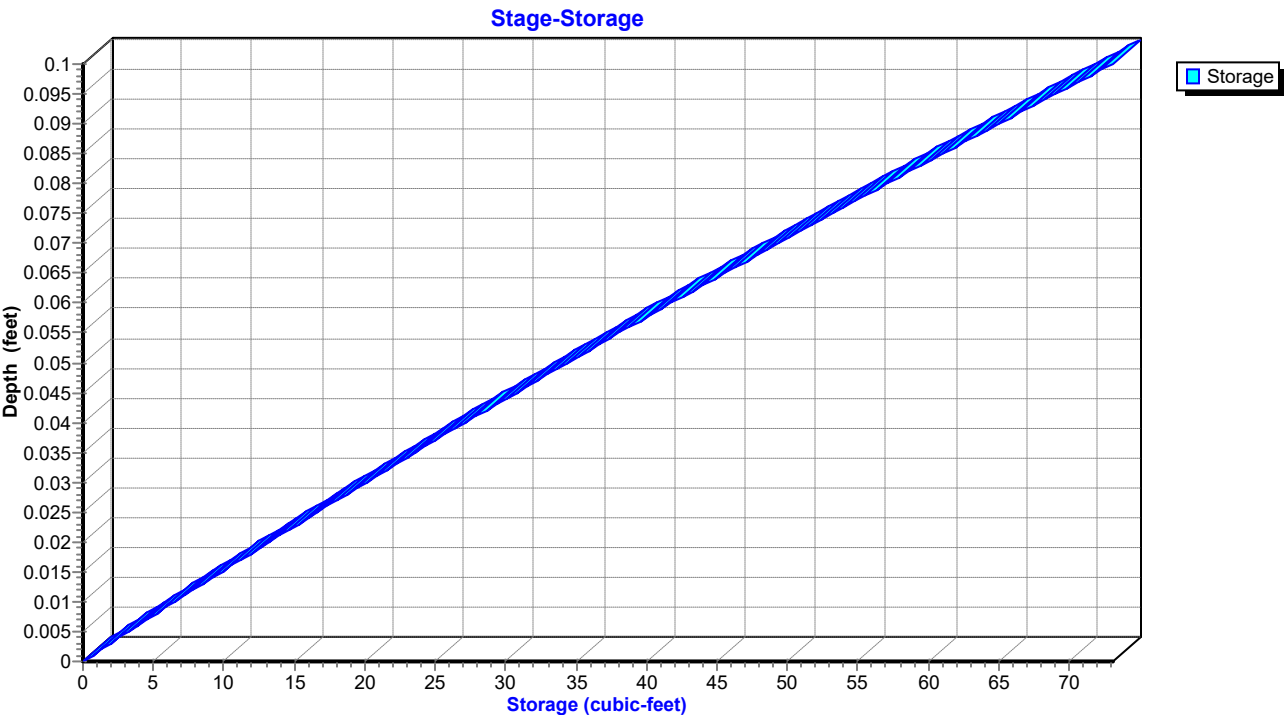
Inlet Invert= 90.90', Outlet Invert= 89.75'

**Reach 5R: Reach 2 Woods**

Hydrograph



Reach 5R: Reach 2 Woods



Summary for Reach 6R: Reach 3 Intermittent Channel

Inflow Area = 0.041 ac, 100.00% Impervious, Inflow Depth = 3.73" for 25-year event
 Inflow = 0.16 cfs @ 12.44 hrs, Volume= 0.013 af
 Outflow = 0.15 cfs @ 12.54 hrs, Volume= 0.013 af, Atten= 4%, Lag= 6.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Max. Velocity= 0.99 fps, Min. Travel Time= 3.1 min

Avg. Velocity = 0.82 fps, Avg. Travel Time= 3.8 min

Peak Storage= 28 cf @ 12.49 hrs

Average Depth at Peak Storage= 0.04' , Surface Width= 4.15'

Bank-Full Depth= 3.00' Flow Area= 30.0 sf, Capacity= 367.70 cfs

4.00' x 3.00' deep channel, n= 0.040 Earth, cobble bottom, clean sides

Side Slope Z-value= 2.0 ' ' Top Width= 16.00'

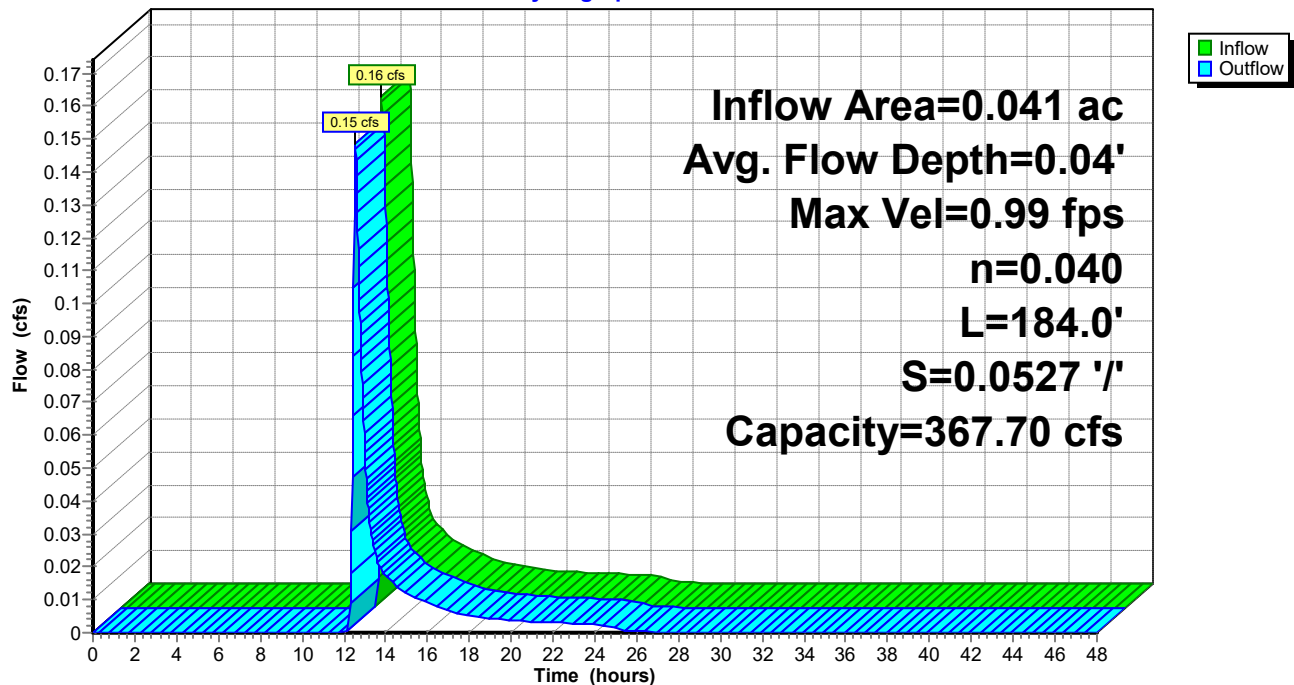
Length= 184.0' Slope= 0.0527 ' '

Inlet Invert= 89.70', Outlet Invert= 80.00'

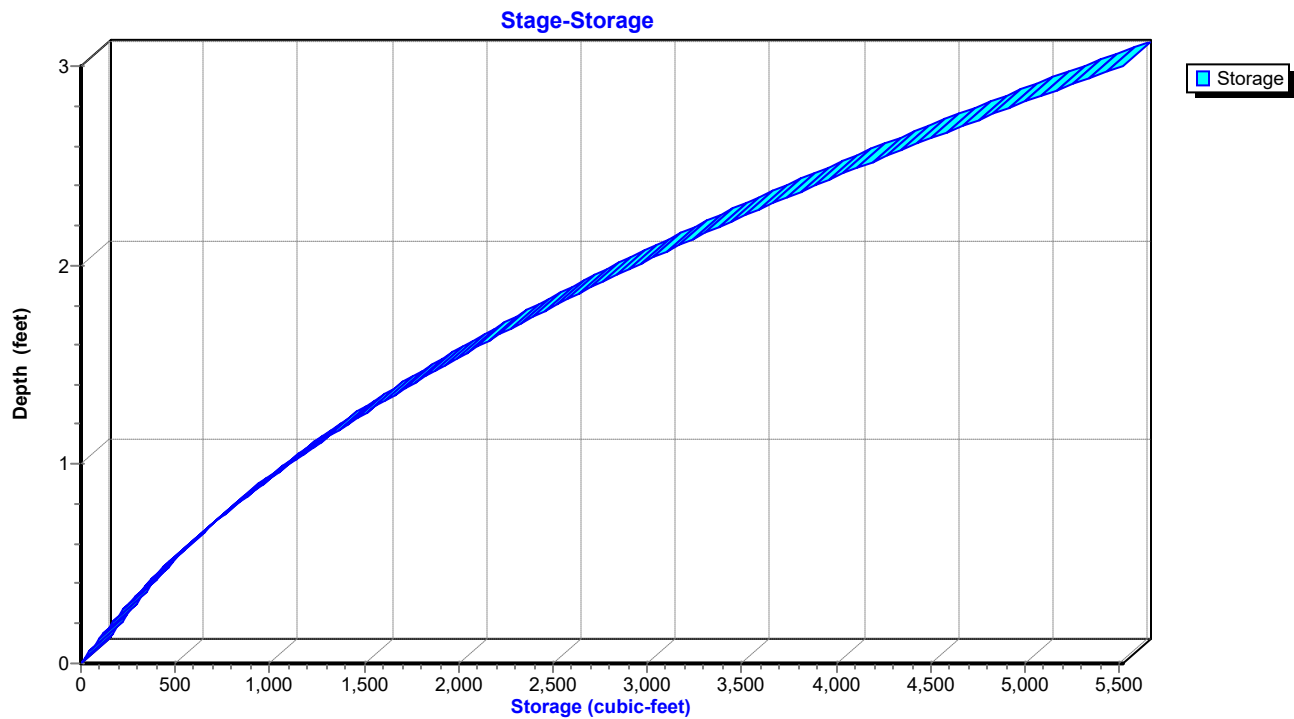


Reach 6R: Reach 3 Intermittent Channel

Hydrograph



Reach 6R: Reach 3 Intermittent Channel



Summary for Pond 4P: Cultec C-4 Chambers

Inflow Area = 0.041 ac, 100.00% Impervious, Inflow Depth = 6.13" for 25-year event
 Inflow = 0.25 cfs @ 12.08 hrs, Volume= 0.021 af
 Outflow = 0.25 cfs @ 12.09 hrs, Volume= 0.013 af, Atten= 1%, Lag= 0.6 min
 Primary = 0.25 cfs @ 12.09 hrs, Volume= 0.013 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs
 Peak Elev= 97.60' @ 12.09 hrs Surf.Area= 462 sf Storage= 369 cf

Plug-Flow detention time= 217.2 min calculated for 0.013 af (61% of inflow)
 Center-of-Mass det. time= 106.5 min (850.7 - 744.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	96.00'	92 cf	6.00'W x 26.50'L x 1.71'H Field A 272 cf Overall - 41 cf Embedded = 231 cf x 40.0% Voids
#2A	96.50'	41 cf	Cultec FD C-4 x 3 Inside #1 Effective Size= 42.0"W x 8.0"H => 1.67 sf x 8.00'L = 13.3 cf Overall Size= 48.0"W x 8.5"H x 8.50'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.67 sf x 1 rows
#3B	96.00'	175 cf	6.00'W x 50.50'L x 1.71'H Field B 518 cf Overall - 81 cf Embedded = 437 cf x 40.0% Voids
#4B	96.50'	81 cf	Cultec FD C-4 x 6 Inside #3 Effective Size= 42.0"W x 8.0"H => 1.67 sf x 8.00'L = 13.3 cf Overall Size= 48.0"W x 8.5"H x 8.50'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.67 sf x 1 rows
		389 cf	Total Available Storage

Storage Group A created with Chamber Wizard
 Storage Group B created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	97.53'	12.0" x 12.0" Horiz. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.25 cfs @ 12.09 hrs HW=97.60' (Free Discharge)
 ↑ **1=Orifice/Grate** (Weir Controls 0.25 cfs @ 0.87 fps)

Pond 4P: Cultec C-4 Chambers - Chamber Wizard Field A

Chamber Model = Cultec FD C-4 (Cultec Contactor® Field Drain C-4)

Effective Size= 42.0"W x 8.0"H => 1.67 sf x 8.00'L = 13.3 cf

Overall Size= 48.0"W x 8.5"H x 8.50'L with 0.50' Overlap

Row Length Adjustment= +0.50' x 1.67 sf x 1 rows

3 Chambers/Row x 8.00' Long +0.50' Row Adjustment = 24.50' Row Length +12.0" End Stone x 2 = 26.50' Base Length

1 Rows x 48.0" Wide + 12.0" Side Stone x 2 = 6.00' Base Width

6.0" Stone Base + 8.5" Chamber Height + 6.0" Stone Cover = 1.71' Field Height

3 Chambers x 13.3 cf +0.50' Row Adjustment x 1.67 sf x 1 Rows = 40.8 cf Chamber Storage

271.6 cf Field - 40.8 cf Chambers = 230.8 cf Stone x 40.0% Voids = 92.3 cf Stone Storage

Chamber Storage + Stone Storage = 133.1 cf = 0.003 af

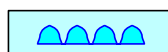
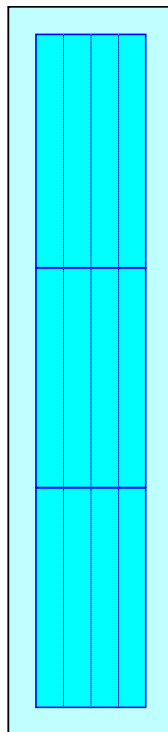
Overall Storage Efficiency = 49.0%

Overall System Size = 26.50' x 6.00' x 1.71'

3 Chambers

10.1 cy Field

8.5 cy Stone



Pond 4P: Cultec C-4 Chambers - Chamber Wizard Field B

Chamber Model = Cultec FD C-4 (Cultec Contactor® Field Drain C-4)

Effective Size= 42.0"W x 8.0"H => 1.67 sf x 8.00'L = 13.3 cf

Overall Size= 48.0"W x 8.5"H x 8.50'L with 0.50' Overlap

Row Length Adjustment= +0.50' x 1.67 sf x 1 rows

6 Chambers/Row x 8.00' Long +0.50' Row Adjustment = 48.50' Row Length +12.0" End Stone x 2 = 50.50' Base Length

1 Rows x 48.0" Wide + 12.0" Side Stone x 2 = 6.00' Base Width

6.0" Stone Base + 8.5" Chamber Height + 6.0" Stone Cover = 1.71' Field Height

6 Chambers x 13.3 cf +0.50' Row Adjustment x 1.67 sf x 1 Rows = 80.8 cf Chamber Storage

517.6 cf Field - 80.8 cf Chambers = 436.8 cf Stone x 40.0% Voids = 174.7 cf Stone Storage

Chamber Storage + Stone Storage = 255.5 cf = 0.006 af

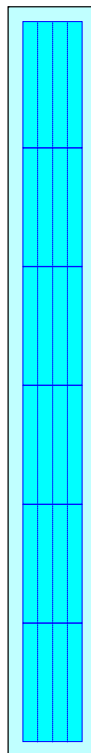
Overall Storage Efficiency = 49.4%

Overall System Size = 50.50' x 6.00' x 1.71'

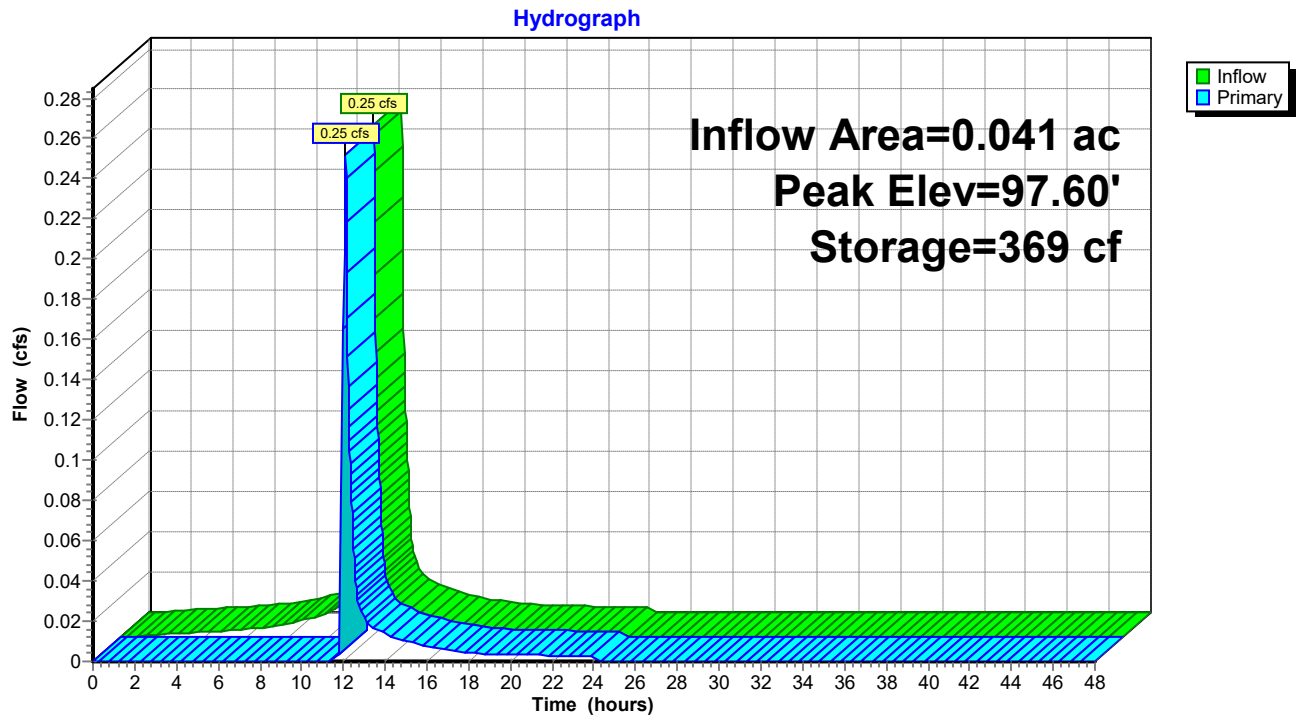
6 Chambers

19.2 cy Field

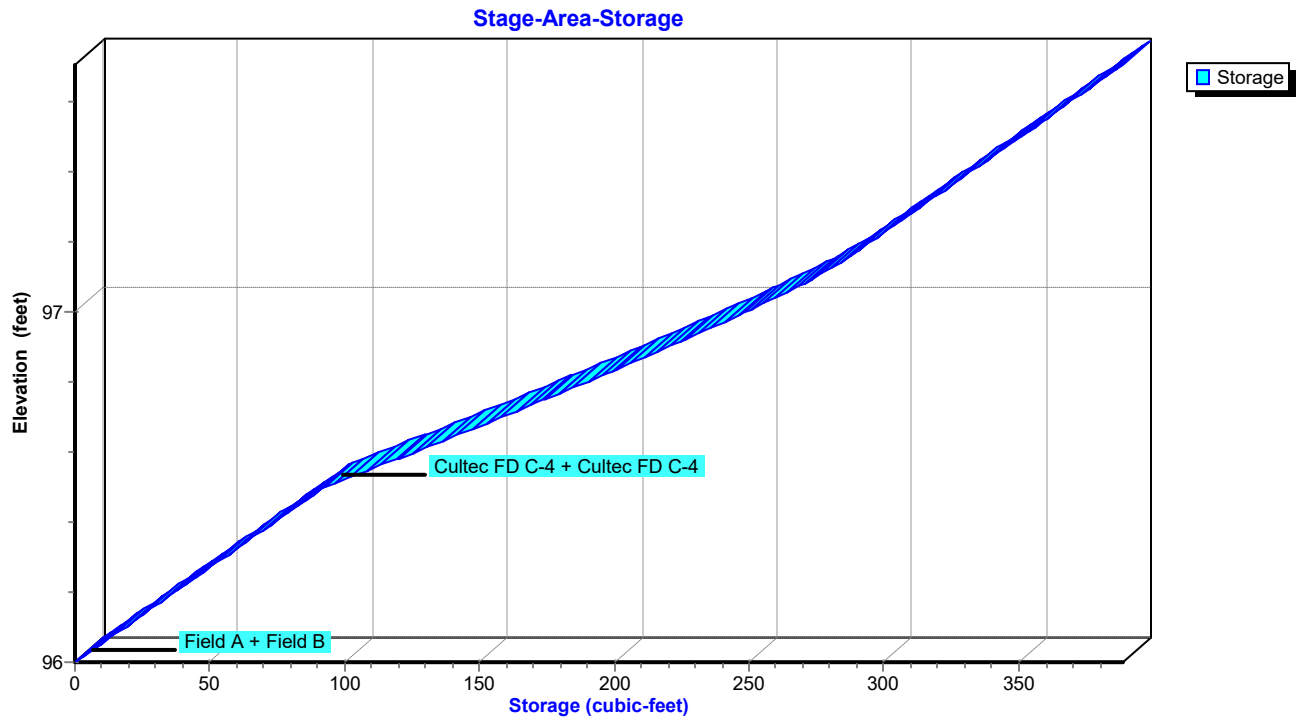
16.2 cy Stone



Pond 4P: Cultec C-4 Chambers



Pond 4P: Cultec C-4 Chambers

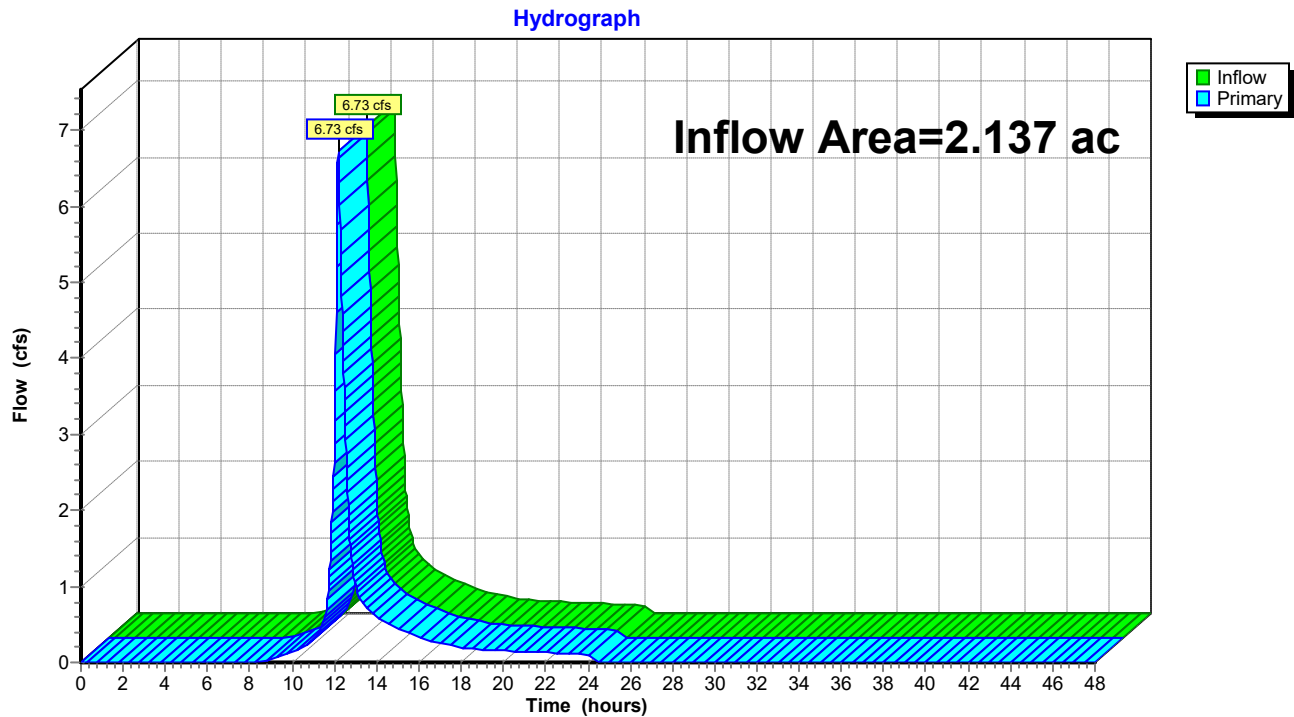


Summary for Link 7L: Design Point

Inflow Area = 2.137 ac, 8.69% Impervious, Inflow Depth = 3.50" for 25-year event
Inflow = 6.73 cfs @ 12.19 hrs, Volume= 0.624 af
Primary = 6.73 cfs @ 12.19 hrs, Volume= 0.624 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.02 hrs

Link 7L: Design Point



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SEP 21 2020

Town Clerk
Town of Lewisboro

**RESOLUTION
TOWN OF LEWISBORO
ZONING BOARD OF APPEALS
IN THE MATTER OF THE APPLICATION OF
Peter and Annette McGuinness
FOR A VARIANCE OF
ARTICLE IV §220-23(E)
CAL. NO. 12-20-BZ**

INTRODUCED BY: Board Member Rendo

SECONDED BY: Board Member Infield

DATE OF CONSIDERATION/ADOPTION: July 29, 2019

WHEREAS, Peter and Annette McGuinness, as the applicant [McGuinness III, Peter J. & Annette Y., owner of record], have made application to the Lewisboro Zoning Board of Appeals (the "ZBA") for an area variance of Article IV, Section 220-23(E) of the Lewisboro Town Code, on the subject premises located at 17 Schoolhouse Road, Waccabuc, New York, Tax Map Sheet 22, Block 10802, Lots 35 ("the property"), in the matter of a proposed pool deck that will have a northeast side yard setback of 10'-0" whereas 50' are required, a proposed pool that will have a northeast side yard setback of 11'-0" whereas 50' are required, a proposed recreation cottage west side patio that will have a northeast side yard setback of 39'-6" whereas 50' are required, a proposed recreation cottage west side overhang that will have a northeast side yard setback of 39'-6" whereas 50' are required, a proposed recreation cottage north side overhang that will have a northeast side yard setback of 23'-6" whereas 50' are required, a proposed east side storage enclosure that will have a northeast side yard setback of 6'-0" whereas 50' are required, a proposed patio on the east side of fireplace/grill that will have a northeast side yard setback of 12'-0" whereas 50' are required, a proposed fireplace/grill that will have a northeast side yard setback of 20'-0" whereas 50' are required, a proposed covered dining/sitting folly that will have a northeast side yard setback of 23'-0" whereas 50' are required, and proposed pool equipment that will have a northeast side yard setback of 10'-0" whereas 50' are required per Article IV Section 220-23E of the Town of Lewisboro Zoning Code, and

WHEREAS, this application for an area variance constitutes a Type II action under 6 NYCRR Part 617, and therefore, requires no further review under the State Environmental Quality Review Act (SEQRA), and

WHEREAS, a public hearing was held via the videoconferencing application Zoom (Meeting ID: 978 0603 4147) in this matter on July 29, 2020 and a site walk was conducted on July 25, 2020 to consider the application, after which a vote was taken with regard to the variance as set forth above, and

WHEREAS, The Lewisboro Zoning Board of Appeals has given careful consideration to the facts presented in the application at the public hearing based upon the criteria set forth in Section 267-b(3)(b) of the Town Law of the State of New York, and finds as follows:

1. The property is an approximate 23.261 acre parcel in the R-4A zoning district owned Peter and Annette McGuinness and is improved with a single-family residence.
2. The applicant wishes to install a pool deck that will have a northeast side yard setback of 10'-0" whereas 50' are required, thereby requiring a 40' northeast side yard setback, a pool that will have a northeast side yard setback of 11'-0" whereas 50' are required, thereby requiring a 39' northeast side yard setback, a recreation cottage west side patio that will have a northeast side yard setback of 39'-6" whereas 50' are required, thereby requiring a 10' -6" northeast side yard setback, a recreation cottage west side overhang that will have a northeast side yard setback of 39'-6" whereas 50' are required, thereby requiring a 10' -6" northeast side yard setback, a recreation cottage north side overhang that will have a northeast side yard setback of 23'-6" whereas 50' are required, thereby requiring a 26' -6" northeast side yard setback, a east side storage enclosure that will have a northeast side yard setback of 6'-0" whereas 50' are required, thereby requiring a 44' northeast side yard setback, a patio on the east side of fireplace/grill that will have a northeast side yard setback of 12'-0" whereas 50' are required, thereby requiring a 38' northeast side yard setback, a fireplace/grill that will have a northeast side yard setback of 20'-0" whereas 50' are required, thereby requiring a 30' northeast side yard setback, a covered dining/sitting folly that will have a northeast side yard setback of 23'-0" whereas 50' are required, thereby requiring a 27' northeast side yard setback and pool equipment that will have a northeast side yard setback of 10'-0" whereas 50' are required, thereby requiring a 40' northeast side yard setback.
3. There will be no undesirable change in the character of the neighborhood or detriment to nearby properties.
4. There is no practical alternative to the variance requested.
5. The Board found that the variance is not substantial.
6. There will not be an adverse effect or impact to the physical or environmental conditions of the neighborhood.
7. The Board found that the difficulty was not self-created.

WHEREAS, pursuant to Section 267-b(3)(c), the ZBA hereby determines that the minimum area variance necessary in this application is a variance of 40' from the required 50' northeast side yard setback thereby permitting the installation of the pool deck 10' -0" from the northeast side yard lot line, a variance of 39' from the required 50' northeast side yard setback thereby permitting the installation of the pool 11' -0" from the northeast side yard lot line, a variance of 10' -6" from the required 50' northeast side yard setback thereby permitting the installation of the recreation cottage west side patio 39' -6" from the northeast side yard lot line, a variance of 10' -6" from the required 50' northeast side yard setback thereby permitting the installation of the recreation cottage west side overhang 39' -6" from the northeast side yard lot line, a variance of 26' -6" from the required 50' northeast side yard setback thereby permitting the installation of the recreation cottage north side overhang 23' -6" from the northeast side yard lot line, a variance of 44' from the required 50' northeast side yard setback thereby permitting the installation of the east side storage enclosure 6' -0" from the northeast side yard lot line, a variance of 38' from the required 50' northeast side yard setback thereby permitting the installation of the

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Cal. No. 12-20-BZ

patio on the east side of fireplace/grill 12' -0" from the northeast side yard lot line, a variance of 30' from the required 50' northeast side yard setback thereby permitting the installation of the fireplace/grill 20' -0" from the northeast side yard lot line, a variance of 27' from the required 50' northeast side yard setback thereby permitting the installation of the covered dining/sitting folly 23' -0" from the northeast side yard lot line, a variance of 40' from the required 50' northeast side yard setback thereby permitting the installation of the pool equipment 10' -0" from the northeast side yard lot line.

NOW, THEREFORE BE IT RESOLVED, that the Lewisboro Zoning Board of Appeals hereby grants an area variance of 40' from the required 50' northeast side yard setback of Article IV, Section 220-23(E) of the Lewisboro Town Code in order to permit the installation of the pool deck 10' -0" from the northeast side yard lot line, a variance of 39' from the required 50' northeast side yard setback of Article IV, Section 220-23(E) of the Lewisboro Town Code in order to permit the installation of the pool 11' -0" from the northeast side yard lot line, a variance of 10' -6" from the required 50' northeast side yard setback of Article IV, Section 220-23(E) of the Lewisboro Town Code in order to permit the installation of the recreation cottage west side patio 39' -6" from the northeast side yard lot line, a variance of 10' -6" from the required 50' northeast side yard setback of Article IV, Section 220-23(E) of the Lewisboro Town Code in order to permit the installation of the recreation cottage west side overhang 39' -6" from the northeast side yard lot line, a variance of 26' -6" from the required 50' northeast side yard setback of Article IV, Section 220-23(E) of the Lewisboro Town Code in order to permit the installation of the recreation cottage north side overhang 23' -6" from the northeast side yard lot line, a variance of 44' from the required 50' northeast side yard setback of Article IV, Section 220-23(E) of the Lewisboro Town Code in order to permit the installation of the east side storage enclosure 6' -0" from the northeast side yard lot line, a variance of 38' from the required 50' northeast side yard setback of Article IV, Section 220-23(E) of the Lewisboro Town Code in order to permit the installation of the patio on the east side of fireplace/grill 12' -0" from the northeast side yard lot line, a variance of 30' from the required 50' northeast side yard setback of Article IV, Section 220-23(E) of the Lewisboro Town Code in order to permit the installation of the fireplace/grill 20' -0" from the northeast side yard lot line, a variance of 27' from the required 50' northeast side yard setback of Article IV, Section 220-23(E) of the Lewisboro Town Code in order to permit the installation of the covered dining/sitting folly 23' -0" from the northeast side yard lot line, a variance of 40' from the required 50' northeast side yard setback of Article IV, Section 220-23(E) of the Lewisboro Town Code in order to permit the installation of the pool equipment 10' -0" from the northeast side yard lot line, which is located in the R-4A zoning district pursuant to Section 267-b(4) of the Town Law of the State of New York:

VOTE:

Chairman Price	-	In Favor
Board Member Casper	-	In Favor
Board Member Infield	-	In Favor
Board Member Mandelker	-	In Favor
Board Member Rendo	-	In Favor

McGuiness
Cal. No. 12-20-BZ

VOTE:

Resolution carried by a vote of 5 to 0.



Robin Price, Jr., Chairman

Dated in South Salem, New York

This 18 day of September, 2020

Expiration: The variance shall deemed to authorize only the particular use or uses specified in the decision, and unless other provisions are set forth by the Zoning Board of Appeals in connection with its decision, shall expire if work is not initiated pursuant thereto within one (1) year of the date said decision is filed with the Office of the Town Clerk or if said use or uses shall cease for more than one (1) year. Applicants wishing to seek an extension are advised to make application therefore to the Zoning Board of Appeals sufficiently in advance of expiration so as to allow their request for extension to be calendared and heard by the Zoning Board of Appeals prior to the date of expiration. Any such application must include a chronological listing of work (which may include efforts to obtain other regulatory approvals) initiated pursuant to the variance.


STATE OF NEW YORK

)
) ss.:

COUNTY OF WESTCHESTER

I, Kara Sullivan, Secretary of the Zoning Board of Appeals, do hereby certify that the above is an excerpt/summary/fair representation of the Resolution adopted by the Zoning Board of Appeals of the Town of Lewisboro at a meeting of said Board on July 29, 2020.

Dated: 9/18/2020



Kara Sullivan
Secretary Zoning Board of Appeals