

**AGENDA PACKET**

**MARCH 19, 2019 MEETING**

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**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](mailto:planning@lewisborogov.com)**

**AGENDA**

**Tuesday, March 19, 2019**

**79 Bouton Road, South Salem**  
**Justice Court**

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

**I. DECISION**

**Cal #01-18WV, Cal #76-18WP**

**Potz Residence, 1178 Route 35, South Salem, NY 10590, Sheet 27, Block 10805, Lot 29 (Siegfried and Karen Potz, owners of record)**

**II. PUBLIC HEARINGS**

**Cal #08-17PB, Cal #16-17SW**

**Oakridge Commons, 450 Oakridge Common, South Salem, NY 10590, Sheet 49D, Block 9829, Lot 10 (Smith Ridge Associates, owner of record) - Application for Site Development Plan for installation of a car wash.**

**Cal #08-18PB, Cal #81-18WP, Cal #10-18SW**

**Waccabuc Country Club, 90 Mead Street, Waccabuc NY 10597, Sheet 22, Block 10802, Lots 61 & 37 (Waccabuc Country Club, owner of record) – Application for Site Development Plan relating to a chemical wash facility.**

**III. SKETCH PLAN REVIEWS**

**Cal #10-17PB**

**Mercedes Benz of Goldens Bridge, 321 Main Street, Goldens Bridge, NY 10526, Sheet 4E, Block 11135, Lots 1, 2, 3, 4, 6 & 7 (Charisma Holding Corp., owner of record); Sheet 4E, Block 11135, Lot 5 (Spencemorg, LLC., owner of record) and Sheet 4E, Block 11137, Lot 42 (Robert Castelli, owner of record) – Application for Site Development Plan for additions to existing auto showroom and service buildings, additional parking spaces and construction of a parking garage.**

**Cal# 1-19PB, Cal #2-19WP, and Cal #2-19SW**

**Goncalves vacant land, Duffy's Bridge Road, Katonah, NY 10536, Sheet 2, Block 10516, Lot 001 (Manuel Goncalves, owner of record) – Application for a single-family residence on an undeveloped lot.**

**IV. WETLAND PERMIT REVIEWS**

**Cal #66-17WP, Cal #12-17SW**

**Dedvukaj vacant land, 170 Elmwood Road, South Salem, NY 10590, Sheet 47, Block 10056, Lot 38 (Yuliya and Zef Dedvukaj, owners of record) – Application for a single-family residence, driveway, septic system and well.**

**Cal #09-19WP, Cal #05-19SW**

**Kranz vacant land, Elmwood Road, South Salem, NY 10590, Sheet 43, Block 10302, Lot 23 (Alexander Kranz, owner of record) – Application for a single-family residence, driveway, septic system and well.**

**Cal# 2-19PB, Cal #6-19WP, Cal #4-19SW**

**Ryan Residence, 40 Old Pond Road, South Salem, NY 10590, Sheet 33C, Block 11155, Lot 16, 17 & 44 (John and Kira Ryan, owners of record) – Application for the renovation of a three-bedroom single-family residence, construction of a new garage, septic system, sky bridge, driveway and pool.**

**V. WETLAND VIOLATION**

**Cal #04-18WV, Cal #14-19WP**

**Lordi Residence, 2 Cheyenne Court, Katonah, NY 10536, Sheet 10, Block 11152, Lot 140 (William and Marianne Lordi, owners of record)**

**VI. MINUTES OF January 15, 2019; MINUTES OF January 24, 2019 and MINUTES OF February 26, 2019.**

**VII. NEXT MEETING DATE: April 16, 2019**

**TO:** Town of Lewisboro Planning Board

**FROM:** Lewisboro Conservation Advisory Council

**SUBJECT:** Oakridge Commons,  
450 Oakridge Common  
South Salem, NY 10290  
Sheet 49D, Block 9829, Lot 10

**DATE:** March 7, 2019

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The Conservation Advisory Council (CAC) reviewed the applicant's submission document of the Pure Water filtration system which is understood to be the filtration system for the car wash water output.

The CAC continues to have concerns with two aspects of the Oakridge Commons car wash. The first concern is with information about the car wash filtration system. It is clear from the PureWater documentation provided, that the system is primarily designed to provide recycled clean water to the car wash and not for the quality of the water discharged to the Oakridge septic system and watershed.

The Oakridge Commons Car Wash Wastewater Review by Delaware Engineering places a significant weight on the documents provided by Oakridge Commons and its vendor PureWater. Given that there is no actual measurement of the effluent available, the CAC would like to have a well-defined inspection plan that includes inspections at regular intervals and measurement that meet EPA Standard Methods and by ELAP certified laboratory. The first such measurements should be done as early as possible to confirm the data provided. The CAC would like to see this included as a condition, should approval be granted by the Planning Board.

Despite the Delaware review the CAC continues to have the concerns stated below.

*"The primary purpose of the reclaim system is to provide quality water to the wash so that the water can be re-used within the wash..."*

*"The reclaim system is not designed to meet a specific effluent..."*

*"TSS, FOG, and BOD are typically the main concerns of municipalities receiving the effluent from a car wash. Given the type of processes used by PureWater Reclaim System, **there is no effect on total dissolved solids (TDS), pH or temperature. There may be little or no effect on certain chemicals dissolved in the water, emulsified or dissolved oils and non-settleable solids**".*

*“The discharge is sent to a separate, customer supplied wastewater treatment device, or directly to sewer or leach field. The PureWater Reclaim System does not treat or affect minerals or chemicals dissolved in the water, emulsified or dissolved oils, non-settleable solids, the BOD/COD content, ph, or temperature of the water that is discharged.”*

*“The estimated discharge quality from the PureWater Reclaim System may or may not be acceptable for direct discharge to sewer or a leach field”*

**(TSS = Total Suspended Solids, FOG = Fat, Oil and Grease and BOD = Biochemical Oxygen Demand which is an indicator of Organic content. Missing altogether is COD which is Chemical Oxygen Demand)**

The CAC presumes that the Oakridge sewer/septic system was designed for typical household effluents and not for chemicals (**unknown at this time**), wax, grease, oil and other substances used in a car wash. Therefore, the CAC is concerned that effluent coming from the car wash could pose a risk to the water system and watershed at Oakridge. **The CAC would like to have the Town of Lewisboro and its consultant for the Oakridge water and septic system determine whether that system was designed for these kinds of effluents and if the system can adequately remove them without damage to the water and the septic system itself.**

Second, the CAC has concerns about the outflow capacity calculations. The following excerpt from the January CAC minutes summarizes the CAC’s concern: *“The document titled “ Site Engineering Report” prepared by Redniss & Mead, Inc only addresses the waste water management for the addition of the day care center and does not address the impact of adding a car wash. Even so, this report indicates that with the addition of the day care center, the waste water system would be in the 80% + range of capacity using average daily out flow. If the calculation used maximum average out flow for the calculation, the waste water system would be over 90% of capacity, again without the addition of the car wash. The CAC would like the site engineering to include the impact of the car wash and use maximum average sewage out flow and the water demand.”*



## Delaware Engineering, D.P.C.

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28 Madison Avenue Extension  
Albany, New York 12203

Tel: 518.452.1290  
Fax: 518.452.1335

February 25, 2019

Town of Lewisboro Planning Board  
Jerome Kerner, Chairman, AIA  
79 Bouton Road  
South Salem, New York 10590

Re: Oakridge Commons Car Wash Wastewater Review

Dear Planning Board:

Delaware Engineering, D.P.C. has reviewed the proposed Oakridge Commons Car Wash plans and agrees with the proposed discharge concentrations and flow rates from the car wash effluent. Based on the information provided, the car wash effluent will not impact the Oakridge Wastewater Treatment Plant operations and the level of treatment will not be impacted by the added flows. Additionally, the proposed car wash effluent flows will not have an adverse impact to the quality of effluent from the treatment plant.

We have received confirmation that the proposed car wash will not use any detergents with phosphorus. This satisfies our concern regarding the Oakridge wastewater treatment plant meeting its phosphorous limits.

We have reviewed the system regarding chlorides. The proposed treatment process is an RO system that will remove dissolved solids like chlorides. Thus, we agree that the car wash effluent will have chloride concentrations within the normal range for municipal sanitary sewage (below 200 mg/l).

As noted previously, we agree with the estimated flows (347 gpd) that will be generated.

As noted previously, we agree with the estimated concentrations of FOG, TSS, BOD that are anticipated.

We recommend the Town inspect the installation of the treatment system and require that the solids handling tanks be pumped out every six months.

Additionally, a condition of operating the car wash should include a requirement to sample the car wash effluent quarterly. This sampling will allow enforcement if the actual discharge is not in conformance with the design expectations.

The quarterly sampling should be a six-hour representative composite sample collected per "EPA Standard Methods" and analyzed in an ELAP certified laboratory. The samples should be collected by a certified wastewater/water operator, engineer or other appropriate professional.

The parameters to be tested are FOG, TSS, BOD, ammonia, total phosphorus, and chlorides.

Sincerely,

Delaware Engineering, DPC

Roberto Flores, P.E.  
Senior Project Manager



March 11, 2019

Town of Lewisboro Planning Board  
Jerome Kerner, Chairman, AIA  
79 Bouton Road  
South Salem, New York 10590

Re: Oakridge Commons Car Wash Wastewater Review

Dear Planning Board:

Delaware Engineering, D.P.C. has received and reviewed the following documents:

- Drawings SP1C, SP2C prepared by Cross River Architects dated 6/27/18
- Drawings C1, C2 and C3 prepared by Cross River Architects dated 2/3/18
- Anticipated Carwash Water Use Calculations (Based on 20 washes per day) dated 2/5/18
- Letter from Bibbo Associates dated 12/28/18
- PurWater 100 Spec Sheet
- PurWater Reclaim System Design Letter
- Reclaim Effluent Quality Estimate for PurWater Reclaim Systems letter
- Safety Data Sheets for PrepPro1, UltraShine Max, Rainshield, Razberry Clearcoat, Blue Foaming Wax, Red Foaming Wax, and Yellow Foaming Wax.
- CleanTouch letter dated Feb 11, 2019 from Michael McKillip, Chemical Engineering Manager

Delaware Engineering, D.P.C. has reviewed the proposed Oakridge Commons Car Wash plans and agrees with the proposed discharge concentrations and flow rates of 347 gallons per day per the “anticipated Carwash Water Use Calculations (based on 20 washes per day). Based on the information provided, the car wash effluent will not impact the Oakridge Wastewater Treatment Plant operations and the level of treatment will not be impacted by the added flows. Additionally, the proposed car wash effluent flows will not have an adverse impact to the quality of effluent from the treatment plant.

We reviewed the Safety Data Sheets of the proposed car wash products and reviewed the letter from CleanTouch confirming that the proposed car wash will not use any detergents with phosphorus. This satisfies our concern regarding the Oakridge wastewater treatment plant meeting its phosphorous limits.

We have reviewed the system regarding chlorides. The proposed treatment process is an RO system that will remove dissolved solids like chlorides. Thus, we agree that the car wash effluent will have chloride concentrations within the normal range for municipal sanitary sewage (below 200 mg/l).

As noted previously, we agree with the estimated flows (347 gpd) that will be generated.

As noted previously, we reviewed the “Reclaim Effluent Quality Estimate for PurWater Reclaim Systems letter and agree with the estimate concentrations that are anticipated of BOD: 15-50 ppm, Free Oil and Grease (FOG): 10-25 ppm, and Total Suspended Solids (TSS): 15-100 ppm.



## DELAWARE ENGINEERING, D.P.C.

28 MADISON AVENUE EXTENSION · ALBANY, NEW YORK 12203  
(518) 452-1290 · (518) 452-1335 F.

We recommend the Town inspect the installation of the treatment system and require the that the solids handling tanks be pumped out every six months.

Additionally, a condition of operating the car wash should include a requirement to sample the car wash effluent quarterly. This sampling will allow enforcement if the actual discharge is not in conformance with the design expectations.

The quarterly sampling should be a six-hour representative composite sample collected per “EPA Standard Methods” and analyzed in an ELAP certified laboratory. The samples should be collected by a certified wastewater/water operator, engineer or other appropriate professional.

The parameters to be tested are FOG, TSS, BOD, ammonia, total phosphorus, and chlorides. The upward limits acceptable are as follows:

FOG – 25 mg/l  
TSS – 100 mg/l  
BOD – 50 mg/l  
Ammonia – 25 mg/l  
Phosphorus – 0.2 mg/l  
Chlorides – 200 mg/l

Sincerely,



Delaware Engineering, DPC

Roberto Flores, P.E.  
Senior Project Manager

## MEMORANDUM

TO: Chairman Jerome Kerner, AIA and  
Members of Lewisboro Planning Board

CC: Ciorsdan Conran  
Judson Siebert, Esq.  
Joseph Angiello

FROM: Jan K. Johannessen, AICP   
Joseph M. Cermele, P.E., CFM   
Town Consulting Professionals

DATE: March 14, 2019

RE: Site Development Plan, Wetland Permit and Stormwater Permit  
Waccabuc Country Club  
Chemical Wash Station & Bulk Storage Units  
90 Mead Street  
Sheet 22, Block 10802, Lot 61 & 37

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### PROJECT DESCRIPTION

The subject property is comprised of  $\pm 4.06$  acres of land and is part of a larger site owned by the Waccabuc Country Club. The property is located at 90 Mead Street and is within the R-4A Zoning District. The applicant is proposing the construction of a 30' x 105' chemical wash station for the maintenance of its equipment, drainage, utility and related improvements. Previously proposed bulk storage buildings appear to have been removed from the plan. The subject property contains a watercourse that is jurisdictional to the Town of Lewisboro and a portion of the wash building and the storage sheds are located within the 150-foot buffer.

### SEQRA

The proposed action has been preliminarily identified as a Type II Action and is categorically exempt from the State Environmental Quality Review Act (SEQRA).



**REQUIRED APPROVALS**

1. Site Development Plan Approval, a Wetland Permit and a Town Stormwater Permit is required from the Planning Board; a public hearing is required to be held.
2. The subject property is located within the Special Character Overlay District and the application should be referred to the Architecture and Community Appearance Review Council (ACARC) for review.
3. Coverage under the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002) is required.

**COMMENTS**

1. Full-size, signed and sealed versions of the latest site plans shall be submitted for review.
2. As shown on the reduce-sized plans provided in the Stormwater Pollution Prevention Plan (SWPPP), the Bulk Storage sheds are no longer proposed. These improvements shall be removed from all future submissions.
3. As previously requested, a zoning table shall be added to the plans and shall compare the existing and proposed condition to the requirements of the underlying zoning district; any required variances shall be noted (if any).
4. As requested, the plans were referred to the Building Inspector for review from a zoning perspective; a written report dated February 19, 2019 from the Building Inspector indicates that a number of zoning variances will be required for the chemical wash station and the bulk storage. As it appears the bulk storage is no longer proposed, those variances would no longer apply.
5. As the project is located within the New York City East of Hudson Watershed and given the proximity of the storage sheds to the watercourse, the applicant has consulted with the New York City Department of Environmental Protection (NYCDEP). It is our understanding that the Bulk Storage was not approved and is no longer proposed. The applicant should be prepared to discuss the outcome of the NYCDEP consultation with the Board and update the plans accordingly.
6. The Wetland Mitigation Plan shall be revised to reflect the current site layout.
7. As previously requested, the applicant shall provide a draft Notice of Intent (NOI) and MS4 SWPPP Acceptance Form for review.

8. As previously requested, the plan shall clearly illustrate limits of the existing and proposed gravel and paved drives.
9. As previously requested, the drives and access areas should be dimensioned to demonstrate adequate vehicle circulation and maneuvering.
10. As previously requested, provide all rim and invert elevations, pipe material and slope, as appropriate, for all storm and sewer improvements.
11. As previously requested, include a north arrow on all site plans.
12. As previously requested, the temporary silt fence shall be shown to be installed downgrade of all disturbances and parallel to the contours. Silt fence crossing access drives should be avoided and alternative measures, such as waterbars, utilized.
13. The applicant should clarify if the dual-fuel tank and containment pad is still being proposed. If so, illustrate it on the plan and provide construction details.
14. Provide construction details for all improvements, including, but not limited to, drainage structures and facilities, sewer service connection, pavement, pipe trench, pipe bollards, etc.
15. As previously requested, the pipe bollards shown on the building elevations should be located on the site plan.
16. As previously requested, the applicant should be prepared to discuss the chemical handling process (delivery, storage, sludge handling and waste removal).
17. As previously requested, any proposed site lighting (building or pole mounted) shall be illustrated and detailed on the plan.
18. The location of the existing and proposed water services shall be clarified. It appears the infiltration system is located over the existing water service. The water service shall be rerouted to avoid all existing utilities and maintain the required setbacks to the sewer system.

In order to expedite the review of subsequent submissions, the applicant should provide annotated responses to each of the comments outlined herein.

**PLANS REVIEWED, PREPARED BY MARCHETTI CONSULTING ENGINEERS, DATED FEBRUARY 4, 2019:**

- Site Utility & Drainage Plan (C-1)
- Grading Plan (C-2)
- Details & Sections (C-3, C-4)

Chairman Jerome Kerner, AIA  
March 14, 2019  
Page 4 of 4

**PLAN REVIEWED, PREPARED BY DOYLE COFFIN ARCHITECTURE, DATED JANUARY 31, 2019:**

- Architectural Site Plan (AS1.1)

**PLANS REVIEWED, PREPARED BY A2 LAND CONSULTING, LLC, DATED FEBRUARY 7, 2019:**

- Mitigation Plan (L1 and L2)

**DOCUMENTS REVIEWED:**

- Stormwater Pollution Prevention Plan (SWPPP), prepared by Marchetti Consulting Engineers, dated February 28, 2019
- Wall Mount LED Wall Sconce Gardco Specifications
- ACARC Resolution, dated December 12, 2018
- Base Map, prepared by Insite Engineering, dated January 31, 2019

JKJ/JMC/dc

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**TOWN OF LEWISBORO**

**NOTICE OF PUBLIC HEARING**

**NOTICE IS HEREBY GIVEN** that the Planning Board of the Town of Lewisboro, Westchester County, New York will convene a Public Hearing on March 19, 2019 at 7:30 p.m., or soon thereafter, at the Town Offices at 79 Bouton Road, South Salem, New York, regarding the following:

**Cal #08-18PB, #81-18WP, #10-18SW**

Applications for Site Development Plan Approval, Wetland Activity Permit Approval and Stormwater Activity Permit Approval for Waccabuc Country Club, 5 Carriage House Road, Waccabuc, NY 10597 (Sheet 22, Block 10802, Lot 61) and 8 Carriage House Road, Waccabuc, NY 10597 (Sheet 22, Block 10802, Lot 26) for the installation of a chemical mixing and wash facility building and associated wetland mitigation. Waccabuc Country Club is the owner of record of both parcels which are approx. 2.413 acres (Lot 61) and approx. 0.49 acres (Lot 26) respectively. The property on which the chemical mixing and wash facility building is to be sited is located within a Residential Four Acre (R-4A) Zoning District.

A copy of materials and proposed site documents may be inspected at the office of the Planning Board Administrator, 79 Bouton Road, South Salem, New York during regular Planning Board hours. Persons wishing to object to the application should file a notice of objection with the Planning Board together with a statement of the grounds of objection prior to the closing of the Public Hearing. All interested parties are encouraged to attend the Public Hearing and all will be provided an opportunity to be heard.

**PLANNING BOARD  
TOWN OF LEWISBORO  
By: Jerome Kerner  
Chair**

**Dated: February 27, 2019**

The Town of Lewisboro is committed to equal access for all citizens. Anyone needing accommodations to attend or participate in this meeting is encouraged to notify the Secretary to the Planning Board in advance.

STATE OF NEW YORK            )  
  ) ss.  
COUNTY OF WESTCHESTER    )

Re: Waccabuc Country Club

John D. Assumma, being duly sworn, deposes and says that he is over the age of eighteen years and works at 90 Mead Street, Waccabuc, NY 10597:

On March 1, 2019, I mailed a true copy of the annexed Notice of Public Hearing by mailing the same by certified mail, return receipt requested in a sealed envelope, with postage prepaid thereon, in a post-office or official depository of the U.S. Postal Service within the State of New York, addressed to the last know addresses of the addressees as indicated below:

Murray JR., Brian S. Hayes, Erin J.  
12 Post Office Rd.  
Waccabuc, NY 10597

Henshaw, Richard t. & Elizabeth L.  
102 Mead Street  
Cross River, NY 10518

Waccabuc Country Club CC  
5 Carriage House Road  
Waccabuc, NY 10597

Waccabuc Country Club  
90 Mead Street  
Waccabuc, NY 10597

Rosenberg, David S. & Martin, Kristina L.  
9 Post Office Road  
Waccabuc, NY 10597

Wilkes, Elizabeth W. Trust Elizabeth Stanton Wattles  
107 Mead Street  
Waccabuc, NY 10597

Valente, Carmine A. & Leslie K.  
11 Carriage House Road  
Waccabuc, NY 10597

Weigel, Mark & McGee Dyllan  
106 Mead Street  
Cross River, NY 10518

Dardani, Edward & Mary L.  
6 Post Office Road  
Waccabuc, NY 10597

Westchester Land Trust  
403 Harris Road  
Bedford, NY 10507

Waccabuc Landowners Council Inc  
2 Post Office Road  
Waccabuc, NY 10597

  
John D. Assumma, CCM

Sworn to before me this  
1<sup>st</sup> day of March, 2019

  
Notary Public

KAREN A GALASSO  
Notary Public - State of New York  
NO. 01GA6301751  
Qualified in Westchester County  
My Commission Expires Apr 21, 2022

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<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00

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Street and Apt. No., or PO Box No. **106 Mead St**

City, State, ZIP+4® **Cross River NY 10597**

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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Certified Mail Fee \$3.50

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<input type="checkbox"/> Return Receipt (hardcopy)	\$2.80
<input type="checkbox"/> Return Receipt (electronic)	\$0.00
<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00
<input type="checkbox"/> Adult Signature Required	\$0.00
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00

Postage \$0.55

Total Postage and Fees \$6.85

Sent To **Westchester Land Trust**

Street and Apt. No., or PO Box No. **403 Harris Road**

City, State, ZIP+4® **Beckford NY 10507**

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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<input type="checkbox"/> Return Receipt (hardcopy)	\$2.80
<input type="checkbox"/> Return Receipt (electronic)	\$0.00
<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00
<input type="checkbox"/> Adult Signature Required	\$0.00
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00

Postage \$0.55

Total Postage and Fees \$6.85

Sent To **Waccabuc Landowners**

Street and Apt. No., or PO Box No. **2 Post Office Rd**

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Certified Mail Fee \$3.50

Extra Services & Fees (check box, add fee as appropriate)

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<input type="checkbox"/> Return Receipt (electronic)	\$0.00
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<input type="checkbox"/> Adult Signature Required	\$0.00
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00

Postage \$0.55

Total Postage and Fees \$6.85

Sent To **Valente**

Street and Apt. No., or PO Box No. **11 Carriage House Rd**

City, State, ZIP+4® **Waccabuc NY 10597**

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Postage \$0.55

Total Postage and Fees \$6.85

Sent To **Dardani**

Street and Apt. No., or PO Box No. **6 Post Office Rd**

City, State, ZIP+4® **Waccabuc NY 10597**

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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<input type="checkbox"/> Return Receipt (electronic)	\$0.00
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<input type="checkbox"/> Adult Signature Required	\$0.00
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00

Postage \$0.55

Total Postage and Fees \$6.85

Sent To **Mr. Brian S. Murray, Jr. + Ms. Erin J. Hayes**

Street and Apt. No., or PO Box No. **12 Post Office Road**

City, State, ZIP+4® **Waccabuc, New York 10597**

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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**CROSS RIVER, NY 10518**

Certified Mail Fee \$3.50

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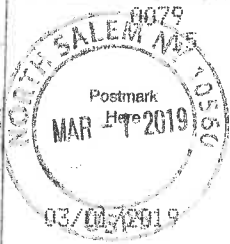
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<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00

Postage \$0.55

Total Postage and Fees \$6.85

Sent To **Mr. + Mrs. Henshaw**  
 Street and Apt. No., or PO Box No. **102 Mead Street**  
 City, State, ZIP+4® **Cross River, New York 10518**

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



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**WACCABUC, NY 10597**

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Extra Services & Fees (check box, add fee as appropriate)

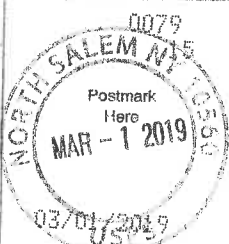
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<input type="checkbox"/> Adult Signature Required	\$0.00
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00

Postage \$0.55

Total Postage and Fees \$6.85

Sent To **Waccabuc Country Club**  
 Street and Apt. No., or PO Box No. **40 Mead St.**  
 City, State, ZIP+4® **Waccabuc NY 10597**

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



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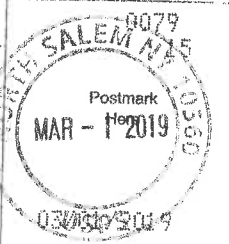
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<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00

Postage \$0.55

Total Postage and Fees \$6.85

Sent To **Wikes / Watties**  
 Street and Apt. No., or PO Box No. **107 Mead St.**  
 City, State, ZIP+4® **Waccabuc NY 10597**

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**WACCABUC, NY 10597**

Certified Mail Fee \$3.50

Extra Services & Fees (check box, add fee as appropriate)

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<input type="checkbox"/> Adult Signature Required	\$0.00
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00

Postage \$0.55

Total Postage and Fees \$6.85

Sent To **Mr. + Mrs. Henshaw, IV**  
 Street and Apt. No., or PO Box No. **102 Mead Street**  
 City, State, ZIP+4® **Waccabuc, New York 10597**

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



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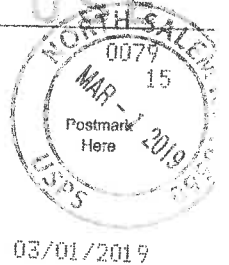
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<input type="checkbox"/> Adult Signature Required	\$0.00
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00

Postage \$0.55

Total Postage and Fees \$6.85

Sent To **Waccabuc Country Club**  
 Street and Apt. No., or PO Box No. **5 Carriage House Rd**  
 City, State, ZIP+4® **Waccabuc NY 10597**

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<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00

Postage \$0.55

Total Postage and Fees \$6.85

Sent To **Rosenberg**  
 Street and Apt. No., or PO Box No. **a Post Office RD**  
 City, State, ZIP+4® **Waccabuc NY 10597**

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| <input type="checkbox"/> Return Receipt (hardcopy)           | \$ |
| <input type="checkbox"/> Return Receipt (electronic)         | \$ |
| <input type="checkbox"/> Certified Mail Restricted Delivery  | \$ |
| <input type="checkbox"/> Adult Signature Required            | \$ |
| <input type="checkbox"/> Adult Signature Restricted Delivery | \$ |

Postage

\$

Total Postage and Fees

\$

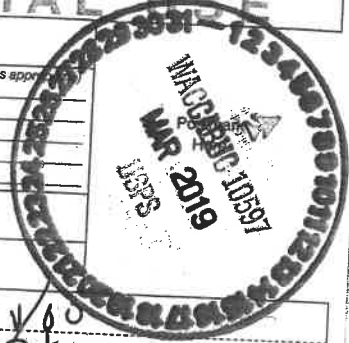
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Street and Apt. No., or PO Box No.

City, State, ZIP+4

PS Form 3800, April 2015 PSN 7530-02-000-9047

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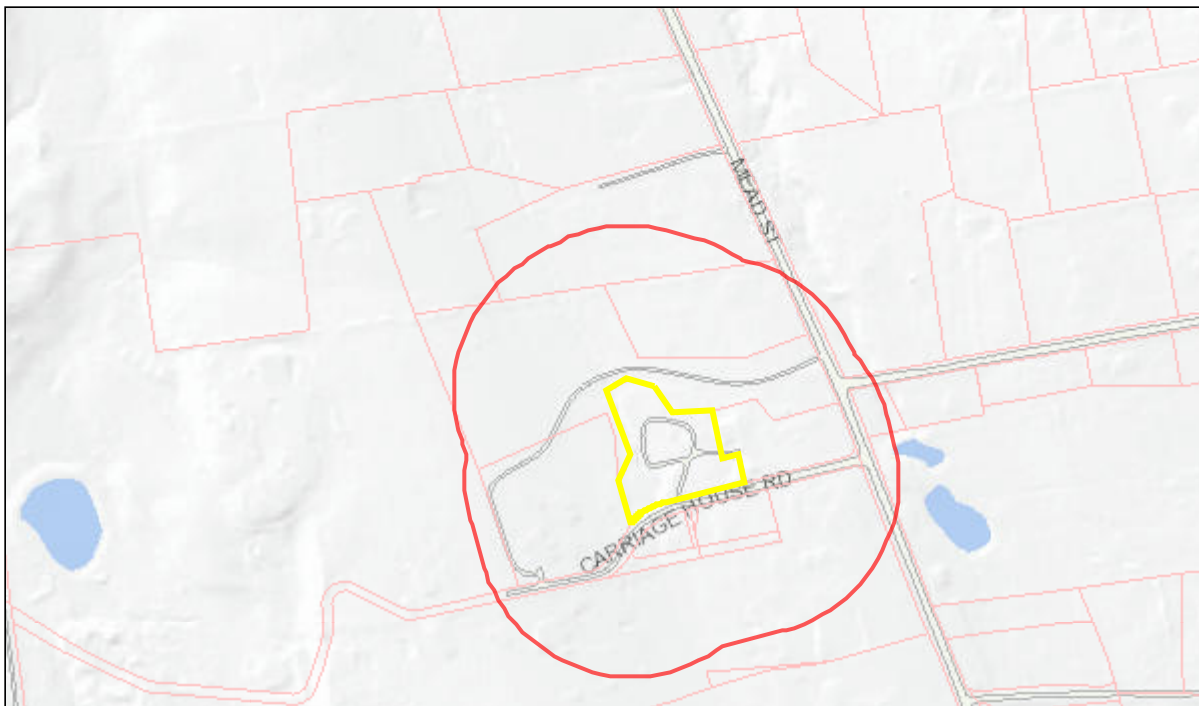
6.85  
Ronald  
74 Mead St  
Waccabuc MI 10597

# Tax Parcel Maps

**Address:** 5 CARRIAGE HOUSE RD

**Print Key:** 32.4-1-14

**SBL:** 03200400010140000000



**Disclaimer:**

This tax parcel map is provided as a public service to Westchester County residents for general information and planning purposes only, and should not be relied upon as a sole informational source. The County of Westchester hereby disclaims any liability from the use of this GIS mapping system by any person or entity. Tax parcel boundaries represent approximate property line location and should NOT be interpreted as or used in lieu of a survey or property boundary description. Property descriptions must be obtained from surveys or deeds. For more information please contact the assessor's office of the municipality.

You're searching: **Lewisboro** (Data: 2016)

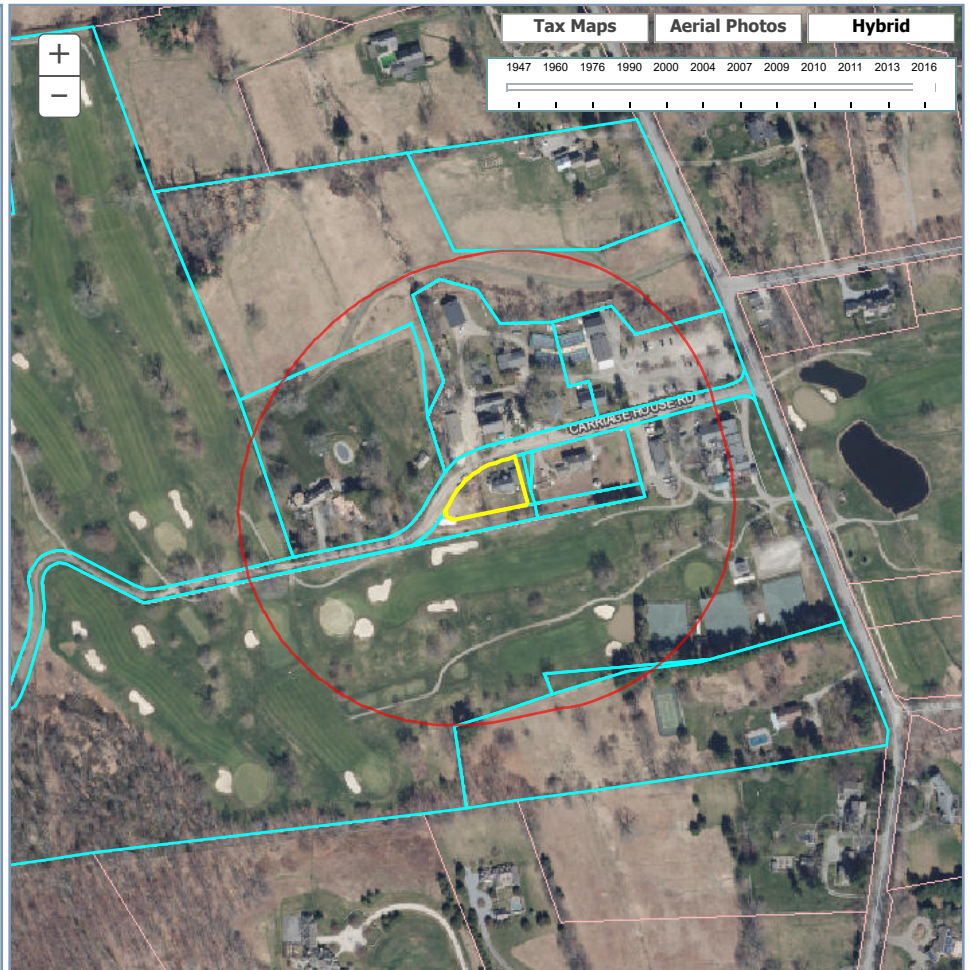
☐ Search by owner's name [?](#)

8 carri

Search

16 parcels were found. Click row for map. [Clear](#)

Owner	Prop Address	Printkey	SBL
VALENTE, CARMINE A. & LESLIE K.	11 CARRIAGE HOUSE RD	32.4-1-13	032004000000
n/a		42.2-1-7	042002000000
HENSHAW, RICHARD T. & ELIZABETH L.	102 MEAD ST	32.4-1-17	032004000000
WACCABUC COUNTRY CLUB	6 CARRIAGE HOUSE RD	42.2-1-5	042002000000
WACCABUC COUNTRY CLUB CO	5 CARRIAGE HOUSE RD	32.4-1-14	032004000000
WACCABUC COUNTRY CLUB	8 CARRIAGE HOUSE RD	42.2-1-2	042002000000
YOO, RONALD J. & LESLIE J.	74 MEAD ST	42.2-1-10	042002000000
WESTCHESTER LAND TRUST	CARRIAGE HOUSE RD	32.4-1-16	032004000000
WACCABUC COUNTRY CLUB (CLUB HOUSE)	90 MEAD STREET	42.2-1-8	042002000000
n/a		42.2-1-6	042002000000
WACCABUC COUNTRY CLUB CO	MEAD ST	42.2-1-9	042002000000
WACCABUC COUNTRY CLUB CO	CARRIAGE HOUSE RD	32.4-1-12	032004000000
WACCABUC COUNTRY CLUB CO., INC		42.2-1-1	042002000000
n/a		42.2-1-4	042002000000
WACCABUC COUNTRY CLUB CO	3 CARRIAGE HOUSE RD	32.4-1-15	032004000000
n/a		42.2-1-3	042002000000



# Affidavit of Publication

STATE OF NEW YORK }  
County of Westchester } SS:

PAT DOMMERMUTH being duly sworn  
says \*she is Principal Clerk of

The Bedford • Lewisboro • Pound Ridge  
**RECORD REVIEW**

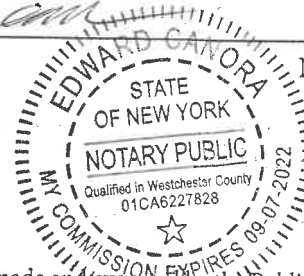
a newspaper published in the Town of Bedford, County of Westchester, and State of New York, and that a notice, of which the annexed printed notice is a copy, has been published in The Record-Review one time(s), and that such publication was made in the issue(s) of: 3-8-19

Pat Dommermuth

Pat Dommermuth, Principal Clerk

Sworn before me this 11 day  
of March 2019 }

Edward Cavora



Notary Public

\*This affidavit must be made and executed by the Publisher, Principal Clerk or Foreman of the composing room.

## TOWN OF LEWISBORO

### NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that the Planning Board of the Town of Lewisboro, Westchester County, New York will convene a Public Hearing on March 19, 2019 at 7:30 p.m., or soon thereafter, at the Town Offices at 79 Bouton Road, South Salem, New York, regarding the following:

Cal #08-18PB,  
#81-18WF #10-18SW

Applications for Site Development Plan Approval, Wetland Activity Permit Approval and Stormwater Activity Permit Approval for Waccabuc Country Club, 5 Carriage House Road, Waccabuc, NY 10597 (Sheet 22, Block 10802, Lot 61) and 8 Carriage House Road, Waccabuc, NY 10597 (Sheet 22, Block 10802, Lot 26) for the installation of a chemical mixing and wash facility building and associated wetland mitigation. Waccabuc Country Club is the owner of record of both parcels which are approx. 2.413 acres (Lot 61) and approx. 0.49 acres (Lot 26) respectively. The property on which the chemical mixing and wash facility building is to be sited is located within a Residential Four Acre (R-4A) Zoning District.

A copy of materials and proposed site documents may be inspected at the office of the Planning Board Administrator, 79 Bouton Road,

South Salem, New York during regular Planning Board hours. Persons wishing to object to the application should file a notice of objection with the Planning Board together with a statement of the grounds of objection prior to the closing of the Public Hearing. All interested parties are encouraged to attend the Public Hearing and all will be provided an opportunity to be heard.

PLANNING BOARD  
TOWN OF LEWISBORO  
By: Jerome Kerner  
Chair

Dated: February 27, 2019

The Town of Lewisboro is committed to equal access for all citizens. Anyone needing accommodations to attend or participate in this meeting is encouraged to notify the Secretary to the Planning Board in advance.

RR57-19





March 12, 2019

Jerome Kerner, Chairman  
Town of Lewisboro Planning Board  
PO Box 725  
20 North Salem Road, Suite L  
Cross River, NY 10518

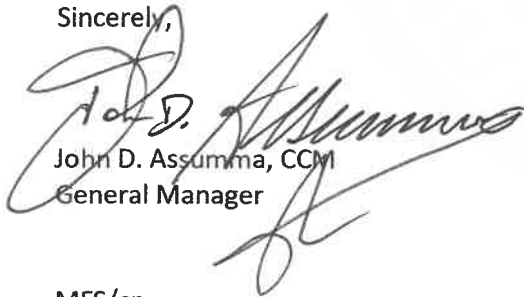
Re: Waccabuc Country Club  
Wetlands Activity Permit and Stormwater Permit Approval  
Cal #08-18PB, #81-18WP. #10-18SW

Dear Chairman Kerner and Members of the Planning Board:

On Behalf of the Applicants, enclosed please find an Affidavit of Posting and photographs evidencing the fact that a sign was posted on the above property noticing the Planning Board public hearing schedule for March 19, 2019.

Please incorporate the enclosed as part of the official record of the proceedings. Thank you for your assistance in this matter.

Sincerely,



John D. Assumma, CCM  
General Manager

MFS/cp  
Enclosure

cc: John Doyle  
Frank Connelly



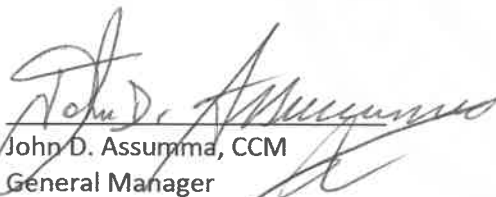
AFFIDAVIT OF POSTING

IN THE MATTER OF AN APPLICATION BY WACCABUC COUNTRY CLUB SEEKING SITE PLAN REVIEW,  
WETLANDS ACTIVITY PERMIT AND STORMWATER PERMIT APPROVALS FOR PROPOSED IMPROVEMENT  
TO 5 CARRIAGE HOUSE ROAD, WACCABUC, NY 10597 (Sheet 22 Block 10802, Lot 61) and 8 Carriage  
House Road, Waccabuc, NY 10597 (Sheet 22, Block 10802, Lot 26)


STATE OF NEW YORK                    )  
  ) ss.  
COUNTY OF WESTCHESTER        )

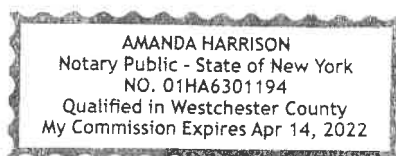
JOHN D. ASSUMMA, being duly sworn, deposes and says: I am over 18 years of age and reside in  
Westchester County, State of New York.

On March 12, 2019 a sign was posted at the entrance to the existing property for Waccabuc Country Club  
property noticing the March 19, 2019 Planning Board Public Hearing as was provided to me by the Town  
of Lewisboro Planning Department.

  
John D. Assumma, CCM  
General Manager  
Waccabuc Country Club

Sworn to before me this  
14<sup>th</sup> Day of March, 2019.

  
Notary Public







CARRIAGE  
HOUSE  
ROAD

**NOTICE**

This property is the subject of an application before the  
Lewistown Planning Board.  
A Public Hearing has been scheduled at which time all interested parties  
will be afforded an opportunity to be heard.

Please contact the Planning Board Administrator at  
914-763-5592

or visit  
[www.lewistownpa.com](http://www.lewistownpa.com)  
for additional information









CARRIAGE  
HOUSE  
ROAD

**NOTICE**

This property is the subject of an application before the  
Lewistown Planning Board.  
A Public Hearing has been scheduled at which time all interested parties  
will be afforded an opportunity to be heard.

Please contact the Planning Board Administrator at  
914-763-5592

or visit

[www.lewistownpa.com](http://www.lewistownpa.com)  
for additional information





# **STORM WATER POLLUTION PREVENTION PLAN (SWPPP)**

**For**

**NEW WASH FACILITY**

**at**

**WACCABUC COUNTRY CLUB**

**90 Mead St.**

**Waccabuc, NY 10597**

RECEIVED  
LEWISBORO  
MAR - 5 2019  
PLANNING  
BOARD

**Prepared by**

**Marchetti Consulting Engineers  
25 High Ridge Road  
Pound Ridge, NY 10576  
(914-764-9011 Fax 764-9012)**

**[info@marchetticonsultingengineers.com](mailto:info@marchetticonsultingengineers.com)**

**February 28, 2019**



## Post Construction Storm Water Management Practices

- a) A retention/infiltration basin will be constructed consisting of Storm Tech storage containers, a series of catch basins with 2' sumps and interconnected piping .
- b) A site plan is included in this report as C-1 , showing location of post construction storm water management practices.
- c) The detailed summary of sizing calculations is included as an Appendix III in this report. The sizing criteria is based on a 25 year, 24 hour event as detailed in Storm Water Management for Westchester County, Best Management Practices Manual Series.

The existing conditions and associated Curve Number (Cn) was calculated by the existing areas of the different surfaces ,that is , impervious and pervious on the site prior to construction. The post development Cn was calculated for the proposed additional impervious surfaces with the reduction in pervious areas accounted for.

Determining the Q , rainfall in inches ,for the two conditions allowed sizing the storage volume . A storage volume,  $V_s = 2,978$  cu. ft of storage is required. This is a conservative value as the infiltration rate for the retention facility was not factored into the calculation.

The  $V_s$  is contained in Storm Tech (SC-740) and the associated gravel and piping within the storm water collection and routing structures.

Dimensions and material specifications as well as installation details for each post construction storm water are shown in the C-1 thru C-4 plans Appendix I

The Operation and Maintenance plan of the new facility will include the following.

- Periodic inspection, on a monthly basis, of the catch basins and retention facility.
- Cleaning of all catch basins to remove sediment and litter on a 6 month basis, or sooner if required , as reported in the monthly inspection report.
- Inspection of retention facility thru observation ports of sedimentation on a yearly basis.

The responsible party for the long term operation, reporting and maintenance of each practice will be Patrick Hagan, Maintenance Supervisor, Waccabuc Country Club.

## **APPENDIX I**



Area of Interest (AOI)

Soil Map

Soil Data Explorer

Download Soils Data

Shopping Cart (Free)

[Printable Version](#)[Add to Shopping Cart](#)

Search

Map Unit Legend

Westchester County, New York (NY119)			
Westchester County, New York (NY119)			
Map Unit Symbol	Map Unit Name	Acres In AOI	Percent of AOI
PnB	Paxton fine sandy loam, 3 to 8 percent slopes	3.9	79.3%
WdB	Woodbridge loam, 3 to 8 percent slopes	1.0	20.7%
<b>Totals for Area of Interest</b>		<b>4.9</b>	<b>100.0%</b>

Soil Map


 Scale (not to scale)
**Warning: Soil Map may not be valid at this scale.**

You have zoomed in beyond the scale at which the soil map for this area is intended to be used. Maps were mapped at 1:12,000. The design of map units and the level of detail shown in the resulting scale. Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of map contrasting soils that could have been shown at a more detailed scale.

## **APPENDIX II**

**MARCHETTI CONSULTING ENGINEERS**  
25 High Ridge Rd  
Pound Ridge, NY 10576  
P (914) 764-8911  
F (914) 764-8912  
info@marchetticonsultingengineers.com

Drawings and Specifications, as Instruments of professional service, are and shall remain the property of the Engineer. Documents are not to be used, in whole or in part, for other projects or purposes or by any other parties than those authorized by contract without the specific written authorization of the Engineer. The use of this document is contingent upon payment to the engineer for services rendered. Non-payment shall give the Engineer the authority to bar document use by any and all parties. If owner disputes any Engineer's statements for services, it is required that the owner advise the engineer in writing with ten (10) days. Remaining, undisputed portions are due and payable upon receipt. The owner shall indemnify the Engineer against any claims alleging damages or delays incurred in the event the Engineer exercises the right to bar document use for non-payment. Contractors must check all dimensions on site. Only figured dimensions are to be worked from. Discrepancies must be reported immediately to the Engineer before proceeding.

**LEGEND**

C.O.	CLEAN OUT
R.L.	RAIN LEADER
***	EROSION CONTROL FENCING
EOH	ELECTRIC OVER HEAD
EUG	ELECTRIC UNDERGROUND
SAN	SANITARY WASTE
W	WATER
384	EXISTING CONTOUR
384	NEW CONTOUR
T.O.W.	TO OF WALL
B.O.W.	BOTTOM OF WALL
✕✕	CURB TO BE REMOVED
UD	CUT AREA
UD	UNDERDRAIN
TP-1	TEST PT-1 LOCATION
P-1	PERCOLATION TEST LOCATION

No.	DESCRIPTION	DATE
1	ISSUE FOR PRICING	2018-09-13
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	REVISION	2019-02-04
	REVISED SCOPE	2019-02-25

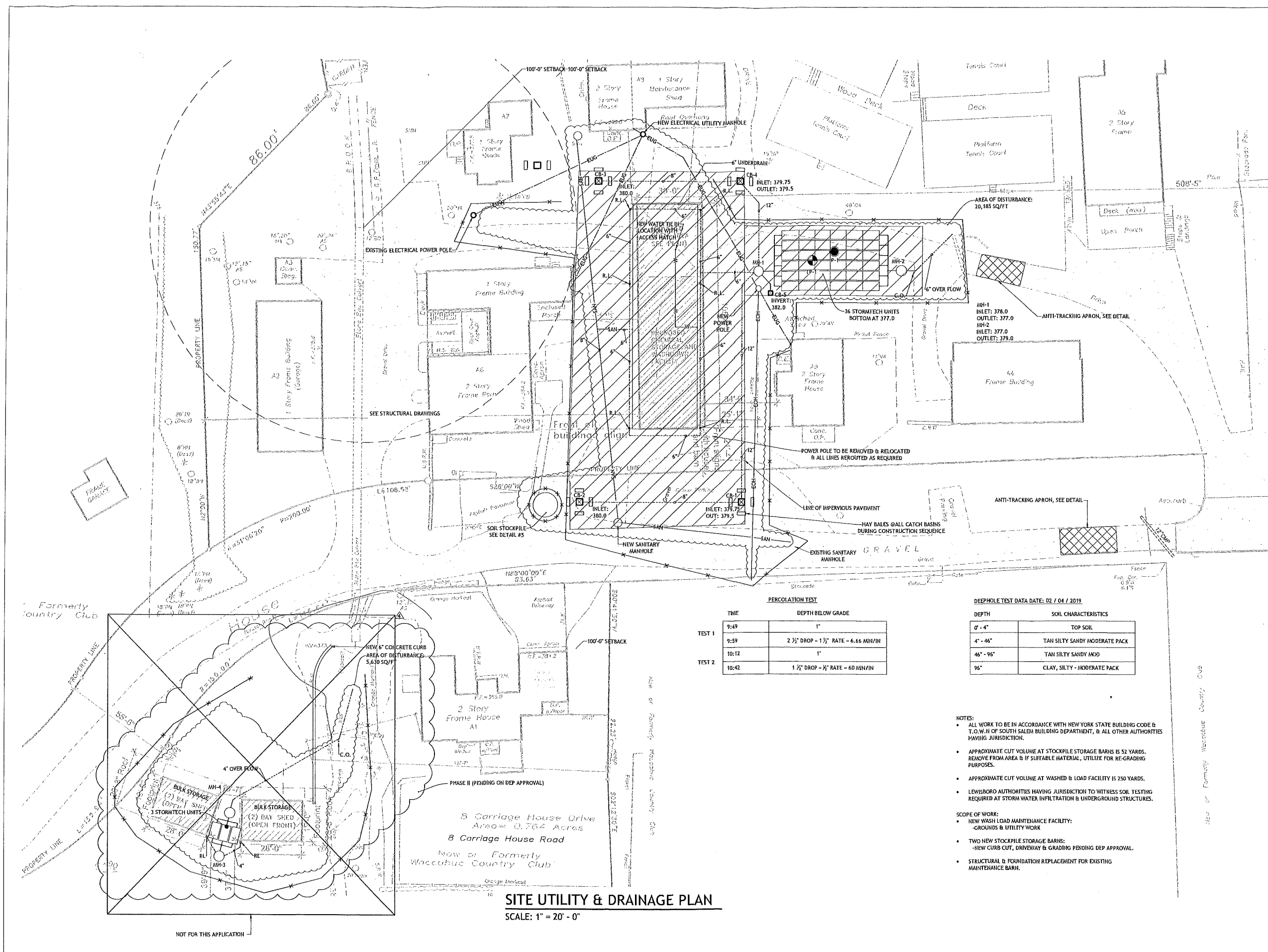
STAMP & SIGN:

**WACCABUC COUNTRY CLUB**  
90 MEAD STREET  
LEWISBORO, NY 10597  
**SITE UTILITY  
DRAINAGE, SOIL & EROSION  
CONTROL PLAN**

PROJECT NUMBER:	#2018-29
DATE:	2018-09-13
DRAWN BY:	EF/RN
CHECKED BY:	PGM

C-1

SCALE: AS NOTED



**PERCOLATION TEST**

TIME	DEPTH BELOW GRADE
TEST 1	9:49 1"
	9:59 2 1/2" DROP = 1 1/2" RATE = 6.66 MIN/IN
	10:12 1"
TEST 2	10:42 1 1/2" DROP = 1/2" RATE = 60 MIN/IN

**DEEPOHLE TEST DATA DATE: 02 / 04 / 2019**

DEPTH	SOIL CHARACTERISTICS
0' - 4"	TOP SOIL
4" - 46"	TAN SILTY SANDY MODERATE PACK
46" - 96"	TAN SILTY SANDY MOD
96"	CLAY, SILTY - MODERATE PACK

- NOTES:**
- ALL WORK TO BE IN ACCORDANCE WITH NEW YORK STATE BUILDING CODE & T.O.W.N OF SOUTH SALEM BUILDING DEPARTMENT, & ALL OTHER AUTHORITIES HAVING JURISDICTION.
  - APPROXIMATE CUT VOLUME AT STOCKPILE STORAGE BARN IS 52 YARDS. REMOVE FROM AREA & IF SUITABLE MATERIAL, UTILIZE FOR RE-GRADING PURPOSES.
  - APPROXIMATE CUT VOLUME AT WASHED & LOAD FACILITY IS 250 YARDS.
  - LEWISBORO AUTHORITIES HAVING JURISDICTION TO WITNESS SOIL TESTING REQUIRED AT STORM WATER INFILTRATION & UNDERGROUND STRUCTURES.
- SCOPE OF WORK:**
- NEW WASH LOAD MAINTENANCE FACILITY: -GROUNDS & UTILITY WORK
  - TWO NEW STOCKPILE STORAGE BARN: -NEW CURB CUT, DRIVEWAY & GRADING PENDING DEP APPROVAL.
  - STRUCTURAL & FOUNDATION REPLACEMENT FOR EXISTING MAINTENANCE BARN.

**SITE UTILITY & DRAINAGE PLAN**  
SCALE: 1" = 20' - 0"



MARCHETTI  
CONSULTING  
ENGINEERS

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LEGEND

C.O.	CLEAN CUT
R.L.	RAIN LEADER
* * *	EROSION CONTROL FENCING
EOH	ELECTRIC OVER HEAD
EXG	ELECTRIC UNDERGROUND
SAH	SANITARY WASTE
W	WATER
384	EXISTING CONTOUR
384	NEW CONTOUR
T.O.W.	TO OF WALL
B.O.W.	BOTTOM OF WALL
X X	CURB TO BE REMOVED
UD	CUT AREA UNDERDRAIN

No.	DESCRIPTION	DATE
1.	ISSUE FOR PRICING	2018-09-13
	REVISION	2018-10-10
	REVISION	2019-02-04
	REVISED SCOPE	2019-02-25

STAMP & SIGN:

WACCABUC COUNTRY CLUB  
90 MEAD STREET  
LEWISBORO, NY 10597

GRADING PLAN

PROJECT NUMBER: #2018-29  
DATE: 2018-09-13  
DRAWN BY: EF  
CHECKED BY: PGM

C-2

SCALE: AS NOTED

APPROXIMATE LOCATION OF EXISTING SEWAGE LINE

HATCHED LINE INDICATES REGRADING, CUT AND FILL AREA

NEW REGRADED PAVED DRIVEWAYS

EXISTING UTILITY POLE TO BE REMOVED. UTILITY LINES TO BE RELOCATED UNDERGROUND

APPROXIMATE LOCATION OF EXISTING 2" WATER SERVICE LINE

NEW PARKING AREA

ANTI-TRACKING APRON, SEE DETAIL

NEW REGRADED PAVED DRIVEWAYS @ EL. 382.0

FOUNDATION AND FLOOR STRUCTURE OF EXISTING MAINTENANCE BARN TO BE REPLACED

SLAB EL. 375.0

STONE CULVERT

ANCHOR POLE

ANCHOR

NEW CURB CUT

NEW GRAVEL DRIVEWAY

SEE S-1 FOR STRUCTURAL DETAILS

SLAB EL. @ 380.0

BULK STORAGE

SLAB ON GRADE SEE DETAIL ON STRUCTURAL PLAN

BULK STORAGE SLAB EL. 380.0

NEW STOCKPILE STORAGE BARN

SHADE AREA REPRESENTS CUT IN GRADING (TYP)

PENDING DEP. APPROVAL

1 1/2 STORY FRAME HOUSE

WELL

CARRIAGE HOUSE ROAD

NEW RETAINING WALL AND FENCE

SEE S-1 FOR STRUCTURAL DETAILS

T.O.W.: 384.0  
B.O.W.: 382.0

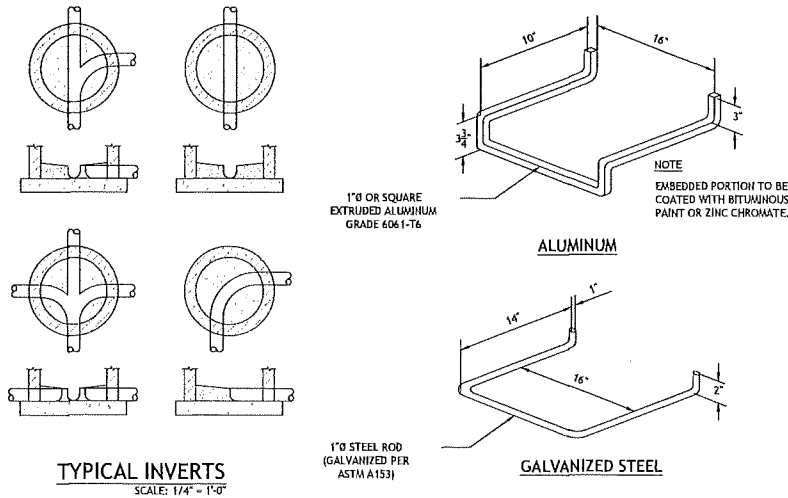
LINE OF EXISTING ROADWAYS TO BE REMOVED/RECONFIGURED

ANTI-TRACKING APRON, SEE DETAIL

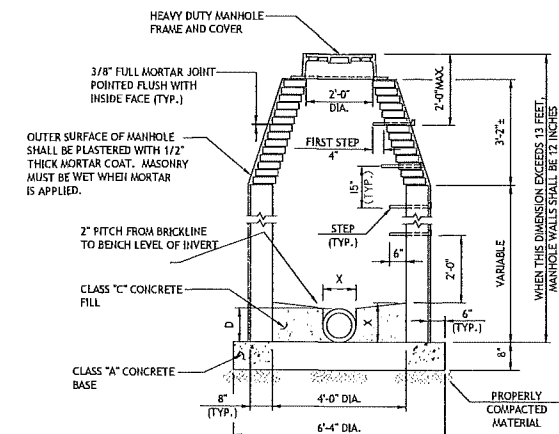
NOTES:  
ALL WORK TO BE IN ACCORDANCE WITH NEW YORK STATE BUILDING CODE & T.O.W.N. OF SOUTH SALEM BUILDING DEPARTMENT, & ALL OTHER AUTHORITIES HAVING JURISDICTION.  
APPROXIMATE CUT VOLUME AT STOCKPILE STORAGE BARN IS 52 YARDS. REMOVE FROM AREA & IF SUITABLE MATERIAL, UTILIZE FOR RE-GRADING PURPOSES.  
APPROXIMATE CUT VOLUME AT WASHED & LOAD FACILITY IS 225 YARDS.  
SCOPE OF WORK:  
NEW WASH LOAD MAINTENANCE FACILITY:  
-GROUNDS & UTILITY WORK  
TWO NEW STOCKPILE STORAGE BARN:  
-NEW CURB CUT, DRIVEWAY & GRADING  
STRUCTURAL & FOUNDATION REPLACEMENT FOR EXISTING MAINTENANCE BARN.

GRADING PLAN  
SCALE: 1" = 20' - 0"

NOT FOR THIS APPLICATION



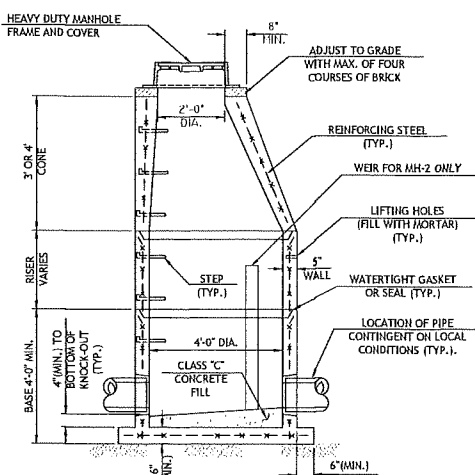
**TYPICAL INVERTS**  
SCALE: 1/4" = 1'-0"



- NOTES**
1. DIMENSIONS "X" VARY ACCORDING TO SIZE OF PIPE. "D" DENOTES OUTSIDE DIAMETER OF PIPE.
  2. WHERE 5 FT. & 6 FT. DIA. MANHOLES ARE SHOWN ON THE PLANS, THEY SHALL BE CONSTRUCTED USING PRECAST CONCRETE UNITS.

**STANDARD MANHOLE  
(LESS THAN 36\"/>**

**1 STANDARD MANHOLE**  
C-3 SCALE: N.T.S.



- NOTES**
1. 5 FT. & 6 FT. DIA. PRECAST BASES MAY BE USED WHEN REQUIRED DUE TO SIZE OR NUMBER OF PIPES AT THE MANHOLE. PRECAST REDUCERS WILL BE PLACED ABOVE THE 5' AND 6' BASES AS DIRECTED BY THE ENGINEER. WALL THICKNESS TO INCREASE 1 INCH FOR EACH 1 FOOT OF INSIDE DIAMETER INCREASE.
  2. FOR ADDITIONAL INFORMATION, SEE "STANDARD MANHOLE (LESS THAN 36\"/>

**STANDARD MANHOLE  
(PRECAST CONCRETE UNITS)**

**NOTES**

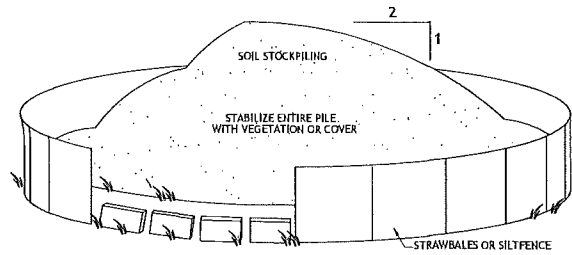
CASTINGS DESIGNATED AS "HEAVY DUTY" SHALL SAFELY WITHSTAND ASHTO HS20 HIGHWAY LOADING.

ALL STEEL TO BE STRUCTURAL GRADE CONFORMING TO ASTM A36.

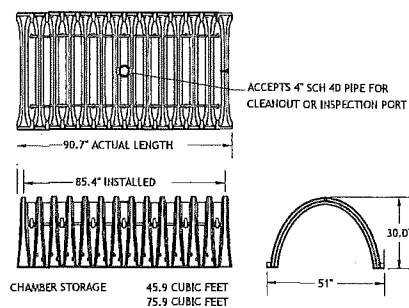
CAST IRON SHALL CONFORM TO ASTM A48 CLASS 30.

SEAT OF MANHOLE FRAMES, EDGES AND BOTTOM OF COVERS SHALL BE MACHINED TO A TRUE SURFACE SO COVERS WILL NOT BIND OR ROCK ON FRAMES.

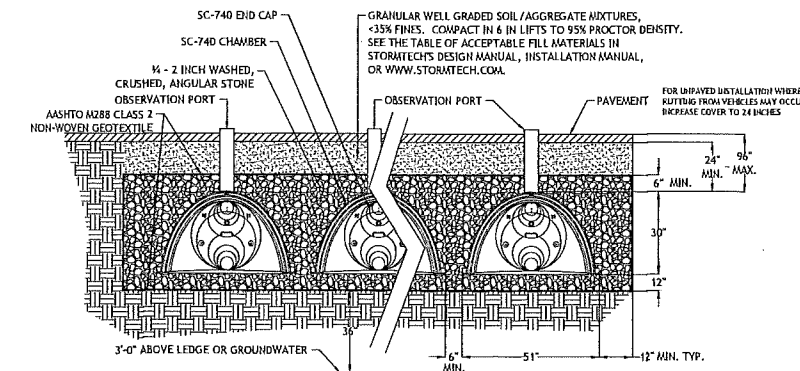
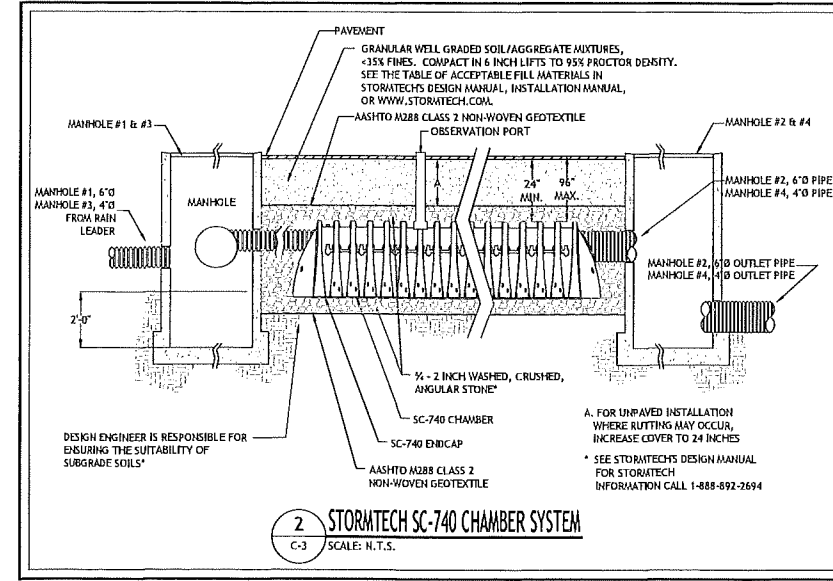
FIRST STEP FROM TOP OF MANHOLE SHALL BE SHORTENED SO AS TO EXTEND NOT MORE THAN 4\"/>



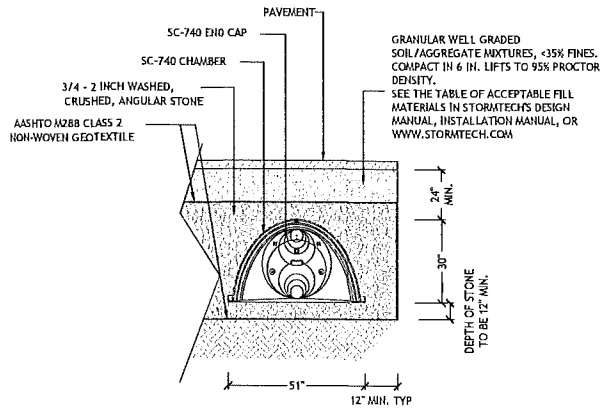
**5 STOCKPILE SOIL DETAIL**  
C-3 SCALE: N.T.S.



**4 STORMTECH SC-740 CHAMBER INFILTRATOR**  
C-3 SCALE: N.T.S.



**3 STORMTECH SC-740 CHAMBER SYSTEM TYPICAL CROSS SECTION DETAIL**  
C-3 SCALE: N.T.S.



**6 STORMTECH SC-740 CHAMBER SYSTEM TYPICAL CROSS SECTION DETAIL**  
C-3 SCALE: N.T.S.

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✱ ✱ ✱	EROSION CONTROL FENCING
EOH	ELECTRIC OVER HEAD
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No.	DESCRIPTION	DATE
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2	REVISION	2018-10-10
3	REVISION	2019-02-04
4	REVISED SCOPE	2019-02-25

STAMP & SIGN:

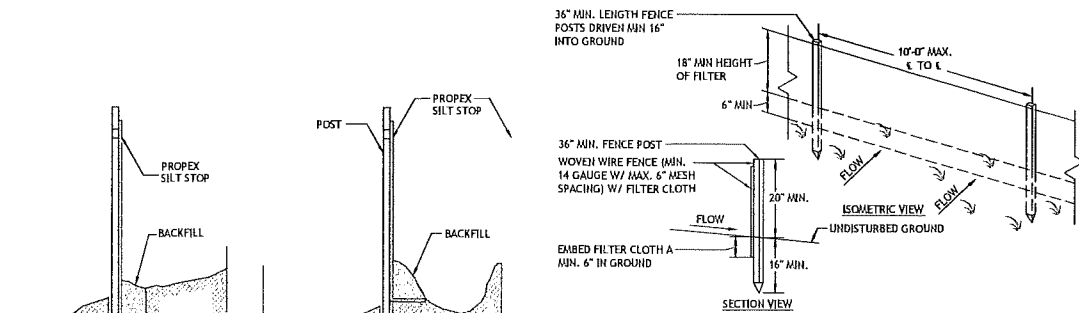
WACCABUC COUNTRY CLUB  
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LEWISBORO, NY 10597

**DETAILS & SECTIONS**

PROJECT NUMBER: #2018-29  
DATE: 2018-09-13  
DRAWN BY: EF  
CHECKED BY: PGM

**C-3**

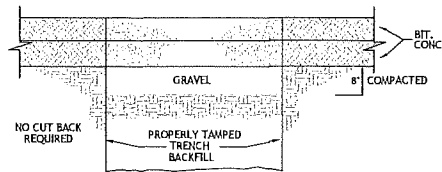
SCALE: AS NOTED



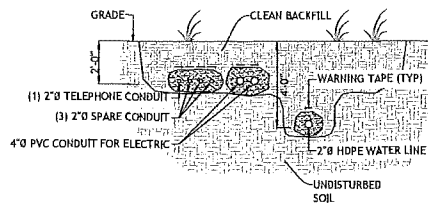
#### CONSTRUCTION SPECIFICATIONS

1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL EITHER "T" OR "U" TYPE, OR HARDWOOD.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 6" AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140H, OR APPROVED EQUIVALENT.
4. PREFABRICATED UNITS SHALL MEET THE MINIMUM REQUIREMENTS SHOWN.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

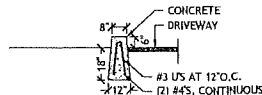
**7 SILT FENCE DETAIL**  
C-4 SCALE: N.T.S.



**8 GRAVEL AND DIRT ROADS**  
C-4 SCALE: N.T.S.



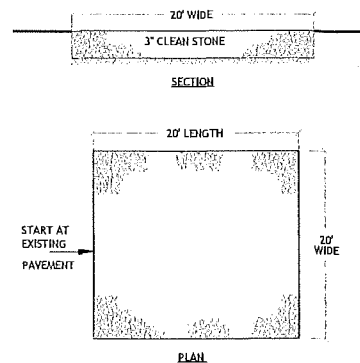
**9 TYPICAL UTILITY TRENCH DETAIL**  
C-4 SCALE: N.T.S.



**10 CURB DETAIL**  
C-4 SCALE: N.T.S.

NOTES:  
\* 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 CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT OF WAY MUST BE REMOVED IMMEDIATELY.

\* PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PERFORMED AFTER EACH RAIN.



**11 ANTI-TRACKING APRON**  
C-4 SCALE: N.T.S.

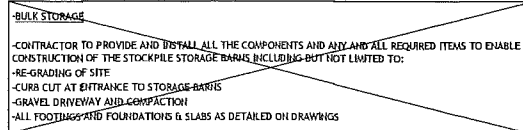
#### SCOPE OF WORK:

-THE FOLLOWING IS A LIST OF REQUIRED WORK AT THE SITE. ALL WORK TO BE IN ACCORDANCE WITH TOWN OF SOUTH SALEM BUILDING, PLANNING AND ZONING AND WATER CONTROL AGENCIES AS WELL AS STATE OF NEW YORK BUILDING CODES. THIS LIST IS NOT INTENDED BE ALL INCLUSIVE ALL REQUIRED WORK AND MATERIAL TO BE SUPPLIED AS TO PROVIDE COMPLETED STRUCTURES.

#### -CHEMICAL & WASH DOWN FACILITY

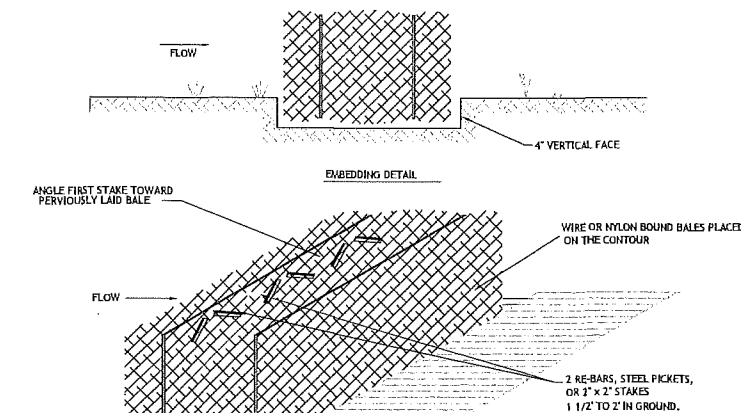
CONTRACTOR TO PROVIDE AND INSTALL ALL OF THE COMPONENTS AND ANY AND ALL OTHER REQUIRED ITEMS TO ENABLE CONSTRUCTION OF THE WASH & LOAD MAINTENANCE FACILITY INCLUDING BUT NOT LIMITED TO:

- ALL GRADING OF SITE AND ADJACENT DRIVE AREAS.
- ALL FOOTINGS AND FOUNDATIONS, ALL RETAINING WALLS AS DETAILED ON STRUCTURAL DRAWINGS FOR BUILDING.
- ALL PAVED AND UNPAVED AREAS CONSISTING OF BASE, GRAVEL, BASE AND FINISH ASPHALT TOPPING AS DETAILED AND AS REQUIRED.
- ALL UTILITY SERVICE HOOKUPS TO NEW BUILDING INCLUDING UNDERGROUND POTABLE WATER, SANITARY WASTE, STORM WATER AND ELECTRIC SERVICE WITH RELOCATION OF SAME AS REQUIRED.
- POTABLE WATER TO BE TIED TO EXISTING 2" MAIN AS SHOWN WITH HIGH DENSITY POLYETHYLENE (HDPE) PIPING.
- SANITARY TO BE TIED INTO EXISTING SERVICE WITH SCHEDULE 80 & 40 PVC.
- A COMPLETE STORM WATER RETENTION SYSTEM AND OVERFLOW WITH ALL STRUCTURES AND PIPING AS SHOWN ON PLANS PIPING TO BE PVC.
- A NEW ELECTRIC POWER POLE AND RELOCATION OF OVERHEAD ELECTRIC SERVICE TO UNDERGROUND SERVICE TO ADJACENT BUILDING. ALL POWER LINES TO BE COPPER IN SCHEDULE 40 OR 80 PVC.
- RETAINING WALL AND FENCING AS SHOWN



#### -FOUNDATION & SLAB INSTALLATION AT MAINTENANCE BUILDING

- CONTRACTOR TO PROVIDE AND INSTALL ALL REQUIRED SHORING, EXCAVATION, SLABS, FOUNDATIONS AS PER THE DRAWINGS AND NOT LIMITED TO:
- SHORING AND UNDERPINNING OF EXISTING BUILDING AND COLLAPSING FOUNDATION AREA
- EXCAVATION AND PLACEMENT OF FOOTINGS AND FOUNDATION AT SAME AREA AS SHOWN ON DRAWINGS
- LEVELING AND GRADING, COMPACTION, AND GRAVEL AND CONCRETE PLACEMENT AT GARAGE AREA OF MAINTENANCE BUILDING INCLUDING, ALL GRAVEL, VAPOR BARRIER, COMPACTION, CONCRETE AND REINFORCEMENT PLACEMENT.
- REPLACEMENT OF ALL EXISTING WOOD COLUMNS WITH 8"X8"X12" HSS STEEL COLUMNS ON 4'-0"X12" REINFORCED FOOTINGS.
- ALL REQUIRED CONNECTIONS OF EXISTING BUILDING TO NEW ELEMENTS



#### CONSTRUCTION SPECIFICATIONS

1. BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4'.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY STAKES OR RE-BARS DRIVEN THROUGH THE BALES. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
4. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

**12 HAY BALE ANCHORING DETAIL**  
C-4 SCALE: N.T.S.

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No.	DESCRIPTION	DATE
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2	REVISION	2018-10-10
3	REVISION	2019-07-04
4	REVISED SCOPE	2019-02-25

#### STAMP & SIGN:

WACCABUC COUNTRY CLUB  
90 MEAD STREET  
LEWISBORO, NY 10597

## DETAILS & SECTIONS

PROJECT NUMBER:	#2018-29
DATE:	2018-09-13
DRAWN BY:	EF
CHECKED BY:	PGM

C-4

SCALE: AS NOTED

## **APPENDIX III**

# MARCHETTI CONSULTING ENGINEERS

25 High Ridge Rd.  
Pound Ridge, NY 10576  
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JOB Waccabuc Stormwater  
SHEET NO. (1) OF (2)  
CALCULATED BY PGM DATE 2/1/19  
CHECKED BY PGM DATE 2/28/19  
SCALE NTS

## EXISTING Site CONDITIONS

Total Area = 2.413 Acres = 105,110 FT<sup>2</sup>  
TAX Lot 61 = HYDROLOGIC SOIL GROUP = C

EXISTING BUILDINGS = 15

### I BLDG

- MAINTENANCE STORAGE SHED
- Chemical Shed
- MAINTENANCE BUILDING
- 2 STORY HOUSE
- FRAME BLDG
- PLATFORM TENNIS COURTS
- 2 STORY FRAME HOUSE
- TREATMENT FACILITY

AREA (FT<sup>2</sup>)

2,128 #

138 #

2,445 #

1,177 #

2,251 #

3,655 #

2,363 #

2,145 #

Total = 17,226 FT<sup>2</sup>

### II EXISTING GRAVEL DRIVEWAYS

= 15,120 FT<sup>2</sup>

### III GRASS AREAS (OPEN SPACES) (FAIR)

= 72,764

EXISTING CN VALUES =

BUILDING FOOTPRINTS - CN = 98

GRAVEL AREAS - CN = 89

GRASS AREAS - CN = 79

CN

EXISTING

$$= \frac{17,226(98) + 15,120(89) + 72,764(79)}{105,110}$$

$$= \frac{1,688,148 + 1,345,680 + 5,748,356}{105,110}$$

$$= \frac{8,782,184}{105,110} = \underline{\underline{83.5}}$$

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JOB Waccabuc Stormwater

SHEET NO. (2) OF (6)

CALCULATED BY Pgm DATE 2/1/19

CHECKED BY Pgm DATE 2/28/19

SCALE NTS

Proposed Site Conditions

$$\text{Total Area} = 2.413 \text{ ACRES} = 105,110 \text{ FT}^2$$

I. EXISTING & PROPOSED BUILDINGS

$$\text{EXISTING} = 17,221 \text{ FT}^2$$

$$\text{PROPOSED} = 3,015 \text{ FT}^2$$

$$\text{TOTAL} = 20,241 \text{ FT}^2 \quad C_N = 98$$

II EXISTING & PROPOSED GRAVEL DRIVES = 28,583 FT<sup>2</sup>

$$= 28,583 \text{ FT}^2 \quad C_N = 89$$

III GRASS AREAS = 56,286 FT<sup>2</sup>  $C_N = 79$

$$C_{N(\text{NEW})} = \frac{20,241(98) + 28,583(89) + 56,286(79)}{105,110}$$

$$= \frac{1,983,618 + 2,543,807 + 4,446,594}{105,110}$$

$$C_{N(\text{NEW})} = \frac{8,974,019}{105,110} = 85.3$$

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JOB Waccabuc Stormwater

SHEET NO. (3)

OF (6)

CALCULATED BY PQM

DATE 2/1/19

CHECKED BY PQM

DATE 2/23/19

SCALE NTS

RAINFALL Calculation

25 year Storm = 5.7" per 24 hour Period

$$Q = \frac{(P - I_a)^2}{(P - I_a) + S}$$

Q = Runoff (in)

P = Rainfall (in)

S = Potential max retention after runoff (in)

I<sub>a</sub> = Initial Abstraction (in)

$$I_a = 0.25$$

$$Q = \frac{(P - .25)^2}{(P - .25) + S}$$

$$S = \frac{1000}{C_n} - 10$$

$$S_{\text{EXIST}} = \frac{1000}{83.5} - 10 = 1.976$$

$$C_n_{\text{EXIST}} = 83.5$$

$$P = 5.7"$$

$$Q_{\text{EXIST}} = \frac{(5.7 - .2(1.976))^2}{5.7 + .8(1.976)} = \frac{(5.7 - .395)^2}{5.7 + 1.581} = \frac{28.14}{7.281} = 3.86"$$

$$= \frac{28}{7.281} Q = \underline{\underline{3.86''}} \text{ EXISTING}$$

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JOB Waccabuc Stormwater  
SHEET NO. (4) OF (6)  
CALCULATED BY PQM DATE 2/1/19  
CHECKED BY PQM DATE 2/28/19  
SCALE NTS

$$Q_{\text{proposed}} = \frac{(P - .25)^2}{(P + .85)}$$

$$S = \frac{1000}{\text{Proposed CN}} - 10$$

$$= \frac{1000}{85.3} - 10 = 1.723$$

$$Q_{\text{proposed}} = \frac{(5.7 - .2(1.723))^2}{5.7 + .8(1.723)} = \frac{(5.355)^2}{7.078} = 4.05''$$

$$\underline{Q_{\text{proposed}} = 4.05''}$$

$$\text{Volume to be stored} = V_s = \Delta V \times 105,110 \text{ ft}^2$$

$$= \frac{4.05'' - 3.86''}{12} \times 105,110 \text{ ft}^2 = \underline{1,664.2 \text{ ft}^3} \text{ Volume}$$

• with a 12" stone base

$$\text{Volume} = 81.7 \text{ ft}^3 / \text{SC-740 chambers}$$

$$\# \text{ of Units Required} = \frac{1,664.2 \text{ ft}^3}{81.7 \frac{\text{ft}^3}{\text{UNIT}}} =$$

20.36 units  
REQUIRED

Impervious Area increased. See next page (5)



MARCHETTI CONSULTING ENGINEERS

25 High Ridge Rd.  
Pound Ridge, NY 10576  
info@marcchetticonsultingengineers.com  
(914) 764-9011 Fax (914) 764-9012

JOB Waccabuc Stormwater  
SHEET NO. (5) OF (6)  
CALCULATED BY PQM DATE 2/1/19  
CHECKED BY PQM DATE 2/28/19  
SCALE NTS

~~GRAVEL~~ DRIVEWAYS changed to Paved.

AREAS of EXISTING GRAVEL DRIVES converted to impervious pavement

= Net AREA =  $17,170 \text{ ft}^2 - 500 \text{ ft}^2$

=  $16,670 \text{ ft}^2$  of additional impervious surface from gravel to pavement

EXISTING Pre developed  $C_n = 83.5$

Proposed Post Developed  $C_n =$

EXISTING & proposed impervious AREA =

	$C_n$
BUILDINGS = $20,241 \text{ ft}^2$	98
IMPERVIOUS PAVEMENT = $16,670 \text{ ft}^2$	98
GRAVEL DRIVES = $11,913 \text{ ft}^2$	89
GRASS AREAS = $56,286$	79 TYPE C HSG

$$C_{n(\text{post})} = \frac{(20,241 + 16,670)98 + 11,913(89) + 56,286(79)}{105,110}$$

$$= \frac{3617,278 + 1060257 + 4446594}{105,110}$$

$$C_n = 86.8$$

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JOB

Waccabuc Stormwater

SHEET NO.

6

OF

6

CALCULATED BY

Pgm

DATE

2/11/9

CHECKED BY

Pgm

DATE

2/28/9

SCALE

N.T.S.

$$\phi_{\text{PROPOSED}} = \frac{(P - .2S)^2}{P + .8S}$$

w/ GRAVEL TO IMPERVIOUS

$$S = \frac{1000}{CN} - 10$$

$$= \frac{1000}{86.8} - 10 = 1.52$$

$$\phi = \frac{(5.7 - .2(1.52))^2}{5.7 + .8(1.52)} = \frac{29.12}{6.916} = 4.2''$$

$$\text{Volume to be stored} = \left( \frac{4.2 - 3.86}{12} \right) \times 105,110$$

$$V_s = \Delta V \times A$$

$$V_s = 2,978 \text{ ft}^3 \text{ for 25 yr storm}$$

Based on SC-740 Stormtech Units w/ 12" GRAVEL BASE

$$= 81.7 \text{ ft}^3 / \text{chamber}$$

$$= 36.45 \text{ units}$$

36 Units provided & balance of storage is contained in MANIFOLDS, GRAVEL base & piping.

- **Main Office**  
445 Hamilton Avenue  
White Plains, NY 10601  
Phone 914.946.4777  
Fax 914.946.6868
- **Mid-Hudson Office**  
200 Westage Business Center  
Fishkill, NY 12524  
Phone 845.896.0120
- **New York City Office**  
505 Park Avenue  
New York, NY 10022  
Phone 646.794.5747

March 11, 2019

VIA FEDERAL EXPRESS

**JUDSON K. SIEBERT**  
Principal Member

Honorable Peter Parsons, Supervisor  
and Members of the Town Board  
Town of Lewisboro  
Town House  
79 Bouton Road  
South Salem, New York 10590

Re: Celebrity Westchester Realty, LLC –  
Petition for Zoning Map Amendment  
(Mercedes Benz of Golden Bridge, 321 Main Street)

Dear Supervisor Parsons and Members of the Town Board:

I write on behalf of the Planning Board of the Town of Lewisboro (the “Planning Board”) concerning the above-referenced Petition for an Amendment to the Zoning Map of the Town of Lewisboro (the “Zoning Petition”). Specifically, I write to request that the Town Board provide comments to the Planning Board concerning the Zoning Petition and the potential environmental impacts of the map change proposed therein. The Zoning Petition has been submitted as part of a project to expand and redevelop the Mercedes Benz dealership located on Route 22 in Goldens Bridge, New York (the “MB Project”). The Planning Board serves as lead agency under the State Environmental Quality Review Act (“SEQRA”) with regard to the MB Project, and seeks the Town Board’s comments in this capacity.

Pursuant to SEQRA and its implementing regulations, the Town Board cannot act upon the Zoning Petition until either (1) a SEQRA negative declaration is issued by the Planning Board, as lead agency, for the MB project or (2) in the event a SEQRA positive declaration is issued, a Final Environmental Impact Statement is accepted and a Findings Statement adopted by the Planning Board, as lead agency.

Consequently, the Planning Board requests these comments from the Town Board, a SEQRA involved agency, in order to inform and facilitate the lead agency’s evaluation of the environmental impacts of the MB Project. Input from the Town Board will assist the Planning Board in discharging its SEQRA responsibilities in a fully informed manner.

Honorable Peter Parsons

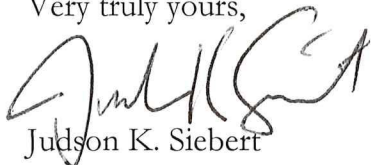
March 11, 2019

Page 2

The MB project is presently before the Planning Board in the form of an application for site development plan approval. The Planning Board requests that the Town Board provide its comments at its earliest convenience, so that SEQRA processes may be undertaken and the site development plan application proceed.

On behalf of the Planning Board, I thank the Town Board for its consideration of this request.

Very truly yours,

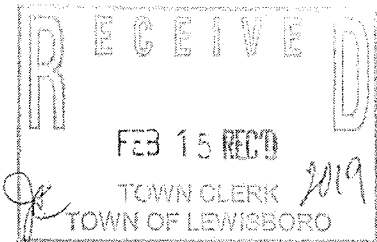


Judson K. Siebert

JKS/lt

cc: Honorable Janet Anderson, Planning Board Chairperson  
Ms. Ciorsdan Conran, Planning Board Secretary  
Anthony Mole, Esq.  
Jan K. Johannessen, AICP  
Robin Price, Jr., ZBA Chairman  
Michael F. Sirignano, Esq.

TOWN BOARD OF THE TOWN OF LEWISBORO  
COUNTY OF WESTCHESTER: STATE OF NEW YORK



-----X  
In the Matter of the Application of

CELEBRITY WESTCHESTER REALTY, LLC

**PETITION FOR  
ZONING MAP  
AMENDMENT**

For amendments to the Zoning Map of the Town of Lewisboro changing the Zoning Designation of Parcels Zoned RB to GB affecting 5 Anderson Lane, also designated as Sheet 4E, Block 11135, Lot 5 and 307 Route 22, also as designated Sheet 4E, Block 1135, Lot 9; and Parcel Zoned R-1/2A to GB affecting 46 Green Hill Road also designated as Sheet 4E, Block 11137, Lot 42.

-----X

CELEBRITY WESTCHESTER REALTY, LLC (the "Petitioner") hereby petitions the Town Board of the Town of Lewisboro for amendments to the Zoning Map pursuant to New York State Town Law Sections 264 and 265 as follows:

The Petitioner

1. Petitioner CELEBRITY WESTCHESTER REALTY, LLC is a limited liability company duly organized and existing under the laws of the State of New Jersey with offices at 130 Route 10 West, Whippany, New Jersey 07981 ("Celebrity").
2. Petitioner is the Contract Vendee of three separate tax lots (5, 9 and 42) as more particularly described below.
3. Petitioner intends to incorporate Lots 5, 9 and 42 into its adjoining automobile dealership property as part of a modernization and redesign of Mercedes-Benz of Goldens Bridge's sales and service business that has been in continuous operation at 321 Main Street since 1969.

### The Premises

4. The three parcels to be re-zoned are shown and designated on the Tax Assessment Map of the Town of Lewisboro as Sheet 4E, Block 11135, Lots 5 and 9 and as Sheet 4E, Block 11137, Lot 42.

5. Lot 5 is comprised of approximately 0.350 acres located at 5 Anderson Lane, Goldens Bridge, New York ("Lot 5").

6. Lot 9 is a corner lot containing 4,640± s.f. located at 307 Route 22, Goldens Bridge, New York ("Lot 9").

7. Lots 5 and 9 are presently within the RB zoning district but they immediately abut the GB zoning district and the Mercedes Benz dealership to the north.

8. Lot 42 is comprised of 1.350 acres located at 46 Green Hill Road, Goldens Bridge, New York ("Lot 42"). Lot 42 is presently within the R-1/2A zoning district but it too immediately abuts the GB zoning district and the Mercedes Benz dealership to the west.

9. An earlier expansion project proposed by the prior owner (Charisma Holding Corp.) was approved by the Planning Board on October 11, 2011 after several area variances were granted by the Zoning Board of Appeals under Resolution (Cal. No. 18-10-BZ) dated May 11, 2011. Said earlier project also obtained approvals from other outside agencies such as NYSDEC, NYCDEP, NYSDOT and the Westchester County Department of Health. However, the prior owner never began construction due to

economic constraints, as well as internal decisions and disagreements with Mercedes-Benz USA. In 2014, the Planning Board granted Amended Site Development Plan Approval for the demolition of two abandoned structures, site parking and landscaping improvements.

10. Celebrity is now before the Planning Board for a modified re-development of the dealership on a larger site that will include Lots 5, 9 and 42. The current Project resembles the previously approved design but will utilize more acreage for two additional parking areas as well as an expansion and modernization of the showroom and service buildings; construction of a new parking garage to be attached to the showroom; installation of additional parking on adjacent parcel Lot 42; reconfiguration and reduction of the number of existing curb cuts on NYS Route 22 and existing parking; and installation of improved drainage, lighting, landscaping and other ancillary improvements. Celebrity acquired the rights to purchase the three new lots in order for the Project to meet its and Mercedes-Benz USA design requirements.

11. The Project as currently proposed includes a showroom expansion of 38,500 s.f. to the existing 12,000 s.f. showroom building, bringing the new showroom building total to 50,500 s.f. A 2,700 s.f. expansion is proposed to the existing 17,500 s.f. service building, bringing the new service building total to 20,250 s.f. (the service building was planned to be demolished under the previous approval). A new 3-level parking garage is proposed to be attached to the showroom building. The total net increase in building area on the site is approximately 41,200 s.f. As noted above, an on-grade vehicle inventory storage area is proposed on Lot 42 to the east of the existing dealership.

12. Due to the typography and shape of the property, and the location of the existing showroom and service building, the recently modified design of the Project requires many of the same or similar variances from the Zoning Board of Appeals and approvals from the same outside agencies previously granted. The Planning Board has also referred the Project to the Zoning Board of Appeals to consider the variances needed.

#### The Proposed Rezoning

13. Petitioner respectfully requests the Town Board to rezone Lots 5 and 6 from RB to GB and Lot 42 from R-1/2A to GB to enable their incorporation and use as part of modernized and redesigned Mercedes-Benz dealership on approximately 5 acres. Extending the existing GB zoning district to include Lots 5, 9 and 42 will not adversely affect or impact the residences in the abutting R-1/2A district. Lot 42 will be used for vehicle inventory storage and will be connected to the dealership by a new internal driveway. No buildings are proposed and no retail/customer activity will occur on Lot 42.

14. The proposed changes to the dealership have been preliminarily identified as a Type 1 Action under State Environmental Quality Review Act ("SEQRA"). The Planning Board as lead agency must adopt a determination of significance and it has referred this rezoning request to the Town Board for consideration and comment as part of its coordinated review of the project under SEQRA. The Town Board is an involved agency in this SEQRA process.

15. Petitioner respectfully submits that the incorporation of Lots 5, 9 and 42 into the abutting GB zoning district is appropriate in this I-684/NYS Route 22 corridor



and the proposed dealership use of said parcels is consistent with the goals of the Comprehensive Plan for this commercial strip with frontage on NYS Route 22. The dealership overlooks state highway I-684 to the west and the nearest major cross street is NYS Route 138 to the south. The proposed rezoning of these three lots will have little, if any, impact on the residential areas to the east and north. A redesigned Mercedes Benz dealership will provide luxury automobiles and high quality products and service to town residents, create local jobs and increase tax revenues, thereby contributing to the well-being of the Town of Lewisboro and its Goldens Bridge residents.

WHEREFORE, the Petitioners respectfully request that the Town Board grant this Petition and amend the zoning map as set forth herein.

Respectfully submitted,

CELEBRITY WESTCHESTER REALTY, LLC

By: \_\_\_\_\_

Tom Maoli, Manager

- **Main Office**  
445 Hamilton Avenue  
White Plains, NY 10601  
Phone 914.946.4777  
Fax 914.946.6868
- **Mid-Hudson Office**  
200 Westage Business Center  
Fishkill, NY 12524  
Phone 845.896.0120
- **New York City Office**  
505 Park Avenue  
New York, NY 10022  
Phone 646.794.5747

March 11, 2019

VIA FEDERAL EXPRESS

**JUDSON K. SIEBERT**  
Principal Member

Robin Price, Jr., Chairman  
and Members of the Zoning Board of Appeals  
Town of Lewisboro  
Town House  
79 Bouton Road  
South Salem, New York 10590

Re: Celebrity Westchester Realty, LLC –  
Variance Application  
(Mercedes Benz of Golden Bridge, 321 Main Street)

Dear Chairman Price and Members of the Zoning Board of Appeals:

I write on behalf of the Planning Board of the Town of Lewisboro (the “Planning Board”) concerning the above-referenced application for area and signage variances (the “Variance Application”). The variances sought are specified in a February 14, 2019 letter to the Zoning Board of Appeals (the “ZBA”) from the applicant’s attorney, Michael F. Sirignano, Esq. A copy of Mr. Sirignano’s letter is enclosed herein.

Specifically, I write to request that the ZBA provide comments to the Planning Board concerning the potential environmental impacts of the requested variances. The Variance Application has been submitted as part of a project to expand and redevelop the Mercedes Benz dealership located on Route 22 in Goldens Bridge, New York (the “MB Project”). The Planning Board serves as lead agency under the State Environmental Quality Review Act (“SEQRA”) with regard to the MB Project, and seeks the ZBA’s comments in this capacity.

Pursuant to SEQRA and its implementing regulations, the ZBA cannot act upon the Variance Application until either (1) a SEQRA negative declaration is issued by the Planning Board, as lead agency, for the MB project or (2) in the event a SEQRA positive declaration is issued, a Final Environmental Impact Statement is accepted and a Findings Statement adopted by the Planning Board, as lead agency.

Consequently, the Planning Board requests these comments from the ZBA, a SEQRA involved agency, in order to inform and facilitate the lead agency’s

Robin Price, Jr., Chairman

March 11, 2019

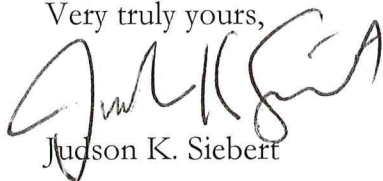
Page 2

evaluation of the environmental impacts of the MB Project. Input from the ZBA will assist the Planning Board in discharging its SEQRA responsibilities in a fully informed manner.

The MB project is presently before the Planning Board in the form of an application for site development plan approval. The Planning Board requests that the ZBA provide its comments at its earliest convenience, so that SEQRA processes may be undertaken and the site development plan application proceed.

On behalf of the Planning Board, I thank the Town Board for its consideration of this request.

Very truly yours,



Judson K. Siebert

JKS/lt

cc: Honorable Janet Anderson, Planning Board Chairperson  
Ms. Ciorsdan Conran, Planning Board Secretary  
Honorable Peter Parsons, Town Supervisor  
Anthony Mole, Esq.  
Jan K. Johannessen, AICP  
Michael F. Sirignano, Esq.

*Michael Fuller Sirignano*  
*Attorney and Counselor at Law*

*Old Post Road Professional Building  
892 Route 35, P.O. Box 784  
Cross River, New York 10518*

*Tel: (914) 763-5500  
Fax: (914) 763-9589  
michael@sirignano.us*

February 14, 2019

Robin Price, Jr., Chairman  
Zoning Board of Appeals  
Town of Lewisboro  
79 Bouton Road  
South Salem, New York 10590

Re: Mercedes-Benz of Goldens Bridge

Dear Chairman Price and  
Members of Zoning Board of Appeal:

I am assisting Tom Maoli and his realty company Celebrity Westchester Realty, LLC in obtaining land use approvals/permits in connection with the proposed re-vitalization of the Mercedes-Benz of Goldens Bridge dealership. Celebrity is the Contract Vendee of three additional tax lots (5, 9 and 41) that abut the dealership, shown and designated on the Tax Assessment Map of the Town of Lewisboro as Sheet 4E, Block 11135, Lots 5 and 9 and as Sheet 4E, Block 11137, Lot 42, respectively. Celebrity is acquiring these parcels solely for the purpose incorporating them into the dealership property – both to achieve an even better modernization and redesign of this long-established Mercedes-Benz sales and service business, and to further mitigate potential impact of its proposed plans to our nearest neighboring properties. These three additional parcels will hence need to be re-zoned by the Town Board to accomplish this purpose.

Lot 5 is comprised of approximately 0.350 acres located at 5 Anderson Lane, Goldens Bridge, New York ("Lot 5"). Lot 9 is a corner lot containing 4,640± s.f. located at 307 Route 22, Goldens Bridge, New York ("Lot 9"). Lots 5 and 9 are presently within the RB zoning district and they immediately abut the GB zoning district and the Mercedes-Benz dealership to the north. Lot 42 is comprised of 1.350 acres located at 46 Green Hill Road, Goldens Bridge, New York ("Lot 42"). Lot 42 is presently within the R-1/2A zoning district but it too immediately abuts the GB zoning district and the Mercedes-Benz dealership to the west. We have filed a Petition with the Town Board requesting that these three parcels be rezoned to GB.

#### Prior History

This Mercedes-Benz dealership has sold and serviced luxury vehicles at this location since 1969. The Buonanno family (Charisma Holding Corp.) continuously operated the dealership for some 48 years. Automobile sales and service at this site dates back to 1936, and even prior to that time it was used for carriages. An earlier expansion project proposed by the prior owner (Charisma Holding Corp.) was approved by the Planning Board on October 11, 2011 after your Board of Appeals granted several area variances under Resolution (Cal. No. 18-10-BZ) dated May 11, 2011. Said earlier project also obtained approvals from other outside agencies such as NYSDEC, NYCDEP, NYSDOT and the Westchester County Department of Health. However, the prior owner never commenced construction due to economic constraints, as well as internal decisions and disagreements with Mercedes-Benz USA. In 2014, the Planning Board granted Amended Site Development Plan Approval for the demolition of two abandoned structures, site parking and landscaping improvements. Celebrity purchased the dealership and now wishes to complete the revitalization of this respected and important business, to refresh what is becoming an obsolete facility, and to separate the dealership operations, as best as it can, from the residential area nearby.

#### Current Project

Celebrity is now before the Planning Board seeking, *inter alia*, site plan approval for a modified re-vitalization of the dealership on an integrated site that will include Lots 5, 9 and 42. The Project resembles the previously approved design but inclusion of the new parcels will better allow for expansion and modernization of the showroom and service buildings; development of two additional parking areas; construction of a new vehicle storage only garage to be attached to the showroom; installation of additional outdoor vehicle storage on adjacent parcel Lot 42; reconfiguration of and reduction in the number of existing curb cuts on NYS Route 22 and existing parking lots; and installation of improved drainage, lighting, landscaping and other ancillary improvements.

More specifically, the Project as currently proposed includes a showroom expansion of 38,500 s.f. to the existing 12,000 s.f. showroom building, bringing the new showroom building total to 50,500 s.f. A 2,700 s.f. expansion is proposed to the existing 17,500 s.f. service building, bringing the new service building total to 20,250 s.f. The total net increase in building area on the site is approximately 41,200 s.f.

#### Planning Board Referrals

The Planning Board referred the Project to the Town Board to consider rezoning Lots 5 and 9 from RB to GB and Lot 42 from R-1/2A to GB to enable the incorporation of said additional parcels into a modernized Mercedes-Benz dealership on approximately 5 acres. The proposed changes to the dealership have been preliminarily identified as a Type 1 Action under the State Environmental Quality Review Act ("SEQRA"). The Planning Board, as lead agency, must adopt a determination of significance. Before it does so, it has also referred our variance requests to your Board of Appeals for consideration and comment as part of said Board's coordinated review of

---



*Michael Fuller Strignano*

*Attorney and Counselor at Law*

-3-

the Project under SEQRA. The Board of Appeals is an involved agency in this SEQRA process. As will be shown, many of the variances are necessary because of the corporate identity/corporate design criteria requirements imposed by Mercedes-Benz USA on all its dealerships nationwide.

Prior Variances Granted

Due to the unique topography and shape of the property, and the location of the existing showroom and service building, the modified design of the Project requires many of the same or similar variances from your Zoning Board of Appeals which were previously granted in 2011 (Cal. No. 18-10-BZ). Given, however, that Celebrity is acquiring the three properties which would have been most affected by the 2011 variance package, the current variances as a whole will be less impactful to the neighborhood than the 2011 variances. The then Chairman, Jeffrey Egginton, moved to grant the 2011 variances based on the following findings:

- That there will be no undesirable change in the character of the nearby property, the positive changes will outweigh the negative changes with respect to the environmental issues;
- That there is a practical alternative to request a variance, one is to do nothing and the other is to expand the two structures as they had done in their 2006 application;
- That the area variance is relatively substantial, however the applicant has made an effort in mitigating the substance of the variance request with the exception of the overall coverage, they have reduced the height and have mitigated the impact on the rear and side yard variance requests including planting, screening and stormwater management;
- That there will be no adverse environmental impact, in fact it will be a positive environmental impact;
- That the difficulty is self-created.

The Chairman's motion was adopted with Mr. Egginton, Ms. Mandelker and Mr. Price voting in favor. Mr. Casper was absent and Mr. Krellenstein abstained. Your Board imposed the following conditions on its 2011 variance:

- Screening on the north side of the site where they propose (11) 14' White Pine trees on a 4' high berm, and (3) 14' White Pine trees in a north south direction on the
-

*Michael Fuller Dirignano*  
*Attorney and Counselor at Law*  
*-4-*

corner along the easterly edge of the property, all planted 10-12' apart in a staggered pattern;

- A stockade fence on the north side of the property for complete closure for security reasons;
- A 440' maintenance free PVC fence between the applicant and Mr. Castelli's property, pickets and color to be determined in consultation with Mr. Castelli;
- The stormwater drainage issues be addressed prior to construction.

These conditions have either been implemented or rendered moot due to changes in the current Project. Stated otherwise, the current variances will be even less impactful.

Area Variances Requested for Current Project

SITE IMPROVEMENTS

- Section 220-9D(1) and (2) Non-conformities other than use. *A variance was granted for increase in non-conformity in 2011.*
  - Section 220-24E Gross Floor Area of a single structure (maximum of 10,000 s.f. permitted/50,900 s.f. proposed) for one continuation of existing non-conforming Service Building and expansion of Service Building and Showroom Building. *A variance was granted for a structure in excess of 10,000 s.f. in 2011.*
  - Section 220-24E Maximum building coverage (20% permitted/24.7% proposed) for the expansions to Showroom and Service Buildings. *A variance was granted for maximum building coverage in 2011.*
  - Section 220-24E Maximum site coverage (maximum 60% permitted/64.4% proposed) for the expansion of buildings, driveways and parking areas. *A variance was granted for maximum site coverage in 2011.*
  - Section 220-24E Maximum building height (maximum 30' permitted/35' proposed) for the proposed Shroom Building height. *A variance was granted for maximum building height in 2011.*
-

- Section 220-55C(3) Minimum aisle width (minimum 25' required/20' proposed) for the proposed drive aisles within the gated upper parking lot for employee parking and vehicle storage. *A variance was granted for minimum 25' width of aisles in 2011.*
  - Section 220-55D(2) Maximum entrance/exit grade within 30' of street line (maximum permitted 3%/10% & 7.4% proposed) where slopes in excess of 3% are needed at both driveway entrances from NYS Route 22 to meet the existing and proposed Showroom Building expansion has been lowered by 12 inches to help achieve flatter slopes. *A variance was granted for maximum entrance/exit grades in 2011.*
  - Section 220-55D(2) Maximum driveway grade (maximum 12%) for the existing non-conforming driveway to the Service Building is to remain and be slightly modified. Design is consistent with existing non-conforming slopes.
  - Section 220-12E(1) Walls within required setbacks cannot exceed 6'. The proposed retaining wall behind the Service Building will replace soil, boulders and vegetation against the rear of the Service Building. It is partly within the rear yard setback and ranges from approximately 11 feet high to 1 foot high within the setback. *A variance was granted for wall in excess of 6 feet in height in 2011.*
  - Section 220-12E(1) Fence within required setbacks cannot exceed 6'. The proposed heavy-duty fence adjacent to the vehicle lifts is 8'-8" tall and has one small portion located in the setback. *A variance was granted for fences in excess of 6 feet in height in 2011.*
  - Section 220-57B Prohibits off-street loading areas to block parking stalls for the loading spaces on the west side/front of Showroom Building and on the north side/upper portion of Showroom Building. Deliveries of new vehicles are scheduled to occur before or after showroom business hours.
  - Section 220-57(C)(1) Requires 1 loading space for the first 4,000 s.f. of gross floor area or major portion thereof and 1 additional space for 10,000 s.f. of gross floor area or major portion thereof in excess of 4,000 s.f. shall be provided. Two spaces are shown; a total of 6 are required. Loading spaces are proposed in only the two locations needed by the dealership.
  - Section 220-24E Auto lifts are within the required setbacks. The proposed vehicle lifts are approximately 17 feet from the rear property line, 38 feet from the side property line and 20 feet from the front property line as shown on JMC Drawing C-100 "Layout Plan." These lifts allow additional outdoor storage of vehicle inventory without increasing impervious surface.
-

*Michael Fuller Sirignano*

*Attorney and Counselor at Law*

-6-

- Section 220-55D(1) Access to upper parking must be a minimum of 20' wide. The existing driveway to the vehicle storage parking area east of the Service Building will be increased from approximately 11 feet wide to 16 feet wide as requested and approved by the Goldens Bridge Fire District.
- Section 220-55D(2) Access to upper parking shall not exceed a grade of 3% within 30' of the street line or 12% at any other point. This existing non-conforming driveway will be improved but will remain non-conforming.
- Section 220-55E(3) In all off-street parking areas containing 25 or more parking spaces, at least 10% of the surface within the parking perimeter shall consist of planting islands. Variances are requested for the upper employee and storage parking area north of the Service Building and inventory storage area east of the Service Building. These two parking areas cannot be seen from Route 22. These lots will not be used for customer parking but for employee vehicles and inventory vehicle storage only.

#### SIGNAGE

- Section 185-5F(3)(a) Permits wall signs up to and including 20 feet in length. The main "Mercedes-Benz of Goldens Bridge" sign on the west side of the Showroom Building in between the service entrance/exit doors is 46 feet long.
- Section 185-5F(3)(a) Allows for no more than 2 wall signs so long as the second wall sign meets the standards provided in Section 185-5F(4)/6 wall signs are prosed. This is for the Showroom Building main sign, service, entrance/exit signs plus Mercedes-Benz logos shown on top of the north, south and west sides of Showroom Building.
- Section 185-6C(4) Permits wall signs but limits them from extending beyond the second story. Mercedes-Benz logos shown on top of the north, south and west sides of Showroom Building extend approximately 33 feet, 1-1/2 inches above the second story as shown on Sullivan Architecture Drawing A3.0.
- Section 185-6C(6) Permits letters on wall signs up to and including 12". The main "Mercedes-Benz of Goldens Bridge" sign on west side of Showroom Building in between service entrance/exit doors exceeds 12".

The signage variances are being requested as a result of the nationwide corporate identity requirements imposed by Mercedes-Benz USA.

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Applicable Area Variance Standards

Lewisboro Zoning Ordinance §220-74D(2) and Town Law §267-b(3)(a) empower your Board to grant area variances where there are practical difficulties or unnecessary hardships stand in the way of carrying out the strict letter of the code. Pursuant to Town Law §267-b(3)(b), zoning boards must engage in a balancing test in determining whether to grant an application for area variances, weighing the benefit to the applicant against possible detriment to the health, safety and welfare of the neighborhood or community if the variances are granted. A board of appeals may grant area variances under state and local law where, as here, it finds:

- (1) An undesirable change will not be produced in the character of the neighborhood and a detriment to nearby properties will not be created by the granting of the area variance. Celebrity is acquiring the most affected abutting parcels specifically for the purpose of minimizing impact to the surrounding area and to mitigate, to the greatest and most commercially reasonable extent possible, potential, impacts from its operations the nearest residences to the east and north. These acquisitions help to address some of the key concerns raised during your Board's consideration of the 2011 variances. Against the backdrop of Celebrity's good faith efforts, it is important to note that the dealership has been in continuous operation at this site since 1969, some 50 years ago. Most, if not all, residential neighbors purchased their properties while the dealership has been in operation. The most affected residential parcel to the east (Castelli) in 2011 will now be part of the re-vitalized dealership.
  - (2) The benefits sought by the applicant cannot be achieved by some other method, feasible for the applicant to pursue, other than by the granting of the area variances. The strict application of the regulations would deprive the Celebrity of the reasonable use of this commercial property and the variances sought are the minimum relief necessary for such reasonable use. The proposed re-design of the dealership and the new signage is largely dictated by Mercedes-Benz USA in order to comply with mandatory corporate identity/corporate design requirements for improvements to dealerships nationwide. As a going concern, operating within a luxury niche, Celebrity is required, if it is to remain viable, to upgrade, modernize and beautify its facilities. The new design is intended to be aesthetically pleasing and appropriate to its unique location on the Route 22/I-684 Corridor and, if such goal is to be achieved, the Project will require variances.
  - (3) The requested variances cannot be considered substantial precisely because many of them are similar to variances previously granted by your Board after painstaking consideration. It is important to recall that Celebrity is not seeking dramatically different changes than those previously permitted. When considered against the backdrop of Celebrity's efforts to ameliorate offsite impacts by acquiring the affected parcels, its variances cannot reasonably be considered inconsistent with this element of the Code. Moreover, the potential off-site impacts of the several area variances are minimal as natural features and professionally designed landscaping will provide visual screening for the benefit of neighboring properties.
-



- (4) The proposed variances will not have an adverse effect or impact on the physical or environmental conditions in the neighborhood or district. Celebrity has submitted traffic and stormwater reports to the Planning Board that demonstrate nominal changes in traffic volumes and no increase in off-site stormwater discharges. Its business operations will remain consistent with its present operations, though Celebrity hopes to see considerably increased business efficiency, safer on-premises unloading of new vehicles from large vehicle carriers, more logical internal traffic patterns and customer parking, and material improvements to stormwater and drainage as a result of its proposed improvements. Celebrity is acutely conscious of the scope of its request and has thus sought, in each instance, design and engineering improvements that are intended to further mitigate the concerns that animated this Board's careful consideration of the 2011 application. The positive changes in the Project far outweigh any potential effects on the environmental conditions. Indeed, the proposed new stormwater management systems will substantially benefit the property and the surrounding environment.
- (5) The difficulty was not self-created. The hardship does not result from any act by Celebrity. This business has been in operation and a mainstay of this Town for more than five decades, long before the implementation of the present Code. The need for area variances is not self-created but arise because of the existing placement of the existing showroom, service buildings, driveway and parking areas, the steep topography and narrow configuration of this site. Moreover, the proposed improvements are largely dictated by Mercedes-Benz USA, the parent company that must approve all redesigns of dealerships that sell this luxury brand of automobiles. The Project is designed precisely to harmonize the reasonable concerns of the neighbors with the demands of operating and maintaining the viability of his luxury automotive business to Mercedes' exacting standards that Celebrity has acquired nearby parcels, invested in high-quality, low impact design and engineering, and otherwise considered how best to upgrade its facilities.

#### Conclusion

The incorporation of new Lots 5, 9 and 42 into the dealership and the re-vitalization of a long-established and respected Town business are appropriate for this I-684/NYS Route 22 corridor. A modernized first-class dealership is consistent with the goals of the Comprehensive Plan for this commercial strip. The dealership fronts on NYS Route 22; it overlooks state highway I-684 to the west; and the nearest major cross street is NYS Route 138 to the south. There is no better location for this dealership anywhere in the Town of Lewisboro.

The area variances sought will have little, new if any, impact on the neighboring properties to the east and north. In point of fact, there will be less impact than the variances approved in 2011 because of Celebrity's acquisition of the three most affected abutting parcels. Also, to be figured into this Board's balancing calculation is that a redesigned Mercedes-Benz dealership will provide luxury automobiles and high-quality products and service to town residents, create local jobs and increase tax revenues, thereby contributing to the well-being of the Town of Lewisboro and its Goldens Bridge residents. We look forward to presenting our area variance application to your

---

*Michael Fuller Sirignano*  
*Attorney and Counselor at Law*  
- 9 -

Board of Appeals and having your Board report its preliminary comments to the Planning Board, the lead agency under SEQRA that must make its determination of significance.

Very truly yours,

  
Michael Fuller Sirignano

MFS/cp

---

# Town of Lewisboro

79 Bouton Road  
South Salem, NY 10590

## APPLICATION TO THE BOARD OF APPEALS

\*Cal. No. .... (B.Z.)

\*\*Cal. No. .... (S.P.)

### I. IDENTIFICATION OF APPLICANT & PROPERTY OWNER

Applicant's Name: Mercedes-Benz of Goldens Bridge Phone: (914) 232-8122

Address 321 Main Street (NYS Rt. 22) E-Mail .....

Owner's Name: Tom Maoli Phone: (973) 319-2900

Address 130 Route 10, Whippany, NJ 07981 E-Mail tmaoli@celebritymotorcar.com

### II. TO THE ZONING BOARD OF APPEALS OF THE TOWN OF LEWISBORO:

Application is hereby made for:

- ☐ A Variation of Article ..... Section ..... of the Zoning Ordinance.
- ☐ A Special Permit pursuant to Article ..... Section ..... of the Zoning Ordinance.
- ☐ An Interpretation of the Zoning Ordinance or Zoning Map.
- ☐ A Variation of Section 280 (a) of the Town Law.
- ☐ An appeal from an Order of the Building Inspector to correct a Violation of the Housing Code  
Section .....

☒ (Other) Appeal from 1/8/19 list of variances determined to be needed for proposed improvements to dealership by Building Inspector (see attached 1/8/19 list).

AND FURTHER DESCRIBED AS FOLLOWS: .....

### III. IDENTIFICATION OF PROPERTY:

Location of Affected Premises: 321 Main Street (NYS Rt 22), Goldens Bridge, NY

Tax Map: Sheet 4E Block 11135 Lot(s) 1, 2, 3, 4, 5, 6, 7, 8 & 9 Sheet 4E, Blk 11137, Lot 42

Zoning District: GB&RB Lot Area: 4.9± Acres

### IV. ADDITIONAL INFORMATION

Have previous appeals/special permits been filed in regard to these premises? .....  
(If yes, please give calendar number & date)

Cal. No. 18-10-BZ Date 5/11/2011

Cal. No. .... Date .....

Cal. No. .... Date .....

Cal. No. .... Date .....

Has a court summons been served relative to this matter? .....

Have you inquired of the Clerk of the Town of Lewisboro whether there is any petition pending to change the use district regulations affecting the block on which these premises are located? .....

Attached hereto and made a part of this application, I submit the following:

- A copy of the ground and floor plans with all necessary measurements.
- A property survey.
- A signed consent by the owner of the property if the applicant is not the owner.

### V. APPROVED FOR SUBMISSION:

Applicant's Signature:  Date: 2/7/19

### VI. RECEIPT:

Date Received by Clerk .....

AFFIDAVIT OF OWNERSHIP

State of New York, Tom Maoli, of Celebrity Motor Car, LLC .... being duly sworn, deposes  
County of New York

and says that he resides at conducts business .... in the Town of .... Lewisboro .....

in the County of Westchester ..... in the State of .... New York ..... and that

he is the owner in fee of all that certain lot, piece or parcel of land situated, lying and being in the  
Town of Lewisboro, N.Y., aforesaid and known and designated on the Tax Map as Lot Number 1,2,3,

4, 5, 6, 7, 8, 9 in Block 11135 on Sheet 4E\* ..... and that he hereby authorizes  
Mercedes-Benz of Goldens Bridge

..... to make the annexed application in his behalf  
and that the statements of fact contained in said application including the statements contained in all  
of the exhibits transmitted herewith are true.

Sworn to before me, this .....  
day of February, 2019

(sign here)

(over)

\*and Lot 42 in Block 11137 on Sheet 4E

MICHAEL F. SIRIGNANO  
Notary Public, State of New York  
No. 4709295  
Qualified in Westchester County  
Commission Expires January 31, 2023

TOWN OF LEWISBORO  
Westchester County, New York



Building Department  
79 Bouton Road  
South Salem, New York 10590

Tel: (914) 763-3060  
Fax: (914) 875-9148  
Email: jangiello@lewisborogov.com

January 8, 2019

Mr. Jerome Kerner, Chairman  
Town of Lewisboro Planning Board

Re: Application of Mercedes Benz of Goldens Bridge

Dear Mr. Kerner and Members of the Board,

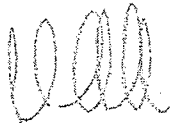
I have reviewed the plans from Stephen Spina, P.E. latest revision dated 12/26/18 and the plans from Sullivan Architecture latest revision dated 9/6/18 as well as additional sheet A3.04 dated 12/26/18. I have the following comments based upon the assumption that the applicant will acquire lots 5 and 42. It is also assumed that the Town will approve the rezoning of these lots to GB:

1. A variance is required for Nonconformities other than use per Section 220-9D(1)&(2). The specific nonconformities are to follow.
2. The proposed showroom/parking building has a rear yard setback whereas 30' are required per Section 220-24E(A).
3. The proposed showroom/parking building has a gross floor area of 50,900 square ft. whereas 10,000 square ft. is the maximum permitted per Section 220-24E.
4. The proposed building coverage is 24.7% whereas 20% is the maximum permitted per Section 220-24E.
5. The proposed site coverage is 64.4% whereas 60% is the maximum per Section 220-24E.
6. The proposed showroom/parking building has a height of 51'-5.5" whereas the maximum permitted is 30'.
7. The northern parking/storage lot has aisle widths of 19' and 21' whereas 25' are required per Section 220-55C(3).
8. The proposed grade within 30' of the street line for the southern exit/entrance is 10% and the northern is 7.4% whereas the maximum permitted is 3% per Section 220-55D(2).
9. The proposed driveway grade is 14.5% whereas the maximum permitted per 220-55D(2) is 12%.
10. The proposed retaining wall on the northeastern corner of the service building has a height of 11' whereas the maximum permitted within a required setback is 6' per 220-12E(1).

11. The proposed fence located on the western side of the northern parking/storage lot has a height of 8'-8" whereas the maximum permitted within a required setback is 6' per 220-12E(1).
12. The proposed wall sign has a length of 46' whereas the maximum permitted is 20' per Section 185-5F(3)(A).
13. The proposed wall sign has a height of 3'-3.5" whereas the maximum permitted is 2' per Section 185-5F(3)(A).
14. There are seven additional proposed wall signs whereas only one is permitted per Section 185-5F(4).
15. Of the seven additional proposed wall signs, five signs have an area of 16.5 square ft. each and two signs have an area of 7.8 square ft. each whereas the maximum permitted area of a secondary sign is 6 square ft. per Section 185-F(4)(a).
16. Four of the proposed wall signs extend above the second story whereas it is not permitted per Section 185-6C(4).
17. The proposed wall sign has letters with a height of 24.5" whereas the maximum permitted is 12" per Section 185-6(C)6.
18. The proposed off-street loading areas will temporarily block a portion of the required parking spaces whereas this is not permitted per Section 220-57B.
19. The proposed auto storage lifts on the northwest side of the northern parking/storage area has a rear yard setback of 17' whereas 30' are required per Section 220-24E(A).
20. The access to the proposed upper parking/storage lots has an access width of 16' whereas 20' are required per Section 220-55D(1).
21. The access to the proposed upper parking/storage lots has a grade of 16% whereas no entrance or exit for any off-street parking shall exceed a grade of 3% within 30' of the street line or 12% at any other point per Section 220-55D(2).
22. The proposed parking areas containing more than 25 spaces do not have planting islands whereas in all off-street parking areas containing 25 or more parking spaces, at least 10% of the surface within the parking area perimeter shall consist of planting islands per Section 220-55E(3).
23. The applicant proposes two loading spaces whereas six are required per Section 220-57C(1).
24. The applicant proposes 88 parking spaces for customers whereas one space per 500 square ft. of gross floor area is required ( $71,800 \text{ sq. ft.} / 500 = 144 \text{ spaces}$ ) per Section 220-56D.
25. The applicant is seeking a waiver to permit a deviation from the standards requiring landscape buffers per 220-15B(7).

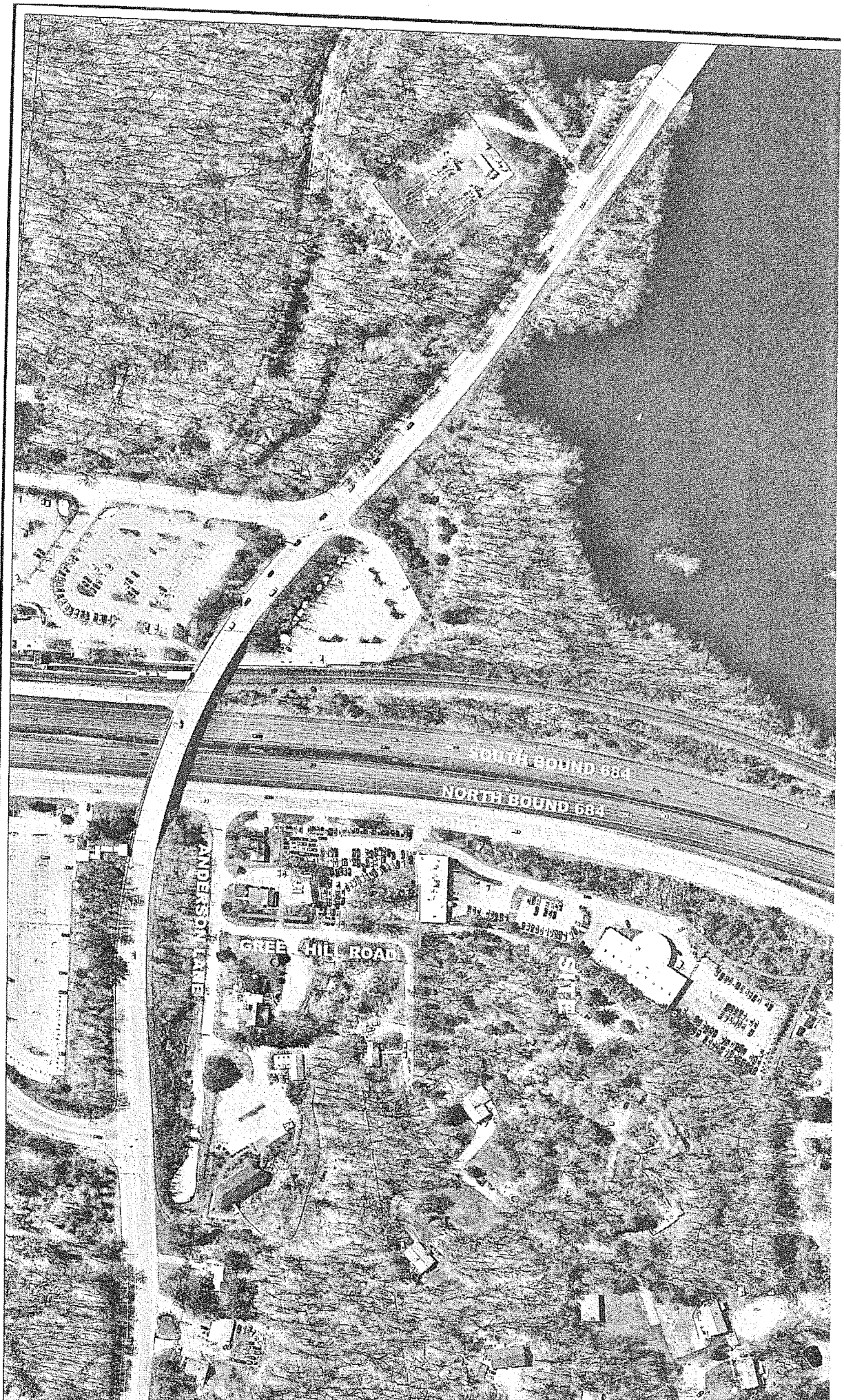
Please do not hesitate to contact me with any questions.

Sincerely,



Joe Angiello  
Building Inspector

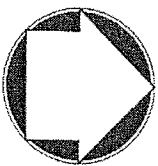




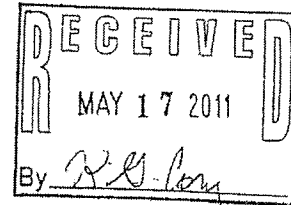
# AREA MAP

SCALE: 1" = 200'

SOURCE: NEAR MAP / 2017



**ZONING BOARD OF APPEALS  
TOWN OF LEWISBORO**



**In the matter of:**  
**CAL. NO. 18-10-BZ**

Application of Charisma Holding Corp., dba Estate Motors –Mercedes Benz, 321 Route 22, Golden's Bridge, New York 10526 for a variance of [1] Article IV, § 220-24C(1)(a) of the Zoning Ordinance in the matter of an automobile service which is not a permitted use in the RB, Retail Business District. [2] Article III, § 220-9D(1)&(2) of the Zoning Ordinance in the matter of an increase in non-conformity other than use. [3] Article IV, § 220-24E of the Zoning Ordinance in the matter of a variance of Dimensional and Bulk Regulations including footnote (b) for a structure over 10,000 square feet in floor area and therefore exceeds the maximum building coverage requirement. [4] Article IV, § 220-24E of the Zoning Ordinance in the matter of a variance of Dimensional and Bulk Regulations including footnote (a) for a structure that abuts land in a residence district with variances required for rear yard and side yard. [5] Article IV, § 220-24E of the Zoning Ordinance in the matter of a variance of Dimensional and Bulk Regulations for building height and maximum site coverage. [6] Article III, §220-12E(1) of the Zoning Ordinance in the matter of a variance of Yards and Setbacks-walls or fences can not exceed 6 feet in height. [7] Article VII, § 220-55C(3) of the Zoning Ordinance in the matter of Size of Parking Spaces- back up and maneuvering aisles between rows of parking spaces must be at least 25 feet wide. [8] Article VII, § 220-55D(2) of the Zoning Ordinance in the matter of a variance of Access- exit and entrance exceeds grade of 3% within 30 feet of street line and exceeds 12% further on.

The Public Hearings were held on Wednesday, July 28<sup>th</sup> 2010, September 1<sup>st</sup> 2010, September 29<sup>th</sup> 2010, October 27<sup>th</sup> 2010 and February 23<sup>rd</sup> 2011 at the Town House, 11 Main Street, South Salem, NY, at 8:15 p.m.

**Board Members:**

**Present:**

Geoffrey Egginton  
Chairman  
Carolyn Mandelker  
Robin Price, Jr. 7/28/10, 9/29/10,  
10/27/10, 2/23/11  
Thomas Casper 9/29/10, 10/27/10  
Jason Krellenstein

**Absent:**

Robin Price, Jr. 9/1/10  
Thomas Casper 7/28/10, 9/1/10, 2/23/11

**The Property:**

The property is located on the east side of Route 22, designated on the Tax Map as Sheet 04, Block 11135, Lots 1,2,3,7 & 8 in a GB, General Business District and Sheet 04, Block 11135, Lots 4 & 6 in a RB, Retail Business District.

**Appearances:**

**For Applicant:**

Mr. Alfred DelBello, Esq.  
Mr. Robert Roth, PE  
PAGE 1 OF 47

CAL. NO. 18-10-BZ

RESOLUTION:

In Opposition:

Ms. Melanie DeNicola, 353 Route 22  
Mr. Charles Monaco, 307 Route 22  
Mr. Lambert Wixson, 43 Greenhill Rd  
Mr. Robert Castelli, 46 Greenhill Rd  
Ms. Jeanette Zak, 46 Greenhill Rd  
Ms. Angela Paolicelli, 361 Route 22  
Ms. Pamela Dwyer, 35 Green Hill Rd  
Mr. Patrick McCarthy, 40 Green Hill Rd

References:

Minutes of the Public Hearings; Letter from Mercedes Benz, dated 7/20/09; Statement of Principal Points, undated; DVD submitted by Ms. DeNicola; Letters from Ms. DeNicola, dated 7/26/10 & 8/26/10; Email from Mr. Wixson dated 11/3/10; Letter from New York State DOT dated 9/2/10; Photos, undated; Cover Letter from DelBello, Donnellan, Weingarten, Wise and Wiederkehr, LLP dated 6/30/10, 8/13/10 & 1/13/11; Cover letter from DelBello, Donnellan, Weingarten, Wise and Wiederkehr, LLP and Mercedes Benz AOI Facility Analysis, dated 9/24/10; Mercedes Benz Autohaus Corporate Identity/Corporate Design Manual, revision date 3/12/08; ZBA Resolution for Cal. No. 53-03BZ; ACARC Resolution for Cal. No. 14-10; Memo from Peter Barrett, Building Inspector, dated 2/7/11; Resolution Lewisboro Planning Board-Negative Declaration of Significance, dated 2/8/11; Letter from John Pappalardo, Esq. dated 3/14/11; Zoning Variance Plan Z-1, dated 6/28/10; Exterior Elevations A3.0, dated 6/24/10; Exterior Elevations A3.0, revision date 9/16/10; Exterior Signage Variance Plan SD.2, dated 8/13/10; Zoning Variance Plan Z-1, revision date 12/23/10; Landscaping Plan, dated 12/23/10; Exterior Elevations Plan, revision date 12/23/10;

Action of the Board:  
CAL. NO. 18-10-BZ

THE APPLICATION IS CONDITIONALLY APPROVED.  
RESOLUTION: PAGE 2 OF 47

Negative: Kreitenstein

Absent: Casper

Abstain: None

**NATURE OF APPLICATION  
AND  
SUMMARY OF EVIDENCE PRESENTED**

Application for a variance of [1] Article IV, § 220-24C(1)(a) of the Zoning Ordinance in the matter of an automobile service which is not a permitted use in the RB, Retail Business District. [2] Article III, § 220-9D(1)&(2) of the Zoning Ordinance in the matter of an increase in non-conformity other than use. [3] Article IV, § 220-24E of the Zoning Ordinance in the matter of a variance of Dimensional and Bulk Regulations including footnote (b) for a structure over 10,000 square feet in floor area and therefore exceeds the maximum building coverage requirement. [4] Article IV, § 220-24E of the Zoning Ordinance in the matter of a variance of Dimensional and Bulk Regulations including footnote (a) for a structure that abuts land in a residence district with variances required for rear yard and side yard. [5] Article IV, § 220-24E of the Zoning Ordinance in the matter of a variance of Dimensional and Bulk Regulations for building height and maximum site coverage. [6] Article III, § 220-12E(1) of the Zoning Ordinance in the matter of a variance of Yards and Setbacks-walls or fences can not exceed 6 feet in height. [7] Article VII, § 220-55C(3) of the Zoning Ordinance in the matter of Size of Parking Spaces- back up and maneuvering aisles between rows of parking spaces must be at least 25 feet wide. [8] Article VII, § 220-55D(2) of the Zoning Ordinance in the matter of a variance of Access- exit and entrance exceeds grade of 3% within 30 feet of street line and exceeds 12% further on.

The properties are located on the east side of Route 22, designated on the Tax Map as Sheet 04, Block 11135, Lots 1,2,3,7 & 8 in a GB, General Business District and Sheet 04, Block 11135, Lots 4 & 6 in a RB, Retail Business District.

Chairman Egginton asked if anyone objected to the notice as it appeared in the Lewisboro Ledger. No one responded.

Mr. Alfred DelBello, Esq. was present to represent the applicant at the July 28<sup>th</sup> meeting.

Chairman Egginton read a letter from Melanie DeNicola dated July 26<sup>th</sup> 2010 into the record. Chairman Egginton stated that the Board would not be making a decision tonight on this application and he wanted to give everyone a fair chance to speak. He stated that this is a very important application to the Town of Lewisboro as well as the neighbors.

Mr. DelBello introduced Bob Roth, PE of John Meyer Consulting and John Sullivan, AIA as well as Chris Buonanno the owner of Estate Motors. He stated that everyone is familiar with Estate Motors which has been there for some time. Mr. DelBello stated that Estate Motors was acquired by the Buonanno family in 1969 and has been used continually used as a Mercedes dealership for all those years. He stated that historically it appears going all the way back to 1936 and even prior to that time, it was used for carriages. Mr. DelBello stated that it has always been used for

he is an optimistic person and the owners of the dealership have a good intention to operate properly. He stated that he believes in people and hopes that he will not be burned. Chairman Egginton stated that the other variances are relatively unsubstantial. He stated that the coverage issue does not concern him very much because there is a lot of impervious surface that is calculated in the coverage. Chairman Egginton stated that he takes the vote of this Board extremely seriously on this application and he hopes that the mitigation efforts that are undertaken are pared out to the Building Department and other agencies. He stated that he puts a great deal of stock in the Planning Board, which is a very good and thorough board in this town, and the Negative Declaration was influential in his decision. Chairman Egginton stated that for those reasons, he will vote for the application with conditions. He stated that there are only four members present tonight with apparently three votes in favor.

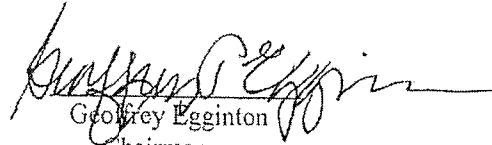
Chairman Egginton moved that the application be conditionally approved as amended for the following reasons:

- That there will be no undesirable change in the character of the nearby property, the positive changes will outweigh the negative changes with respect to the environmental issues;
- That there is a practical alternative to request a variance, one is to do nothing and the other is to expand the two structures as they had done in their 2006 application;
- That the area variance is relatively substantial, however the applicant has made an effort in mitigating the substance of the variance request with the exception of the overall coverage, they have reduced the height and have mitigated the impact on the rear and side yard variance requests including planting, screening and storm water management;
- That there will be no adverse environmental impact, in fact it will be a positive environmental impact;
- That the difficulty is self-created;

Conditions as follows:

- Screening on the north side of the site where they propose (11) 14' White Pine trees on a 4' high berm, and (3) 14' White Pine trees in a north south direction on the corner along the easterly edge of the property, all planted 10-12' apart in a staggered pattern
- A stockade fence on the north side of the property for complete closure for security reasons
- A 440' maintenance free PVC fence between the applicant and Mr. Castelli's property, pickets and color to be determined in consultation with Mr. Castelli
- The storm water drainage issues be addressed prior to construction

The motion was seconded by Ms. Mandelker; In favor: Ms. Mandelker, Mr. Price, and Chairman Egginton. To Deny: Mr. Krellenstein; Abstain: None; Absent: Mr. Casper;

  
Geoffrey Egginton  
Chairman

Dated in South Salem, New York  
This 11 day of May 2011

Expiration: The variance shall be 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.



**Robert J. Castelli Associates, Inc.**  
**PO Box 344**  
**Somers, NY 10589**

Date: February 25, 2019

To: Planning Board Town of Lewisboro, NY

From: Robert J. Castelli

Subject: APPLICATION OF CELEBRITY MOTORS, GOLDENS BRIDGE, NY

Ladies and Gentleman of the Board:

For those of you who do not know me let me introduce myself. My name is Robert J. Castelli, I have been a resident of 46 Green Hill Rd., Goldens Bridge for 40 years. During that time I have had the honor of serving this Community for most of those years. In the 1970's and 1980's I served as the resident Trooper in Lewisboro for the NY State Police, establishing the Neighborhood Watch Program, helping to train members of the Lewisboro Police Department, and regularly lecturing in the Towns Schools on numerous subjects, while working on crisis intervention with Lewisboros' youth, in my spare time.

A decade later I had the honor of serving as a member of the Lewisboro Town Board, where I had direct oversight of the Police Department, assisted in the preparation of our Town Budget, established the School Resource Officer Program in the John Jay Junior High and High Schools and kept our Town taxes to a 1.78% increase for four years.

A decade after that I had the honor to serve as the New York State Assemblyman for two terms representing Lewisboro and 8 other jurisdictions, from the City of White Plains to the Town of North Salem. Working across the aisle with our Governor I assisted in passing the Tax Cap and other valuable pieces of legislation for the Environment, Veterans and the Elderly to protect our citizens and insure our quality of life.

Beyond this I, am a service disabled Veteran, having voluntarily served my Country as an Infantry Sergeant in Vietnam during 1968 and 1969.

My point in writing to you is this: that the matter before this Board has now been before you entering its second year, indeed the Empire State Building was built in less time than the 14 plus months that this application has been before this Board. As a direct result, you have held up the sale of my home while this is pending, resulting in my lost opportunity to purchase not one, but two homes in our community and I am now in danger of losing the third.

Further, this application is substantially the same as one that this Board approved for the previous owner, Estate Motors, some years back. I have sat silently over many months watching this without even the opportunity to speak on the subject, as is my right as a citizen in our Community.

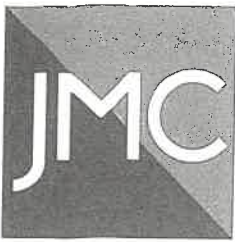
There is every indication that the new owner of this business (our largest tax payer) has proven to be and will remain a good neighbor, and for the sake of full disclosure the sale of my home, which abuts this facility, is contingent on the approvals granted by this Board which would allow the refit of the existing business to become a world class Mercedes Benz Dealer and become a neighbor that will bring more business to our community and that we can all be proud of.

I implore you to act swiftly to approve this project for my good, the good of the Town and Celebrity Motors.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Robert J. Castelli", written in a cursive style.

Robert J. Castelli



Site Planning  
Civil Engineering  
Landscape Architecture  
Land Surveying  
Transportation Engineering

Environmental Studies  
Entitlements  
Construction Services  
3D Visualization  
Laser Scanning

March 5, 2019

Chairman Jerome Kerner and Members of the Board  
Town of Lewisboro Planning Board  
79 Bouton Road  
South Salem, NY 10590

Re: JMC Project 16124  
Mercedes-Benz of Goldens Bridge  
321 Main Street (NY 22)  
Town of Lewisboro, NY

RECEIVED  
LEWISBORO  
MAR - 6 2019  
PLANNING  
BOARD

**Accident Analysis**

Dear Chairman Kerner and Members of the Board:

We have prepared this letter to supplement our submission letter and Traffic Study dated 02/05/2019 in response to the review memorandum from Frederick P. Clark Associates, Inc. (FPCA) dated 01/08/2019.

As previously mentioned in our 02/05/2019 submission letter, JMC requested accident reports within the study area from the Town's police department; however, the Town's response to our request stated that the Lewisboro Police do not have any record of accidents involved in the requested locations. Subsequently, JMC requested accident reports from the State for all the studied intersections and links between the studied intersections during a three year period from 01/01/2016 to 12/31/2018. We received accident reports back from the State and the data from the accident reports have been provided in tabular format in the attached Tables AR1 thru AR9.

At the intersection of NY 22 and Connector Road, there were two reported accidents during the three year period as shown in Table AR1. One accident occurred when a vehicle was waiting on Connector Road to turn and a second vehicle rear-ended the vehicle waiting to turn. The second accident involved a vehicle making a left turn onto Connector Road from NY 22 and a second vehicle proceeded to make a left turn from Connector Road to NY 22 which resulted in an accident. In the second accident, the driver turning from Connector Road stated that there was a sun glare and did not see the vehicle on NY 22.

Along Connector Road between NY and NY 138, there was one reported accident as shown in Table AR8. Improper passing or lane use is the contributing factor for the accident. The vehicle in the accident traversed onto the train station parking lot driveway island and struck the existing traffic signage on the island.

There were 6 reported accidents at the intersection of NY 138 & Connector Road. The majority of the accidents were rear end accidents which are common among signalized intersections. One of the accidents is related to a deer entering NY 138 and a vehicle striking the animal. A sideswipe

accident occurred at the intersection when a vehicle made a wide right turn right from NY 138 onto Connector Road crossing the double yellow and striking a waiting vehicle in the Connector Road left turn lane. 67% of the contributing factors of the reported accidents are following too closely.

There were no other reported accidents during the three year period at the studied intersections or the roadway sections between the studied intersections.

Our previous letter submission and Traffic Study dated 02/05/2019 as well as this supplemental submission should satisfactorily address the comments mentioned in the FPCA's review memorandum dated 01/08/2019.

Sincerely,

JMC Planning Engineering Landscape Architect & Land Surveying PLLC



Marc Petraro, PE, PTOE  
Senior Project Manager

cc: Mr. Tom Maoli  
Ms. Bernadette Kopec  
Mr. Chris Pelella, AIA  
Mr. John Sullivan, FAIA  
Michael Sirignano, Esq.

**TABLE AR1**

INTERSECTION NAME: NY 22 &amp; Connector Road

TOTAL ACCIDENTS: 2

INTERSECTION NUMBER: 1

TIME PERIOD: 1/1/2016-12/31/2018

Day of Week	Number	%
Sunday		
Monday		
Tuesday		
Wednesday		
Thursday	2	100
Friday		
Saturday		
Time of Day	Number	%
6 am-10 am		
10 am-4 pm		
4 pm-7 pm	2	100
7 pm-12 Mid		
12 Mid-6 am		
Weather	Number	%
Clear	2	100
Cloudy		
Fog		
Rain		
Sleet/Snow		
Pavement	Number	%
Dry	2	100
Snow/Ice		
Wet		
Light Conditions	Number	%
Day	2	100
Night		
Dawn/Dusk		

Accident Type	Number	%
Rear End	1	50
Sideswipe		
Left Turn	1	50
Right Turn		
Right Angle		
Head On		
Bicyclist		
Pedestrian		
Fixed Object		
Unknown		
Severity	Number	%
Fatal Injury		
Non-Fatal Injury	1	50
Property-Damage Only	1	50
Time of Year	Number	%
Winter (Dec-Feb)		
Spring (Mar-May)	1	50
Summer (June-Aug)	1	50
Fall (Sep-Nov)		
Contributing Factors	Number	%
Driver Inexperience		
Failure to Yield ROW	1.00	50
Following Too Closely	0.50	25
Glare	0.50	25
Unsafe Speed		
Pavement Slippery		
Unknown		

**Accident Rate Calculations**

Total Volume:	9,650	vehicles per day (AADT Source: JMC base counts)
	3.52	Million Vehicles per Year
	0.7	Average number of accidents per year
	0.19	Accident Rate in accidents per Million Entering Vehicles (MEV)
	0.06	NYSDOT Mean collision rate (Urban 3-leg unsignalized intersection)

**Specific Collisions Types****Rear End**

0.3	Average number of Rear End accidents per year
0.09	Accident Rate in Accidents per Million Entering Vehicles
0.02	NYSDOT Mean Accident Rate

**Left Turn**

0.3	Average number of Left Turn accidents per year
0.09	Accident Rate in Accidents per Million Entering Vehicles
0.00	NYSDOT Mean Accident Rate

**TABLE AR2**

ROADWAY NAME: NY 22

TOTAL ACCIDENTS: 0

BETWEEN: Connector Road (INT 1) &amp; Anderson Lane (INT 2)

SEGMENT LENGTH: 0.09 mi

TIME PERIOD: 1/1/2016-12/31/2018

Day of Week	Number	%
Sunday		
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		
Time of Day	Number	%
6 am-10 am		
10 am-4 pm		
4 pm-7 pm		
7 pm-12 Mid		
12 Mid-6 am		
Weather	Number	%
Clear		
Cloudy		
Fog		
Rain		
Sleet/Snow		
Pavement	Number	%
Dry		
Snow/Ice		
Wet		
Light Conditions	Number	%
Day		
Night		
Dawn/Dusk		

Accident Type	Number	%
Rear End		
Sideswipe		
Left Turn		
Right Turn		
Right Angle		
Head On		
Bicyclist		
Pedestrian		
Fixed Object		
Unknown		
Severity	Number	%
Fatal Injury		
Non-Fatal Injury		
Property-Damage Only		
Time of Year	Number	%
Winter (Dec-Feb)		
Spring (Mar-May)		
Summer (June-Aug)		
Fall (Sep-Nov)		
Contributing Factors	Number	%
Driver Inexperience		
Failure to Yield ROW		
Following Too Closely		
Traffic Control Disregard		
Unsafe Speed		
Pavement Slippery		
Unknown		

**Accident Rate Calculations**

Total Volume:	5,380	vehicles per day (AADT Source: JMC base counts)
	1.96	Million Vehicles per Year
	0.0	Average number of accidents per year
	0.00	Accident Rate in accidents per Million Vehicle Miles (MVM)
	3.52	NYS DOT Mean collision rate (Urban Mainline & Juncture 2-Lanes Undivided)



**TABLE AR3**

INTERSECTION NAME: NY 22 &amp; Anderson Lane

TOTAL ACCIDENTS: 0

INTERSECTION NUMBER: 2

TIME PERIOD: 1/1/2016-12/31/2018

Day of Week	Number	%
Sunday		
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		
Time of Day	Number	%
6 am-10 am		
10 am-4 pm		
4 pm-7 pm		
7 pm-12 Mid		
12 Mid-6 am		
Weather	Number	%
Clear		
Cloudy		
Fog		
Rain		
Sleet/Snow		
Pavement	Number	%
Dry		
Snow/Ice		
Wet		
Light Conditions	Number	%
Day		
Night		
Dawn/Dusk		

Accident Type	Number	%
Rear End		
Sideswipe		
Left Turn		
Right Turn		
Right Angle		
Head On		
Bicyclist		
Pedestrian		
Fixed Object		
Unknown		
Severity	Number	%
Fatal Injury		
Non-Fatal Injury		
Property-Damage Only		
Time of Year	Number	%
Winter (Dec-Feb)		
Spring (Mar-May)		
Summer (June-Aug)		
Fall (Sep-Nov)		
Contributing Factors	Number	%
Driver Inexperience		
Failure to Yield ROW		
Following Too Closely		
Traffic Control Disregard		
Unsafe Speed		
Pavement Slippery		
Unknown		

**Accident Rate Calculations**

Total Volume:	5,470	vehicles per day (AADT Source: JMC base counts)
	2.00	Million Vehicles per Year
	0.0	Average number of accidents per year
	0.00	Accident Rate in accidents per Million Entering Vehicles (MEV)
	0.12	NYSDOT Mean collision rate (Urban 3-leg unsignalized intersection)

**TABLE AR4**

ROADWAY NAME: NY 22

TOTAL ACCIDENTS: 0

BETWEEN: Anderson Lane (INT 2) &amp; Site Driveway A (INT 3)

SEGMENT LENGTH: 0.04 mi

TIME PERIOD: 1/1/2016-12/31/2018

Day of Week	Number	%
Sunday		
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		
Time of Day	Number	%
6 am-10 am		
10 am-4 pm		
4 pm-7 pm		
7 pm-12 Mid		
12 Mid-6 am		
Weather	Number	%
Clear		
Cloudy		
Fog		
Rain		
Sleet/Snow		
Pavement	Number	%
Dry		
Snow/Ice		
Wet		
Light Conditions	Number	%
Day		
Night		
Dawn/Dusk		

Accident Type	Number	%
Rear End		
Sideswipe		
Left Turn		
Right Turn		
Right Angle		
Head On		
Bicyclist		
Pedestrian		
Fixed Object		
Unknown		
Severity	Number	%
Fatal Injury		
Non-Fatal Injury		
Property-Damage Only		
Time of Year	Number	%
Winter (Dec-Feb)		
Spring (Mar-May)		
Summer (June-Aug)		
Fall (Sep-Nov)		
Contributing Factors	Number	%
Driver Inexperience		
Failure to Yield ROW		
Following Too Closely		
Traffic Control Disregard		
Unsafe Speed		
Pavement Slippery		
Unknown		

**Accident Rate Calculations**

Total Volume:	5,190	vehicles per day (AADT Source: JMC base counts)
	1.89	Million Vehicles per Year
	0.0	Average number of accidents per year
	<b>0.00</b>	Accident Rate in accidents per Million Vehicle Miles (MVM)
	3.52	NYSDOT Mean collision rate (Urban Mainline & Junction 2-Lanes Undivided)

**TABLE AR5**

INTERSECTION NAME: NY 22 & Site Driveway A

TOTAL ACCIDENTS: 0

INTERSECTION NUMBER: 3

TIME PERIOD: 1/1/2016-12/31/2018

Day of Week	Number	%
Sunday		
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		
Time of Day	Number	%
6 am-10 am		
10 am-4 pm		
4 pm-7 pm		
7 pm-12 Mid		
12 Mid-6 am		
Weather	Number	%
Clear		
Cloudy		
Fog		
Rain		
Sleet/Snow		
Pavement	Number	%
Dry		
Snow/Ice		
Wet		
Light Conditions	Number	%
Day		
Night		
Dawn/Dusk		

Accident Type	Number	%
Rear End		
Sideswipe		
Left Turn		
Right Turn		
Right Angle		
Head On		
Bicyclist		
Pedestrian		
Fixed Object		
Unknown		
Severity	Number	%
Fatal Injury		
Non-Fatal Injury		
Property-Damage Only		
Time of Year	Number	%
Winter (Dec-Feb)		
Spring (Mar-May)		
Summer (June-Aug)		
Fall (Sep-Nov)		
Contributing Factors	Number	%
Driver Inexperience		
Failure to Yield ROW		
Following Too Closely		
Traffic Control Disregard		
Unsafe Speed		
Pavement Slippery		
Unknown		

**Accident Rate Calculations**

Total Volume:	5,190	vehicles per day (AADT Source: JMC base counts)
	1.89	Million Vehicles per Year
	0.0	Average number of accidents per year
	0.00	Accident Rate in accidents per Million Entering Vehicles (MEV)
	0.12	NYSDOT Mean collision rate (Urban 3-leg unsignalized intersection)

**TABLE AR6**

ROADWAY NAME: NY 22

TOTAL ACCIDENTS: 0

BETWEEN: Site Driveway A (INT 3) &amp; Site Driveway B (INT 4)

SEGMENT LENGTH: 0.03 mi

TIME PERIOD: 1/1/2016-12/31/2018

Day of Week	Number	%
Sunday		
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		
Time of Day	Number	%
6 am-10 am		
10 am-4 pm		
4 pm-7 pm		
7 pm-12 Mid		
12 Mid-6 am		
Weather	Number	%
Clear		
Cloudy		
Fog		
Rain		
Sleet/Snow		
Pavement	Number	%
Dry		
Snow/Ice		
Wet		
Light Conditions	Number	%
Day		
Night		
Dawn/Dusk		

Accident Type	Number	%
Rear End		
Sideswipe		
Left Turn		
Right Turn		
Right Angle		
Head On		
Bicyclist		
Pedestrian		
Fixed Object		
Unknown		
Severity	Number	%
Fatal Injury		
Non-Fatal Injury		
Property-Damage Only		
Time of Year	Number	%
Winter (Dec-Feb)		
Spring (Mar-May)		
Summer (June-Aug)		
Fall (Sep-Nov)		
Contributing Factors	Number	%
Driver Inexperience		
Failure to Yield ROW		
Following Too Closely		
Traffic Control Disregard		
Unsafe Speed		
Pavement Slippery		
Unknown		

**Accident Rate Calculations**

Total Volume:	5,190	vehicles per day (AADT Source: JMC base counts)
	1.89	Million Vehicles per Year
	0.0	Average number of accidents per year
	<b>0.00</b>	Accident Rate in accidents per Million Vehicle Miles (MVM)
	3.52	NYSDOT Mean collision rate (Urban Mainline & Juncture 2-Lanes Undivided)

**TABLE AR7**

INTERSECTION NAME: NY 22 &amp; Site Driveway B

TOTAL ACCIDENTS: 0

INTERSECTION NUMBER: 4

TIME PERIOD: 1/1/2016-12/31/2018

Day of Week	Number	%
Sunday		
Monday		
Tuesday		
Wednesday		
Thursday		
Friday		
Saturday		
Time of Day	Number	%
6 am-10 am		
10 am-4 pm		
4 pm-7 pm		
7 pm-12 Mid		
12 Mid-6 am		
Weather	Number	%
Clear		
Cloudy		
Fog		
Rain		
Sleet/Snow		
Pavement	Number	%
Dry		
Snow/Ice		
Wet		
Light Conditions	Number	%
Day		
Night		
Dawn/Dusk		

Accident Type	Number	%
Rear End		
Sideswipe		
Left Turn		
Right Turn		
Right Angle		
Head On		
Bicyclist		
Pedestrian		
Fixed Object		
Unknown		
Severity	Number	%
Fatal Injury		
Non-Fatal Injury		
Property-Damage Only		
Time of Year	Number	%
Winter (Dec-Feb)		
Spring (Mar-May)		
Summer (June-Aug)		
Fall (Sep-Nov)		
Contributing Factors	Number	%
Driver Inexperience		
Failure to Yield ROW		
Following Too Closely		
Traffic Control Disregard		
Unsafe Speed		
Pavement Slippery		
Unknown		

**Accident Rate Calculations**

Total Volume:	5,290	vehicles per day (AADT Source: JMC base counts)
	1.93	Million Vehicles per Year
	0.0	Average number of accidents per year
	0.00	Accident Rate in accidents per Million Entering Vehicles (MEV)
	0.12	NYSDOT Mean collision rate (Urban 3-leg unsignalized intersection)

**TABLE AR8**

ROADWAY NAME: Connector Road

TOTAL ACCIDENTS: 1

BETWEEN: NY 22 (INT 1) &amp; NY 138 (INT 5)

SEGMENT LENGTH: 0.15 mi

TIME PERIOD: 1/1/2016-12/31/2018

Day of Week	Number	%
Sunday		
Monday		
Tuesday	1	100
Wednesday		
Thursday		
Friday		
Saturday		
Time of Day	Number	%
6 am-10 am		
10 am-4 pm	1	100
4 pm-7 pm		
7 pm-12 Mid		
12 Mid-6 am		
Weather	Number	%
Clear	1	100
Cloudy		
Fog		
Rain		
Sleet/Snow		
Pavement	Number	%
Dry	1	100
Snow/Ice		
Wet		
Light Conditions	Number	%
Day	1	100
Night		
Dawn/Dusk		

Accident Type	Number	%
Rear End		
Sideswipe		
Left Turn		
Right Turn		
Right Angle		
Head On		
Bicyclist		
Pedestrian		
Fixed Object	1	100
Unknown		
Severity	Number	%
Fatal Injury		
Non-Fatal Injury		
Property-Damage Only	1	100
Time of Year	Number	%
Winter (Dec-Feb)	1	100
Spring (Mar-May)		
Summer (June-Aug)		
Fall (Sep-Nov)		
Contributing Factors	Number	%
Passing or Lane Usage Improper	1.00	100
Following Too Closely		
Traffic Control Disregard		
Unsafe Speed		
Pavement Slippery		
Unknown		

**Accident Rate Calculations**

Total Volume:	7,780	vehicles per day (AADT Source: JMC base counts)
	2.84	Million Vehicles per Year
	0.3	Average number of accidents per year
	0.77	Accident Rate in accidents per Million Vehicle Miles (MVM)
	3.52	NYSDOT Mean collision rate (Urban Mainline & Juncture 2-Lanes Undivided)

**Specific Collisions Types****Wet Pavement**

0.0	Average number of Wet Pavement accidents per year
0.00	Accident Rate in Accidents per Million Vehicle Miles
0.57	NYSDOT Mean Accident Rate

**Fixed Object**

0.3	Average number of Fixed Object accidents per year
0.12	Accident Rate in Accidents per Million Vehicle Miles
0.49	NYSDOT Mean Accident Rate



**TABLE AR9**

INTERSECTION NAME: NY 138 &amp; Connector Road

TOTAL ACCIDENTS: 6

INTERSECTION NUMBER: 5

TIME PERIOD: 1/1/2016-12/31/2018

Day of Week	Number	%
Sunday		
Monday	1	17
Tuesday	2	33
Wednesday		
Thursday	2	33
Friday	1	17
Saturday		
Time of Day	Number	%
6 am-10 am	2	33
10 am-4 pm	3	50
4 pm-7 pm	1	17
7 pm-12 Mid		
12 Mid-6 am		
Weather	Number	%
Clear	5	83
Cloudy	1	17
Fog		
Rain		
Sleet/Snow		
Pavement	Number	%
Dry	5	83
Snow/Ice		
Wet	1	17
Light Conditions	Number	%
Day	5	83
Night		
Dawn/Dusk	1	17

Accident Type	Number	%
Rear End	4	67
Sideswipe	1	17
Left Turn		
Right Turn		
Right Angle		
Head On		
Bicyclist		
Pedestrian		
Fixed Object		
Animal	1	17
Severity	Number	%
Fatal Injury		
Non-Fatal Injury	1	17
Property-Damage Only	5	83
Time of Year	Number	%
Winter (Dec-Feb)		
Spring (Mar-May)		
Summer (June-Aug)	3	50
Fall (Sep-Nov)	3	50
Contributing Factors	Number	%
Driver Inexperience		
Failure to Yield ROW		
Following Too Closely	4.00	67
Animal's Action	1.00	17
Failure to Keep Right	0.50	8
Turning Improperly	0.50	8
Unknown		

**Accident Rate Calculations**

Total Volume:	10,620	vehicles per day (AADT Source: JMC base counts)
	3.88	Million Vehicles per Year
	2.0	Average number of accidents per year
	0.52	Accident Rate in accidents per Million Entering Vehicles (MEV)
	0.14	NYSDOT Mean collision rate (Urban 3-leg signalized intersection)

**Specific Collisions Types****Rear End**

1.3	Average number of Rear End accidents per year
0.34	Accident Rate in Accidents per Million Entering Vehicles
0.05	NYSDOT Mean Accident Rate

**Sideswipe**

0.3	Average number of Sideswipe accidents per year
0.09	Accident Rate in Accidents per Million Entering Vehicles
0.00	NYSDOT Mean Accident Rate

**Wet Pavement**

0.3	Average number of Wet Pavement accidents per year
0.09	Accident Rate in Accidents per Million Entering Vehicles
0.02	NYSDOT Mean Accident Rate

### **NYSDOT Review Comments**

The following comments result from the review of the documentation submission on February 12, 2019.

#### **General Comments:**

- The trips you have generated are still below the ITE's recommended values. The Department requests that you use the ITE values for your trip generation.
- Your proposed driveways are too wide. Per NYSDOT Standard Sheet 608-03 Table 1, the width of a one-way minor commercial driveway shall not exceed 24 feet (for a posted speed of 40mph or less).
- The 7.4% and 10% driveway slopes may not meet the recommended standards by NYSDOT. Provide profiles of the proposed driveways for a detail review of how they tie into Route 22. The Department recommends all driveways be constructed to slope away from the edge of the travel lane at the same slope as the highway shoulder.
- The posted speed limit on Route 22 within the study area is 45mph (not 55mph as noted in your TIS), which drops to 40mph (only in the northbound direction).



#### **Synchro Comments:**

- Based on the 15-minute counts provided, the peak hour factors used in your Synchro models are slightly higher than the computed.
- The synchro models will need to be revised using ITE's average values.

## MEMORANDUM

TO: Chairman Jerome Kerner, AIA and  
Members of Lewisboro Planning Board

CC: Ciorsdan Conran  
Judson Siebert, Esq.  
Joseph Angiello

FROM: Jan K. Johannessen, AICP   
Joseph M. Cermele, P.E., CFM   
Town Consulting Professionals

DATE: March 14, 2019

RE: Zef Dedvukaj  
170 Elmwood Road  
Sheet 47, Block 10056, Lot 38

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### PROJECT DESCRIPTION

The subject property consists of ±2.0 acres of vacant land and is located at 170 Elmwood Road within the R-2A Zoning District. The subject property contains wetlands and watercourses that are jurisdictional to the Town of Lewisboro and the on-site watercourse is a regulated by the New York State Department of Environmental Conservation (NYSDEC) as a Class AA-S stream. The applicant is proposing to develop the property with a single-family residence, paved driveway including a new open-bottom culvert, septic system, water well, and other ancillary improvements. The majority of the proposed improvements are located within either the wetland or wetland buffer.

### SEQRA

The proposed action is a Type II Action and is categorically exempt from the State Environmental Quality Review Act (SEQRA).

**REQUIRED APPROVALS**

1. A Wetland Activity Permit and Town Stormwater Permit are required from the Planning Board; a public hearing is required to be held on the Wetland Activity Permit.
2. The subject parcel is located within the Special Character Overlay Zone and approval by the ACARC is required.
3. Access onto Elmwood Road will require a Driveway Work Permit from the Town of Lewisboro Highway Superintendent.
4. The proposed septic system and well have been approved by the Westchester County Department of Health (WCDH).
5. An Article 15 Protections of Water Permit is required from the New York State Department of Environmental Conservation (NYSDEC).
6. The stream crossing and proposed culvert may require approval by the Army Corps of Engineers (ACOE).
7. If land disturbance  $\geq 1$  acre, coverage under the NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002) will be required.

**COMMENTS:**

1. As requested, the applicant has prepared a Stormwater Pollution Prevention Plan (SWPPP) for the proposed development. The applicant is proposing a series of rain gardens to provide water quality treatment of stormwater runoff from the house and drive. In lieu of additional mitigation measures to provide detention for runoff volume from larger storm events, the applicant is proposing to discharge these flows to the stream to allow it to pass through the adjacent downstream culvert crossing on Elmwood Road prior to the peak flows from the remaining tributary drainage area ( $\pm 447$  acres) reaching this design point. Given the site's proximity to the existing culvert crossing at the downstream confluence of the drainage basin, we are in general agreement with this design approach. The applicant has provided a hydraulic model that analyzes three (3) scenarios; the existing conditions, the current proposed plan and a potential scenario that includes the future replacement of the existing pipe in Elmwood Road with a box culvert. As previously noted, the existing crossing at Elmwood Road/Wakeman Road has been historically problematic and subject to frequent flooding. The Town has made prior applications for various grants in an effort to replace the culvert with an appropriately sized crossing with no success. The Board may wish to consider that the applicant, in lieu of providing the on-site detention, contribute toward off-site improvements for the culvert crossing. It is our opinion that

the project area would be better served by an improved crossing than simply providing on-site mitigation that will ultimately have little, if any, positive effect to the current conditions.

2. As noted above, the applicant has provided sizing calculations supporting the design of the proposed stream crossing for the drive. The analysis demonstrated that the crossing can safely pass the 25-year storm without impacting the upstream driveway crossing. As previously requested, however, the crossing shall safely convey the 100-year storm event. The current analysis indicates that elevated stream flows for the 50-year and 100-year storm events will be impeded slightly. It appears the driveway grades can be modified in order to raise the elevation of the bridge to avoid the conflict.
3. As requested, the application was referred to the City of Norwalk First District Water Department for review and comment. Correspondence from the First Taxing District Water Department dated February 12, 2019, has been submitted to the Board for consideration.
4. As requested, the applicant has reviewed the proposed driveway curb cut location with the Highway Superintendent. The location was found to be acceptable subject to clearing existing brush and vegetation, as needed within the sight lines of a vehicle exiting the drive. The limits of clearing shall be shown on the plan and include a note requiring the property owner to maintain a maximum height of two (2) feet for all vegetation planted in this area.
5. The construction sequence shall be revised to include the construction and conversion of the temporary sediment traps.
6. The construction sequence shall be revised to include the construction of the driveway crossing and associated construction staging areas. The limit of disturbance shall be updated as necessary. Include any construction details related to the crossing installation including, but not limited to, dewatering devices, concrete washout details, turbidity curtains, etc.
7. The applicant has provided a copy of the septic and well approval from WCHD. However, this approval was based on an earlier stormwater management plan. The applicant should provide confirmation from the WCHD that the current well location and proximity to the rain gardens is acceptable.
8. A construction detail for the Rain Gardens shall be provided.
9. Section 5.0 of the SWPPP report shall be revised to reference the latest revised site plans and current owner.
10. Question #40 and #41 of the NOI shall be revised to reference the required NYSDEC and ACOE approvals.

Chairman Jerome Kerner, AIA  
March 14, 2019  
Page 4 of 4

In order to expedite the review of subsequent submissions, the applicant should provide annotated responses to each of the comments outlined herein.

**PLANS REVIEWED, PREPARED BY CRONIN ENGINEERING, DATED JANUARY 15, 2019:**

- Cover Sheet (C-0.1)
- Zoning Compliance Plan (ZC-1.1)
- Utility, Grading, and Erosion Control Plan (UG-2.1)
- Construction Details and Profile (UD-3.1)

**PLANS REVIEWED, PREPARED BY STEVEN DANZER, PHD & ASSOCIATES, LLC, DATED OCTOBER 9, 2018:**

- Wetland Mitigation and Enhancement Plan and Plant List (WP-1)
- Tree Removal and Protection Plan (WP-2)

**DOCUMENTS REVIEWED:**

- Letter, prepared by Cronin Engineering, dated February 5, 2019
- Stormwater Pollution Prevention Plan Report, dated November 20, 2018
- Supplemental Wetlands Report, prepared by Steven Danzer, dated June 19, 2018
- Email from Donald Ukers, First Taxing District, dated February 12, 2019
- Email from Jim Cannon ACOE, dated January 11, 2019
- NYSDEC Permit, dated December 3, 2018
- Architecturals, prepared by Teo Siguenza Architect, dated November 7, 2018
- WCHD Approval, dated January 22, 2019

JKJ/JMC/dc

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**TO:** Town of Lewisboro Planning Board

**FROM:** Lewisboro Conservation Advisory Council

**SUBJECT:** Dedvukaj Residence - Cal #66-17WP, #12-17SW  
170 Elmwood Road, South Salem  
Sheet 47, Block 10056, Lot 38

**DATE:** March 7, 2019

---

The Conservation Advisory Council (CAC) continues to have the concerns expressed in the previous documents (April 4, April 7, May 8, July12). The site-walk did not alleviate the concerns. The additional possibility of blasting, adds a new concern about wetland disturbance.

The location of the project, which is entirely in the wetland buffer, poses potential risks to the streams that flow down Wakeman Road and eventually into a City of Norwalk reservoir.

The submissions for the March Planning Board meeting shows documents from NYSDEC, Norwalk Water, a SWPPP report and a Wetland Mitigation Plan. These documents impose an extensive set of conditions and requirements on this project. Given this environment, it is important that the wetland mitigation plan be reviewed to ensure it is adequate to protect the wetland. The CAC is concerned that all these conditions be adequately monitored. Failure to meet many of these conditions on an ongoing basis could result in pollution to the stream with sediment, construction material, fertilizer and other material. The CAC would like to see a comprehensive and detailed inspection plan that ensures all the conditions are met prior to, during and after construction is complete.

At one time it was mention that blasting might be necessary in the construction of the house and that this would not be known until construction began. The CAC would like to see an update as to whether blasting is still being considered and if so, a plan to contain any output from the process to protect the wetland and neighbor's property.

After construction, it is also important that materials such as fertilizers are controlled and monitored so they do not enter the wetland.

In reviewing the plan to remove trees, it appears there is the possibility that some of the trees planned for removal could have ages in excess of one hundred years. If these trees are not invasive (such as Norway maple) then the CAC would like to see if they could be preserved.

With the project plans complete, the CAC would like a second site walk to be considered.



# DEDVUKAJ SITE DEVELOPMENT PLAN

## GENERAL NOTES

1. THE GROSS SITE AREA IS 2.001 ACRES.
2. SURVEY DATA SHOWN HEREON IS TAKEN FROM A SURVEY PREPARED BY H. STANLEY JOHNSON AND COMPANY, LAND SURVEYORS, PC ENTITLED: "BOUNDARY SURVEY AND TOPOGRAPHIC SURVEY PREPARED FOR ZEF DEDVUKAJ..." LAST UPDATED ON JUNE 8, 2017.
3. THE SITE IS LOCATED IN THE R-2A ZONING DISTRICT.
4. THE SITE IS LOCATED IN THE SPECIAL CHARACTER OVERLAY DISTRICT.
5. WETLAND DISTURBANCES SHALL BE MITIGATED WITH PLANTINGS AS SHOWN ON THE WETLAND MITIGATION AND ENHANCEMENT PLAN AND PLANT LIST (SHEET WP-1) PREPARED BY TRACY CHALIFOUX, LLC LANDSCAPE ARCHITECT, DATED JUNE 20, 2018.

## LIST OF DRAWINGS

SHEET #	SHEET X OF Y	TITLE	ISSUE DATE	REVISED
C-0.1	SHEET 1 OF 4	COVER SHEET	JUNE 28, 2018	JANUARY 15, 2019
ZC-1.1	SHEET 2 OF 4	ZONING COMPLIANCE PLAN	JUNE 28, 2018	JANUARY 15, 2019
UG-2.1	SHEET 3 OF 4	UTILITY, GRADING, AND EROSION CONTROL PLAN	JUNE 28, 2018	JANUARY 15, 2019
UD-3.1	SHEET 4 OF 4	UTILITY, GRADING, AND EROSION CONTROL DETAILS	JUNE 28, 2018	JANUARY 15, 2019

## REFERENCE NOTES

REFERENCE IS TO BE MADE TO THE WETLAND MITIGATION AND ENHANCEMENT PLAN AND PLANT LIST (SHEET WP-1) PREPARED BY TRACY CHALIFOUX, LLC LANDSCAPE ARCHITECT, DATED AS REVISED OCTOBER 9, 2018.

REFERENCE IS TO BE MADE TO THE TREE REMOVAL AND PROTECTION PLAN (SHEET WP-2) PREPARED BY TRACY CHALIFOUX, LLC LANDSCAPE ARCHITECT, DATED AS REVISED OCTOBER 9, 2018.

REFERENCE IS TO BE MADE TO THE SUPPLEMENTAL WETLANDS INVESTIGATION PREPARED BY STEVEN DANZER, PHD & ASSOCIATES, LLC WETLANDS AND ENVIRONMENTAL CONSULTING, DATED OCTOBER 11, 2018.

REFERENCE IS TO BE MADE TO THE SUPPLEMENTAL WETLANDS REPORT PREPARED BY STEVEN DANZER, PHD & ASSOCIATES, LLC WETLANDS AND ENVIRONMENTAL CONSULTING, DATED JUNE 19, 2018.

REFERENCE IS TO BE MADE TO THE ARCHITECTURAL PLANS AND ELEVATIONS PREPARED BY TEO SIGÜENZA, ARCHITECT, DATED JUNE 25, 2018.

REFERENCE IS TO BE MADE TO THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED BY THIS OFFICE, DATED SEPTEMBER 28, 2018.

REFERENCE IS TO BE MADE TO THE BRIDGE DESIGN PLANS PREPARED BY OTHERS.

## SOIL DATA CHART

SYMBOL	DESCRIPTION	PERCENT
CrC	CHARLTON-CHATFIELD COMPLEX, ROLLING, VERY ROCKY	13% OF SITE
CsD	CHARLTON-CHATFIELD COMPLEX, HILLY, VERY ROCKY	29% OF SITE
LcB	LEICESTER LOAM, 3 TO 8% SLOPES, STONY	52% OF SITE
ChC	CHARLTON LOAM, 8 TO 15% SLOPES	6% OF SITE

## LEGEND

	EXISTING CONTOURS
	PROPOSED CONTOURS
	PROPOSED ZONING SETBACK
	PROPOSED WELL
	EXISTING SOIL BOUNDARY
	WETLAND
	T.S.T.
	S.S.
	EXISTING AND/OR PROPOSED OWTS



## ARCHITECT'S FRONT ELEVATION

NOT TO SCALE

## CONSTRUCTION SEQUENCE

1. FILE PERTINENT DOCUMENTS WITH THE TOWN BUILDING DEPARTMENT, NYSOT, NYSDEC, AND ANY OTHER INVOLVED AGENCY.
2. OBTAIN REQUIRED PERMITS (I.E., BUILDING PERMIT, WETLAND PERMIT, EXCAVATION PERMIT, AND ANY OTHER PERMITS NECESSARY FOR THE CONSTRUCTION OF THE RESIDENCE.) RETAIN THE SERVICES OF A QUALIFIED INSPECTOR. PRIOR TO ANY WORK ON SITE, CONTACT THE UNDERGROUND LINE LOCATION SERVICE.
3. LOCATE THE PROPOSED HOUSE AND OTHER SITE IMPROVEMENTS. LOCATION SHALL BE STAKED OUT, WITH OFFSETS AS NECESSARY, BY A LICENSED LAND SURVEYOR.
4. TREES TO BE PRESERVED, IF ANY, ARE TO BE CLEARLY MARKED AND PROTECTED FROM CONSTRUCTION PER THE APPROVED PLAN.
5. PERFORM THE WETLAND MITIGATION PROGRAM AND REMOVE THE INVASIVE SPECIES LISTED. INSTALL ALL REQUIRED EROSION CONTROL MEASURES PER THE APPROVED PLAN. SEE EROSION AND SEDIMENT CONTROL NOTES.
6. CLEAR AND GRUB AREAS PROPOSED FOR CONSTRUCTION, INCLUDING THE HOUSE ADDITION SITE, DRIVEWAY AND DRAINAGE AREA. STUMPS TO BE REMOVED FROM THE SITE SHALL BE DISPOSED OF IN A LAWFUL MANNER. CORDON OFF THE SEPTIC AREA (ON SITE WASTEWATER TREATMENT SYSTEM - OWTS).
7. BEGIN SITE EXCAVATIONS AND FILLING OPERATIONS. ALL DEMOLITION SHALL TAKE PLACE HERE AND ALL DEBRIS SHALL BE REMOVED FROM THE SITE IN A LAWFUL MANNER.
8. CONSTRUCT FOOTING FORMS AND FOUNDATION WALLS. PROCEED WITH CONSTRUCTION OF RESIDENCE IN ACCORDANCE WITH ALL BUILDING DEPARTMENT REQUIREMENTS.
9. INSTALL ROOF LEADER AND FOOTING DRAIN LINES PER THE APPROVED PLANS AND INSTALL THE STORMWATER DRAINAGE SYSTEM PER THE APPROVED PLANS.
10. PLANTING OF ALL THE WETLAND MITIGATION PLANTINGS PER THE APPROVED PLAN, THEN INSTALL THE WETLAND BUFFER MARKERS PER THE APPROVED PLAN.
11. INITIATE AND COMPLETE FINAL GRADING OF THE SITE. PROVIDE THE NECESSARY SEEDING AND MULCH TO ALL FINAL GRADED AREAS.
12. CONTINUAL INSPECTION AND MAINTENANCE OF THE EROSION CONTROL MEASURES IS REQUIRED THROUGHOUT CONSTRUCTION AND SHALL CONTINUE UNTIL THE SITE HAS A STABILIZED GROUND COVER.
13. PAVE THE DRIVEWAY (AS APPLICABLE.)
14. INSTALL THE NECESSARY PLANTINGS AND IMPLEMENT GENERAL CLEAN-UP OF THE LOT.
15. OBTAIN A CERTIFICATE OF OCCUPANCY FROM THE BUILDING DEPARTMENT.

## PLANNING BOARD CERTIFICATION

REVIEWED FOR COMPLIANCE WITH THE PLANNING BOARD  
RESOLUTION DATED \_\_\_\_\_.

JOSEPH M. CERMELI, P.E.  
KELLARD SESSIONS CONSULTING, P.C.  
TOWN CONSULTING ENGINEER

DATE

## OWNER CERTIFICATION

THE UNDERSIGNED OWNER(S) OF THE PROPERTY SHOWN  
HEREON, IS FAMILIAR WITH THIS DRAWING AND ITS CONTENTS,  
AND HEREBY APPROVES THE SAME FOR FILING.

ZEF DEDVUKAJ  
170 ELMWOOD ROAD, TOWN OF LEWISBORO NEW YORK

DATE

YULIA DEDVUKAJ  
170 ELMWOOD ROAD, TOWN OF LEWISBORO, NEW YORK

DATE

## PLANNING BOARD APPROVAL

APPROVED BY RESOLUTION OF THE LEWISBORO TOWN  
PLANNING BOARD DATED \_\_\_\_\_.

JEROME KERNER, CHAIRMAN

DATE

LISA PISERA, SECRETARY

DATE



VICINITY MAP SCALE: 1" = 500'

## ATTORNEY

THE LAW OFFICE OF  
**Michael Fuller Sirignano**  
ATTORNEY & COUNSELOR AT LAW

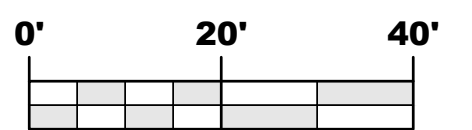
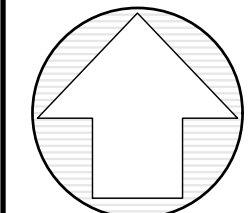
## ARCHITECT

**TEO SIGÜENZA**  
ARCHITECT  
SURVEYOR

H. STANLEY JOHNSON AND COMPANY  
LAND SURVEYORS, P.C.

## ENVIRONMENTAL

STEVEN DANZER, PHD & ASSOCIATES LLC  
wetlands & environmental consulting



SCALE: 1" = 40'

- UNDER NEW YORK STATE EDUCATIONAL LAW ARTICLE 145, SECTION 7209 (2), IT IS UNLAWFUL FOR ANY PERSON TO ALTER ANY ITEM ON THIS DRAWING, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER. IF ANY ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION AND A SPECIFIC DESCRIPTION OF THE ALTERATION.
- COPYRIGHT "2019" BY CRONIN ENGINEERING, P.E., P.C. ALL RIGHTS RESERVED.

## - REVISIONS -

#	REASON	DATE
2	BRIDGE SECTION, REGRADING, AND GENERAL	JANUARY 15, 2019
1	TOWN COMMENTS	SEPTEMBER 28, 2018

## MUNICIPAL TAX IDENTIFICATION:

SECTION: 47  
BLOCK: 10056  
LOT: 38  
DRAWN BY: KAA  
DESIGN BY: KCS/JT  
CHECKED: TC3  
PROJECT: DEDVUKAJ-170ELM  
DATE: JUNE 28, 2018  
JOB #: 170402



PREPARED BY  
**CRONIN**  
ENGINEERING P.E., P.C.  
Professional Engineering & Consulting  
39 ARLO LANE  
CORTLANDT MANOR, NY 10567

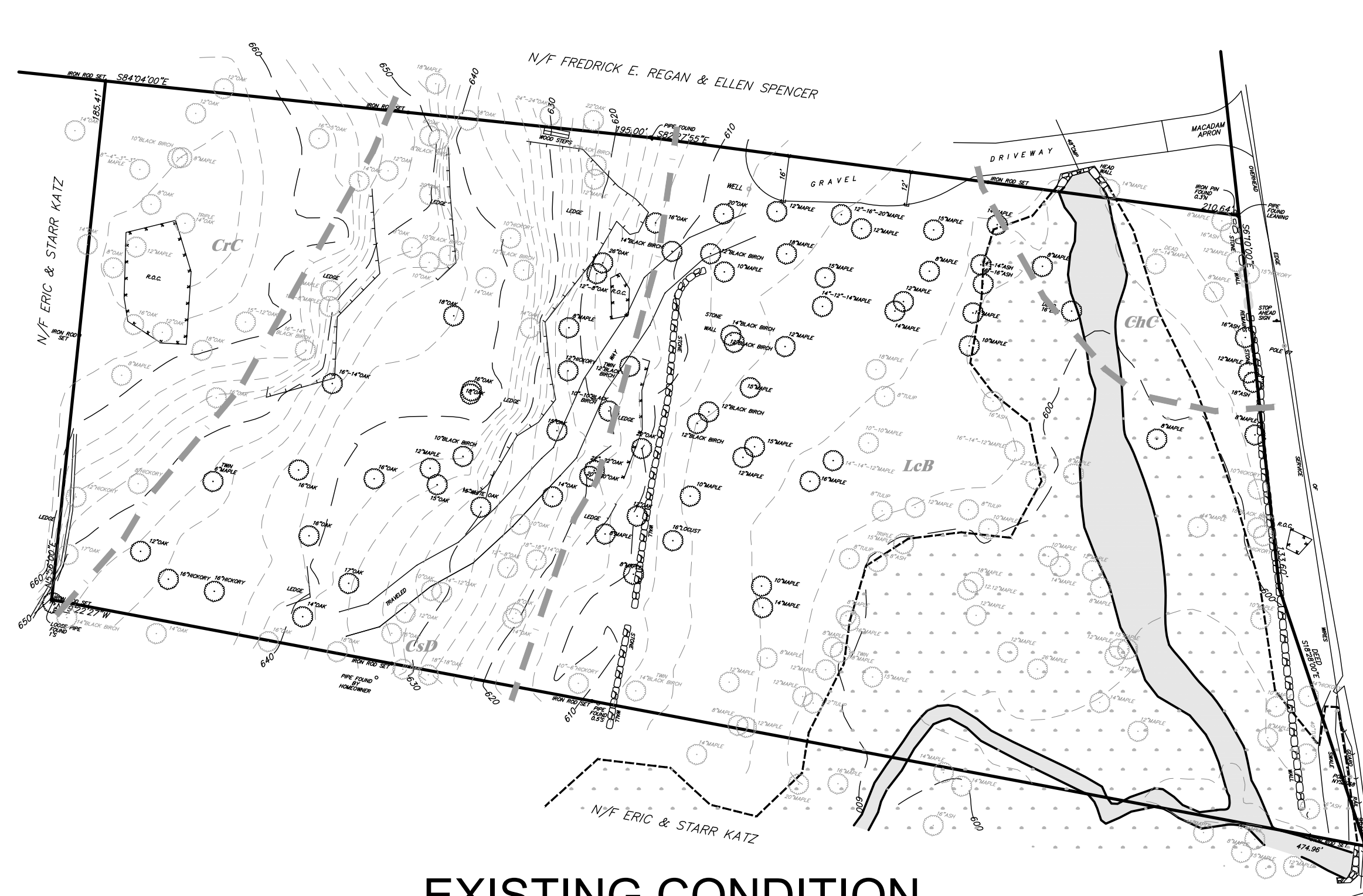
## COVER SHEET

**SITE DEVELOPMENT PLAN  
FOR  
ZEF & YULIA DEDVUKAJ**

170 ELMWOOD ROAD  
SOUTH SALEM, NY 10590

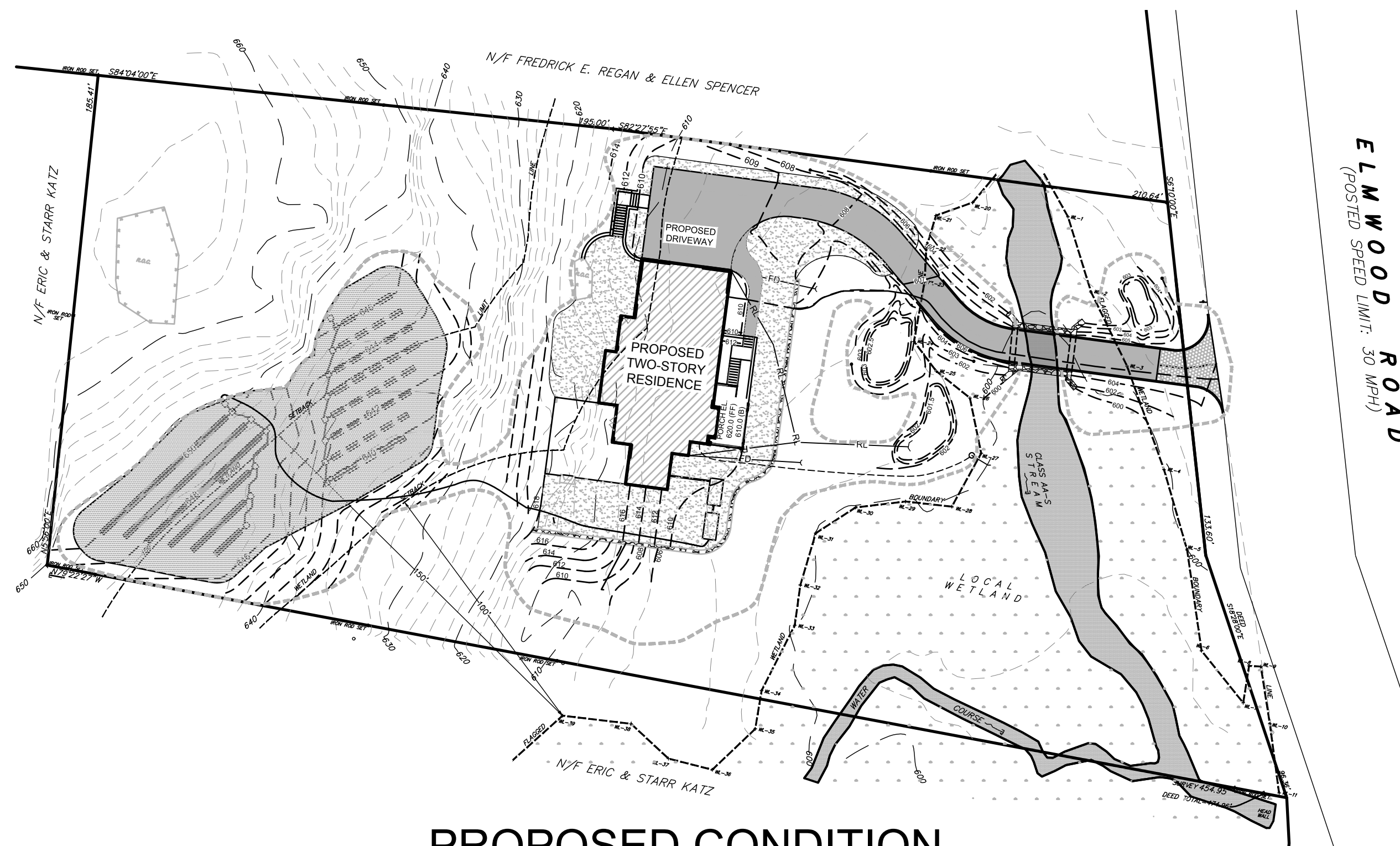
SHEET 1 OF 4

C-0.1



## EXISTING CONDITION

SCALE: 1" = 40'



## PROPOSED CONDITION

SCALE: 1" = 40'

**TOWN OF LEWISBORO  
WESTCHESTER COUNTY, NEW YORK**





VICINITY MAP SCALE: 1" = 500'

**ATTORNEY**  
THE LAW OFFICE OF  
**Michael Fuller Sirignano**  
ATTORNEY & COUNSELOR AT LAW

**ARCHITECT**  
**TEO SIGÜENZA**  
ARCHITECT  
SURVEYOR

H. STANLEY JOHNSON AND COMPANY  
LAND SURVEYORS, P.C.

**ENVIRONMENTAL**  
STEVEN DANZER, PH.D. & ASSOCIATES LLC  
Wetlands & Environmental Consulting

0' 10' 20'  
SCALE: 1" = 20'

• UNDER NEW YORK STATE EDUCATIONAL LAW ARTICLE 145, SECTION 7209 (2), IT IS UNLAWFUL FOR ANY PERSON TO ALTER ANY ITEM ON THIS DRAWING, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER. IF ANY ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

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- REVISIONS -		
#	REASON	DATE
2	BRIDGE SECTION, REGRADING, AND GENERAL	JANUARY 15, 2019
1	TOWN COMMENTS	SEPTEMBER 28, 2018
MUNICIPAL TAX IDENTIFICATION:		
SECTION:	47	
BLOCK:	10056	
LOT:	38	
DRAWN BY:	KAA	
DESIGN BY:	KCS/JT	
CHECKED:	TC3	
PROJECT:	DEDVUKAJ-170ELM	
DATE:	JUNE 28, 2018	
JOB #:	170402	
STATE OF NEW YORK TIMOTHY L. CRONIN III LICENSED PROFESSIONAL ENGINEER 62980 TIMOTHY L. CRONIN III, P.E. LICENSE #062980		

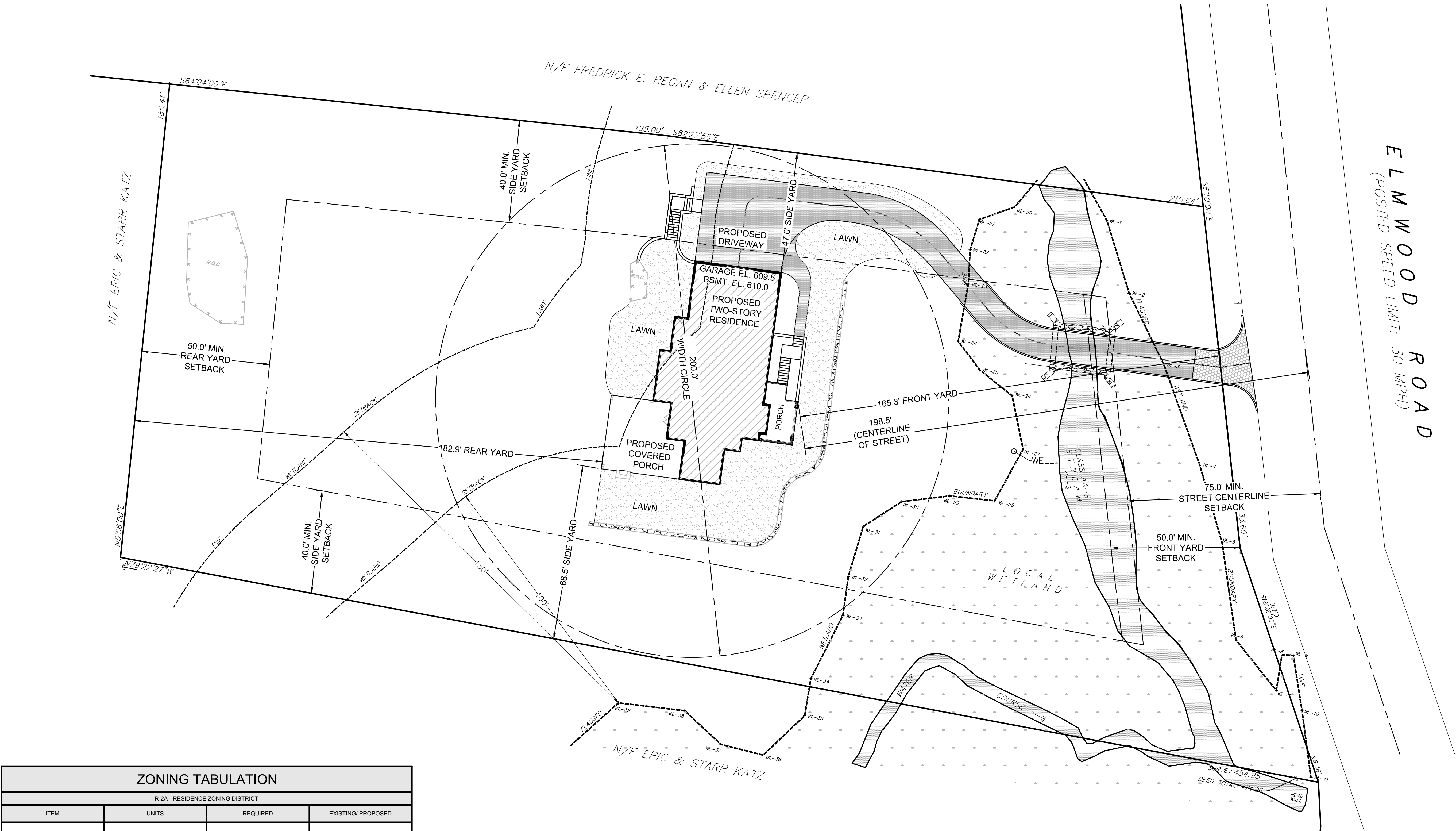
**PREPARED BY**  
**CRONIN**  
ENGINEERING P.E., P.C.  
Professional Engineering & Consulting  
39 ARLO LANE  
CORTLANDT MANOR, NY 10567

**ZONING COMPLIANCE PLAN**

**SITE DEVELOPMENT PLAN FOR**  
**ZEF & YULIA DEDVUKAJ**

170 ELMWOOD ROAD  
SOUTH SALEM, NY 10590

SHEET 2 OF 4 **ZC-1.1**



ZONING TABULATION			
R-2A - RESIDENCE ZONING DISTRICT			
ITEM	UNITS	REQUIRED	EXISTING/ PROPOSED
LOT SIZE	ACRES	2	±2.001
LOT WIDTH	FEET	200	± 203.1'
FRONT YARD (FROM STREET CENTER LINE)	FEET	75	± 198.5
FRONT YARD (FROM FRONT LOT LINE)	FEET	50	± 165.3
SIDE YARD (LEFT)	FEET	40	± 68.5
SIDE YARD (RIGHT)	FEET	40	± 47.0
REAR YARD	FEET	50	± 182.9
BUILDING HEIGHT	STORIES/FEET	2.5 / 35	2 / 32
BUILDING COVERAGE	PERCENT	9	± 5.4*
*BUILDING FOOTPRINT (44,709.75 S.F.) / LOT AREA (827,169.28 S.F.) = 0.054 x 100% = ± 5.4%			
**THIS SITE IS LOCATED IN THE SPECIAL CHARACTER OVERLAY DISTRICT			

**Dig Safely.**  
**New York**  
800-962-7962  
www.digsafelynewyork.org

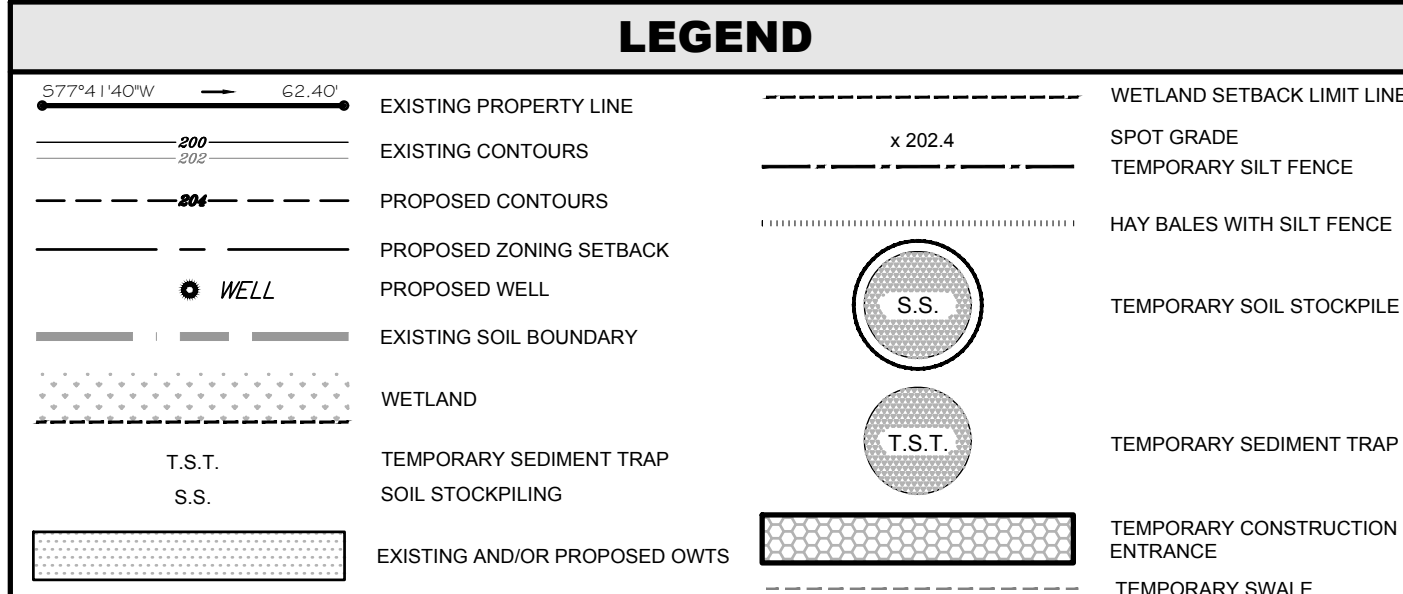
☐ Call Before You Dig  
☐ Wait The Required Time  
☐ Confirm Utility Response  
☐ Respect the Marks  
☐ Dig With Care

ZONING COMPLIANCE PLAN  
SCALE: 1" = 20'



## ENGINEER'S NOTES TO OWNER AND/OR CONTRACTOR

- THERE SHALL BE NO MODIFICATION TO ANY ASPECT OF THIS PLAN WITHOUT FIRST CONTACTING CRONIN ENGINEERING, P.E., P.C. FOR APPROVAL.
- PRIOR TO ANY EXCAVATION, THE OWNER AND/OR CONTRACTOR SHALL CALL THE UNDERGROUND LINE LOCATION SERVICE (CODE 53) AT (800)962-7962. FOR MORE INFORMATION, VISIT: [www.digsafelynewyork.org](http://www.digsafelynewyork.org)
- EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN IN THIS PLAN SET SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF ANY SITE WORK. IF UNFORESEEN FIELD CONDITIONS ARE ENCOUNTERED WHICH PROHIBIT THE INSTALLATION OF CERTAIN EROSION AND SEDIMENT CONTROL MEASURES AS SHOWN, IT SHALL BE THE OWNER AND/OR CONTRACTOR'S RESPONSIBILITY TO CONTACT CRONIN ENGINEERING, P.E., P.C. IMMEDIATELY TO DISCUSS ALTERNATIVE METHODS. IT SHALL BE THE OWNER AND/OR CONTRACTOR'S RESPONSIBILITY TO ENSURE THE INTEGRITY OF ALL EROSION AND SEDIMENT CONTROL MEASURES AT ALL TIMES THROUGHOUT THE DURATION OF THE PROJECT.
- CRONIN ENGINEERING, P.E., P.C. MAKES NO REPRESENTATIONS OR CERTIFICATIONS AS TO THE INTEGRITY, LOCATION OR EXISTENCE OF SUBSURFACE STRUCTURES OR SOIL CONDITIONS WITH RESPECT TO STABILITY AND SUITABILITY FOR THE INTENDED PURPOSE. IT IS THE RESPONSIBILITY OF THE OWNER AND/OR CONTRACTOR TO VERIFY ALL SUBSURFACE CONDITIONS AND INSURE THAT ALL IMPROVEMENTS ARE PLACED ON MATERIAL WITH A SUITABLE BEARING CAPACITY.
- CRONIN ENGINEERING, P.E., P.C. MAKES NO REPRESENTATION OR CERTIFICATIONS AS TO THE QUANTITY OF MATERIAL NEEDED OR TO BE REMOVED FOR THE SUCCESSFUL CONSTRUCTION OF THE PROJECT. IT IS THE RESPONSIBILITY OF THE OWNER AND/OR CONTRACTOR TO VERIFY THE QUANTITY OF MATERIAL NEEDED OR TO BE REMOVED TO SUCCESSFULLY CONSTRUCT THE PROJECT.
- IN THE EVENT THAT FIELD CONDITIONS ARE DIFFERENT THAN WHAT IS PRESENTED IN THIS PLAN SET, IT IS THE RESPONSIBILITY OF THE OWNER AND/OR CONTRACTOR TO NOTIFY CRONIN ENGINEERING, P.E., P.C. PRIOR TO CONTINUING WITH ANY FURTHER SITE WORK.
- IF UNFORESEEN SUBSURFACE CONDITIONS ARE ENCOUNTERED (I.E. ROCK, GROUNDWATER, ETC.), THE OWNER AND/OR CONTRACTOR SHALL STOP WORK AND NOTIFY CRONIN ENGINEERING, P.E., P.C. ALL NECESSARY MODIFICATIONS OR CHANGES SHALL BE DISCUSSED WITH AND APPROVED BY CRONIN ENGINEERING, P.E., P.C. PRIOR TO CONTINUING WITH ANY FURTHER SITE WORK. FURTHERMORE, THE OWNER AND/OR CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS IF BLASTING IS REQUIRED.
- IT IS THE OWNER AND/OR CONTRACTOR'S SOLE RESPONSIBILITY TO FOLLOW OSHA, NYS AND ANY OTHER APPLICABLE CODES OR REQUIREMENTS THROUGHOUT THE DURATION OF THE PROJECT. THIS INCLUDES BUT IS NOT LIMITED TO PROVIDING ADEQUATE BRACING AND GUARANTEEING THE STABILITY OF EXCAVATIONS AND OTHER VICINITY STRUCTURES.
- CRONIN ENGINEERING, P.E., P.C. MAKES NO REPRESENTATION AS TO THE QUALITY (I.E. CONTAMINATION), IF ANY, OF THE SOILS ON THIS SITE. THE OWNER AND/OR CONTRACTOR IS RESPONSIBLE TO CONDUCT ANY AND ALL TESTING AS MAY BE REQUIRED TO ENSURE THE SITE HAS NO CONTAMINATED SOILS.



### WETLAND AND WETLAND BUFFER MITIGATION

DESCRIPTION	MITIGATION AREA PROVIDED (SQ. FT.)	MITIGATION AREA PROVIDED (ACRES)	WETLAND MITIGATION RATIO	WETLAND BUFFER MITIGATION RATIO
TREES, SHRUBS, AND PERENNIALS (WITHIN WETLAND)	4,620	0.106	1.6 : 1 *	---
TREES, SHRUBS, AND PERENNIALS (IN WETLAND BUFFER)	5,690	0.131	---	0.18 : 1 *
RAIN GARDENS (IN WETLAND BUFFER)	1,104	0.025	---	0.036 : 1 *
NATIVE WILDFLOWER MEADOW (IN WETLAND BUFFER)**	4,057	0.093	---	---
NATIVE WILDFLOWER MEADOW (OUTSIDE OF WETLAND BUFFER)**	3,858	0.088	---	---
<b>TOTAL</b>	<b>19,329</b>	<b>0.443</b>	---	---

\* BASED ON DISTURBANCE AREAS IN LIMIT OF DISTURBANCE CHART ON THIS SHEET  
\*\* NOT COUNTED AS MITIGATION

### RAIN GARDEN 1 SIZING CALCULATIONS

Calculations prepared for: Deduval  
170 Elmwood Road, Town of Laviada  
Rain Garden 1 for Roof Area

STEP 1: CALCULATED WATER QUALITY VOLUME	
$WQ_v = \frac{(P)(R)(A)}{12}$	= Water Quality Volume
P = 90% Rain = 1.2 in.	
I = 1% Impervious = 100%	
R <sub>1</sub> = 0.05 + (0.0006) = 0.05	
A = Roof Area = 2900 sq. ft.	
WQ <sub>v</sub> = 276 cu. ft.	

STEP 2: SOLVE FOR DRAINAGE LAYER AND SOIL MEDIA VOLUME	
$V_{SM} = A_{RG} \times D_{SM} \times P_{SM}$	
$V_{DL} = A_{RG} \times D_{DL} \times P_{DL}$	
A <sub>RG</sub> = proposed rain garden surface area = 485 sq. ft.	
D <sub>SM</sub> = depth soil media = 6 in.	
D <sub>DL</sub> = depth drainage layer = 12 in.	
P <sub>SM</sub> = porosity of soil media = 20%	
P <sub>DL</sub> = porosity of drainage layer = 40%	
V <sub>SM</sub> = volume of soil media = 58.0007 cu. ft.	
V <sub>DL</sub> = volume of drainage layer = 176 cu. ft.	
D <sub>DL</sub> = ponding depth = 6 in.	
WQ <sub>v</sub> ≤ V <sub>SM</sub> + V <sub>DL</sub> + (D <sub>P</sub> × A <sub>RG</sub> )	
WQ <sub>v</sub> = 276 cu. ft.	
V <sub>SM</sub> + V <sub>DL</sub> + (D <sub>P</sub> × A <sub>RG</sub> ) = 483.0007 cu. ft.	
The proposed design is ok.	

Refer to Chapter 5 of the New York State DEC Stormwater Design Manual  
The proposed design exceeds the water quality volume requirements.

Keith Staudohar, CPSWQ x January 16, 2019

**CRONIN ENGINEERING P.E., P.C.**  
Professional Engineering & Consulting

### RAIN GARDEN 2 SIZING CALCULATIONS

Calculations prepared for: Deduval  
170 Elmwood Road, Town of Laviada  
Rain Garden 2 for Upper Driveway Area

STEP 1: CALCULATED WATER QUALITY VOLUME	
$WQ_v = \frac{(P)(R)(A)}{12}$	= Water Quality Volume
P = 90% Rain = 1.2 in.	
I = 1% Impervious = 100%	
R <sub>1</sub> = 0.05 + (0.0006) = 0.05	
A = Driveway Area = 2900 sq. ft.	
WQ <sub>v</sub> = 276 cu. ft.	

STEP 2: SOLVE FOR DRAINAGE LAYER AND SOIL MEDIA VOLUME	
$V_{SM} = A_{RG} \times D_{SM} \times P_{SM}$	
$V_{DL} = A_{RG} \times D_{DL} \times P_{DL}$	
A <sub>RG</sub> = proposed rain garden surface area = 485 sq. ft.	
D <sub>SM</sub> = depth soil media = 6 in.	
D <sub>DL</sub> = depth drainage layer = 12 in.	
P <sub>SM</sub> = porosity of soil media = 20%	
P <sub>DL</sub> = porosity of drainage layer = 40%	
V <sub>SM</sub> = volume of soil media = 48.1 cu. ft.	
V <sub>DL</sub> = volume of drainage layer = 184.4 cu. ft.	
D <sub>DL</sub> = ponding depth = 6 in.	
WQ <sub>v</sub> ≤ V <sub>SM</sub> + V <sub>DL</sub> + (D <sub>P</sub> × A <sub>RG</sub> )	
WQ <sub>v</sub> = 276 cu. ft.	
V <sub>SM</sub> + V <sub>DL</sub> + (D <sub>P</sub> × A <sub>RG</sub> ) = 491 cu. ft.	
The proposed design is ok.	

Refer to Chapter 5 of the New York State DEC Stormwater Design Manual  
The proposed design exceeds the water quality volume requirements.

Keith Staudohar, CPSWQ x January 16, 2019

**CRONIN ENGINEERING P.E., P.C.**  
Professional Engineering & Consulting

### RAIN GARDEN 3 SIZING CALCULATIONS

Calculations prepared for: Deduval  
170 Elmwood Road, Town of Laviada  
Rain Garden 3 for Lower Driveway Area

STEP 1: CALCULATED WATER QUALITY VOLUME	
$WQ_v = \frac{(P)(R)(A)}{12}$	= Water Quality Volume
P = 90% Rain = 1.2 in.	
I = 1% Impervious = 100%	
R <sub>1</sub> = 0.05 + (0.0006) = 0.05	
A = Driveway Area = 2900 sq. ft.	
WQ <sub>v</sub> = 276 cu. ft.	

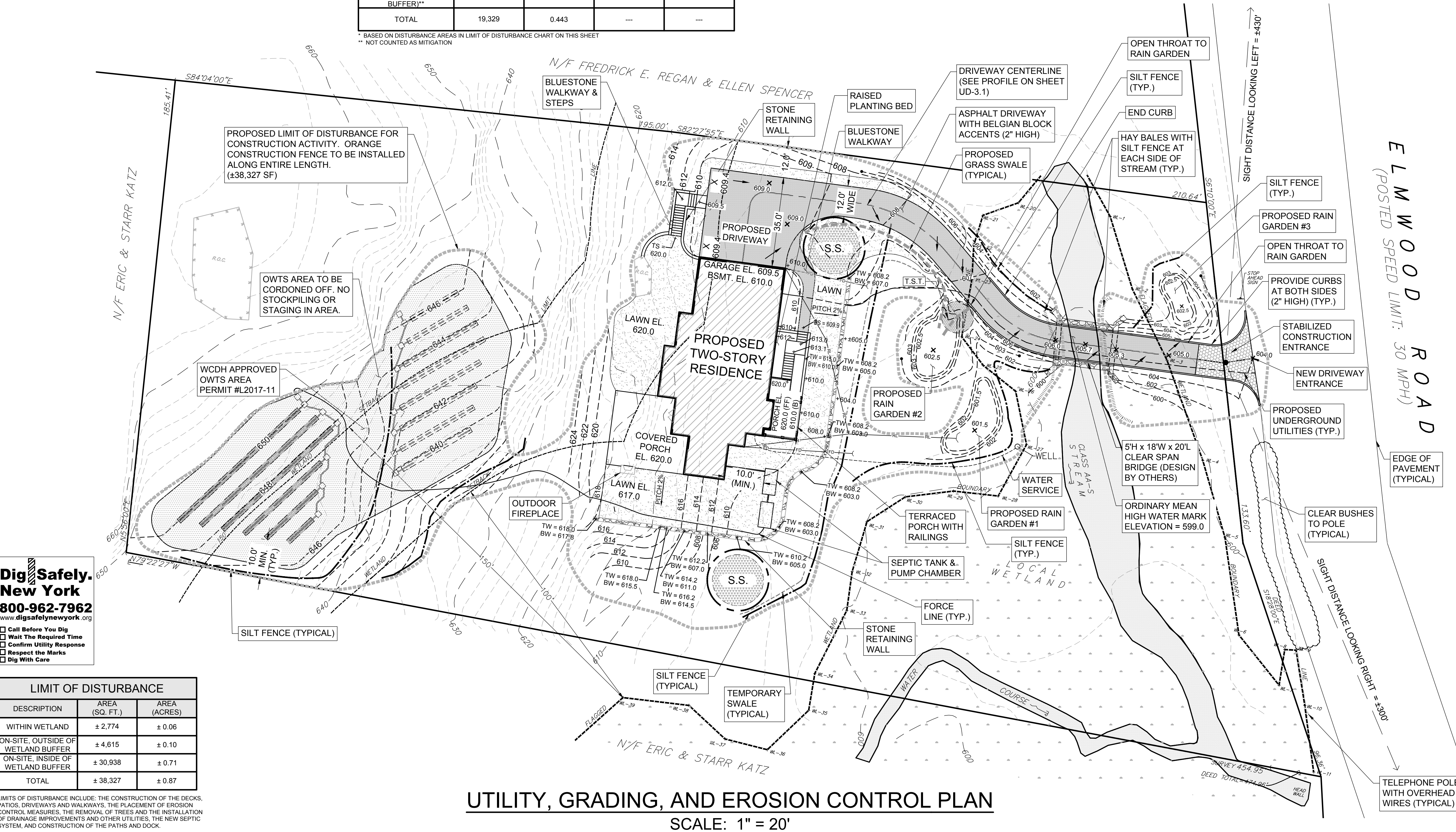
STEP 2: SOLVE FOR DRAINAGE LAYER AND SOIL MEDIA VOLUME	
$V_{SM} = A_{RG} \times D_{SM} \times P_{SM}$	
$V_{DL} = A_{RG} \times D_{DL} \times P_{DL}$	
A <sub>RG</sub> = proposed rain garden surface area = 275 sq. ft.	
D <sub>SM</sub> = depth soil media = 6 in.	
D <sub>DL</sub> = depth drainage layer = 6 in.	
P <sub>SM</sub> = porosity of soil media = 20%	
P <sub>DL</sub> = porosity of drainage layer = 40%	
V <sub>SM</sub> = volume of soil media = 27.5 cu. ft.	
V <sub>DL</sub> = volume of drainage layer = 55 cu. ft.	
D <sub>DL</sub> = ponding depth = 6 in.	
WQ <sub>v</sub> ≤ V <sub>SM</sub> + V <sub>DL</sub> + (D <sub>P</sub> × A <sub>RG</sub> )	
WQ <sub>v</sub> = 276 cu. ft.	
V <sub>SM</sub> + V <sub>DL</sub> + (D <sub>P</sub> × A <sub>RG</sub> ) = 220 cu. ft.	
The proposed design is ok.	

Refer to Chapter 5 of the New York State DEC Stormwater Design Manual  
The proposed design exceeds the water quality volume requirements.

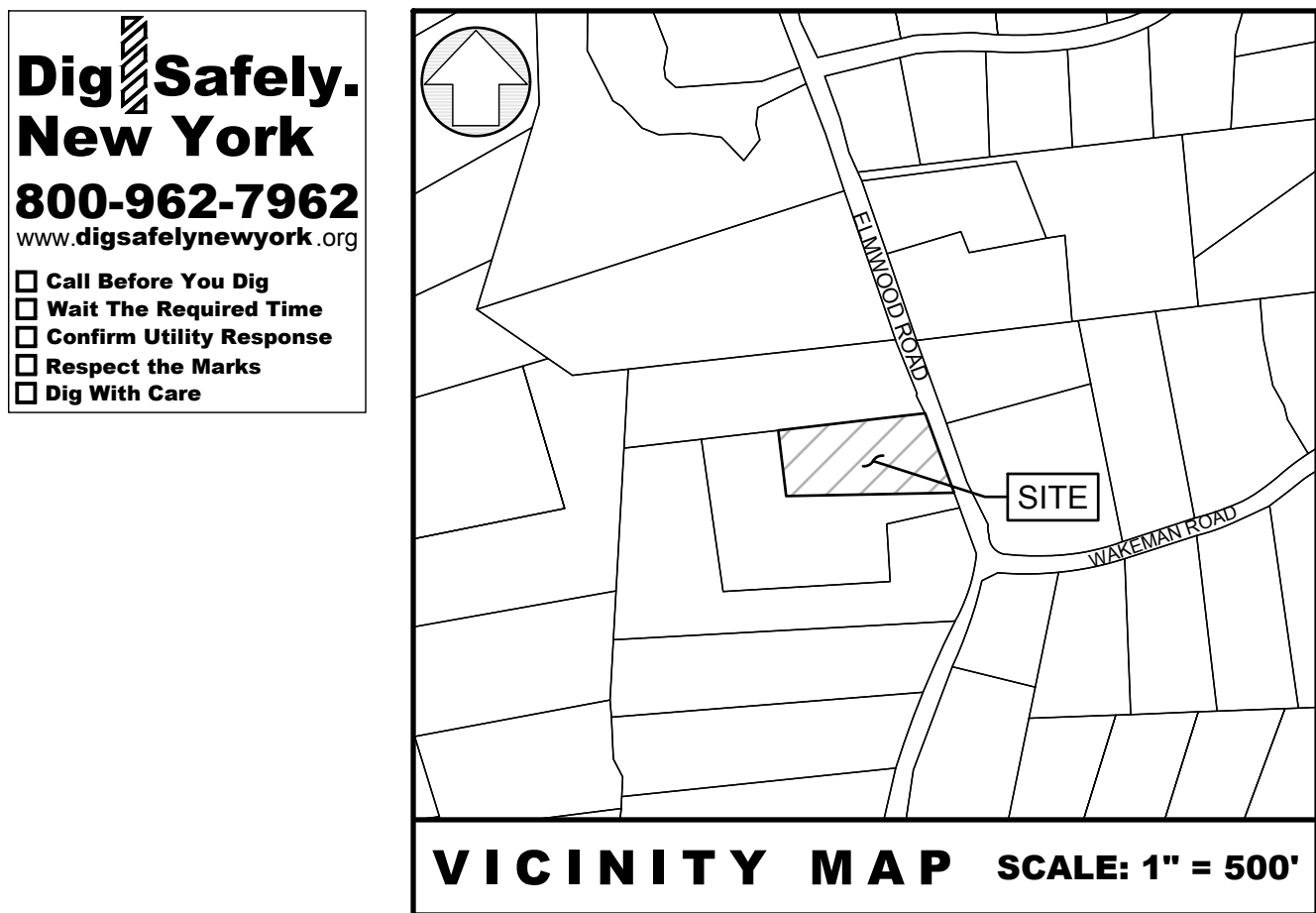
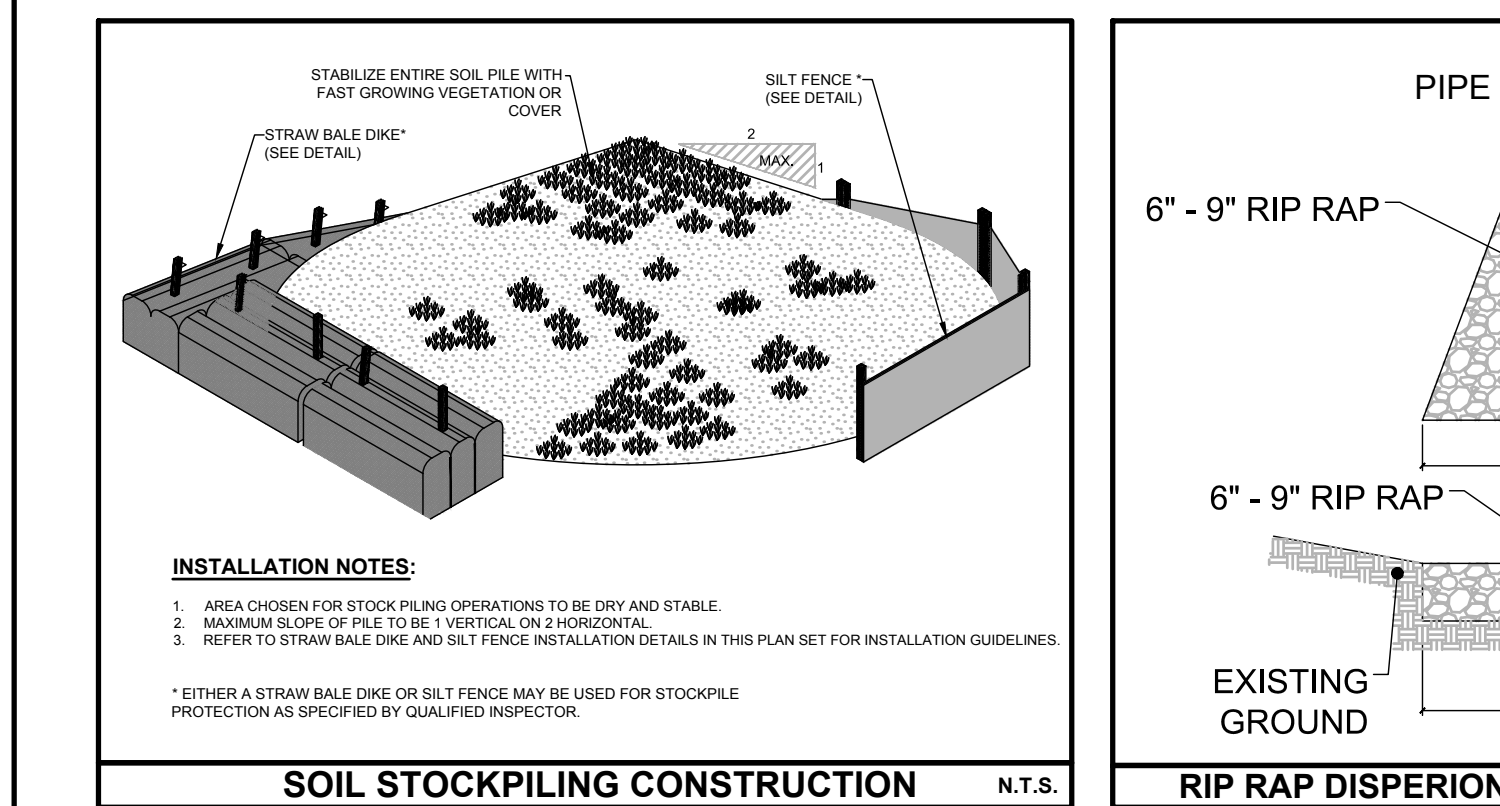
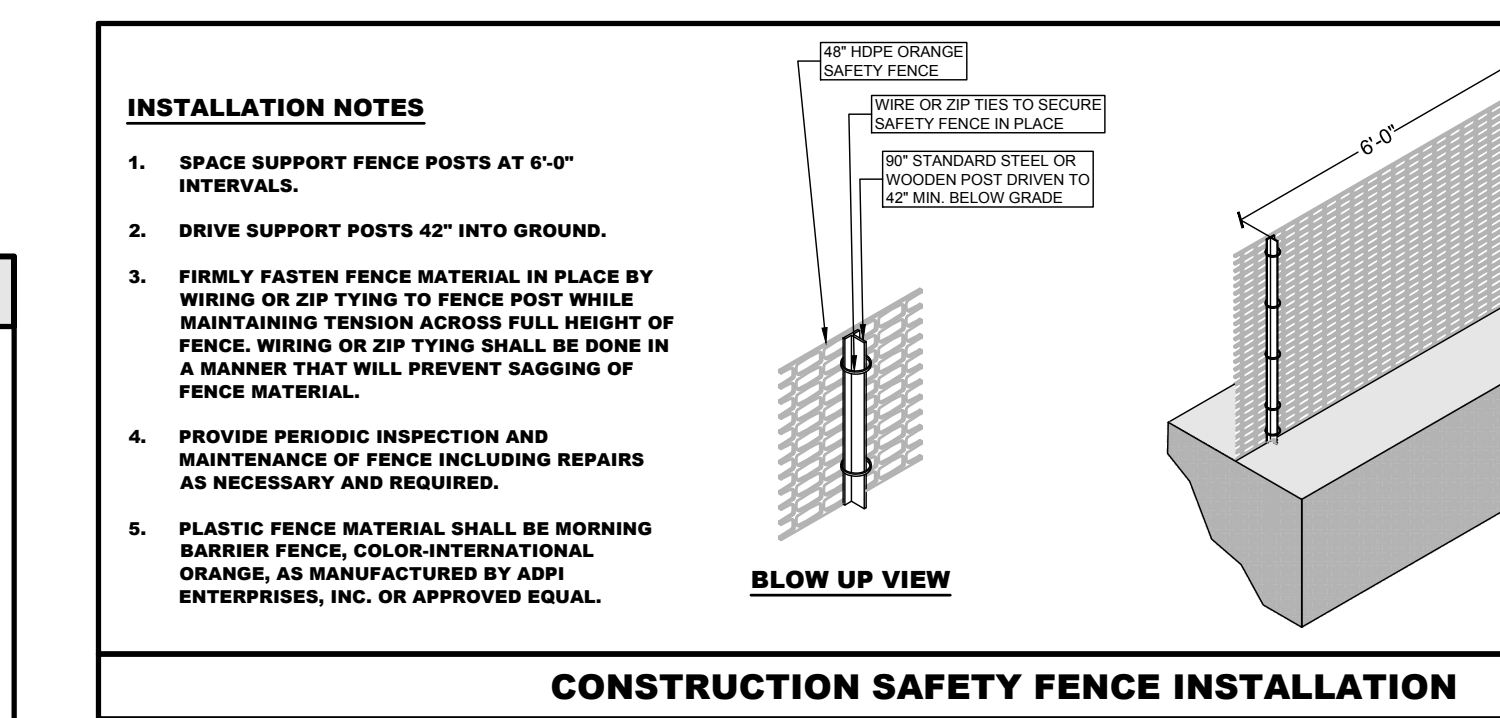
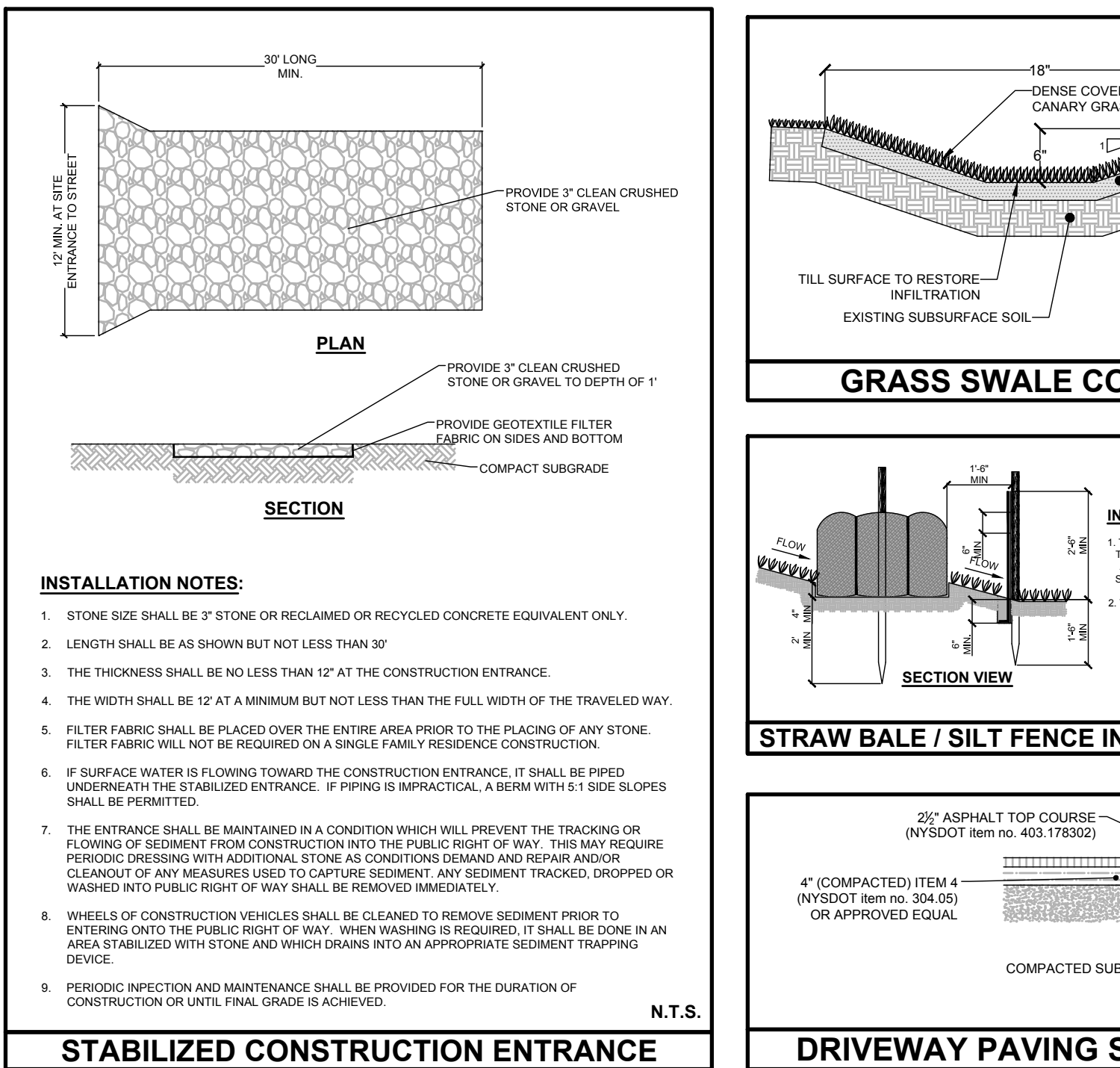
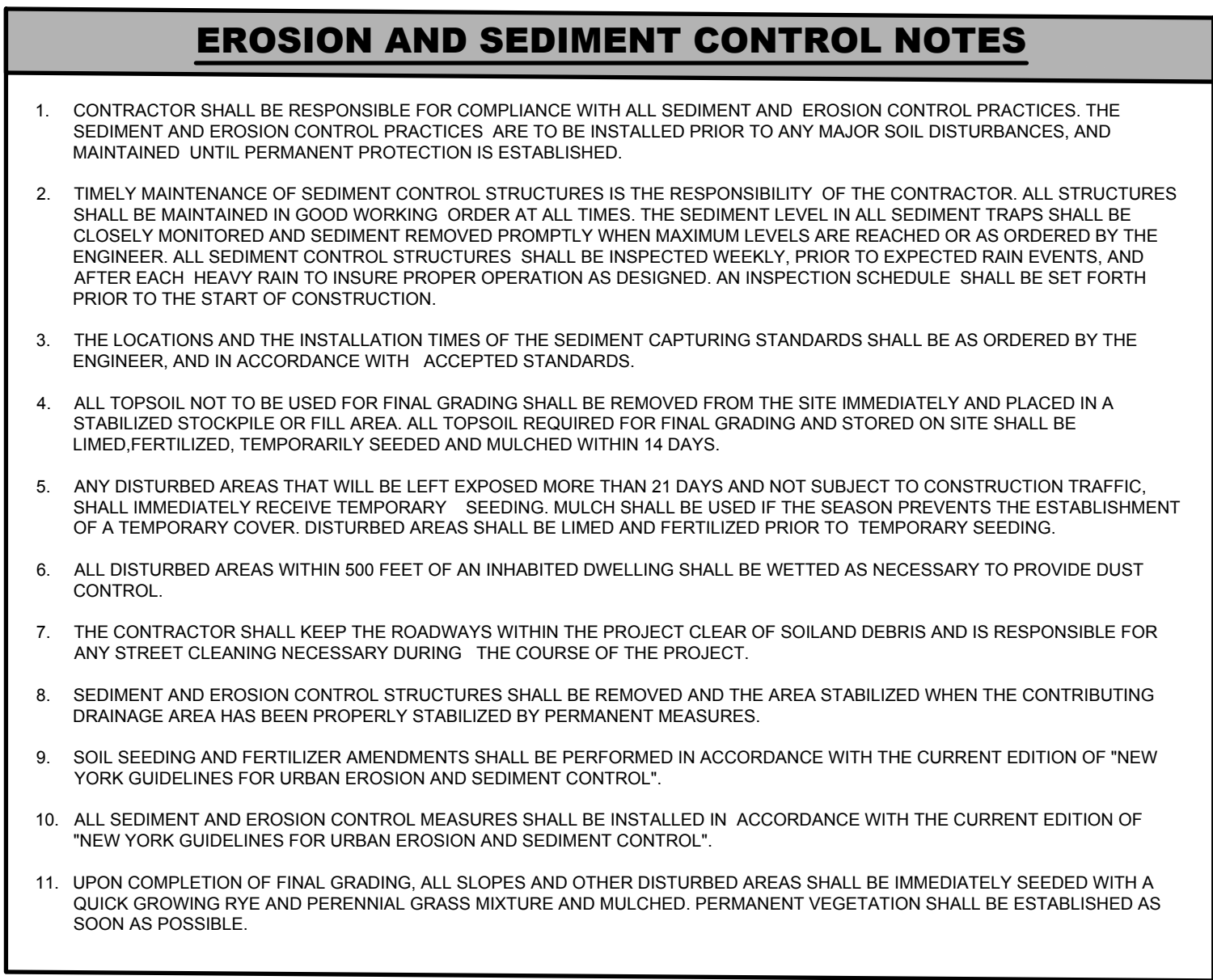
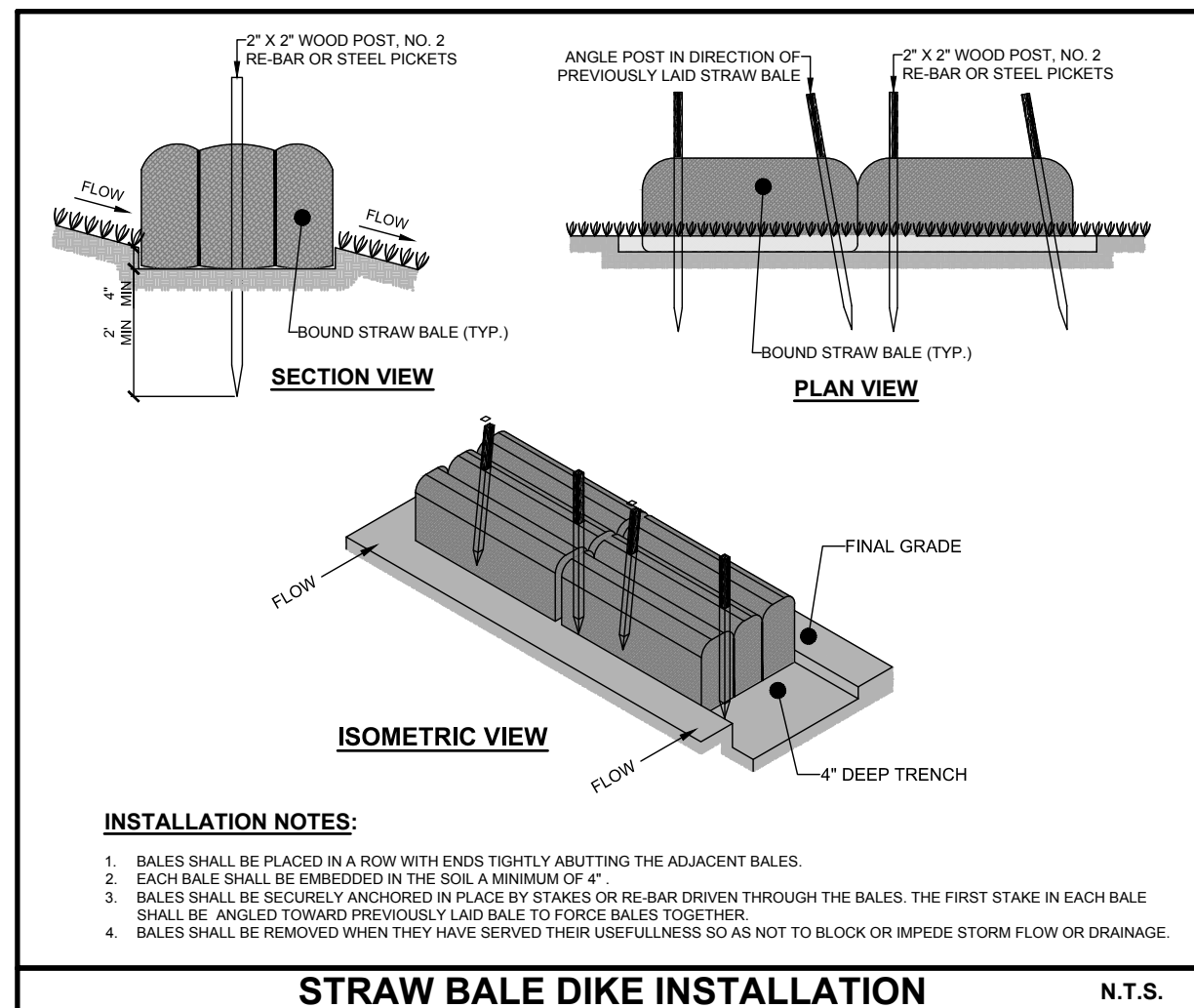
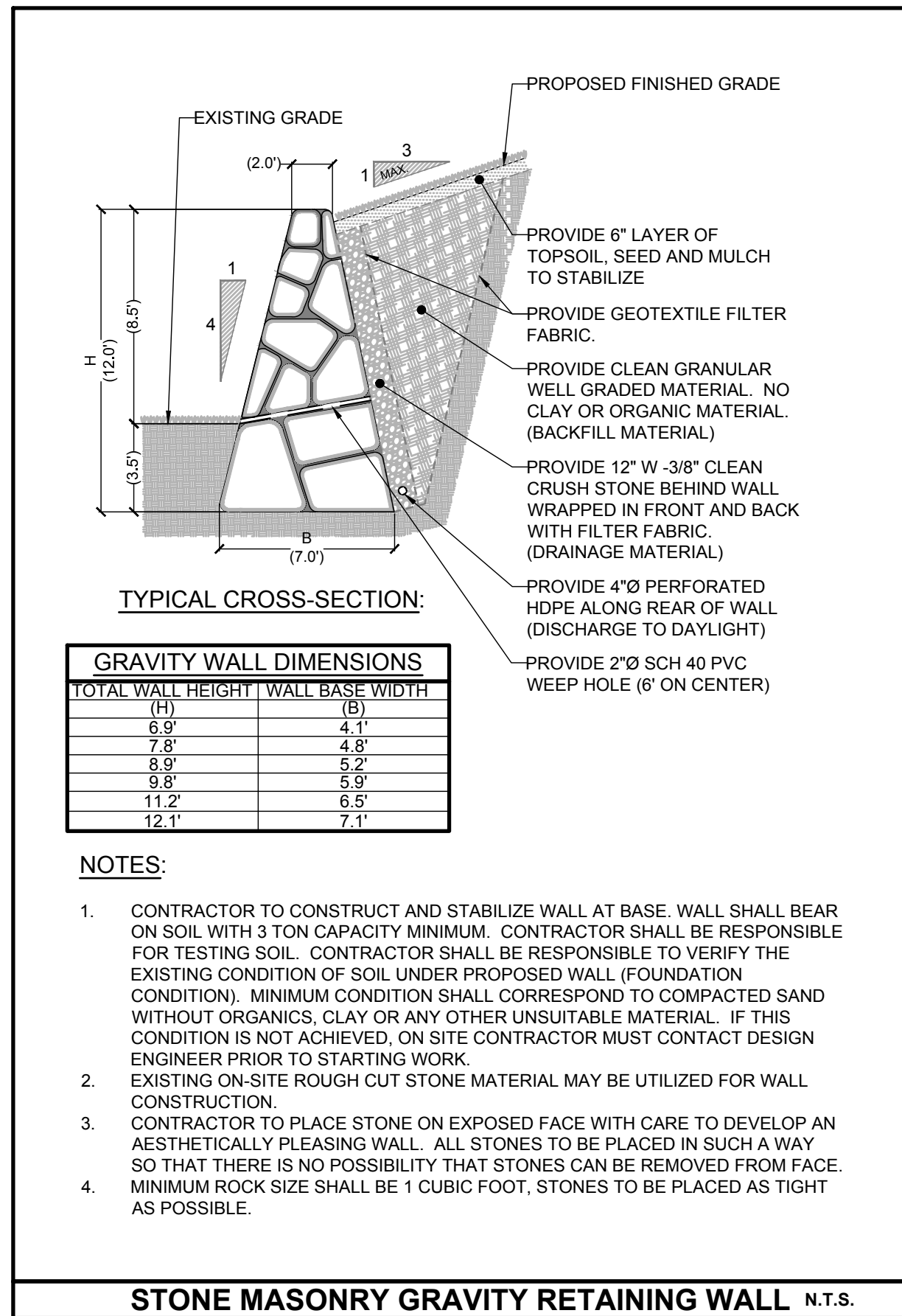
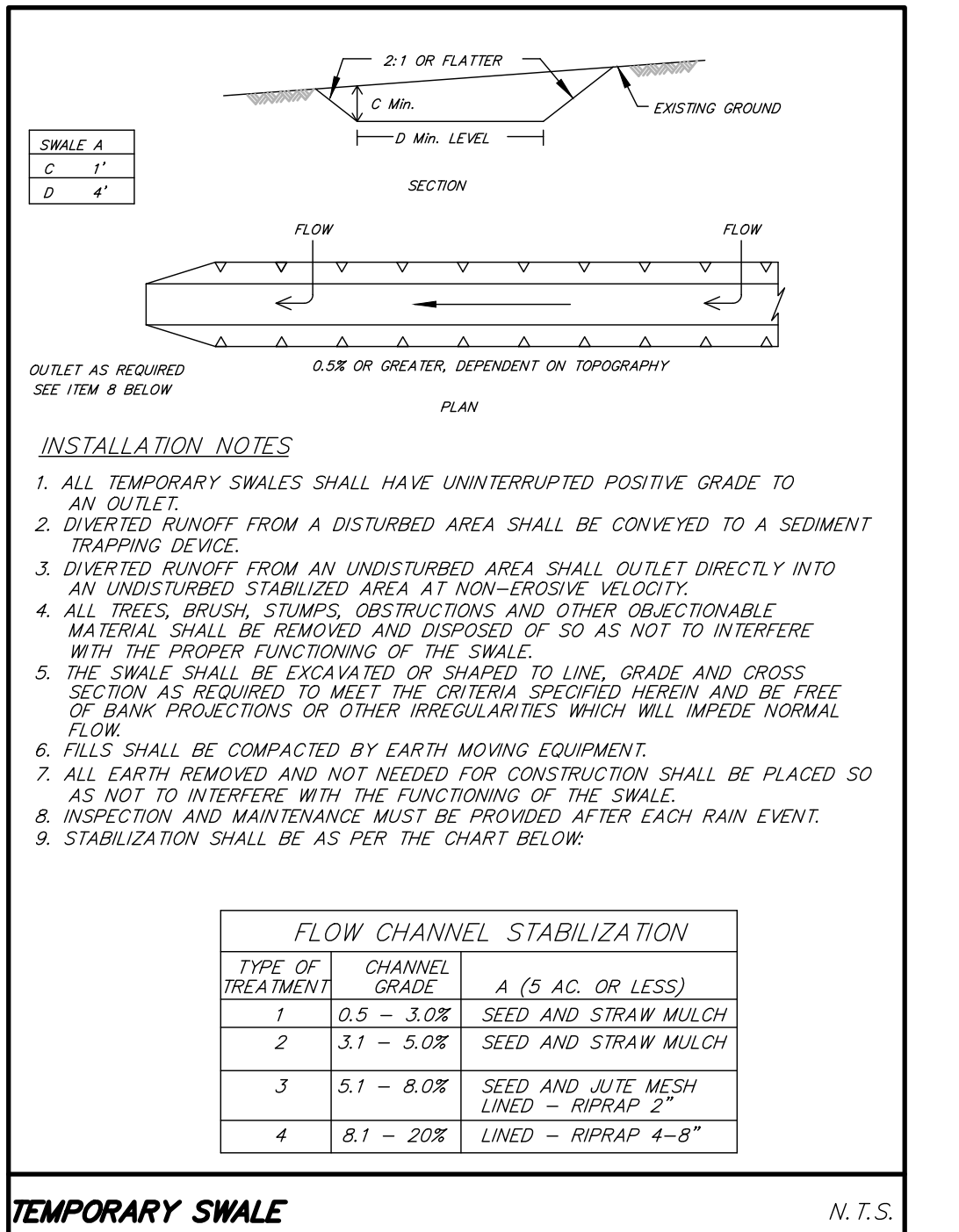
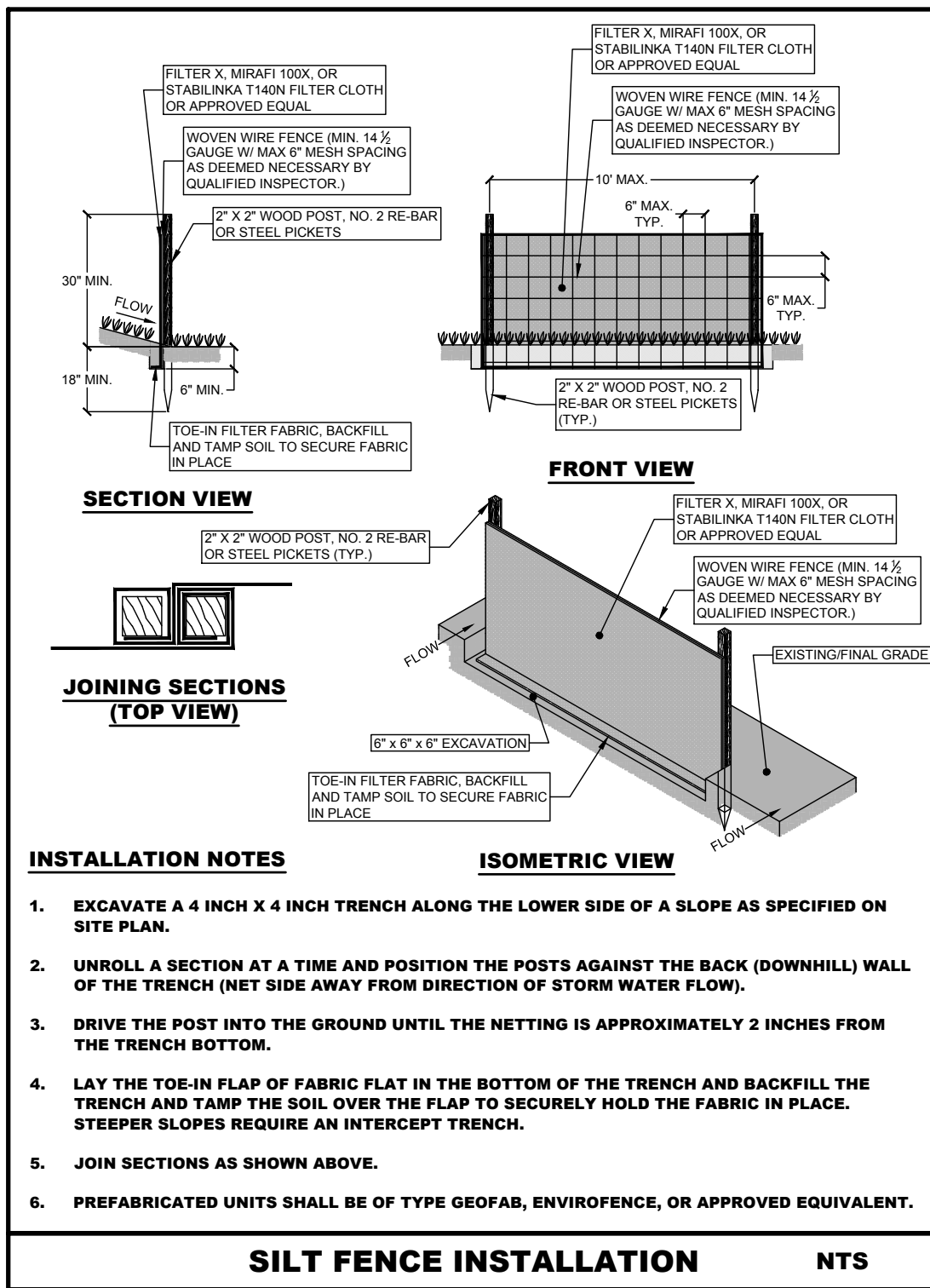
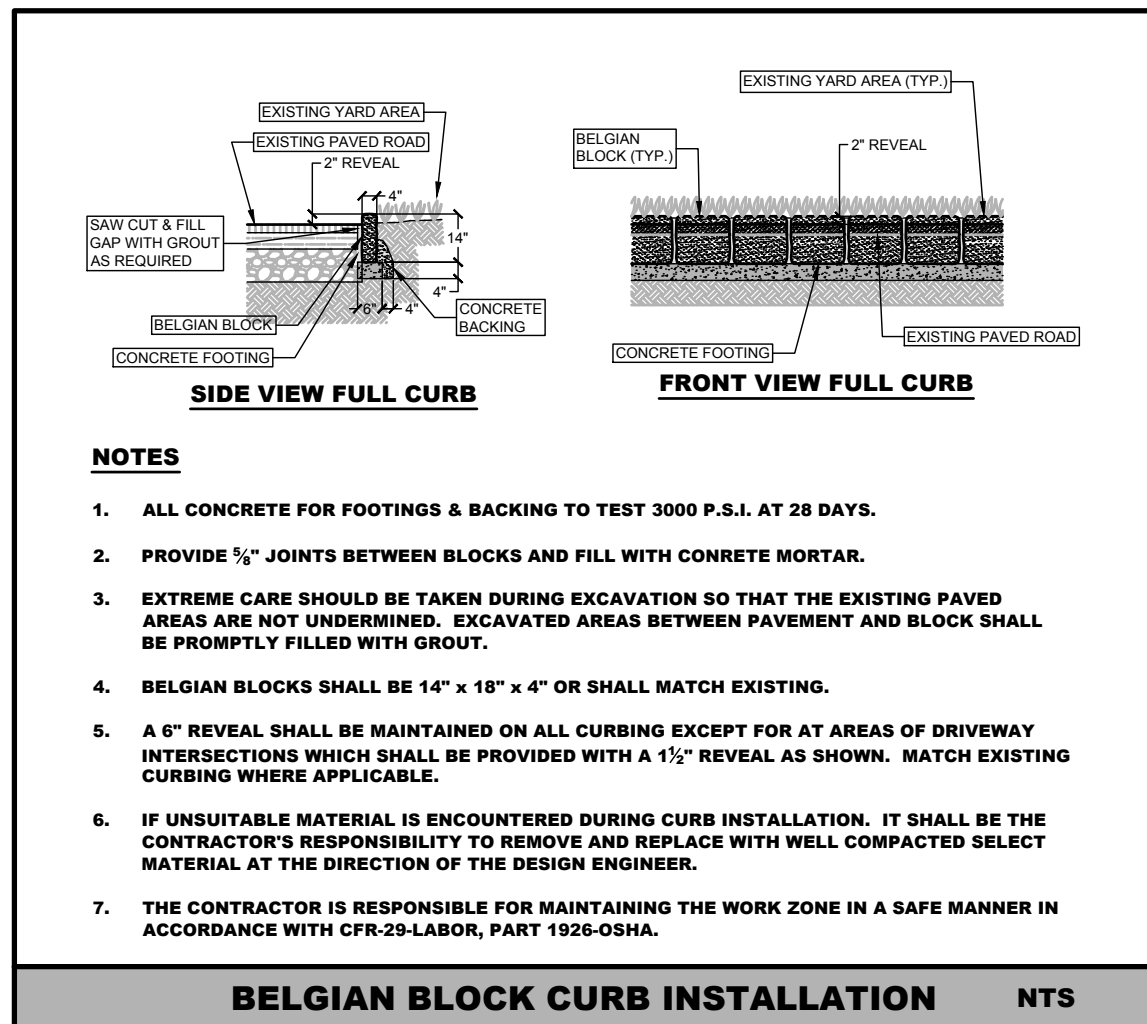
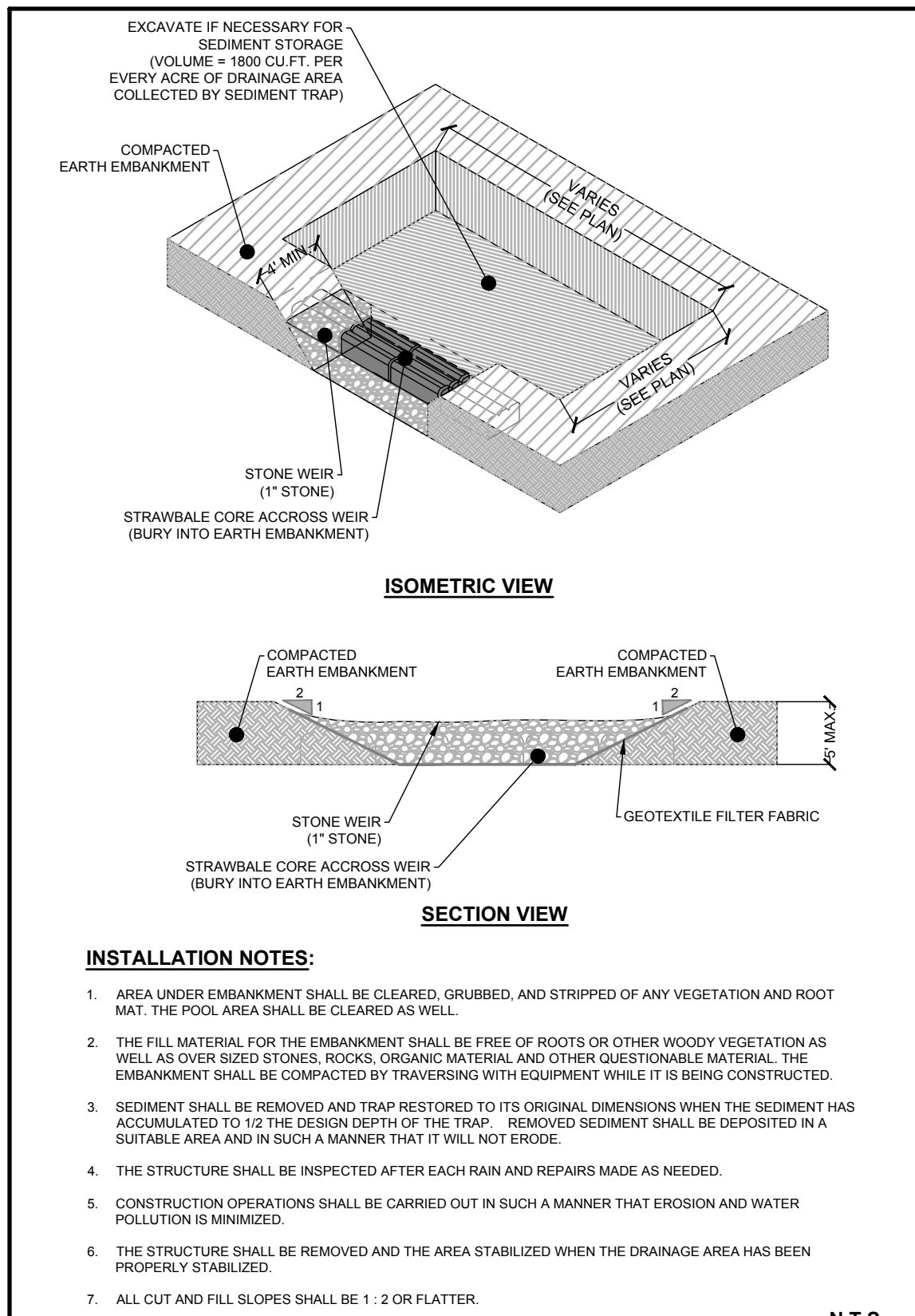
Keith Staudohar, CPSWQ x January 16, 2019

**CRONIN ENGINEERING P.E., P.C.**  
Professional Engineering & Consulting

REFERENCE IS TO BE MADE TO THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) PREPARED BY THIS OFFICE, DATED NOVEMBER 20, 2018.







**ATTORNEY**

THE LAW OFFICE OF  
**Michael Fuller Sirignano**  
ATTORNEY & COUNSELOR AT LAW

**ARCHITECT**

**TEO SIGUENZA**  
ARCHITECT  
SURVEYOR

H. STANLEY JOHNSON AND COMPANY  
LAND SURVEYORS, P.C.

**ENVIRONMENTAL**

STEVEN DANZER, PH.D & ASSOCIATES LLC  
wetlands & environmental consulting

0' 10' 20'  
SCALE: 1" = 20'

• UNDER NEW YORK STATE EDUCATIONAL LAW ARTICLE 145, SECTION 7209 (2), IT IS UNLAWFUL FOR ANY PERSON TO ALTER ANY ITEM ON THIS DRAWING, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER. IF ANY ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

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- REVISIONS -		
#	REASON	DATE
2	BRIDGE SECTION, REGRADING, AND GENERAL	JANUARY 15, 2019
1	TOWN COMMENTS	SEPTEMBER 28, 2018

MUNICIPAL TAX IDENTIFICATION:

SECTION: 47  
BLOCK: 10056  
LOT: 38

DRAWN BY: KAA  
DESIGN BY: KCS/JT  
CHECKED: TC3  
PROJECT: DEDVUKAJ-170ELM  
DATE: JUNE 28, 2018  
JOB #: 170402

STATE OF NEW YORK  
TIMOTHY L. CRONIN III  
LICENSED PROFESSIONAL ENGINEER  
62980  
TIMOTHY L. CRONIN III, P.E.  
LICENSE #062980

**PREPARED BY**

**CRONIN**  
ENGINEERING P.E., P.C.  
Professional Engineering & Consulting

39 ARLO LANE  
CORTLANDT MANOR, NY 10567

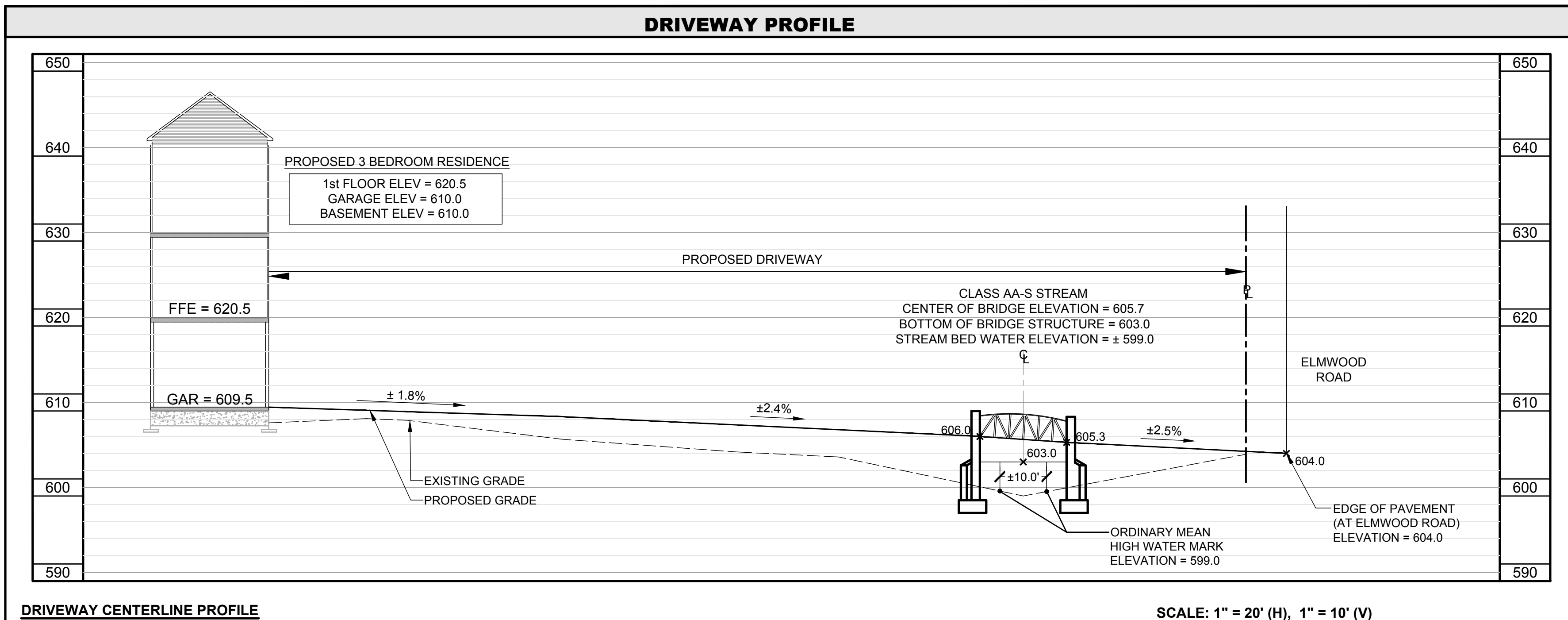
**CONSTRUCTION DETAILS AND PROFILE**

**SITE DEVELOPMENT PLAN FOR ZEF & YULIA DEDVUKAJ**

170 ELMWOOD ROAD  
SOUTH SALEM, NY 10590

SHEET 4 OF 4

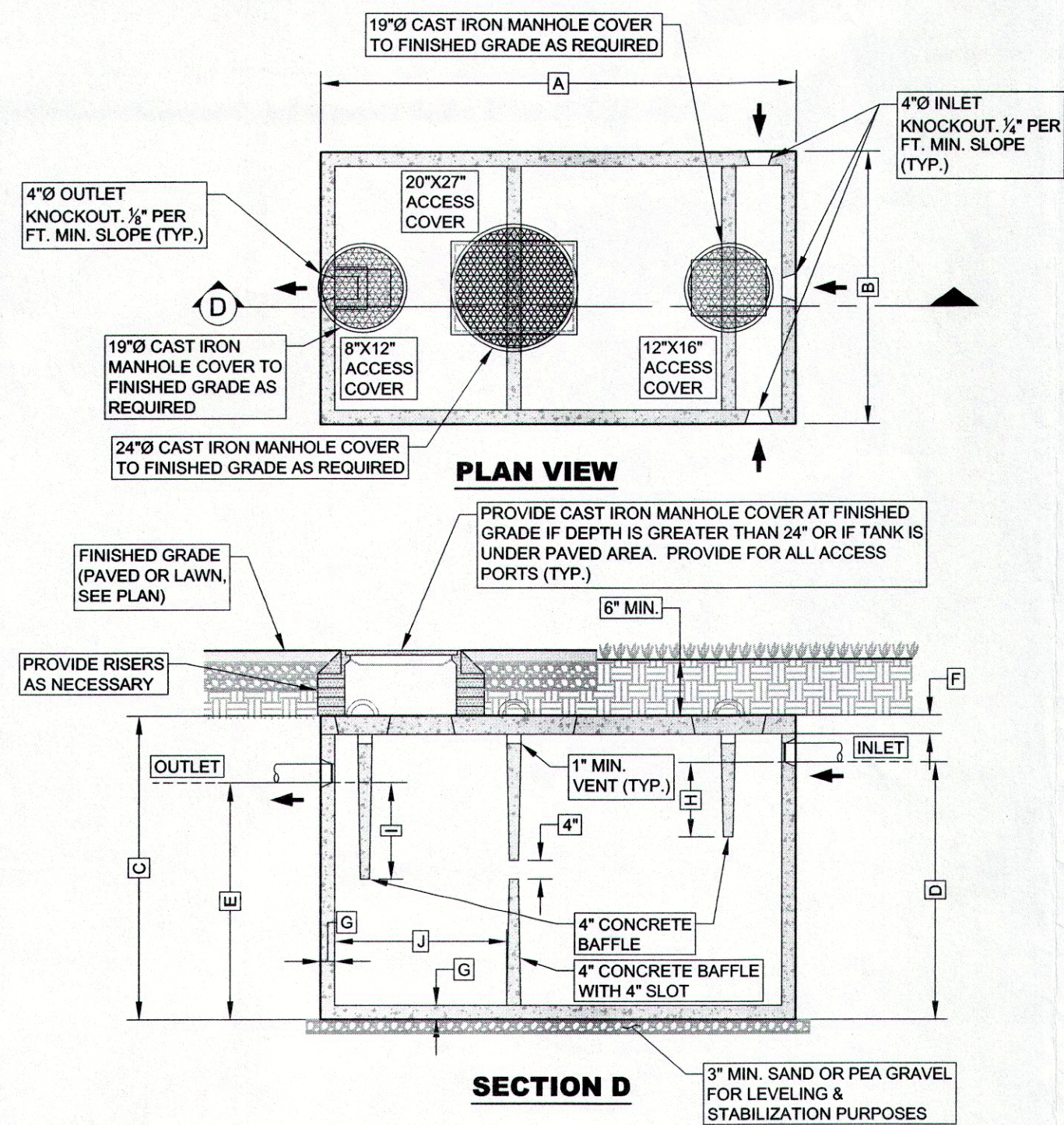
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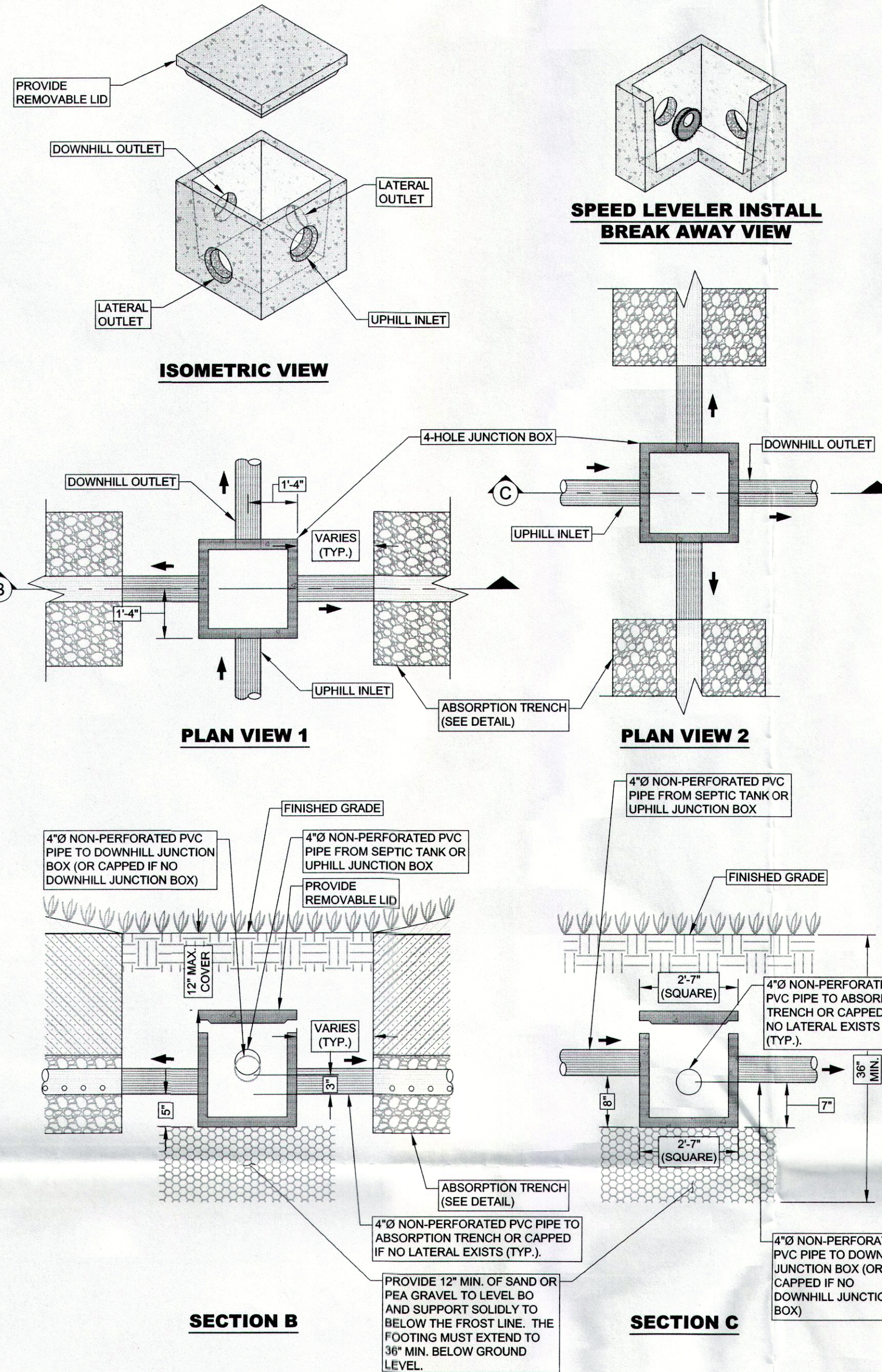




#### NOTES

- THERE SHALL BE A MINIMUM OF 6" OF COVER ABOVE THE SEPTIC TANK. IF MORE THAN 24" OF COVER IS PROPOSED OVER THE SEPTIC TANK, A RISER TO GRADE MUST BE INSTALLED ON ALL ACCESS PORTS. RISERS MUST ALSO BE INSTALLED WHERE THE TANK IS PROPOSED TO BE LOCATED UNDER A PAVED AREA.
- ALL COMPONENTS AS SPECIFIED IN THIS DETAIL ARE AS MANUFACTURED OR SPECIFIED BY WOODARD'S CONCRETE PRODUCTS, INC. IF AN ALTERNATIVE TANK IS DESIRED, IT SHALL FIRST BE APPROVED BY THE HEALTH DEPARTMENT AND THE DESIGN ENGINEER PRIOR TO INSTALLATION.

### 1 NON-TRAFFIC SEPTIC TANK INSTALLATION NTS



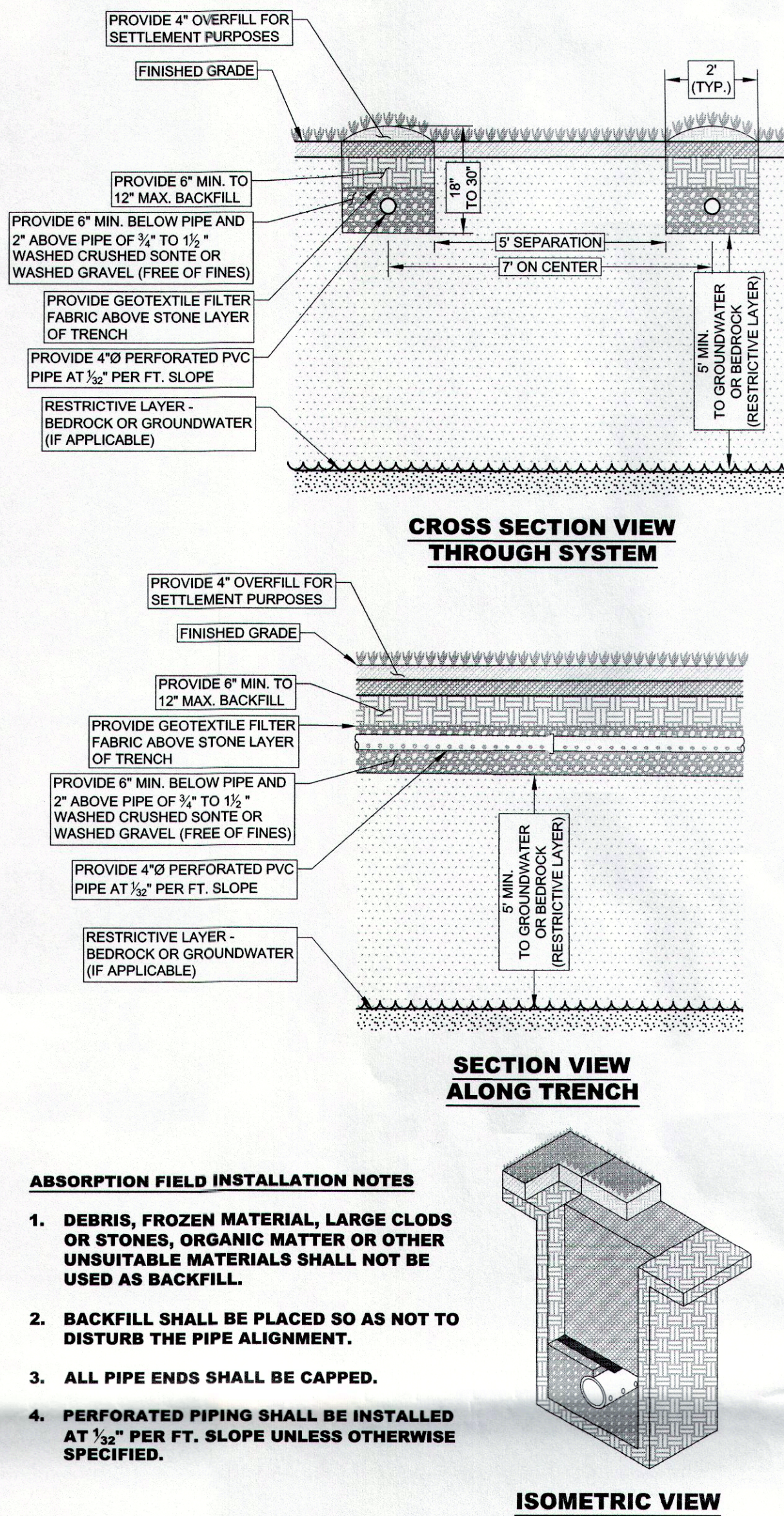
#### JUNCTION BOX INSTALLATION NOTES

- ALL JUNCTION BOXES SHALL BE INSTALLED LEVEL & SUPPORTED SOLIDLY TO BELOW FROST LEVEL.
- SPEED LEVELERS SHALL BE PLACED AS SHOWN IN ORDER TO MAINTAIN EQUAL FLOW TO ABSORPTION FIELDS.
- ALL PIPING SHALL BE CUT FLUSH WITH THE INTERIOR WALL OF EACH JUNCTION BOX.

#### BAFFLE JUNCTION BOX INSTALLATION NOTE

- IF A JUNCTION BOX IS REQUIRED FOR BAFFLING PURPOSES, THE 2 OUTLETS WHICH WOULD NORMALLY BE USED FOR ABSORPTION LATERALS SHALL BE PLUGGED AND CAPPED.

### 2 JUNCTION BOX INSTALLATION NTS



#### ABSORPTION FIELD INSTALLATION NOTES

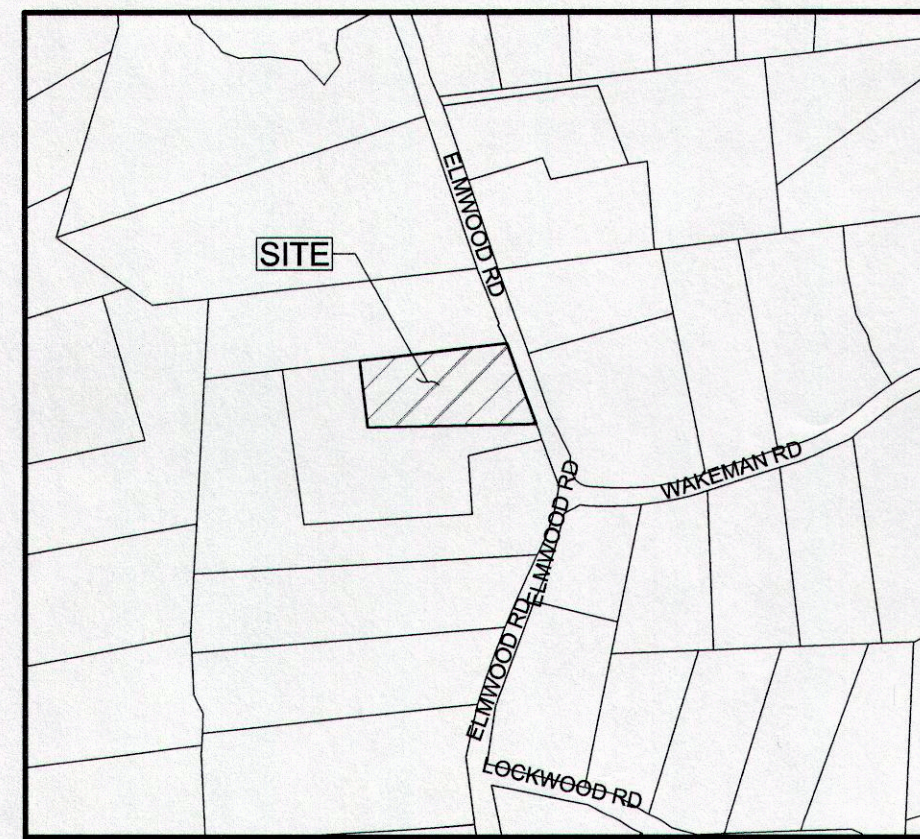
- DEBRIS, FROZEN MATERIAL, LARGE CLOUDS OR STONES, ORGANIC MATTER OR OTHER UNSUITABLE MATERIALS SHALL NOT BE USED AS BACKFILL.
- BACKFILL SHALL BE PLACED SO AS NOT TO DISTURB THE PIPE ALIGNMENT.
- ALL PIPE ENDS SHALL BE CAPPED.
- PERFORATED PIPING SHALL BE INSTALLED AT 1/2" PER FT. SLOPE UNLESS OTHERWISE SPECIFIED.

### 3 ABSORPTION TRENCH INSTALLATION NTS

**Dig Safely.**  
New York  
800-962-7962  
www.digsafelynewyork.org

☐ Call Before You Dig  
☐ Wait The Required Time  
☐ Confirm Utility Response  
☐ Respect the Marks  
☐ Dig With Care

2019-05  
APPROVED FOR CONSTRUCTION  
JAN 22 2019  
WEST CO. DEPT. OF HEALTH  
(See First Sheet For Authorized Signature)



VICINITY MAP SCALE: 1" = 500'

#### OWNER/DEVELOPER

**ZEF & YULIA DEDVUKAJ**  
43 LAUREL ROAD  
SOUTH SALEM, NY 10590

#### OWTS CONTRACTOR

**O'HANLON EXCAVATION INC.**  
(WCDH LICENSE #: 93)  
8 HAWK RIDGE LANE  
BREWSTER, NY 10509  
(845) 279-8124

#### WATER SUPPLY

**TO BE DETERMINED**  
(MUST BE REGISTERED WITH NYS)

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#### - REVISIONS -

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1	WCDH COMMENT LETTER DATED 08-01-2017	08-15-2017

MUNICIPAL TAX IDENTIFICATION:

SECTION: 47

BLOCK: 10056

LOT: 38

DRAWN BY: JT

DESIGN BY: JT

CHECKED: TC3

PROJECT: DEDVUKAJ-170 ELMWD

DATE: JULY 26, 2017

JOB #: 170402

STATE OF NEW YORK  
TIMOTHY L. CRONIN III  
LICENSED PROFESSIONAL ENGINEER  
062980

TIMOTHY L. CRONIN III, P.E.  
LICENSE #062980

#### WCDH APPROVAL

PREPARED BY  
**CRONIN**  
ENGINEERING P.E., P.C.  
Professional Engineering & Consulting  
39 ARLO LANE  
CORTLANDT MANOR, NY 10567

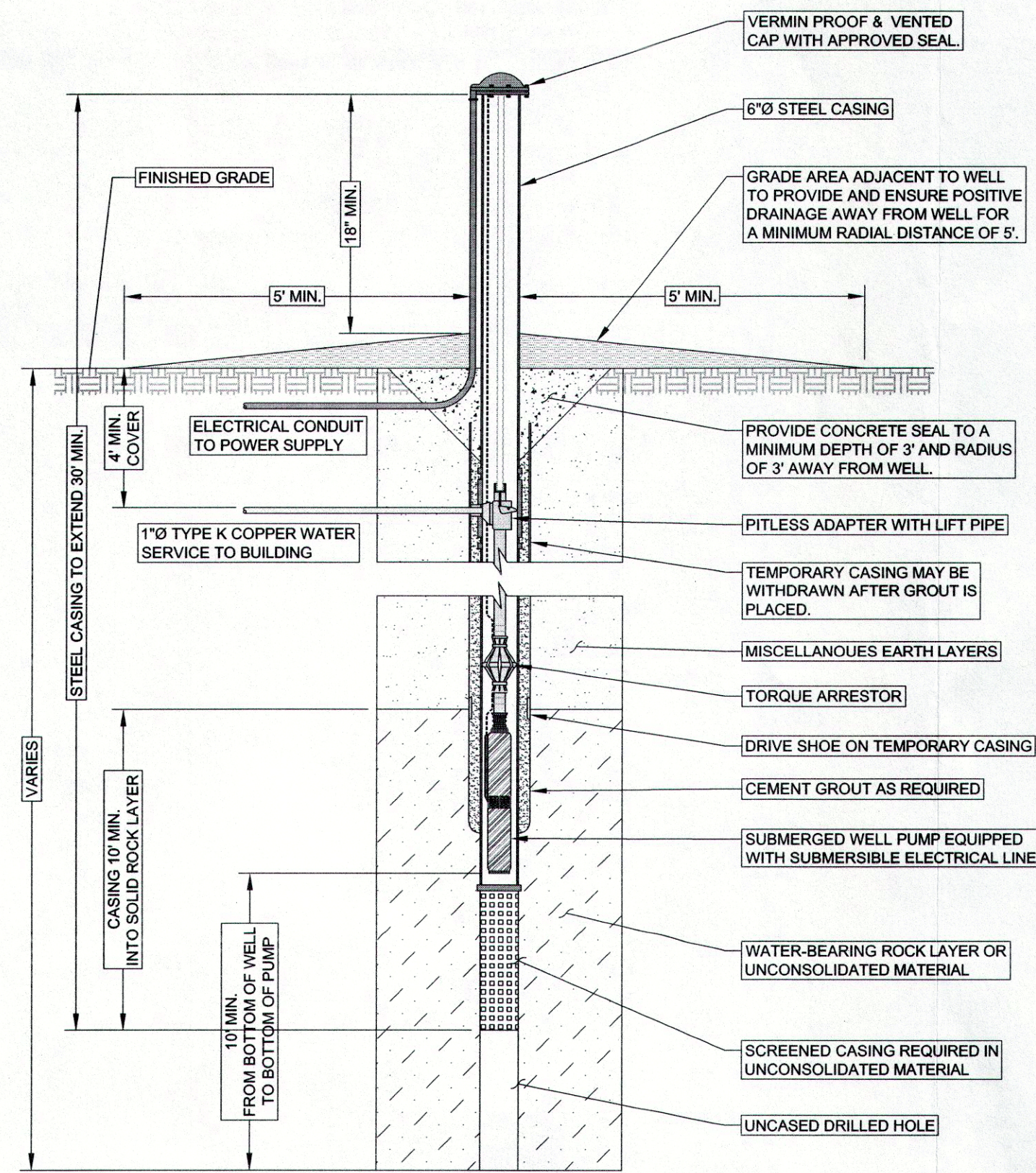
#### OWTS CONSTRUCTION DETAILS

**ON-SITE WASTEWATER TREATMENT SYSTEM PLAN FOR ZEF & YULIA DEDVUKAJ**

170 ELMWOOD ROAD  
SOUTH SALEM, NY 10590

SHEET 2 OF 3 **OW-1.2**





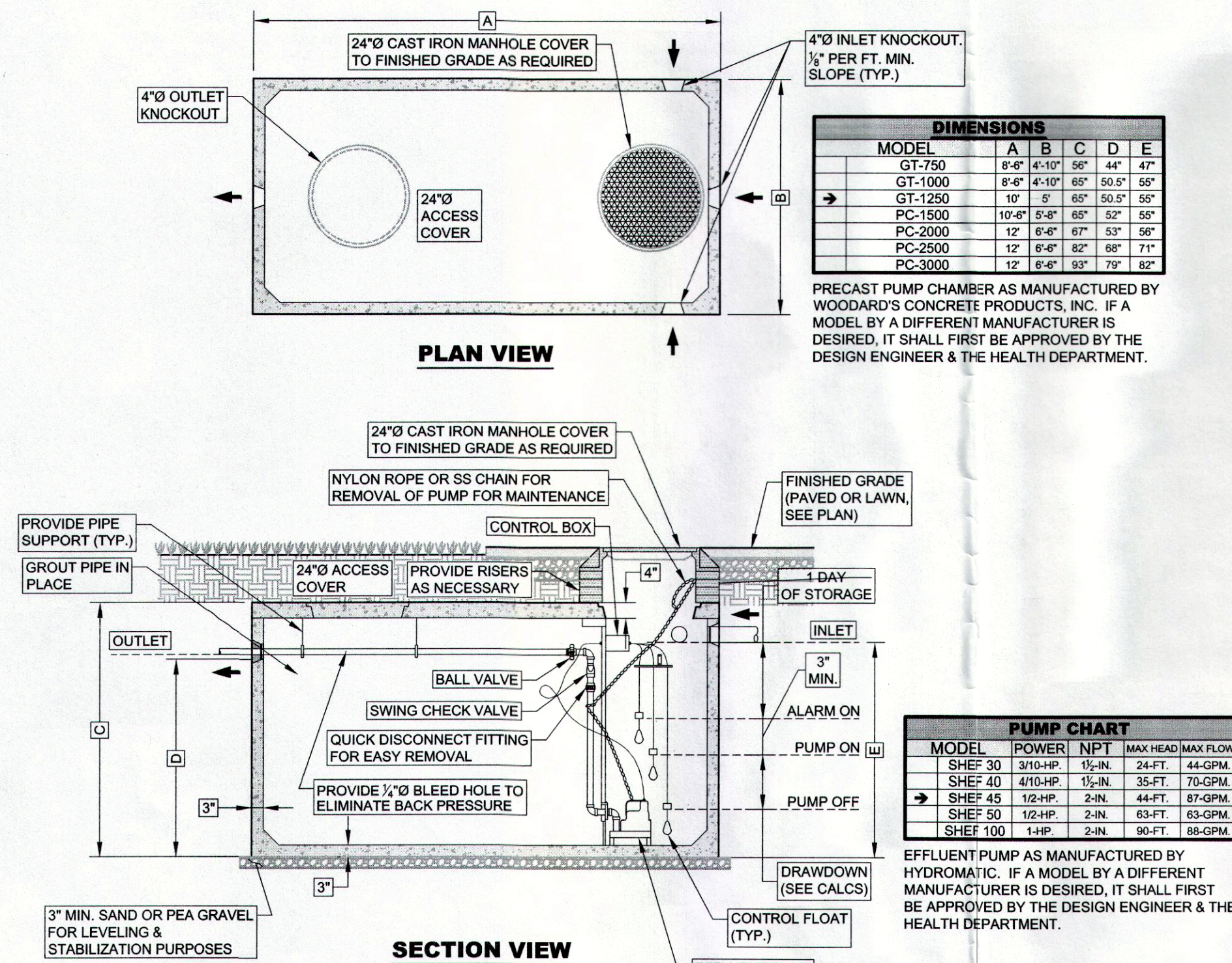
SECTION VIEW

#### DRILLED WELL NOTES

1. THE GROUND SURFACE SHALL BE GRADED AWAY FROM THE WELL AS SHOWN TO PREVENT SURFACE CONTAMINANTS FROM REACHING THE GROUNDWATER.
2. THE WELL SHALL BE ACCESSIBLE FOR THE PLACEMENT AND INSTALLATION OF THE WATER SERVICE, MAINTENANCE & REPAIR OF THE WELL.
3. SANITARY SEALS SHALL BE PROVIDED WHERE APPLICABLE.
4. THE CASING SHALL EXTEND TO A MINIMUM OF 18" ABOVE GRADE.

### 1 DRILLED WELL INSTALLATION

NTS



SECTION VIEW

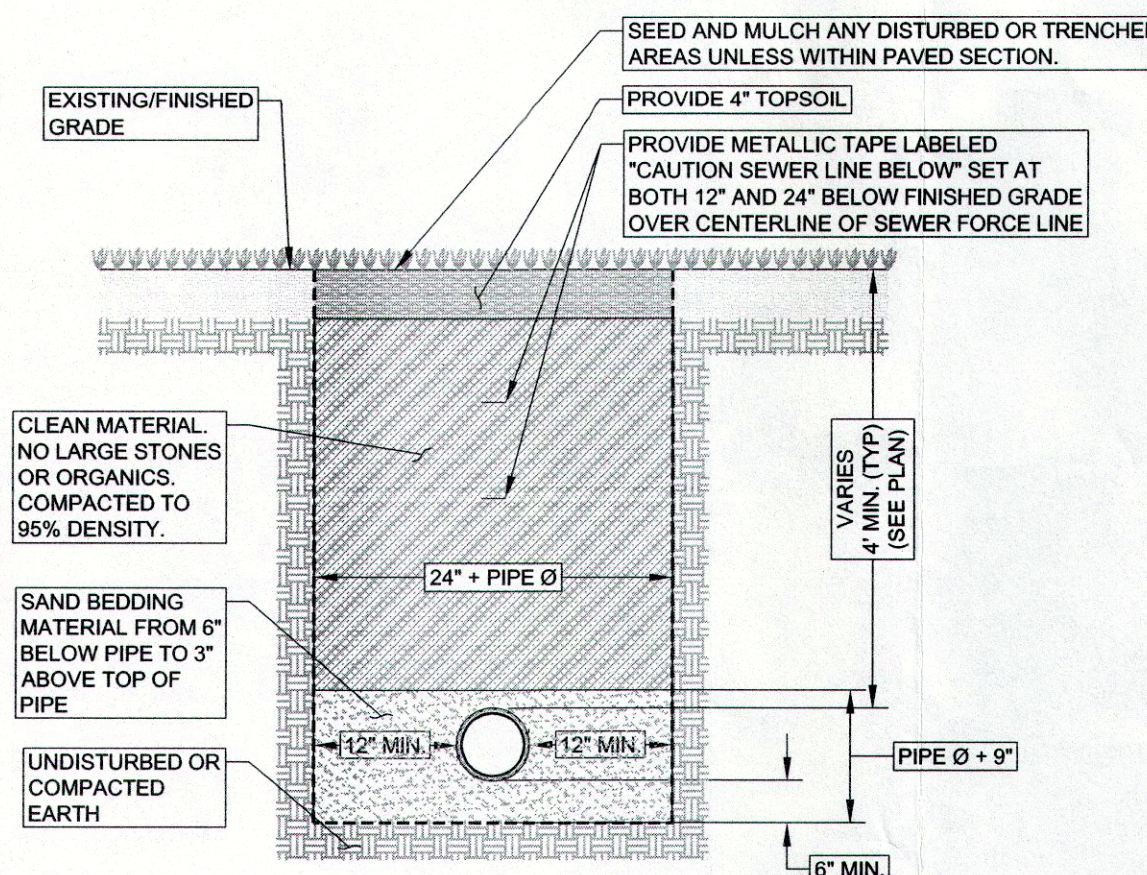
#### NOTES

1. AN AUDIBLE & VISUAL HIGH LEVEL ALARM MUST BE INSTALLED INSIDE THE BUILDING.
2. THERE SHALL BE A MINIMUM OF 12" OF COVER ABOVE THE PUMP CHAMBER.
3. ALL ELECTRICAL WORK AND MATERIAL FOR PUMP INSTALLATION SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE.
4. AN ELECTRICAL UNDERWRITER'S CERTIFICATE FOR THE PUMP CHAMBER MUST BE PROVIDED TO THE DEPARTMENT PRIOR TO THE DEPARTMENT CONDUCTING A FINAL INSPECTION ON THE PUMP CHAMBER.
5. THE PUMP CONTROL PANEL AND ALARMS SHALL BE LOCATED INSIDE THE BUILDING.
6. ALL PUMP COMPONENTS AS SPECIFIED IN THIS DETAIL ARE AS MANUFACTURED OR SPECIFIED BY HYDRAMATIC. THE SCHEMATIC AS SHOWN INCLUDES THE EZ-OUT GUIDE RAIL SYSTEM FOR PUMP INSTALLATION. ALTHOUGH NOT REQUIRED, A GUIDE RAIL SYSTEM IS RECOMMENDED FOR EASE OF PUMP INSTALLATION AND REMOVAL, SPECIFICALLY FOR MAINTENANCE PURPOSES. IN EITHER CASE, A QUICK DISCONNECT AND NYLON ROPE OR SS CHAIN SHALL BE PROVIDED FOR EASY REMOVAL.

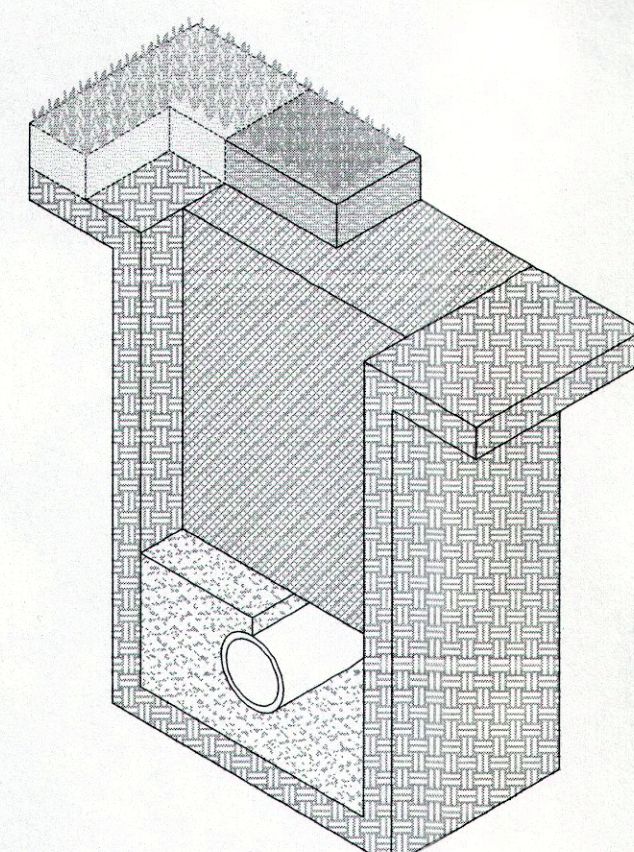
1

### NON-TRAFFIC PUMP CHAMBER & PUMP INSTALLATION

NTS



SECTION VIEW



ILLUSTRATIVE ISOMETRIC VIEW

#### SEWER FORCE LINE PIPE INSTALLATION NOTES

1. SHEETING AND BRACING SHALL BE USED IN ACCORDANCE WITH OSHA AND THE NYS DEPARTMENT OF LABOR INDUSTRIAL CODE, RULE 753 WHERE REQUIRED. SHEETING & BRACING ARE REQUIRED WHERE TRENCH DEPTHS EXCEED 5' IN HEIGHT. SHEETING & BRACING ARE ALSO REQUIRED WHEN CLAY, SILT LOAM OR NON SOILS ARE ENCOUNTERED.
2. THE CONTRACTOR SHALL CALL IN A "CODE 753" PRIOR TO EXCAVATION.
3. ALL SEWER PIPING TO BE AS SPECIFIED ON PLANS.
4. SEWER FORCE LINE PIPING SHALL HAVE A MINIMUM OF 4'-0" COVER OVER PIPE UNLESS OTHERWISE SHOWN ON THE PLANS. IF THIS IS NOT POSSIBLE THE OWNER/APPLICANT SHALL CONTACT THE DESIGN ENGINEER PRIOR TO CONSTRUCTION.
5. NO ROCK SHALL PROJECT WITHIN THE SURFACE OF THE TRENCH AND ALL ROCK SHALL BE A MINIMUM OF 12" FROM THE PIPE HORIZONTALLY. IF BEDROCK IS ENCOUNTERED DURING INSTALLATION, IT SHALL BE EXCAVATED TO A MINIMUM DEPTH OF 6" BELOW BOTTOM OF PIPE AND REPLACED WITH 6" OF SAND.
6. DEBRIS, FROZEN MATERIAL, LARGE CLODS OR STONES, ORGANIC MATTER OR OTHER UNSUITABLE MATERIALS SHALL NOT BE USED AS BACKFILL.
7. BACKFILL SHALL BE PLACED SO AS NOT TO DISTURB THE PIPE ALIGNMENT.
8. SELECT AND BACKFILL MATERIAL SHALL BE PLACED IN 12" LIFTS (PRIOR TO COMPACTION) AND COMPACTED WITH A MECHANICAL TAMPER TO 95% DENSITY.

1

### SEWER FORCE LINE INSTALLATION

NTS

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- ☐ Call Before You Dig
- ☐ Wait The Required Time
- ☐ Confirm Utility Response
- ☐ Respect the Marks
- ☐ Dig With Care

#### Pump Chamber Sizing Calculations

<b>Dose Calculation</b>	
O.W.T.S. Pipe Network Length:	252 L.F.
Pipe Diameter:	4 In.
Volume Factor:	75 %
Set Dose Volume to:	123.4 Gal.
<b>Drawdown Calculation</b>	
Woodards Pump Chamber Model:	GT-1250
Interior Length of Chamber:	9.5 Ft.
Interior Width of Chamber:	4.5 Ft.
Interior Depth to Outlet Invert:	4.0 Ft.
Interior Area of Tank:	42.8 Sq. Ft.
Drawdown Required:	4 5/8 in.

#### Additional Storage Calculation

Proposed Number of Bedrooms:	3 Br.
Flow Rate per Bedroom:	200 Gpd./Br.
Minimum Additional Storage Required Above Alarm:	600 Gal. or 1.9 Ft.

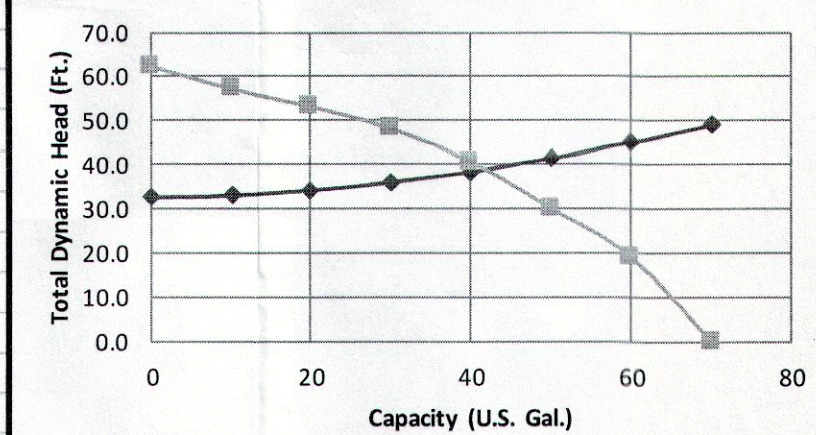
#### Pump Chamber Installation Settings

Proposed Inlet Elevation:	616.8
Set Outside Bottom of Tank at:	612.3
Set Pump off at:	613.2
Set Pump on at:	613.6
Set Alarm on at:	613.8
Set Outlet at:	616.5

#### Pump Sizing Calculations

<b>Static Head</b>																																											
	Pump Chamber Inlet Elevation:		616.8																																								
	Junction Box/Distribution Box Inlet Elevation:		649.3																																								
	Total Static Head:		32.5 ft.																																								
<b>Friction Loss</b>																																											
	Equivalent Length (Inside Tank):		36 ft.																																								
	Equivalent Length (Piping):		187 ft.																																								
	Total Equivalent Length:		223 ft.																																								
<b>System Curve</b>																																											
	Pipe Diameter:		2.00 in.																																								
	<table><tr><td><i>Q</i></td><td><i>hf</i></td><td><i>Static Head</i></td><td><i>T.D.H.</i></td></tr><tr><td>(GPM)</td><td>(Ft./100Ft.)</td><td>(Ft.)</td><td>(Ft.)</td></tr><tr><td>0</td><td>0.00</td><td>32.5</td><td>32.5</td></tr><tr><td>10</td><td>0.47</td><td>32.5</td><td>32.9</td></tr><tr><td>20</td><td>1.65</td><td>32.5</td><td>34.1</td></tr><tr><td>30</td><td>3.46</td><td>32.5</td><td>35.9</td></tr><tr><td>40</td><td>5.86</td><td>32.5</td><td>38.3</td></tr><tr><td>50</td><td>8.92</td><td>32.5</td><td>41.4</td></tr><tr><td>60</td><td>12.49</td><td>32.5</td><td>44.9</td></tr><tr><td>70</td><td>16.50</td><td>32.5</td><td>49.0</td></tr></table>			<i>Q</i>	<i>hf</i>	<i>Static Head</i>	<i>T.D.H.</i>	(GPM)	(Ft./100Ft.)	(Ft.)	(Ft.)	0	0.00	32.5	32.5	10	0.47	32.5	32.9	20	1.65	32.5	34.1	30	3.46	32.5	35.9	40	5.86	32.5	38.3	50	8.92	32.5	41.4	60	12.49	32.5	44.9	70	16.50	32.5	49.0
<i>Q</i>	<i>hf</i>	<i>Static Head</i>	<i>T.D.H.</i>																																								
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#### Head Loss/Pump Performance Curves



#### Pump Sizing Calculation:

Dose Volume:	123.4 Gal.
Choose Hydromatic:	SHEF 50 Pump
Pump will operate at:	41 gpm. @ 39 Ft. of head
Pump operation time:	3.0 min.
(See Manufacturer Specs for:	SHEF 50 1/2 HP Pump)

#### VICINITY MAP SCALE: 1" = 500'

#### OWNER/DEVELOPER

#### ZEF & YULIA DEDVUKAJ

43 LAUREL ROAD  
SOUTH SALEM, NY 10590

#### OWTS CONTRACTOR

#### O'HANLON EXCAVATION INC.

(WCDH LICENSE #: 93)  
8 HAWK RIDGE LANE  
BREWSTER, NY 10509  
(845) 279-8124

#### WATER SUPPLY

#### TO BE DETERMINED (MUST BE REGISTERED WITH NYS)

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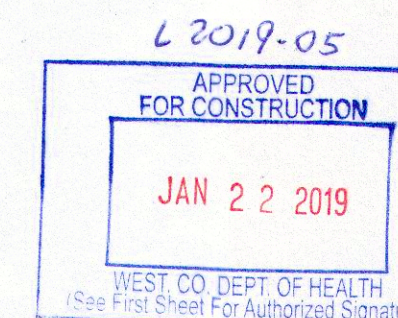
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DRAWN BY:	JT	
DESIGN BY:	JT	
CHECKED:	TC3	
PROJECT:	DEDVUKAJ-170 ELMWD	
DATE:	JULY 26, 2017	
JOB #:	170402	



TIMOTHY L. CRONIN III, P.E.  
LICENSE #062980

#### WCDH APPROVAL



#### PREPARED BY

**CRONIN**  
ENGINEERING P.E., P.C.  
Professional Engineering & Consulting  
39 ARLO LANE  
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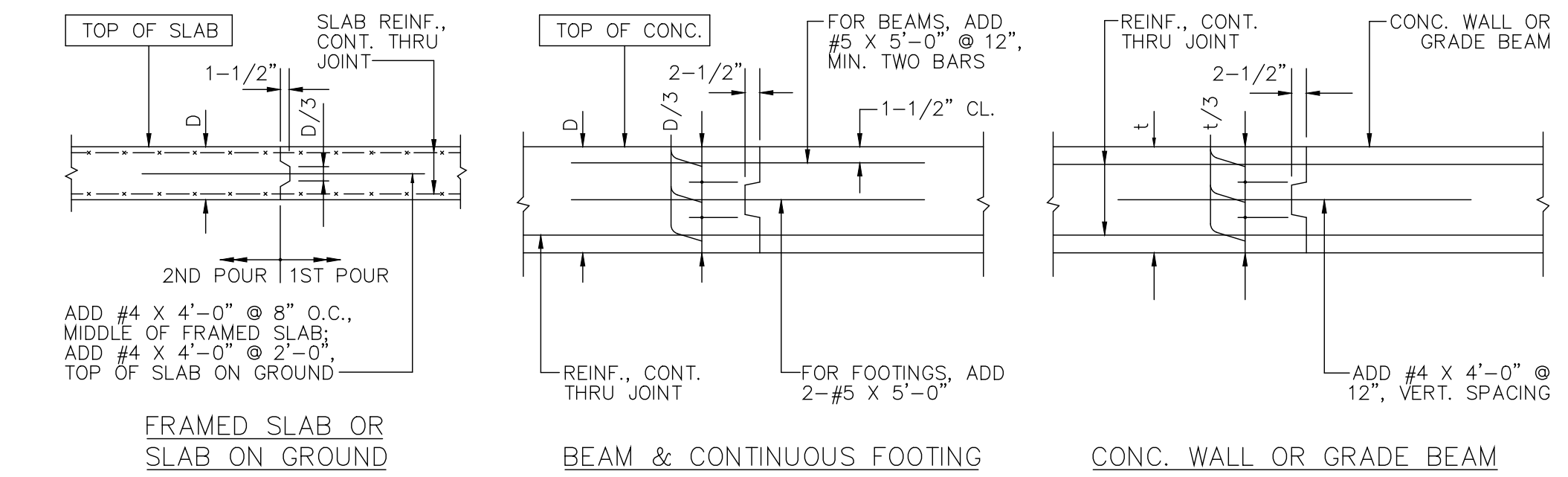
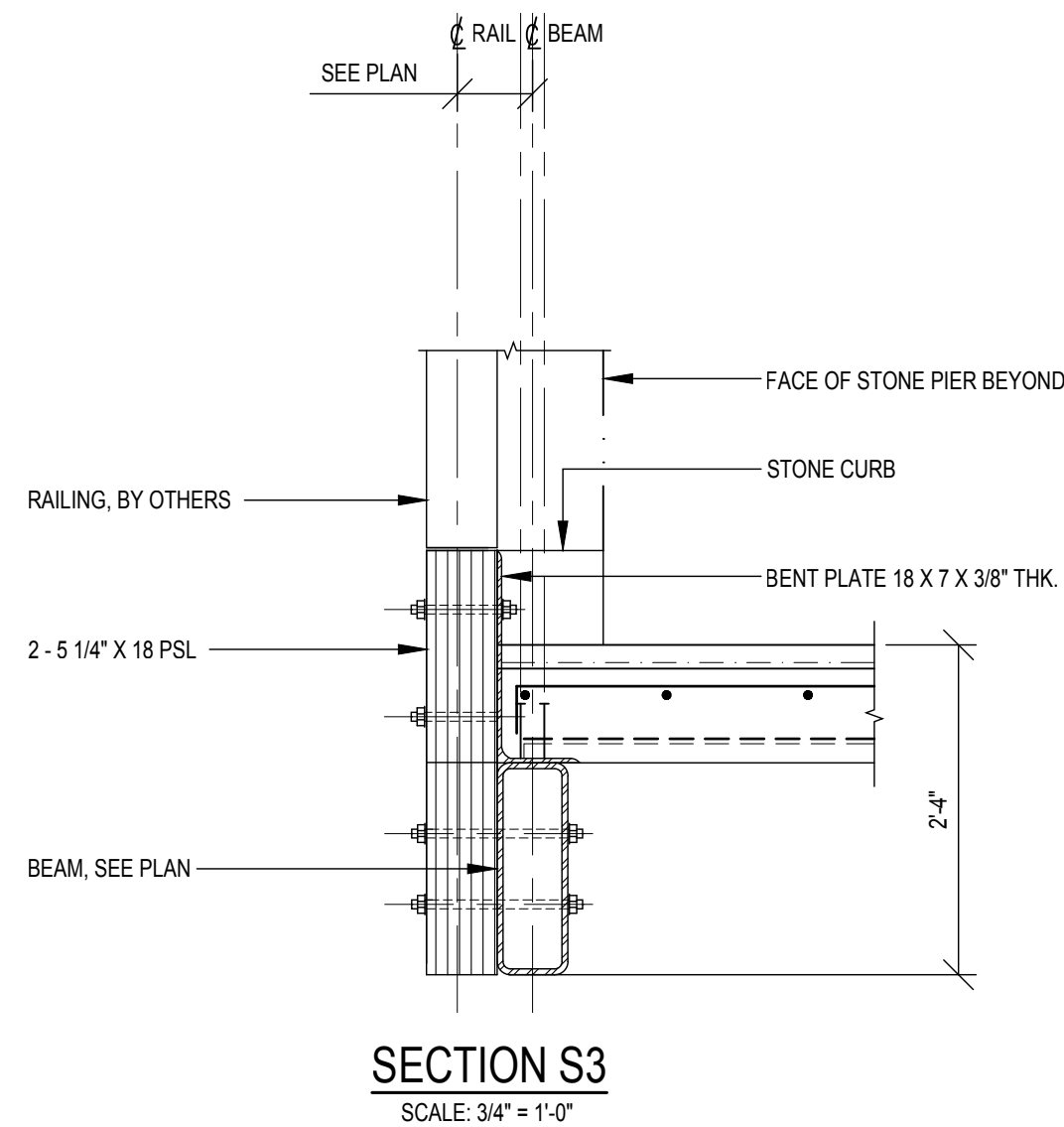
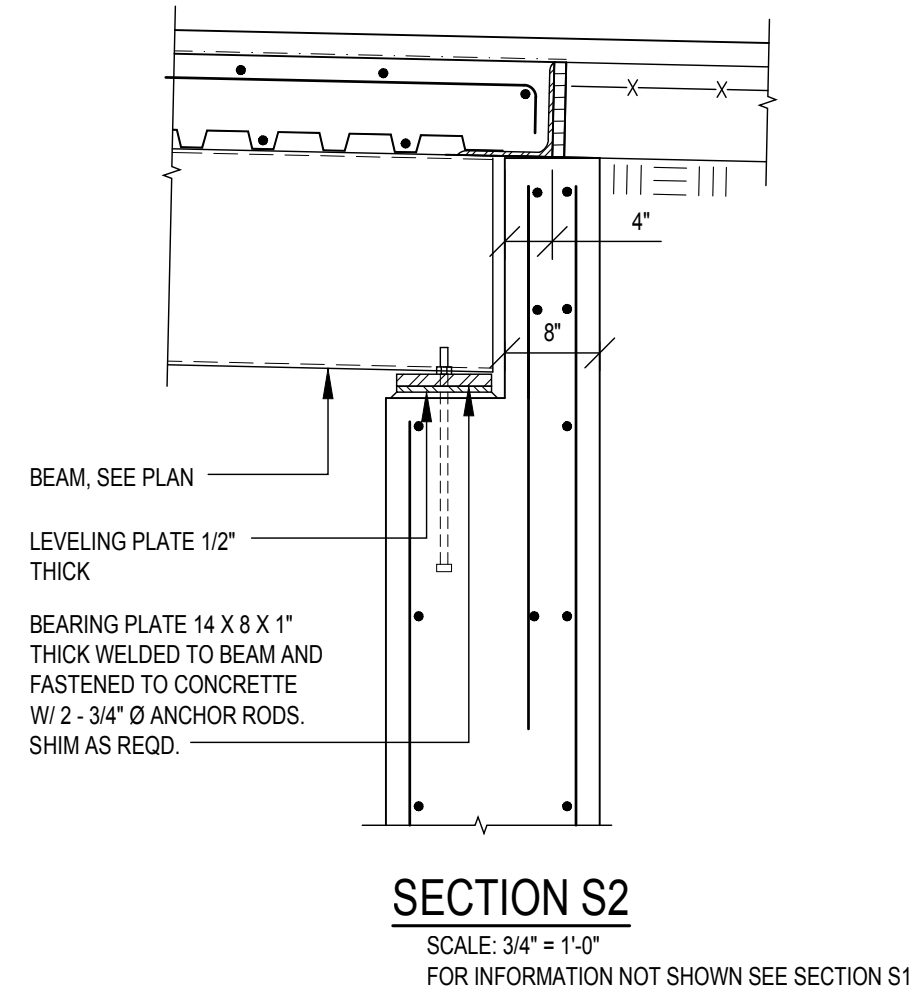
#### OWTS CONSTRUCTION PLAN

#### ON-SITE WASTEWATER TREATMENT SYSTEM PLAN FOR ZEF & YULIA DEDVUKAJ

170 ELMWOOD ROAD  
SOUTH SALEM, NY 10590







DOUBLE DRAPED WWM AT END SPAN AND EXTEND 2'-6" BEYOND FIRST INTERIOR SUPPORT

WELDED WIRE MESH (WWM)

FOR SIZE OF WWM - SEE PLAN OR NOTES

1" FROM TOP OF SLAB TYP. AT COMPOSITE FSD - OR -

DRAPED WWM - TYP. @ NON-COMPOSITE FSD

3/4" CL.

DATUM - SEE PLAN

FORM STEEL DECK (FSD) FOR DEPTH AND STYLE SEE PLAN OR NOTES

SLAB THICKNESS - SEE PLAN

2 #4 CONT.

CONT. POUR

BEAM - SEE PLAN

SEE PLAN

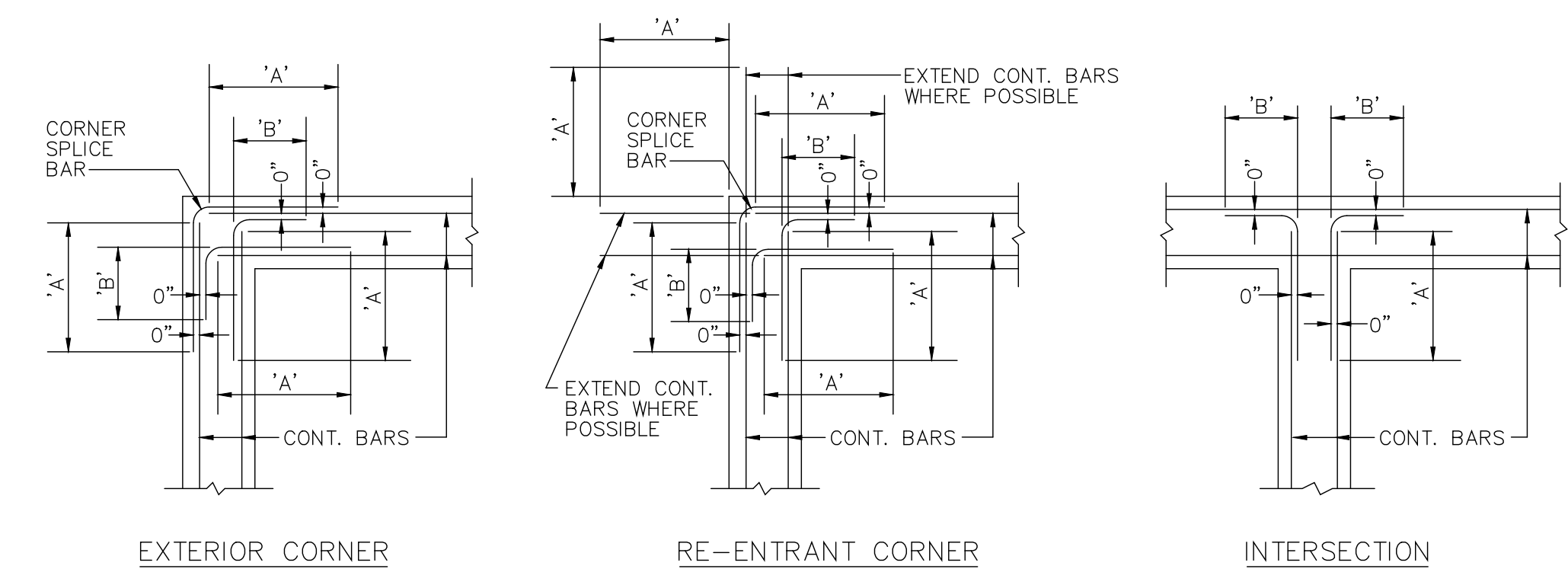
END SPAN

INTERIOR SPAN

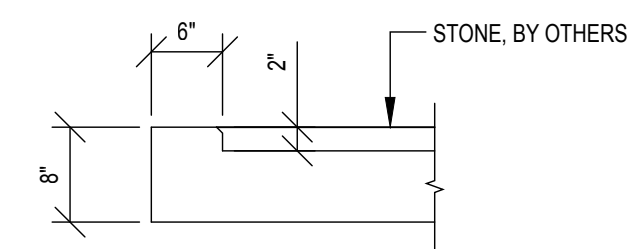
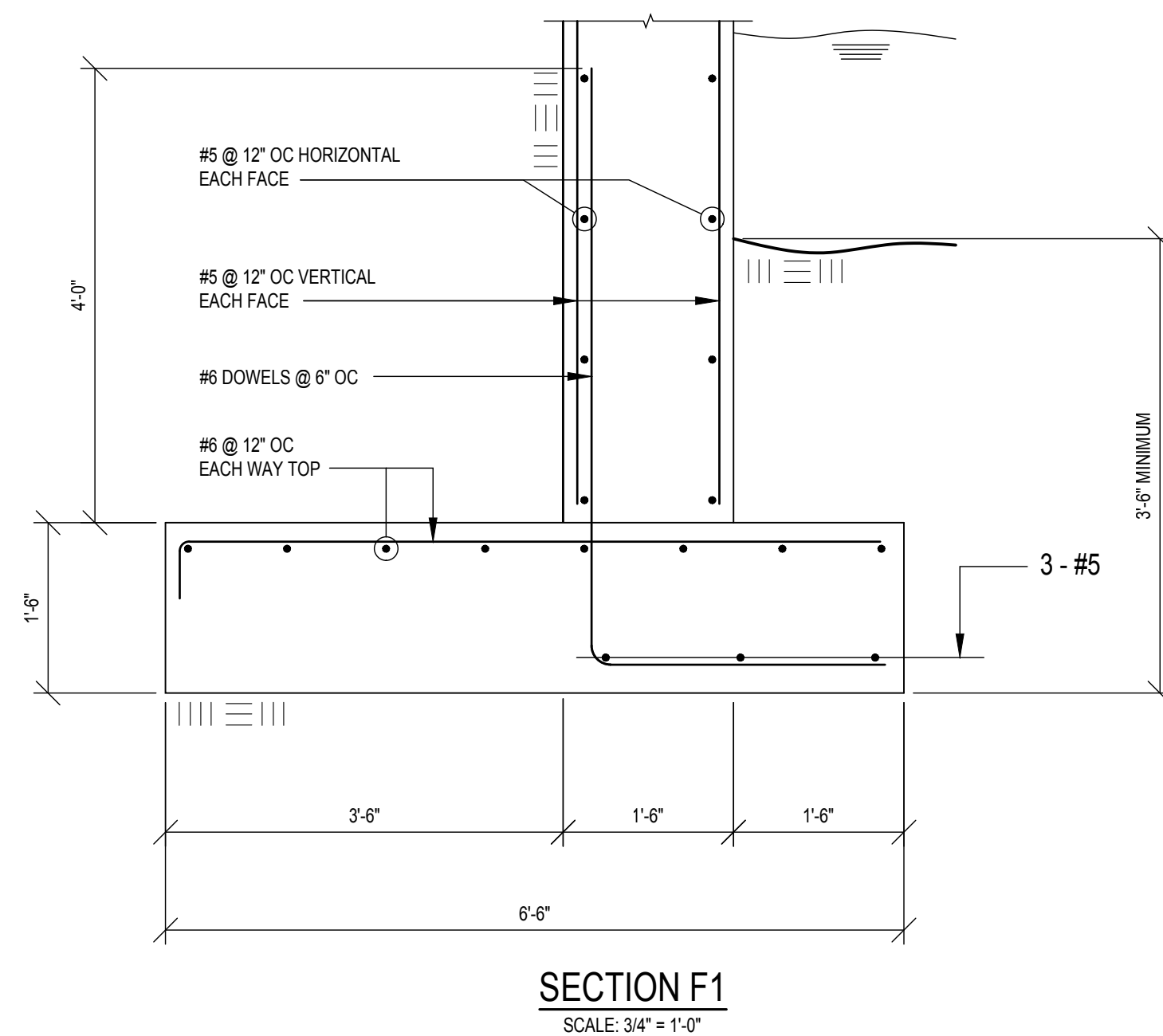
**NOTE:**  
DESIGN IS BASED ON CONCRETE PLACEMENT BY STANDARD PUMPING TECHNIQUES. DEPOSIT CONCRETE UNIFORMLY ON FORM STEEL DECK, AVOIDING MOUNDING.  
IF OTHER PLACEMENT METHODS ARE USED, PROVIDE SHORING AND PLANKING TO AVOID OVERLOADING THE FORM STEEL DECK.

SECT. A-A

The image contains three technical drawings of beam details. The top drawing shows a cross-section of a beam with a concrete slab on top. Labels include 'POUR STOP' pointing to the left end, 'SEE PLAN' pointing to the top reinforcement, 'CONCRETE SLAB' pointing to the top slab, 'FORM STEEL' pointing to the right side, and '1 1/2" MIN. BEARING' indicating the distance from the pour stop to the form steel. A note specifies: 'NOTE: WHERE "a" EXCEEDS 3" EXTEND DECK ACROSS BEAM FLANGE - SEE DETAIL BELOW'. The middle drawing shows a cross-section of a beam with a pour stop and reinforcement bars. Labels include '#4 CONT.' pointing to the top reinforcement, 'POUR STOP' pointing to the left end, and '#3 X 2-6 @ 12" o/c' pointing to the bottom reinforcement. A note specifies: 'NOTE: PROVIDE BAR REINF. WHERE "a" EXCEEDS 4"'. The bottom drawing shows a cross-section of a beam with a pour stop and reinforcement bars. Labels include 'POUR STOP' pointing to the left end and 'CELL CLOSURE' pointing to the right end. A note specifies: 'NOTE: POUR STOPS AND CLOSURE PLATES TO BE FURNISHED AND INSTALLED BY THE STEEL DECK CONTRACTOR. LOCATION OF STOPS TO BE COORDINATED WITH ARCHITECTURAL DRAWINGS TO OBTAIN THE FINISHED SHAFT OR EDGE OF SLAB DIMENSION. "SHAFT" REFERS TO ELEVATOR, MECHANICAL, STAIR OR OTHER OPENINGS IN THE SLAB.



TYPICAL DETAILS OF CONTINUOUS BARS IN WALLS,  
GRADE BEAMS, BEAMS AND SPANDREL BEAMS



**TYPICAL APRON CURB DETAIL**  
SCALE: 3/4" = 1'-0"

**GMCEPC**  
GROSSFIELD MACRI CONSULTING ENGINEERS, PC  
75 SMITH AVENUE, MOUNT KISCO, NY 10549 914.747.4145  
34 SHADBLOW HILL ROAD, RIDGEFIELD, CT 06877 203.431.1700  
[WWW.GMCEPC.COM](http://WWW.GMCEPC.COM)

BRIDGE  
170 ELMWOOD RD  
SOUTH SALEM, NY

[illegible]

Date	11/07/18	Scale	3/4" = 1'-0"
Drawn By	DMM	Checked By	MAM

PROJECT #	18063
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Title
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## SECTIONS & TYPICAL DETAILS

Drawing #

S-2





STEVEN DANZER, PhD & ASSOCIATES LLC

Wetlands & Environmental Consulting

WWW.CTWETLANDSCONSULTING.COM

203 451-8319

WETLAND BOUNDARIES ▸ POND & LAKE MANAGEMENT ▸ CONSTRUCTION FEASIBILITY CONSULTATIONS ▸ ENVIRONMENTAL STUDIES

## Supplemental Wetlands Report

Date: October 11, 2018

By: Steven Danzer Ph.D.

- Soil Scientist – Certified Nationally by the Soil Science Society of America (#353463).  
– Registered with the Society of Soil Scientists of Southern New England.
- Professional Wetland Scientist - PWS #1321, Society of Wetland Scientists.
- Arborist - CT DEEP License S-5639.
- Ph.D. - Renewable Natural Resource Studies.

Re: 170 Elmwood Road, Lewisboro, NY: (Parcel Tax ID 66.4-1-4.)

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The following information is submitted for consideration of the Lewisboro Planning Board in response to comments by Kellard Sessions Consulting, PC dated 11/15/17.

Specifically, this document is intended to address page 2, comment #2: “A wetland report, prepared to address items required per Section 217-7A(5) and (6) of the Wetland Ordinance, must be submitted for review.”

Previous Reports submitted:

Wetlands Investigation, by Steven Danzer PhD & Associates, dated May 18, 2017.

*Section 217-a(5): Wetland/Watercourse delineation report and assessment, prepared by a qualified wetland delineator as defined by this chapter.*

The wetlands were flagged on 5/17/17. A report was issued on 5/18/17 with the above requested information contained within with the exception of item (c) “wetland and buffer functions and benefits” which will be discussed in a section below. The wetland line was confirmed on site by Jan Johannessen on 11/30/17.



*Section 217-7A(6) A narrative description of the proposed regulated activity or use, indicating:*

*(a) Location of subject property and area to be affected.*

The roughly 2 acre site is located on the west side of Elmwood Road, south of 164 Elmwood Road. The western portion of the site is forested with a steep wooded slope with notable bedrock outcrops. The eastern portion of the site is comparatively flatter, and includes the wetlands and a substantial portion of the wetland buffer.

The wetlands include a watercourse located adjacent to Elmwood Road, a second smaller watercourse located near the adjacent property located to the south, and freshwater wetlands located in the southeastern portion of the site.

Most of the proposed activity will be located against the steep slope, or on the eastern portion of the site. The 150 wetland “setback” area extends to near the top of the slope, encapsulating most of the proposed development.

The proposed activity within the regulated area includes, as depicted on the site plan from west to east, construction of a residence (against the side of the slope), septic fields (on the hill above the residence), grading around the residence, a demarcation wall east and south of the residence, installation of three raingardens, installation of a driveway, a stream crossing for the driveway, and an aggressive wetland mitigation and enhancement plan in the wetland and wetland buffer area.

*(b) Environmental impact assessment and description of the wetland, watercourse and/or buffer area proposed to be disturbed or altered.*

***And Section 217-7A(5) (c): Wetland/Watercourse and buffer area functions and benefits.***

## Existing Conditions:

Wetlands on site include:

- 1) A watercourse which flows southerly along the frontage of the site.
- 2) A second watercourse which flows easterly along the southern property boundary. This watercourse joins with the main watercourse at the southeastern corner of the parcel.
- 3) Forested wetlands which flank both watercourses towards the interior of the site, along with a wider area of slope wetlands located between the two watercourses in the southeastern portion of the site.

Of the two watercourses investigated, the watercourse along the Elmwood Road frontage is the more significant in terms of flow. The watercourse is deepest immediately south of

the inlet culvert along the northern property boundary with a pool and riffle morphology. The watercourse widens out between wetland flag 3 and wetland flag 7, where flow becomes a trickle during the drier summer months. The watercourse outlets under Elmwood Rd into a 4 ft diameter hdpe plastic pipe. The plastic pipe is roughly 60 feet long and outlets south of Elmwood drive, above a stream adjacent to the road. There is at least a 10 inch drop from the pipe's outlet to the stream below.

The substantial drop between the pipe outlet and the stream is significant to note since it **impedes** any potential passage of fish from the downstream, a concern of the Conservation Advisory Council.

It should be noted that the State, as per the NYSDEC Environmental Resource Mapper, classifies the stream as AA-S *and not* as AA-T (trout waters) or AA-TS (suitable for trout spawning).

According to the State Regulations,"... the best usages of Class AA-S waters are: a source of water supply for drinking, culinary or food processing purposes; primary and secondary contact recreation; and fishing. The waters shall be suitable for fish, shellfish and wildlife propagation and survival..."

The two watercourses perform the following major functions and benefits: The *conveyance* and *pollutant attenuation* of surface flow as it makes its way through the watercourse on its way to Scott's Reservoir, a drinking water reservoir located approximately 1500 ft east of the site. The watercourses also provide *wildlife habitat* for stream invertebrates and small wildlife. Flow seems to be inadequate to support a viable fish population year round.

The wetland area adjacent to these two watercourses also offers a robust array of wetland functions and values (based upon the US Army Corps of Engineers Highway Methodology descriptive approach) including *Groundwater Discharge, Floodflow Alteration, Sediment/Toxicant/Pathogen Retention, Nutrient Removal, Production Export, and Wildlife Habitat*. Hydrology within the adjacent wetlands varied from inundation to soil saturation. The forested wetland buffer area provides similar functions to the wetlands as the wetlands themselves, such as pollutant renovation and wildlife habitat, as well as additional benefits such as shading and groundwater storage.

Based upon the NYSDEC Environmental Resource Mapper <http://www.dec.ny.gov/gis/erm/>, the wetlands are *not* State Regulated Freshwater Wetlands. The main stream system along the road frontage is classified as AA-S, while the stream system that drains from the slope is unclassified. According to the resource mapper, there are no "*Significant Natural Communities*" within the site or within close proximity to the site. Nor are there any "*Rare Plants and Rare Animals*" within the site or within close proximity to the site. The site investigation revealed no vernal pools. Fauna that utilize the site are the typical fauna one would reasonably expect in a small forested tract with a wetland and watercourse, adjacent to residential development (i.e. mammals such as deer,

raccoon, squirrel, chipmunks, coyote, fox, skunk, opossum, avian spp. such as song birds and the occasional predatory hawk, and although no reptiles and amphibians were observed on site it is reasonable to expect such usage by frogs and snakes.

### Impacts:

At the core of this application for a Wetlands Permit is a proposal to alter the terrain to construct a residence and driveway. The residence has been sited so as to be as far from the wetlands as reasonably possible.

The primary landscape alterations within the regulated areas will include the removal of 72 trees, construction of a residence, septic fields, grading around the residence, a demarcation wall east and south of the residence, the installation of three raingardens, and the installation of a driveway to access the site.

Efforts have been more to reduce gross disturbance in the upland buffer due to the construction activity as much as possible during the planning process. As of the site plan revised through 9/28/18, site disturbance will be 38,263 sf. It is possible that this area of disturbance may be reduced further during the course of the review process.

Total disturbance to the wetland buffer and wetlands, as per 9/28/18, will be 33,648 sf, of which approximately 92% of the disturbance will be in the 150 foot wetland buffer rather than the wetlands itself.

An aggressive 10,310 sf planting plan is proposed to enhance the remaining wetland buffer (and wetland) area and to provide mitigation for impacts due to the loss of woody vegetation during the construction process. Furthermore, approximately 1,500 sf of Japanese Stilt Grass, and 2,000 sf of invasive shrubs will be removed.

A stream crossing will be necessary for the driveway, since the Applicant was unable to receive permission from the neighbor to the north to share their existing driveway.

The stream crossing will occur at the narrowest point of the stream. This will minimize overall disturbance to the stream channel and its adjacent banks.

The stream crossing will result in 2,774 sf of disturbance to the wetlands area, primarily consisting of displacement of habitat adjacent to the east and west banks of the stream to accommodate the placement of the driveway.

There will be no work in the stream channel itself. Dominant woody vegetation adjacent to the east (roadside) bank which will be eliminated from the wetlands and/or the wetlands buffer will include 8 Red and Sugar maples of sapling to intermediate size classes, and copious amounts of invasive Multiflora rose. Dominant vegetation to be removed on the west bank will include Spicebush, Cinnamon fern, invasive Japanese

barberry, invasive Multi-flora rose, and several Maple and dead/diseased Ash on the wetland boundary.

An elevated bridge will used for the stream crossing.

Consideration was initially given to a culvert crossing. Both an open bottom culvert design and closed bottom design were investigated. The environmental benefits of an open bottom culvert rather than a closed culvert design include:

1. Disruption to the stream will be minimized since the culvert will not have to be forcibly embedded into the channel bottom.
2. The post-construction base level of the stream will be unaffected, minimizing the potential for downstream channel cutting and erosion.
3. The open bottom design will permit flow to continue through the stream unimpeded and without additional constrictions, preventing alterations to the existing hydrologic regime of the stream.
4. The open bottom design will limit the stream from contact with a metal bottom, eliminating the risk of pollution from rust.

An elevated bridge would cause even less disturbance to the stream channel than a culvert.

As of 9/28/18, an elevated bridge is the preferred option.

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Regarding tree removal on the site, all trees to be removed were assessed as to their health under existing conditions, during a tree survey conducted during May 2018. The evaluation was conducted by a licensed Arborist (Steven Danzer PhD). The roots, trunk, and scaffolding of each tree proposed for removal were visually inspected, and each tree then assigned to its respective condition class. Raw data and results are included at the end of this report.

To summarize the tree condition assessment:

- There will be 72 trees removed that are 8 inch DBH or greater in size.
- Forty-four percent (49%) of those trees are either *already dead* (eight trees, mainly Ash) or in *poor condition* (twenty-seven trees, variety of species).
- The rest of the trees to be removed (thirty-seven trees) are in fair to good condition.

- Species to removed included (in declining order of abundance) Maple (Red and Sugar), Oak (Red and White), Black Birch, Hickory, and Tulip Tree.
- Most of the Black Birches are suffering from a fungal infection (Nectria canker) which will ultimately girdle the trees, causing their demise.

*(c) Intended purpose of the proposed activity or use and the applicant's interest in the subject property and area to be affected.*

The Applicant intends to develop the property in order to construct a residence in conformance with the Lewisboro Town Code. The Applicant intends to use the residence as their primary residence.

*(d) Intended purpose and extent of impact or alteration on the affected wetland, watercourse and/or buffer area.*

Please see previous discussion in sections (a) and (b), above.

*(e) Explanation why the proposed regulated activity cannot be located at another site or location with no or less impact upon wetland, watercourse and/or buffer area.*

The Applicant was unable to receive permission from the adjacent property owner to the north to share an existing driveway located on that property. Therefore the applicant is compelled to propose a stream crossing in order to obtain reasonable access to the interior of their property.

Several areas along the stream crossing were explored. The currently proposed crossing site was selected as the best location to cross the stream since the stream is the narrowest at this location, and because impact to the adjacent stream bank will be minimized.

*(f) Explanation as to whether or not the proposed activity is dependent on the affected wetland, watercourse and/or buffer area.*

The proposed activity is not a watercourse-dependent use or a wetland-dependent use. The activity will require alteration of the buffer, however.

*(g) The alternatives to the proposed activity considered, and why the proposal to disturb or alter the affected wetland, watercourse and/or buffer area was chosen instead.*

Since the watercourse spans the entire eastern length of the property, there is no alternative but to cross the stream. Several locations for the crossing were assessed, and the current proposed location was eventually selected since it is the narrowest point in the channel and will result in the least disturbance to the adjacent wetlands.

Several culvert designs were originally considered. An open-bottom culvert design as initially recommended over a closed bottom culvert to minimize disturbance (see section (b) above). A closed bottom culvert could be proposed, however that will result in additional disturbance to the channel bottom, a change in base level potentially resulting in erosion downstream, and a permanent constriction in stream bottom. However, the applicant has decided to propose an elevated bridge design *to avoid* all disturbance to the channel.

The location for the residence was selected so as to maximize distance from the watercourse.

And lastly, even though there will be no direct impacts in the wetland area other than the 2,774 sf of disturbance for the stream crossing, an aggressive 10,310 sf planting plan is proposed to enhance the remaining wetland and buffer area, and to provide mitigation for impacts due to loss of woody vegetation during the construction process.

*(h) The mitigation measures proposed to avoid or reduce impact on the affected wetland, watercourse and/or buffer area.*

Three raingardens are proposed in order to help mitigate stormwater runoff from the developed areas.

The driveway surface will be constructed using pervious materials.

Lawn areas are minimized in the buffer area.

A demarcation wall will physically separate the developed areas of the site from the natural buffer area.

An aggressive 10,310 sf planting plan is proposed to enhance the wetland and buffer area and to provide mitigation for impacts due to loss of vegetation during the construction process. Thirty-three (33) trees, one hundred thirty-one (131) shrubs, and seventy-two



(72) herbaceous perennials are proposed. Additionally, two hundred fifty-six (256) herbaceous perennials are to be planted in the rain gardens. All plants are native. The objective of the plan is multifold: to enhance diversity, to provide additional habitat, to enhance the understory by creating more layering in the forest, and to create more food and shelter for wildlife.

Approximately 2,000 sf of existing woody invasive species (primarily Japanese barberry, Multi-flora rose, and Asiatic bittersweet) will be removed by hand and disposed off site. Roughly 1,500 sf of existing Japanese stilt grass, also an invasive, will be removed by hand prior to flowering or weed whacked prior to seeding, wherever feasible. Existing construction debris (an old steel girder) will be removed from the eastern bank of the stream and disposed off site.

A 7,915 sf Native Wildflower meadow will be planted over the septic system, to be mowed no more than twice a year.

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Thank you for the opportunity to comment,

Signed,



Steven Danzer Ph.D., Certified Professional Soil Scientist (CPSS #353463)



## TREE CONDITION ASSESSMENT - 170 ELMWOOD RD

### Summary

- There will be 72 trees removed that are 8 inch DBH or greater in size.
- Forty-four percent (49%) of those trees are either *already dead* (eight trees, mainly Ash) or in *poor condition* (twenty-seven trees, variety of species).
- The rest of the trees to be removed (thirty-seven trees) are in fair to good condition.
- Species to removed included (in declining order of abundance) Maple (Red and Sugar), Oak (Red and White), Black Birch, Hickory, and Tulip Tree.
- Most of the Black Birches are suffering from a fungal infection (Nectria canker) which will ultimately girdle the trees, causing their demise.

<u>ID</u>	<u>SPECIES</u>	<u>SIZE</u>	<u>CONDITION</u>	<u>COMMENTS</u>
1	Ash	16"	Dead	
2	Maple	12"	Excellent	
3	Ash	18"	Dead	Fallen
4	Maple	8"	Poor	
5	Maple	8"	Good/Fair	Fallen
6	Ash	twin 14"	Dead	
7	Ash	twin 16"	Dead	
8	Maple	14"	Excellent	
9	Maple	10"	Good/Fair	
10	Ash	16"	Dead	
11	Maple	triple 16/14/12"	Poor	
12	Maple	22"	Excellent	
13	Tulip	8"	Excellent	
14	Ash	8"	Poor	Dying
15	Maple	triple 14/14/12"	Excellent	
16	Maple	16"	Poor	
17	Maple	10"	Poor	
18	Locust	16"	Dead	
19	Oak	12"	Poor	Undersized scaffolding
20	Maple	8"	Poor	
22	Maple	22"	Good/Fair	One tree, not two
23	Oak	14"	Good/Fair	
24	Oak	15"	Good/Fair	
25	Black Birch	twin 10"	Poor	

26	Hickory	12"	Dead	Storm damage
27	Black Birch	twin 12"	Poor	
<b>28</b>	<b>Maple</b>	<b>8"</b>	<b>Excellent</b>	<b>To remain</b>
<b>29</b>	<b>Maple</b>	<b>twin 12/8"</b>	<b>Good/Fair</b>	<b>To remain</b>
<b>30</b>	<b>Oak</b>	<b>26"</b>	<b>Excellent</b>	<b>To remain</b>
31	Black Birch	14"	Poor	
32	Oak	16"	Excellent	
33	Maple	10"	Excellent	
34	Black Birch	12"	Poor	
35	Oak	20"	Good/Fair	
36	Maple	12"	Good/Fair	
37	Maple	18"	Excellent	
38	Maple	15"	Excellent	
39	Maple	triple 14/12/14"	Good/Fair	
40	Maple	triple 12/16/20"	Good/Fair	Strangled by vines
41	Maple	12"	Poor	
42	Maple	15"	Excellent	
43	Maple	8"	Poor	
44	Maple	12"	Poor	
45	Black Birch	14"	Excellent	
46	Black Birch	12"	Excellent	
47	Maple	15"	Good/Fair	
48	Maple	15"	Good/Fair	
49	Maple	12"	Good/Fair	
50	Black Birch	12"	Poor	
51	Black Birch	12"	Good/Fair	
52	Oak	22"	Excellent	
53	White Oak	15"	Good	
54	Oak	15"	Poor	
55	Maple	12"	Good/Fair	
56	Black Birch	10"	Poor	Virus
57	Oak	16"	Poor	One tree, not two
58	Oak	18"	Good/Fair	
59	Oak	twin 16/14"	Excellent	
60	Oak	16"	Excellent	
61	Oak	16"	Poor	
62	Oak	17"	Excellent	
63	Oak	14"	Poor	

64	Hickory	16"	Poor	
65	Hickory	16"	Poor	
66	Oak	12"	Excellent	
67	Maple	twin	Poor	
68	Oak	16"	Good/Fair	
69	Ash	16"	Dead	
70	Maple	8"	Excellent	
71	Maple	8"	Poor	
72	Maple	12"	Poor	
73	Maple	14"	Good/Fair	
74	Oak	10"	Poor	
21a	Maple	10"	Poor	Co-dominant trunks
21b	Maple	8"	Good/Fair	Co-dominant trunks



NOTES:

- CONTACT DIG SAFELY NEW YORK AT 800-962-7962 WWW.DIGSAFELYNEWYORK.ORG TO HAVE UNDERGROUND UTILITY LINES MARKED PRIOR TO START OF ANY EXCAVATION WORK.
- BASE MAP INFORMATION WAS TAKEN FROM SITE DEVELOPMENT PLAN PREPARED BY CRONIN ENGINEERING P.E., P.C., CORTLANDT MANOR, NEW YORK, DATED THROUGH SEPTEMBER 28, 2018. ADDITIONAL INFORMATION WAS ADDED FROM FIELD MEASUREMENTS TAKEN BY TRACY L. CHALIFOUX, RLA AND STEVEN DANZER.
- WETLAND LINE WAS FLAGGED BY STEVEN DANZER, PHD & ASSOCIATES ON MAY 15, 2017.
- EXACT LOCATION OF PLANTINGS, SPECIES TYPES AND QUANTITIES MAY VARY FROM THIS PLAN BASED ON SITE PLAN REVISIONS AND/OR ACTUAL FIELD CONDITIONS.
- PLANT SPECIES SUBSTITUTIONS MAY BE MADE WITH THE APPROVAL OF THE PROJECT LANDSCAPE ARCHITECT PRIOR TO PLANTING. SUBSTITUTED PLANTS SHALL BE AT AN EQUAL OR GREATER SIZE AS NOTED USING A SIMILAR TYPE PLANT.
- PLANT LAYOUT SHALL BE SUPERVISED BY PROJECT LANDSCAPE ARCHITECT.
- ALL PLANTING METHODS SHALL BE IN ACCORDANCE WITH THE 'AMERICAN STANDARDS FOR NURSERY STOCK' LATEST EDITION, AS PUBLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
- IN THE EVENT OF A DISCREPANCY BETWEEN THE QUANTITIES OF PLANTS IN THE PLANT LIST AND THE ACTUAL QUANTITIES SHOWN ON THE PLAN THE PLAN SHALL GOVERN.
- ALL PLANTING WORK SHALL BE PERFORMED BY HAND OR BY SMALL, TRACKED MACHINERY.
- EXISTING INVASIVE VEGETATION TO BE TAGGED BY LANDSCAPE ARCHITECT AND SHALL BE REMOVED BY HAND AND DISPOSED OF OFF SITE.
- MEADOW AREA OVER SEPTIC FIELDS SHALL BE FINE RAKED AND SEEDED WITH SHOWY WILDFLOWER MIX BY NEW ENGLAND WETLAND PLANTS, INC. OR EQUAL. APPLY A LAYER OF CLEAN, WEED-FREE STRAW TO SEEDED AREA. MEADOW AREA IS NOT TO BE MOVED MORE THAN TWICE PER YEAR.
- DISTURBED AREAS WITHIN WETLAND SHALL BE FINE RAKED AND SEEDED WITH WETMIX BY NEW ENGLAND WETLAND PLANTS, INC. OR EQUAL. APPLY A LAYER OF CLEAN, WEED-FREE STRAW TO SEEDED AREA.
- APPLY 2" OF NON-DYED MULCH TO PLANTS WITHIN WETLAND AND WETLAND BUFFER AREA FOR THE FIRST TWO YEARS.
- APPLY ORGANIC DEER SPRAY OR PROTECTIVE TREE TUBES TO ANY NEW PLANTINGS SUSCEPTIBLE TO BROWSING.
- RESTORE ANY DISTURBED LAWN AREAS WITH 4" CLEAN, SCREENED TOPSOIL (IF REQUIRED) FINE RAKE, SEED AND HAY MULCH.

WORK SEQUENCE:

- INSTALL CONSTRUCTION ACCESS, TEMPORARY STREAM CROSSING, TREE PROTECTION, SILT FENCE, FENCE ALONG LIMIT OF DISTURBANCE AS REQUIRED AND OTHER EROSION CONTROLS AS SHOWN ON ENGINEER'S PLAN.
- TREES TO BE TAGGED IN FIELD PRIOR TO REMOVAL.
- REMOVE TREES TAGGED FOR REMOVAL AND DISPOSE OF WOOD OFF SITE OR IN AN APPROVED UPLAND AREA.
- EXISTING INVASIVE VEGETATION TO BE TAGGED BY LANDSCAPE ARCHITECT AND SHALL BE REMOVED BY HAND AND DISPOSED OF OFF SITE. JAPANESE STILT GRASS IS TO BE REMOVED BY HAND PRIOR TO FLOWERING OR WEED WHACKED PRIOR TO SETTING SEED.
- INSTALL STAKED AND SEEDED COR LOGS ALONG ALL NEWLY EXPOSED PORTIONS OF STREAM BANK, IF NECESSARY.
- CONSTRUCT NEW RETAINING WALL DEMARCATION. NOTE: DISPOSE OF EXCESS FILL OFF SITE OR IN AN APPROVED UPLAND LOCATION OUTSIDE OF REGULATED WETLAND BUFFER. ANY FILL DISPOSED OF ON-SITE TO BE APPROPRIATELY STABILIZED.
- INSTALL NEW NATIVE SHRUBS, TREES AND PERENNIALS AS SHOWN ON PLAN.
- APPLY 2" OF NON-DYED MULCH TO PLANTS WITHIN WETLAND AND WETLAND BUFFER AREA.
- FINE RAKE, SEED AND PROVIDE A LAYER OF CLEAN, WEED-FREE STRAW TO MEADOW AREA.
- APPLY ORGANIC DEER SPRAY OR PROTECTIVE TREE TUBES TO NEW PLANTINGS SUSCEPTIBLE TO DEER BROWSING.
- RESTORE ANY DISTURBED LAWN AREAS WITH 4" TOPSOIL (IF REQUIRED) FINE RAKE, SEED AND HAY MULCH.

PLANT LIST-170 Elmwood Rd, South Salem, NY

10/9/2018

QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING NOTES
<b>TREES</b>					
1	AR	Acer rubrum	Red Maple	2-2 1/2" cal	Full, Heavy, B&B
3	AC	Amelanchier canadensis	Shadblow Serviceberry	8'-10' ht.	Multi-stemmed, B&B
6	BN	Betula nigra	River Birch	8'-10' ht.	Multi-stemmed, Cont.
3	CC	Carpinus caroliniana	American Hornbeam	2-2 1/2" cal	Full, Heavy, B&B
1	HOL	Ilex opaca	American Holly	7'-8' ht.	Full, Heavy, B&B
1	LS	Liquidambar styraciflua	Sweet Gum	2-2 1/2" cal	Full, Heavy, B&B
1	NS	Nyssa sylvatica	Sourwood	2-2 1/2" cal	Full, Heavy, B&B
13	PG	Picea glauca	White Spruce	7'-8' ht.	Full, Heavy, B&B
3	QB	Quercus bicolor	Swamp White Oak	2-2 1/2" cal	Full, Heavy, B&B
1	QP	Quercus palustris	Pin Oak	1 1/2"-2" cal	Full, Heavy, B&B

SHRUBS

28	CA	Clethra alnifolia	Sweet Pepperbush	3'-3 1/2' ht.	6' O.C.	Full, Heavy, Container
14	CS	Cornus sericea	Redtwig Dogwood	3'-3 1/2' ht.	6' O.C.	Full, Heavy, Container
24	IG	Ilex glabra	Inkberry	3'-3 1/2' ht.	6' O.C.	Full, Heavy, Container
5	HV	Hammamelis virginiana	Common Witchazel	3'-3 1/2' ht.	6' O.C.	Full, Heavy, Container
11	IV	Ilex verticillata	Winterberry Holly	3'-3 1/2' ht.	6' O.C.	Full, Heavy, Container
17	LB	Lindera benzoin	Spicebush	3'-3 1/2' ht.	6' O.C.	Full, Heavy, Container
12	RM	Rhododendron maximum	Rosebay	3'-3 1/2' ht.	6' O.C.	Full, Heavy, Container
10	VD	Viburnum dentatum	Arrowwood Viburnum	3'-3 1/2' ht.	6' O.C.	Full, Heavy, Container
10	VN	Viburnum nudum	Witherod Viburnum	3'-3 1/2' ht.	6' O.C.	Full, Heavy, Container

PERENNIALS

12	IR	Iris versicolor	Blueflag Iris	1 Gallon	15" O.C.	Container
60	PV	Panicum virgatum	Switchgrass	1 Gallon	18" O.C.	Container

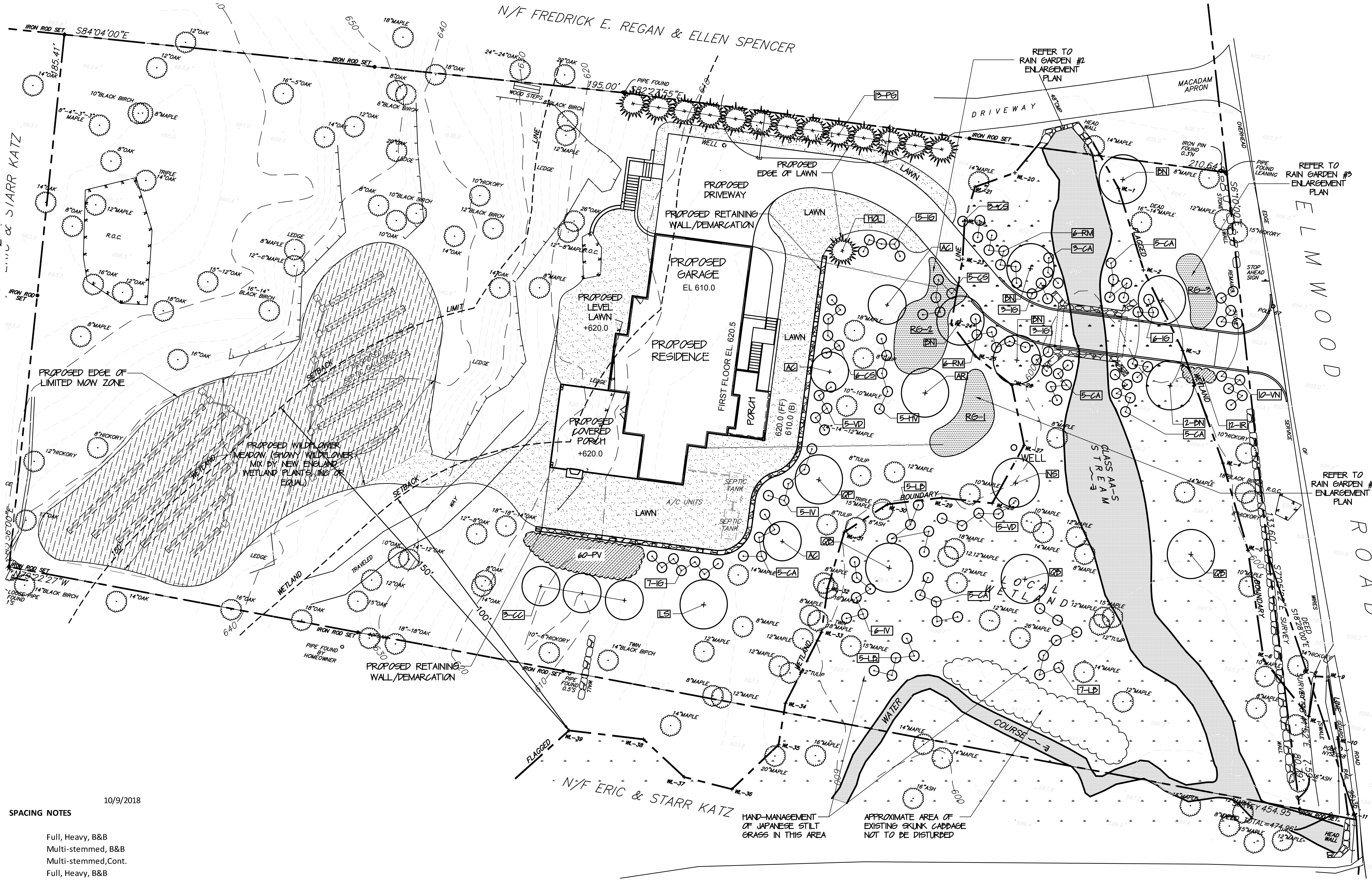
Note: Apply 2" of non-dyed bark mulch in plant beds.

RAIN GARDENS PLANT LIST-170 Elmwood Rd, South Salem, NY

10/9/2018

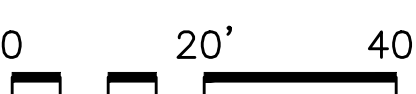
QUANTITY	SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	SPACING NOTES
<b>PERENNIALS</b>					
28	ASC	Asclepias incarnata	Swamp Milkweed	1 Gallon	24" O.C. Container
30	AST	Astilbe spp.	Astilbe	1 Gallon	24" O.C. Container
9	CAL	Calamagrostis canadensis	Bluejoint	1 Gallon	24" O.C. Container
12	EUP	Eupatorium purpureum	Joe-Pye Weed	1 Gallon	24" O.C. Container
72	IR	Iris versicolor	Blueflag Iris	1 Gallon	18" O.C. Container
21	LOB	Lobelia siphilitica	Great Blue Lobelia	1 Gallon	24" O.C. Container
45	OC	Osmunda cinnamomea	Cinnamon Fern	1 Gallon	24" O.C. Container
39	CAR	Carex stricta	Tussock Sedge	1 Gallon	24" O.C. Container

Note: Apply 2" of non-dyed bark mulch to bottom of rain gardens.



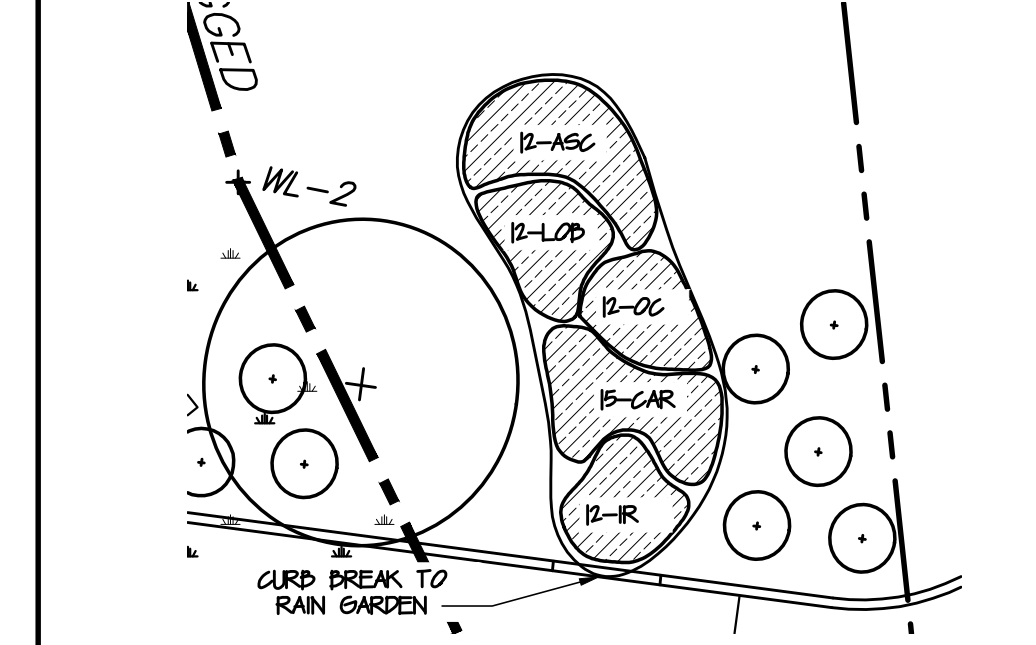
WETLAND MITIGATION AND ENHANCEMENT PLAN

SCALE: 1" = 20'-0"

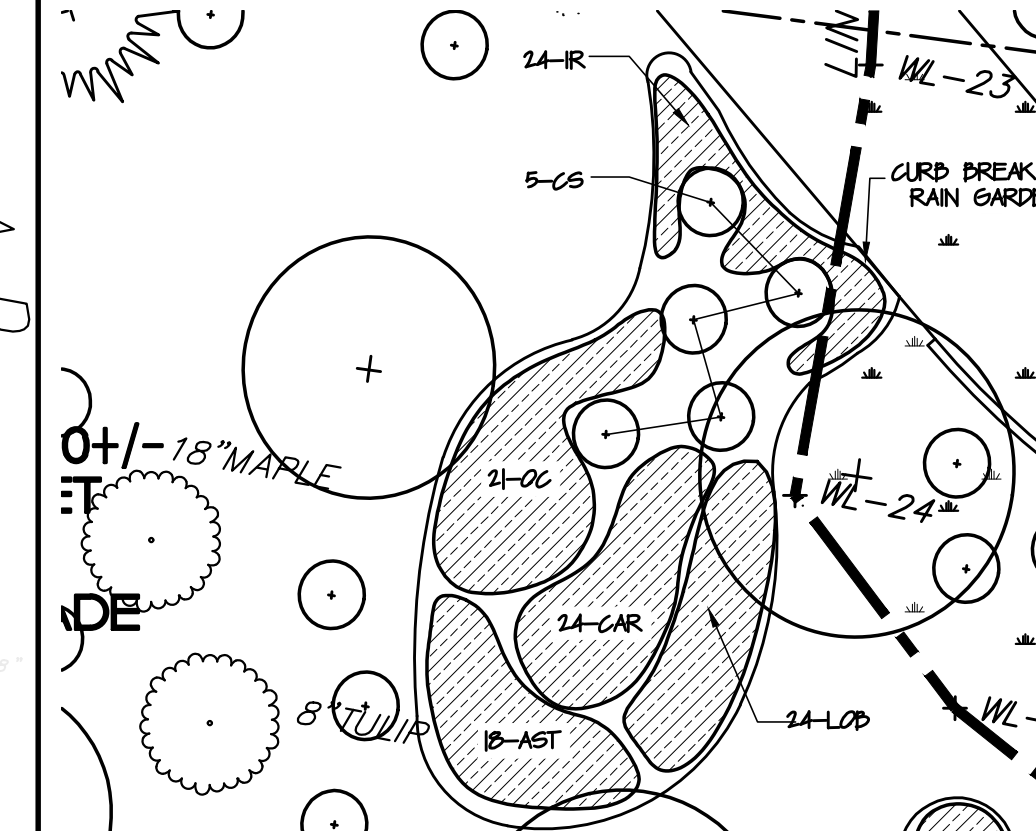


GENERAL LEGEND

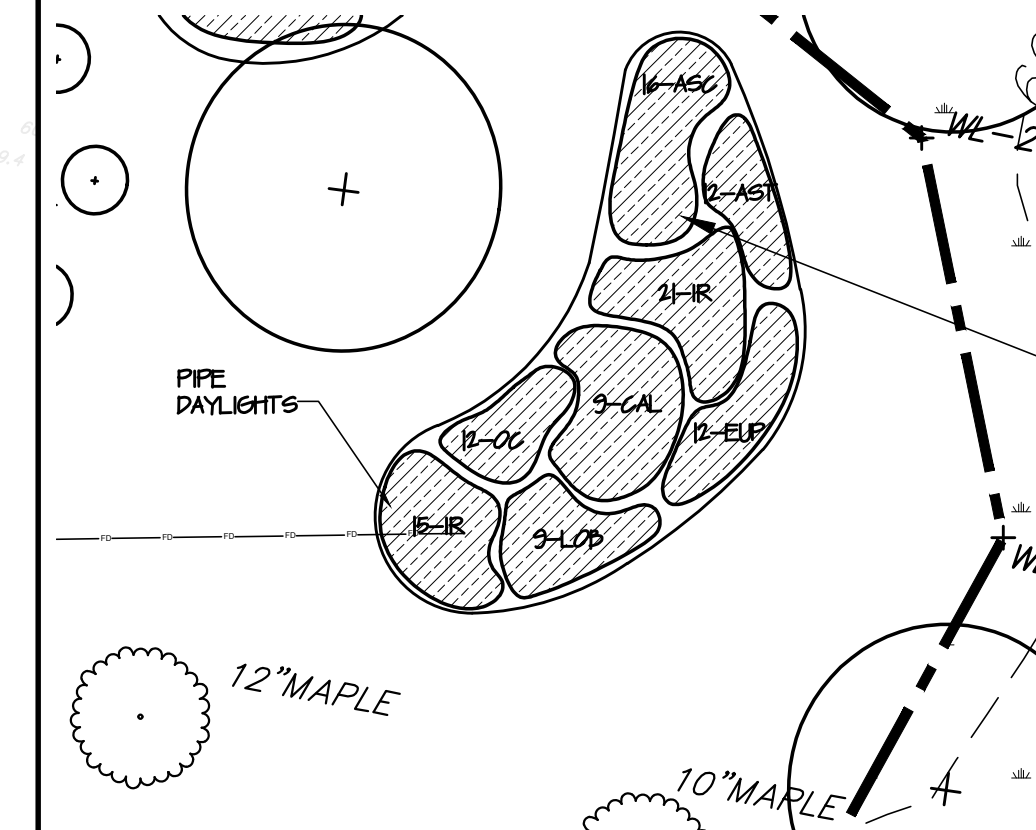
PROPERTY LINE	---
PROPOSED TREE	+
PROPOSED SHRUB	•
PROPOSED FERNS/PERENNIALS	▨
EXISTING WETLAND FLAG/LINE	WL-30
PROPOSED LAWN RESTORATION	▨
PROPOSED WILDFLOWER MEADOW	▨



RAIN GARDEN #3 ENLARGEMENT PLAN  
SCALE: 1" = 10'-0"



RAIN GARDEN #2 ENLARGEMENT PLAN  
SCALE: 1" = 10'-0"



RAIN GARDEN #1 ENLARGEMENT PLAN  
SCALE: 1" = 10'-0"

Revised per Town comments; additional rain garden	10.09.18
Revisions	Date

--	--

Tracy Chalifoux LLC  
Landscape Architect  
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E-mail: tchalifoux@gmail.com

STEVEN DANZER, PHD & ASSOCIATES LLC  
Wetlands & Environmental Consulting  
WWW.CTWETLANDSCONSULTING.COM  
203 451-8319



Project Title

**WETLAND MITIGATION AND ENHANCEMENT PLAN**

PREPARED FOR:  
ZEF AND YULIA DEDVUKAJ

Location

170 ELMWOOD ROAD  
SOUTH SALEM, NEW YORK 10567

Graphic Scale and North Arrow

Date

June 20, 2018

Scale

AS SHOWN

Checked

SD

Drawn

TLC

Drawing Title

**WETLAND MITIGATION AND ENHANCEMENT PLAN AND PLANT LIST**

Drawing No.

**WP-1**

SHEET 1 OF 2



# TREE REMOVAL AND PROTECTION LEGEND

PROPERTY LINE

EXISTING WETLAND FLAG/LINE

PROTECT EXISTING TREE TO REMAIN

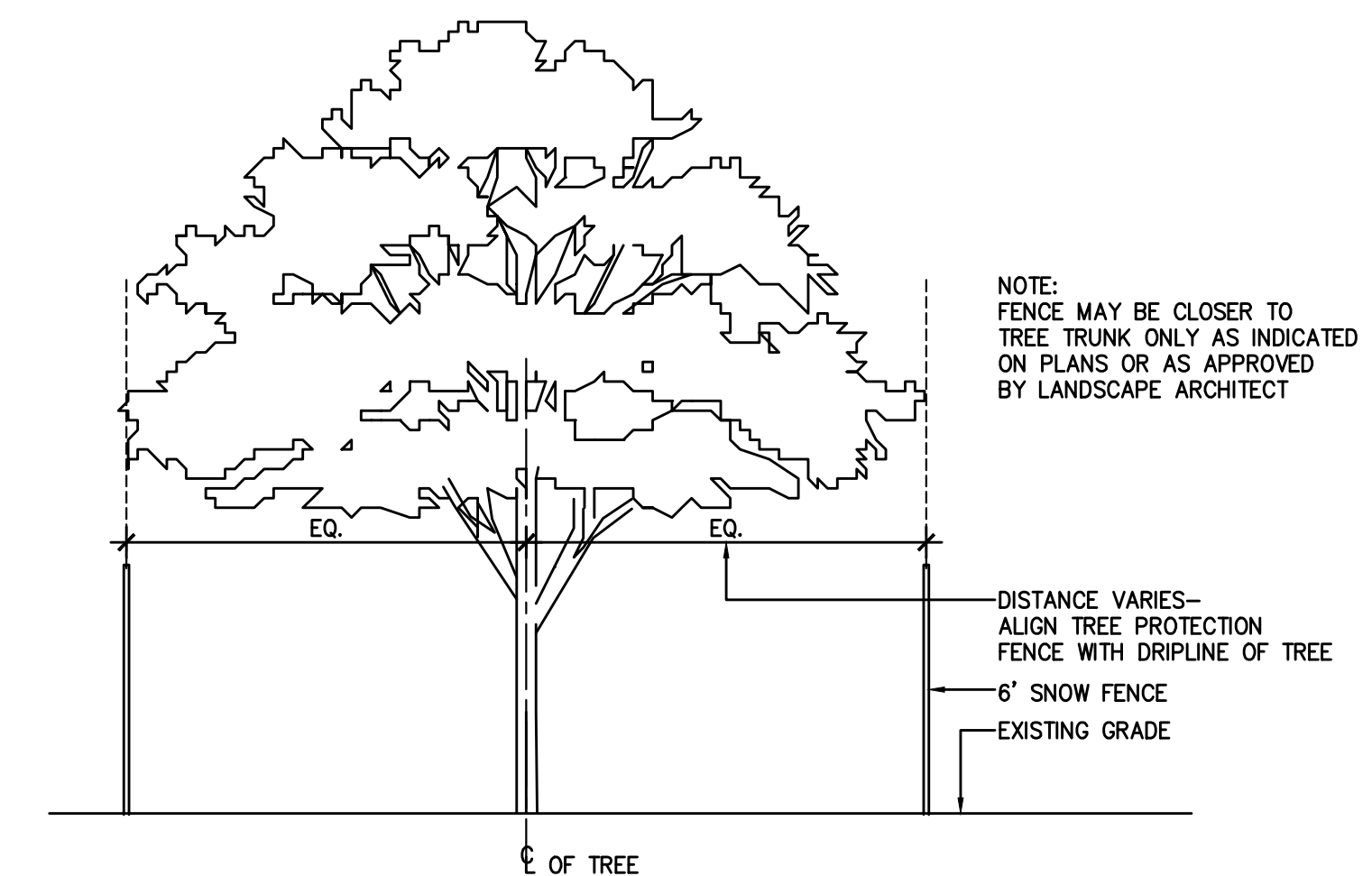
EXISTING TREE TO BE REMOVED

LIMIT OF DISTURBANCE

## TREE PROTECTION AND REMOVAL NOTES:

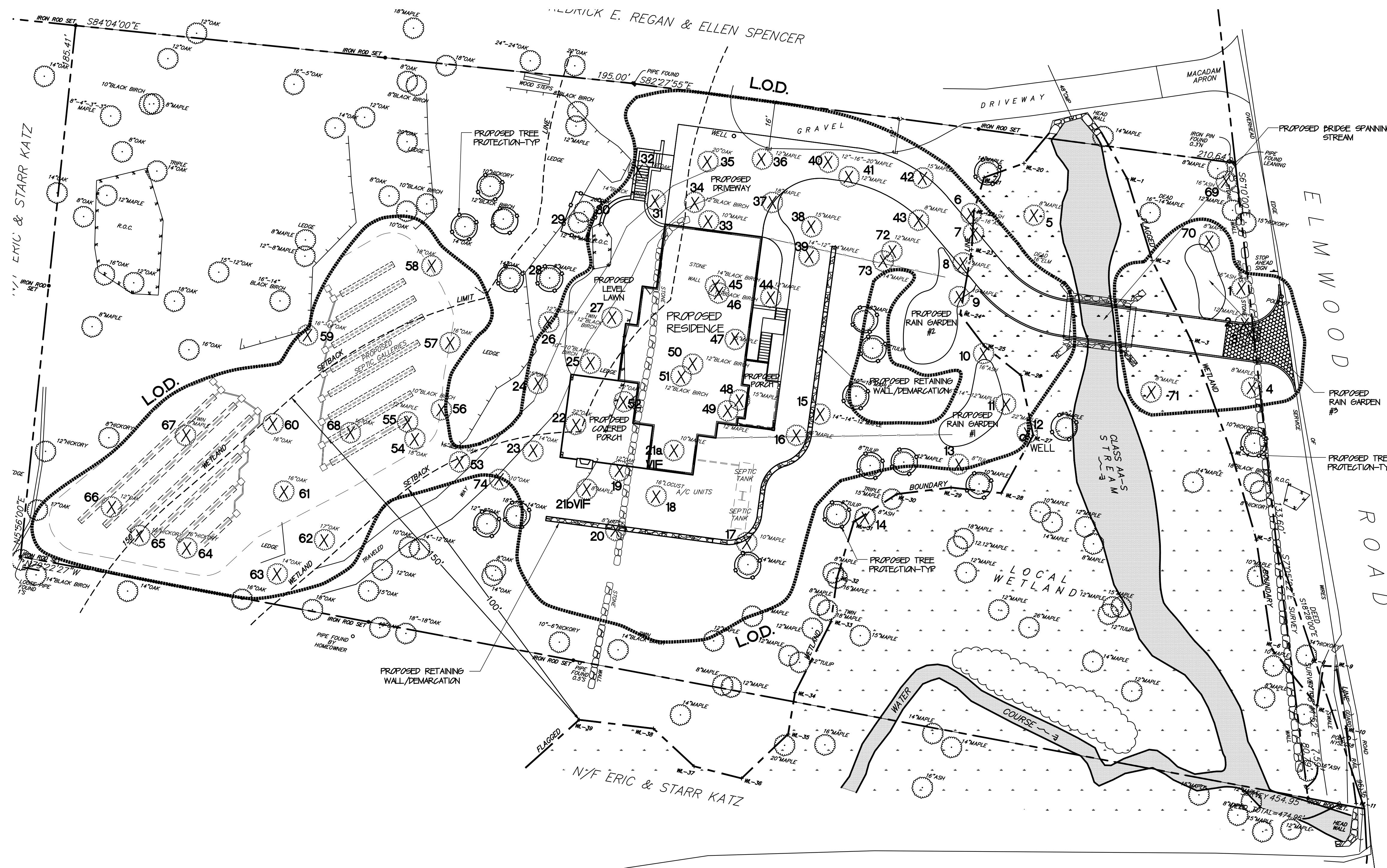
1. PROTECT ALL EXISTING TREES TO REMAIN
2. TREE PROTECTION SHALL BE USED AROUND TREES NEAR WORK AREA
3. LANDSCAPE ARCHITECT OR OTHER QUALIFIED PROFESSIONAL SHALL DETERMINE IF FENCE MAY BE CLOSER TO TREE TRUNK THAN SHOWN ON PLAN
4. EXISTING TREES TO BE REMOVED SHALL BE CUT AND DISPOSED OF OFF SITE OR WITHIN AN APPROVED UPLAND LOCATION
5. NO MATERIALS SHALL BE STOCKPILED ON ROOT ZONES OF EXISTING TREES TO REMAIN

TREES TO BE REMOVED WITHIN BUFFER & UPLAND AREAS = 71  
TREES TO BE REMOVED WITHIN WETLANDS = 4  
TOTAL TREES TO BE REMOVED = 75



## TREE PROTECTION DETAIL

SCALE: NOT TO SCALE



Tracy Chalifoux LLC

Landscape Architect  
7 King Street, Danbury, CT 06811  
Office: 845-364-1340  
E-mail: tchalfoux@gmail.com



Seal



Project Title

## TREE REMOVAL and PROTECTION PLAN

PREPARED FOR:  
ZEF AND YULIA DEDVUKAJ

Location

170 ELMWOOD ROAD  
SOUTH SALEM, NEW YORK 10567

Graphic Scale and North Arrow



Date

June 20, 2018

Scale

1"=20'-0"

Checked

SD

Drawn

TLC

Drawing Title

## TREE REMOVAL and PROTECTION PLAN

Drawing No.

WP-2

SHEET 2 OF 2

Revised limit of disturbance line

10.09.18

Revisions

Date

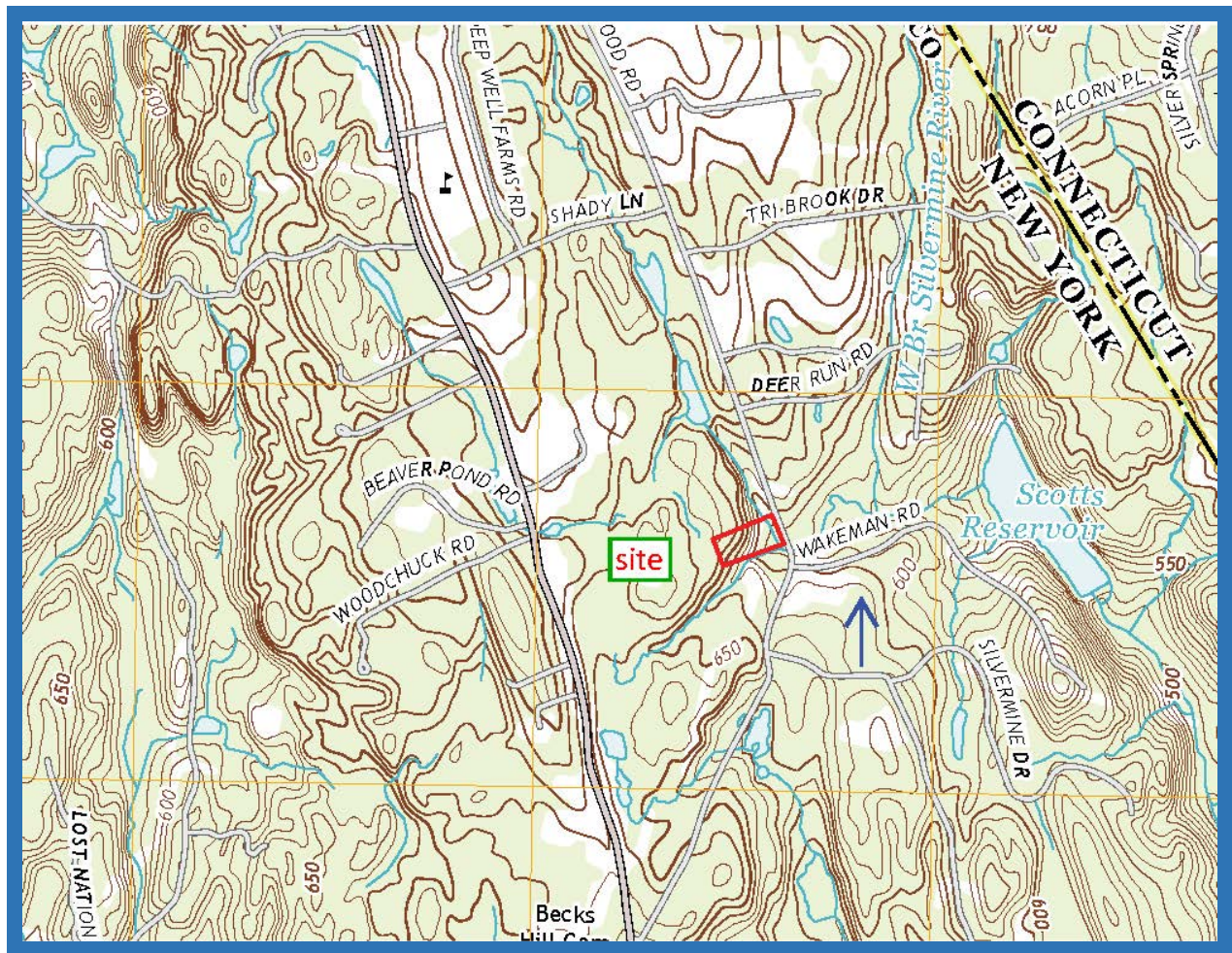


# Dedvukaj – 170 Elmwood Road

## STORMWATER POLLUTION PREVENTION PLAN

Town of Lewisboro, Westchester County, New York

November 20, 2018



**Prepared by:** Cronin Engineering, P.E., P.C.  
**Owner/Operator:** Zef Dedvukaj  
**Approving Authority:** Town of Lewisboro



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<b>APPENDIX C</b>	<b>MS4 (TOWN OF LEWISBORO) SWPPP ACCEPTANCE FORM</b>
<b>APPENDIX D</b>	<b>DETAILS OF EROSION AND SEDIMENT CONTROL</b>
<b>APPENDIX E</b>	<b>SITE SPECIFIC SOILS REPORT</b>
<b>APPENDIX F</b>	<b>STORMWATER MANAGEMENT REPORT</b>



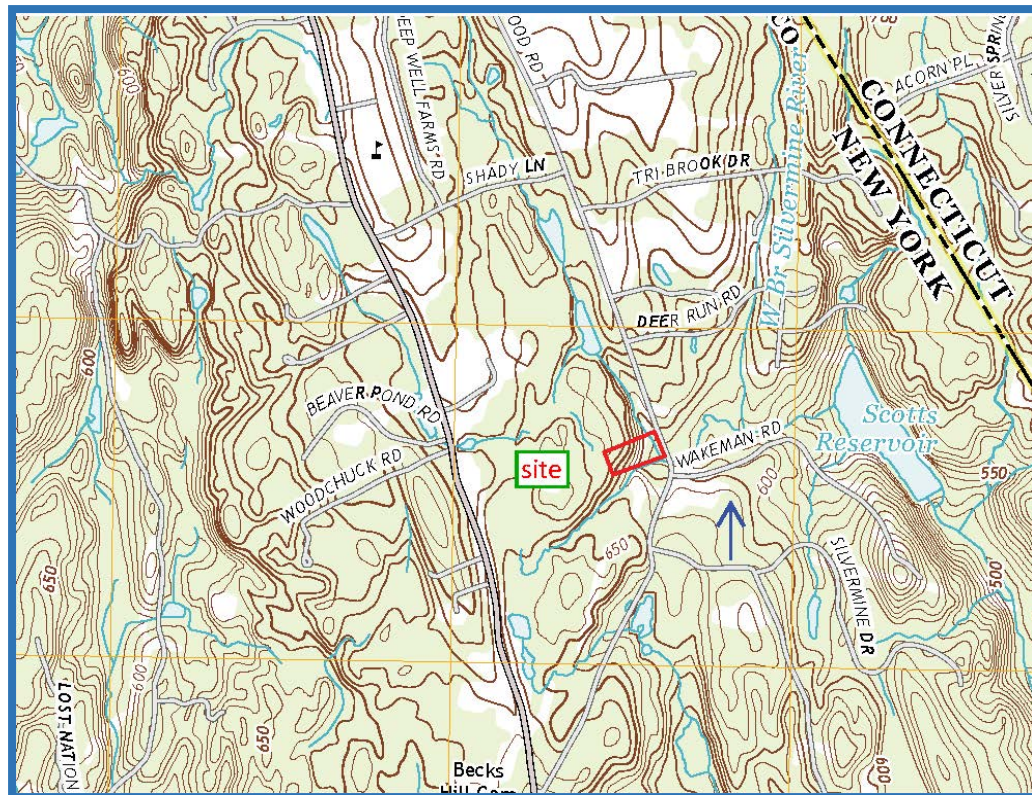
## 1.0 INTRODUCTION

### 1.1 Project Description

Reference is made to the Site Plan prepared by this office entitled, “Site Development Plan for Zef Dedvukaj”, dated as revised **November 20, 2018**. Said plans and this report together complete this stormwater pollution prevention plan (SWPPP).

#### 1.1.1 Proposed Project

This project involves the construction of a single-family residence, various patios and decks, driveway and bridge and a new on-site wastewater treatment system. See **Figure 1** for site location.



**Figure 1 – Location Map**

Total site disturbance: approximately **0.9** acres for all of the proposed site work.

Town tax map designation for the site: Section: **47** Block: **10056**; Lot: **38**

Property owner: Zef Dedvukaj, 43 Laurel Lane, South Salem NY 10590

Watershed – **Long Island Sound**

#### 1.1.2 Project Soils

The predominant soils type located on the project site are Chatfield-Charlton complex and Leicester loam, see **Figure 2** below.





**Figure 2 – Soils Map**

Soils information is based on the soil survey of Putnam and Westchester Counties, NY prepared by the USDA and SCS, dated September 1994 and the USDA National Resources Conservation Services Web Soil Survey. The on-site soils are identified below with their corresponding Hydrologic Soil Group (HSG):

ChC	Charlton fine sandy loam	8 to 15% slope	HSG B	1.5% of site
CrC	Charlton-Chatfield Complex	0 to 15% slope	HSG B	2.4% of site
CsD	Chatfield-Charlton Complex	15-35% slope	HSG B	30.4% of site
LcB	Leicester loam	3 to 8% slope	HSG C	65.0% of site
Sh	Sun loam	0 to 8% slope	HSG D	0.7% of site

See **Appendix E** for the soils report.

## 1.2 Stormwater Management Objectives

The stormwater management objective for this SWPPP is to provide an erosion and sediment control plan for the proposed development of **170 Elmwood Road** described above. The project site currently has approximately **0.9** acres (**+39,000** sq ft) of disturbance for the construction of the house, patio, driveway and bridge, sewage treatment system and mitigation plan and all appurtenances.

Therefore, based on the above and the total amount of disturbance on site, this project is **not** subject to the water quality and quantity requirements of the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit for stormwater discharges from construction activity, Permit **GP-0-15-002**, as shown in **Appendix B, Table 1** of the Permit.

While this project does not require approval from the NYSDEC General Permit for either stormwater quantity controls or quality controls, this project is considered an activity that requires the preparation of a SWPPP that includes an erosion and sediment control **plan as required by the Town of Lewisboro Town Code, Chapter 189**. This is because there is greater than 5,000 square feet of disturbance proposed for the project.



### 1.3 NYSDEC SPDES General Permit GP-0-15-002 Applicability and Requirements

Disturbance >1 acre	no (0.9 acres)
Disturbance > 5 acres	no (0.9 acres)
Disturbance > 5,000 square feet	yes (+39,000 sq ft)
Construction in the NYCDEP Watershed	no
Project located in TMDL watershed or 303(d) listed water	no

#### SWPPP components required pursuant to NYSDEC:

Erosion & sediment control plan	not required but provided
Water quality control plan	not required
Water quantity control plan	not required, locally regulated

This report includes an Erosion and Sediment Control program and a stormwater management program, **Appendix F**, to address the increased impervious areas as required by the Town of Lewisboro.

## 2.0 WATER QUANTITY / WATER QUALITY

### 2.1 Water Quantity / Water Quality

Pursuant to the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit for stormwater discharges from construction activity, Permit **GP-0-15-002**, the project is **not** subject to the water quality and quantity requirements. However, the local municipality, pursuant to Chapter 189 of the Town Code, requires stormwater peak flow attenuation (quantity) controls for post development conditions. As such, a stormwater management study has been prepared by Cronin Engineering P.E. P.C., dated **November 20, 2018**. The report can be seen in **Appendix F** and is summarized as follows:

The watershed tributary to the Elmwood Road crossing contains 447 acres. This includes 390 acres originating just south of West Road and generally terminating along the northern boundary of the subject parcel. An additional 55 acres originates at the northern boundary of the subject property and extends generally to the west. And the subject parcel is 2 acres. This can be seen in **Appendix F-1** of the report. Generally, when a condition exists similar to the specific case at hand, it is advisable to discharge the water as quickly as possible so that the site runoff has passed through the constriction before the upstream peak flows reach this location. Due to this, no stormwater detention facilities are proposed. In lieu of this, we are proposing an extensive wetland mitigation plan with additional indigenous trees, shrubs and perennials to supplement the existing condition.

A hydrologic analysis was performed for the entire watershed with the various variable watershed parameters. Based on the size of the subject parcel relative to the overall drainage basin, 0.45%, the location of the subject parcel relative to the point of study, i.e.; the Elmwood Rd. 48" HDPE crossing, it is not uncommon for there to be no increase in the peak rate of runoff discharge from the watershed as a result of our proposal and in fact, there will be a net decrease in the peak flow at the Elmwood Rd. crossing after development than that which currently exists.

The applicant is currently proposing a bridge spanning the existing stream. The bridge span will be a 20 ft. clear span leaving intact the existing stream flow channel. The analysis shows this bridge passing the 25-year storm event. Furthermore, the proposed bridge will not adversely affect the parcel to the north. It should be noted that the driveway crossing to the north has a culvert similar in size to that of Elmwood Rd. Based on the model, this crossing cannot pass the 2-year storm event without overtopping their driveway



Stormwater quality treatment is not required for this project, however, see Section 2.2 of this report for stormwater improvements associated with the project.

## **2.2 Stormwater Improvements**

While post-construction stormwater quantity or quality management and treatment are not required, the Applicant is sensitive to the project's location in relation to the wetland system. As such, a clear span bridge is proposed over the stream, eliminating any disturbance to the stream bed or its banks, preserving the natural quality of the channel.

In addition, there is a substantial wetland mitigation indigenous planting program proposed to enhance the low-lying areas of the site which will aid in water quality improvement and flow dissipation.

And finally, there is proposed three rain gardens to treat stormwater runoff from the proposed roof and driveway

The above improvements should be provided with long-term maintenance as follows:

1. Clear debris and tree branches in and around the bridge opening.
2. Clear debris and tree branches from the stream channel.
3. Inspect mitigation plantings and replace as necessary.
4. Continue annually.

## **3.0 EROSION AND SEDIMENT CONTROL PLAN**

### **3.1 Introduction, Narrative and Directive**

This erosion and sedimentation control plan has been prepared for the **170 Elmwood Road** site, with mitigating measures specified for the construction of the house addition and related site improvements. This control plan includes a description of each erosion, sedimentation, and site control practice planned; a construction schedule identifying the sequence of site development activities; and a maintenance schedule stipulating the maintenance requirements of the mitigating measures during, immediately after, and beyond construction.

The control plan has been prepared in accordance with the latest editions of:

- "New York State Standards for Erosion and Sediment Control"
- "NYSDEC Stormwater Management Design Manual",
- "NYSDEC Instruction Manual for the Stormwater Construction Permit"

In general, prior to the commencement of clearing for construction, the developer will have the site clearly delineated. The owner/developer will identify all trees scheduled for protection, located within or adjacent to the construction area; install tree protection measures as necessary; erect construction fencing to control the site and to protect the boundaries of all conservation easements (if any) and no disturbance buffers; install silt fences and straw bale barriers; and provide stabilized construction entrances and staging areas.

During the construction process, silt fences, straw bale barriers, temporary diversion dikes, temporary swales, rip rap and vegetative channels, and sediment traps and basins will be provided as required or as determined by the engineer, to prevent soil erosion and sedimentation of the surrounding areas. Mitigating measures will be inspected on a regular basis, including prior to and after every runoff-producing rainfall.

Needed repairs will be made immediately to maintain measures as designed. Sediment will be removed from sediment traps, basins, or from behind all barriers when the storage capacity is approximately 50 percent filled. Gravel, filter fabric, silt fences and straw bales will be replaced as required.



Stormwater runoff will be managed both during the construction process and following completion of construction to prevent flooding, erosion, and sedimentation of existing watercourses or wetlands. The erosion and sedimentation control measures will be implemented to reduce the velocity of stormwater runoff, increase infiltration, and direct stormwater runoff into permanent or temporary sediment basins, first flush basins, or other control devices. Direct discharge of runoff from disturbed site areas or lawn areas into wetlands, watercourses, or water bodies without water quality enhancement features adequate to prevent sedimentation, siltation, or pollution of downstream areas with fertilizers, herbicides, and pesticides is prohibited.

Clearing or grubbing of the ground and/or forest cover within the proposed limits of disturbance will be done on a selective basis with great care. Ground cover will not be removed sooner than necessary to avoid exposing soils to erosion.

Clearing outside of the limits of disturbance, which is delineated on the site plans and which will be flagged on the parcel is generally prohibited except for special conditions subject to approval of the Town. Maintenance practices of areas within the limits of the proposed conservation easements, if any, will be limited to those permitted by the Town.

Because of the slope conditions on some portions of the site, grading and drainage measures will be critical to successful erosion control. In general, grading of slopes will not exceed 1:2 vertical to horizontal. Slopes with grades of 1:2 vertical to horizontal or greater will require special consideration and the implementation of specific site stabilizing measures as deemed necessary by the engineer. Topsoil will be stripped, stockpiled, and reused on-site. Areas disturbed by vehicular or equipment traffic will be stabilized temporarily with gravel. This gravel will be removed as required upon completion of the work and may be reused on-site as is practical. Site areas disturbed by grading or excavation will be re-vegetated as soon as practical. Until ground cover and plantings have become established, disturbed areas will be stabilized with straw, mulch, and/or soil fabric. Snow fences, netting, and silt fences will also be used to control air currents and airborne dust due to wind.

All stockpiles of topsoil or excavated materials, as well as materials delivered as fill to the site, will be scheduled to avoid excessive quantities stored on-site for an extended period of time.

Stockpiles will be located in dry and stable areas away from swales, drainage channels, watercourses, wetlands, or steep slopes. Stockpiles will be surrounded by silt fences and straw bale barriers, as required. Maximum slope of stockpiled loose material will be 1 vertical to 2 horizontal and will be keyed into a stable subbase to prevent slides. Stockpiled loose material will be mulched or covered to prevent erosion by wind or water.

Site areas disturbed by the construction process will be stabilized by replanting as soon as practical. Construction sites will be replanted with material specifically selected to quickly establish soil stability and prevent erosion and sedimentation. Primary to this effort will be reestablishment of ground cover, including critical area seeding. Mulching and Geo-Mat netting fabric will be used as deemed necessary in conjunction with critical area seeding and site planting to establish plant cover, conserve moisture, and reduce erosion and sedimentation.

### **3.2 Temporary Erosion, Sedimentation and Site Control Practices**

Reference is made to the Stormwater Management Plan for details and locations of the proposed temporary erosion and sediment control devices to be implemented prior to and during construction. These plans are an integral part of this report.

All devices and structures shall be constructed and maintained in accordance with the design guidelines as set forth in the "New York State Standards and Specifications for Erosion and Sediment Control" dated July 2016 or latest edition. Additional measures may be required as deemed necessary by the Design Engineer and/or Town Engineer, if field conditions warrant.



The following designations will be assigned to the erosion and sediment control devices listed below: (N/A)-Not Applicable, for a device that is not applicable for this project as presently proposed but may be implemented, (ADN)- As Deemed Necessary, for a device that is not required for this project as presently proposed but may be implemented per the Design Engineer and/or Town Engineer's request, (REQ)-Required, for a device this is required for this project as presently proposed.

**3.2.1 Security Fencing: (ADN)**

Temporary chain link fences with lockable gates or other similar fencing will be installed at locations as is required, necessary or desired to control access to the site or other areas, if any, of the site and to restrict unauthorized personnel from entering the construction areas or the conservation areas.

**3.2.2 Stabilized Construction Entrance: (REQ)**

Temporary gravel construction entrances will be installed at the proposed driveway entrances. During wet weather it may be necessary to wash vehicle tires at this location. The entrance will be graded so that runoff water will be directed to an inlet protection structure and/or erosion control barrier and not out into the streets or onto neighboring properties.

**3.2.3 Traffic Control: (ADN)**

The on-site developer will provide necessary traffic control to maintain and promote the safe passage of vehicles and delivery trucks to and from the site as well as within the site. All work done in the any public right of way shall be in accordance with the approved plans.

**3.2.4 Silt Fence - Protection of Off-Site and Conservation Areas: (REQ)**

Temporary silt fences will be constructed as shown on the plans, generally along the down hill slope edge of all construction and up slope of wetland or protected areas.

**3.2.5 Silt Fence - Construction: (REQ)**

Temporary silt fences will be constructed around material stockpiles, around the base of large fill areas, and along channel berms adjacent to deep cut areas, as is necessary, to prevent sediment from entering channels. Prior to construction commencing on individual building lots, temporary silt fences will be placed down slope of all construction.

**3.2.6 Straw Bale Sediment Barrier: (ADN)**

Temporary straw bale dike barriers will be installed to intercept sediment laden runoff from small drainage areas of disturbed soil and to prevent erosion from sheet stormwater flow.

**3.2.7 Temporary Diversion: (ADN)**

Temporary diversion will be created along the uphill edge within areas of cut or fill operations and at the perimeter of construction areas to prevent runoff from entering disturbed areas by intercepting and diverting it to stabilized outlets, dissipation pads or other stabilization devices as is required or deemed necessary by the engineer. Temporary diversion dikes will be constructed along the top edge of cut or fill slopes at the end of each day during filling operations to protect the fill slope.

**3.2.8 Temporary Swale: (ADN)**

Temporary swales will be created along the downhill edge of construction areas and near the middle of long re-graded sloped areas as is required or deemed necessary by the engineer to prevent surface runoff from eroding these banks and direct sediment laden water to sediment trapping devices. Temporary swales will outlet to temporary inlet protection devices or to sediment traps.

**3.2.9 Temporary Drop Inlet Protection: (ADN)**

Temporary drop inlet protection measures will be installed at the catch basins, if any, using straw bale sediment barriers to prevent sediment laden runoff from silting pipes and to reduce the burden on the sediment traps.

**3.2.10 Sediment Trap: (ADN)**

Sediment traps will be used in conjunction with temporary diversion methods and swales to intercept and control sediment laden runoff, as required, to prevent siltation of watercourses, wetland areas



and off-site areas.

**3.2.11 Soil Stockpiling: (REQ)**

Topsoil will be stripped from areas scheduled for construction and stockpiled for reuse on site. Stockpiles will be located in dry and stable areas away from swales and drainage channels and will be surrounded with silt fences and with straw bales as required. Maximum slope of stockpiled material is 1 vertical to 2 horizontal. Stockpiles will be mulched or covered to prevent erosion by wind or water. Stockpiles will be keyed into a stable subbase to prevent slides.

**3.2.12 Dust Control: (ADN)**

Construction work will be scheduled to avoid premature or unnecessary disturbance of site areas. Mulch or gravel will be placed on disturbed areas as required to reduce dust levels. Water sprinkling will be used as is necessary during the placement of fill material to reduce dust levels. Snow fences, netting, and silt fences will be used to control air currents and airborne dust due to wind when and where it is deemed necessary.

**3.2.13 Limits of Disturbance: (REQ)**

The site plan includes a clearly defined Limit of Disturbance. The Limits of Disturbance boundary clearly defines those areas on the site, which may be disturbed during construction. The boundaries of the Limits of Disturbance will be marked on the parcel and shall not be extended without the prior approval of the Town.

**3.2.14 Property Line Protection: (REQ)**

Property boundaries within twenty feet of proposed disturbances will be surveyed and staked prior to any site disturbance and erosion and sediment control measures will be implemented prior to the initiation of construction. Due to the permissible areas of disturbance on the lot being restricted by the limits of disturbance, there will be a natural buffer between construction areas and neighboring properties to obviate concerns with disturbance to trees and other vegetation on the neighboring properties. These buffers, as well as the other mitigating measures described above, will prevent disturbance to or adverse impacts on neighboring properties. If in the event damage is caused to a neighboring property, the damages shall be replaced in kind at the expense of the owner/developer.

**3.2.15 Vegetation Preservation and Protection: (ADN)**

Trees to be protected shall be identified and clearly marked in the field. Protection of trees shall follow details in the subdivision plan. Snow fencing will be installed at the canopy drip line prior to initiating clearing or grubbing of the site and this fencing will be maintained until all heavy equipment work has been completed. The fencing is intended to prevent stockpiled fill material or building materials from being placed within the canopy drip line of the protected trees as well as prohibit heavy equipment from compacting the soil and damaging the root system. Where construction is required within the canopy drip line or where drip line protection measures will block access or significantly impede construction activities, the fencing will be placed so as to restrict unnecessary disturbance to the tree. In cases where the fencing is placed closer than 5 feet to the tree trunk, trunk armoring will be used to protect the tree from damage to the bark. Snow fences will also be used to restrict access to site areas which are not scheduled for construction activity and to prevent the unnecessary removal of existing vegetation.

**3.2.16 Temporary Check Dams: (ADN)**

Stone check dams will be constructed as required during construction to reduce erosion and degradation of the channels prior to stabilization.

### **3.3 Permanent Erosion, Sedimentation and Site Control Practices**

Reference is made to the Stormwater Management Plan for details and locations of the proposed permanent erosion and sediment control devices to be implemented prior to and during construction. These plans are an integral part of this report.

All devices and structures shall be constructed and maintained in accordance with the design guidelines as set forth in the "New York State Standards and Specifications Erosion and Sediment



Control" dated July 2016 or latest edition. Additional measures may be required as deemed necessary by the design engineer and/or Town Engineer, if field conditions warrant.

The following designations will be assigned to the erosion and sediment control devices listed below: **(N/A)**-Not Applicable, for a device that is not applicable for this project as presently proposed but may be implemented, **(ADN)**- As Deemed Necessary, for a device that is not required for this project as presently proposed but may be implemented per the Design Engineer and/or Town Engineer's request, **(REQ)**-Required, for a device this is required for this project as presently proposed.

#### 3.3.1 Rip Rap Lined Channel: (N/A)

Rip rap lined channels will be installed as directed by the site engineer in drainage ways and rip rap sediment traps will be installed at the primary points of discharge from major disturbed areas to dissipate the velocity of runoff preventing scour and to intercept sediment laden runoff from areas disturbed by construction.

#### 3.3.2 Surface Stabilization: (REQ)

Since areas of existing vegetation will be removed or disturbed on the property by the proposed construction, a substantial replanting of all disturbed areas is required. The site will be replanted with material specifically selected to quickly establish soil stability and prevent erosion and sedimentation. Primary to this effort is reestablishment of groundcover, including critical area seeding, since this is the most effective method to reduce sources of siltation and dust. Mulching and Geo-Mat netting fabric will be used, as required, in conjunction with critical area seeding and with site planting to help establish plant cover, conserve moisture, and reduce erosion and sedimentation.

#### 3.3.3 Diversion Swale: (ADN)

Diversion swales will be constructed at the bottom of slopes where high runoff velocities are expected. The swales will protect areas from erosion and allow for the establishment of vegetation below the swales. The swales shall allow for the conveyance runoff to stable outlets at low non-erosive velocities. The swales shall be seeded, and vegetation shall be established to further diffuse runoff velocities.

#### 3.3.4 Level Spreader: (ADN)

Level spreaders will be provided to create a non-erosive outlet for concentrated runoff and disperse flows uniformly over the slope as sheet flow. The level spreaders will be provided to capture runoff that is diverted away from the proposed development areas via vegetated diversion swales.

The vegetated diversion swales will intercept and convey runoff from the bottom of slopes where high runoff velocities are expected to a level spreader. The level spreader will convert the concentrated flow into sheet flow for dispersal into the wooded areas.

### **3.4 Pre-Construction Schedule**

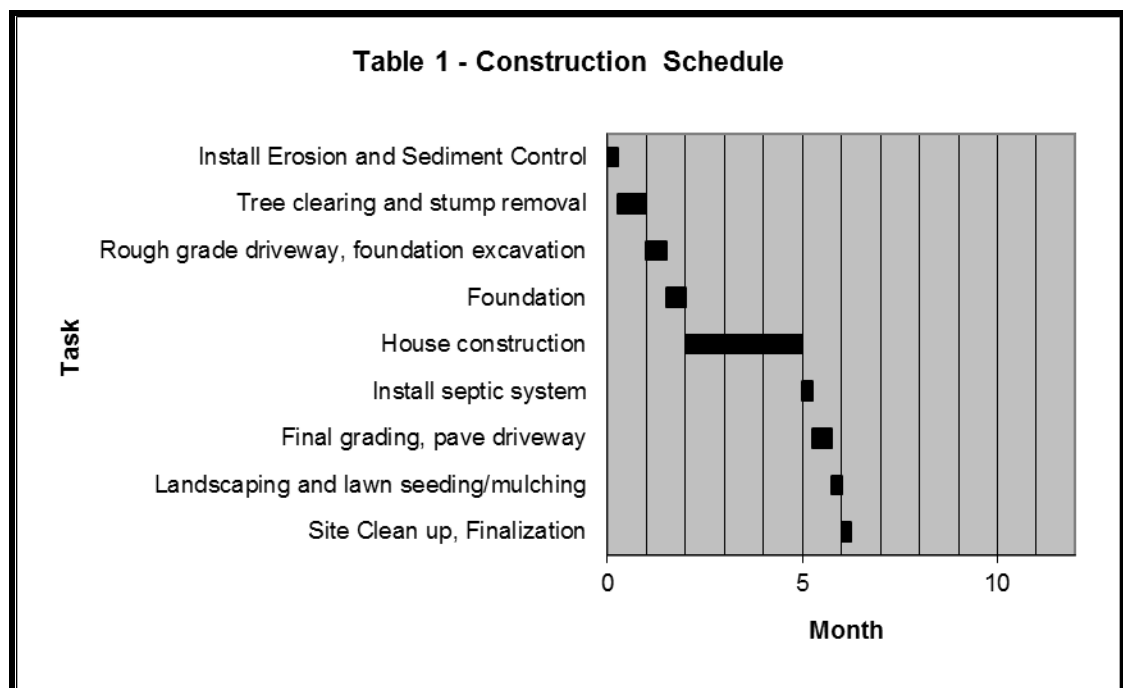
1. Satisfy all applicable conditions of the Stormwater Management Plan described herein and identify what other applicable permits for site development are required.
2. File pertinent documents with the Utility Companies, the Town, and any other involved agency, for necessary reviews and approvals.
3. Obtain the services of a Site Engineer, licensed in the State of New York and as approved by the Town or a qualified professional to perform the necessary SWPPP inspections.
4. Post any necessary Performance Bonds for the proposed site work.
5. Submit all required insurance riders to the appropriate authorities.
6. Stake the property lines, flag the work limits, identify trees to be protected, if any, and establish elevation reference points (bench marks) on site.
7. Meet with representatives from the appropriate Town Departments to establish acceptable time restrictions for the scheduled delivery of materials and equipment to the site. This is intended to mitigate unnecessary conflicts between construction related traffic and rush hour related traffic.
8. Obtain any required Excavation Permits, Street Opening Permits, etc. from the Town.



9. Confirm that all required fees to the Town and any other involved agency have been paid, that all outstanding fees for the Town's consultants have been paid in full.
10. Contact the Underground Line Location Service (Code 53) at 800-962-7962.
11. Secure the site with required fencing and gates, as necessary.
12. Confirm utility mark out with the Site Engineer and Contractor.

### 3.5 Construction Schedule

The construction schedule includes the installation of the erosion and sediment control practices, the construction of the new residence, driveway, septic system as well as the stormwater management facility, if any. It is anticipated that the construction process will be completed in approximately six months. The construction schedule is presented in **Table 1** below.



### 3.6 Construction Operation and Maintenance of Practices

It is important during all phases of construction that all the erosion and sediment control devices remain stable and effective to protect down slope areas and off-site areas from sedimentation and erosion. Therefore, all erosion control measures shall be inspected on a regular basis. During construction, the owner/developer will inspect and maintain the erosion control devices in accordance with the construction schedule and the following:

1. All erosion, sediment, and site stability control measures will be checked for protection, stability, and operation following every rainfall (1/2-inch rain/24 hrs min) but in no case less than once every week. Any needed repairs will be made immediately to maintain practices as designed. The Site Inspector will also make inspections of protection measures and all corrective measures will be implemented without delay.



2. The street areas adjacent to the site entrances will be broom swept and washed down at the end of each day on which fill material has been delivered to the site and at other times as is necessary or directed by the Site Inspector. During wet weather, vehicle tires will be checked and washed down, if necessary, at the construction entrance before the trucks leave the site to prevent mud and dirt from being tracked onto the streets.
3. Sediment basins will be checked for protection, stability, and operation following every runoff-producing rainfall but in no case less than once every week and will be cleaned out when the level of sediment reaches 50% capacity of the basin. Gravel will be cleaned or replaced when the sediment pool no longer drains properly.
4. Sediment traps catch basins and drop inlet protection devices will be checked for protection, stability, and operation prior to and following every runoff-producing rainfall but in no case less than once every week and sediment will be removed when storage capacity has been approximately 50% filled. Gravel will be cleaned or replaced when the sediment pool no longer drains properly. Filter fabric will be replaced as necessary.
5. Silt fences and straw bale barriers will be checked for stability and operation following every rainfall (1/2-inch rain/24 hours min) but in no case less than once every week and sediment will be removed from behind devices when it becomes about three inches deep. Silt fences will be repaired, and straw bales will be replaced as necessary and as directed by the Site Engineer to maintain a barrier.
6. Drainage channels will be inspected following every rainfall (1/2-inch rain/24 hrs min) but in no case less than once every month to ensure that the side slopes remain stable and to check for points of scour and breaches. Channels will be repaired and lined with riprap as necessary.
7. A minimum of 25 additional straw bales will be stored at the site from prior to initiating any cut or fill operation until final site stabilization has been completed. Stacked straw bales will be protected with a tarp cover. These straw bales are available for use as temporary measures to reduce stormwater runoff velocities and, in emergency situations, to prevent failures in the operation of drainage channels, temporary diversions, and silt fences. The stockpile of straw bales will be replenished following each event where they are used.
8. Markers and fencing utilized for traffic control, if any, will be inspected periodically to insure they are placed and functioning properly. All efforts will be taken to keep traffic off of all structural erosion control measures at all times. Where traffic must cross a structural measure, a suitable crossing will be constructed in accordance with the instructions and specifications of the Site Engineer.
9. Any tree protection fences and silt fences defining construction boundaries will be inspected weekly to ensure that they are properly placed and will be repaired as necessary.
10. Mulch and gravel used to reduce dust in disturbed areas and parking areas will be inspected weekly and will be cleaned off with water, replenished or replaced as necessary.
11. Construction debris will be stored in designated refuse areas either in fenced enclosures or in dumpsters and will be removed from the site to a proper facility on a regular schedule. Full dumpsters will be removed from the site within 3 days. The site will be policed weekly and more often, if necessary, to collect debris which has not been properly placed in a designated refuse area. Food and perishable garbage will not be mixed with construction debris and will be removed from the site daily. Recycling containers will be provided in a designated area for recyclable cans and bottles.
12. All maintenance work on construction equipment will be done in a safe area away from drainage and drainage control structures. Maintenance items such as cans, boxes, and cartridges will be stored in a suitable temporary structure. Following use, all such items will be disposed of in a safe and proper manner and at a suitable facility.
13. All seeded areas will be fertilized, re-seeded as necessary, and mulched to maintain a vigorous, dense vegetative cover. Temporary seeding will be inspected every 30 days and damaged areas will be re-seeded and re-mulched as necessary.
14. The developer and/or owner of the project will have the site inspected each spring and each fall for three years following final stabilization. Plant material will be replaced as required and deficiencies in site stability corrected immediately.



15. A maintenance schedule for the proper watering, fertilizing, pruning, mowing, and weeding of planted materials as well as the use of herbicides and pesticides will be implemented and the ongoing responsibility for this maintenance schedule will be the developer and/or owner.
16. The sump sediment trap in each catch basin receiving stormwater from the site will be inspected following every runoff-producing rainfall but in no case less than once every week during the construction process. Following the completion of construction, on site catch basins shall be inspected and cleaned annually.
17. Ongoing site maintenance requirements of the completed project will be identified, and the responsible parties so advised.

### 3.7 Critical Area Seeding

All disturbed areas (Detention basin, staging areas, and disturbed slope areas) will require critical seeding to re-establish a vegetative cover. This will consist of the removal of debris, the final grading of these areas, seeding and mulching. This final grade will be left at the prescribed grades in an even and properly compacted condition so as to prevent the formation of depressions where water will stand.

During this entire process, the perimeter erosion control barrier shall be maintained in good working order and checked daily for breach or failure and repaired or replaced as necessary. This perimeter barrier will prevent any sediment from leaving the site proper or entering the wetland system.

After the site has been brought to the proper grade, and immediately prior to the placement of top soil, this sub-grade shall be loosened by scarifying to a depth of at least 2" to permit bonding of the topsoil to the sub-grade.

Within 30 days of the completion of the final grading, topsoil shall be placed over the area. The topsoil used shall be free of stones >2", trash, debris, and have less than 10% gravel by volume. The soil shall have >6% by weight fine textured stable organic material, muck soil will not be considered topsoil.

The topsoil shall not be placed in a frozen or muddy condition. Topsoil shall be uniformly distributed over the target areas and evenly spread to a depth of 4". After the topsoil installation is complete, ground limestone (calcium carbonate) shall be spread uniformly and thoroughly over the topsoil at a rate of approximately 100 lbs. per 1000 square feet or to achieve a soil pH of 6.0. Upon completion of the lime, the site soil shall be fertilized with 600 lbs. of 5-10-10 or equivalent per acre.

Immediately after the soil has been prepared, permanent seeding shall be applied. The seed mix shall contain the following ratios:

Kentucky Blue Grass	65%
Perennial Rye Grass	20%
Fine Fescue	15%

This seed mixture shall be applied at a rate of 175-200 lbs. per acre within a day of the completion of the soil placement. Upon placement of the seed mixtures, the entire seeded area shall be mulched. The mulch shall consist of Hay or Straw and shall be applied at a rate of 2 tons per acre or 100-200 bales per acre.

The erosion controls in place for these operations shall remain until a stable vegetative (grass) cover is established. The removal of the erosion control barriers shall be at the direction of the Site Engineer only. The above described critical area seeding as well as the establishment of any trees and shrubs shall be in conformance with the standards presented in "New York Guidelines for Urban Erosion and Sediment Control", 2005 or current.

### 3.8 Trained Contractor

Prior to commencement of construction activity, the owner/operator must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in this SWPPP and that they will be responsible for constructing the post-construction stormwater management practices included in this SWPPP, if any. The owner / operator shall have each contractor and subcontractor identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the **"Trained Contractor"**. The owner/operator shall insure that at least one trained contractor is on site on a daily basis when soil disturbance activities are being performed. See **Appendix A**. The trained contractor shall meet the requirements as defined in the General Permit, **GP-0-15-002**.

### 3.9 Town of Lewisboro Inspections

The Town of Lewisboro may require such inspections as necessary to determine compliance with the SWPPP and may either approve that portion of the work completed or notify the owner / developer wherein the work fails to comply with the requirements of the Town and the SWPPP as approved. To obtain inspections, the owner / developer shall notify the Town of Lewisboro enforcement official at least 48 hours before any of the following as required by the Stormwater Management Officer:

1. Start of construction
2. Installation of sediment and erosion control measures
3. Completion of site clearing
4. Completion of rough grading
5. Completion of final grading
6. Close of the construction season
7. Completion of final landscaping
8. Successful establishment of landscaping in public areas

If any violations are found, the owner / developer shall be notified in writing of the nature of the violation and the required corrective actions. No further work shall be conducted except for site stabilization until the violations are corrected and all work previously completed has received approval by the Stormwater Management Officer.

## 4.0 SUPPORT DATA

### 4.1 Support Data

The following items were used as support data for the preparation of this analysis:

Architectural plans by others.

Soils information is based on the soil survey of Putnam and Westchester Counties, NY prepared by the USDA and SCS, dated September 1994 with updated information from the USDA Web Soil Survey.

USDA National Resources Conservation Center Web Soil Survey.

Pound Ridge USGS quadrangle.

NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity, General Permit # **GP-0-15-002**.

NYSDEC Stormwater Management Design Manual, August 2015.

NYSDEC Reducing the Impacts of Stormwater Runoff from New Development, April 1993.



New York State Standards and Specifications for Erosion and Sediment Control, July 2016.

Site inspections made by this office to the site proper and areas to which the site is tributary.

### **5.0 SWPPP Conditions**

It is the responsibility of the Owner/Operator to be familiar with this report and the herein referenced Stormwater Pollution Prevention Plan and Site Construction Plans. All conditions of the Stormwater General Permit, **GP-0-15-002** shall be complied with prior to and during construction and until all disturbed areas are stabilized.

This document and the aforementioned plans shall be located on site in a conspicuous location and available for review by any authorized official of the Town and/or New York State.

This SWPPP is only considered a complete document when it is accompanied by the SWPPP plans entitled "Site Development Plan for Andrew Samalin", prepared by Cronin Engineering, P.E., P.C. and dated as revised **November 20, 2018**.

This stormwater pollution prevention plan is for the proposed improvements as shown on the above referenced plan only and includes the house addition with associated patio and retaining walls, along with the driveway reconfiguration and wetland mitigation plan. Additional site work outside of the scope of this document is not necessarily protected by the proposed erosion and sediment control devices shown herein.

### **Cronin Engineering, P.E., P.C.**



Keith Staudohar, CPESC, CPSWQ



Timothy L. Cronin III, P.E.



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# **APPENDIX A**

## Owner/Operator and Contractor Certifications



**Owner / Operator Certification**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those directly responsible for gathering the information. The information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the penal Law.

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Signature

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Company

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Name

---

Address

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Title

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Contact number

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Date

### **Contractor Certification**

All contractors and subcontractors identified in the SWPPP must sign a copy of this certification statement. All certifications must be included in this SWPPP. Additionally, new contractors and subcontractors need to similarly certify.

I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the "qualified inspector" during a site inspection. I also understand that the owner/operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharges from construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations.

#### **General Contractor**

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Signature

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Company

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Name

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Address

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Title

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Contact number

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Date

#### **Subcontractor**

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Signature

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Company

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Name

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Address

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Title

---

Contact number

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Date

#### **Trained Contractor**

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Signature

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Company

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Name

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Address

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Title

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Contact number

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Date



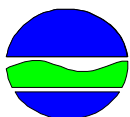
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## **APPENDIX B**

### Notice of Intent

The notice of intent will be submitted to the NYSDEC a minimum of five days prior to the start of construction

# 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)

**Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-15-002**

**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

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Zip

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Phone (Owner/Operator)

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Fax (Owner/Operator)

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Email (Owner/Operator)

[illegible][illegible]

FED TAX ID

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(not required for individuals)





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>

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>





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-0-15-002. 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

Date

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 / 

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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"/>



[illegible][illegible]

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 acre-feet

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acre-feet

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Page 10 of 14

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

- 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

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed? ☐ **Yes** ☐ **No**

38. Has a long term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed? ☐ **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.

- [illegible]

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.

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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>																													
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## **APPENDIX C**

### MS4 (Town of Lewisboro) SWPPP Acceptance Form





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:

2. Contact Person:

3. Street Address:

4. City/State/Zip:

### II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/State/Zip:

### 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**



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## **APPENDIX D**

### Details of Temporary and Permanent Structural Measures for Erosion and Sediment Control

# STANDARD AND SPECIFICATIONS FOR STABILIZED CONSTRUCTION ACCESS



## Definition & Scope

A stabilized pad of aggregate underlain with geotextile located at any point where traffic will be entering or leaving a construction site to or from a public right-of-way, street, alley, sidewalk, or parking area. The purpose of stabilized construction access is to reduce or eliminate the tracking of sediment onto public rights-of-way or streets.

## Conditions Where Practice Applies

A stabilized construction access shall be used at all points of construction ingress and egress.

## Design Criteria

See Figure 2.1 on page 2.31 for details.

**Aggregate Size:** Use a matrix of 1-4 inch stone, or reclaimed or recycled concrete equivalent.

**Thickness:** Not less than six (6) inches.

**Width:** 12-foot minimum but not less than the full width of points where ingress or egress occurs. 24-foot minimum if there is only one access to the site.

**Length:** As required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum would apply).

**Geotextile:** To be placed over the entire area to be covered with aggregate. Filter cloth will not be required on a single-family residence lot. Piping of surface water under entrance shall be provided as required. If piping is impossible, a mountable berm with 5:1 slopes will be permitted.

**Criteria for Geotextile:** The geotextile shall be woven or nonwoven fabric consisting only of continuous chain polymeric filaments or yarns of polyester. The fabric shall be

inert to commonly encountered chemicals, hydro-carbons, mildew, rot resistant, and conform to the fabric properties as shown:

Fabric Properties <sup>3</sup>	Light Duty <sup>1</sup> Roads Grade Sub-grade	Heavy Duty <sup>2</sup> Haul Roads Rough Graded	Test Method
Grab Tensile Strength (lbs)	200	220	ASTM D1682
Elongation at Failure (%)	50	60	ASTM D1682
Mullen Burst Strength (lbs)	190	430	ASTM D3786
Puncture Strength (lbs)	40	125	ASTM D751 Modified
Equivalent	40-80	40-80	US Std Sieve
Opening Size			CW-02215
Aggregate Depth	6	10	-
<sup>1</sup> Light Duty Road: Area sites that have been graded to subgrade and where most travel would be single axle vehicles and an occasional multi-axle truck. Acceptable materials are Trevira Spunbond 1115, Mirafi 100X, Typar 3401, or equivalent.			
<sup>2</sup> Heavy Duty Road: Area sites with only rough grading, and where most travel would be multi-axle vehicles. Acceptable materials are Trevira Spunbond 1135, Mirafi 600X, or equivalent.			
<sup>3</sup> Fabrics not meeting these specifications may be used only when design procedure and supporting documentation are supplied to determine aggregate depth and fabric strength.			

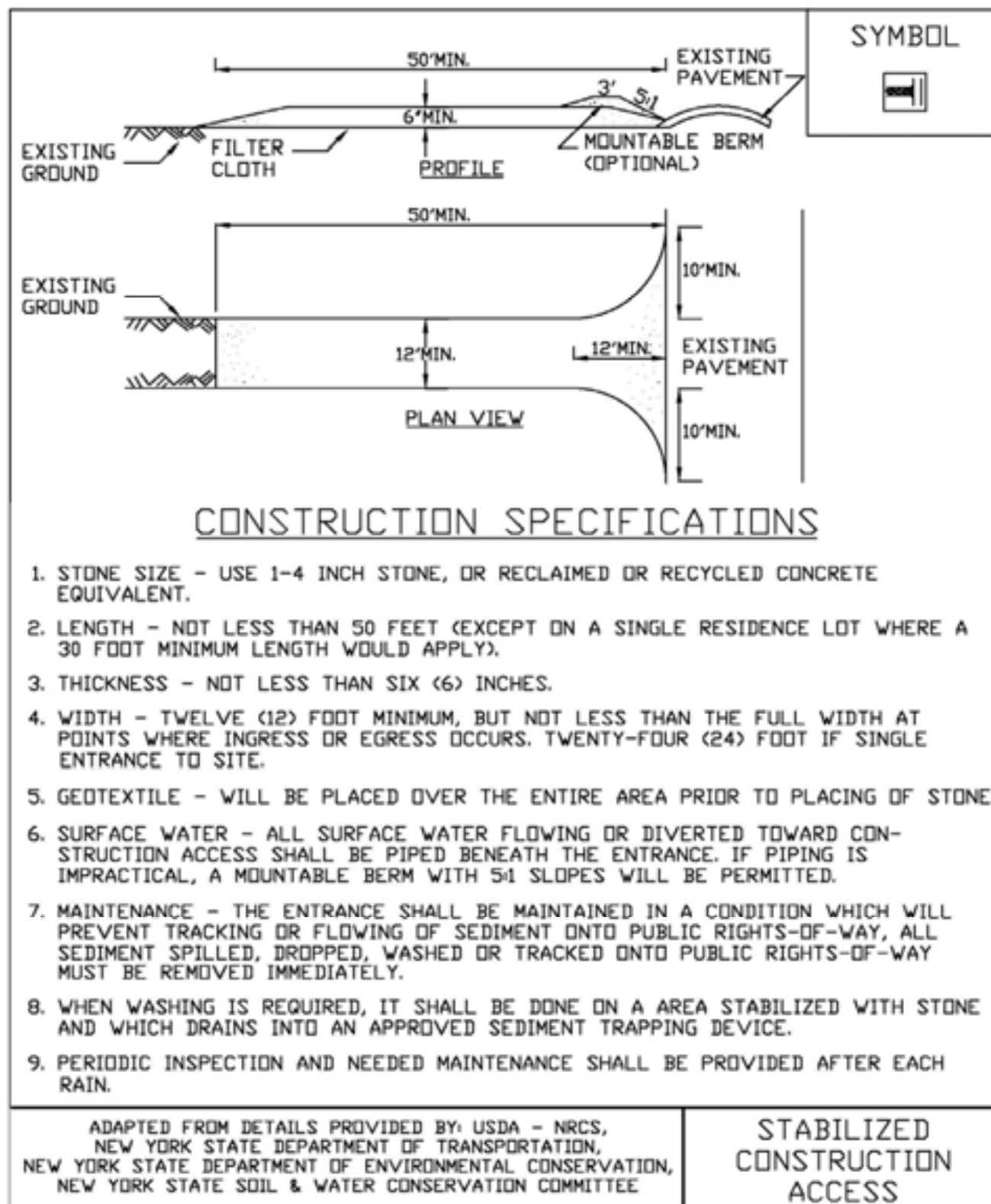
## Maintenance

The access shall be maintained in a condition which will prevent tracking of sediment onto public rights-of-way or streets. This may require periodic top dressing with additional aggregate. All sediment spilled, dropped, or washed onto public rights-of-way must be removed immediately.

When necessary, wheels must be cleaned to remove sediment prior to entrance onto public rights-of-way. When washing is required, it shall be done on an area stabilized with aggregate, which drains into an approved sediment-trapping device. All sediment shall be prevented from entering storm drains, ditches, or watercourses.



**Figure 2.1**  
**Stabilized Construction Access**



# STANDARD AND SPECIFICATIONS FOR STRAW BALE DIKE



## **Definition**

A temporary barrier of straw, or similar material, used to intercept sediment laden runoff from small drainage areas of disturbed soil.

## **Purpose**

The purpose of a bale dike is to reduce runoff velocity and effect deposition of the transported sediment load. Straw bale dikes have an estimated design life of three (3) months.

## **Conditions Where Practice Applies**

The straw bale dike is used where:

1. No other practice is feasible.

2. There is no concentration of water in a channel or other drainage way above the barrier.
3. Erosion would occur in the form of sheet erosion.
4. Length of slope above the straw bale dike does not exceed these limits.

Constructed Slope	Percent Slope	Slope Length (ft.)
2:1	50	25
3:1	33	50
4:1	25	75

Where slope gradient changes through the drainage area, steepness refers to the steepest slope section contributing to the straw bale dike.

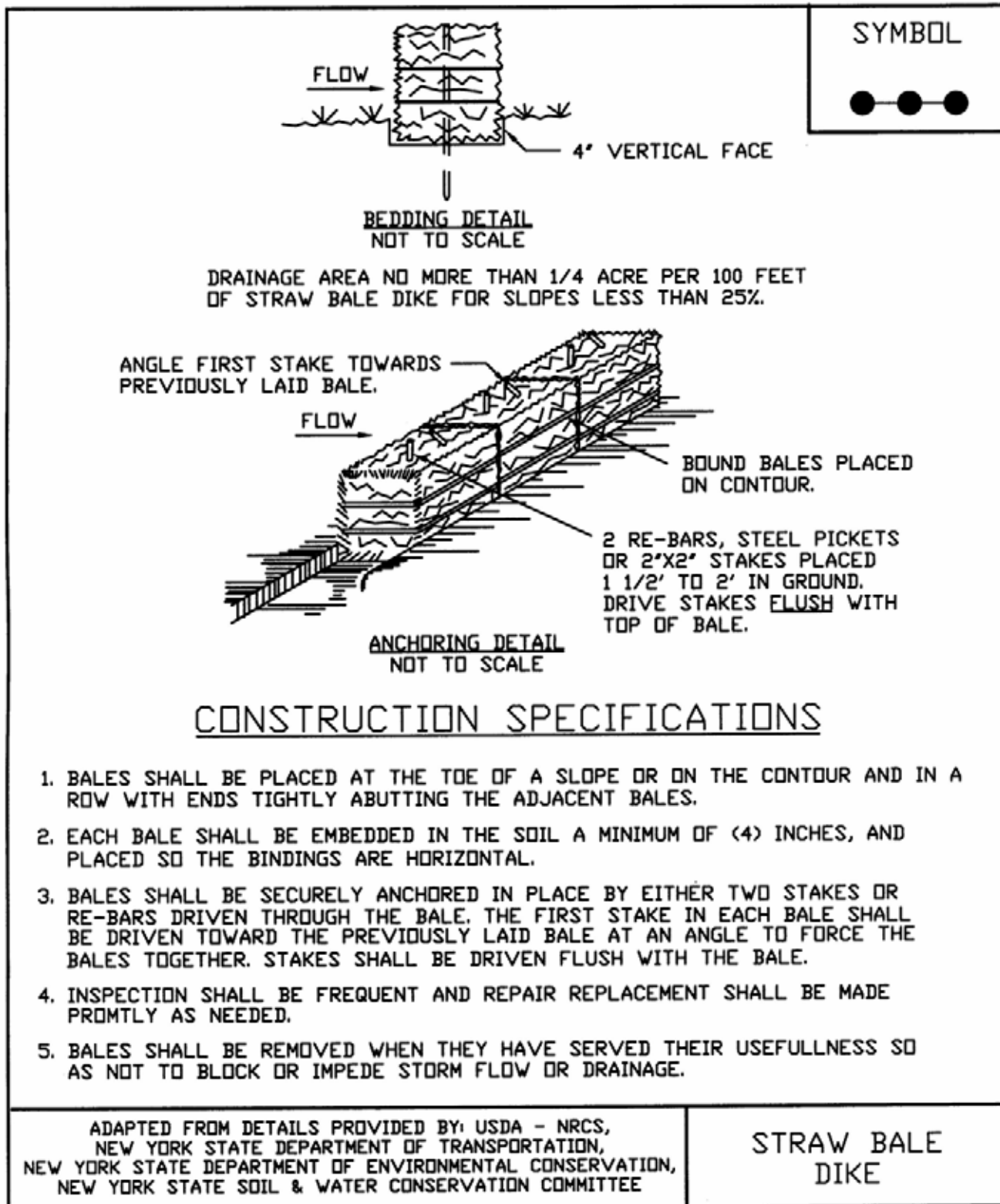
The practice may also be used for a single family lot if the slope is less than 15 percent. The contributing drainage areas in this instance shall be less than one quarter of an acre per 100 feet of fence and the length of slope above the dike shall be less than 200 feet.

## **Design Criteria**

The above table is adequate, in general, for a one-inch rainfall event. Larger storms could cause failure of this practice. Use of this practice in sensitive areas for longer than one month should be specifically designed to store expected runoff. All bales shall be placed on the contour with cut edge of bale adhering to the ground. See Figure 5A.7 on page 5A.18 or details.



**Figure 5A.7**  
**Straw Bale Dike**



# STANDARD AND SPECIFICATIONS FOR CONSTRUCTION DITCH



## Definition & Scope

A **temporary** excavated drainage way to intercept sediment laden water and divert it to a sediment trapping device or to prevent runoff from entering disturbed areas by intercepting and diverting it to a stabilized outlet.

## Conditions Where Practice Applies

Construction ditches are constructed:

1. to divert flows from entering a disturbed area.
2. intermittently across disturbed areas to shorten over-land flow distances.
3. to direct sediment laden water along the base of slopes to a trapping device.
4. to transport offsite flows across disturbed areas such as rights-of-way.

Ditches collecting runoff from disturbed areas shall remain in place until the disturbed areas are permanently stabilized.

## Design Criteria

See Figure 3.2 on page 3.6 for details.

## General

	Ditch A	Ditch B
Drainage Area	<5 Ac	5-10 Ac
Bottom Width of Flow Channel	4 ft.	6 ft.
Depth of Flow Channel	1 ft.	1 ft.
Side Slopes	2:1 or flatter	2:1 or flatter
Grade	0.5% Min. 10% Max.	0.5% Min. 10% Max.

For drainage areas larger than 10 acres, refer to the Standard and Specification for Grassed Waterways on page 3.23 and 3.24.

## Stabilization

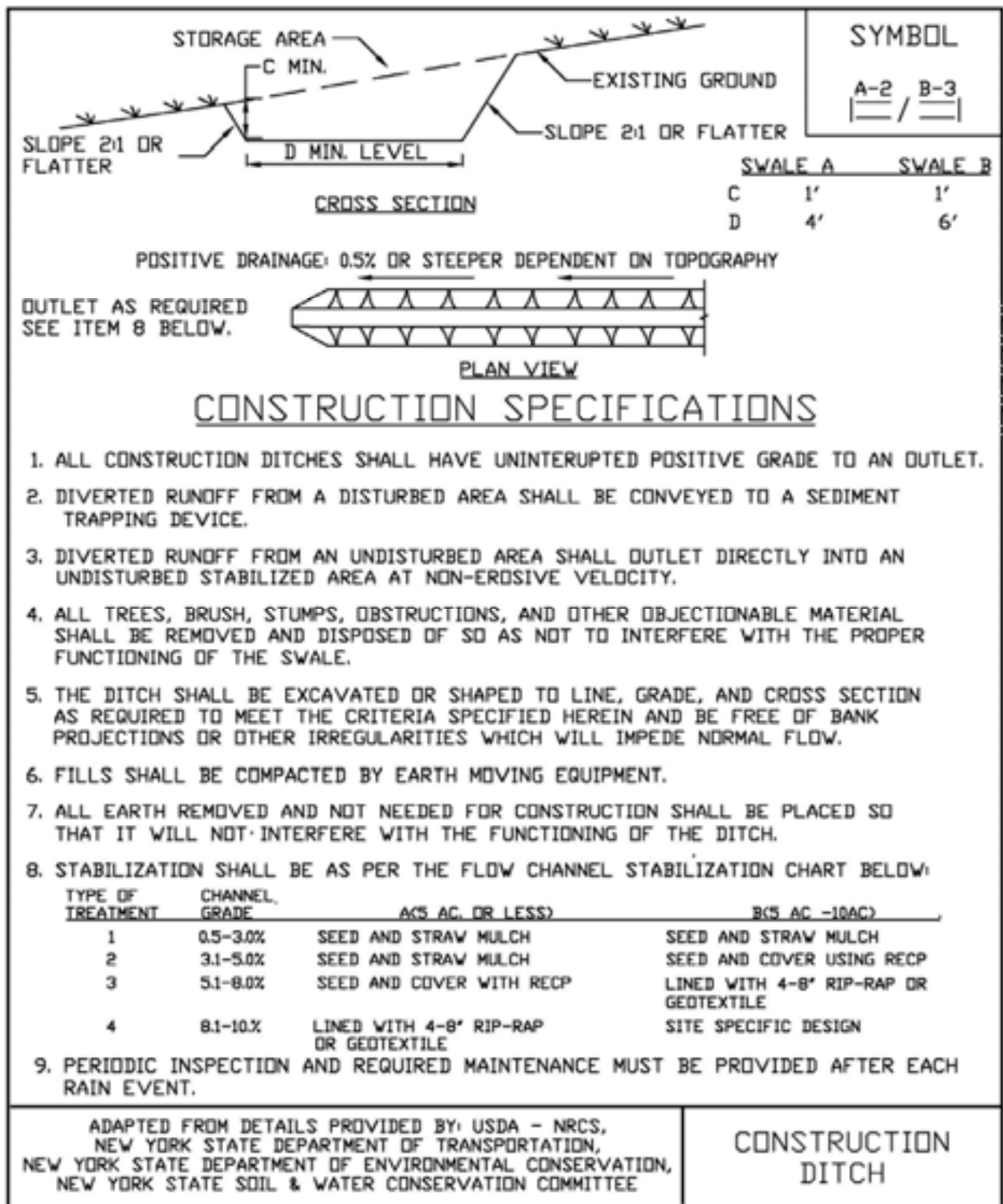
Stabilization of the ditch shall be completed within 2 days of installation in accordance with the appropriate standard and specifications for vegetative stabilization or stabilization with mulch as determined by the time of year. The flow channel shall be stabilized as per the following criteria:

The seeding for vegetative stabilization shall be in accordance with the standard on Page 4.78. The seeded area will be mulched in accordance with the standard on Page 4.39.

Type of Treatment	Channel Grade <sup>1</sup>	Flow Channel	
		A (<5 Ac.)	B (5-10 Ac.)
1	0.5-3.0%	Seed & Straw Mulch	Seed & Straw Mulch
2	3.1-5.0%	Seed & Straw Mulch	Seed and cover with RECP <sup>2</sup> , Sod, or lined with plastic or 2" stone
3	5.1-8.0%	Seed and cover with RECP <sup>2</sup> , Sod, or line with plastic or 2 in. stone	Line with 4-8 in. rip-rap or, geotextile
4	8.1-10%	Line with 4-8 in. rip-rap or geotextile	Site Specific Design
<sup>1</sup> In highly erodible soils, as defined by the local approving agency, refer to the next higher slope grade for type of stabilization. <sup>2</sup> Rolled Erosion Control Product.			



**Figure 3.2  
Construction Ditch Detail**



# STANDARD AND SPECIFICATIONS FOR SILT FENCE



## Definition

A temporary barrier of geotextile fabric installed on the contours across a slope used to intercept sediment laden runoff from small drainage areas of disturbed soil.

## Purpose

The purpose of a silt fence is to reduce runoff velocity and effect deposition of transported sediment load. Limits imposed by ultraviolet stability of the fabric will dictate the maximum period the silt fence may be used (approximately one year).

## Conditions Where Practice Applies

A silt fence may be used subject to the following conditions:

1. Maximum allowable slope lengths contributing runoff to a silt fence placed on a slope are:

<u>Slope Steepness</u>	<u>Maximum Length (ft.)</u>
2:1	25
3:1	50
4:1	75
5:1 or flatter	100

2. Maximum drainage area for overland flow to a silt fence shall not exceed ¼ acre per 100 feet of fence, with maximum ponding depth of 1.5 feet behind the fence; and
3. Erosion would occur in the form of sheet erosion; and
4. There is no concentration of water flowing to the barrier.

## Design Criteria

Design computations are not required for installations of 1 month or less. Longer installation periods should be designed for expected runoff. All silt fences shall be placed as close to the areas as possible, but at least 10 feet from the toe of a slope to allow for maintenance and roll down. The area beyond the fence must be undisturbed or stabilized.

Sensitive areas to be protected by silt fence may need to be reinforced by using heavy wire fencing for added support to prevent collapse.

Where ends of filter cloth come together, they shall be overlapped, folded and stapled to prevent sediment bypass. A detail of the silt fence shall be shown on the plan. See Figure 5A.8 on page 5A.21 for details.

## Criteria for Silt Fence Materials

1. Silt Fence Fabric: The fabric shall meet the following specifications unless otherwise approved by the appropriate erosion and sediment control plan approval authority. Such approval shall not constitute statewide acceptance.

<u>Fabric Properties</u>	<u>Minimum Acceptable Value</u>	<u>Test Method</u>
Grab Tensile Strength (lbs)	90	ASTM D1682
Elongation at Failure (%)	50	ASTM D1682



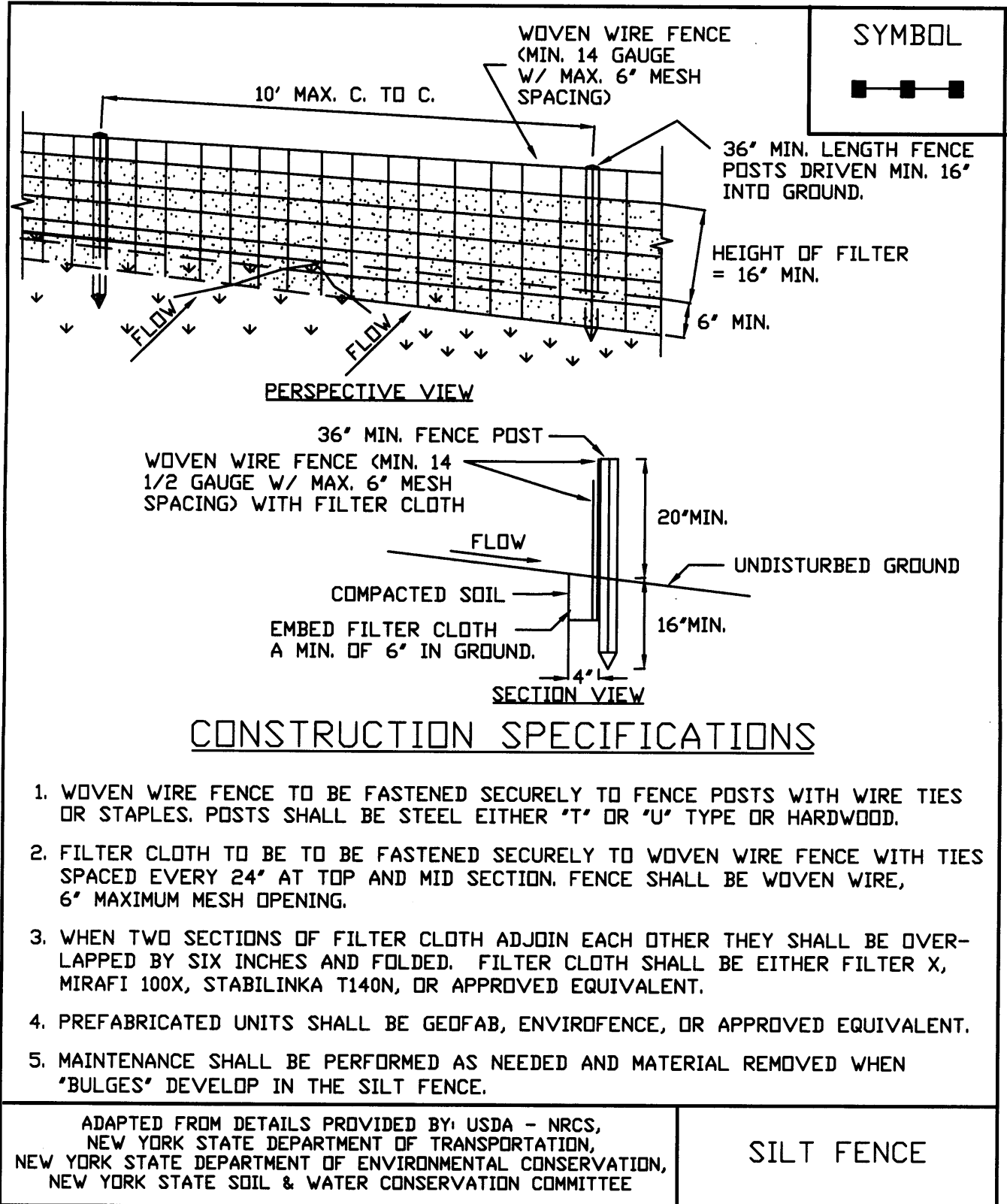
Mullen Burst Strength (PSI)	190	ASTM D3786
Puncture Strength (lbs)	40	ASTM D751 (modified)
Slurry Flow Rate (gal/min/sf)	0.3	
Equivalent Opening Size	40-80	US Std Sieve CW-02215
Ultraviolet Radiation Stability (%)	90	ASTM G-26

2. Fence Posts (for fabricated units): The length shall be a minimum of 36 inches long. Wood posts will be of sound quality hardwood with a minimum cross sectional area of 3.0 square inches. Steel posts will be standard T and U section weighing not less than 1.00 pound per linear foot.

3. Wire Fence (for fabricated units): Wire fencing shall be a minimum 14 gage with a maximum 6 in. mesh opening, or as approved.

4. Prefabricated Units: Envirofence, Geofab, or approved equal, may be used in lieu of the above method providing the unit is installed per details shown in Figure 5A.8.

**Figure 5A.8**  
**Silt Fence**





# STANDARD AND SPECIFICATIONS FOR SEDIMENT TRAP



## **Definition & Scope**

A **temporary** sediment control device formed by excavation and/or embankment to intercept sediment-laden runoff and trap the sediment in order to protect drainageways, properties, and rights-of-way below the sediment trap from sedimentation.

## **Conditions Where Practice Applies**

A sediment trap is usually installed in a drainageway, at a storm drain inlet, or other points of collection from a disturbed area for one construction season.

Sediment traps should be used to artificially break up the natural drainage area into smaller sections where a larger device (sediment basin) would be less effective.

## **Design Criteria**

If the drainage area to the proposed trap location exceeds 5 acres, or the trap is in place beyond one construction season, or any of the additional design criteria presented here cannot be met, a full Sediment Basin must be used. See Standard and Specification for Sediment Basin on page 5.19.

## **Drainage Area**

The maximum drainage area for all sediment traps shall be 5 acres.

## **Location**

Sediment traps shall be located so that they can be installed prior to grading or filling in the drainage area they are to protect. Traps must **not be located any closer than 20 feet** from a proposed building foundation if the trap is to func-

tion during building construction. Locate traps to obtain maximum storage benefit from the terrain and for ease of cleanout and disposal of the trapped sediment.

## **Trap Size**

The volume of a sediment trap as measured at the elevation of the crest of the outlet shall be at least 3,600 cubic feet per acre of drainage area. A minimum length to width ratio of 2:1 should be provided. The volume of a constructed trap shall be calculated using standard mathematical procedures. The volume of a natural sediment trap may be approximated by the equation: Volume (cu.ft.) = 0.4 x surface area (sq.ft.) x maximum depth (ft.).

## **Trap Cleanout**

Sediment shall be removed and the trap restored to the original dimensions when the sediment has accumulated to  $\frac{1}{2}$  of the design depth of traps I-II, and  $\frac{1}{3}$  the depth for trap III. Sediment removed from the trap shall be deposited in a protected area and in such a manner that it will not erode.

## **Embankment**

All earth embankments for sediment traps shall not exceed five (5) feet in height as measured at the low point of the original ground along the centerline of the embankment. Embankments shall have a minimum four (4) foot wide top and side slopes of 2:1 or flatter. The embankment shall be compacted by traversing with equipment while it is being constructed. The embankment shall be stabilized with seed and mulch as soon as it is completed.

The elevation of the top of any dike directing water to any sediment trap will equal or exceed the maximum height of the outlet structure along the entire length of the trap.

## **Excavation**

All excavation operations shall be carried out in such a manner that erosion and water pollution shall be minimal. Excavated portions of sediment traps shall have 1:1 or flatter slopes.

## **Outlet**

The outlet shall be designed, constructed, and maintained in such a manner that sediment does not leave the trap and that erosion at or below the outlet does not occur.

Sediment traps must outlet onto stabilized (preferable undisturbed) ground, into a watercourse, stabilized channel, or into a storm drain system. Distance between inlet and outlet should be maximized to the longest length practicable.

All traps must be seeded and mulched immediately after construction.

### Trap Details Needed on Erosion and Sediment Control Plans

Each trap shall be delineated on the plans in such a manner that it will not be confused with any other features. Each trap on a plan shall indicate all the information necessary to properly construct and maintain the structure. If the drawings are such that this information cannot be delineated on the drawings, then a table shall be developed. If a table is developed, then each trap on a plan shall have a number and the numbers shall be consecutive.

The following information shall be shown for each trap in a summary table format on the plans.

1. Trap number
2. Type of trap
3. Drainage area
4. Storage required
5. Storage provided (if applicable)
6. Outlet length or pipe sizes
7. Storage depth below outlet or cleanout elevation
8. Embankment height and elevation (if applicable)

### Type of Sediment Traps

There are three (3) specific types of sediment traps which vary according to their function, location, or drainage area.

- I. Pipe Outlet Sediment Trap
- II. Stone Outlet Sediment Trap
- III. Compost Filter Sock Sediment Trap

#### I. Pipe Outlet Sediment Trap

A Pipe Outlet Sediment Trap consists of a trap formed by embankment or excavation. The outlet for the trap is through a perforated riser and a pipe through the embankment. The outlet pipe and riser shall be made of steel, corrugated metal or other suitable material. The top of the embankment shall be at least 1 ½ feet above the crest of the riser. The preferred method of dewatering the sediment trap is by surface skimmer. See Dewatering Device Standard, page 5.10. If the riser alone is used for dewatering, the top 2/3 of the riser shall be perforated with one (1) inch nominal diameter holes or slits spaced six (6) inches vertically and horizontally placed in the concave portion of the corrugated pipe.

No holes or slits will be allowed within six (6) inches of the top of the horizontal barrel. All pipe connections shall be watertight. The riser shall be wrapped with ½ to ¼ inch hardware cloth wire then wrapped with filter cloth with a sieve size between #40-80 and secured with strapping or connecting band at the top and bottom of the cloth. The

cloth shall cover an area at least six (6) inches above the highest hole and six (6) inches below the lowest hole. The top of the riser pipe shall not be covered with filter cloth. The riser shall have a base with sufficient weight to prevent flotation of the riser. Two approved bases are:

1. A concrete base 12 in. thick with the riser embedded 9 in. into the concrete base, or
2. One quarter inch, minimum, thick steel plate attached to the riser by a continuous weld around the circumference of the riser to form a watertight connection. The plate shall have 2.5 feet of stone, gravel, or earth placed on it to prevent flotation. In either case, each side of the square base measurement shall be the riser diameter plus 24 inches.

Pipe outlet sediment traps shall be limited to a five (5) acre maximum drainage area. Pipe outlet sediment trap is interchangeable in the field with stone outlet provided that these sediment traps are constructed in accordance with the detail and specifications for that trap.

Select pipe diameter from the following table:  
See details for Pipe Outlet Sediment Trap ST-I in Figure 5.25 and 5.26 on pages 5.49 and 5.50.

Optional sediment trap dewatering devices are shown on Figure 5.29 on Page 5.53.

#### Minimum Sizes

Barrel Diameter <sup>1</sup> (in.)	Riser Diameter <sup>1</sup> (in.)	Maximum Drainage Area (ac.)
12	15	1
15	18	2
18	21	3
21	24	4
21	27	5

<sup>1</sup> Barrel diameter may be same size as riser diameter





## II. Stone Outlet Sediment Trap

A Stone Outlet Sediment Trap consists of a trap formed by an embankment or excavation. The outlet of this trap is over a stone section placed on level ground. The minimum length (feet) of the outlet shall be equal to four (4) times the drainage area (acres).

Required storage shall be 3,600 cubic feet per acre of drainage area.

The outlet crest (top of stone in weir section) shall be level, at least one (1) foot below top of embankment and no more than one (1) foot above ground beneath the outlet. Stone used in the outlet shall be small riprap (4 in. x 8 in.). To provide more efficient trapping effect, a layer of filter cloth should be embedded one (1) foot back into the upstream face of the outlet stone or a one (1) foot thick layer of two (2) inch or finer aggregate shall be placed on the upstream face of the outlet.

Stone Outlet Sediment Traps may be interchangeable in the field with pipe outlet sediment traps provided they are constructed in accordance with the detail and specifications for those traps. Stone outlet sediment traps shall be limited to a five (5) acre maximum drainage area.

See details for Stone Outlet Sediment Trap ST-II in Figure 5.27 on page 5.51



## III. Compost Sock Sediment Trap

A compost sock sediment trap consists of a trap formed by creating an enclosure of geotextile mesh tubes filled with a compost filter media. These traps are used in locations where there is no opportunity to direct runoff into larger traps or well vegetated areas. This could occur at site entrances and access points or in tight areas due to construction boundary limits.

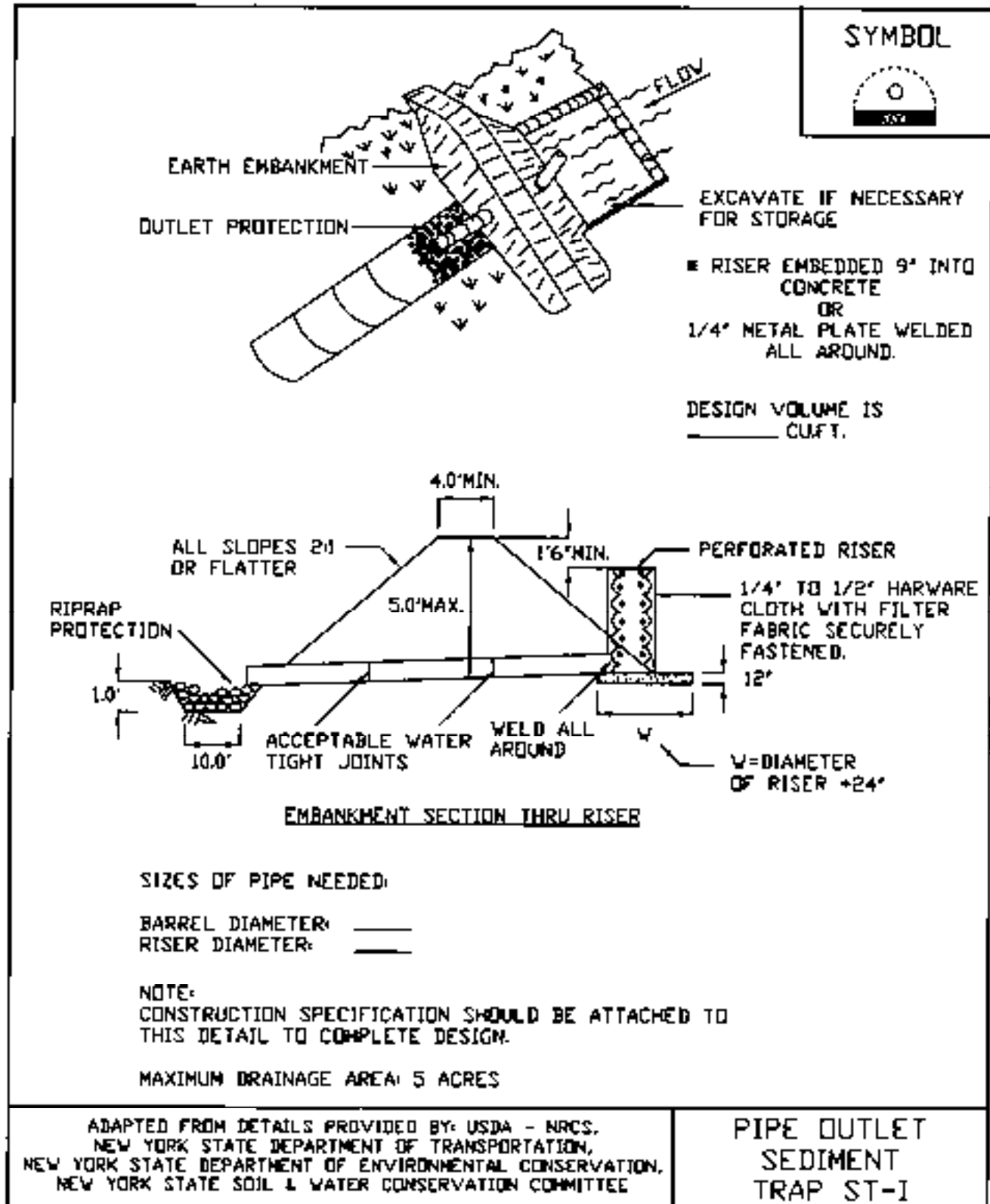
Surface runoff can be directed to the trap with standard conveyance practices. Groundwater or surface ponding in low areas can be pumped into the compost sock sediment trap with appropriate energy dissipation at the pump outlet to prevent scour.

Design criteria for Compost Sock Sediment Trap

1. The maximum drainage area tributary to the trap shall be 5 acres.
2. The minimum settled height above ground shall be 2.0 feet formed by staking 3 compost filter socks in a pyramid as shown in Figure 5.28 on page 5.52.
3. The storage volume provided in the compost sock sediment trap shall be 3,600 cubic feet per tributary drainage acre.
4. If necessary, additional storage area can be created by excavating a sump 1 foot deep beginning at least 5 feet away from the inside sock.
5. All compost filter sock materials, mesh, and compost, will meet the material specifications listed in the Compost Filter Sock standard. No spillway is required.
6. Compost filter sock sediment traps shall be inspected weekly and after every rainfall event. Sediment shall be removed when it reaches one third,  $\frac{1}{3}$ , the height of the trap.
7. The maximum limit of use for a compost sock sediment trap is one (1) year. The existing trap shall be replaced if there is a need for a trap beyond that time limit.
8. Upon completion of the work, the compost sock sediment trap shall be removed. The compost within the socks may be used during cleanup as a vegetative growth medium in accordance with the site stabilization plan.



**Figure 5.25**  
**Pipe Outlet Sediment Trap: ST-I**





**Figure 5.26**  
**Pipe Outlet Sediment Trap: ST-I - Construction Specifications**

<p style="text-align: center;"><u>CONSTRUCTION SPECIFICATIONS</u></p>	<p style="text-align: center;">SYMBOL</p> 
<ol style="list-style-type: none"> <li>1. AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED.</li> <li>2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.</li> <li>3. VOLUME OF SEDIMENT STORAGE SHALL BE 3600 CUBIC FEET PER ACRE OF CONTRIBUTORY DRAINAGE.</li> <li>4. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND STABILIZED.</li> <li>5. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.</li> <li>6. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND SEDIMENT ARE CONTROLLED.</li> <li>7. THE STRUCTURE SHALL BE REMOVED AND AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.</li> <li>8. ALL FILL SLOPES SHALL BE 2:1 OR FLATTER; CUT SLOPES 1:1 OR FLATTER.</li> <li>9. ALL PIPE CONNECTIONS SHALL BE WATERTIGHT.</li> <li>10. THE TOP 2/3 OF THE RISER SHALL BE PERFORATED WITH ONE (1) INCH DIAMETER HOLES OR SLITS SPACED SIX (6) INCHES VERTICALLY AND HORIZONTALLY AND PLACED IN THE CONCAVE PORTION OF PIPE. NO HOLES WILL BE ALLOWED WITHIN SIX (6) INCHES OF THE HORIZONTAL BARREL.</li> <li>11. THE RISER SHALL BE WRAPPED WITH 1/4 TO 1/2 INCH HARDWARE CLOTH WIRE THEN WRAPPED WITH FILTER CLOTH (HAVING AN EQUIVALENT SIEVE SIZE OF 40-80). THE FILTER CLOTH SHALL EXTEND SIX (6) INCHES ABOVE THE HIGHEST HOLE AND SIX (6) INCHES BELOW THE LOWEST HOLE. WHERE ENDS OF THE FILTER CLOTH COME TOGETHER, THEY SHALL BE OVER-LAPPED, FOLDED AND STAPLED TO PREVENT BYPASS.</li> <li>12. STRAPS OR CONNECTING BANDS SHALL BE USED TO HOLD THE FILTER CLOTH AND WIRE FABRIC IN PLACE. THEY SHALL BE PLACED AT THE TOP AND BOTTOM OF THE CLOTH.</li> <li>13. FILL MATERIAL AROUND THE PIPE SPILLWAY SHALL BE HAND COMPACTED IN FOUR (4) INCH LAYERS. A MINIMUM OF TWO (2) FEET OF HAND COMPACTED BACKFILL SHALL BE PLACED OVER THE PIPE SPILLWAY BEFORE CROSSING IT WITH CONSTRUCTION EQUIPMENT.</li> <li>14. THE RISER SHALL BE ANCHORED WITH EITHER A CONCRETE BASE OR STEEL PLATE BASE TO PREVENT FLOTATION. FOR CONCRETE BASE THE DEPTH SHALL BE TWELVE (12) INCHES WITH THE RISER EMBEDDED NINE (9) INCHES. A 1/4 INCH MINIMUM THICKNESS STEEL PLATE SHALL BE ATTACHED TO THE RISER BY A CONTINUOUS WELD AROUND THE BOTTOM TO FORM A WATERTIGHT CONNECTION AND THEN PLACE TWO (2) FEET OF STONE, GRAVEL, OR TAMPED EARTH ON THE PLATE.</li> </ol>	
<p>ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS,  NEW YORK STATE DEPARTMENT OF TRANSPORTATION,  NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,  NEW YORK STATE SOIL &amp; WATER CONSERVATION COMMITTEE</p>	<p style="text-align: center;">PIPE OUTLET  SEDIMENT TRAP  ST-I</p>

# EROSION AND SEDIMENT CONTROL PLAN FOR SMALL HOMESITE CONSTRUCTION

## Definition

Small homesite erosion and sediment control plans are a group of minimum erosion and sediment control practices and management techniques that apply to small homesite construction activity on a single residential lot, in order to prevent polluted discharge.

## Purpose

This appendix lays out a series of minimum requirements for erosion and sediment control, and management practices that may be used to meet these requirements. Use of these templates will help show compliance with the general requirements for construction activities that require basic stormwater pollution prevention plans (SWPPP). This applies to the construction of small homesites. The owner/developer must complete the relevant conditions (1-4), or small parcel erosion and sediment control plan included in this section, and submit the NOI in order to meet compliance with the SPDES General Permit for Stormwater Discharges From Construction Activities.

## Criteria

Generally, several types of practices are required on any one site for effective erosion and sediment control. There are three broad categories of construction-related practices for controlling erosion and sediment on small homesite developments:

1. **Cover practices** prevent erosion by protecting the soil surface from rainfall and runoff. Prevention of erosion is the most preferable and cost-effective approach. These practices include: protection of existing vegetation; temporary covering of exposed soil by mulching, matting, or covering; and permanent site stabilization by topsoiling, seeding, and/or sodding.
2. **Structural Practices** are structural controls that either reduce erosion, control runoff, or keep sediment on the construction site. Examples of these practices include stabilized construction entrances, silt fences, sediment traps, berms, and check dams.
3. **Management Measures** are construction management methods that prevent or reduce erosion potential and ensure the proper functioning of erosion and sediment control practices. Careful construction management can dramatically reduce the costs associated with erosion and sediment problems. Examples of these management measures include:
  - Preserving existing trees and grass where possible

to prevent erosion;

- Decompacting and re-vegetating the site as soon as possible;
- Locating soil piles away from roads or waterways;
- Limiting tracking of mud onto streets by requiring all vehicles to use designated access drives;
- Removing sediment carried off-site by vehicles or storms;
- Installing downspout extenders to prevent erosion from roof runoff; and
- Maintaining erosion and sediment practices through sediment removal, structure replacement, etc.

## Specifications

Each construction site is different. The owner/developer of a small construction site may choose and follow one of the four variations of ESC plans included in this section to develop a SWPPP in compliance with the SPDES Construction Permit For Stormwater Discharges From Construction Activities. However, because of the general nature of the following conditions, **the plans included in this section may not cover all of the resource protection needs on a particular site, and this form does not exempt an owner from the responsibility of filing an NOI, if required.**

## Small Homesite Minimum Requirements:

### **1. Stabilized Construction Entrance:**

To prevent vehicles and equipment from tracking sediment and mud off-site, apply gravel or crushed rock to the driveway area and restrict traffic to this one route. This practice will help keep soil from sticking to tires and stop soil from washing off into the street. Carry out periodic inspections and maintenance including washing, top-dressing with additional stone, reworking, and compaction. Plan for periodic street cleaning to remove any sediment that may have been tracked off-site. Remove sediment by shoveling or sweeping and transport to a suitable disposal area where it can be stabilized.

### **2. Stabilization of Denuded Areas:**

In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that directly discharge to one of the 303 (d) segments listed in the Construction General Permit or is



located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased.

Stabilize disturbed areas by implementing soil covering practices (e.g. mulching, matting, sodding). Exposed soils are the most prone to erosion from rainfall and runoff. Vegetation helps protect the soil from these forces and provides natural erosion control. Plan construction to limit the amount of exposed area, and avoid grading activities during the rainy season (November through March) as much as possible. Clearing limits should be clearly marked and kept as small as possible. Once construction is completed, the site must be permanently stabilized with topsoiling, seeding and plantings, or sodding if needed.

### **3. Protection of Adjacent Properties:**

Keep sediment on-site by using structural and source control practices (e.g. vegetative buffer strips, sediment barriers, soil berms or dikes, etc). See Sections 3, 4, or 5 as appropriate. Wherever possible, preserve a buffer of existing vegetation around the site boundary. This will help to decrease runoff velocities and trap sediment suspended in the runoff. Other structural controls such as filter fence or straw bale barriers should also be used to filter runoff and trap sediment on-site.

When excavating basement soils, move the soil to a location that is, or will be, vegetated, such as in the backyard or side yard area. This will increase the distance eroded soil must travel, through vegetation, to reach the storm sewer system. Piles should be situated so that sediment does not run into the street or adjoining yards. Soil piles should be temporarily seeded and circled with silt fence until the soil is either replaced or removed. Backfill basement walls as soon as possible and rough grade the lot. This will eliminate the large soil mounds, which are highly erodible, and prepare the lot for temporary cover. After backfilling, grade or remove excess soil from the site quickly, to eliminate any sediment loss from surplus fill.

### **4. Concentrated Flow:**

For constructed drainage ways, or other areas of concentrated flow, install check dams according to the specifications on page E.12 to reduce erosion in the channel. As with other erosion controls, check dams must be inspected regularly. Remove sediment accumulated behind the dam as needed to allow channel to drain through the stone check dam and prevent large flows from carrying sediment over the dam. Replace stones as needed to maintain the design cross section of the structures. Sediment removal is crucial to the effectiveness of the

dam—if not maintained, high flows could cause erosion around the sides of the structures, adding significant sediment loads downstream.

### **5. Maintenance:**

Maintain erosion and sediment control practices through regular inspection. Regular maintenance is extremely important for the proper operation of structural practices. After initial groundbreaking, the responsible contractor shall conduct daily maintenance inspections within the active work area to ensure practices are being maintained in effective operating conditions at all times.

### **6. Soil Restoration:**

Soils that have been disturbed and compacted due to construction activities should be de-compacted to restore their previous hydrologic condition. This normally involves aeration of small areas for home sites. Large areas should be restored in accordance with the Soil Restoration standard in Section 4 of this book of standards.

### **7. Other Practices:**

Use additional practices as required by the local plan approval authority to mitigate effects of increased runoff. This may include providing additional controls to a locally protected stream or resource area, protecting riparian corridors (vegetative stream buffers), etc. Individual homeowners and/or developers are responsible for researching additional requirements related to erosion and sediment runoff control established by their local jurisdictions.

**Figure D.1**  
**Erosion Control Plan Condition 1**

<p><b>EROSION CONTROL PLAN LEGEND</b></p> <p>— — — PROPERTY LINE</p> <p>— — — EXISTING DRAINAGE</p> <p>— — — FINISHED DRAINAGE</p> <p>— — — LIMITS OF GRADING</p> <p>● — ● STRAW BALES</p> <p>■ — ■ SILT FENCE</p> <p>① VEGETATION SPECIFICATION</p> <p>② TREE PRESERVATION</p> <p>▨ STOCKPILED SOIL</p> <p>▩ GRAVEL</p>	<p style="text-align: center;">GARAGE</p> <p style="text-align: center;">HOUSE</p> <p style="text-align: center;">STABILIZED CONSTRUCTION ENTRANCE</p> <p style="text-align: center;">Placed on the Contour</p> <p style="text-align: center;">Placed on the Contour</p>	<p><b>NOTES</b></p> <p>1. On moderate slopes, up to 8 percent, silt fence and straw bales may be used interchangeably.</p> <p>2. Slopes exceeding 25 percent shall have silt fence secured by straw bales for support.</p> <p>3. Use additional practices as required by the local plan approval authority to mitigate effects of post construction runoff.</p>									
<p>STREET</p> <p>EXISTING CURB AND GUTTER</p>											
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">PROJECT LOCATION</td> <td style="width: 33%;">PROPERTY OWNER</td> <td style="width: 33%;">CONTRACTOR</td> </tr> <tr> <td>ANTICIPATED STARTING DATE</td> <td colspan="2">SOIL TYPE</td> </tr> <tr> <td>ANTICIPATED COMPLETION DATE</td> <td colspan="2">SLOPE</td> </tr> </table>			PROJECT LOCATION	PROPERTY OWNER	CONTRACTOR	ANTICIPATED STARTING DATE	SOIL TYPE		ANTICIPATED COMPLETION DATE	SLOPE	
PROJECT LOCATION	PROPERTY OWNER	CONTRACTOR									
ANTICIPATED STARTING DATE	SOIL TYPE										
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<p>NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL &amp; WATER CONSERVATION COMMITTEE</p>		<p><b>EROSION CONTROL PLAN CONDITION 1</b></p>									



# Condition 1—Vegetative Requirements & Compliance Form

## Vegetation Requirements:

### 1) Site Preparation

- A. Install needed water and erosion control measures and bring area to be seeded to desired grades using a minimum of 4 in. topsoil.
- B. Prepare seedbed by loosening soil to a depth of 4-6 inches.
- C. Lime to a pH of 6.5
- D. Fertilize as per soil test or, if fertilizer must be applied before soil test results are received, apply 850 pounds of 5-10-10 or equivalent per acre (20 lbs/1,000 sq. ft.)
- E. Incorporate lime and fertilizer in top 2-4 inches of topsoil.
- F. Smooth. Remove all stones over 1 inch in diameter, sticks, and foreign matter from the surface. Firm the seedbed.

### 2) Planting—Sunny Location.

Upon completing soil de-compaction, use a cultipacker type seeder if possible. Seed to a depth of 1/8 to 1/4 inch. If seed is to be broadcast, cultipack or roll after seeding. If hydroseeded, lime and fertilizer may be applied through the seeder and rolling is not practical. Seed using the following mix and rates:

Species (% by weight)	lbs/1,000sq. ft	lbs./acre
65% Kentucky bluegrass blend.....	2.0-2.6.....	85-114
20% perennial ryegrass.....	0.6-0.8.....	26-35
15% fine fescue.....	0.4-0.6.....	19-26
Total.....	3.0-4.0.....	130-175
or,		
100% Tall fescue, Turf-type, fine leaf.....	3.4-4.6.....	150-200

- 3) When using the cultipacker or broadcast seed method, mulch using small grain straw, applied at a rate of 2 tons per acre; and anchor with a netting or tackifier. Hydroseed applications should include mulch, fertilizer and seed.

Common white clover can be added to mixtures at the rate of 1-2 lbs/acre to help maintain green color during the dry summer period, however, they will not withstand heavy traffic. Fertilizing—First year, (spring seedlings) three to four weeks after germination apply 1 pound nitrogen/1,000 square feet using a complete fertilizer with a 2-1-1 or 4-1-3 ratio or as recommended by soil test results. For summer and early fall seedings, apply as above unless air temperatures are above 85°F for extended period. Wait until heat wave is over to fertilize. For late fall/ winter seedings, fertilize in spring. Restrict use—new seedlings should be protected from use for one full year to allow development of a dense sod with good root structure.

## Certification Statement

Please complete and sign this 2-sided document (with Typical Erosion Control Plan) and attach to BLUEPRINTS and SITE PLAN prior to any earth disturbance. These documents must be kept on site and be available for review as requested by any agent of the NYSDEC. **This 2-sided form can be used as a basic stormwater pollution prevention plan, but will not exempt a landowner from filing a Notice of Intent.**

"I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspectors during a site inspection. I also understand that the owner or operator must comply with the term and conditions of the most current version of the New York State Pollutant Discharge Elimination System (SPDES) general permit for stormwater discharges from construction activities and that is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for know violations."

Builder/Contractor (print)

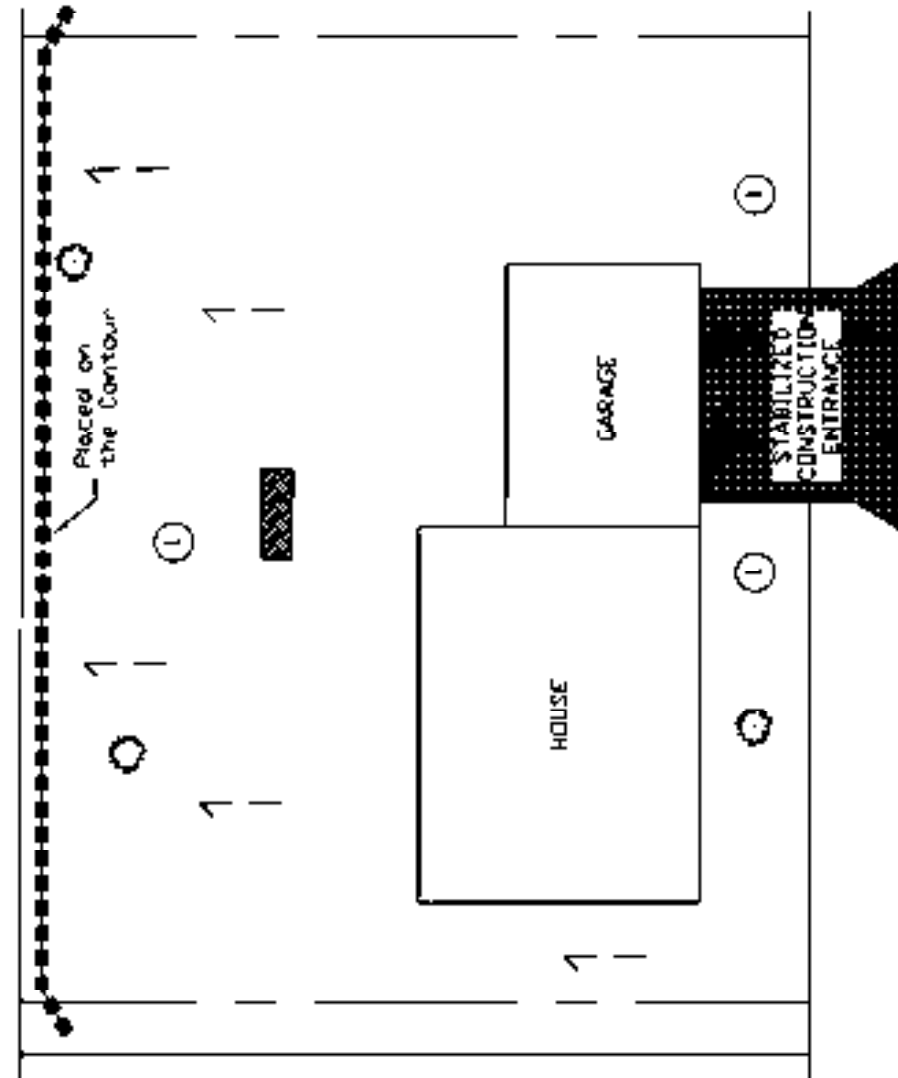
Signature

Address

**Figure D.2**  
**Erosion Control Plan Condition 2**

EROSION CONTROL PLAN LEGEND	
PROPERTY LINE EXISTING DRAINAGE FINISHED DRAINAGE LIMITS OF GRADING STRAW BALES SILT FENCE VEGETATION SPECIFICATION TREE PRESERVATION STABILIZED SOIL GRAVEL	<p><b>NOTES:</b></p> <p>1. On moderate slopes, up to 8 percent, silt fence and straw bales may be used interchangeably.</p> <p>2. Slopes exceeding 25 percent shall have silt fence backed by straw bales for support.</p> <p>3. Use additional practices as required by the local plan approved by the local authority to mitigate effects of peak construction runoff.</p>



Placed on the Contour

STREET	EXISTING CURB AND GUTTER
PROJECT LOCATION	PROPERTY OWNER
ANTICIPATED STARTING DATE	CONTRACTOR
ANTICIPATED COMPLETION DATE	SOIL TYPE
	SLOPE

NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE	<b>EROSION CONTROL PLAN CONDITION 2</b>
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## Condition 2—Vegetative Requirements & Compliance Form

### Vegetation Requirements:

#### 1) Site Preparation

- A. Install needed water and erosion control measures and bring area to be seeded to desired grades using a minimum of 4 in. topsoil.
- B. Prepare seedbed by loosening soil to a depth of 4-6 inches.
- C. Lime to a pH of 6.5
- D. Fertilize as per soil test or, if fertilizer must be applied before soil test results are received, apply 850 pounds of 5-10-10 or equivalent per acre (20 lbs/1,000 sq. ft.)
- E. Incorporate lime and fertilizer in top 2-4 inches of topsoil.
- F. Smooth. Remove all stones over 1 inch in diameter, sticks, and foreign matter from the surface. Firm the seedbed.

#### 2) Planting—Sunny Location.

Upon completing soil de-compaction, use a cultipacker type seeder if possible. Seed to a depth of 1/8 to 1/4 inch. If seed is to be broadcast, cultipack or roll after seeding. If hydroseeded, lime and fertilizer may be applied through the seeder and rolling is not practical. Seed using the following mix and rates:

<u>Species (% by weight)</u>	<u>lbs/1,000sq. ft</u>	<u>lbs./acre</u>
65% Kentucky bluegrass blend.....	2.0-2.6.....	85-114
20% perennial ryegrass.....	0.6-0.8.....	26-35
15% fine fescue.....	0.4-0.6.....	19-26
Total.....	3.0-4.0.....	130-175
or,		
100% Tall fescue, Turf-type, fine leaf.....	3.4-4.6.....	150-200

- 3) When using the cultipacker or broadcast seed method, mulch using small grain straw, applied at a rate of 2 tons per acre; and anchor with a netting or tackifier. Hydroseed applications should include mulch, fertilizer and seed.

Common white clover can be added to mixtures at the rate of 1-2 lbs/acre to help maintain green color during the dry summer period, however, they will not withstand heavy traffic. Fertilizing—First year, (spring seedlings) three to four weeks after germination apply 1 pound nitrogen/1,000 square feet using a complete fertilizer with a 2-1-1 or 4-1-3 ratio or as recommended by soil test results. For summer and early fall seedings, apply as above unless air temperatures are above 85°F for extended period. Wait until heat wave is over to fertilize. For late fall/ winter seedings, fertilize in spring. Restrict use—new seedlings should be protected from use for one full year to allow development of a dense sod with good root structure.

### Certification Statement

Please complete and sign this 2-sided document (with Typical Erosion Control Plan) and attach to BLUEPRINTS and SITE PLAN prior to any earth disturbance. These documents must be kept on site and be available for review as requested by any agent of the NYSDEC. **This 2-sided form can be used as a basic stormwater pollution prevention plan, but will not exempt a landowner from filing a Notice of Intent.**

"I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspectors during a site inspection. I also understand that the owner or operator must comply with the term and conditions of the most current version of the New York State Pollutant Discharge Elimination System (SPDES) general permit for stormwater discharges from construction activities and that is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for know violations."

Builder/Contractor (print)

Signature

Address

**Figure D.3**  
**Erosion Control Plan Condition 3**

<p><b>EROSION CONTROL PLAN LEGEND</b></p> <p>PROPERTY LINE</p> <p>EXISTING DRAINAGE</p> <p>FINISHED DRAINAGE</p> <p>LIMITS OF GRADING</p> <p>STRAW BALES</p> <p>SILT FENCE</p> <p>VEGETATION SPECIFICATION</p> <p>TREE PRESERVATION</p> <p>STABILIZED SOIL</p> <p>GRAVEL</p>		<p><b>NOTES:</b></p> <p>1. On moderate slopes, up to 8 percent, silt fence and straw bales may be used interchangeably.</p> <p>2. Slopes exceeding 25 percent shall have silt fence backed by straw bales for support.</p> <p>3. Use additional practices as required by the local plan approval authority to mitigate effects of post construction runoff.</p>
<p align="center"><b>NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL &amp; WATER CONSERVATION COMMITTEE</b></p>		
<p align="center"><b>EROSION CONTROL PLAN CONDITION 3</b></p>		

PROJECT LOCATION:	STREET		
ANTICIPATED STARTING DATE:	PROPERTY OWNER:	CONTRACTOR:	SLOPE:
ANTICIPATED COMPLETION DATE:	SOIL TYPE:		



# Condition 3—Vegetative Requirements & Compliance Form

## Vegetation Requirements:

### 1) Site Preparation

- A. Install needed water and erosion control measures and bring area to be seeded to desired grades using a minimum of 4 in. topsoil.
- B. Prepare seedbed by loosening soil to a depth of 4-6 inches.
- C. Lime to a pH of 6.5
- D. Fertilize as per soil test or, if fertilizer must be applied before soil test results are received, apply 850 pounds of 5-10-10 or equivalent per acre (20 lbs/1,000 sq. ft.)
- E. Incorporate lime and fertilizer in top 2-4 inches of topsoil.
- F. Smooth. Remove all stones over 1 inch in diameter, sticks, and foreign matter from the surface. Firm the seedbed.

### 2) Planting—Sunny Location.

Upon completing soil de-compaction, use a cultipacker type seeder if possible. Seed to a depth of 1/8 to 1/4 inch. If seed is to be broadcast, cultipack or roll after seeding. If hydroseeded, lime and fertilizer may be applied through the seeder and rolling is not practical. Seed using the following mix and rates:

Species (% by weight)	lbs/1,000sq. ft	lbs./acre
65% Kentucky bluegrass blend.....	2.0-2.6.....	85-114
20% perennial ryegrass.....	0.6-0.8.....	26-35
15% fine fescue.....	0.4-0.6.....	19-26
Total.....	3.0-4.0.....	130-175
or,		
100% Tall fescue, Turf-type, fine leaf.....	3.4-4.6.....	150-200

- 3) When using the cultipacker or broadcast seed method, mulch using small grain straw, applied at a rate of 2 tons per acre; and anchor with a netting or tackifier. Hydroseed applications should include mulch, fertilizer and seed.

Common white clover can be added to mixtures at the rate of 1-2 lbs/acre to help maintain green color during the dry summer period, however, they will not withstand heavy traffic. Fertilizing—First year, (spring seedlings) three to four weeks after germination apply 1 pound nitrogen/1,000 square feet using a complete fertilizer with a 2-1-1 or 4-1-3 ratio or as recommended by soil test results. For summer and early fall seedings, apply as above unless air temperatures are above 85°F for extended period. Wait until heat wave is over to fertilize. For late fall/ winter seedings, fertilize in spring. Restrict use—new seedlings should be protected from use for one full year to allow development of a dense sod with good root structure.

## Certification Statement

Please complete and sign this 2-sided document (with Typical Erosion Control Plan) and attach to BLUEPRINTS and SITE PLAN prior to any earth disturbance. These documents must be kept on site and be available for review as requested by any agent of the NYSDEC. **This 2-sided form can be used as a basic stormwater pollution prevention plan, but will not exempt a landowner from filing a Notice of Intent.**

"I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspectors during a site inspection. I also understand that the owner or operator must comply with the term and conditions of the most current version of the New York State Pollutant Discharge Elimination System (SPDES) general permit for stormwater discharges from construction activities and that is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for know violations."

Builder/Contractor (print)

Signature

Address

**Figure D.4**  
**Erosion Control Plan Condition 4**

<p><b>EROSION CONTROL PLAN LEGEND</b></p> <p>PROPERTY LINE</p> <p>EXISTING DRAINAGE</p> <p>PROPOSED DRAINAGE</p> <p>LIMITS OF GRADING</p> <p>STRAW BAILS</p> <p>SILT FENCE</p> <p>VEGETATION SPECIFICATION</p> <p>TRUCK PRESERVATION</p> <p>STOCKPILED SOIL</p> <p>GRAVEL</p>	<p><b>NOTES:</b></p> <p>1. On moderate slopes, up to 8 percent, silt fence and straw bails may be used interchangeably.</p> <p>2. Slopes exceeding 25 percent shall have silt fence backed by straw bales for support.</p> <p>3. Use additional practices as required by the local plan approval authority to mitigate effects of post construction runoff.</p>
<p><b>SENSITIVE AREA WITH 25% OR GREATER SLOPES</b></p> <p><b>25' BUFFER</b></p> <p><b>MUST MAINTAIN A 25' BUFFER BETWEEN ANY DISTURBED AREA AND THE TOP OF SLOPES 25% AND GREATER</b></p> <p><b>Placed on the Contour</b></p> <p><b>HOUSE</b></p> <p><b>GARAGE</b></p> <p><b>STABILIZED CONSTRUCTION ENTRANCE</b></p>	<p><b>STREET</b></p> <p><b>EXISTING CURB AND GUTTER</b></p>
<p>NEW YORK STATE DEPARTMENT OF TRANSPORTATION, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, NEW YORK STATE SOIL &amp; WATER CONSERVATION COMMITTEE</p>	
<p align="center"><b>EROSION CONTROL PLAN CONDITION 4</b></p>	
<p><b>PROJECT LOCATION:</b></p> <p><b>ANTICIPATED STARTING DATE:</b></p> <p><b>ANTICIPATED COMPLETION DATE:</b></p>	<p><b>PROPERTY OWNER:</b></p> <p><b>CONTRACTOR:</b></p> <p><b>SOIL TYPE:</b></p> <p><b>SLOPE:</b></p>



## Condition 4—Vegetative Requirements & Compliance Form

### Vegetation Requirements:

#### 1) Site Preparation

- A. Install needed water and erosion control measures and bring area to be seeded to desired grades using a minimum of 4 in. topsoil.
- B. Prepare seedbed by loosening soil to a depth of 4-6 inches.
- C. Lime to a pH of 6.5
- D. Fertilize as per soil test or, if fertilizer must be applied before soil test results are received, apply 850 pounds of 5-10-10 or equivalent per acre (20 lbs/1,000 sq. ft.)
- E. Incorporate lime and fertilizer in top 2-4 inches of topsoil.
- F. Smooth. Remove all stones over 1 inch in diameter, sticks, and foreign matter from the surface. Firm the seedbed.

#### 2) Planting—Sunny Location.

Upon completing soil de-compaction, use a cultipacker type seeder if possible. Seed to a depth of 1/8 to 1/4 inch. If seed is to be broadcast, cultipack or roll after seeding. If hydroseeded, lime and fertilizer may be applied through the seeder and rolling is not practical. Seed using the following mix and rates:

Species (% by weight)	lbs/1,000sq. ft	lbs./acre
65% Kentucky bluegrass blend.....	2.0-2.6.....	85-114
20% perennial ryegrass.....	0.6-0.8.....	26-35
15% fine fescue.....	0.4-0.6.....	19-26
Total.....	3.0-4.0.....	130-175
or,		
100% Tall fescue, Turf-type, fine leaf.....	3.4-4.6.....	150-200

- 3) When using the cultipacker or broadcast seed method, mulch using small grain straw, applied at a rate of 2 tons per acre; and anchor with a netting or tackifier. Hydroseed applications should include mulch, fertilizer and seed.

Common white clover can be added to mixtures at the rate of 1-2 lbs/acre to help maintain green color during the dry summer period, however, they will not withstand heavy traffic. Fertilizing—First year, (spring seedlings) three to four weeks after germination apply 1 pound nitrogen/1,000 square feet using a complete fertilizer with a 2-1-1 or 4-1-3 ratio or as recommended by soil test results. For summer and early fall seedings, apply as above unless air temperatures are above 85°F for extended period. Wait until heat wave is over to fertilize. For late fall/ winter seedings, fertilize in spring. Restrict use—new seedlings should be protected from use for one full year to allow development of a dense sod with good root structure.

### Certification Statement

Please complete and sign this 2-sided document (with Typical Erosion Control Plan) and attach to BLUEPRINTS and SITE PLAN prior to any earth disturbance. These documents must be kept on site and be available for review as requested by any agent of the NYSDEC. **This 2-sided form can be used as a basic stormwater pollution prevention plan, but will not exempt a landowner from filing a Notice of Intent.**

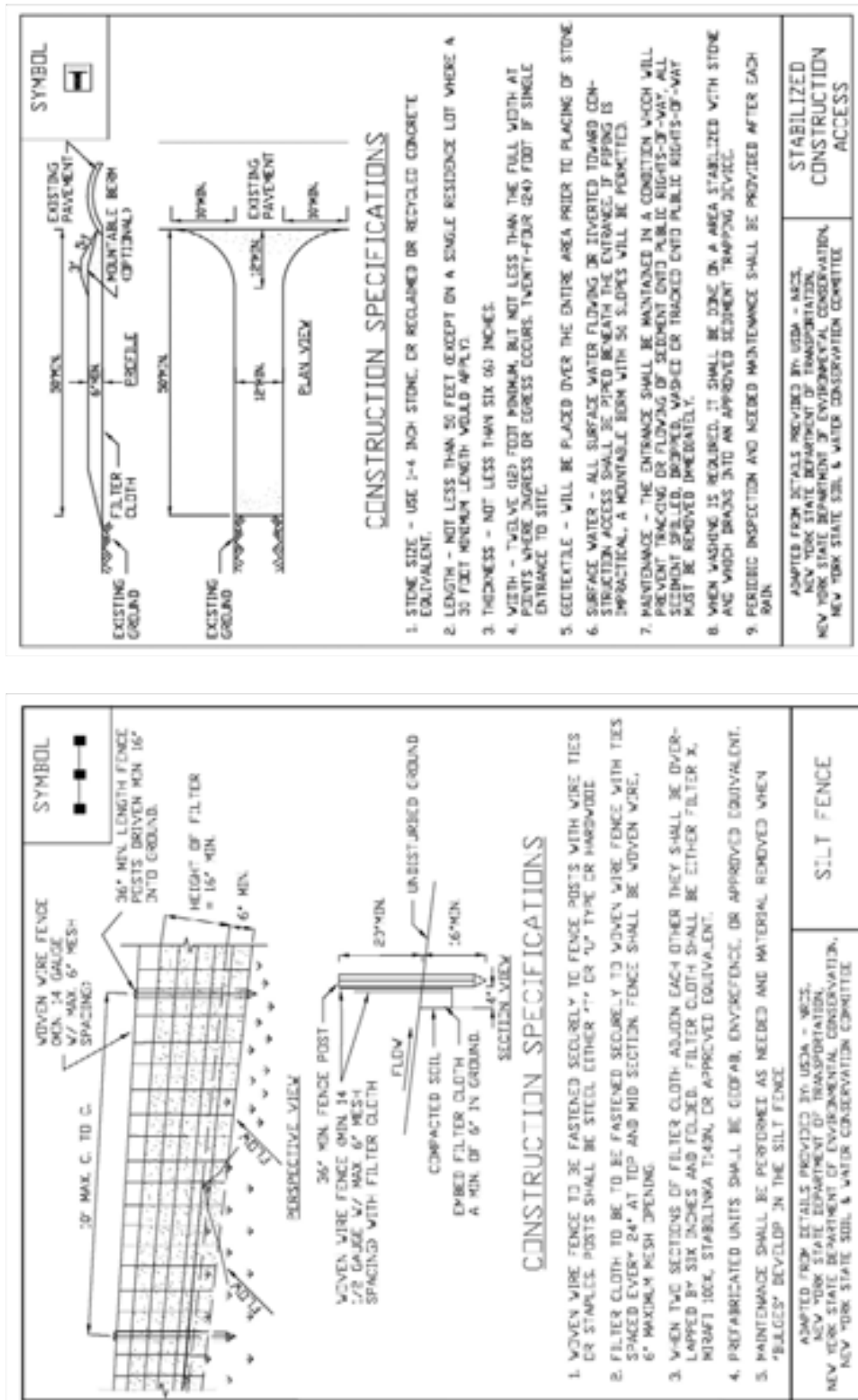
"I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspectors during a site inspection. I also understand that the owner or operator must comply with the term and conditions of the most current version of the New York State Pollutant Discharge Elimination System (SPDES) general permit for stormwater discharges from construction activities and that is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for know violations."

Builder/Contractor (print)

Signature

Address

**Figure D.5**  
**Construction Details for Stabilized Construction Entrance and Silt**





**SYMBOL**

**SYMBOL**

**CONSTRUCTION SPECIFICATIONS**

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
2. SET SPACING OF CHECK DAMS TO ASSURE THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOE OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 15 FEET BEYOND THE EITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LINER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.

MAXIMUM DRAINAGE AREA 2 ACRES

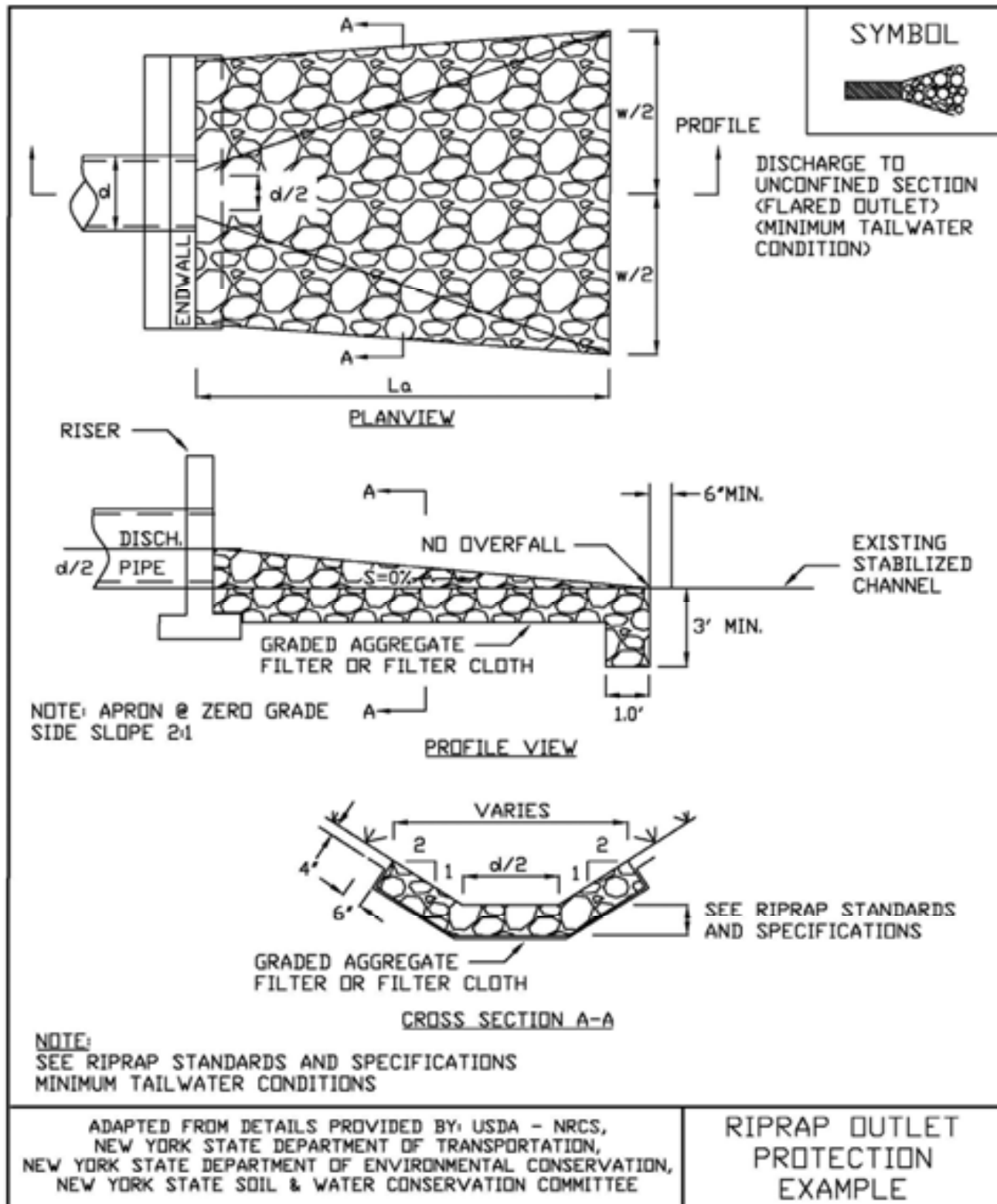
**CONSTRUCTION SPECIFICATIONS**

1. BALES SHALL BE PLACED AT THE TOE OF A SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF (4) INCHES, AND PLACED SO THE JOINTS ARE HORIZONTAL.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. INSPECTION SHALL BE FREQUENT AND REPAIR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPIDE STORM FLOW OR DRAINAGE.

ADAPTED FROM DETAILS PROVIDED BY USDA - NRCS,  
NEW YORK STATE DEPARTMENT OF TRANSPORTATION,  
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,  
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

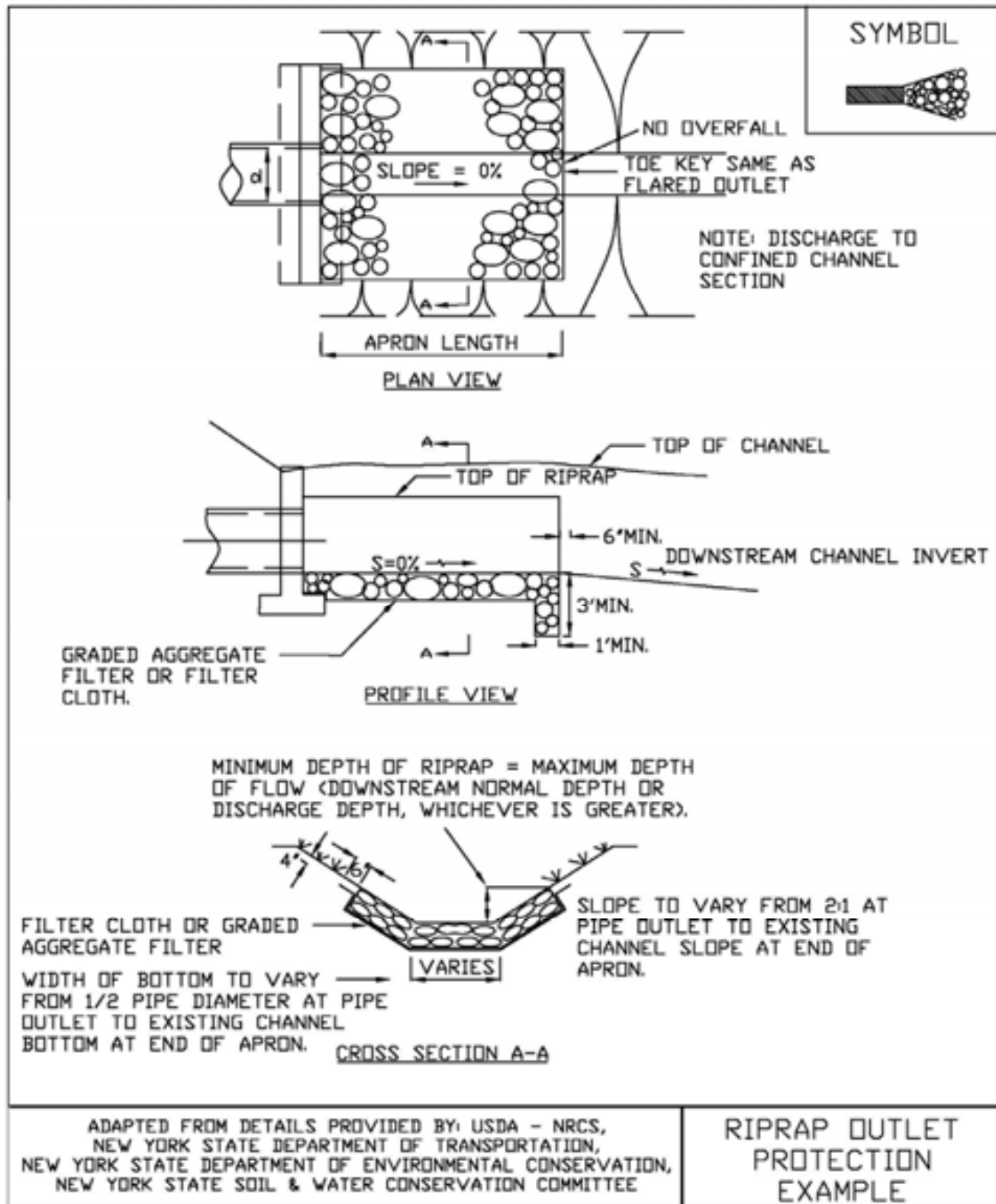
ADAPTED FROM DETAILS PROVIDED BY USDA - NRCS,  
NEW YORK STATE DEPARTMENT OF TRANSPORTATION,  
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,  
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

**Figure 3.18**  
**Riprap Outlet Protection Detail (1)**





**Figure 3.19**  
**Riprap Outlet Protection Detail (2)**



**SYMBOL**

DISCHARGE TO SEMI-CONFINED SECTION (MAXIMUM TAILWATER CONDITION)

**PLANVIEW**

**PROFILE VIEW**

**SECTION A-A (AT END OF CULVERT)**

**SECTION B-B (AT END OF APRON)**

**NOTE:**  
SEE RIPRAP STANDARDS AND SPECIFICATIONS  
MAXIMUM TAILWATER CONDITIONS

ADAPTED FROM DETAILS PROVIDED BY: USDA - NRCS,  
NEW YORK STATE DEPARTMENT OF TRANSPORTATION,  
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,  
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

**RIPRAP OUTLET PROTECTION EXAMPLE**



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# **APPENDIX E**

Site Specific Soils, Resource Map and Data



United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for **Westchester County, New York**

dedvukaj2



July 9, 2018



# Custom Soil Resource Report Soil Map (dedvukaj2)



# Custom Soil Resource Report


## MAP LEGEND


### Area of Interest (AOI)

 Area of Interest (AOI)


### Soils


 Soil Map Unit Polygons


 Soil Map Unit Lines


 Soil Map Unit Points

### Special Point Features

 Blowout

 Borrow Pit


 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop


 Saline Spot

 Sandy Spot

 Severely Eroded Spot


 Sinkhole


 Slide or Slip

 Sodic Spot


 Spoil Area

 Stony Spot


 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

### Water Features

 Streams and Canals


### Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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

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

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

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

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

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

Soil Survey Area: Westchester County, New York  
Survey Area Data: Version 13, Oct 8, 2017

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

Date(s) aerial images were photographed: Dec 31, 2009—Oct 5, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



## Map Unit Legend (dedvukaj2)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
ChC	Charlton fine sandy loam, 8 to 15 percent slopes	0.0	1.5%
CrC	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	0.0	2.4%
CsD	Chatfield-Charlton complex, 15 to 35 percent slopes, very rocky	0.6	30.3%
LcB	Leicester loam, 3 to 8 percent slopes, stony	1.3	65.0%
Sh	Sun loam	0.0	0.7%
<b>Totals for Area of Interest</b>		<b>2.0</b>	<b>100.0%</b>

## Map Unit Descriptions (dedvukaj2)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it

was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.



## Westchester County, New York

### ChC—Charlton fine sandy loam, 8 to 15 percent slopes

#### Map Unit Setting

*National map unit symbol:* 2wh0q

*Elevation:* 0 to 1,440 feet

*Mean annual precipitation:* 36 to 71 inches

*Mean annual air temperature:* 39 to 55 degrees F

*Frost-free period:* 140 to 240 days

*Farmland classification:* Farmland of statewide importance

#### Map Unit Composition

*Charlton and similar soils:* 85 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Charlton

##### Setting

*Landform:* Ground moraines, ridges, hills

*Landform position (two-dimensional):* Backslope

*Landform position (three-dimensional):* Side slope

*Down-slope shape:* Convex, linear

*Across-slope shape:* Convex

*Parent material:* Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

##### Typical profile

*Ap - 0 to 7 inches:* fine sandy loam

*Bw - 7 to 22 inches:* gravelly fine sandy loam

*C - 22 to 65 inches:* gravelly fine sandy loam

##### Properties and qualities

*Slope:* 8 to 15 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high  
(0.14 to 14.17 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline (0.0 to 1.9 mmhos/cm)

*Available water storage in profile:* Moderate (about 6.9 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3e

*Hydrologic Soil Group:* B

*Hydric soil rating:* No

#### Minor Components

##### Sutton, fine sandy loam

*Percent of map unit:* 5 percent

## Custom Soil Resource Report

*Landform:* Ground moraines, ridges, hills  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### **Paxton**

*Percent of map unit:* 5 percent  
*Landform:* Hills, drumlins, ground moraines  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

### **Chatfield**

*Percent of map unit:* 3 percent  
*Landform:* Ridges, hills  
*Landform position (two-dimensional):* Summit, backslope, shoulder  
*Landform position (three-dimensional):* Crest, nose slope, side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear, convex  
*Hydric soil rating:* No

### **Canton**

*Percent of map unit:* 2 percent  
*Landform:* Ground moraines, ridges, hills  
*Landform position (two-dimensional):* Shoulder, backslope, summit  
*Landform position (three-dimensional):* Side slope, nose slope, crest  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

## **CrC—Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky**

### **Map Unit Setting**

*National map unit symbol:* 2w698  
*Elevation:* 0 to 1,550 feet  
*Mean annual precipitation:* 36 to 71 inches  
*Mean annual air temperature:* 39 to 55 degrees F  
*Frost-free period:* 140 to 240 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Charlton, very stony, and similar soils:* 50 percent  
*Chatfield, very stony, and similar soils:* 30 percent  
*Minor components:* 20 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*



## Description of Charlton, Very Stony

### Setting

*Landform:* Ridges, hills

*Landform position (two-dimensional):* Backslope, shoulder, summit

*Landform position (three-dimensional):* Side slope, crest, nose slope

*Down-slope shape:* Linear, convex

*Across-slope shape:* Convex

*Parent material:* Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

### Typical profile

*Oe - 0 to 2 inches:* moderately decomposed plant material

*A - 2 to 4 inches:* fine sandy loam

*Bw - 4 to 27 inches:* gravelly fine sandy loam

*C - 27 to 65 inches:* gravelly fine sandy loam

### Properties and qualities

*Slope:* 3 to 15 percent

*Percent of area covered with surface fragments:* 1.6 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Well drained

*Runoff class:* Low

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.14 to 14.17 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline (0.0 to 1.9 mmhos/cm)

*Available water storage in profile:* Moderate (about 8.7 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6s

*Hydrologic Soil Group:* B

*Hydric soil rating:* No

## Description of Chatfield, Very Stony

### Setting

*Landform:* Ridges, hills

*Landform position (two-dimensional):* Backslope, shoulder, summit

*Landform position (three-dimensional):* Crest, side slope, nose slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear, convex

*Parent material:* Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material

*A - 1 to 2 inches:* fine sandy loam

*Bw - 2 to 30 inches:* gravelly fine sandy loam

*2R - 30 to 40 inches:* bedrock

### Properties and qualities

*Slope:* 3 to 15 percent

*Percent of area covered with surface fragments:* 1.6 percent

## Custom Soil Resource Report

*Depth to restrictive feature:* 20 to 41 inches to lithic bedrock

*Natural drainage class:* Well drained

*Runoff class:* High

*Capacity of the most limiting layer to transmit water (Ksat):* Very low (0.00 to 0.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline (0.0 to 1.9 mmhos/cm)

*Available water storage in profile:* Low (about 4.3 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6s

*Hydrologic Soil Group:* B

*Hydric soil rating:* No

### Minor Components

#### **Sutton, very stony**

*Percent of map unit:* 5 percent

*Landform:* Ground moraines, hills

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Hydric soil rating:* No

#### **Leicester, very stony**

*Percent of map unit:* 5 percent

*Landform:* Depressions, drainageways

*Down-slope shape:* Linear

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

#### **Rock outcrop**

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### **Hollis, very stony**

*Percent of map unit:* 5 percent

*Landform:* Ridges, hills

*Landform position (two-dimensional):* Backslope, shoulder, summit

*Landform position (three-dimensional):* Crest, side slope, nose slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear, convex

*Hydric soil rating:* No



## **CsD—Chatfield-Charlton complex, 15 to 35 percent slopes, very rocky**

### **Map Unit Setting**

*National map unit symbol:* 2w69k

*Elevation:* 0 to 1,290 feet

*Mean annual precipitation:* 36 to 71 inches

*Mean annual air temperature:* 39 to 55 degrees F

*Frost-free period:* 140 to 240 days

*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Chatfield, very stony, and similar soils:* 45 percent

*Charlton, very stony, and similar soils:* 35 percent

*Minor components:* 20 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Chatfield, Very Stony**

#### **Setting**

*Landform:* Ridges, hills

*Landform position (two-dimensional):* Backslope, shoulder, summit

*Landform position (three-dimensional):* Crest, side slope, nose slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear, convex

*Parent material:* Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

#### **Typical profile**

*Oi - 0 to 1 inches:* slightly decomposed plant material

*A - 1 to 2 inches:* fine sandy loam

*Bw - 2 to 30 inches:* gravelly fine sandy loam

*2R - 30 to 40 inches:* bedrock

#### **Properties and qualities**

*Slope:* 15 to 35 percent

*Percent of area covered with surface fragments:* 1.6 percent

*Depth to restrictive feature:* 20 to 41 inches to lithic bedrock

*Natural drainage class:* Well drained

*Runoff class:* High

*Capacity of the most limiting layer to transmit water (Ksat):* Very low (0.00 to 0.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Salinity, maximum in profile:* Nonsaline (0.0 to 1.9 mmhos/cm)

*Available water storage in profile:* Low (about 4.3 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified

## Custom Soil Resource Report

*Land capability classification (nonirrigated): 7s*

*Hydrologic Soil Group: B*

*Hydric soil rating: No*

### Description of Charlton, Very Stony

#### Setting

*Landform: Ridges, hills*

*Landform position (two-dimensional): Backslope*

*Landform position (three-dimensional): Side slope*

*Down-slope shape: Linear, convex*

*Across-slope shape: Convex*

*Parent material: Coarse-loamy melt-out till derived from granite, gneiss, and/or schist*

#### Typical profile

*Oe - 0 to 2 inches: moderately decomposed plant material*

*A - 2 to 4 inches: fine sandy loam*

*Bw - 4 to 27 inches: gravelly fine sandy loam*

*C - 27 to 65 inches: gravelly fine sandy loam*

#### Properties and qualities

*Slope: 15 to 35 percent*

*Percent of area covered with surface fragments: 1.6 percent*

*Depth to restrictive feature: More than 80 inches*

*Natural drainage class: Well drained*

*Runoff class: Medium*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)*

*Depth to water table: More than 80 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)*

*Available water storage in profile: Moderate (about 8.7 inches)*

#### Interpretive groups

*Land capability classification (irrigated): None specified*

*Land capability classification (nonirrigated): 7s*

*Hydrologic Soil Group: B*

*Hydric soil rating: No*

### Minor Components

#### Leicester, very stony

*Percent of map unit: 6 percent*

*Landform: Depressions, ground moraines, drainageways, hills*

*Landform position (two-dimensional): Toeslope, footslope*

*Landform position (three-dimensional): Base slope*

*Down-slope shape: Linear, concave*

*Across-slope shape: Concave*

*Hydric soil rating: Yes*

#### Rock outcrop

*Percent of map unit: 5 percent*

*Landform: Ridges, hills*

*Hydric soil rating: No*



**Hollis, very stony**

*Percent of map unit:* 5 percent

*Landform:* Ridges, hills

*Landform position (two-dimensional):* Backslope, shoulder, summit

*Landform position (three-dimensional):* Side slope, nose slope, crest

*Down-slope shape:* Convex

*Across-slope shape:* Convex, linear

*Hydric soil rating:* No

**Sutton, very stony**

*Percent of map unit:* 4 percent

*Landform:* Ground moraines, hills

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Hydric soil rating:* No

**LcB—Leicester loam, 3 to 8 percent slopes, stony**

**Map Unit Setting**

*National map unit symbol:* bd8w

*Mean annual precipitation:* 46 to 50 inches

*Mean annual air temperature:* 46 to 52 degrees F

*Frost-free period:* 115 to 215 days

*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Leicester, somewhat poorly drained, and similar soils:* 50 percent

*Leicester, poorly drained, and similar soils:* 35 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Leicester, Somewhat Poorly Drained**

**Setting**

*Landform:* Hills, till plains, ridges

*Landform position (two-dimensional):* Footslope, summit

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Parent material:* Loamy acid till derived mostly from schist and gneiss

**Typical profile**

*H1 - 0 to 8 inches:* loam

*H2 - 8 to 26 inches:* sandy loam

*C - 26 to 60 inches:* sandy loam

## Custom Soil Resource Report

### Properties and qualities

*Slope:* 3 to 8 percent  
*Percent of area covered with surface fragments:* 0.1 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 5.95 in/hr)  
*Depth to water table:* About 6 to 18 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 7.7 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* A/D  
*Hydric soil rating:* No

## Description of Leicester, Poorly Drained

### Setting

*Landform:* Ridges, hills, till plains  
*Landform position (two-dimensional):* Footslope, summit  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Parent material:* Loamy acid till derived mostly from schist and gneiss

### Typical profile

*H1 - 0 to 8 inches:* loam  
*H2 - 8 to 26 inches:* sandy loam  
*C - 26 to 60 inches:* sandy loam

### Properties and qualities

*Slope:* 3 to 8 percent  
*Percent of area covered with surface fragments:* 0.1 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high (0.57 to 5.95 in/hr)  
*Depth to water table:* About 0 to 12 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Moderate (about 7.7 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 6s  
*Hydrologic Soil Group:* A/D  
*Hydric soil rating:* Yes

## Minor Components

### Sun

*Percent of map unit:* 7 percent  
*Landform:* Depressions  
*Hydric soil rating:* Yes



**Sutton**

*Percent of map unit: 5 percent*

*Hydric soil rating: No*

**Leicester, very stony**

*Percent of map unit: 3 percent*

*Hydric soil rating: No*

**Sh—Sun loam**

**Map Unit Setting**

*National map unit symbol: bd9q*

*Elevation: 600 to 1,800 feet*

*Mean annual precipitation: 46 to 50 inches*

*Mean annual air temperature: 46 to 52 degrees F*

*Frost-free period: 115 to 215 days*

*Farmland classification: Farmland of statewide importance*

**Map Unit Composition**

*Sun and similar soils: 85 percent*

*Minor components: 15 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Sun**

**Setting**

*Landform: Depressions*

*Landform position (two-dimensional): Toeslope*

*Landform position (three-dimensional): Base slope*

*Down-slope shape: Concave*

*Across-slope shape: Concave*

*Parent material: Loamy till derived primarily from limestone and sandstone, with a component of schist, shale, or granitic rocks in some areas*

**Typical profile**

*H1 - 0 to 9 inches: loam*

*H2 - 9 to 27 inches: loam*

*H3 - 27 to 60 inches: gravelly fine sandy loam*

**Properties and qualities**

*Slope: 0 to 3 percent*

*Depth to restrictive feature: More than 80 inches*

*Natural drainage class: Very poorly drained*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)*

*Depth to water table: About 0 inches*

*Frequency of flooding: None*

*Frequency of ponding: Frequent*

*Calcium carbonate, maximum in profile: 15 percent*

## Custom Soil Resource Report

*Available water storage in profile:* Moderate (about 6.7 inches)

### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 4w

*Hydrologic Soil Group:* C/D

*Hydric soil rating:* Yes

### **Minor Components**

#### **Ridgebury**

*Percent of map unit:* 5 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

#### **Leicester**

*Percent of map unit:* 5 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

#### **Palms**

*Percent of map unit:* 3 percent

*Landform:* Marshes, swamps

*Hydric soil rating:* Yes

#### **Sun, stony**

*Percent of map unit:* 2 percent

*Landform:* Depressions

*Hydric soil rating:* Yes



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# **APPENDIX F**

## Stormwater Management Report

# Appendix F

## Stormwater Management Report

### Introduction:

The Dedvukaj Site is located on the west side of Elmwood Road approximately 200 ft. north of its intersection with Wakeman Road in the Town of Lewisboro. The site is 2-acres in size and it is proposed to develop this site with the construction of one single family home with associated driveway, septic system, potable water well and stormwater management practices.

As required by the Town of Lewisboro, an analysis of the impacts the proposed development may have on the surrounding areas, in terms of stormwater, is required. The Town requires that the analysis show that for a 25-year, Type III, rainfall, that there will be no adverse impacts on any downstream or upstream properties. The 25-year storm is defined as having a 4% chance of occurring in any one year. This intensity storm is predicted to result in a 6.43-inch rainfall over a 24-hour period.

This 2-acre site is at the discharge location of an approximate 447-acre drainage basin. The location of the site as well as the entire watershed can be seen on the plan entitled "Dedvukaj Watershed Map", **Appendix F-1**. This basin discharges its accumulated stormwater flows into the Elmwood Road crossing which is an existing 48-inch HDPE culvert located at the south east corner of the Dedvukaj site. This location is problematic to the Town and has seen a number of flooding events wherein the 48-inch HDPE culvert cannot accommodate the watershed flows, either due to its limited capacity or obstructions in front of the culvert. This has caused stormwater to overtop Elmwood Road and subsequently closes the road.

In light of the issues plaguing this location, the Dedvukaj analysis will evaluate the impact the various storm events will have on the area in general and the 48-inch HDPE Elmwood Road crossing in particular, in both the existing, pre-development condition and the proposed post-development condition. In addition, this analysis will also evaluate the Elmwood Road crossing if the existing 48-inch HDPE culvert were replaced with a 7-foot-wide by 14-foot -wide concrete box culvert.

### Methodology:

As noted, the Dedvukaj site is located at the base of an approximate 447-acre drainage basin.

The procedure employed to analyze and quantify the stormwater characteristics of the site is the USDA Soil Conservation Service Technical Release TR-20. The TR-20 method of stormwater modeling is an accepted standard by both the US Soil Conservation Service and the US Army Corps of Engineers.



This study was performed using the computer-stormwater modeling program HydroCad version 10.0 that is based on TR-20. The HydroCad Stormwater Modeling System is a computer program formulated by Applied Microcomputer Systems and was utilized in determining the stormwater hydrographs. This program requires that each of the hydrologically distinct areas, or sub-basins, be analyzed with the appropriate data input to the program. These distinct areas are referred to as "subcatchments" in HydroCad. Flow from the subcatchments are then routed to either a stream or drainage course, for conveyance to the ultimate discharge point, which in this case is the Elmwood Road crossing. Locations where the stormwater will back up as a result of an obstruction or a culvert with limited capacity, these are modeled as ponds. In this analysis the "ponds" considered were on the high side of both the Spencer Driveway and the Elmwood Road crossing. In the post development condition, the high side of the Dedvukaj bridge was also considered.

The TR-20 procedure requires the input of data that is based on the subcatchments and their discharge points. These discharge points, or locations, are considered as design points in this report. These include values for time of concentration,  $T_c$ , and runoff curve numbers, CN, which are defined as follows:

The time of concentration ( $T_c$ ) is a key element in the calculation of peak rate of runoff and can be defined as the time required for runoff to travel from the most hydrologically distant point of the watershed to the point of discharge. The time of concentration is determined by summing the travel time ( $T_t$ ) for each consecutive flow segment along the hydrologic path for the drainage basin which requires the identification of the type of flow occurring in each segment.

The runoff curve number (CN) indicates the runoff potential of a particular soil cover in an unfrozen state. The CN is determined by evaluating the hydrologic soil group, land use and treatment condition (cover). The higher the curve number (such as 98 for pavement), the greater the runoff potential, while a low CN (such as 30 for some wooded areas), indicates a large infiltration capacity or minimal runoff potential. The CN value is not a percentage of the amount of runoff from a specific storm event. Soils are classified by letter as A, B, C or D. A type soils are highly permeable, similar to sand or bankrun. D type soils are the least permeable soils and are similar to clay.

The procedure requires that site specific factors are initially determined. This information along with the size of the drainage basins and other physical characteristics of the basins are input into the computer program for the generation of stormwater flows, or hydrographs.

Once the specific components of the project have been described, hydrographs for each subcatchment are generated. Based on the site layout and flow paths, the stormwater flows resulting from each of the design storms considered, in both the pre and post-

development condition, are calculated. The appropriate values, based on the subcatchment hydrographs, were summed to determine the flow rates at the specific locations of concern, namely at the Dedvukaj driveway crossing and at the Elmwood Road crossing.

#### Tc Determination:

As noted, the Dedvukaj site is located at the base, or discharge location of an approximate 447-acre drainage basin. The overall watershed consists of three sub basins, or subcatchments for the purpose of the HydroCad Program.

The first and largest subcatchment consists of 390 acres and generally runs in the north south direction. This basin originates just south of West Lane and eventually becomes the stream which crosses in front of the Dedvukaj site adjacent to Elmwood Road. The initial flow segment is 100 ft. of sheet flow through woods with a dense underbrush. Flow is then through two segments of shallow concentrated flow with a total length of 3,500 ft. The final segment is 5,150 ft. of stream flow which discharges at the Elmwood Road 48-inch HDPE. The total time of concentration for flow through this subcatchment is 93.2 minutes. This is a reasonable time of concentration considering the total flow path from the head of the subcatchment to the Elmwood Road crossing is approximately 1.67 miles.

The second subcatchment consists of 55 acres and originates west of Smith Ridge Road (NYS Route 123) generally runs west to east into the flow channel adjacent to the southern side of the Dedvukaj site. The initial flow segment is 100 ft. of sheet flow through woods with a light underbrush. Flow is then also through two segments of shallow concentrated flow with a total length of 1,700 ft. The final segment is 1,430 ft., also of stream flow which also discharges at the Elmwood Road 48-inch HDPE. The time of concentration for this subcatchment is 44.6 minutes with a total flow length of 0.61 miles.

The computation of the time of concentration through the various segments of all subcatchments are shown on the attached HydroCad simulations

The third, and smallest subcatchment is the Dedvukaj parcel. This subcatchment is 2 acres in size and has a time of concentration of 10 minutes in the existing pre-development condition and was decreased to 6 minutes in the proposed, post-development condition.



### Cn Determination:

The United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) has evaluated soils throughout the country and had determined their respective Cn values. Because of this, the NRCS web site was utilized to determine the specific Cn for the Dedvukaj 447-acre watershed. The web site requires that the watershed be defined which then allows for the generation of the site-specific soils map. The results of this are attached and the breakdown into the various soil classifications presented. Although the area input into the NRCS web site is slightly greater than the 447-acre drainage basin, due to the scale of the map provided by the NRCS the discrepancy is minor. What is important is that the percentages of each of the respective soil types, A, B, C and D, can now be input into the HydroCad program for modeling purposes. The predominant soil type in this watershed are the B type soils which account for 215 acres, or 48%, and C type soils which account for 134 acres, or 30%.

The NRCS map and soil data breakdown are attached and presented in **Appendix F-2**.

For the purpose of this analysis, and as previously discussed with the Town Consultant, it has been agreed that the HydroCad input will be as though the entire watershed was developed with 2-acre single family lots. Although the number of actual single-family homes in the watershed is less than the number alleged with this process, when the other impervious areas, such as Meadow Pond Elementary School, are considered, it is our belief that the Cn values input into the program will result in conservative, i.e.; will result in a greater than actual stormwater flows, for the watershed.

### Analysis / Stormwater Modeling:

The watershed was analyzed under three separate scenarios for each of the generally used storms. The Type III storms considered are as follows (rainfall amounts were provided by the Northeast Regional Climate Center located at Cornell University, and are presented in **Appendix F-3**):

<b>Table T-1 – Type III Storms Considered - Dedvukaj</b>		
Frequency (year)	% to occur any given year	Rainfall Depth (inches)
1	100 %	2.85
2	50 %	3.44
5	20 %	4.31
10	10 %	5.12
25	4 %	6.43
50	2 %	7.64
100	1 %	9.09

The analysis performed was for three specific scenarios.

1. The first scenario is the existing condition which does not include development of the Dedvukaj site. With this scenario there is flooding over Elmwood Road starting with the 1-year storm event and flooding over the Spencer driveway starting at the 2-year storm event.
2. The second scenario considers the Dedvukaj proposed development including the 20-foot clear span bridge proposed to cross the stream running in front of the Dedvukaj site.
3. The third scenario is similar to the second with a 7-foot-tall by 14-foot-wide concrete box culvert replacing the existing 48-inch HDPE culvert under Elmwood Road.

The HydroCad output is provided for each of the scenarios for the 25-year, 6.43-inch rainfall and are presented as **Appendix F-4A (Existing Condition)**; **Appendix F-4B (Proposed Condition with the Dedvukaj Bridge)** and **Appendix F-4C (Proposed Condition with the Dedvukaj Bridge and the 7 ft. by 14 ft. Concrete Box Culvert In Elmwood Road)**.

All of the scenarios presented assume that there are no blockages to any of the drainage structures considered.

#### Pre-Development / Existing Condition:

This condition analyzes the watershed as it currently exists. This included the entire 447-acre drainage basin without the construction of the Dedvukaj residence. Areas of specific concern include the 48-inch CMP Spencer driveway crossing located immediately north of the Dedvukaj site as well as the 48-inch HDPE Elmwood Road crossing.

The resulting stormwater flows and the impact they will have on the streams and stream crossings located adjacent to the Dedvukaj site are presented in “**Table T-2 – Dedvukaj - Existing Conditions Stormwater Flows**”.

As can be seen from Table T-2 the Spencer driveway 48-inch culvert barely accommodates the 1 year, 2.85-inch rain storm. The Elmwood Road 48-inch crossing does not accommodate the 1-year storm and according to the model there will be 2 inches of runoff over Elmwood during this storm. Due to the size of these culverts any minor or insignificant blockages would make the condition considerably worse.

Needless to say, as the storms increase in intensity the effects the larger storms will have on the drainage basin get drastically worse. During the 25-year, 6.43-inch rain storm there will be approximately 18 inches of water overtopping Elmwood Road and approximately 19 inches overtopping the Spencer driveway.



**Table T-2: Dedvukaj – Existing Conditions Stormwater Flows**

Storm Event	Rainfall Depth	S1 Flow	S2 Flow	Spencer Driveway Crossing (48-inch cmp)					Elmwood Road Crossing (48-inch HDPE)						
year	inch	cfs	cfs	Pipe Flow (48")			Driveway / Weir Flow			Pipe Flow (48")			Elmwood Road / Weir Flow		
				Flow Depth, inch	Flow cfs	%	Depth inch	Flow cfs	%	Flow Depth, inch	Flow cfs	%	Depth inch	Flow cfs	%
1	2.85	85.5	19.2	48	85.4	100	0	0	48	82.6	93	2	6.5	7	
2	3.44	136.0	30.5	48	119.8	88	2	15.8	48	87.5	59	7	61.6	41	
5	4.31	219.5	49.2	48	130.7	60	8	88.8	48	92.1	38	11	149.7	62	
10	5.12	304.7	68.1	48	135.9	45	13	168.4	48	95.3	28	14	240.1	72	
25	6.43	451.6	100.4	48	142.7	32	19	308.7	48	99.3	20	18	398.7	80	
50	7.64	593.3	131.5	48	148.2	25	24	445.0	48	102.5	16	22	551.9	84	
100	9.09	767.4	169.7	48	152.4	20	28	614.2	48	105.8	12	25	742.3	88	

It is important to note that the overtopping noted in Table T-2 occurs without the construction of the Dedvukaj residence.

Post Development / Proposed Without Modifying the Elmwood Road Crossing Condition:

This condition analyses the watershed with the development of the Dedvukaj site. The development of this site includes the installation of a 20-foot clear span bridge over the existing stream channel that traverses the Dedvukaj site generally along its eastern boundary. The details of the development of this lot are shown on the plans prepared by this office and part of this application.

The resulting stormwater flows and the impact they will have on the crossings located adjacent to the Dedvukaj site are presented in “**Table T-3 – Dedvukaj – Proposed Conditions Zef Bridge & 48 inch in Elmwood Stormwater Flows**”.

For all storms up to the 25-year, 6.43-inch rainfall the Dedvukaj proposed bridge can accommodate the flows from subcatchment S1, the larger of the two subcatchments that are tributary to the Elmwood Road crossing. For both the 50-year, 7.64-inch rain fall event and the 100-year, 9.09 rainfall event, there will be some overtopping of the Dedvukaj bridge for a short period of time, approximately 50 minutes for the 100-year event and 5 minutes for the 50-year event. It was felt that the potential inconvenience of the driveway closing for up to 50 minutes with a 1% likelihood of occurring in any one year was a reasonable and allowed the bridge to have a 20-foot span with no disturbance to the stream bed.

Post Development / Proposed With Modifying the Elmwood Road Crossing Condition:

This condition analyses the watershed with the Dedvukaj development complete and the installation of a 7-foot-high by 14-foot-wide box culvert crossing from west to east under Elmwood Road. Based on the analysis this size box culvert is necessary to convey the stormwater flows across Elmwood Road. This improvement would eliminate the Elmwood Road flooding that currently occurs for all design storms considered, starting with the 1 year, 2.85-inch rain storm.

With the 100-year, 9.09-inch rainfall the capacity of the box culvert is exceeded and there will be minor ponding on the west side of Elmwood Road. This ponding will not result in the overtopping of Elmwood Road.

The resulting stormwater flows and the impact they will have on the crossings located adjacent to the Dedvukaj site are presented in “**Table T-4 – Dedvukaj – Proposed Conditions Zef Bridge & 7-ft x 14 ft in Elmwood Stormwater Flows**”.



Table T-3: Dedvukaj – Proposed Conditions: Zef Bridge & 48 inch in Elmwood Stormwater Flows																						
Storm Event	Rain-fall	S1 Flows	S2 Flows	Spencer Driveway Crossing (48-inch cmp)				Zef Dedvukaj Bridge (20-foot Clear Span)				Elmwood Road Crossing (48-inch HDPE)										
year	inch	cfs	cfs	Pipe Flow (48 inch)			Driveway / Weir Flow			Under New Bridge (48 inch clearance)			Driveway / Weir Flow			Pipe Flow (48 inch)			Elmwood Road / Weir Flow			
				Flow Depth inch	Flow cfs	%	Depth inch	Flow cfs	%	Flow Depth inch	Flow cfs	%	Flow Depth inch	Flow cfs	%	Flow Depth inch	Flow cfs	%	Flow Depth inch	Flow cfs	%	
1	2.85	85.5	19.2	48	85.4	100	0	0	0	18	85.4	100	0	0	0	0	48	82.5	93	2	6.5	7
2	3.44	136.0	30.5	48	119.8	88	2	16.2	12	25	135.9	100	0	0	0	0	48	87.5	59	7	61.8	41
5	4.31	219.5	49.2	48	130.7	60	8	88.8	40	33	219.5	100	0	0	0	0	48	92.1	38	11	149.7	62
10	5.12	304.7	68.1	48	131.3	43	13	173.0	57	40	304.5	100	0	0	0	0	48	95.3	28	14	239.9	72
25	6.43	451.6	100.4	48	127.0	28	19	324.1	72	48	451.4	100	0	0	0	0	48	99.3	20	18	398.3	80
50	7.64	593.3	131.5	48	119.7	20	25	472.6	80	48	588.3	99	2	4.7	1	48	102.5	16	22	551.4	84	
100	9.09	767.4	169.7	48	111.8	15	29	655.3	85	48	604.1	79	15	163.1	21	48	105.8	12	25	741.5	88	

Table T-4: Dedvukaj – Proposed Conditions Zef Bridge & 7-ft x 14-ft in Elmwood Stormwater Flows																				
Storm Event	Rain-fall	S1 Flows	S2 Flows	Spencer Driveway Crossing (48-inch cmp)					Zef Dedvukaj Bridge (20-foot Clear Span)					Elmwood Road Crossing (7-ft x 14 ft Box Culvert)						
year	inch	cfs	cfs	Pipe Flow (48 inch)			Driveway / Weir Flow			Under New Bridge (48 inch clearance)			Driveway / Weir Flow			Box Culvert Flow (84 inch clearance)			Elmwood Road / Weir Flow	
				Flow Depth inch	Flow cfs	%	Depth inch	Flow cfs	%	Flow Depth inch	Flow cfs	%	Flow Depth inch	Flow cfs	%	Flow Depth inch	Flow cfs	%	Flow Depth inch	Flow cfs
1	2.85	85.5	19.2	48	85.4	100	0	0	0	17	85.4	100	0	0	0	20	94.3	100	0	0
2	3.44	136.0	30.5	48	119.8	88	2	15.8	12	22	136.0	100	0	0	0	27	149.5	100	0	0
5	4.31	219.5	49.2	48	130.7	60	8	88.8	40	30	219.5	100	0	0	0	38	241.9	100	0	0
10	5.12	304.7	68.1	48	135.6	45	12	168.7	55	36	304.5	100	0	0	0	48	336.0	100	0	0
25	6.43	451.6	100.4	48	131.7	29	19	319.4	71	46	451.4	100	0	0	0	63	498.3	100	0	0
50	7.64	593.3	131.5	48	127.2	21	25	465.6	79	48	593.1	100	0	0	0	76	654.4	100	0	0
100	9.09	767.4	169.7	48	117.4	15	29	649.9	85	48	724.1	94	8	43.1	6	90	846.2	100	0	0



### Conclusions:

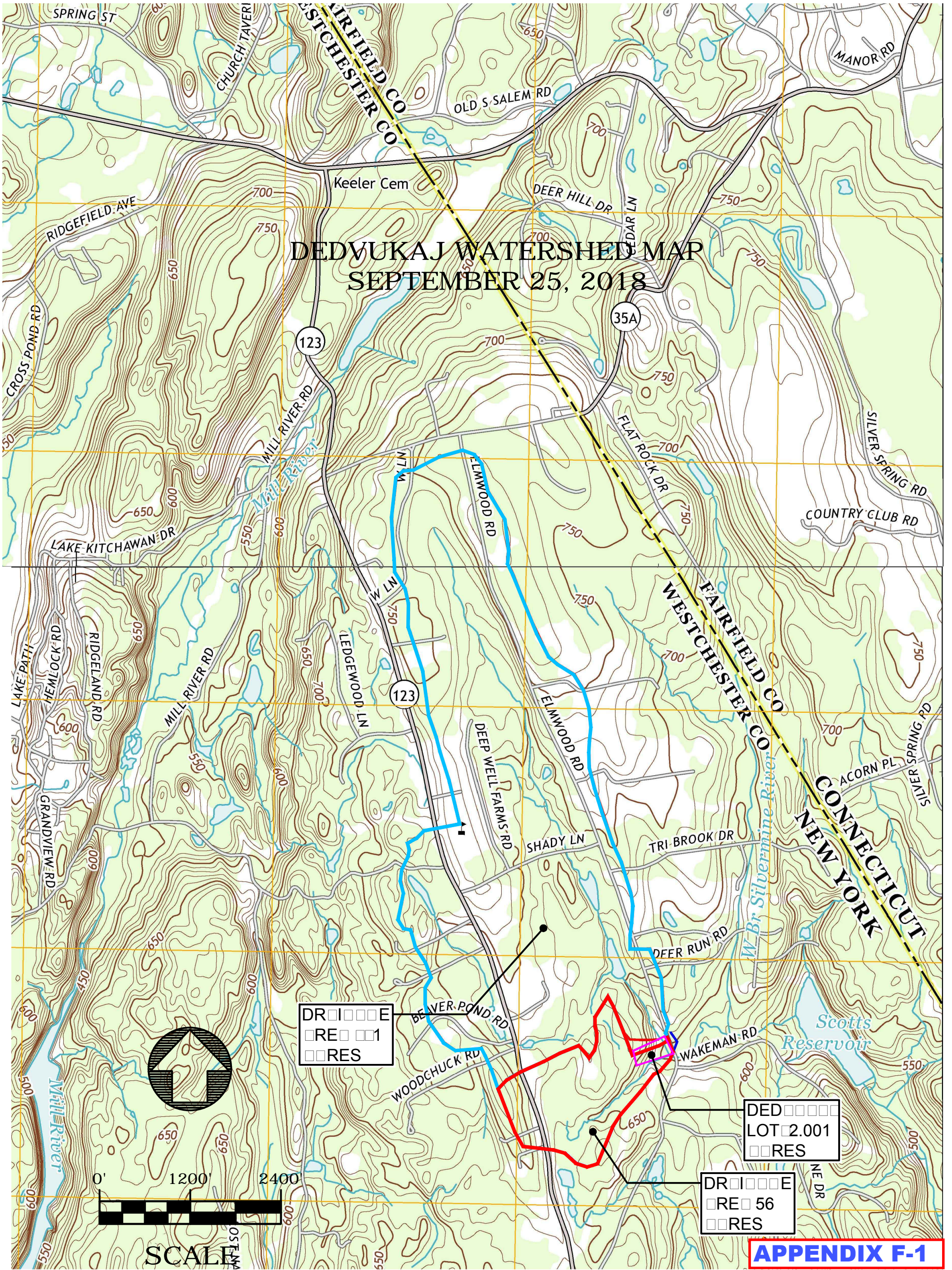
From the analysis presented, as well as information provided by the Town, this location on Elmwood Road, in front of the Dedvukaj site, currently floods and will continue to do so for even modest rainfall events with or without the construction of the Dedvukaj residence. This is a result of both the limited capacity of the existing 48-inch HDPE culvert crossing Elmwood Road, from west to east, as well as obstructions that will restrict the amount of stormwater than can enter this culvert.

Upon completion of the Dedvukaj development there will be no increase in the stormwater flows at the Elmwood Road crossing. The condition will not be made any worse through this development. In fact, there will be a slight decrease for all storms considered in the stormwater flows to this area. For the 100-year storm, 9.09-inch rainfall, there will be a decrease of 0.08%, or 0.72 cubic feet per second (cfs), of the total flow in the existing condition which is 842.32 cfs. For the other storms decrease will be less.

The final analysis presented models replacing the existing Elmwood Road crossing with an appropriately sized drainage structure. The structure modeled is a 7-foot-high by 14-foot-wide concrete box culvert. As noted, even with this replacement, there will still be slight ponding on the west side of Elmwood Road however there would be no overtopping, or flooding, of Elmwood Road even with a 100-year, 9.09-inch storm event.



APPENDIX F-1







United States  
Department of  
Agriculture

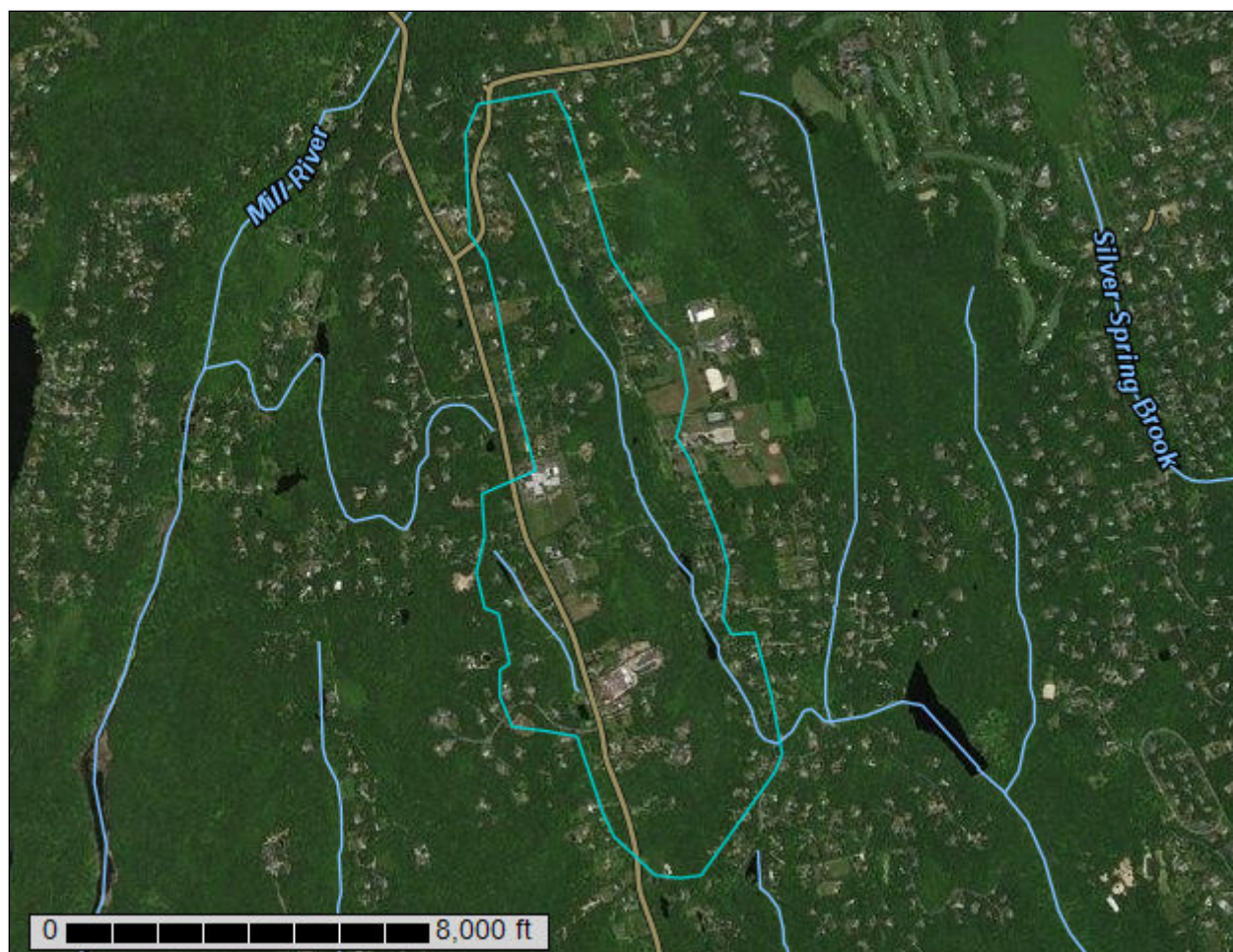
**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

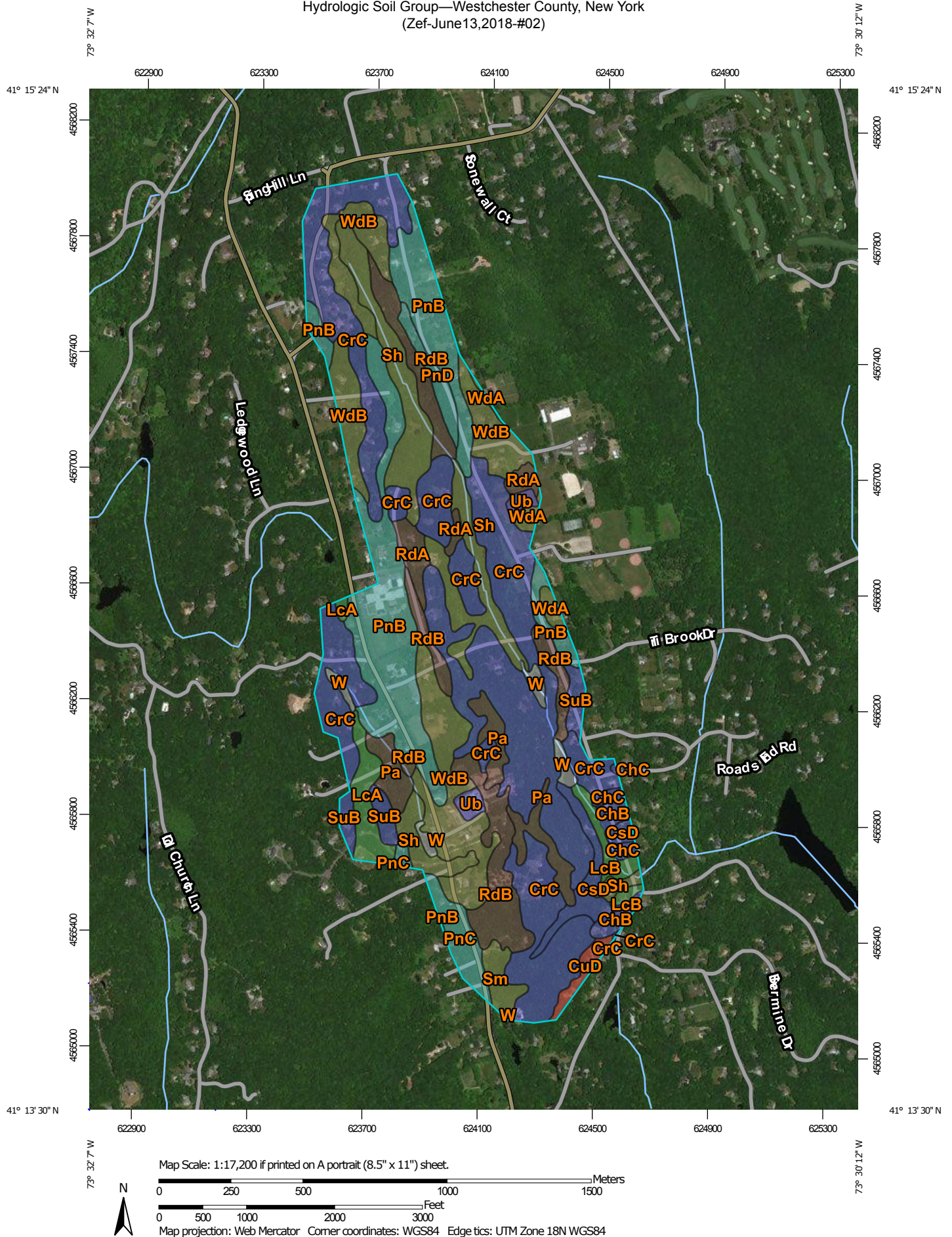
# Custom Soil Resource Report for **Westchester County, New York**

**Zef-June13,2018-#01**






Hydrologic Soil Group—Westchester County, New York  
(Zef-June13,2018-#02)





## MAP LEGEND

### Area of Interest (AOI)









 Area of Interest (AOI)

### Soils

#### Soil Rating Polygons





 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Lines

 A  
 A/D  
 B  
 B/D  
 C  
 C/D  
 D  
 Not rated or not available

#### Soil Rating Points

 A  
 A/D  
 B  
 B/D

 C  
 C/D  
 D  
 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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

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

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

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

Soil Survey Area: Westchester County, New York  
 Survey Area Data: Version 13, Oct 8, 2017

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

Date(s) aerial images were photographed: Dec 31, 2009—Oct 5, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
ChB	Charlton fine sandy loam, 3 to 8 percent slopes	B	4.9	1.0%
ChC	Charlton fine sandy loam, 8 to 15 percent slopes	B	2.4	0.5%
CrC	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	B	158.8	33.8%
CsD	Chatfield-Charlton complex, 15 to 35 percent slopes, very rocky	B	9.6	2.0%
CuD	Chatfield-Hollis-Rock outcrop complex, 15 to 35 percent slopes	D	3.4	0.7%
LcA	Leicester loam, 0 to 3 percent slopes, stony	A/D	9.9	2.1%
LcB	Leicester loam, 3 to 8 percent slopes, stony	A/D	5.5	1.2%
Pa	Natchaug muck, 0 to 2 percent slopes	B/D	16.9	3.6%
PnB	Paxton fine sandy loam, 3 to 8 percent slopes	C	72.5	15.4%
PnC	Paxton fine sandy loam, 8 to 15 percent slopes	C	8.6	1.8%
PnD	Paxton fine sandy loam, 15 to 25 percent slopes	C	5.3	1.1%
RdA	Ridgebury loam, 0 to 3 percent slopes	B/D	8.1	1.7%
RdB	Ridgebury loam, 3 to 8 percent slopes	B/D	36.3	7.7%
Sh	Sun loam	C/D	43.7	9.3%
Sm	Sun loam, extremely stony	C/D	5.2	1.1%
SuB	Sutton loam, 3 to 8 percent slopes	B	8.5	1.8%
Ub	Udorthents, smoothed	B	3.5	0.8%
W	Water		5.7	1.2%
WdA	Woodbridge loam, 0 to 3 percent slopes	C/D	3.9	0.8%



Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
WdB	Woodbridge loam, 3 to 8 percent slopes	C/D	57.0	12.1%
<b>Totals for Area of Interest</b>			<b>469.7</b>	<b>100.0%</b>

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

**APPENDIX F-3**

# Extreme Precipitation Tables

## Northeast Regional Climate Center

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

<b>Smoothing</b>	Yes
<b>State</b>	New York
<b>Location</b>	
<b>Longitude</b>	73.513 degrees West
<b>Latitude</b>	41.232 degrees North
<b>Elevation</b>	0 feet
<b>Date/Time</b>	Wed, 13 Dec 2017 12:05:27 -0500

### Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
<b>1yr</b>	0.33	0.51	0.63	0.82	1.03	1.29	<b>1yr</b>	0.89	1.22	1.48	1.85	2.29	2.85	3.20	<b>1yr</b>	2.53	3.08	3.55	4.25	4.91	<b>1yr</b>
<b>2yr</b>	0.40	0.61	0.76	1.00	1.26	1.57	<b>2yr</b>	1.08	1.47	1.81	2.25	2.78	3.44	3.85	<b>2yr</b>	3.04	3.70	4.24	5.03	5.68	<b>2yr</b>
<b>5yr</b>	0.46	0.72	0.91	1.21	1.55	1.97	<b>5yr</b>	1.34	1.82	2.28	2.83	3.50	4.31	4.87	<b>5yr</b>	3.82	4.68	5.39	6.30	7.07	<b>5yr</b>
<b>10yr</b>	0.52	0.82	1.03	1.40	1.82	2.33	<b>10yr</b>	1.57	2.13	2.70	3.37	4.17	5.12	5.81	<b>10yr</b>	4.53	5.59	6.46	7.47	8.34	<b>10yr</b>
<b>25yr</b>	0.61	0.96	1.23	1.70	2.26	2.92	<b>25yr</b>	1.95	2.64	3.40	4.25	5.26	6.43	7.35	<b>25yr</b>	5.69	7.07	8.21	9.36	10.39	<b>25yr</b>
<b>50yr</b>	0.69	1.10	1.41	1.98	2.66	3.46	<b>50yr</b>	2.30	3.11	4.05	5.07	6.25	7.64	8.78	<b>50yr</b>	6.77	8.45	9.86	11.11	12.27	<b>50yr</b>
<b>100yr</b>	0.78	1.26	1.63	2.31	3.14	4.11	<b>100yr</b>	2.71	3.66	4.82	6.04	7.45	9.09	10.50	<b>100yr</b>	8.04	10.10	11.84	13.19	14.49	<b>100yr</b>
<b>200yr</b>	0.88	1.44	1.87	2.69	3.71	4.89	<b>200yr</b>	3.20	4.31	5.74	7.21	8.88	10.81	12.55	<b>200yr</b>	9.57	12.07	14.22	15.66	17.12	<b>200yr</b>
<b>500yr</b>	1.06	1.75	2.28	3.31	4.63	6.14	<b>500yr</b>	4.00	5.36	7.23	9.08	11.19	13.60	15.91	<b>500yr</b>	12.04	15.30	18.14	19.66	21.36	<b>500yr</b>

### Lower Confidence Limits

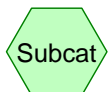
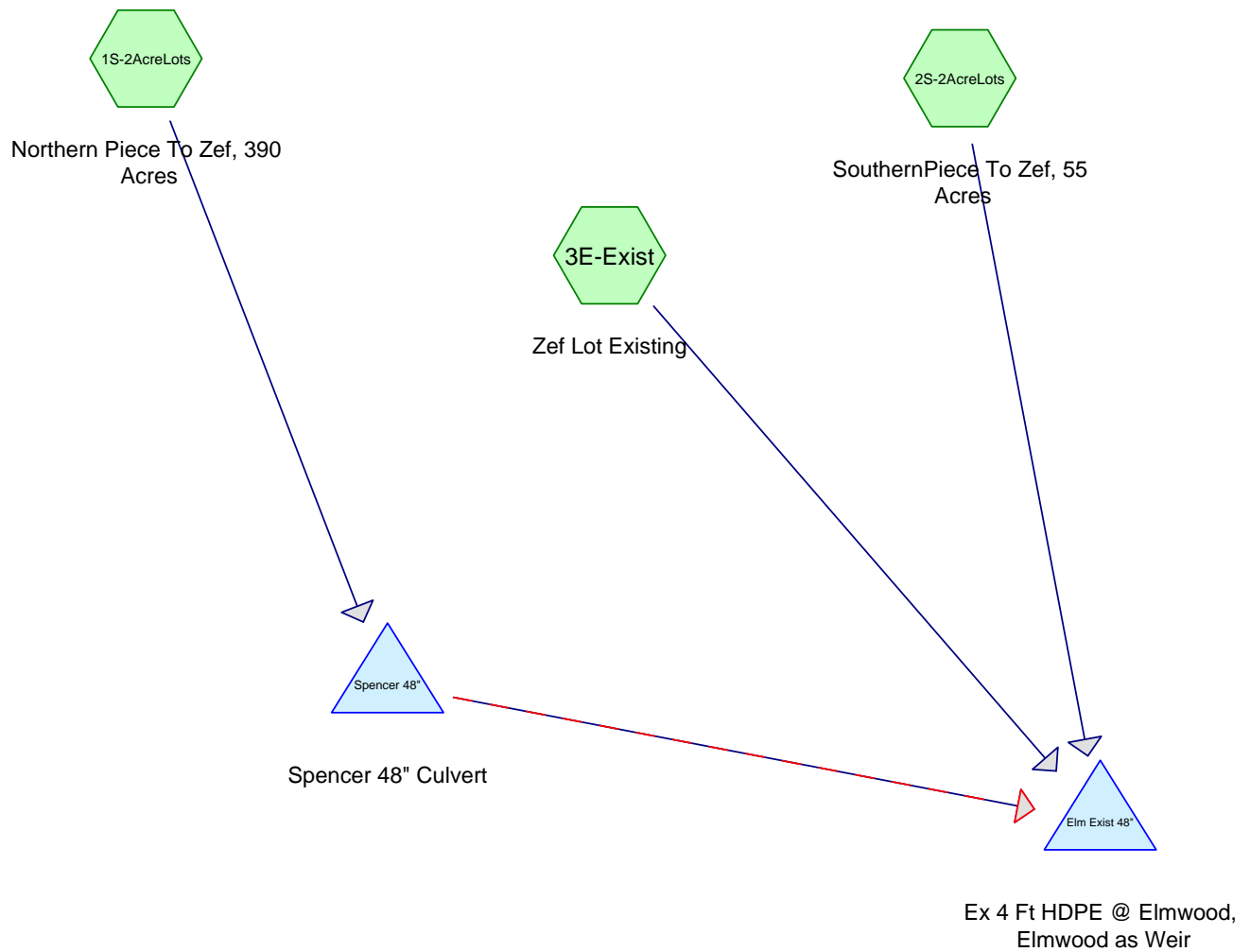
	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
<b>1yr</b>	0.25	0.38	0.46	0.63	0.77	0.95	<b>1yr</b>	0.66	0.93	1.25	1.61	2.03	2.52	2.69	<b>1yr</b>	2.23	2.59	3.23	3.73	4.56	<b>1yr</b>
<b>2yr</b>	0.38	0.59	0.73	0.98	1.21	1.46	<b>2yr</b>	1.05	1.43	1.68	2.14	2.71	3.34	3.73	<b>2yr</b>	2.96	3.59	4.11	4.88	5.52	<b>2yr</b>
<b>5yr</b>	0.42	0.65	0.81	1.11	1.42	1.72	<b>5yr</b>	1.22	1.68	1.96	2.53	3.18	3.98	4.49	<b>5yr</b>	3.52	4.31	4.95	5.78	6.51	<b>5yr</b>
<b>10yr</b>	0.46	0.71	0.88	1.22	1.58	1.94	<b>10yr</b>	1.36	1.90	2.21	2.89	3.59	4.55	5.14	<b>10yr</b>	4.03	4.94	5.71	6.50	7.34	<b>10yr</b>
<b>25yr</b>	0.50	0.76	0.95	1.36	1.78	2.24	<b>25yr</b>	1.54	2.19	2.59	3.42	4.23	5.42	6.13	<b>25yr</b>	4.80	5.89	6.87	7.59	8.62	<b>25yr</b>
<b>50yr</b>	0.53	0.81	1.01	1.45	1.95	2.48	<b>50yr</b>	1.69	2.43	2.94	3.91	4.78	6.20	7.01	<b>50yr</b>	5.49	6.74	7.92	8.55	9.73	<b>50yr</b>
<b>100yr</b>	0.57	0.86	1.08	1.56	2.14	2.75	<b>100yr</b>	1.84	2.69	3.34	4.48	5.32	7.11	8.03	<b>100yr</b>	6.29	7.72	9.16	9.61	10.98	<b>100yr</b>
<b>200yr</b>	0.61	0.91	1.16	1.68	2.34	3.04	<b>200yr</b>	2.02	2.97	3.79	5.14	6.02	8.12	9.24	<b>200yr</b>	7.19	8.89	10.62	10.80	12.42	<b>200yr</b>
<b>500yr</b>	0.66	0.98	1.26	1.84	2.61	3.48	<b>500yr</b>	2.25	3.40	4.49	6.21	7.08	9.73	11.16	<b>500yr</b>	8.61	10.73	12.93	12.62	14.63	<b>500yr</b>

### Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
<b>1yr</b>	0.37	0.56	0.69	0.93	1.14	1.37	<b>1yr</b>	0.98	1.34	1.59	2.03	2.53	3.12	3.48	<b>1yr</b>	2.76	3.34	3.82	4.57	5.21	<b>1yr</b>
<b>2yr</b>	0.42	0.65	0.80	1.08	1.34	1.57	<b>2yr</b>	1.15	1.53	1.79	2.29	2.87	3.57	4.04	<b>2yr</b>	3.16	3.89	4.42	5.27	5.91	<b>2yr</b>
<b>5yr</b>	0.51	0.78	0.97	1.33	1.69	2.00	<b>5yr</b>	1.46	1.95	2.31	2.97	3.70	4.65	5.29	<b>5yr</b>	4.12	5.09	5.85	6.83	7.64	<b>5yr</b>
<b>10yr</b>	0.60	0.92	1.14	1.59	2.05	2.42	<b>10yr</b>	1.77	2.36	2.81	3.60	4.51	5.71	6.54	<b>10yr</b>	5.05	6.28	7.26	8.36	9.29	<b>10yr</b>
<b>25yr</b>	0.76	1.15	1.43	2.04	2.69	3.13	<b>25yr</b>	2.32	3.06	3.64	4.66	5.84	7.49	8.66	<b>25yr</b>	6.63	8.32	9.66	10.94	12.07	<b>25yr</b>
<b>50yr</b>	0.90	1.37	1.70	2.45	3.30	3.81	<b>50yr</b>	2.84	3.73	4.44	5.66	7.13	9.19	10.70	<b>50yr</b>	8.14	10.29	11.99	13.45	14.73	<b>50yr</b>
<b>100yr</b>	1.08	1.63	2.05	2.96	4.06	4.64	<b>100yr</b>	3.50	4.54	5.40	6.88	9.11	11.28	13.22	<b>100yr</b>	9.99	12.71	14.84	16.52	17.97	<b>100yr</b>
<b>200yr</b>	1.30	1.96	2.48	3.59	5.00	5.66	<b>200yr</b>	4.32	5.53	6.57	8.35	11.19	13.84	16.34	<b>200yr</b>	12.25	15.71	18.41	20.29	21.92	<b>200yr</b>
<b>500yr</b>	1.68	2.49	3.21	4.66	6.63	7.36	<b>500yr</b>	5.72	7.19	8.52	10.79	14.75	18.13	21.59	<b>500yr</b>	16.05	20.76	24.38	26.53	28.48	<b>500yr</b>



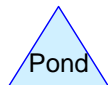
## APPENDIX F-4a



Subcat



Reach



Pond



Link

**Routing Diagram for Zef-Elmwood-SWPPP Input-20180920**  
Prepared by Cronin Engineering PE PC, Printed 9/20/2018  
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**Zef-Elmwood-SWPPPInput-20180920**

Prepared by Cronin Engineering PE PC

HydroCAD® 10.00 s/n 00826 © 2011 HydroCAD Software Solutions LLC

Zef-Existing-25yr

Type III 24-hr 25 year storm Rainfall=6.43"

Printed 9/20/2018 10:24:06 AM

Page 2

**Summary for Subcatchment 1S-2AcreLots: Northern Piece To Zef, 390 Acres**

Runoff = 451.59 cfs @ 13.26 hrs, Volume= 97.813 af, Depth&gt; 3.01"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs

Type III 24-hr 25 year storm Rainfall=6.43"

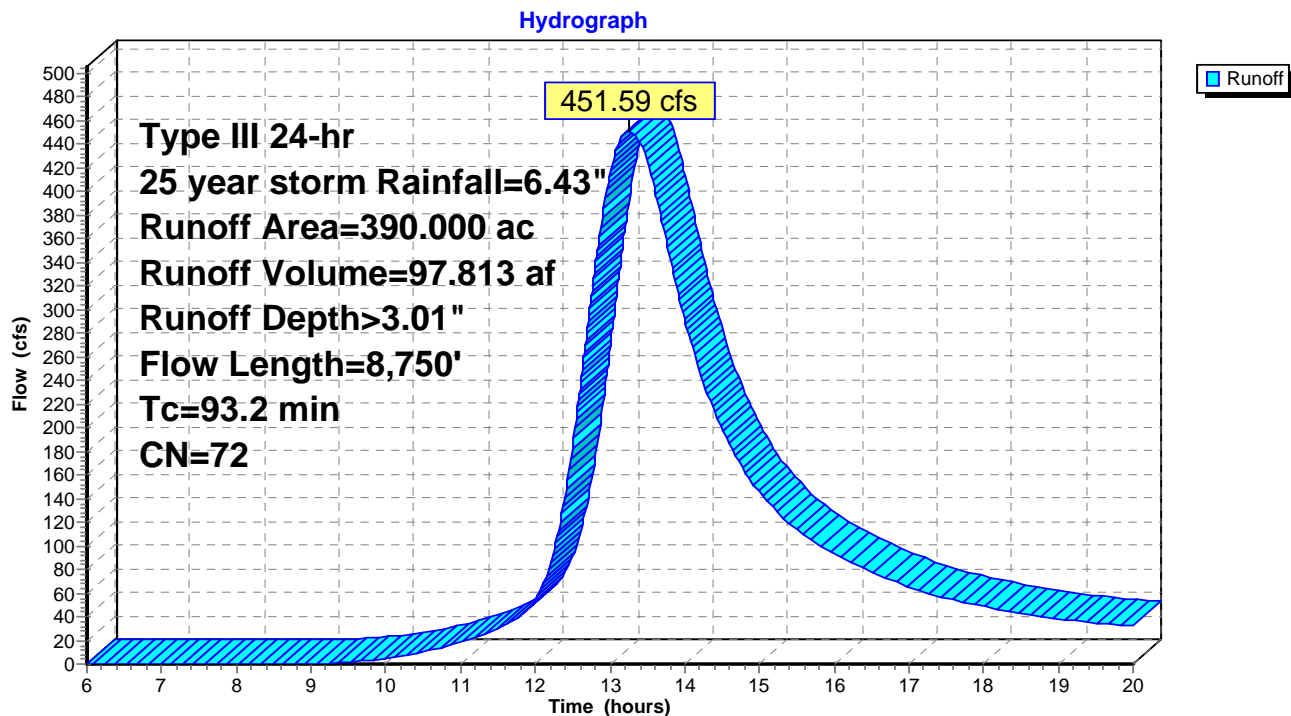
Area (ac)	CN	Description
5.070	46	2 acre lots, 12% imp, HSG A
189.540	65	2 acre lots, 12% imp, HSG B
118.170	77	2 acre lots, 12% imp, HSG C
72.150	82	2 acre lots, 12% imp, HSG D
* 5.070	99	water
390.000	72	Weighted Average
338.738		86.86% Pervious Area
51.262		13.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
36.8	100	0.0200	0.05		<b>Sheet Flow, Spring To Start of Stream</b> Woods: Dense underbrush n= 0.800 P2= 3.30"
33.7	1,600	0.0250	0.79		<b>Shallow Concentrated Flow, Initial concentrated flow, through v</b> Woodland Kv= 5.0 fps
11.6	1,900	0.0130	2.73	32.80	<b>Channel Flow, Initial stream flow</b> Area= 12.0 sf Perim= 10.0' r= 1.20' n= 0.070 Sluggish weedy reaches w/pools
11.1	5,150	0.0210	7.71	185.07	<b>Channel Flow, Behind MPES To Elmwood</b> Area= 24.0 sf Perim= 14.0' r= 1.71' n= 0.040 Winding stream, pools & shoals
93.2	8,750	Total			



**Subcatchment 1S-2AcreLots: Northern Piece To Zef, 390 Acres**



**Summary for Subcatchment 2S-2AcreLots: SouthernPiece To Zef, 55 Acres**

Runoff = 100.42 cfs @ 12.63 hrs, Volume= 14.070 af, Depth&gt; 3.07"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs

Type III 24-hr 25 year storm Rainfall=6.43"

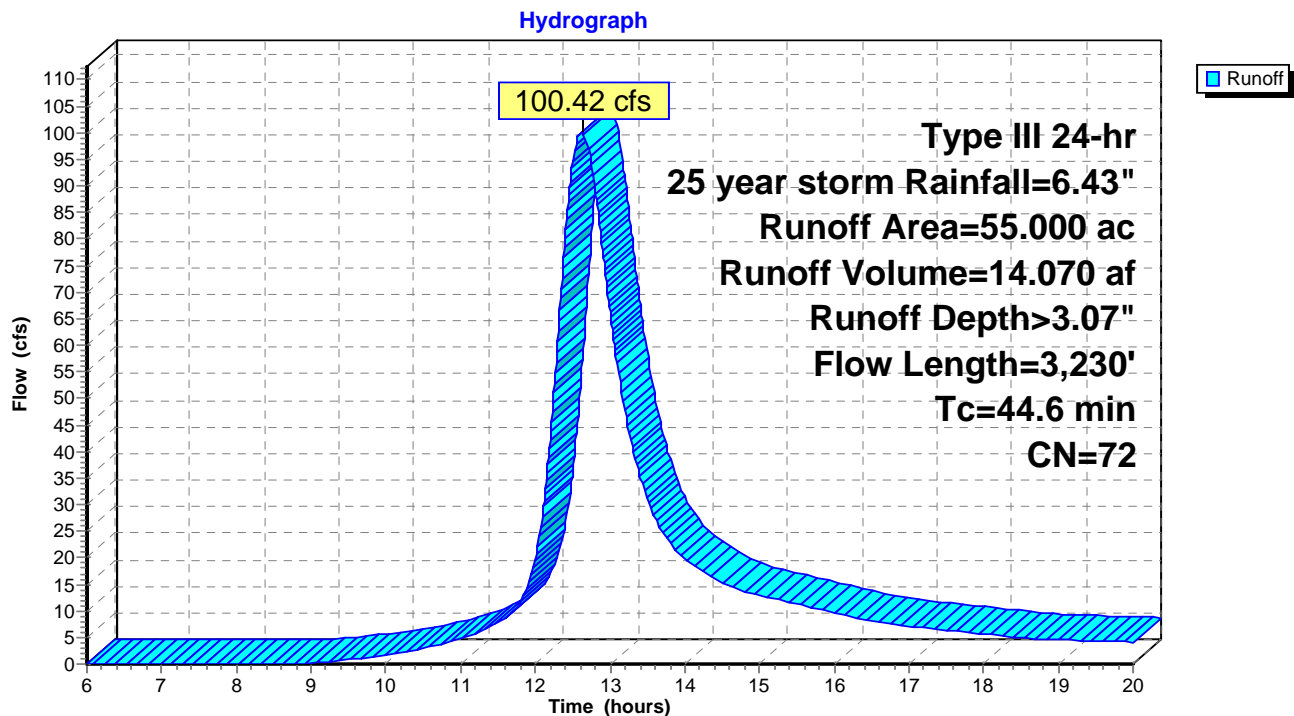
Area (ac)	CN	Description
0.720	46	2 acre lots, 12% imp, HSG A
26.730	65	2 acre lots, 12% imp, HSG B
16.670	77	2 acre lots, 12% imp, HSG C
10.170	82	2 acre lots, 12% imp, HSG D
* 0.710	99	water
55.000	72	Weighted Average
47.775		86.86% Pervious Area
7.225		13.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	100	0.0200	0.08		<b>Sheet Flow, West of Rt 35, Yard</b> Woods: Light underbrush n= 0.400 P2= 3.30"
3.8	400	0.1250	1.77		<b>Shallow Concentrated Flow, Down Slope, Across Rt 35</b> Woodland Kv= 5.0 fps
16.7	1,300	0.0670	1.29		<b>Shallow Concentrated Flow, East of Rt 35</b> Woodland Kv= 5.0 fps
3.0	1,430	0.0350	7.85	94.18	<b>Channel Flow, Channel To Zef</b> Area= 12.0 sf Perim= 10.0' r= 1.20' n= 0.040 Winding stream, pools & shoals
44.6	3,230	Total			



**Subcatchment 2S-2AcreLots: SouthernPiece To Zef, 55 Acres**



**Zef-Elmwood-SWPPPInput-20180920**

Prepared by Cronin Engineering PE PC

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Zef-Existing-25yr

Type III 24-hr 25 year storm Rainfall=6.43"

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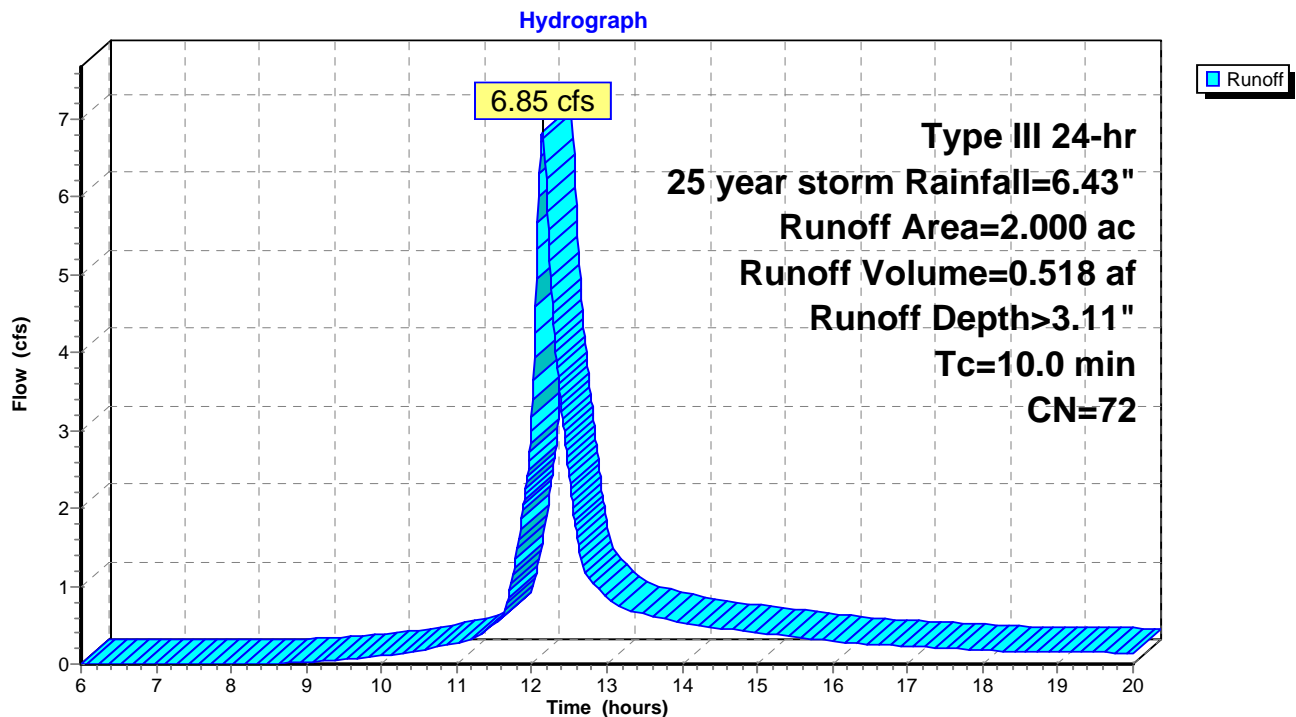
**Summary for Subcatchment 3E-Exist: Zef Lot Existing**

Runoff = 6.85 cfs @ 12.14 hrs, Volume= 0.518 af, Depth&gt; 3.11"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs  
Type III 24-hr 25 year storm Rainfall=6.43"

Area (ac)	CN	Description
* 1.300	79	front flat area & rock outcrops, fair condition, (C soil)
* 0.600	55	upland, woods behind house, good condition, (B soil)
* 0.100	88	wetland, sun loam (D soil)
2.000	72	Weighted Average
2.000		100.00% Pervious Area

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

**Subcatchment 3E-Exist: Zef Lot Existing**



**Summary for Pond Elm Exist 48": Ex 4 Ft HDPE @ Elmwood, Elmwood as Weir**

Inflow Area = 447.000 ac, 13.08% Impervious, Inflow Depth > 3.02" for 25 year storm event  
 Inflow = 498.94 cfs @ 13.16 hrs, Volume= 112.400 af  
 Outflow = 498.20 cfs @ 13.19 hrs, Volume= 112.172 af, Atten= 0%, Lag= 1.5 min  
 Primary = 99.28 cfs @ 13.19 hrs, Volume= 54.490 af  
 Secondary = 398.91 cfs @ 13.19 hrs, Volume= 57.682 af

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs  
 Peak Elev= 601.32' @ 13.19 hrs Surf.Area= 39,902 sf Storage= 106,242 cf

Plug-Flow detention time= 5.7 min calculated for 112.092 af (100% of inflow)  
 Center-of-Mass det. time= 5.0 min ( 862.0 - 856.9 )

Volume	Invert	Avail.Storage	Storage Description		
#1	595.00'	243,783 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
595.00	0	0.0	0	0	0
596.00	1,900	250.0	633	633	4,975
598.00	14,750	780.0	14,629	15,263	48,429
600.00	30,725	875.0	44,509	59,771	61,049
602.00	45,100	1,000.0	75,367	135,138	79,794
604.00	64,100	1,150.0	108,645	243,783	105,548

Device	Routing	Invert	Outlet Devices
#1	Primary	595.00'	<b>48.0" Round Culvert</b> L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 595.00' / 594.00' S= 0.0250 1' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 12.57 sf
#2	Secondary	599.80'	<b>30.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Secondary	600.00'	<b>50.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#4	Secondary	600.80'	<b>50.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#5	Secondary	601.90'	<b>40.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

# Zef-Elmwood-SWPPPInput-20180920

Prepared by Cronin Engineering PE PC

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Zef-Existing-25yr

Type III 24-hr 25 year storm Rainfall=6.43"

Printed 9/20/2018 10:24:06 AM

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**Primary OutFlow** Max=99.28 cfs @ 13.19 hrs HW=601.32' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 99.28 cfs @ 7.90 fps)

**Secondary OutFlow** Max=398.72 cfs @ 13.19 hrs HW=601.32' (Free Discharge)

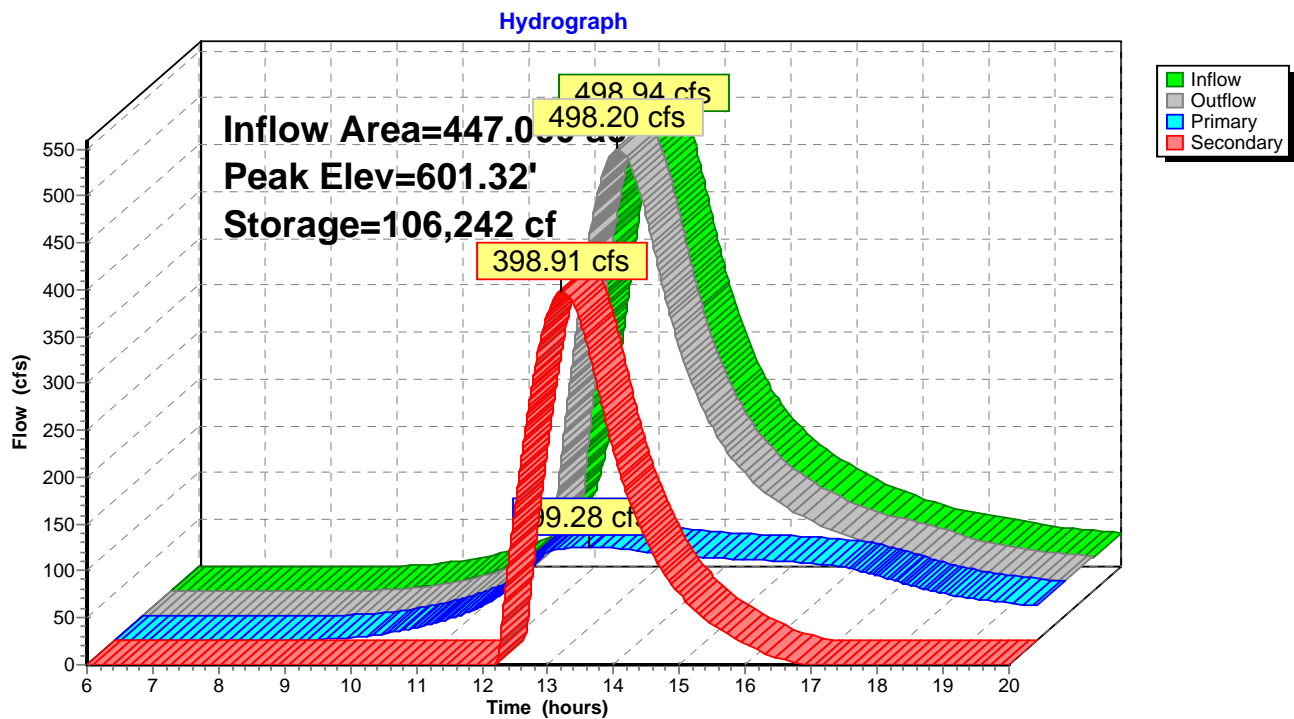
↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 148.04 cfs @ 3.25 fps)

↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 200.11 cfs @ 3.03 fps)

↑ **4=Broad-Crested Rectangular Weir** (Weir Controls 50.57 cfs @ 1.95 fps)

↑ **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

## Pond Elm Exist 48": Ex 4 Ft HDPE @ Elmwood, Elmwood as Weir



**Summary for Pond Spencer 48": Spencer 48" Culvert**

Inflow Area = 390.000 ac, 13.14% Impervious, Inflow Depth > 3.01" for 25 year storm event  
 Inflow = 451.59 cfs @ 13.26 hrs, Volume= 97.813 af  
 Outflow = 451.45 cfs @ 13.26 hrs, Volume= 97.811 af, Atten= 0%, Lag= 0.5 min  
 Primary = 142.72 cfs @ 13.26 hrs, Volume= 62.063 af  
 Secondary = 308.73 cfs @ 13.26 hrs, Volume= 35.748 af

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs  
 Peak Elev= 607.56' @ 13.26 hrs Surf.Area= 10,454 sf Storage= 14,859 cf

Plug-Flow detention time= 0.4 min calculated for 97.741 af (100% of inflow)  
 Center-of-Mass det. time= 0.4 min ( 862.0 - 861.6 )

Volume	Invert	Avail.Storage	Storage Description		
#1	600.00'	98,599 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
600.00	0	0.0	0	0	0
602.00	40	20.0	27	27	38
604.00	250	50.0	260	287	219
606.00	4,100	300.0	3,575	3,862	7,191
608.00	12,750	525.0	16,053	19,915	21,985
610.00	20,000	650.0	32,479	52,394	33,732
612.00	26,350	750.0	46,204	98,599	44,961

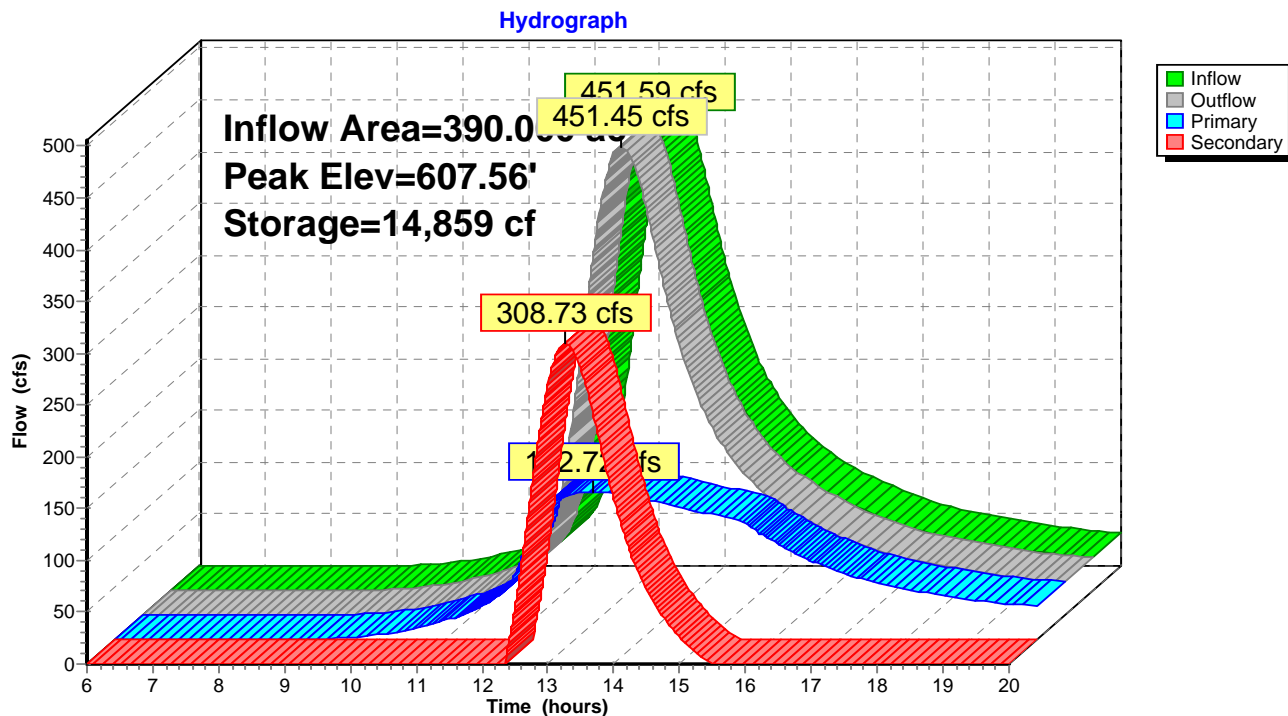
Device	Routing	Invert	Outlet Devices
#1	Primary	600.00'	<b>48.0" Round Culvert - 48" Under Driveway</b> L= 18.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 600.00' / 599.80' S= 0.0111 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 12.57 sf
#2	Secondary	606.00'	<b>60.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Secondary	608.00'	<b>90.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#4	Secondary	610.00'	<b>55.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

**Primary OutFlow** Max=142.72 cfs @ 13.26 hrs HW=607.56' TW=601.91' (Fixed TW Elev= 601.91')  
 1=Culvert - 48" Under Driveway (Inlet Controls 142.72 cfs @ 11.36 fps)

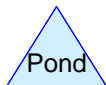
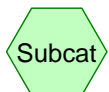
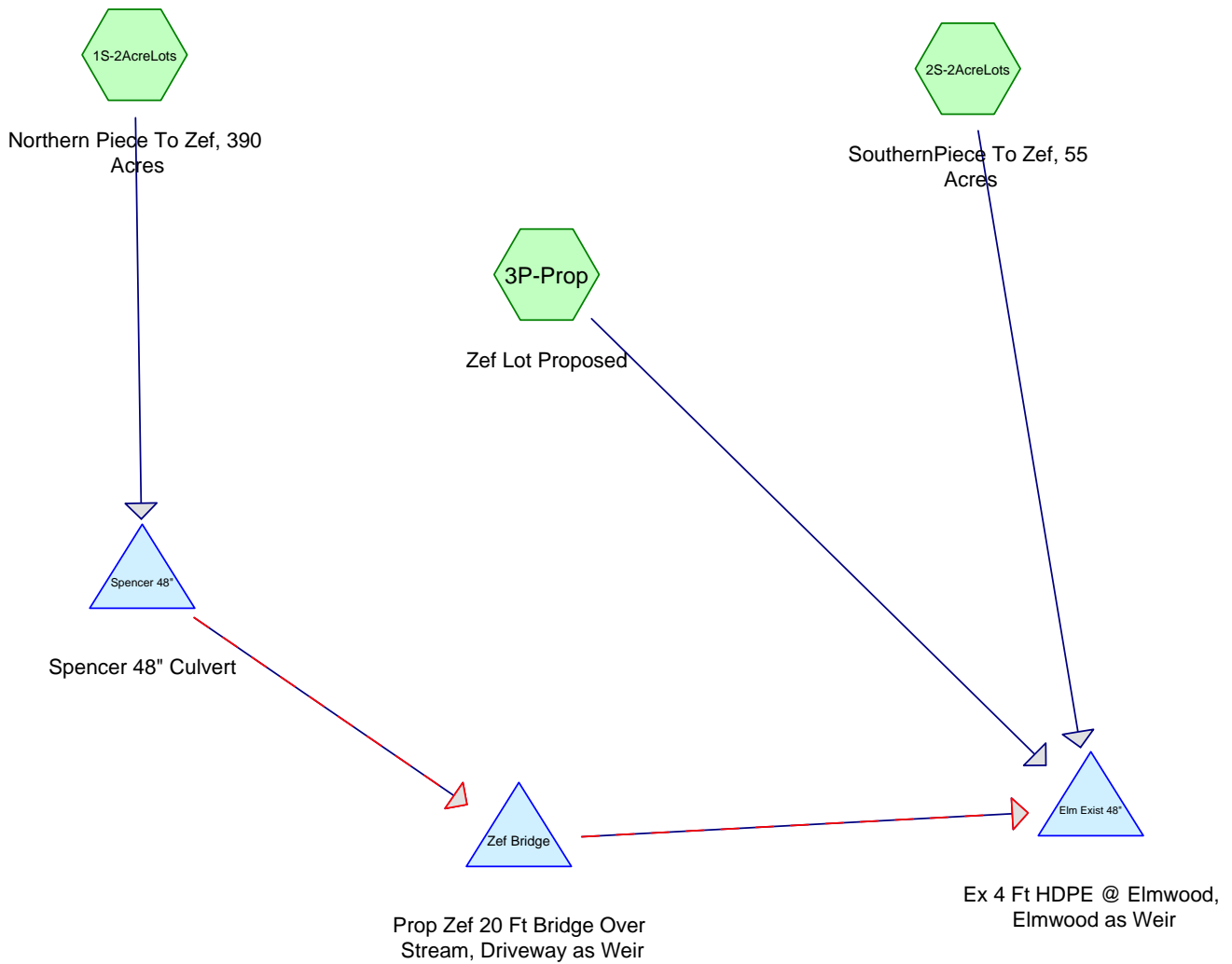
**Secondary OutFlow** Max=308.67 cfs @ 13.26 hrs HW=607.56' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Weir Controls 308.67 cfs @ 3.29 fps)  
 3=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)  
 4=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)



**Pond Spencer 48": Spencer 48" Culvert**



# APPENDIX F-4b



Routing Diagram for Zef-Elmwood-SWPPP Input-Modified Water Depth-Mike Macri Bridge-2018112

Prepared by Cronin Engineering PE PC, Printed 11/20/2018  
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### Summary for Subcatchment 1S-2AcreLots: Northern Piece To Zef, 390 Acres

Runoff = 451.59 cfs @ 13.26 hrs, Volume= 97.813 af, Depth> 3.01"

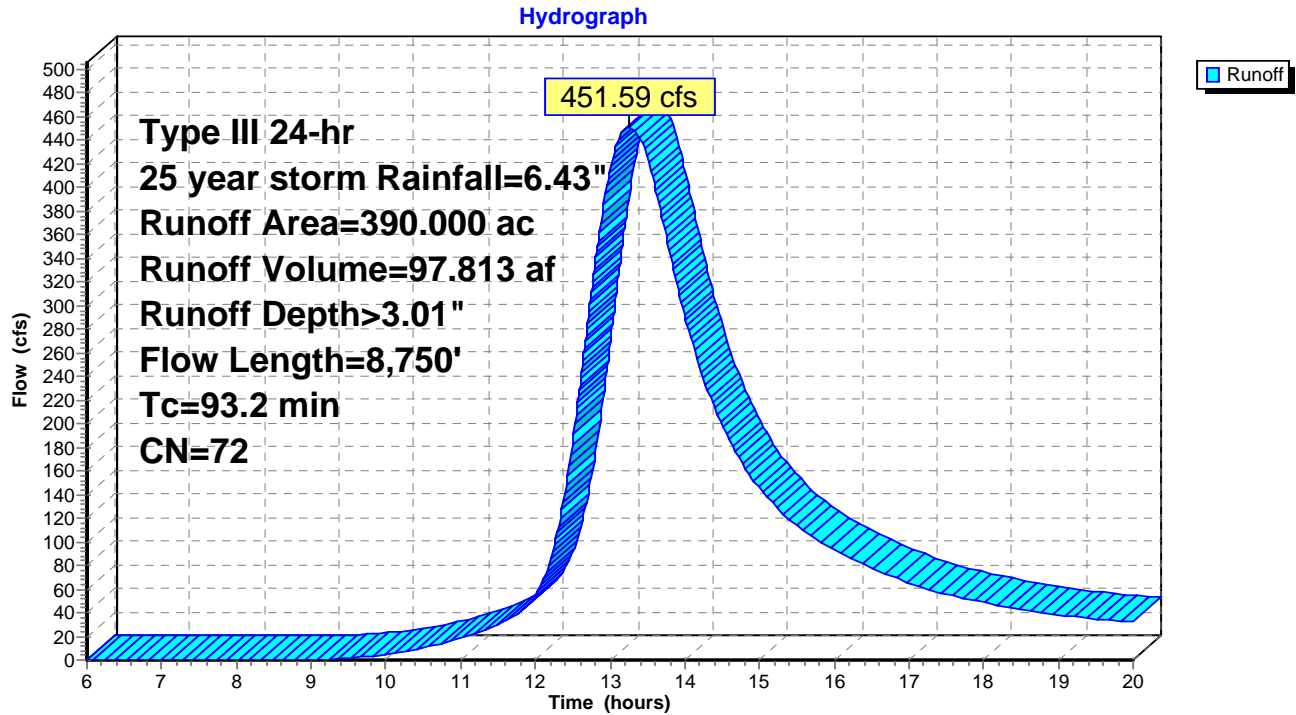
Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25 year storm Rainfall=6.43"

Area (ac)	CN	Description
5.070	46	2 acre lots, 12% imp, HSG A
189.540	65	2 acre lots, 12% imp, HSG B
118.170	77	2 acre lots, 12% imp, HSG C
72.150	82	2 acre lots, 12% imp, HSG D
* 5.070	99	water
390.000	72	Weighted Average
338.738		86.86% Pervious Area
51.262		13.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
36.8	100	0.0200	0.05		<b>Sheet Flow, Spring To Start of Stream</b> Woods: Dense underbrush n= 0.800 P2= 3.30"
33.7	1,600	0.0250	0.79		<b>Shallow Concentrated Flow, Initial concentrated flow, through v</b> Woodland Kv= 5.0 fps
11.6	1,900	0.0130	2.73	32.80	<b>Channel Flow, Initial stream flow</b> Area= 12.0 sf Perim= 10.0' r= 1.20' n= 0.070 Sluggish weedy reaches w/pools
11.1	5,150	0.0210	7.71	185.07	<b>Channel Flow, Behind MPES To Elmwood</b> Area= 24.0 sf Perim= 14.0' r= 1.71' n= 0.040 Winding stream, pools & shoals
93.2	8,750	Total			



**Subcatchment 1S-2AcreLots: Northern Piece To Zef, 390 Acres**



### Summary for Subcatchment 2S-2AcreLots: SouthernPiece To Zef, 55 Acres

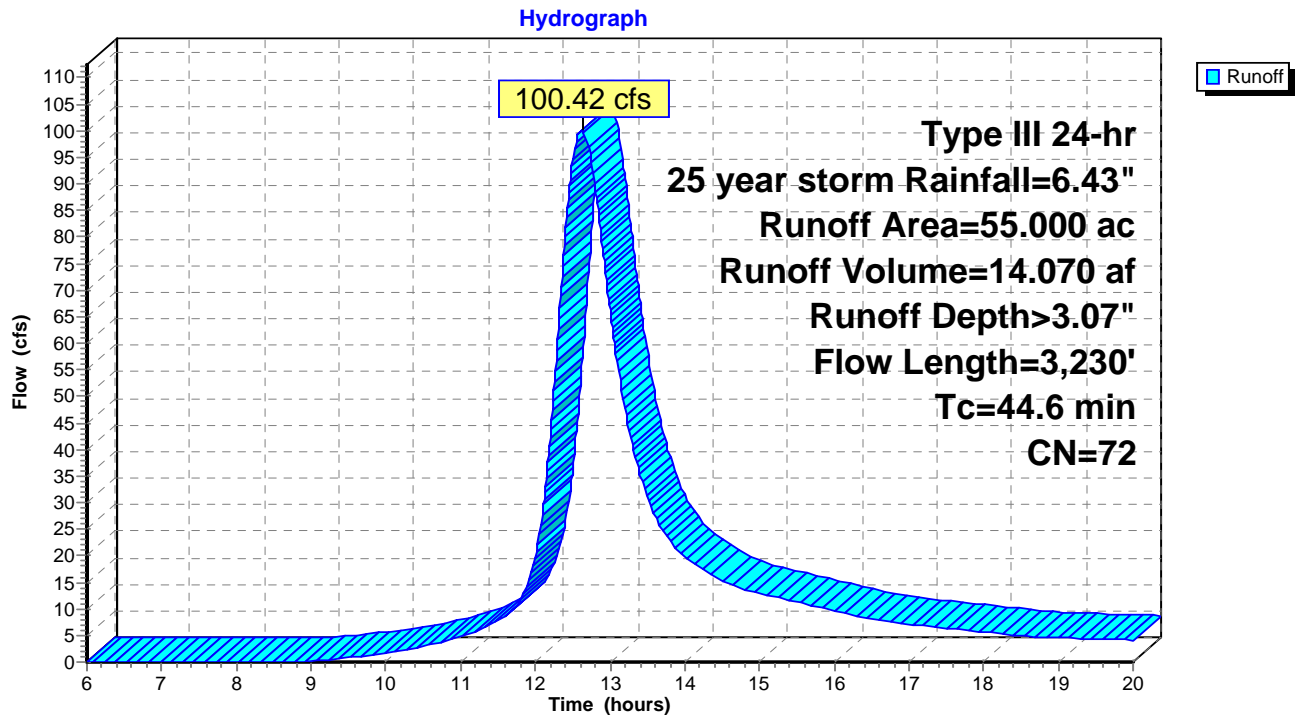
Runoff = 100.42 cfs @ 12.63 hrs, Volume= 14.070 af, Depth> 3.07"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25 year storm Rainfall=6.43"

Area (ac)	CN	Description
0.720	46	2 acre lots, 12% imp, HSG A
26.730	65	2 acre lots, 12% imp, HSG B
16.670	77	2 acre lots, 12% imp, HSG C
10.170	82	2 acre lots, 12% imp, HSG D
* 0.710	99	water
55.000	72	Weighted Average
47.775		86.86% Pervious Area
7.225		13.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	100	0.0200	0.08		<b>Sheet Flow, West of Rt 35, Yard</b> Woods: Light underbrush n= 0.400 P2= 3.30"
3.8	400	0.1250	1.77		<b>Shallow Concentrated Flow, Down Slope, Across Rt 35</b> Woodland Kv= 5.0 fps
16.7	1,300	0.0670	1.29		<b>Shallow Concentrated Flow, East of Rt 35</b> Woodland Kv= 5.0 fps
3.0	1,430	0.0350	7.85	94.18	<b>Channel Flow, Channel To Zef</b> Area= 12.0 sf Perim= 10.0' r= 1.20' n= 0.040 Winding stream, pools & shoals
44.6	3,230	Total			

**Subcatchment 2S-2AcreLots: SouthernPiece To Zef, 55 Acres**





### Summary for Subcatchment 3P-Prop: Zef Lot Proposed

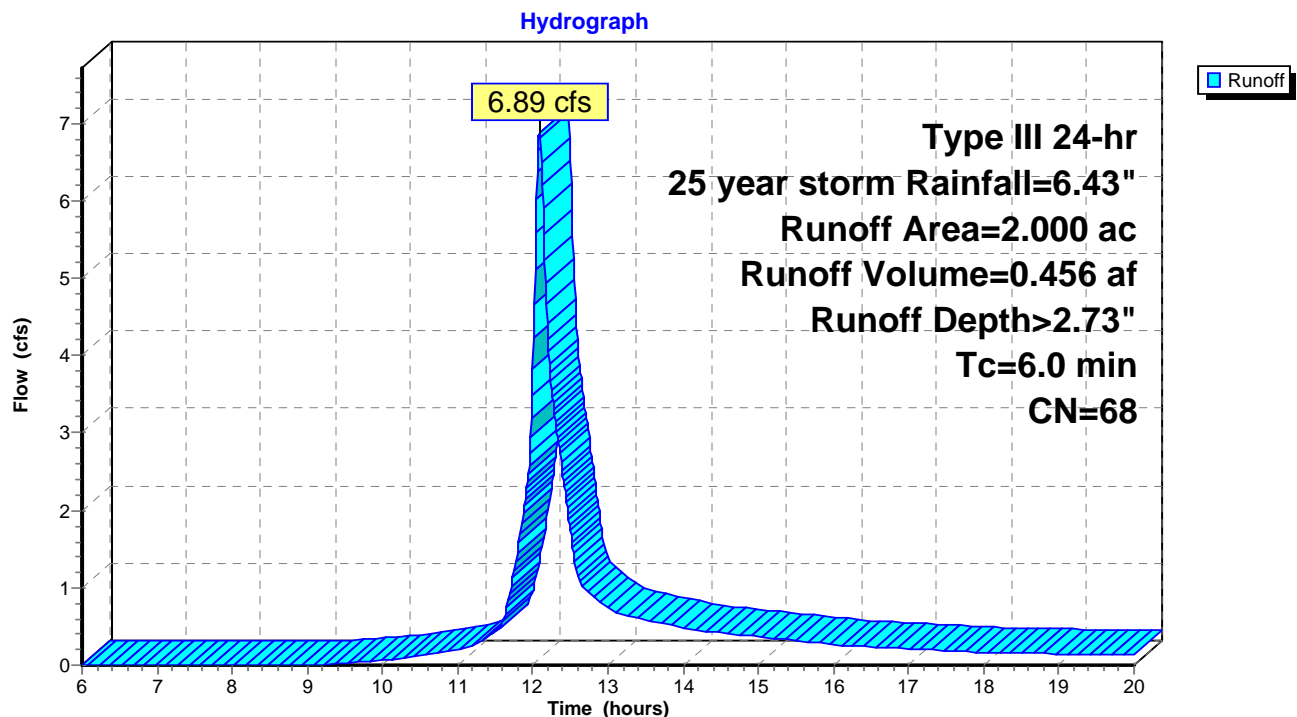
Runoff = 6.89 cfs @ 12.09 hrs, Volume= 0.456 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25 year storm Rainfall=6.43"

Area (ac)	CN	Description
* 0.236	98	house & driveway, impervious, (C soil)
* 0.087	74	front & side yard lawns, good condition, (C soil)
* 0.977	65	landscaped enhanced town wetland area, front yard, good condition, (C soil)
* 0.100	88	wetland, sun loam (D soil)
* 0.160	61	grass over septic bankrun, good condition (B soil)
* 0.440	55	upland, woods behind house, good condition, (B soil)
2.000	68	Weighted Average
1.764		88.20% Pervious Area
0.236		11.80% Impervious Area

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

### Subcatchment 3P-Prop: Zef Lot Proposed



**Summary for Pond Elm Exist 48": Ex 4 Ft HDPE @ Elmwood, Elmwood as Weir**

Inflow Area = 447.000 ac, 13.14% Impervious, Inflow Depth > 3.02" for 25 year storm event  
 Inflow = 498.44 cfs @ 13.17 hrs, Volume= 112.315 af  
 Outflow = 497.76 cfs @ 13.19 hrs, Volume= 112.087 af, Atten= 0%, Lag= 1.4 min  
 Primary = 99.27 cfs @ 13.19 hrs, Volume= 54.458 af  
 Secondary = 398.49 cfs @ 13.19 hrs, Volume= 57.629 af

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs  
 Peak Elev= 601.32' @ 13.19 hrs Surf.Area= 39,896 sf Storage= 106,210 cf

Plug-Flow detention time= 5.7 min calculated for 112.087 af (100% of inflow)  
 Center-of-Mass det. time= 5.0 min ( 862.2 - 857.2 )

Volume	Invert	Avail.Storage	Storage Description		
#1	595.00'	243,783 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
595.00	0	0.0	0	0	0
596.00	1,900	250.0	633	633	4,975
598.00	14,750	780.0	14,629	15,263	48,429
600.00	30,725	875.0	44,509	59,771	61,049
602.00	45,100	1,000.0	75,367	135,138	79,794
604.00	64,100	1,150.0	108,645	243,783	105,548

Device	Routing	Invert	Outlet Devices
#1	Primary	595.00'	<b>48.0" Round Culvert</b> L= 40.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 595.00' / 594.00' S= 0.0250 ' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 12.57 sf
#2	Secondary	599.80'	<b>30.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Secondary	600.00'	<b>50.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#4	Secondary	600.80'	<b>50.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#5	Secondary	601.90'	<b>40.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

**Primary OutFlow** Max=99.27 cfs @ 13.19 hrs HW=601.32' (Free Discharge)

↑ **1=Culvert** (Inlet Controls 99.27 cfs @ 7.90 fps)

**Secondary OutFlow** Max=398.28 cfs @ 13.19 hrs HW=601.32' (Free Discharge)

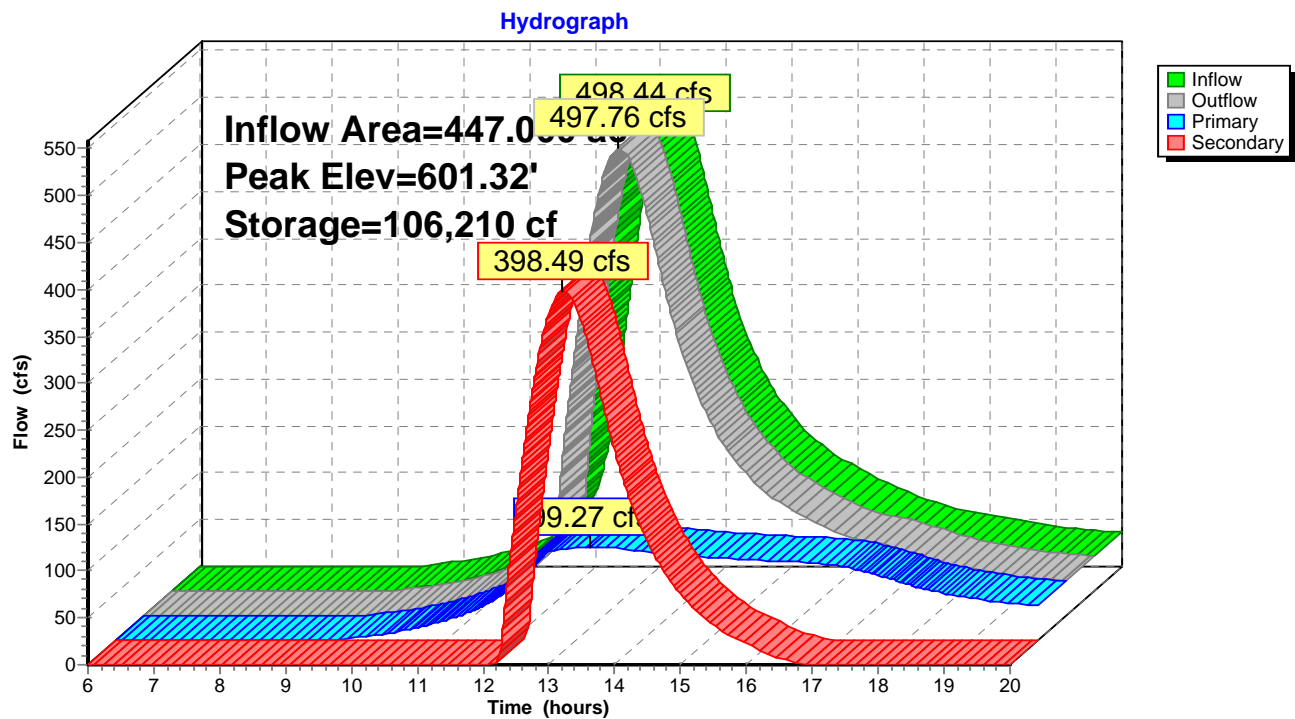
↑ **2=Broad-Crested Rectangular Weir** (Weir Controls 147.91 cfs @ 3.25 fps)

↑ **3=Broad-Crested Rectangular Weir** (Weir Controls 199.92 cfs @ 3.03 fps)

↑ **4=Broad-Crested Rectangular Weir** (Weir Controls 50.45 cfs @ 1.94 fps)

↑ **5=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

### **Pond Elm Exist 48": Ex 4 Ft HDPE @ Elmwood, Elmwood as Weir**





**Summary for Pond Spencer 48": Spencer 48" Culvert**

Inflow Area = 390.000 ac, 13.14% Impervious, Inflow Depth > 3.01" for 25 year storm event  
 Inflow = 451.59 cfs @ 13.26 hrs, Volume= 97.813 af  
 Outflow = 451.45 cfs @ 13.26 hrs, Volume= 97.808 af, Atten= 0%, Lag= 0.5 min  
 Primary = 127.00 cfs @ 13.26 hrs, Volume= 57.937 af  
 Secondary = 324.45 cfs @ 13.26 hrs, Volume= 39.871 af

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs  
 Peak Elev= 607.62' @ 13.26 hrs Surf.Area= 10,718 sf Storage= 15,414 cf

Plug-Flow detention time= 0.5 min calculated for 97.738 af (100% of inflow)  
 Center-of-Mass det. time= 0.5 min ( 862.1 - 861.6 )

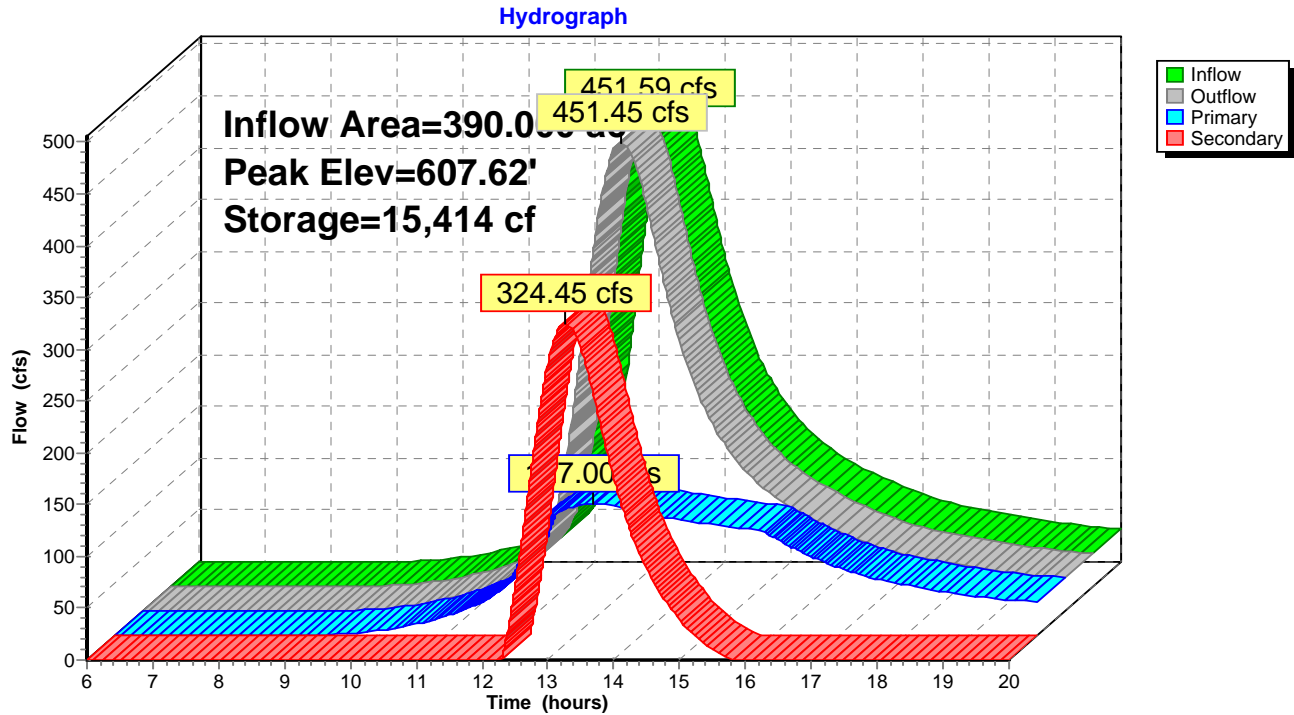
Volume	Invert	Avail.Storage	Storage Description		
#1	600.00'	98,599 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
600.00	0	0.0	0	0	0
602.00	40	20.0	27	27	38
604.00	250	50.0	260	287	219
606.00	4,100	300.0	3,575	3,862	7,191
608.00	12,750	525.0	16,053	19,915	21,985
610.00	20,000	650.0	32,479	52,394	33,732
612.00	26,350	750.0	46,204	98,599	44,961

Device	Routing	Invert	Outlet Devices
#1	Primary	600.00'	<b>48.0" Round Culvert - 48" Under Driveway</b> L= 18.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 600.00' / 599.80' S= 0.0111 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 12.57 sf
#2	Secondary	606.00'	<b>60.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Secondary	608.00'	<b>90.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#4	Secondary	610.00'	<b>55.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

**Primary OutFlow** Max=127.00 cfs @ 13.26 hrs HW=607.62' TW=603.21' (Fixed TW Elev= 603.21')  
 1=Culvert - 48" Under Driveway (Inlet Controls 127.00 cfs @ 10.11 fps)

**Secondary OutFlow** Max=324.13 cfs @ 13.26 hrs HW=607.62' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Weir Controls 324.13 cfs @ 3.34 fps)  
 3=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)  
 4=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

**Pond Spencer 48": Spencer 48" Culvert**



### Summary for Pond Zef Bridge: Prop Zef 20 Ft Bridge Over Stream, Driveway as Weir

[79] Warning: Submerged Pond Spencer 48" Primary device # 1 INLET by 3.21'

Inflow Area = 390.000 ac, 13.14% Impervious, Inflow Depth > 3.01" for 25 year storm event  
 Inflow = 451.45 cfs @ 13.26 hrs, Volume= 97.808 af  
 Outflow = 451.42 cfs @ 13.27 hrs, Volume= 97.789 af, Atten= 0%, Lag= 0.3 min  
 Primary = 451.42 cfs @ 13.27 hrs, Volume= 97.789 af  
 Secondary = 0.00 cfs @ 6.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs  
 Peak Elev= 603.21' @ 13.27 hrs Surf.Area= 3,127 sf Storage= 4,930 cf

Plug-Flow detention time= 0.2 min calculated for 97.789 af (100% of inflow)  
 Center-of-Mass det. time= 0.1 min ( 862.2 - 862.1 )

Volume	Invert	Avail.Storage	Storage Description
#1	599.00'	27,891 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
599.00	0	0.0	0	0	0
600.00	50	30.0	17	17	73
601.00	993	175.0	422	439	2,441
602.00	1,950	200.0	1,445	1,883	3,210
603.00	2,900	220.0	2,409	4,293	3,911
604.00	4,050	270.0	3,459	7,752	5,876
605.00	5,800	310.0	4,899	12,651	7,745
606.00	7,750	370.0	6,751	19,402	11,009
607.00	9,250	430.0	8,489	27,891	14,850

Device	Routing	Invert	Outlet Devices
#1	Primary	599.00'	<b>Asymmetrical Weir Single Short Span, C= 3.27</b> Offset (feet) 0.00 0.00 9.00 15.00 17.00 20.00 20.00 Height (feet) 4.33 0.50 0.00 0.00 0.50 0.80 4.33
#2	Secondary	604.00'	<b>30.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Secondary	604.50'	<b>15.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#4	Secondary	605.00'	<b>15.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#5	Secondary	605.50'	<b>30.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#6	Secondary	606.00'	<b>20.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#7	Secondary	606.90'	<b>30.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b>



Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60  
 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

**Primary OutFlow** Max=451.39 cfs @ 13.27 hrs HW=603.21' TW=601.32' (Fixed TW Elev= 601.32')

↑ **1=Asymmetrical Weir Single Short Span** (Weir Controls 451.39 cfs @ 5.46 fps)

**Secondary OutFlow** Max=0.00 cfs @ 6.00 hrs HW=599.00' (Free Discharge)

↑ **2=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

↑ **3=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

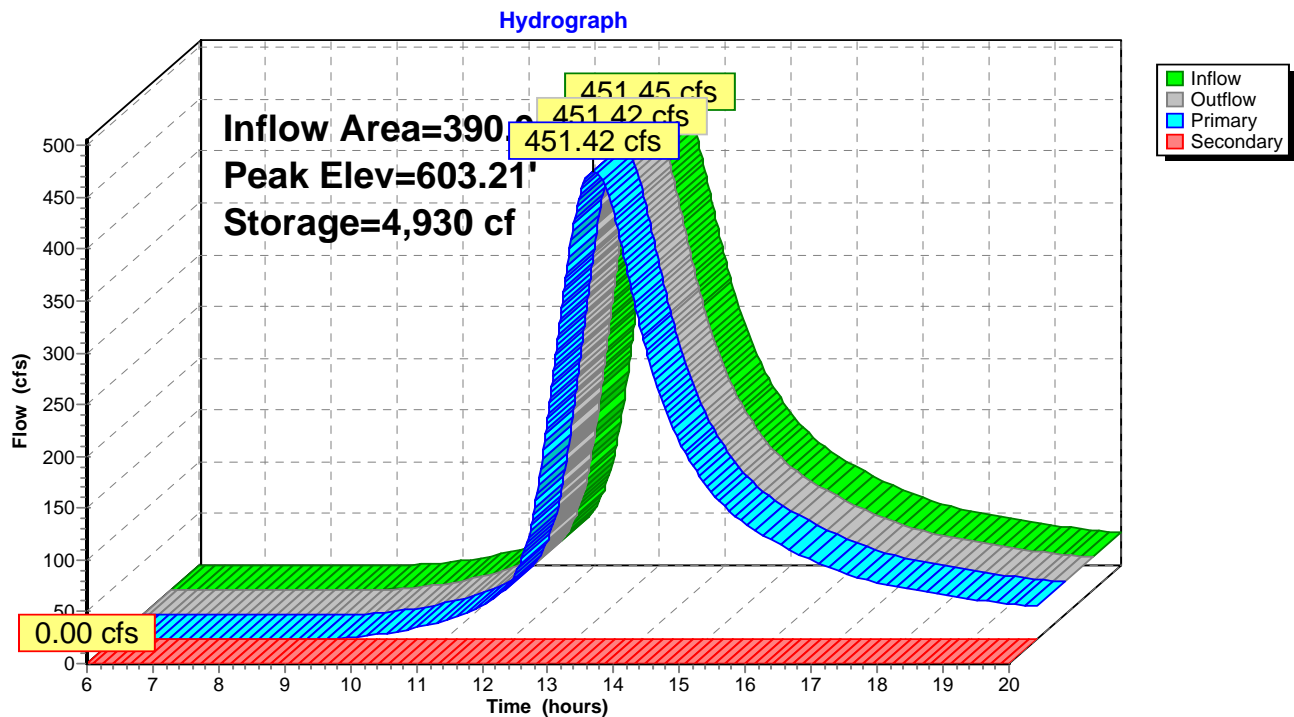
↑ **4=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

↑ **5=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

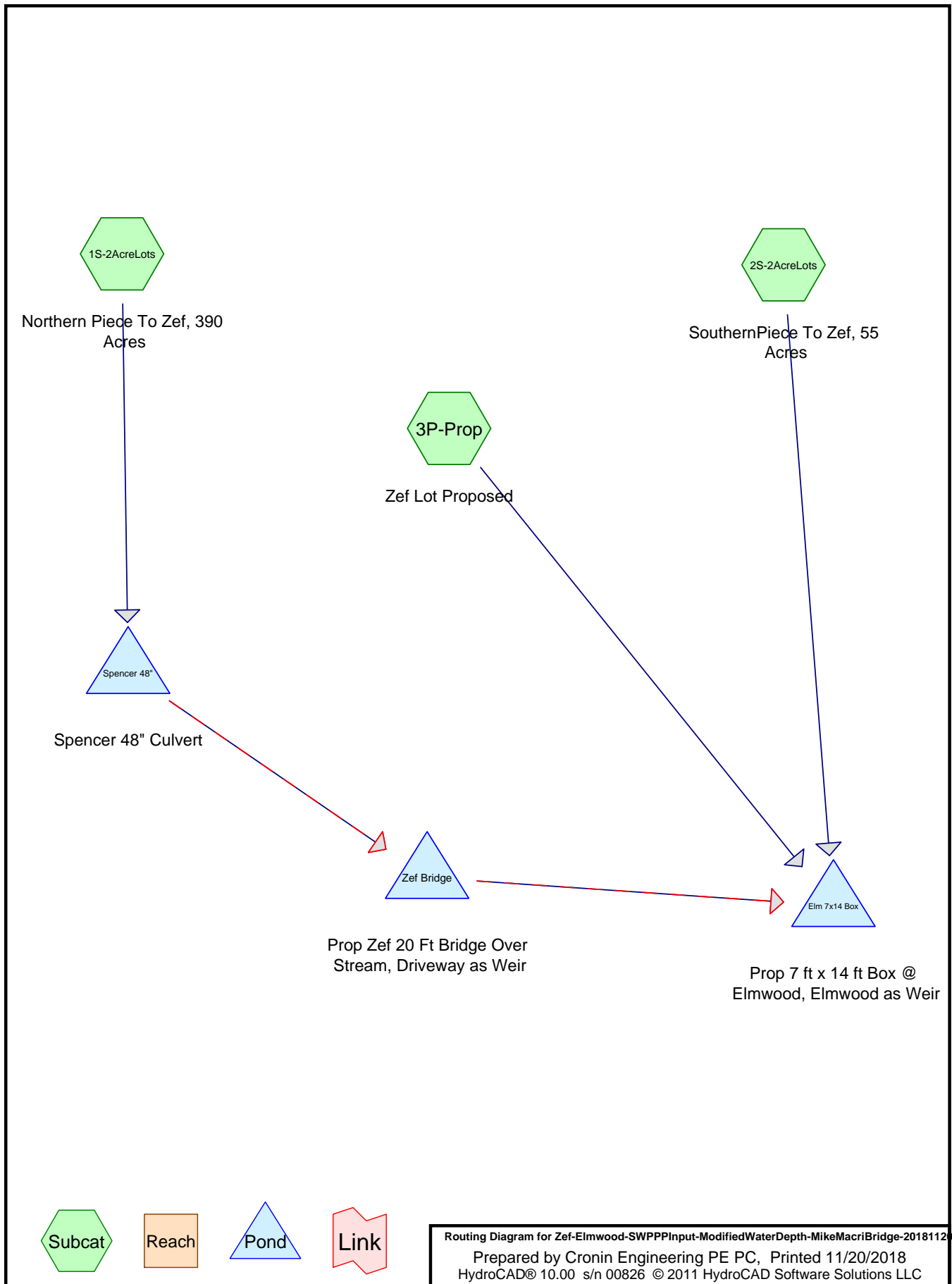
↑ **6=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

↑ **7=Broad-Crested Rectangular Weir** ( Controls 0.00 cfs)

### Pond Zef Bridge: Prop Zef 20 Ft Bridge Over Stream, Driveway as Weir



## APPENDIX F-4c



### Summary for Subcatchment 1S-2AcreLots: Northern Piece To Zef, 390 Acres

Runoff = 451.59 cfs @ 13.26 hrs, Volume= 97.813 af, Depth> 3.01"

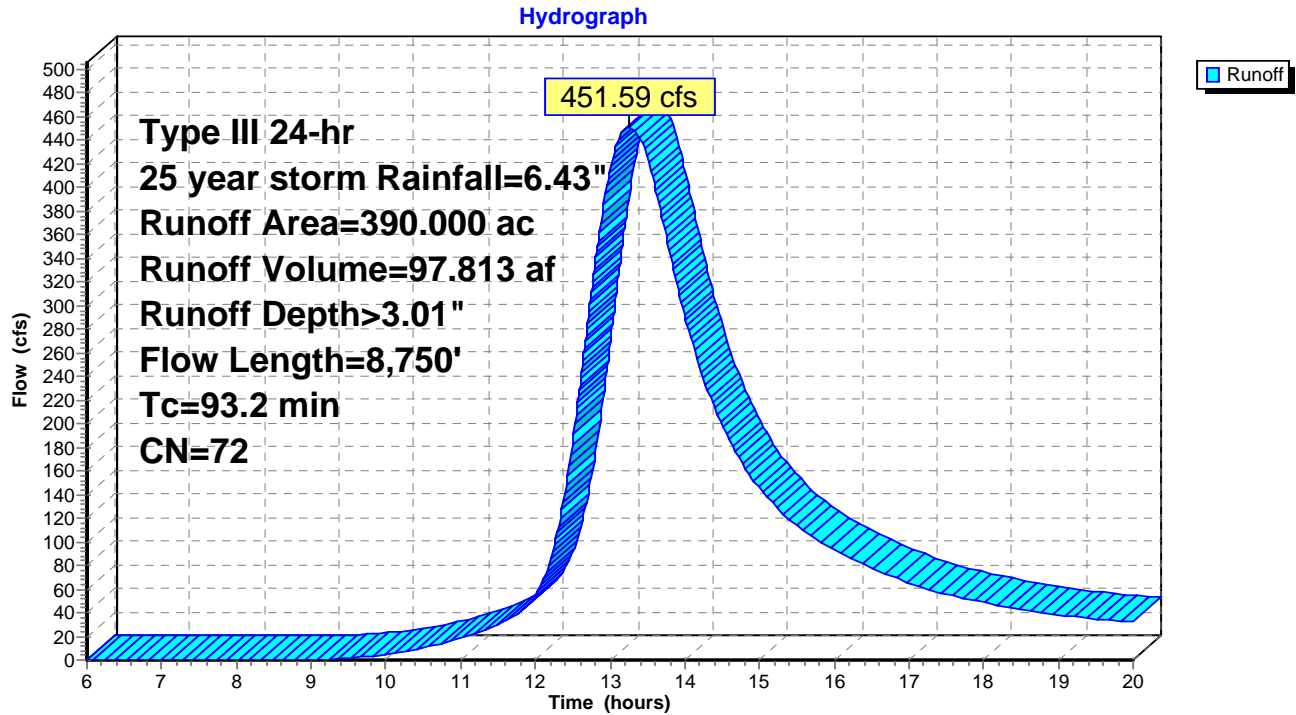
Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25 year storm Rainfall=6.43"

Area (ac)	CN	Description
5.070	46	2 acre lots, 12% imp, HSG A
189.540	65	2 acre lots, 12% imp, HSG B
118.170	77	2 acre lots, 12% imp, HSG C
72.150	82	2 acre lots, 12% imp, HSG D
* 5.070	99	water
390.000	72	Weighted Average
338.738		86.86% Pervious Area
51.262		13.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
36.8	100	0.0200	0.05		<b>Sheet Flow, Spring To Start of Stream</b> Woods: Dense underbrush n= 0.800 P2= 3.30"
33.7	1,600	0.0250	0.79		<b>Shallow Concentrated Flow, Initial concentrated flow, through v</b> Woodland Kv= 5.0 fps
11.6	1,900	0.0130	2.73	32.80	<b>Channel Flow, Initial stream flow</b> Area= 12.0 sf Perim= 10.0' r= 1.20' n= 0.070 Sluggish weedy reaches w/pools
11.1	5,150	0.0210	7.71	185.07	<b>Channel Flow, Behind MPES To Elmwood</b> Area= 24.0 sf Perim= 14.0' r= 1.71' n= 0.040 Winding stream, pools & shoals
93.2	8,750	Total			



**Subcatchment 1S-2AcreLots: Northern Piece To Zef, 390 Acres**



### Summary for Subcatchment 2S-2AcreLots: SouthernPiece To Zef, 55 Acres

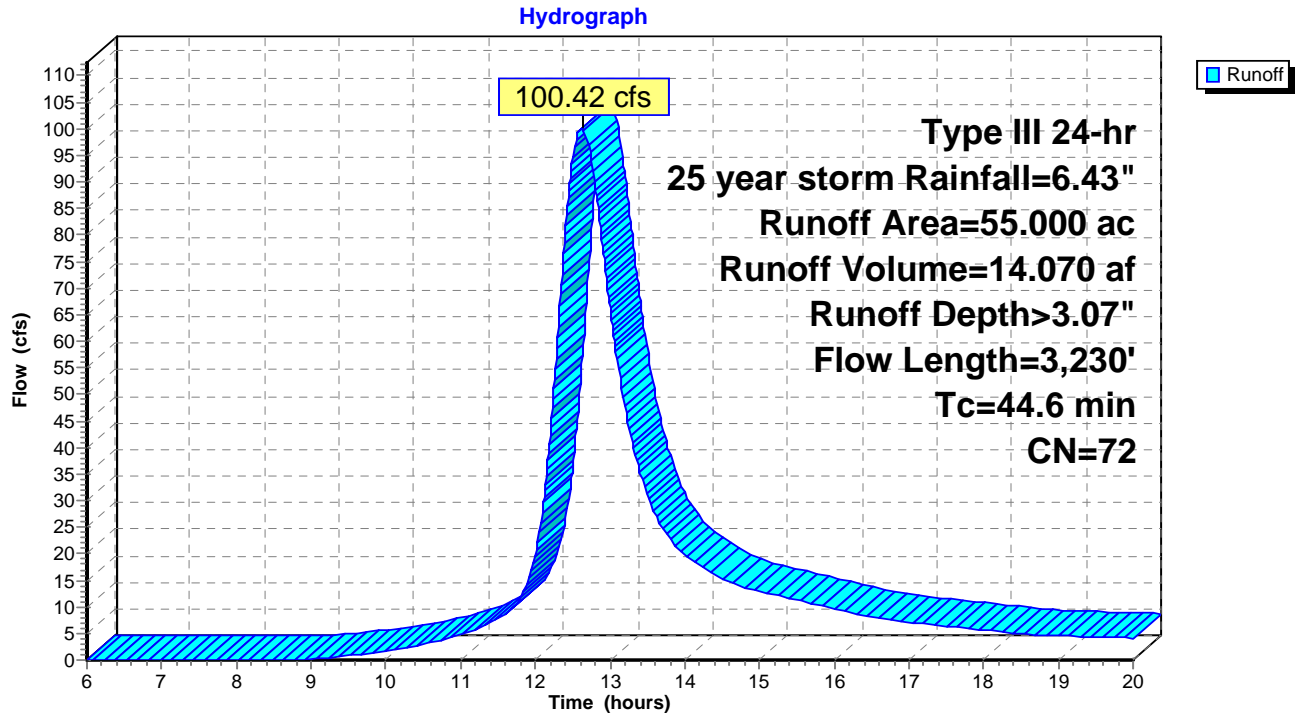
Runoff = 100.42 cfs @ 12.63 hrs, Volume= 14.070 af, Depth> 3.07"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25 year storm Rainfall=6.43"

Area (ac)	CN	Description
0.720	46	2 acre lots, 12% imp, HSG A
26.730	65	2 acre lots, 12% imp, HSG B
16.670	77	2 acre lots, 12% imp, HSG C
10.170	82	2 acre lots, 12% imp, HSG D
* 0.710	99	water
55.000	72	Weighted Average
47.775		86.86% Pervious Area
7.225		13.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	100	0.0200	0.08		<b>Sheet Flow, West of Rt 35, Yard</b> Woods: Light underbrush n= 0.400 P2= 3.30"
3.8	400	0.1250	1.77		<b>Shallow Concentrated Flow, Down Slope, Across Rt 35</b> Woodland Kv= 5.0 fps
16.7	1,300	0.0670	1.29		<b>Shallow Concentrated Flow, East of Rt 35</b> Woodland Kv= 5.0 fps
3.0	1,430	0.0350	7.85	94.18	<b>Channel Flow, Channel To Zef</b> Area= 12.0 sf Perim= 10.0' r= 1.20' n= 0.040 Winding stream, pools & shoals
44.6	3,230	Total			

**Subcatchment 2S-2AcreLots: SouthernPiece To Zef, 55 Acres**





### Summary for Subcatchment 3P-Prop: Zef Lot Proposed

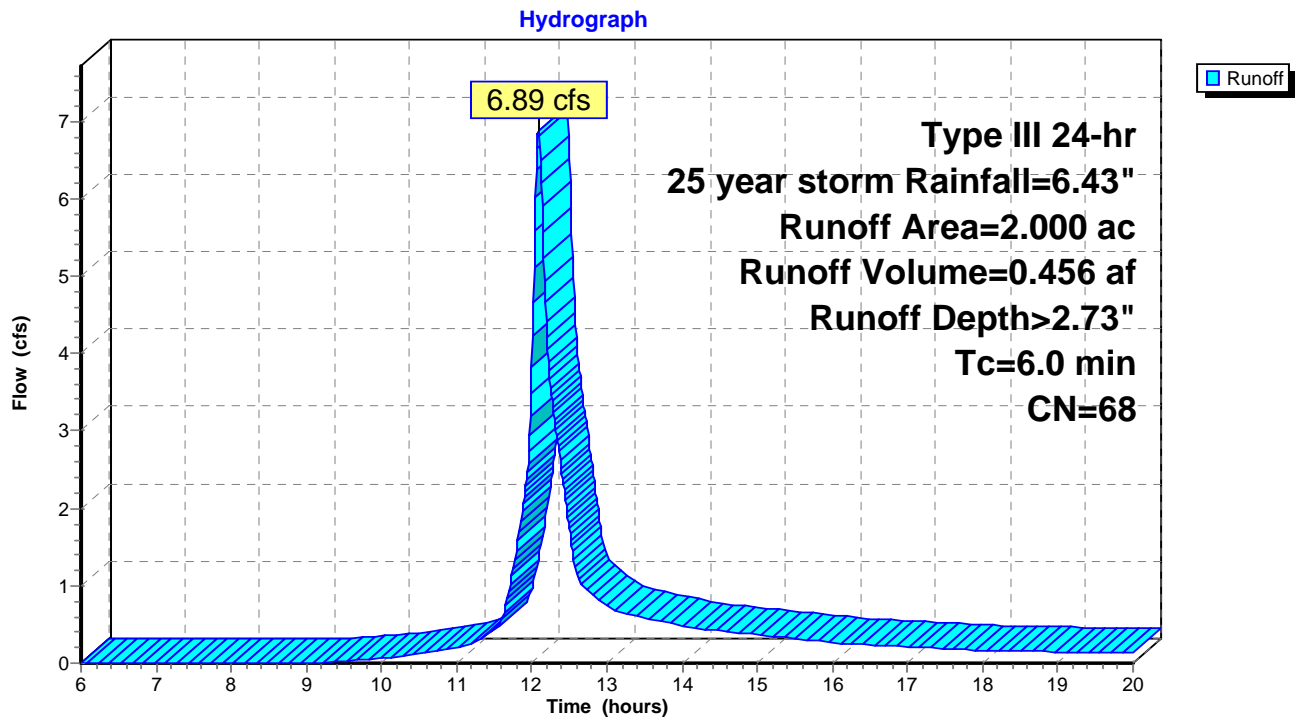
Runoff = 6.89 cfs @ 12.09 hrs, Volume= 0.456 af, Depth> 2.73"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 25 year storm Rainfall=6.43"

Area (ac)	CN	Description
* 0.236	98	house & driveway, impervious, (C soil)
* 0.087	74	front & side yard lawns, good condition, (C soil)
* 0.977	65	landscaped enhanced town wetland area, front yard, good condition, (C soil)
* 0.100	88	wetland, sun loam (D soil)
* 0.160	61	grass over septic bankrun, good condition (B soil)
* 0.440	55	upland, woods behind house, good condition, (B soil)
2.000	68	Weighted Average
1.764		88.20% Pervious Area
0.236		11.80% Impervious Area

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

### Subcatchment 3P-Prop: Zef Lot Proposed



**Summary for Pond Elm 7x14 Box: Prop 7 ft x 14 ft Box @ Elmwood, Elmwood as Weir**

Inflow Area = 447.000 ac, 13.14% Impervious, Inflow Depth > 3.02" for 25 year storm event  
 Inflow = 498.44 cfs @ 13.17 hrs, Volume= 112.335 af  
 Outflow = 498.35 cfs @ 13.18 hrs, Volume= 112.333 af, Atten= 0%, Lag= 0.4 min  
 Primary = 498.35 cfs @ 13.18 hrs, Volume= 112.333 af  
 Secondary = 0.00 cfs @ 6.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs  
 Peak Elev= 596.22' @ 13.18 hrs Surf.Area= 2,734 sf Storage= 4,486 cf

Plug-Flow detention time= 0.1 min calculated for 112.253 af (100% of inflow)  
 Center-of-Mass det. time= 0.1 min ( 857.2 - 857.1 )

Volume	Invert	Avail.Storage	Storage Description		
#1	591.00'	247,120 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
591.00	0	0.0	0	0	0
592.00	300	30.0	100	100	73
593.00	600	80.0	441	541	514
594.00	900	120.0	745	1,286	1,159
595.00	1,300	175.0	1,094	2,380	2,458
596.00	1,900	250.0	1,591	3,971	5,004
598.00	14,750	780.0	14,629	18,600	48,457
600.00	30,725	875.0	44,509	63,109	61,078
602.00	45,100	1,000.0	75,367	138,476	79,823
604.00	64,100	1,150.0	108,645	247,120	105,576

Device	Routing	Invert	Outlet Devices
#1	Primary	591.00'	<b>168.0" W x 84.0" H Box New 7 ft x 14 ft Box</b> L= 40.0' Ke= 0.100 Inlet / Outlet Invert= 591.00' / 590.50' S= 0.0125 ' / ' Cc= 0.900 n= 0.030 Stream, clean & straight, Flow Area= 98.00 sf
#2	Secondary	599.80'	<b>30.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Secondary	600.00'	<b>50.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#4	Secondary	600.80'	<b>50.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#5	Primary	601.90'	<b>40.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

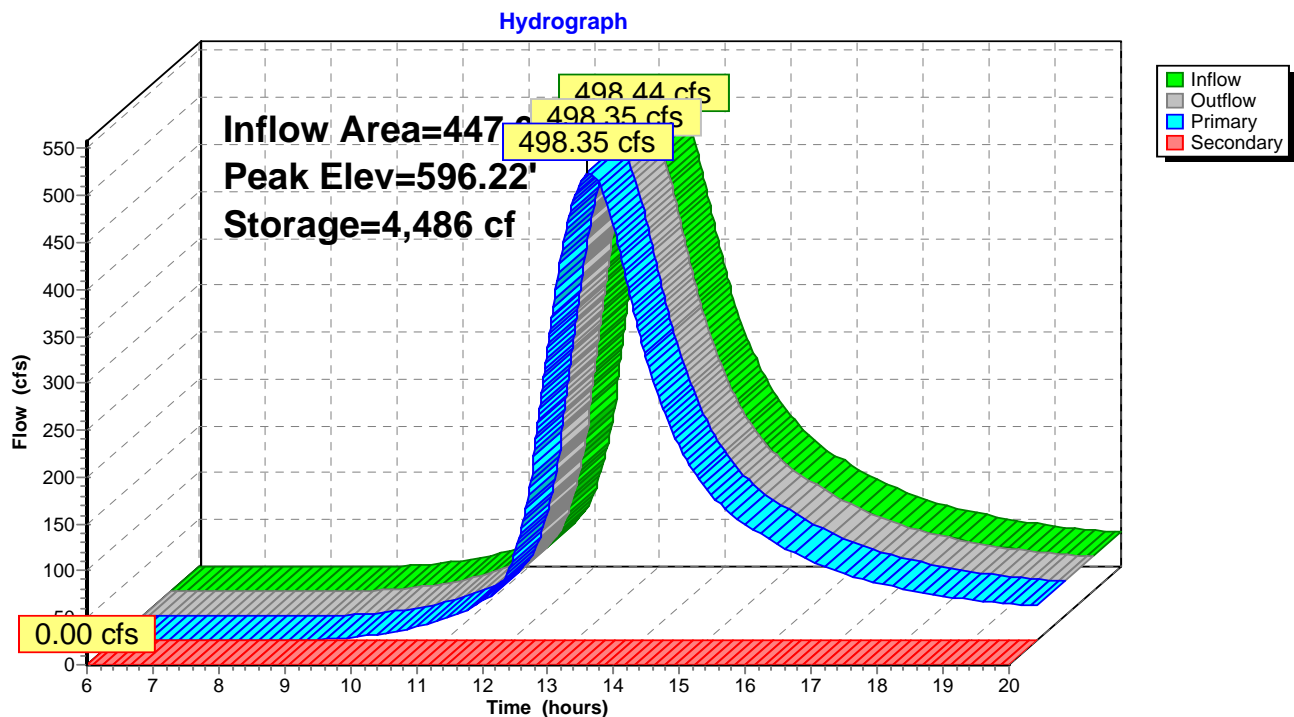
**Primary OutFlow** Max=498.30 cfs @ 13.18 hrs HW=596.22' (Free Discharge)

- 1=New 7 ft x 14 ft Box (Barrel Controls 498.30 cfs @ 9.09 fps)
- 5=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

**Secondary OutFlow** Max=0.00 cfs @ 6.00 hrs HW=591.00' (Free Discharge)

- 2=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)
- 3=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)
- 4=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

**Pond Elm 7x14 Box: Prop 7 ft x 14 ft Box @ Elmwood, Elmwood as Weir**





### Summary for Pond Spencer 48": Spencer 48" Culvert

Inflow Area = 390.000 ac, 13.14% Impervious, Inflow Depth > 3.01" for 25 year storm event  
 Inflow = 451.59 cfs @ 13.26 hrs, Volume= 97.813 af  
 Outflow = 451.45 cfs @ 13.26 hrs, Volume= 97.809 af, Atten= 0%, Lag= 0.5 min  
 Primary = 131.73 cfs @ 13.26 hrs, Volume= 59.353 af  
 Secondary = 319.72 cfs @ 13.26 hrs, Volume= 38.456 af

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs  
 Peak Elev= 607.60' @ 13.26 hrs Surf.Area= 10,638 sf Storage= 15,246 cf

Plug-Flow detention time= 0.5 min calculated for 97.809 af (100% of inflow)  
 Center-of-Mass det. time= 0.5 min ( 862.0 - 861.6 )

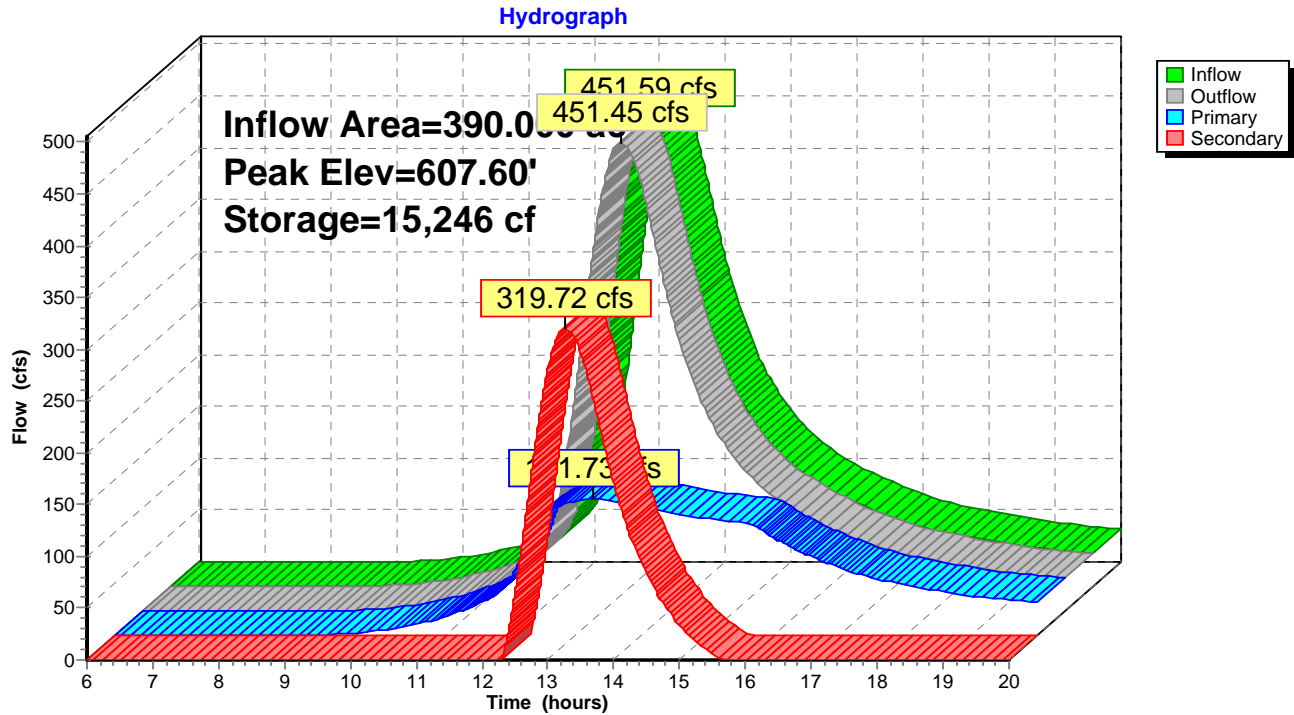
Volume	Invert	Avail.Storage	Storage Description		
#1	600.00'	98,599 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
600.00	0	0.0	0	0	0
602.00	40	20.0	27	27	38
604.00	250	50.0	260	287	219
606.00	4,100	300.0	3,575	3,862	7,191
608.00	12,750	525.0	16,053	19,915	21,985
610.00	20,000	650.0	32,479	52,394	33,732
612.00	26,350	750.0	46,204	98,599	44,961

Device	Routing	Invert	Outlet Devices
#1	Primary	600.00'	<b>48.0" Round Culvert - 48" Under Driveway</b> L= 18.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 600.00' / 599.80' S= 0.0111 ' / ' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 12.57 sf
#2	Secondary	606.00'	<b>60.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Secondary	608.00'	<b>90.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#4	Secondary	610.00'	<b>55.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

**Primary OutFlow** Max=131.73 cfs @ 13.26 hrs HW=607.60' TW=602.86' (Fixed TW Elev= 602.86')  
 1=Culvert - 48" Under Driveway (Inlet Controls 131.73 cfs @ 10.48 fps)

**Secondary OutFlow** Max=319.38 cfs @ 13.26 hrs HW=607.60' (Free Discharge)  
 2=Broad-Crested Rectangular Weir (Weir Controls 319.38 cfs @ 3.33 fps)  
 3=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)  
 4=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

### Pond Spencer 48": Spencer 48" Culvert



### Summary for Pond Zef Bridge: Prop Zef 20 Ft Bridge Over Stream, Driveway as Weir

Inflow Area = 390.000 ac, 13.14% Impervious, Inflow Depth > 3.01" for 25 year storm event  
 Inflow = 451.45 cfs @ 13.26 hrs, Volume= 97.809 af  
 Outflow = 451.42 cfs @ 13.27 hrs, Volume= 97.809 af, Atten= 0%, Lag= 0.3 min  
 Primary = 451.42 cfs @ 13.27 hrs, Volume= 97.809 af  
 Secondary = 0.00 cfs @ 6.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 6.00-20.00 hrs, dt= 0.01 hrs  
 Peak Elev= 602.86' @ 13.27 hrs Surf.Area= 2,752 sf Storage= 3,887 cf

Plug-Flow detention time= 0.1 min calculated for 97.809 af (100% of inflow)  
 Center-of-Mass det. time= 0.1 min ( 862.1 - 862.0 )

Volume	Invert	Avail.Storage	Storage Description		
#1	599.00'	27,891 cf	<b>Custom Stage Data (Irregular)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
599.00	0	0.0	0	0	0
600.00	50	30.0	17	17	73
601.00	993	175.0	422	439	2,441
602.00	1,950	200.0	1,445	1,883	3,210
603.00	2,900	220.0	2,409	4,293	3,911
604.00	4,050	270.0	3,459	7,752	5,876
605.00	5,800	310.0	4,899	12,651	7,745
606.00	7,750	370.0	6,751	19,402	11,009
607.00	9,250	430.0	8,489	27,891	14,850

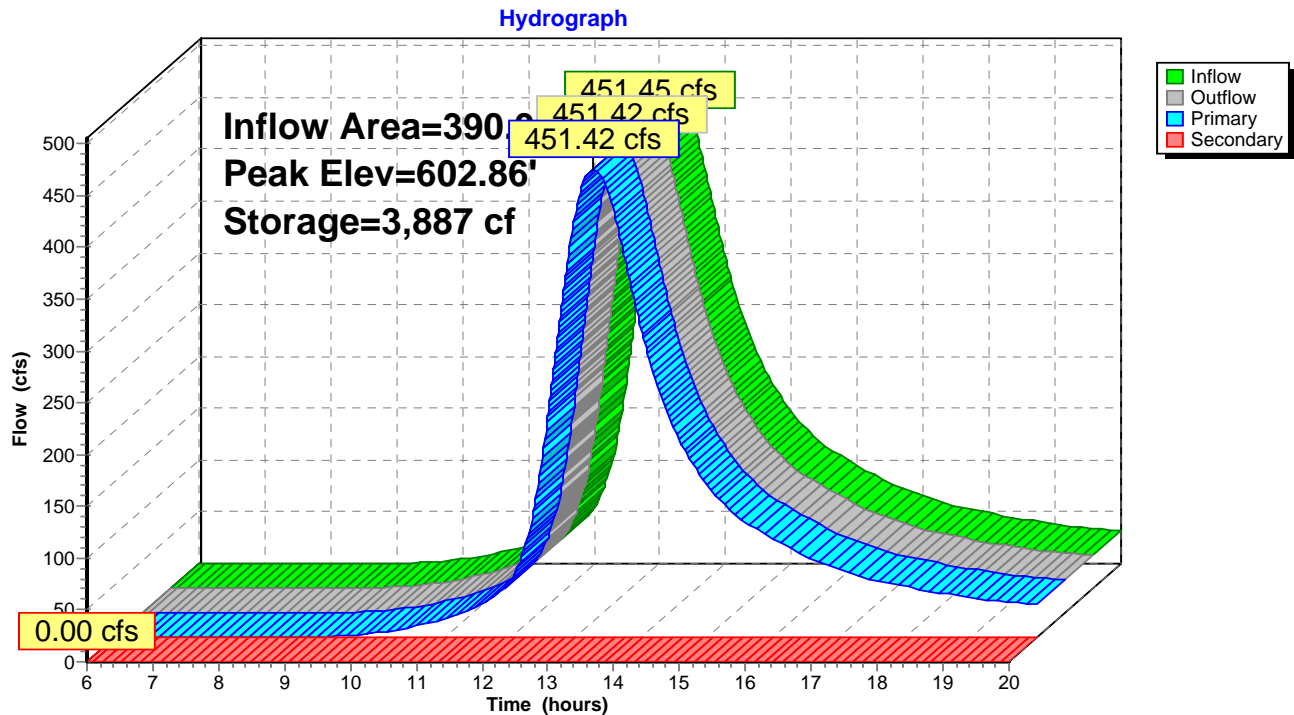
Device	Routing	Invert	Outlet Devices
#1	Primary	599.00'	<b>Asymmetrical Weir Single Short Span, C= 3.27</b> Offset (feet) 0.00 0.00 9.00 15.00 17.00 20.00 20.00 Height (feet) 4.33 0.50 0.00 0.00 0.50 0.80 4.33
#2	Secondary	604.00'	<b>30.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#3	Secondary	604.50'	<b>15.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#4	Secondary	605.00'	<b>15.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#5	Secondary	605.50'	<b>30.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#6	Secondary	606.00'	<b>20.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63
#7	Secondary	606.90'	<b>30.0' long x 20.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63



**Primary OutFlow** Max=451.39 cfs @ 13.27 hrs HW=602.86' TW=596.22' (Fixed TW Elev= 596.22')  
 1=Asymmetrical Weir Single Short Span (Weir Controls 451.39 cfs @ 5.97 fps)

**Secondary OutFlow** Max=0.00 cfs @ 6.00 hrs HW=599.00' (Free Discharge)  
 2=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)  
 3=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)  
 4=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)  
 5=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)  
 6=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)  
 7=Broad-Crested Rectangular Weir ( Controls 0.00 cfs)

**Pond Zef Bridge: Prop Zef 20 Ft Bridge Over Stream, Driveway as Weir**





## PERMIT

### Under the Environmental Conservation Law (ECL)

#### Permittee and Facility Information

**Permit Issued To:**

ZEF DEDVUKAJ  
43 LAUREL RD  
SOUTH SALEM, NY 10590  
(917) 295-7065

**Facility:**

DEDVUKAJ PROPERTY  
170 ELMWOOD RD  
LEWISBORO, NY 10590

**Facility Location:** in LEWISBORO in WESTCHESTER COUNTY

**Facility Principal Reference Point:** NYTM-E: 624.346 NYTM-N: 4566.088  
Latitude: 41°14'11.9" Longitude: 73°30'58.3"

**Authorized Activity:** This permit authorizes disturbance to a tributary of Scotts Reservoir (DEC Waters Index No. Conn. 10-P 1111 and tribs, Class AA-S) associated with the construction of a bridge carrying a driveway for a proposed single-family residence.

#### Permit Authorizations

**Stream Disturbance - Under Article 15, Title 5**

Permit ID 3-5530-00231/00001

New Permit

Effective Date: 12/3/2018

Expiration Date: 12/31/2020

**Water Quality Certification - Under Section 401 - Clean Water Act**

Permit ID 3-5530-00231/00002

New Permit

Effective Date: 12/3/2018

Expiration Date: 12/31/2020

#### NYSDEC Approval

**By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, and all conditions included as part of this permit.**

Permit Administrator: REBECCA S CRIST, Deputy Regional Permit Administrator

Address: NYSDEC Region 3 Headquarters  
21 S Putt Corners Rd  
New Paltz, NY 12561

Authorized Signature: \_\_\_\_\_

Date 12/3/18



### Distribution List

Josh Fisher, DEC Bureau of Ecosystem Health  
Steven Danzer, Steven Danzer Ph.D. and Associates  
Town of Lewisboro  
Peter Steinour, US Army Corps of Engineers

### Permit Components

NATURAL RESOURCE PERMIT CONDITIONS

WATER QUALITY CERTIFICATION SPECIFIC CONDITION

GENERAL CONDITIONS, APPLY TO ALL AUTHORIZED PERMITS

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

### NATURAL RESOURCE PERMIT CONDITIONS - Apply to the Following Permits: STREAM DISTURBANCE; WATER QUALITY CERTIFICATION

1. **Conformance With Plans** All activities authorized by this permit must be in strict conformance with the approved plans submitted by the applicant or applicant's agent as part of the permit application. Such approved plans were prepared by the applicant or applicant's agents, consisting of the Joint Application Form, Project Description, and plans entitled "Site Development Plan for Zef & Yulia Dedvukaj", sheets 1-4, last revised November 1, 2018, all received by DEC November 6, 2018.
2. **Post Permit Sign** The permit sign enclosed with this permit shall be posted in a conspicuous location on the worksite and adequately protected from the weather.
3. **Install Erosion Controls Prior to Work** No site preparation work shall be undertaken until all required erosion control measures have been installed.
4. **Stream Bed Crossings** All equipment crossings of the stream bed shall be performed in the dry under conditions of no stream flow. Installation of any temporary structures, such as steel plates, to facilitate crossings must likewise be performed in the dry under conditions of no stream flow. Reasonable efforts should be made to minimize disturbances to the dry stream bed from crossings, and any temporary structures must be promptly and entirely removed once they are no longer needed or the proposed bridge structure may be safely utilized instead, whichever comes first.
5. **No Turbidity from Dewatering** No turbid water resulting from dewatering operations shall be discharged directly to or allowed to enter the tributary to Scotts Reservoir. Such water shall be pumped to settling basins or to an upland vegetated area prior to any discharge to the tributary to Scotts Reservoir. All other necessary measures shall be implemented to prevent any visible increase in turbidity or sedimentation downstream of the work site.





**6. Concrete Leachate** During construction, no wet or fresh concrete or leachate shall be allowed to escape into any wetlands or waters of New York State, nor shall washings from ready-mixed concrete trucks, mixers, or other devices be allowed to enter any wetland or waters. Only watertight or waterproof forms shall be used. Wet concrete shall not be poured to displace water within the forms.

**7. Precautions Against Contamination of Waters** All necessary precautions shall be taken to preclude contamination of any wetland or waterway by suspended solids, sediments, fuels, solvents, lubricants, epoxy coatings, paints, concrete, leachate or any other environmentally deleterious materials associated with the project.

**8. Straw Bales or Other Downslope of Work Area** Bales of straw or other effective means to control erosion are to be used on the downslope edge of any disturbed areas. This barrier to sediments is to be put in place before any disturbance of the ground occurs and is to be maintained in good condition until all disturbed land is heavily vegetated.

**9. Maintain Water Flow During Work** During periods of work activity, if any natural stream flow is present, sufficient flow of water shall be maintained at all times to sustain aquatic life downstream.

**10. Maintain Stream Width at Bridge** Bridge installation or repair shall entirely span the stream, extending from bank to bank, with no constriction or widening of the existing watercourse or banks nor any modifications of the streambed or low-flow channel.

**11. Seed, Mulch Disturbed Soils** All areas of soil disturbance resulting from this project (above the mean high water line) shall be seeded with an appropriate perennial grass seed and mulched with straw within one week of final grading.

**12. No Work Other Than Authorized Herein** No other modifications to the bed or banks of the stream are authorized by this permit.

**13. State May Order Removal or Alteration of Work** If future operations by the State of New York require an alteration in the position of the structure or work herein authorized, or if, in the opinion of the Department of Environmental Conservation it shall cause unreasonable obstruction to the free navigation of said waters or flood flows or endanger the health, safety or welfare of the people of the State, or cause loss or destruction of the natural resources of the State, the owner may be ordered by the Department to remove or alter the structural work, obstructions, or hazards caused thereby without expense to the State, and if, upon the expiration or revocation of this permit, the structure, fill, excavation, or other modification of the watercourse hereby authorized shall not be completed, the owners, shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may require, remove all or any portion of the uncompleted structure or fill and restore to its former condition the navigable and flood capacity of the watercourse. No claim shall be made against the State of New York on account of any such removal or alteration.

**14. State May Require Site Restoration** If upon the expiration or revocation of this permit, the project hereby authorized has not been completed, the applicant shall, without expense to the State, and to such extent and in such time and manner as the Department of Environmental Conservation may lawfully require, remove all or any portion of the uncompleted structure or fill and restore the site to its former condition. No claim shall be made against the State of New York on account of any such removal or alteration.





**15. State Not Liable for Damage** The State of New York shall in no case be liable for any damage or injury to the structure or work herein authorized which may be caused by or result from future operations undertaken by the State for the conservation or improvement of navigation, or for other purposes, and no claim or right to compensation shall accrue from any such damage.

### **WATER QUALITY CERTIFICATION SPECIFIC CONDITIONS**

**1. Water Quality Certification** The authorized project, as conditioned pursuant to the Certificate, complies with Section 301, 302, 303, 306, and 307 of the Federal Water Pollution Control Act, as amended and as implemented by the limitations, standards, and criteria of state statutory and regulatory requirements set forth in 6 NYCRR Section 608.9(a). The authorized project, as conditioned, will also comply with applicable New York State water quality standards, including but not limited to effluent limitations, best usages and thermal discharge criteria, as applicable, as set forth in 6 NYCRR Parts 701, 702, 703, and 704.

### **GENERAL CONDITIONS - Apply to ALL Authorized Permits:**

**1. Facility Inspection by The Department** The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71- 0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

**2. Relationship of this Permit to Other Department Orders and Determinations** Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

**3. Applications For Permit Renewals, Modifications or Transfers** The permittee must submit a separate written application to the Department for permit renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing. Submission of applications for permit renewal, modification or transfer are to be submitted to:



Regional Permit Administrator  
NYSDEC Region 3 Headquarters  
21 S Putt Corners Rd  
New Paltz, NY12561

**4. Submission of Renewal Application** The permittee must submit a renewal application at least 30 days before permit expiration for the following permit authorizations: Stream Disturbance, Water Quality Certification.

**5. Permit Modifications, Suspensions and Revocations by the Department** The Department reserves the right to exercise all available authority to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

- a. materially false or inaccurate statements in the permit application or supporting papers;
- b. failure by the permittee to comply with any terms or conditions of the permit;
- c. exceeding the scope of the project as described in the permit application;
- d. newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;
- e. noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

**6. Permit Transfer** Permits are transferrable unless specifically prohibited by statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

## NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

### **Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification**

The permittee, excepting state or federal agencies, expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under Article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.





**Item B: Permittee's Contractors to Comply with Permit**

The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

**Item C: Permittee Responsible for Obtaining Other Required Permits**

The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

**Item D: No Right to Trespass or Interfere with Riparian Rights**

This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.

**Item E: SEQR Unlisted Action, No Lead Agency, No Significant Impact** Under the State Environmental Quality Review Act (SEQR), the project associated with this permit is classified as an Unlisted Action and the Department of Environmental Conservation has determined that it will not have a significant effect on the environment. Other involved agencies may reach an independent determination of environmental significance for this project.

# NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 3  
21 South Putt Corners Road, New Paltz, NY 12561-1620  
P: (845) 256-3054 | F: (845) 255-4659  
www.dec.ny.gov



Department of  
Environmental  
Conservation

## IMPORTANT NOTICE TO ALL PERMITTEES

The permit you requested is enclosed. Please read it carefully and note the conditions that are included in it. The permit is valid for only that activity expressly authorized therein; work beyond the scope of the permit may be considered a violation of law and be subject to appropriate enforcement action. Granting of this permit does not relieve the permittee of the responsibility of obtaining any other permission, consent or approval from any other federal, state, or local government which may be required.

Please note the expiration date of the permit. Applications for permit renewal should be made well in advance of the expiration date (minimum of 30 days) and submitted to the Regional Permit Administrator at the above address. For SPDES, Solid Waste and Hazardous Waste Permits, renewals must be made at least 180 days prior to the expiration date.

The DEC permit number & program ID number noted on page 1 under "Permit Authorization" of the permit are important and should be retained for your records. These numbers should be referenced on all correspondence related to the permit, and on any future applications for permits associated with this facility/project area.

If a permit notice sign is enclosed, you must post it at the work site with appropriate weather protection, as well as a copy of the permit per General Condition 1.

If the permit is associated with a project that will entail construction of new water pollution control facilities or modifications to existing facilities, plan approval for the system design will be required from the appropriate Department's regional Division of Water or delegated local Health Department, as specified in the State Pollutant Discharge Elimination System (SPDES) permit.

If you have any questions on the extent of work authorized or your obligations under the permit, please contact the staff person indicated below or the Division of Environmental Permits at the above address.

Chris Lang  
Division of Environmental Permits, Region 3  
Telephone (845) 256-3096

- ☐ Applicable only if checked. Please note all work authorized under this permit is prohibited during trout spawning season commencing October 1 and ending April 30.
- ☐ Applicable only if checked for STORMWATER SPDES INFORMATION: We have determined that your project requires coverage under the General Stormwater SPDES Permit. You must file a Notice of Intent to obtain coverage under the General Permit. This form can be downloaded at: <http://www.dec.ny.gov/chemical/43133.html>
- ☐ Applicable only if checked - MS4 Areas: This site is within an MS4 area (Municipal Separate Storm Sewer System), therefore the SWPPP must be reviewed and accepted by the municipality. The MS-4 Acceptance Form must be submitted in addition to the Notice of Intent.

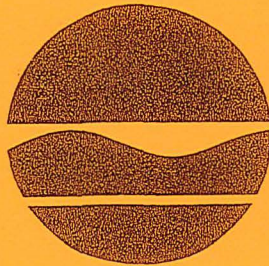
Send the completed form(s) to: NYS DEC, Stormwater Permitting, Division of Water, 625 Broadway, Albany, New York 12233-3505; in addition, DEC requests that you provide one electronic copy of the approved SWPPP directly to NYS DEC, 100 Hillside Avenue - Suite 1W, White Plains, NY 10603-2860.



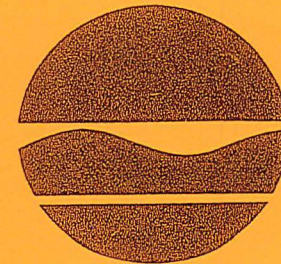
Department of  
Environmental  
Conservation



New York State  
Department of Environmental Conservation



# NOTICE



The Department of Environmental Conservation (DEC) has issued permit(s) pursuant to the Environmental Conservation Law for work being conducted at this site. For further information regarding the nature and extent of work approved and any Department conditions on it, contact the DEC at 845/256-3054. Please refer to the permit number shown when contacting the DEC.

Permittee: Zef Dedrukaj Permit No. 3-5530-00231/00001

Effective Date: 12/3/2018 Expiration date: 12/31/2020

☐ Applicable if checked. No instream work allowed between October 1 & April 30

NOTE: This notice is NOT a permit.



GENERAL NOTES:  
1. DO NOT SCALE DRAWINGS FOR CONSTRUCTION PURPOSES  
2. ALL DIMENSIONS TO BE CHECKED  
3. CONTRACTOR IS OBLIGED TO REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECT

PROJECT  
RESIDENCE AT  
ELMWOOD ROAD  
SINGLE FAMILY RESIDENCE  
ELMWOOD ROAD  
SOUTH SALEM, NY

DRAWING TITLE  
PROPOSED BASEMENT PLAN

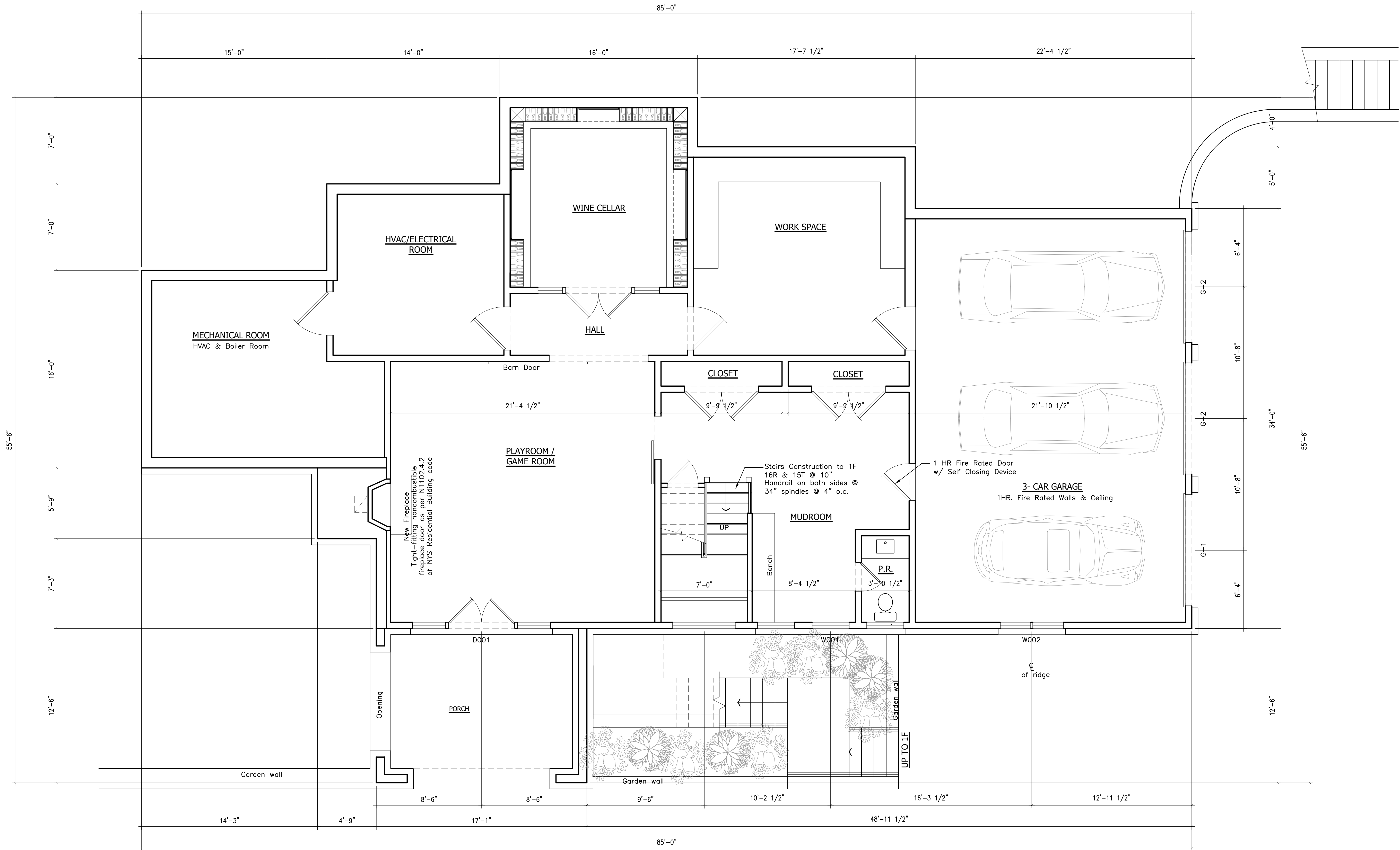
SEAL

DATE  
5-9-18

SCALE  
1/4" = 1'-0"

DRAWING NO.  
A100.00

PAGE NO.



**GENERAL NOTES:**

1. DO NOT SCALE DRAWINGS FOR CONSTRUCTION PURPOSES
2. ALL DIMENSIONS TO BE CHECKED
3. CONTRACTOR IS OBLIGED TO REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECT

	DATE:	REVISION

PROJECT

RESIDENCE AT  
ELMWOOD ROAD

SINGLE FAMILY RESIDENCE

ELMWOOD ROAD  
SOUTH SALEM, NY

DRAWING TITLE

**PROPOSED FIRST FLOOR PLAN**

SEAL

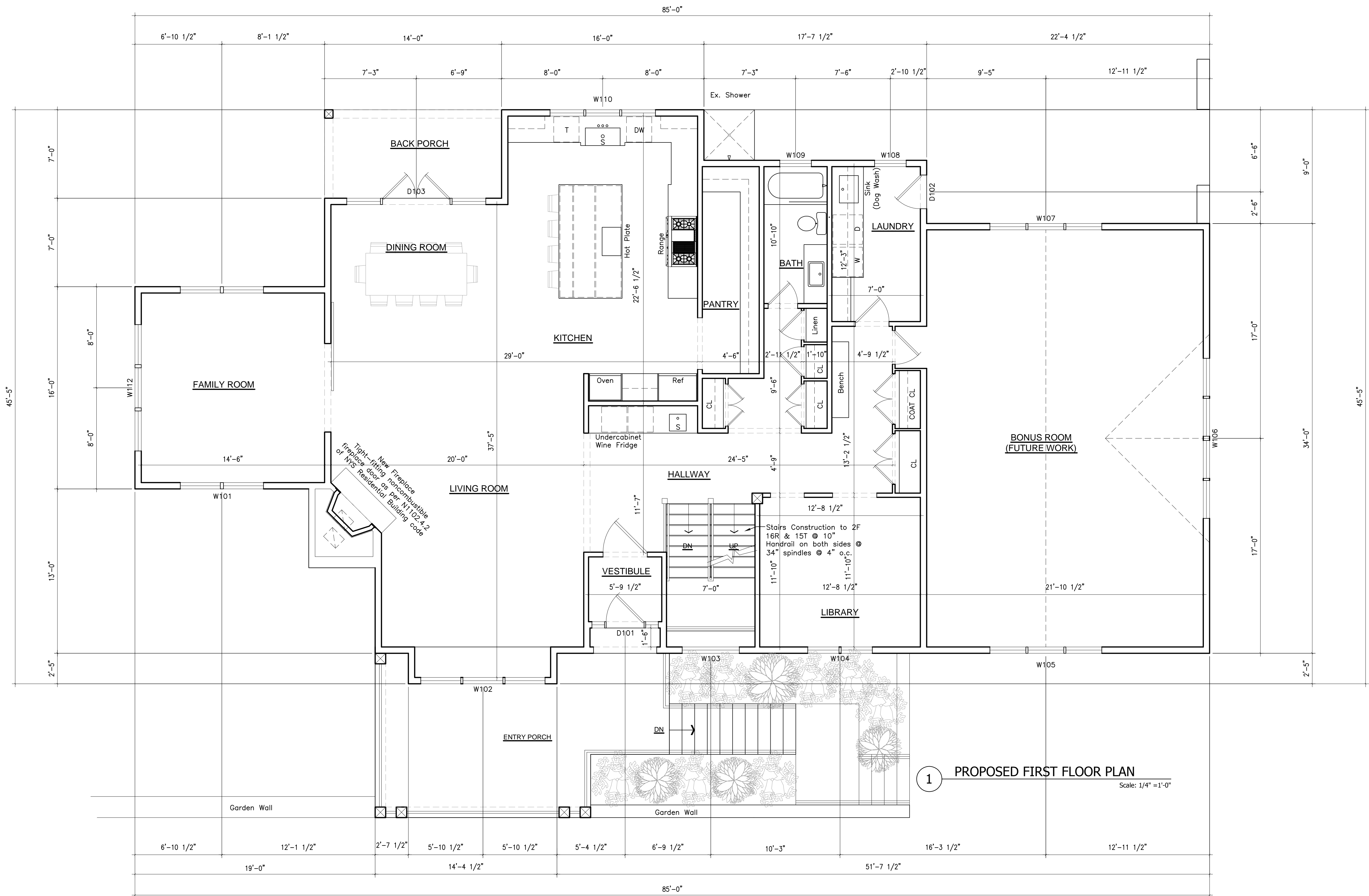
DATE	5-9-18
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SCALE  
1/4" = 1'-0"

DRAWING NO.

A101.00

PAGE NO.



1 PROPOSED FIRST FLOOR PLAN

GENERAL NOTES:  
1. DO NOT SCALE DRAWINGS FOR CONSTRUCTION PURPOSES  
2. ALL DIMENSIONS TO BE CHECKED  
3. CONTRACTOR IS OBLIGED TO REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECT

DATE:	REVISION

PROJECT  
RESIDENCE AT  
ELMWOOD ROAD  
SINGLE FAMILY RESIDENCE  
ELMWOOD ROAD  
SOUTH SALEM, NY

DRAWING TITLE  
PROPOSED SECOND FLOOR PLAN

SEAL

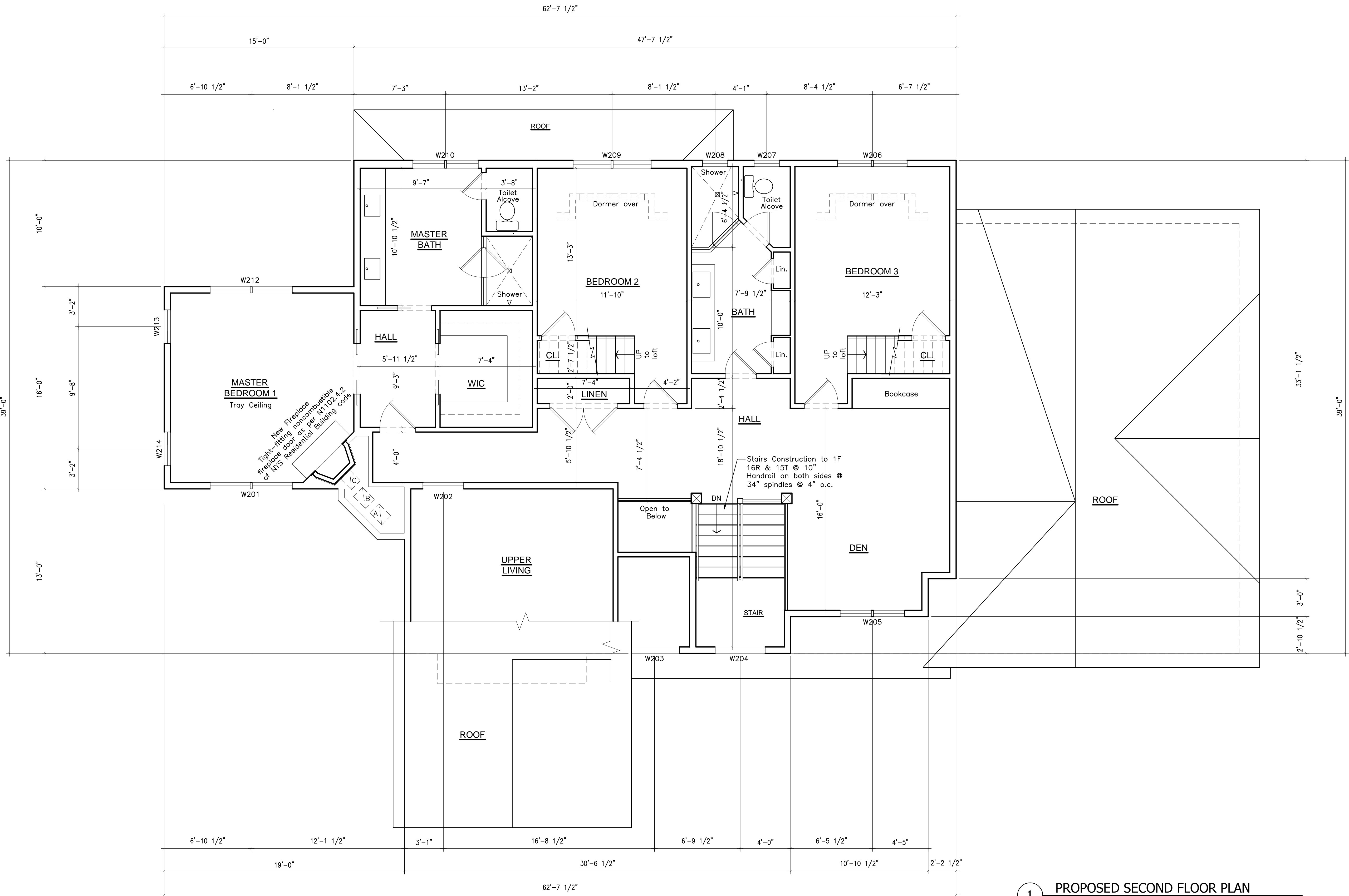
DATE  
5-9-18

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1/4" = 1'-0"

DRAWING NO.

A102.00

PAGE NO.



1 PROPOSED SECOND FLOOR PLAN  
Scale: 1/4" = 1'-0"



**From:** MARY NOECKER <mrebeccan@me.com>  
**Sent:** Tuesday, July 17, 2018 4:28 PM  
**To:** ciorsdan Conran  
**Subject:** Regarding Proposed Building of Dedvukaj Residence at 170 Elmwood Road

Dear Planning Board,

My name is Mary Noecker. I reside at 164 Elmwood Road with my family.

I am writing you regarding concerns that we have about the proposed construction of a residence at 170 Elmwood Road.

My concerns are with the suitability for building on the property in general. The undersized lot of 1.982 acres (as recorded by survey performed by H. Stanley Johnson and Company Land Surveyors, PC on June 7, 2017) falls short of the 2 acre minimum for building in the R-2A zoning designation, aside from having little, if any, build-able area considering a 150' wetland buffer, and the area of the property which is comprised of a slope between 15 and 25%.

As per Town Law Code 220-10 C (2) regarding undersized lots, it appears this lot would not qualify for a variance because the building also goes against the town regulations of not building within the 150 foot wetland buffer.

As far as wetlands are concerned, when you consider the wide area of wetland in the front of the property as well as setback from the back of the property and the south side, coupled with the need for a septic leach field there is simply not enough property for a house of the scale proposed, or possibly not enough to build at all.

Zoning for the area is a MINIMUM of 2 acres for a reason. We recently purchased the house at 164 Elmwood because of the zoning in the area. We purposely did not move to Bergen County, New Jersey because of the McMansions built on 50'X75' lots. We sacrificed city water and sewer for the express purpose of space.

The amount of impermeable surface in this project, which takes place almost entirely within the wetland buffer, will stress the current infrastructure which is already near to top of its capacity. The planning board is already aware of the flooding over Elmwood Road a couple of months ago. An impermeable driveway and a structure with the amount of outdoor living space such as this would significantly add to the danger of flooding which places all adjacent properties in jeopardy.

The construction process is also a concern. Blasting or hoe-ramming the rock face which also runs behind our house is not an exact science and would put our property in danger. We would like to see some sort of bond or insurance that would cover our property in the event a landslide/rockslide takes out or entire house.

I also question the wetland investigation by Steven Danzer. There appears to be a vernal pool (as per the definition of vernal pool in Chapter 217-2 B. Vernal Pool) on the site located adjacent to or on the proposed building site of the house.

Thank you for your time and consideration in this matter.

Mary Noecker

(164 Elmwood Road Resident)

**From:** Sara Parant <parantsara@gmail.com>  
**Sent:** Tuesday, July 17, 2018 11:55 AM  
**To:** Ciorsdan Conran  
**Subject:** Letter for town meeting, 7/17

To whom it may concern,

I would like to add a few points to today's town meeting discussion regarding the following topics: Building on 170 Elmwood Rd and Elmwood Rd Road Rule enforcement.

I reside at 171 Elmwood Rd and 170 Elmwood is the lot directly across from my house. My family's concerns and opposition to the proposed building have not changed or eased. The proposed building would directly affect the rain drainage, which would cause flooding in the streets and on our lot and house. (See photos we provided for previous meetings for proof of this issue.) These naturally flowing creeks and run offs are there for a reason. Who would take responsibility if and when we were to suffer damage and dangerous flooding? Is it the builder who wants to violate wetland restrictions? Or the town who allows it? And when our well water and local reservoirs become contaminated from run off, who pays for that? Why should the neighbors suffer these hazards?

Then there is the blasting of the rock which would put my, and potentially others', foundation of the house at serious risk. Again, our expense at another's convenience. We as home owners have the right to a safe and sound home, and I want to be reassured that will be a priority.

Additionally, it is my understanding that 170 Elmwood Rd lot is just under the 2 acres minimum (1.98 acres), so in order to build, a variance regarding lot size will be necessary. The proposal also violates wetland restrictions by building too close to the wetlands. Another variance they are looking to obtain. There are MANY homes for sale in Vista as well as vacant, buildable lots in the area. We have restrictions and laws for valid reasons. I would like to be assured they will all be followed accordingly and we current residents will be protected from harm.

Separately, we would like to address the speeding on Elmwood Rd (take the car crash that ended in a flipped car 2 weeks ago as an example) and the lack of respect for the stop sign at the corner of Wakeman and Elmwood Rd. We appreciate that the speed trap has been put up, but we hope to see further enforcement. We have so many kids who live on this road, as well as runners, bikers, pets, etc, and the speeding cars put us all at danger.

Thank you for your time and efforts in these matters.

Regards,  
Sara Parant

## Keith Staudohar

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**From:** Keith Staudohar  
**Sent:** Friday, January 11, 2019 8:33 AM  
**To:** Keith Staudohar  
**Subject:** 170 Elmwood Lewisboro/ South Salem (UNCLASSIFIED)

-----Original Message-----

From: Cannon, James H CIV (US) [mailto:James.H.Cannon@usace.army.mil]  
Sent: Thursday, December 27, 2018 2:56 PM  
To: Steven Danzer  
Subject: RE: 170 Elmwood Lewisboro/ South Salem (UNCLASSIFIED)

CLASSIFICATION: UNCLASSIFIED

Mr. Danzer,

This office received the pre-construction notification for the subject project on November 7, 2018.

As I was unable to provide a written determination within 45 days of its submission, in accordance with the current nationwide general permit regulations (Federal Register dated January 6, 2017), if the Corps of Engineers district does not respond to a pre-construction notification within 45 days of receipt, the applicant may proceed with the project as proposed.

The applicant must perform the work as proposed in the pre-construction notification. Any substantive changes to the project would require the applicant to submit a new notification to this office.

If you have any questions, let me know.

Jim Cannon  
New York District, U.S. Army Corps of Engineers Jacob K. Javits Federal Building Regulatory Branch, 19th Floor  
26 Federal Plaza  
New York, New York 10278-0090  
917-790-8412



**To:** 'Tim Cronin' <[tim@croninengineering.net](mailto:tim@croninengineering.net)>; Dedvukaj, Zef <[Zef.Dedvukaj@aecom.com](mailto:Zef.Dedvukaj@aecom.com)>

**Subject:** FW: Dedvukaj Site Development Plan

FYI

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**From:** Jan Johannessen <[jjohannessen@kelses.com](mailto:jjohannessen@kelses.com)>

**Sent:** Tuesday, February 12, 2019 9:08 AM

**To:** Ciorsdan Conran ([planning@lewisborogov.com](mailto:planning@lewisborogov.com)) <[planning@lewisborogov.com](mailto:planning@lewisborogov.com)>

**Cc:** 'Judson Siebert' ([jsiebert@kblaw.com](mailto:jsiebert@kblaw.com))' <[jsiebert@kblaw.com](mailto:jsiebert@kblaw.com)>

**Subject:** FW: Dedvukaj Site Development Plan

See below from the 1<sup>st</sup> Taxing District; Ciorsdan, please distribute to the Board and the applicant.

Jan

**JAN K. JOHANNESSEN, AICP**  
Principal



**KELLARD SESSIONS CONSULTING**

500 Main Street | Armonk, New York 10504

**T:** 914.273.2323 | **F:** 914.273.2329

[jjohannessen@kelses.com](mailto:jjohannessen@kelses.com) | [www.kelses.com](http://www.kelses.com)

CIVIL ENGINEERING | LANDSCAPE ARCHITECTURE  
SITE & ENVIRONMENTAL PLANNING

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**From:** Donald Ukers [<mailto:DUkers@firstdistrictwater.org>]

**Sent:** Tuesday, February 12, 2019 8:28 AM

**To:** Jan Johannessen <[jjohannessen@kelses.com](mailto:jjohannessen@kelses.com)>

**Cc:** Michael Elliott <[MElliott@firstdistrictwater.org](mailto:MElliott@firstdistrictwater.org)>

**Subject:** Dedvukaj Site Development Plan

Jan,

Please see below for First District Water Department's comments/concerns with the Dedvukaj Site Development Plan.

1. The temporary erosion control during construction for the project seems minimal and should have additional measures required due to the environmentally sensitive location of the project. What erosion control measures will be installed during the construction/installation of the bridge? If the project is approved will the town be inspecting erosion control measures? What will be the frequency of the inspections? All proposed work should be within the erosion control measures. The pipe from the well is outside of the sediment and erosion controls and should be inside.
2. If the project is approved, will restrictions be placed on the use of fertilizers and lawn chemicals and if so how will they be enforced?
3. The proposed septic tank and pump chamber are in close proximity to the wetlands. Can the location be shifted further away from the wetlands? The septic fields appear to be located in an area of shallow ledge, will that adequately treat the wastewater prior to it travelling down the steep slope and entering the stream and Scotts Reservoir?
4. Please provide the wetland mitigation plan. This plan should address continuing monitoring and maintenance of the wetland mitigation, and the proposed rain gardens. Will a maintenance requirement for sediment removal and plant replacement be placed on the rain gardens and if so how will it be enforced?

5. The wetland crossing as proposed could be reduced by using a longer bridge or realigning the driveway to where the wetlands are not as wide.



The site seems to have too much intense development/disturbance almost all of which is within the wetlands or wetland setbacks, defeating the intent of having setbacks. As shown we don't think it should be given a permit.

*Don Ukers, P.E.*  
*Resident Engineer*  
*First Taxing District Water Department*  
*12 New Canaan Avenue*  
*Norwalk, Connecticut 06851*  
Office (203) 847-7387 Ext.7269  
Cell (203) 505-9618

## MEMORANDUM

TO: Chairperson Janet Andersen and  
Members of Lewisboro Planning Board

CC: Ciorsdan Conran  
Judson Siebert, Esq.  
Joseph Angiello

FROM: Jan K. Johannessen, AICP,   
Joseph M. Cermele, P.E., CFM   
Town Consulting Professionals

DATE: March 14, 2019

RE: Alexander Kranz, Successor Trustee  
Elmwood Road  
Sheet 43, Block 10302, Lot 23

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### PROJECT DESCRIPTION

The application involves the construction of a proposed 3-bedroom residence on ±3.47 acres of land located on Elmwood Road and within the R-2A Zoning District. The residence is proposed to be served by an asphalt driveway, septic system, private water well, and drainage improvements. The property contains a wetland that is jurisdictional to the Town of Lewisboro and the New York State Department of Environmental Conservation (NYSDEC) and nearly the entire property consists of either wetland or wetland buffer. While no disturbance is proposed within the wetland proper, the majority of the proposed improvements and disturbance is located within the wetland buffer.

### SEQRA

The proposed action is a Type II Action and is categorically exempt from the State Environmental Quality Review Act (SEQRA).

### REQUIRED APPROVALS

1. A Wetland Permit and Town Stormwater Permit is required from the Planning Board; a public hearing is required to be held on the Wetland Permit.

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Chairperson Janet Andersen

March 14, 2019

Page 2 of 3

2. A Driveway Opening Permit is required from the Town of Lewisboro Highway Superintendent.
3. The proposed septic system and potable water well require approval from the Westchester County Department of Health (WCDH).
4. An Article 24 Freshwater Wetland Permit is required from the NYSDEC.
5. If proposed land disturbance exceeds one (1) acre, coverage under the NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002) will be required.
6. If the subject property is located within the Special Character Overlay Zone, the proposed residence would require approval by the ACARC.

**COMMENTS:**

The following comments should be considered preliminary in nature, a complete review of the submission materials will take place following initial review and feedback from the Planning Board:

1. The wetland boundary was delineated by Bruce Donohue and confirmed by this office as being accurate; the wetland boundary line has also been verified by the NYSDEC.
2. A tree survey shall be completed by a Licensed Land Surveyor and shall identify the location and specie type of all trees ≥8-inch DBH and located within and 50 feet from the proposed limit of disturbance line.
3. Soil testing related to proposed stormwater management practices shall be conducted and witnessed by this office; the soil test locations and results shall be provided on the plan.
4. A wetland mitigation plan must be provided which achieves 1:1 mitigation for all disturbance proposed within the wetland buffer; stormwater management practices, and plantings proposed in connection therewith, are typically not counted towards fulfilling the mitigation requirement, as such practices would be required regardless of whether the project requires a Wetland Permit. As currently designed, the project falls short of the minimum required mitigation, per the wetland ordinance.
5. The applicant shall address the comments provided by the NYSDEC, dated October 3, 2018.
6. It is recommended that the plans be referred to the Building Inspector for zoning compliance review.

Chairperson Janet Andersen

March 14, 2019

Page 3 of 3

7. The names of the adjacent property owners and the location of any neighboring structures and buildings shall appear on the plans.
8. The driveway location shall be reviewed in consultation with the Highway Superintendent; the applicant shall coordinate with the Highway Superintendent and arrange for an inspection.
9. The applicant should update the Board on the status of any applications before the NYSDEC and WCDH.
10. It is recommended that the Planning Board conduct a site visit and that the house corners and centerline of driveway be staked in the field.

In order to expedite the review of subsequent submissions, the applicant should provide annotated responses to each of the comments outlined herein.

**PLANS REVIEWED, PREPARED BY SITE DESIGN CONSULTANTS, DATED FEBRUARY 11, 2019:**

- Proposed Site Plan (1 of 7)
- Existing Conditions (2 of 7)
- Septic Plan and General Notes (3 of 7)
- Erosion & Sediment Control Plan (4 of 7)
- Details (5 of 7)
- Septic System Profile and Details (6 of 7 and 7 of 7)

**DOCUMENTS REVIEWED:**

- Letter, prepared by Site Design Consultants, dated February 11, 2019
- Stormwater Management Plan Report, dated February 2019
- Wetland Permit Application
- Stormwater Permit Application
- Wetlands Description
- Short EAF
- Mitigation Plan, prepared by Environmental Design Consulting, dated January 4, 2019
- Survey of Property (with NYSDEC Wetland Validation), prepared by Link Land Surveyors

JKJ/JMC/dc

**TO:** Town of Lewisboro Planning Board

**FROM:** Lewisboro Conservation Advisory Council

**SUBJECT:** Kranz Residence  
Elmwood Road

**DATE:** March 7, 2019

---

The Conservation Advisory Council (CAC) reviewed the applicant's submission of a sketch plan for a single-family home on Elmwood Road.

The proposed house is to be built on a sloping property with a wetland at the bottom of the property. Almost the entire lot is in the wetland or wetland buffer. The proposed septic system is also in the wetland buffer.

Given this, the CAC would like to see an aggressive and extensive wetland mitigation plan and also plans to contain runoff that might include sediments and fertilizers both during construction and after, with an inspection schedule.

Noted in the submitted documents was a plan to remove invasive plants using herbicides. The CAC would like to understand which herbicides are being proposed to make sure that glyphosates are not being used.

A site walk would be useful to assess the project.



# Site Design Consultants

Civil Engineers • Land Planners

February 11, 2019

Mr. Jerome Kerner, Planning Board Chairman  
Members of the Planning Board  
79 Bouton Road  
South Salem, NY 10590

Re: Trust Between Abraham Krantz, and Nora Krantz, and Arthur Krantz  
Elmwood Road  
S/B/L: 10302 / 43 / 23

Dear Chairman Kerner and Members of the Planning Board:

Please find our submission for a Wetland Permit and Stormwater Permit for the referenced property. Enclosed please find nine copies of the following:

- Town of Lewisboro Wetland Permit Application and fee of \$255
- Town of Lewisboro Stormwater Permit Application and previously paid fee of \$155
- Escrow Fee \$330 to bring balance to \$2000
- Affidavit of Ownership
- Tax Payment Affidavit
- Short Form EAF
- Wetland Report prepared by Environmental Design Consulting, dated January 23, 2019
- Survey prepared by Link Land Surveyors "Topographic Survey of Property Situate in the Town of Lewisboro", dated March 23, 2017, last dated June 1, 2017
- Site Plans prepared by Site Design Consultants titled "Proposed Full Site Plan Prepared for Trust Between Abraham Krantz, and Nora Krantz, and Arthur Krantz," dated 6/19/18, last revised 2/11/19, Sheets 1 - 7;
- Mitigation Plan prepared by Environmental Design Consulting titled "Mitigation Plan prepared for Trust Between Abraham Krantz, and Nora Krantz, and Arthur Krantz," dated 1-4-19

Please place this application on the next Planning Board agenda. Thank you.

---

251-F Underhill Avenue • Yorktown Heights, New York 10598

60 Walnut Grove Road • Ridgefield, Connecticut 06877

(914) 962-4488

(203) 431-9504

Fax (914) 962-7386



Mr. Jerome Kerner, Planning Board Chairman  
Members of the Planning Board  
February 11, 2019  
Page 2 of 2

Krantz

Sincerely,

Joseph C. Riina, P.E.

Cc: J. Johannessen  
J. Cermele

JCR/cm/ sdc 16-61



Application No: \_\_\_\_\_

Fee: \_\_\_\_\_ Date: \_\_\_\_\_

## TOWN OF LEWISBORO WETLAND PERMIT APPLICATION

79 Bouton Road, South Salem, NY 10590

Phone: 914-763-5592

Fax: 914-763-3637

planning@lewisborogov.com

### Project Information

Project Address: ELMWOOD ROAD

Sheet: 10203 Block: 43 Lot(s): 23

Project Description (identify the improvements proposed within the wetland/wetland buffer and the approximate amount of wetland/wetland buffer disturbance): CONSTRUCTION OF A SINGLE FAMILY RESIDENCE, DRIVEWAY, WELL, SEPTIC SYSTEM, STORMWATER MANAGEMENT AND RESIDENTIAL LANDSCAPING.

### Owner's Information

Owner's Name: ALEXANDER K. KRAZ SUCCESSION TRUST Phone: 561 255 9350

Owner's Address: 189 BENT TREE DR., PALM BEACH GARDENS, FL 33418 Email: AKKRAZ@AASH.COM

### Applicant's Information (if different)

Applicant's Name: JOSEPH RIINA P.E. Phone: 914 962 4488

Applicant's Address: SITE DESIGN CONSULTANTS, 251-F UNDERHILL AV. YORK TOWNSHIP HEIGHTS, NY 10598 Email: JRIINA@SITEDESIGNCONSULTANTS.COM

### Authorized Agent's Information (if applicable)

Agent's Name: JOSEPH RIINA Phone: 914-962-4488

Agent's Address: \_\_\_\_\_ Email: \_\_\_\_\_

### To Be Completed By Owner/Applicant

1. What type of Wetland Permit is required? (see §217-5C and §217-5D of the Town Code)  
☐ Administrative ☒ Planning Board
2. Is the project located within the NYCDEP Watershed? ☐ Yes ☒ No
3. Total area of proposed disturbance: ☐ < 5,000 s.f. ☒ 5,000 s.f. - < 1 acre ☐ ≥ 1 acre
4. Does the proposed action require any other permits/approvals from other agencies/departments? (Planning Board, Town Board, Zoning Board of Appeals, Building Department, Town Highway, ACARC, NYSDEC, NYCDEP, WCDOH, NYSDOT, etc): Identify all other permits/approvals required: PLANNING BOARD, BLDG. DEPT., TOWN HIGHWAY, ACARC, NYSDEC, WCDOH

Note: Initially, all applications shall be submitted with a plan that illustrates the existing conditions and proposed improvements. Said plan must include a line which encircles the total area of proposed land disturbance and the approximate area of disturbance must be calculated (square feet). The Planning Board and/or Town Wetland Inspector may require additional materials, information, reports and plans, as determined necessary, to review and evaluate the proposed action. If the proposed action requires a Planning Board Wetland Permit, the application materials outlined under §217-7 of the Town Code must be submitted, unless waived by the Planning Board. The Planning Board may establish an initial escrow deposit to cover the cost of application/plan review and inspections conducted by the Town's consultants.

For administrative wetland permits, see attached Administrative Wetland Permit Fee Schedule.

Owner/Applicant Signature: \_\_\_\_\_

Date: 2/11/19



**TOWN OF LEWISBORO  
STORMWATER PERMIT APPLICATION**

79 Bouton Road, South Salem, NY 10590  
Phone: 914-763-5592  
Fax: 914-763-3637  
planning@lewisborogov.com

**Project Information**

Project Address: Elmwood Road

Sheet: 10203 Block: 43 Lot(s): 23

Project Description (describe overall project including all proposed land development activities):  
Construction of a single family residence, driveway, septic field, well, stormwater management, and residential landscaping

**Owner's Information**

Owner's Name: Alexander Kranz, Successor Trustee Phone: 561 255 9350

Owner's Address: 189 Bent Tree Dr., Palm Beach Gardens, FL 33418 Email: ajkranz@msn.com

**Applicant's Information** (if different)

Applicant's Name: Joseph Riina P.E. Phone: 914 962 4488

Applicant's Address: Site Design Consultants, 251-F Underhill Avenue, Yorktown Heights, NY 10598 Email: jriina@sitedesignconsultants.com

**Authorized Agent's Information**

Agent's Name: \_\_\_\_\_ Phone: \_\_\_\_\_

Agent's Address: \_\_\_\_\_ Email: \_\_\_\_\_

**To Be Completed By Owner/Applicant/Agent**

1. The approval authority is? (see §189-5 of the Town Code)  
☐ Town Engineer and SMO    ☒ Planning Board
2. Is the project located within the NYCDEP Watershed?    ☐ Yes    ☒ No
3. Total area of proposed disturbance:    ☒ 5,000 s.f. - < 1 acre    ☐ ≥ 1 acre
4. Will the project require coverage under the NYSDEC General Permit for Stormwater Discharges from Construction Activity?    ☐ Yes    ☐ No    ☒ Requires post-construction stormwater practice
5. 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: Planning Board, Bldg Dept., Town Highway, ACARC, NYSDEC, WCDOH,

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/Applicant Signature: \_\_\_\_\_

Date: 2/11/19

# TOWN OF LEWISBORO PLANNING BOARD

79 Bouton Road, South Salem, NY 10590

Email: [planning@lewisborogov.com](mailto:planning@lewisborogov.com)

Tel: (914) 763-5592

Fax: (914) 763-3637

## Affidavit of Ownership

State of:

Florida

County of:

Palm Beach

Alexander J. Kranz, being duly sworn, deposes and says that he/she  
resides at 189 Bent Tree Drive, Palm Beach Gardens, FL

In the County of Palm Beach State of Florida

and that he/she is (check one) ☐ the owner, or ☐ the Successor Trustee  
Title

of

Name of corporation, partnership, or other legal entity

which is the owner, in fee of all that certain log, piece or parcel of land situated, lying and being in the  
Town of Lewisboro, New York, aforesaid and know and designated on the Tax Map in the Town of  
Lewisboro as:

Block 10302 Lot 024 on Sheet 0043

Alexander J. Kranz, Successor Trustee  
Owner's Signature

Sworn to before me this

26<sup>th</sup> day of September, 2 017



Notary Public - affix stamp

# TOWN OF LEWISBORO PLANNING BOARD

PO Box 725, 20 North Salem Road, Cross River, NY 10518

Email: [planning@lewishorogov.com](mailto:planning@lewishorogov.com)

Tel: (914) 763-5592 Fax: (914) 763-3637

## Tax Payment Affidavit Requirement

*This form must accompany all applications to the Planning Board*

*Under regulations adopted by the Town of Lewisboro, the Planning Board may not accept any application unless an affidavit from the Town of Lewisboro Receiver of Taxes is on file in the Planning Board office. The affidavit must show that all amounts due to the Town of Lewisboro as real estate taxes and special assessments on the total area encompassed by the application, together with all penalties and interest thereon, have been paid.*

*Under New York State law, the Westchester County Clerk may not accept any subdivision map for filing unless the same type of affidavit from the Town of Lewisboro Receiver of Taxes is submitted by the applicant at the time of filing.*

This form must be completed by the applicant and must accompany all applications to the Planning Board. Upon receipt the Planning Board Secretary will send the form to the Receiver of Taxes for signature and notarization. If preferred, the applicant may directly obtain the signature of the Receiver of Taxes and notarization prior to submission.

### To Be Completed by Applicant (Please type or print)

**Joseph Riina P.E.**

*Name of Applicant*

**Elmwood Road**

*Project Name*

#### Property Description

Tax Block(s): ~~023~~ **43**

Tax Lot(s): ~~0043~~ **23**

Tax Sheet(s): **10203**

#### Property Assessed to:

**Alexander Kranz, Successor Trustee**

*Name*

**189 Bent tree Dr. 33418**

*Address*

**Palm Beach Gardens**

**FL**

**33418**

*City*

*State*

*Zip*

The undersigned, being duly sworn deposes and says that a search of the tax records in the office of the Receiver of Taxes, Town of Lewisboro, reveals that all amounts due to the Town of Lewisboro as real estate taxes and special assessments, together with all penalties and interest thereon, affecting the premises described below, have been paid.

Signature - Receiver of Taxes:

**2/7/18**  
*Date*

Sworn to before me this

**7<sup>th</sup>** day of **February**

**2018**

Signature - Notary Public (affix stamp)

JANET L. DONOHUE  
NOTARY PUBLIC, STATE OF NEW YORK  
No. 01D06259627  
Qualified in Westchester County  
Commission Expires April 16, 2020



# Alexander Kranz

## WETLANDS

Elmwood Road, Lewisboro, NY

SBL 10302 023 0043

January 23, 2019

### Property Description

The property is a single 3.4741 ac. (151,331 sf.) lot zoned R-2A. The front portion is also located in Special Character Overlay zone SC-ER. Existing residences adjoin the property on all four sides. The lot fronts on the west side of Elmwood Road and is rectangular in shape, approximately 240 ft. wide and 640 ft. in the E-W direction. The eastern 30% of the site is steeply sloped. The western 60% is wetland. The property is entirely forested.



### Kranz Property

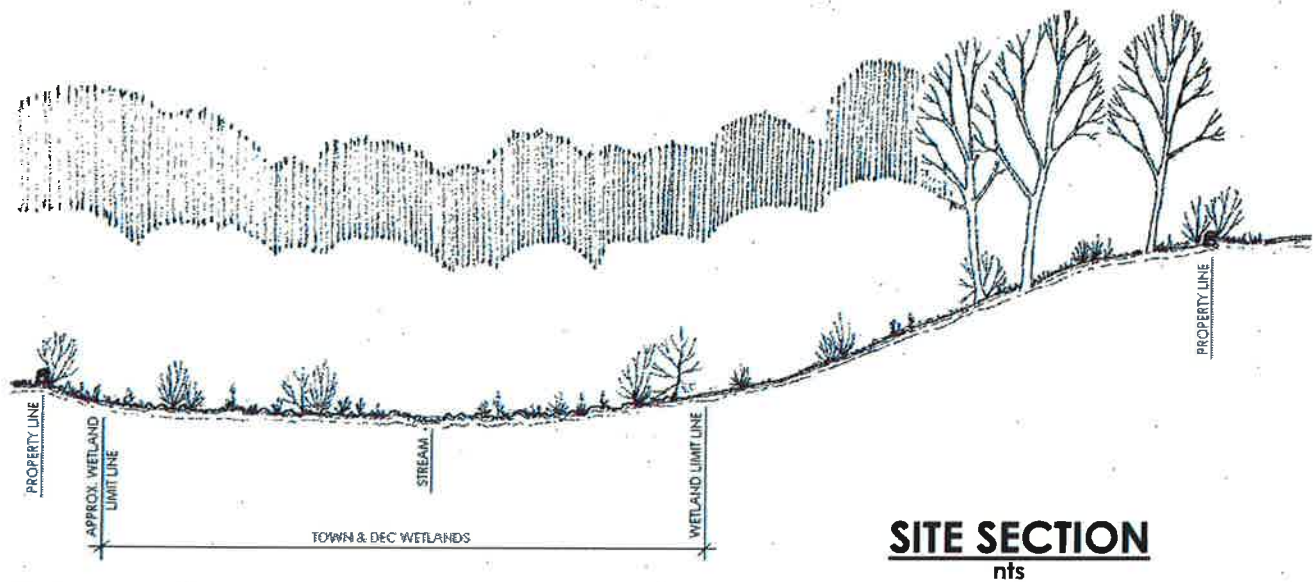
SBL 10302-023-0043

Elmwood Road, North Salem

### Wetland Context

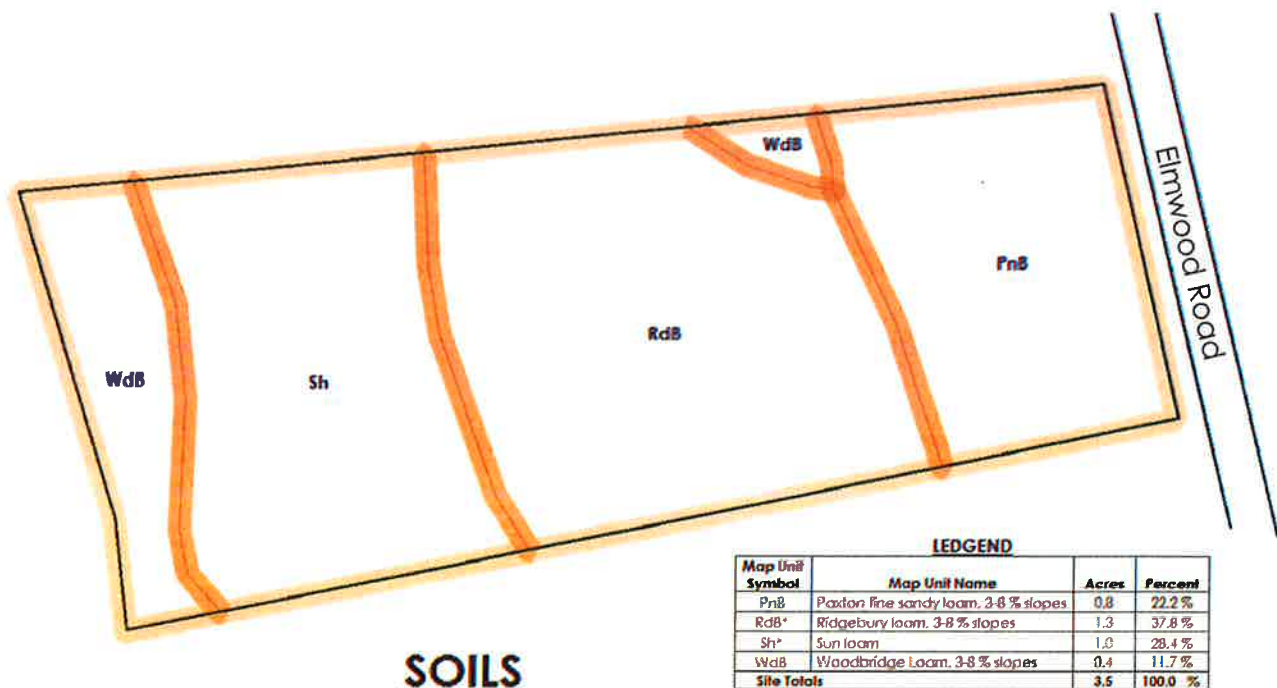
The on-site wetlands and watercourse are located at the headwaters of a tributary to the West Branch of the Silvermine River. There are approximately 35 ac. of watershed which drain through the site. The highest portion of the property is located along the Elmwood Rd. frontage. The land slopes rapidly to the west and the wetlands which

occupy approximately two-thirds of the site, as illustrated in the following Generalized E-W Site Section.



### Wetlands

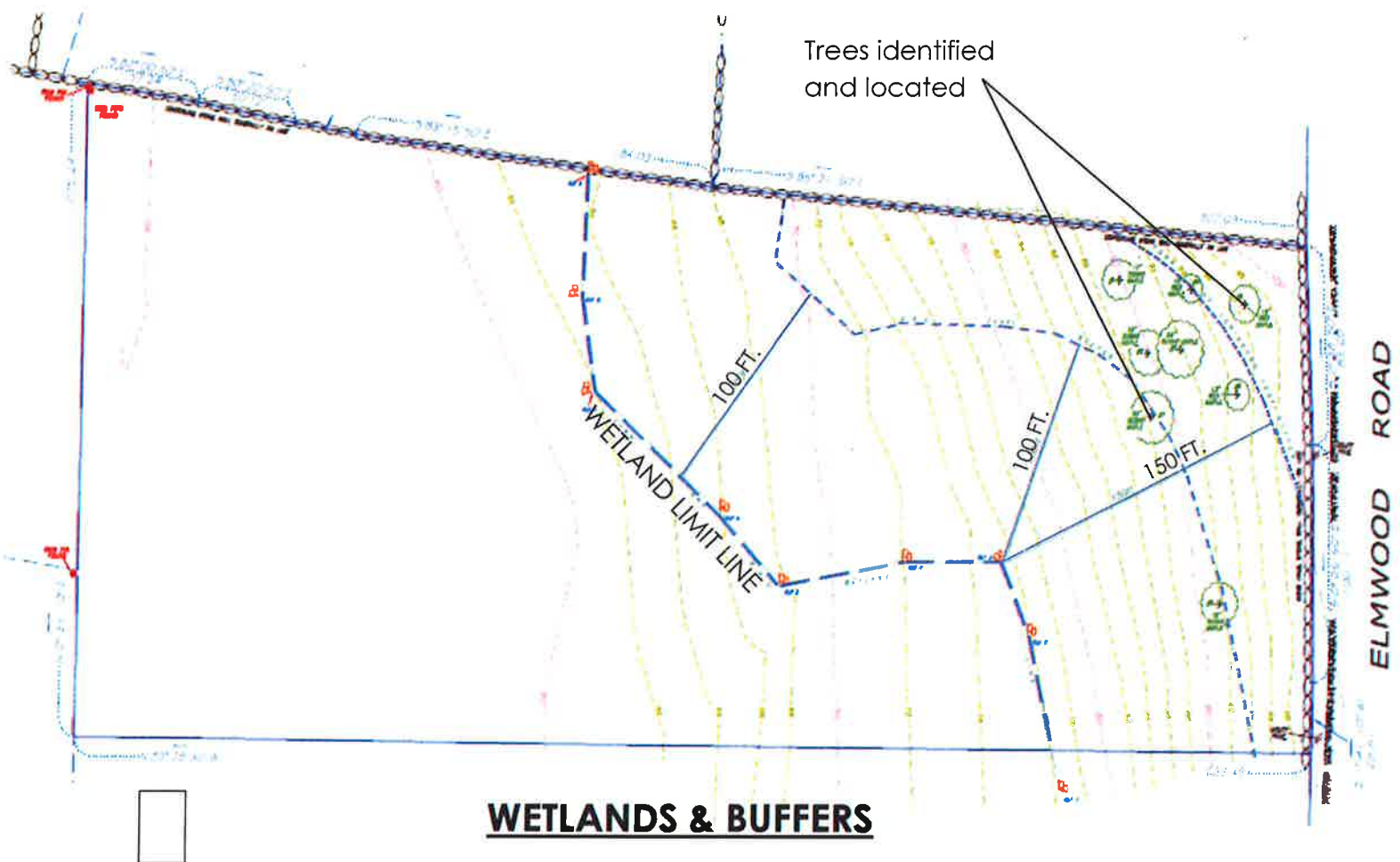
There are both DEC and Town wetlands on the property. Approximately 2.01 ac. of DEC Wetland D-36 were flagged by DEC Biologist, Mr. Josh Fisher on April 28, 2017. These contain the central watercourse and the relatively flat western portion of the property. Poorly drained Sun loam soils are indicated here in the USDA Soils plan below.



**SOILS**  
**Kranz Property**  
 Elmwood Road, Lewisboro, NY  
 SBL 10-302 023 0043

scale: 1" = 50'±





Town wetlands were delineated by Bruce Donohue of Environmental Design Consulting on March 17, 2017 and confirmed by Jahn Johannessen, Town wetland consultant. Town and State wetlands were found to be coincidental.

Wetlands Regulated Area covers 87,740 sf of this property. State wetlands and their 100 ft. buffer occupy 87,740 sf and 40,880 sf ,respectively. Town wetland 150 ft. buffer occupies 59,480 sf including the DEC buffer.

Town wetlands were identified in accordance with the procedures established in Chap. 217, Wetlands and Watercourses. Utilizing a series of test holes, the wetland limit was determined to be the extent of hydric soils, with a matrix Value  $\geq 5$  and Chroma of 2-3 within the upper 16 ". Hydrophilic vegetation, as shown in the following table, predominates in the wetland area. Herbaceous vegetation was minimal due the current dormant season.



Wildlife habitats, as described in "Ecological Communities of New York State, 2 ed, March 2014", are limited to two: 'Red Maple Swamp' and 'Successional Southern Hardwoods' maturing towards 'Oak-Tulip Tree Forest'. The wetland habitat has a rarity ranking of G5 S4 S5, indicating that this habitat type is Demonstrable Secure globally and Apparently to Demonstrable Secure in the state. The Community Occurrence Quality ranking is Good to Excellent on both the global and state scale. The upland habitats are ranked G5 S5 maturing towards G4 S2 S3. These classifications seem to indicate a general trend from a Good to Excellent ranking, but towards Good to Marginal given the surrounding residential development and the small size of the site.

Upland and wetland areas are entirely wooded with late successional mixed hardwoods. The upland canopy is a mix of Sugar and Red Maples, Tulip Poplar and White Ash. Black Cherry, Sweet Birch and Pignut Hickory are also present. The most prominent species is Sugar Maple, with several large individuals near the top of the slope. The forest canopy has been affected by several events. White Ash presence has been severely reduced by Ash Dieback, leaving standing dead and dying individuals. Recent wind storms have thrown several trees and broken tops and major branches of several others. The upland understory/shrub level is generally open and dominated by invasive species. Ground cover vegetation is also sparse, mainly due to seasonal conditions. Invasives are currently prominent. Forest structure is better developed in the wetlands, especially in the understory/shrub and ground cover levels. The canopy is predominantly Red Maple. With some Green Ash, American Elm and Sweet Birch. The Site Vegetation table indicates the species observed, forest level of occurrence, predominance and wetland classification.

# Site Vegetation

Botanical Name/Common Name *	Indicator Status	Location			Woodland Strata**		
		Upland	Wetland	Canopy	Undersory/Shrub	Ground Cover	Vines
<i>Acer platanoides</i> /Norway Maple	UPL	X		X			
<i>Acer Rubrum</i> /Red Maple	FAC	X	X	X			
<i>Acer saccharum</i> /Sugar Maple	FACU	X		X			
<i>Alliaria petiolata</i> /Mustard-Garlic	FACU	X	X			X	
<i>Berberis thunbergii</i> /Japanese Barberry	FACU	X	X		X		
<i>Betula lenta</i> /Sweet Birch	FACU	X		X			
<i>Carex stricta</i> /Tussock Sedge	OBL		X			X	
<i>Carya glabra</i> /Pignut Hickory	FACU	X		X			
<i>Celastrus orbiculatus</i> /Oriental Bittersweet	UPL	X					X
<i>Euonymus alatus</i> /Winged Euonymus	UPL	X	X		X		
<i>Fraxinus Americana</i> /White Ash	FACU	X	X	X			
<i>Fraxinus pennsylvanicus</i> /Green Ash	FACW		X	X			
<i>Hedera helix</i> /English Ivy	FACU	X				X	
<i>Ligustrum ovalifolium</i> /California Privet	UPL	X	X		X		
<i>Lindera benzoin</i> /Spicebush	FACW	X	X		X		
<i>Lonicera japonica</i> /Japanese Honeysuckle	FACU		X		X		
<i>Microstegium vinimeum</i> /Japanese Stiltgrass	FAC		X			X	
<i>Onoclea sensibilis</i> /Sensitive Fern	FACW		X			X	
<i>Pachysandra terminalis</i> /Pachysandra	UPL	X				X	
<i>Prunus pensylvanica</i> /Pin Cherry	FACU	X		X			
<i>Prunus serotina</i> /Black Cherry	FACU	X		X			
<i>Rosa multiflora</i> /Multiflora Rose	FACU	X	X		X		
<i>Rubus allegheniensis</i> /Blackberry	FACU	X	X		X		
<i>Rubus phoenicollaius</i> /Wineberry	FACU	X			X		
<i>Sassafras albidum</i> /Sassafras	FACU	X			X		
<i>Smilax rotundifolia</i> /Greenbriar	FAC	X			X		
<i>Sphagnum</i> spp./Sphagnum Moss	?		X			X	
<i>Symplocarpus foetidus</i> /Skunk Cabbage	OBL		X			X	
<i>Ulmus americana</i> /American Elm	FACW		X	X			
<i>Vaccinium corymbosum</i> /Highbush Blueberry	FACW		X		X		
<i>Vitis</i> sp./Grape	?	X	X				X
		5					

\* Invasive species in *italics*

\*\* Dominant/co-dominant species in **boldface**

Fauna observed on-site was minimal considering the season and pending storm weather conditions. Gray Squirrel, Redtailed Hawk, Hairy Woodpecker, Crow, Turkey and Turkey Vulture were observed or heard. Deer trails and browsed vegetation were observed throughout the site.

Functions provided by the on-site wetlands are related primarily to their headwaters position and the mitigation of low density residential runoff. The broad, nearly level character of the principle area provides stormwater storage, ameliorating downstream peak flows and flooding. Infiltration and groundwater recharge is maximized by the relatively large area of contact. Groundwater is exfiltrated during periods between runoff events, maintaining stream flow. The meandering stream channel and the ground level 'texture' created by the numerous hummocks, clumps of Tussock Sedge and large Sphagnum covered rocks slow the rate of runoff, cause turbulence that cause the deposition of sediments being carried downstream.

Buffer area benefits are limited by the steepness of the on-site grades and their isolated nature. The on-site buffers slope from east to west with a southerly trend. Runoff from off-site is diverted by stone walls along Elmwood Rd. and the adjacent property to the north. The result of this isolation is a notable lack of on-site formation of drainage channels or rill erosion despite the slope of the land. The site soils and vegetative cover are apparently capable of absorbing stormwater runoff without sustaining significant erosion.

#### **Site Development Proposed**

The property is currently managed by Mr. Alexander Kranz as the executor of his father's estate for his siblings. Aware of the physical and regulatory difficulties of building on this property his objective is to obtain Town approval for a specific site development plan. This would maximize the value of the land by having this time consuming aspect of the approval process completed, requiring only a building permit to begin construction.

The proposed development is for a single family residence and associated features: access driveway, well, septic system stormwater management and landscape features typical of the neighboring community. This will involve a total of 34,027 sq.ft. of site disturbance, 30,580 of which is wetland buffer. No wetlands will be disturbed and no activities related to the wetlands are included. There being only 4,200± sq.ft of non-wetland regulated on this property, practically all of the proposed site development requires a wetland permit. Only the initial 65± of driveway, located in the extreme NE corner of the site are in unregulated land.



### **Potential Impacts**

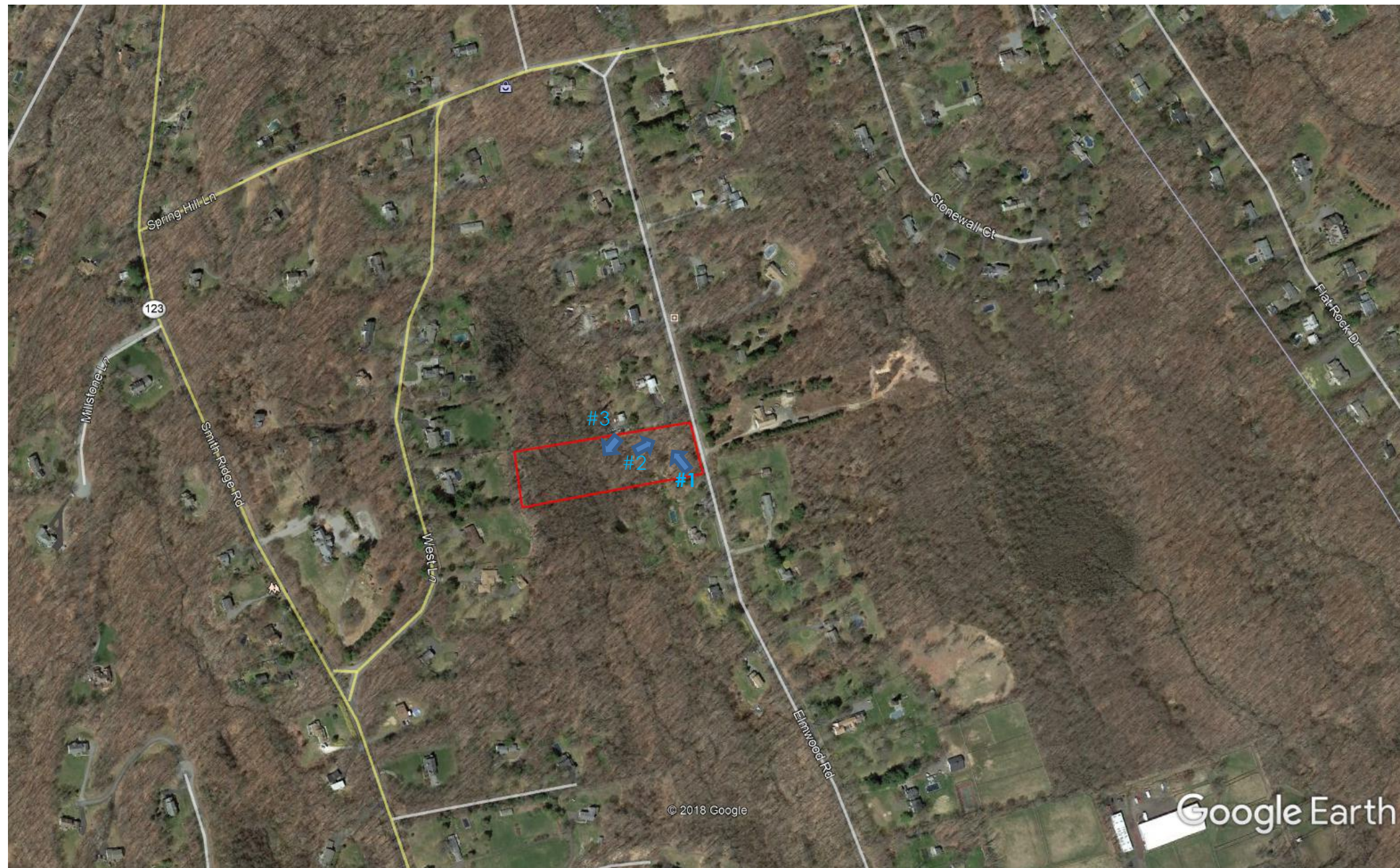
- 30,580± sq.ft. of the existing woodland will be disturbed, primarily for regrading.
- 5,050± sq.ft. of impervious surfaces of house, driveway, walks and terrace will alter surface runoff and contribute pollutants to the runoff.
- Wildlife habitat will be affected by these changes and the resulting increased human activity.
- Established edge habitat along Elmwood Rd. frontage will be lost, to be replaced by considerable more new woodland edge habitat.

### **Mitigation**

- All disturbed area except for impervious surfaces will be revegetated. Stormwater management area will be native material intended to restore a natural condition.
- Wildlife habitat will be diversified by the introduction of meadow and shrub areas. Even lawn and ornamental shrubs provide different foraging opportunities.
- Invasive species which dominate the ground and shrub levels of the current vegetation will be removed. These include Winged Euonymus, Japanese Barberry, Privet, Oriental Bittersweet, Mustard Garlic and Japanese Stiltgrass.
  - Woody plants will be removed by herbicide applied with a cut-and-daub method, eliminating ground disturbance and subsequent erosion potential.
  - Herbaceous material will be removed by herbicide applied with a shrouded applicator set for large droplet size to minimize potential spray drift.
- Stormwater runoff will be managed to maintain predevelopment rate, volume and quality.
  - Piped runoff will be disbursed with a level lip spreader at the top end of a vegetated filter stripe. This will trap sediment and take up nutrients during the growing season.
  - The Bio-retention basin will remove additional pollutants through biologic breakdown by the vegetation and soil biome.
  - The Detention Basin will regulate the peak rate and duration of stormwater discharge.
  - Discharges from both basins will be through underdrains to a second level lip spreader to produce overland sheet flow similar to the predevelopment conditions.



## Kranz Property Context with On-Site Photograph Locations & Orientation







**Photo #1**

Looking NW from SE corner of site in general area of proposed septic system.



**Photo #2**

Looking east from toe of slope in vicinity of stormwater management basins



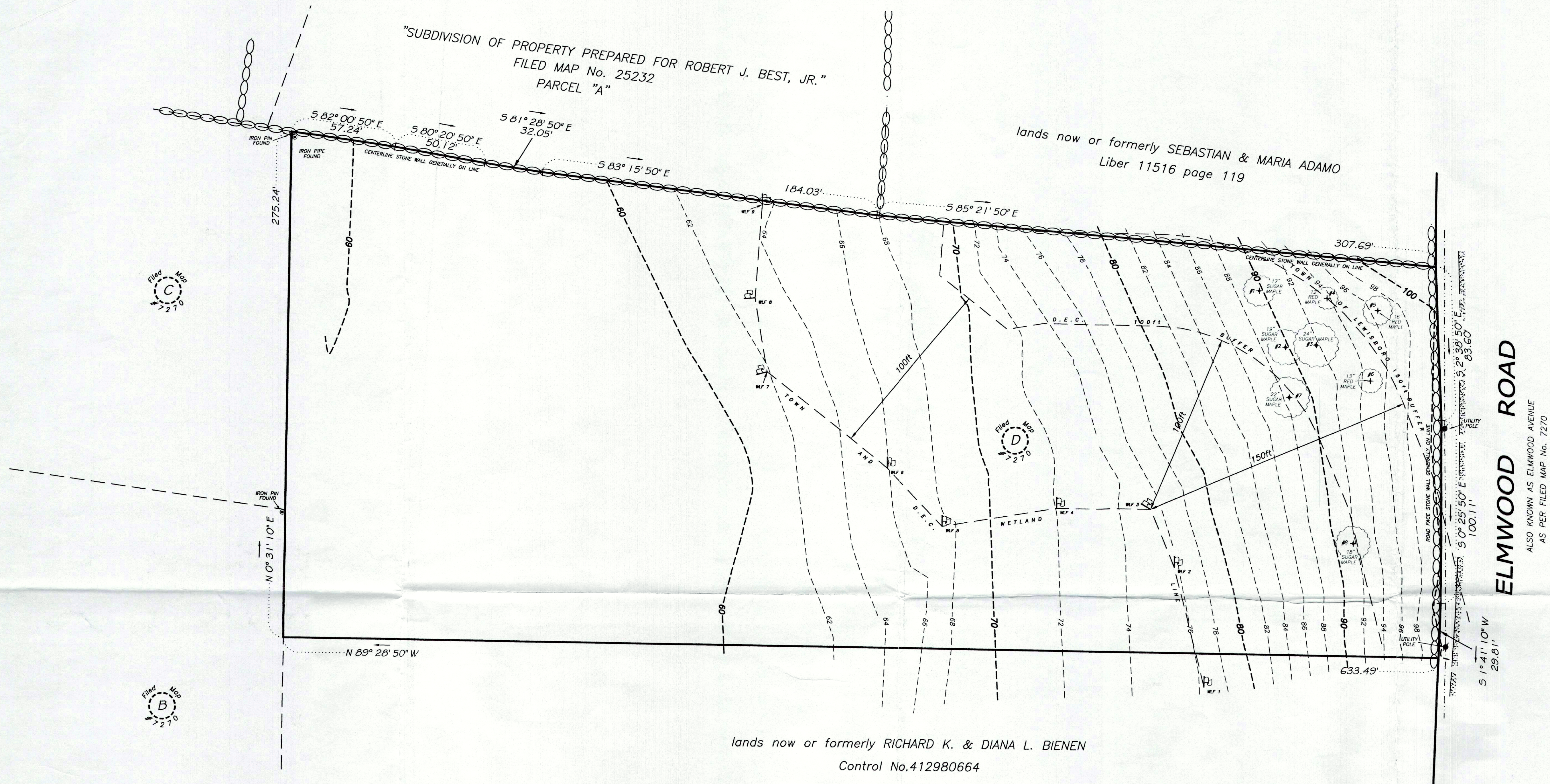
**Photo #3**

Looking SW from northern property line into wetlands









**TOPOGRAPHIC  
SURVEY OF PROPERTY  
SITUATE IN THE  
TOWN OF LEWISBORO  
WESTCHESTER COUNTY  
NEW YORK**

SCALE : 1"= 30'  
SURVEYED : MARCH 23, 2017  
WETLAND FLAGS AND TREES LOCATED: JUNE 1, 2017

● PREMISES ARE DESIGNATED ON THE TAX MAPS FOR THE TOWN OF LEWISBORO

SECTION 55.3: BLOCK 6: LOT 8:

PROPERTY AREA: 151,331 SQ. FT. / 3.4741 AC.

- THE PREMISES SHOWN HEREON BEING KNOWN AND DESIGNATED AS PARCEL "D" AS SHOWN ON A CERTAIN MAP ENTITLED "SURVEY OF PROPERTY OWNED BY CHARLES L. SUTHERLAND" PREPARED BY WALTER K. GOODHUE, CIVIL ENGINEER, DATED JULY 31, 1950 AND FILED IN THE WESTCHESTER COUNTY CLERK'S OFFICE, DIVISION OF LAND RECORD, ON DECEMBER 6, 1950 AS FILED MAP No. 7270.
- THIS MAP IS BASED UPON THE INFORMATION SUPPLIED BY THE CLIENT AND/OR HIS REPRESENTATIVE AND SUBJECT TO THE FINDINGS THAT A COMPLETE ABSTRACT OF TITLE MAY UNCOVER
- THE OFFSETS SHOWN HEREON, ARE NOT INTENDED TO ESTABLISH PROPERTY LINES FOR THE ERECTION OF FENCES, STRUCTURES OR ANY OTHER IMPROVEMENTS.
- WETLANDS WERE FLAGGED 4-28-17 BY BRUCE DONOHUE OF ENVIRONMENTAL DESIGN CONSULTING AND CONFIRMED BY THE TOWN AND DEC
- TREE CALIPER AND SPECIES AS PER BRUCE DONOHUE OF ENVIRONMENTAL DESIGN CONSULTING
- ENCROACHMENTS BELOW GRADE AND/OR SUBSURFACE FEATURES, IF ANY, NOT LOCATED OR SHOWN HEREON.
- ELEVATIONS ARE BASED ON AN ARBITRARY DATUM.
- UNAUTHORIZED ALTERATION OR ADDITION TO A SURVEY MAP BEARING A LICENSED LAND SURVEYOR'S SEAL IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAWS.
- THE INFORMATION DEPICTED HEREON IS BASED UPON AN ACTUAL FIELD SURVEY AND IS AN OPINION BASED UPON SAID SURVEY. VARIATIONS IN OFFSETS FROM THAT OF THE OTHERS CAN AND MAY EXIST.
- ONLY COPIES FROM THE ORIGINAL OF THIS SURVEY MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S SEAL SHALL BE CONSIDERED TO BE TRUE VALID COPIES.
- THIS MAP WAS PREPARED FROM AN ACTUAL FIELD SURVEY CONDUCTED ON THE DATE SHOWN AND THAT SAID SURVEY WAS PERFORMED IN ACCORDANCE WITH THE EXISTING "CODE OF PRACTICE FOR LAND SURVEYS" ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS.

PREPARED FOR: KRANTZ TRUST  
ALEXANDER J KRANTZ TTE

NYSDEC FRESHWATER WETLAND BOUNDARY VALIDATION	
The freshwater wetland boundary as represented on these plans accurately depicts the limits of Freshwater	
Wetlands <u>D-36</u>	as delineated by <u>Bruce Donohue</u> on <u>3/17/2017</u>
DEC Staff: <u>J. J. J.</u>	7/23/19 (Surveyor) Engineer: <u>[Signature]</u>
Date Valid: <u>7/23/2018</u>	Expiration Date: <u>7/23/2023</u>
<p>Wetland boundary delineations as validated by the New York State Department of Environmental Conservation remain valid for 5 years <b>unless</b> existing exempt activities, area hydrology, or land use practices change (e.g., agricultural to residential). <b>After 5 years the boundary must be revalidated by DEC staff.</b> Revalidation may include a new delineation and survey of the wetland boundary.</p> <p>Any proposed construction, grading, filling, excavating, clearing or other regulated activity in the freshwater wetland or within 100 feet of the wetland boundary as depicted on this plan requires a permit from the NYS Department of Environmental Conservation under Article 24 of the Environmental Conservation Law (Freshwater Wetlands Act) prior to commencement of work.</p>	

**Link**  
**Land Surveyors P.C.**  
21 Clark Place, Suite 1-B Phone 845-628-5857  
Mahopac N.Y. 10541 Fax 845-621-0013

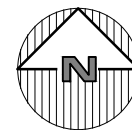
[Signature]  
**ERIK J. LINK**  
NEW YORK STATE LICENSED  
LAND SURVEYOR NO. 050542

RECEIVED

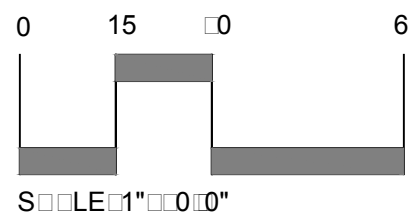
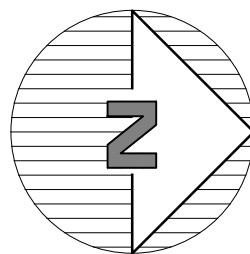
JUL 16 2018

Natural Resources  
NYSDEC Region 3 - New Paltz





I L D L O I S L D S O D




## SAFE DI

B... D... Dr... B...  
CALL TOLL FREE 1-800-62-62  
Ind... R...  
...  
...d...  
...d...



Engineer:



Joseph C. Riina, P.E.  
NYS Lic. No. 64431

[illegible]

SCALE:  
1" = 20'

DRAWN BY:  
OM/JR

DATE:  
6/19/18

# PROPOSED SITE PLAN

## PROPOSED SEPTIC PLAN

TRUST BET ☐ EE ☐ BR ☐ M  
R ☐ T ☐ ☐ ☐ D ☐ OR ☐ R ☐ T ☐

PROJECT LOCATION  
ELMWOOD ROAD  
Town of Lewisboro      Westchester Co., New York

Sheet 1 of 7







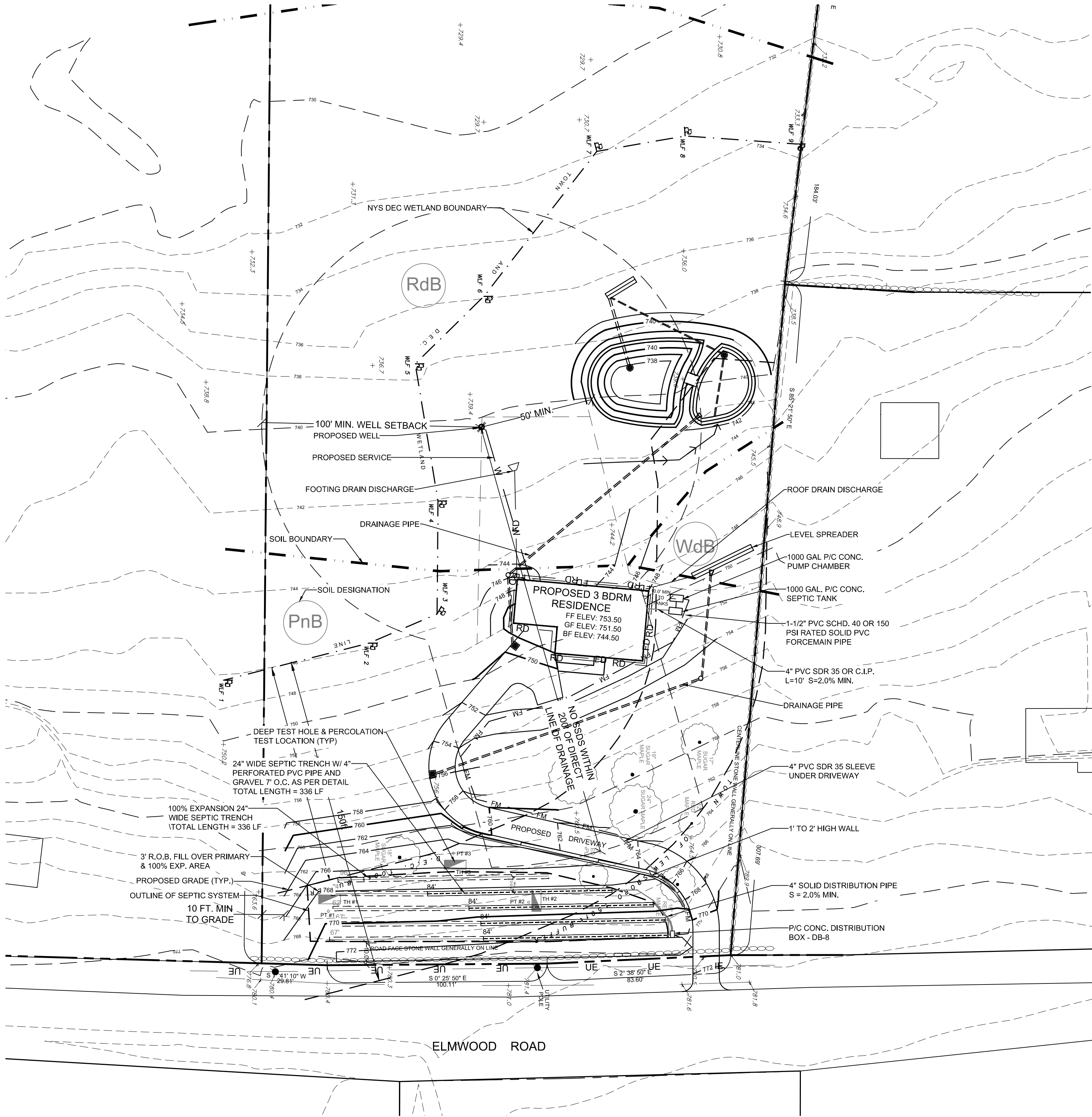


SITE DATA

OWNER: DELOLOE  
STREET ADDRESS:  
PROJECT LOCATION:  
TO: TOWN OF MIDDLETOWN  
RE: LOTS 1 & 2  
SITE AREA:  
SEWER FACILITIES:  
WATER FACILITIES:  
OTHER NOTES:

TR: ST BET: EEL & BROOK (R) TO TOWN OF MIDDLETOWN  
100' BENT TREE DRIVE  
ELMWOOD ROAD  
ELMWOOD ROAD  
TO: TOWN OF MIDDLETOWN  
SE: TIO: 10:02: BLO: 10:02: LOT 2  
L: 10:02: S: T: 10:02: LOT 2  
RES (151:2: SF)  
S: B: 10:02: SE: 10:02: TREATMENT SYSTEM  
DRILLED WELL  
100' BENT TREE DRIVE

SOIL CLASSIFICATIONS			
TYPE	NAME	DESCRIPTION	PROPOSED
Rd	RIDEB	LO-M	
Wd	WOODBRIDGE	LO-M	
S	SAND	LO-M	



WELL DEPARTMENT SETTING SCHEDULE											
LOT NO.	S.S.T. (S.F.)	LOT (S.F.)	TEST (S.F.)	DEPT. TEST (S.F.)	TOTAL DEPT.	DEPT. TO CENTER	DEPT. TO ROAD	DEPT. TO SLOPE	DEPT. TO TEST	DEPT. TO (MIN.)	DEPT. TO (MAX.)
1	6100 S.F.	151:2: S.F.	100'	6" T.S.OIL 6" S" MOD. OM. M.S.D.S. 10' STOS-ES	100'			15.0'	10'	10'	10'
2			100'	6" T.S.OIL 6" S" MOD. OM. M.S.D.S. 10' STOS-ES	100'			15.0'	10'	10'	10'
3			100'	6" T.S.OIL 6" S" MOD. OM. M.S.D.S. 10' STOS-ES	100'			15.0'	10'	10'	10'

NOTE: R.O.B. FILL OVER PRIMARY & 100% EXP. AREA

SEWER DISTANCES FROM SEWER SOURCES

SEWER SOURCE	DRILLED WELL (TYPICAL ELEVATION)	TO STREET (TYPICAL ELEVATION)	TO WELL	TO STREET LINES
1. 10' SEWER (TYPICAL)	25'	25'	10'	10'
2. 10' SEWER (TYPICAL)	50'	50'	10'	10'
3. 10' SEWER (TYPICAL)	50'	50'	10'	10'
4. 10' SEWER (TYPICAL)	100'	100'	20'	10'
5. 10' SEWER (TYPICAL)	100'	100'	20'	10'
6. 10' SEWER (TYPICAL)	150'	100'	20'	10'
7. 10' SEWER (TYPICAL)	50'	25'	20'	10'

NOTES:

1. 10' SEWER (TYPICAL)
2. 10' SEWER (TYPICAL)
3. 10' SEWER (TYPICAL)
4. 10' SEWER (TYPICAL)
5. 10' SEWER (TYPICAL)
6. 10' SEWER (TYPICAL)
7. 10' SEWER (TYPICAL)

ADDITIONAL SEWER DISTANCES FROM SEWER TO:

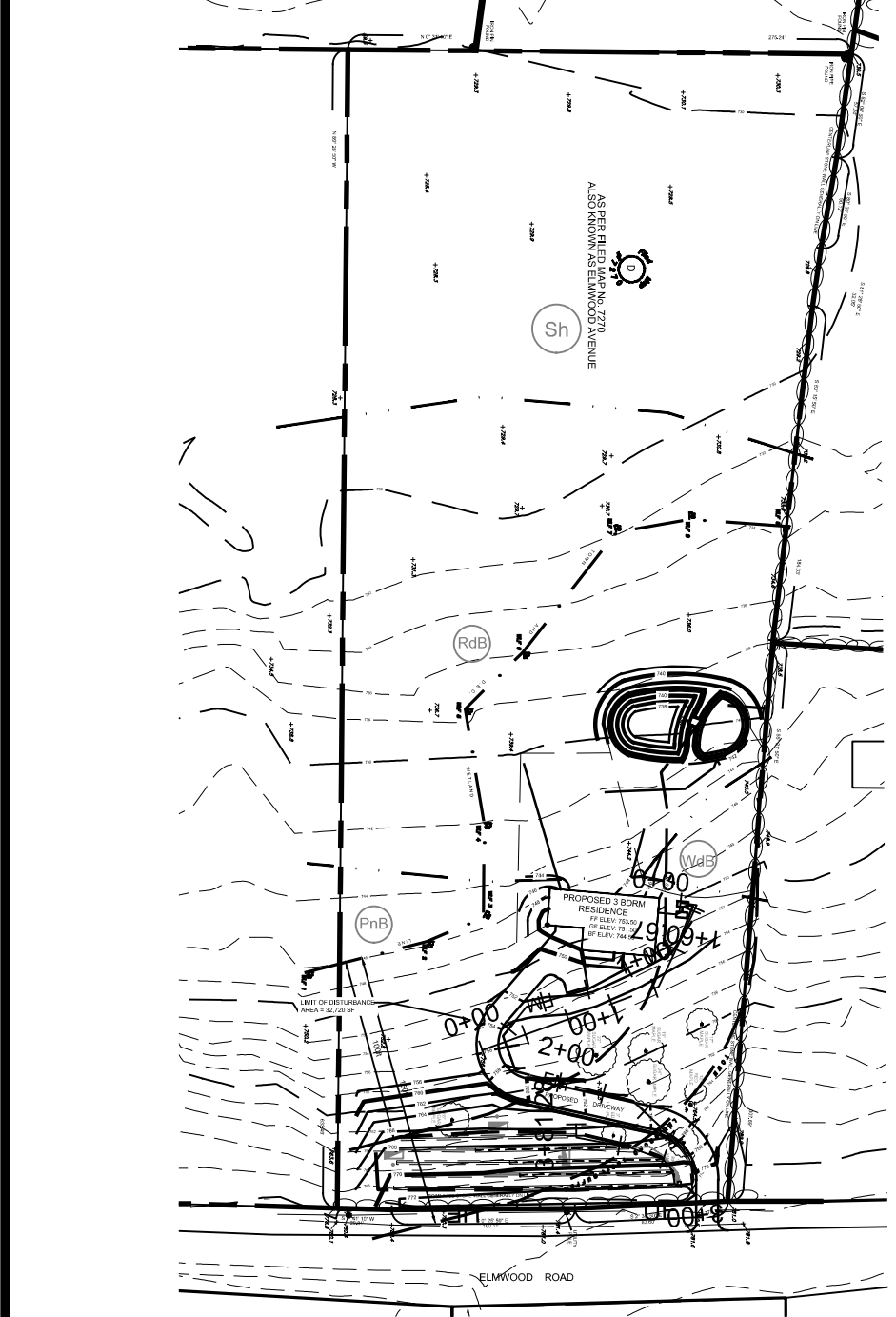
1. 10' SEWER (TYPICAL)
2. 10' SEWER (TYPICAL)
3. 10' SEWER (TYPICAL)
4. 10' SEWER (TYPICAL)
5. 10' SEWER (TYPICAL)

SUMMARY:

1. 10' SEWER (TYPICAL)
2. 10' SEWER (TYPICAL)
3. 10' SEWER (TYPICAL)
4. 10' SEWER (TYPICAL)
5. 10' SEWER (TYPICAL)

DESIGN:

1. 10' SEWER (TYPICAL)
2. 10' SEWER (TYPICAL)
3. 10' SEWER (TYPICAL)
4. 10' SEWER (TYPICAL)
5. 10' SEWER (TYPICAL)

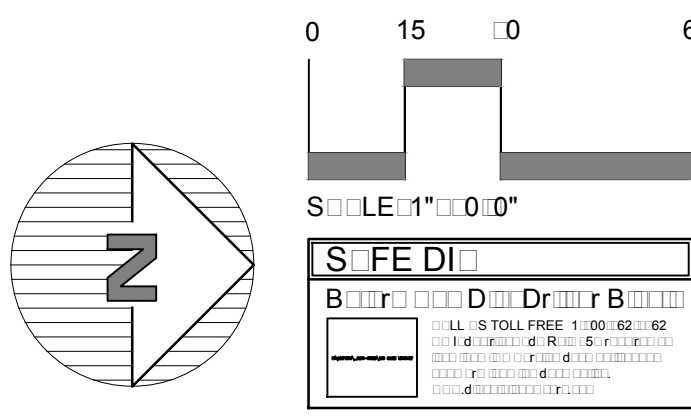


- GENERAL NOTES:
1. 10' SEWER (TYPICAL)
  2. 10' SEWER (TYPICAL)
  3. 10' SEWER (TYPICAL)
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  14. 10' SEWER (TYPICAL)
  15. 10' SEWER (TYPICAL)
  16. 10' SEWER (TYPICAL)
  17. 10' SEWER (TYPICAL)
  18. 10' SEWER (TYPICAL)
  19. 10' SEWER (TYPICAL)
  20. 10' SEWER (TYPICAL)
  21. 10' SEWER (TYPICAL)
  22. 10' SEWER (TYPICAL)

- SEWER CONSTRUCTION REQUIREMENTS:
1. 10' SEWER (TYPICAL)
  2. 10' SEWER (TYPICAL)
  3. 10' SEWER (TYPICAL)
  4. 10' SEWER (TYPICAL)
  5. 10' SEWER (TYPICAL)
  6. 10' SEWER (TYPICAL)
  7. 10' SEWER (TYPICAL)
  8. 10' SEWER (TYPICAL)
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  18. 10' SEWER (TYPICAL)
  19. 10' SEWER (TYPICAL)
  20. 10' SEWER (TYPICAL)
  21. 10' SEWER (TYPICAL)

- GENERAL NOTES:
1. 10' SEWER (TYPICAL)
  2. 10' SEWER (TYPICAL)
  3. 10' SEWER (TYPICAL)
  4. 10' SEWER (TYPICAL)
  5. 10' SEWER (TYPICAL)
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  14. 10' SEWER (TYPICAL)
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  16. 10' SEWER (TYPICAL)
  17. 10' SEWER (TYPICAL)
  18. 10' SEWER (TYPICAL)
  19. 10' SEWER (TYPICAL)
  20. 10' SEWER (TYPICAL)
  21. 10' SEWER (TYPICAL)

- MINIMUM RESTRICTIVE DISTANCES TO WELL:
1. 10' SEWER (TYPICAL)
  2. 10' SEWER (TYPICAL)
  3. 10' SEWER (TYPICAL)
  4. 10' SEWER (TYPICAL)
  5. 10' SEWER (TYPICAL)
  6. 10' SEWER (TYPICAL)
  7. 10' SEWER (TYPICAL)
  8. 10' SEWER (TYPICAL)
  9. 10' SEWER (TYPICAL)
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  16. 10' SEWER (TYPICAL)
  17. 10' SEWER (TYPICAL)
  18. 10' SEWER (TYPICAL)
  19. 10' SEWER (TYPICAL)
  20. 10' SEWER (TYPICAL)
  21. 10' SEWER (TYPICAL)



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www.sitedesignconsultants.com

Engineer: Joseph C. Rina, P.E.  
NYS Lic. No. 64431

Revisions:

No.	Date	Comments
1.	7/5/18	H.D. Comm.
2.	12/18/18	Revised basins
3.	2/17/19	Minor revisions

SCALE: 1" = 20'

DRAWN BY: OM/R

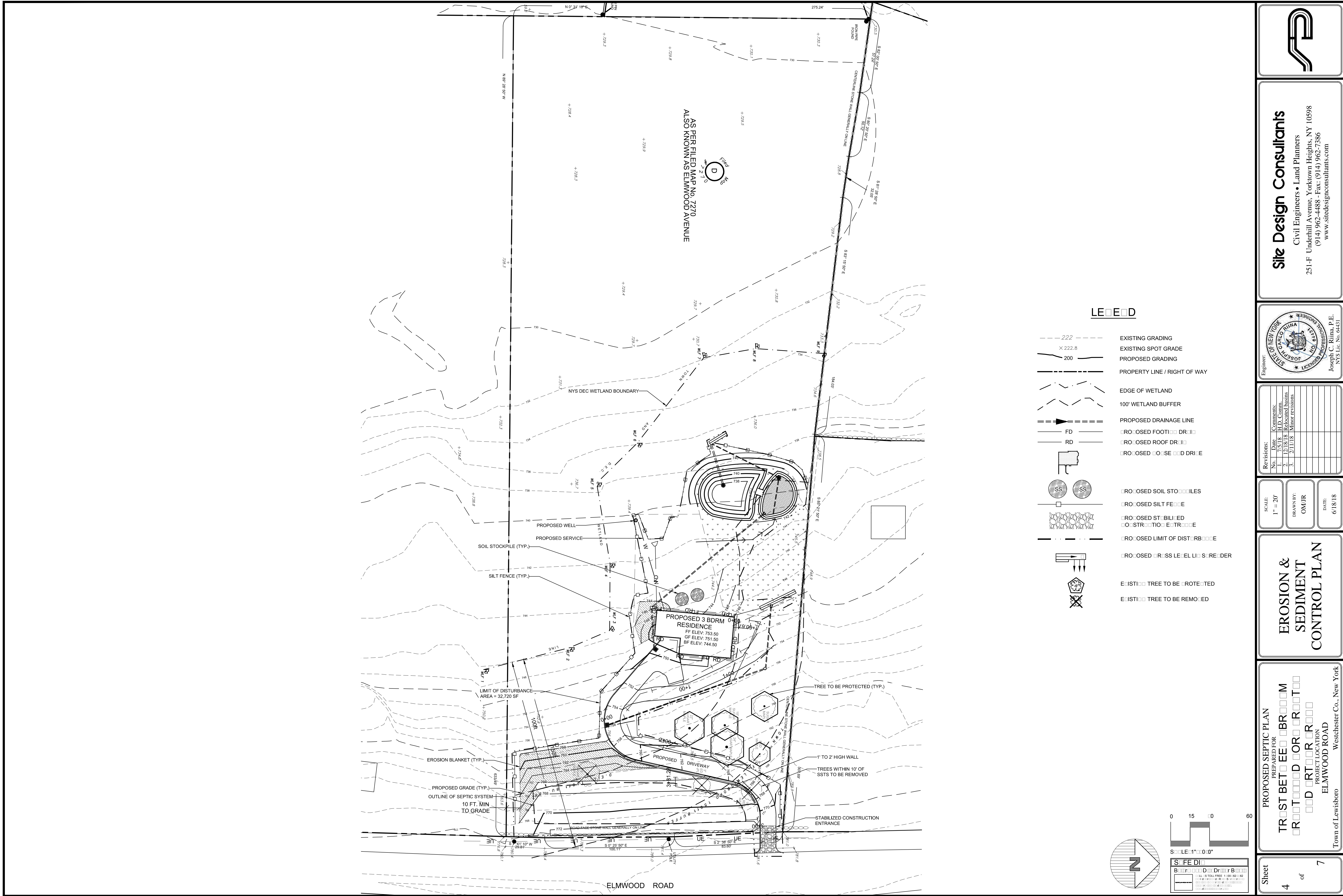
DATE: 6/18/18

SEPTIC PLAN AND GENERAL NOTES

PROPOSED SEPTIC PLAN  
PREPARED FOR: TR: ST BET: EEL & BROOK (R) TO TOWN OF MIDDLETOWN  
PROJECT LOCATION: 100' BENT TREE DRIVE, ELMWOOD ROAD, WESTCHESTER CO., NEW YORK

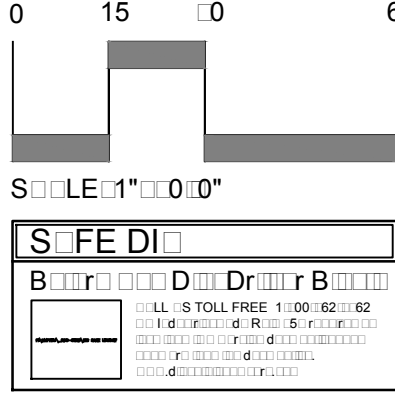
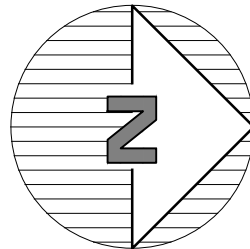
Sheet 3 of 7





LEGEND

- EXISTING GRADING
- EXISTING SPOT GRADE
- PROPOSED GRADING
- PROPERTY LINE / RIGHT OF WAY
- EDGE OF WETLAND
- 100' WETLAND BUFFER
- PROPOSED DRAINAGE LINE
- PROPOSED FOOTING DRAIN
- PROPOSED ROOF DRAIN
- PROPOSED CULVERT DRAIN
- PROPOSED SOIL STOCKPILES
- PROPOSED SILT FENCE
- PROPOSED STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED BRUSH LOG SLOPE COVER
- EXISTING TREE TO BE PROTECTED
- EXISTING TREE TO BE REMOVED



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Revisions:	No.	Date	Comments
	1.	7/5/18	H.D. Comm. Replaced basins
	2.	12/18/18	Minor revisions
	3.	2/17/18	Minor revisions

SCALE:  
1" = 20'

DRAWN BY:  
OMJR

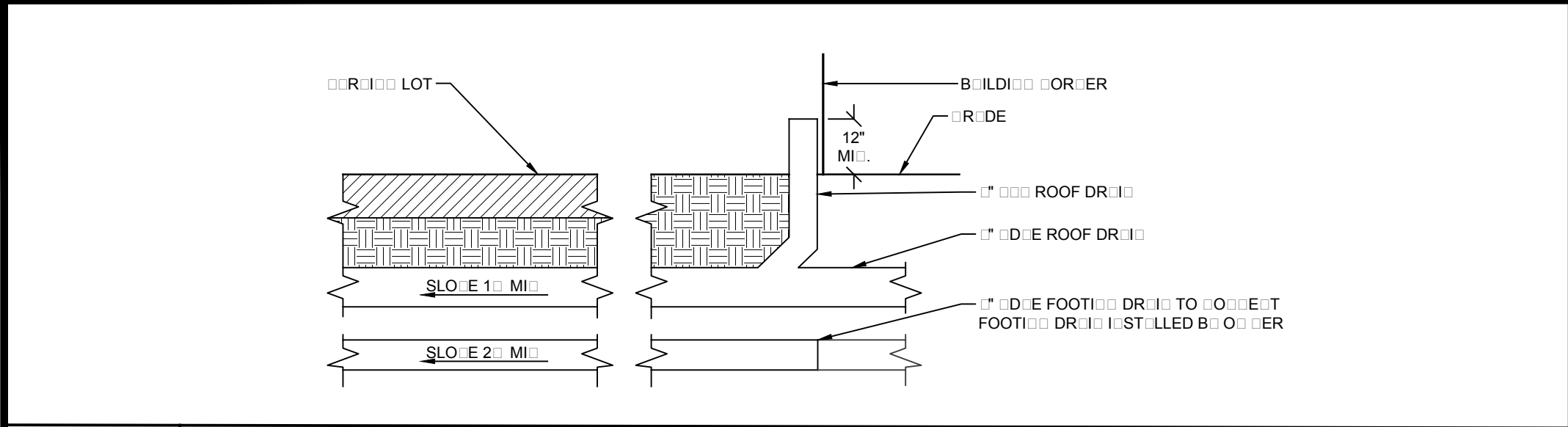
DATE:  
6/18/18

**EROSION & SEDIMENT CONTROL PLAN**

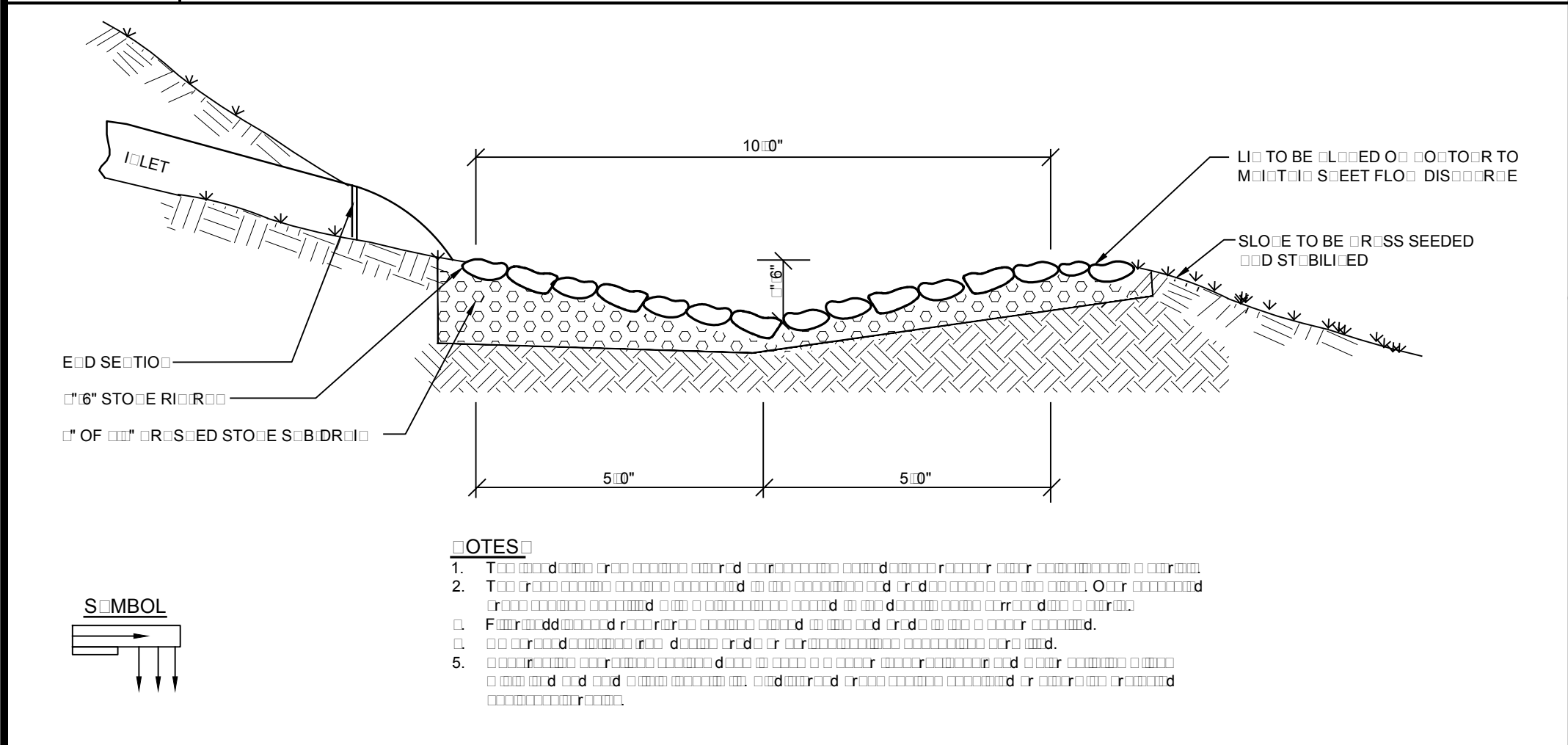
PROPOSED SEPTIC PLAN  
PREPARED FOR  
TRUST BETHEEN BRIM  
ROTTEND ORRORT  
DORTORRORT  
PROJECT LOCATION  
ELMWOOD ROAD  
Town of Lewisboro Westchester Co., New York

Sheet 4 of 7

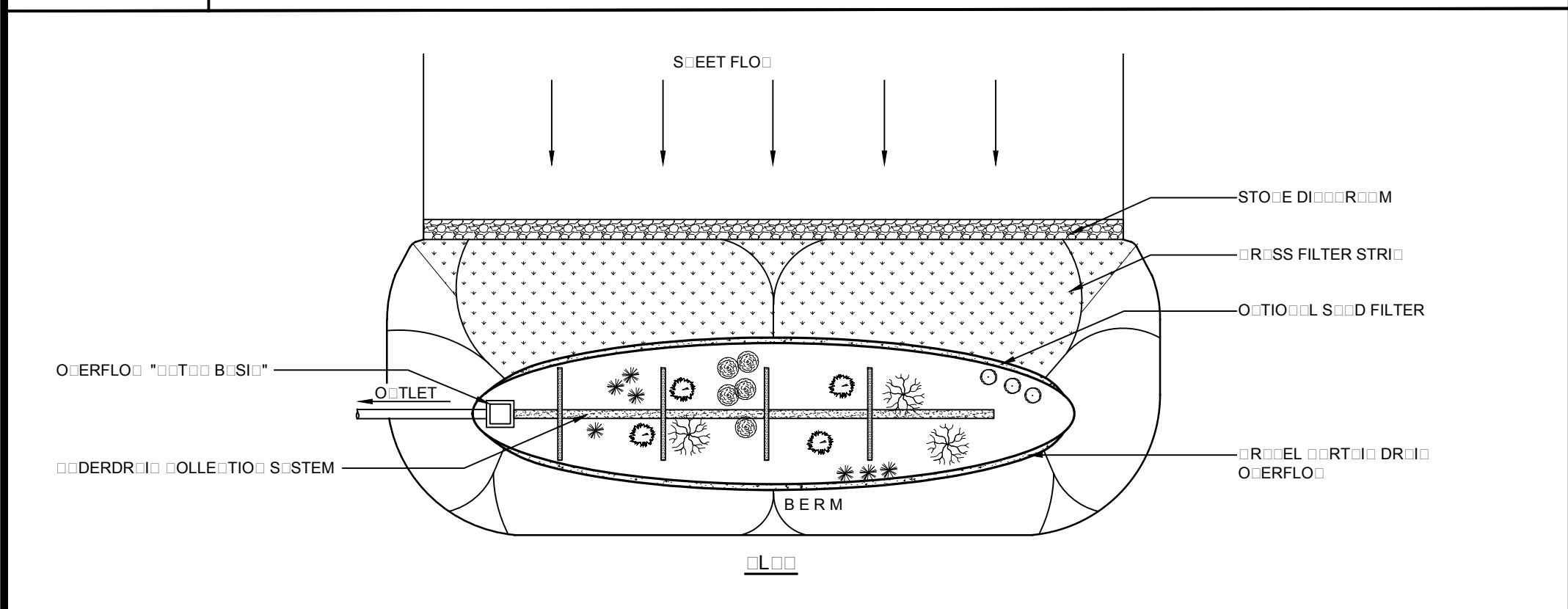




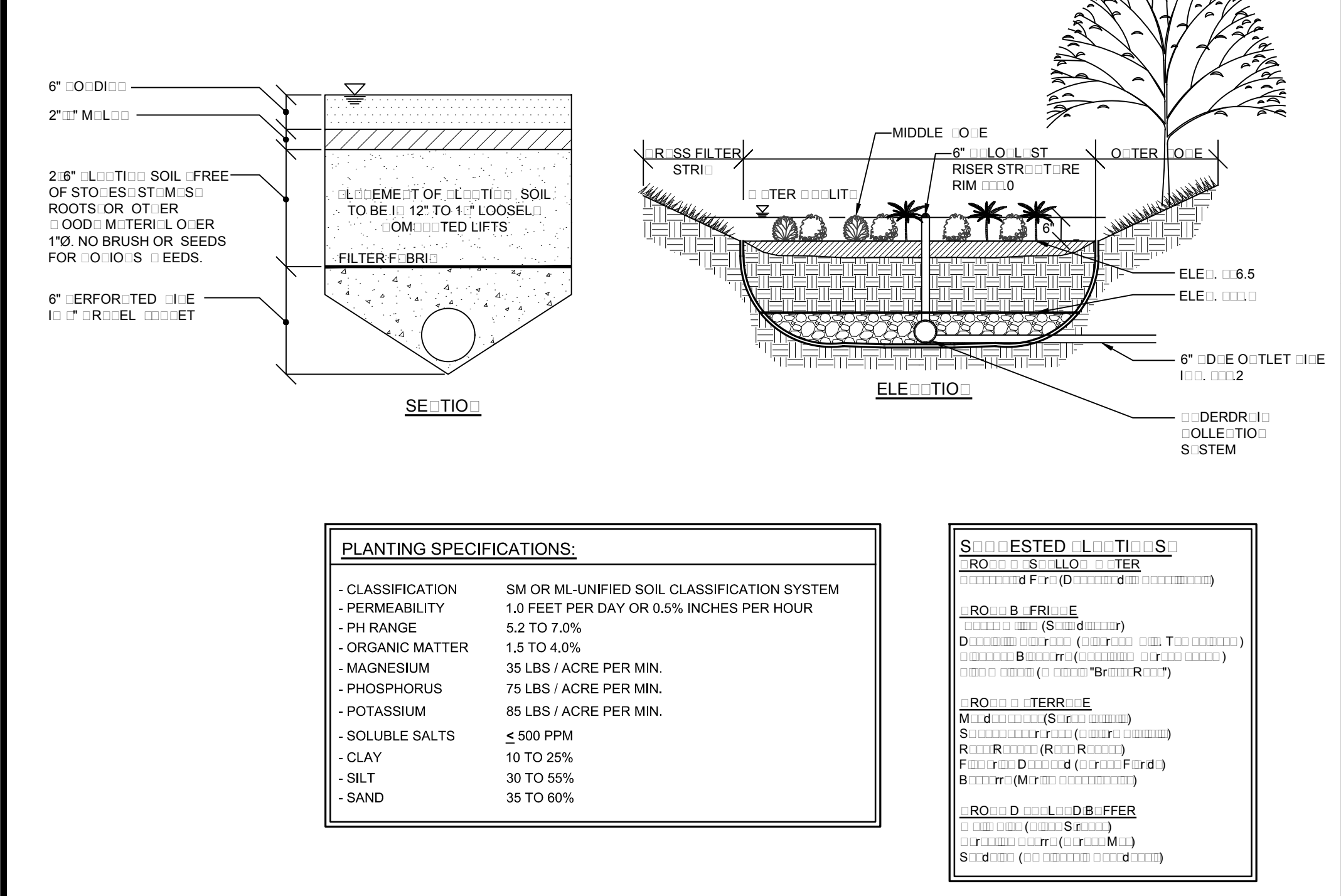
ROOF FOOTING DETAIL



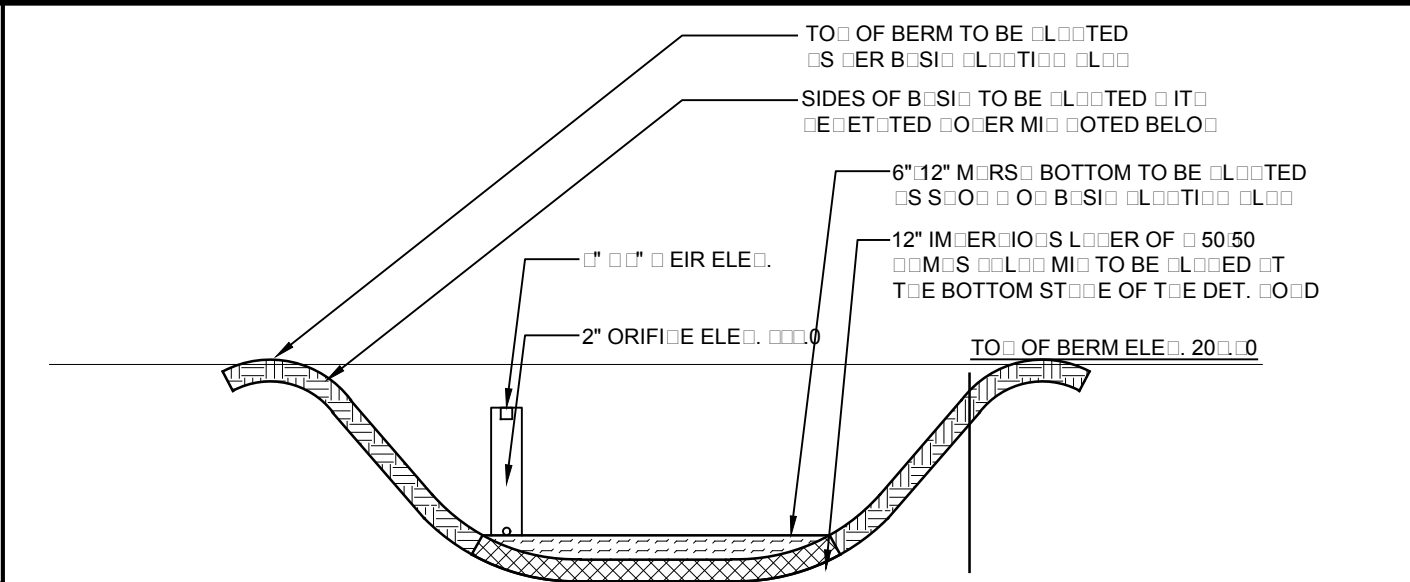
STORM DRAIN DETAIL



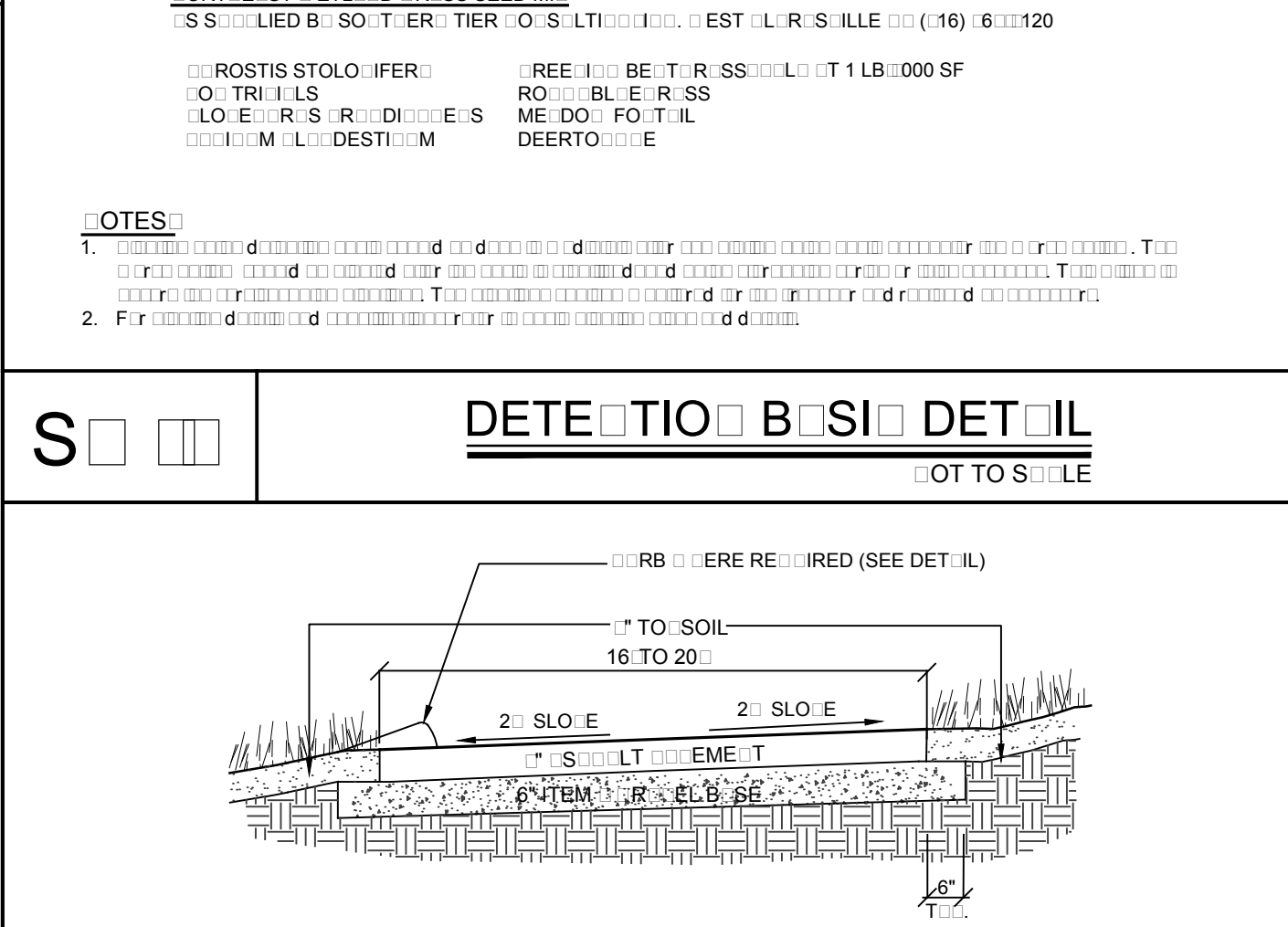
STORM DRAIN DETAIL



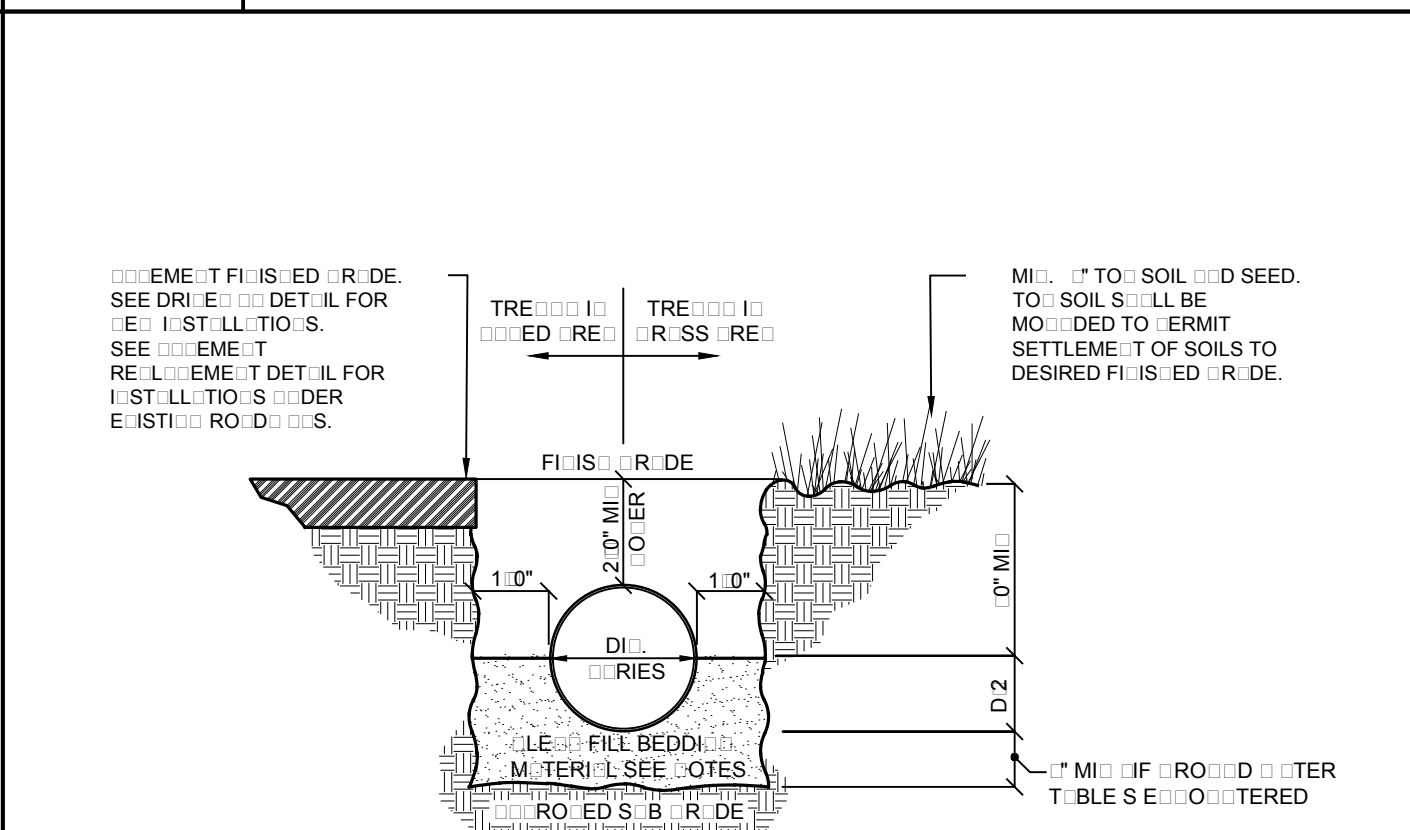
BIORETENTION DETAIL



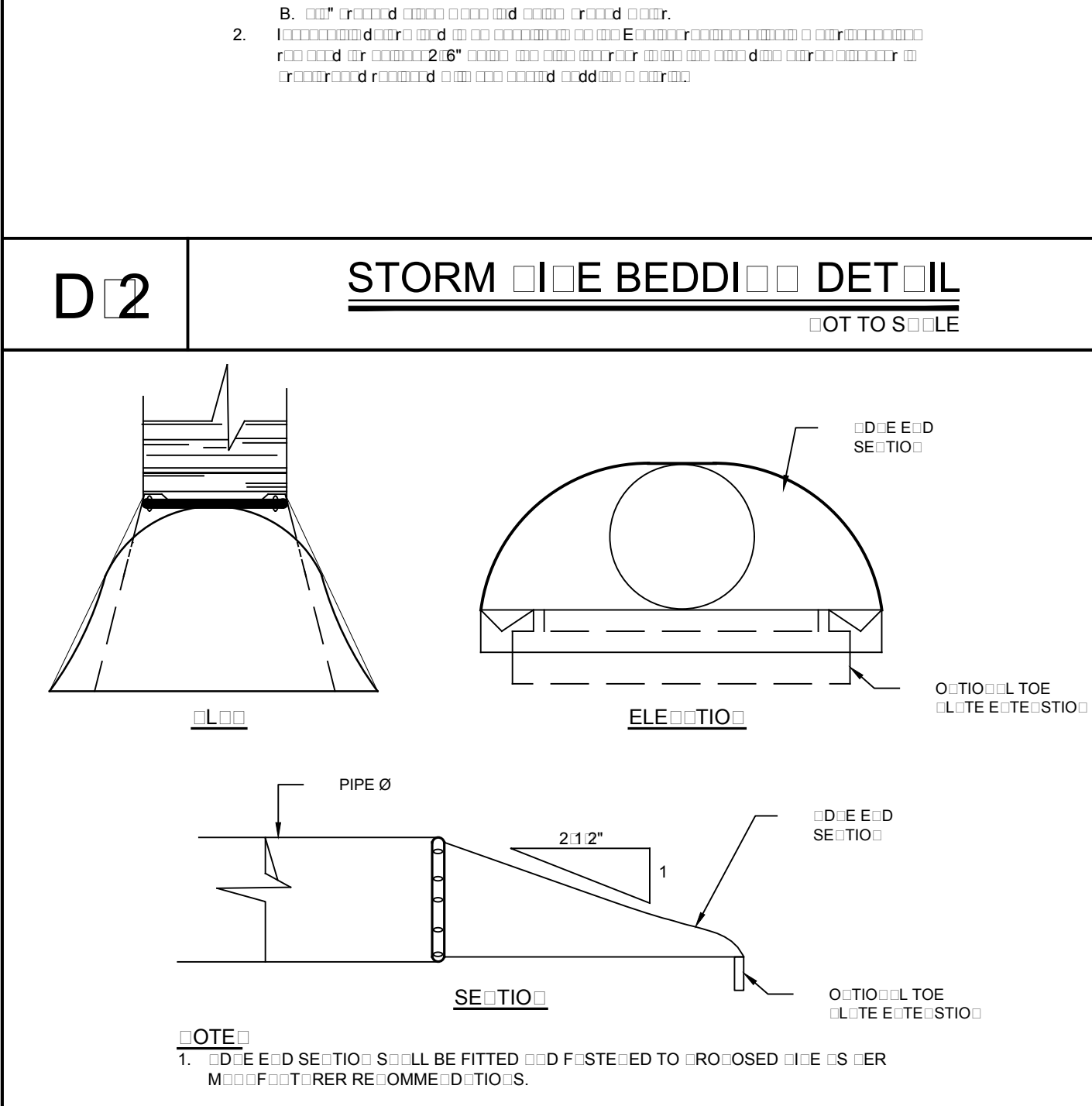
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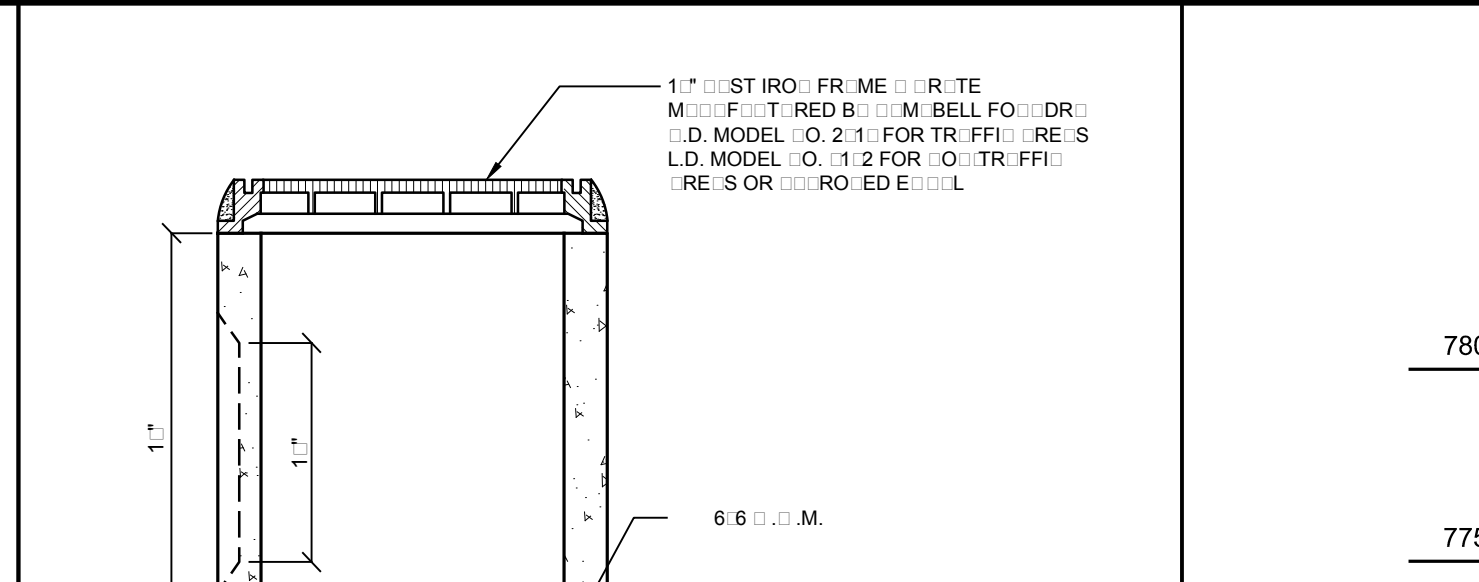
STORM DRAIN DETAIL



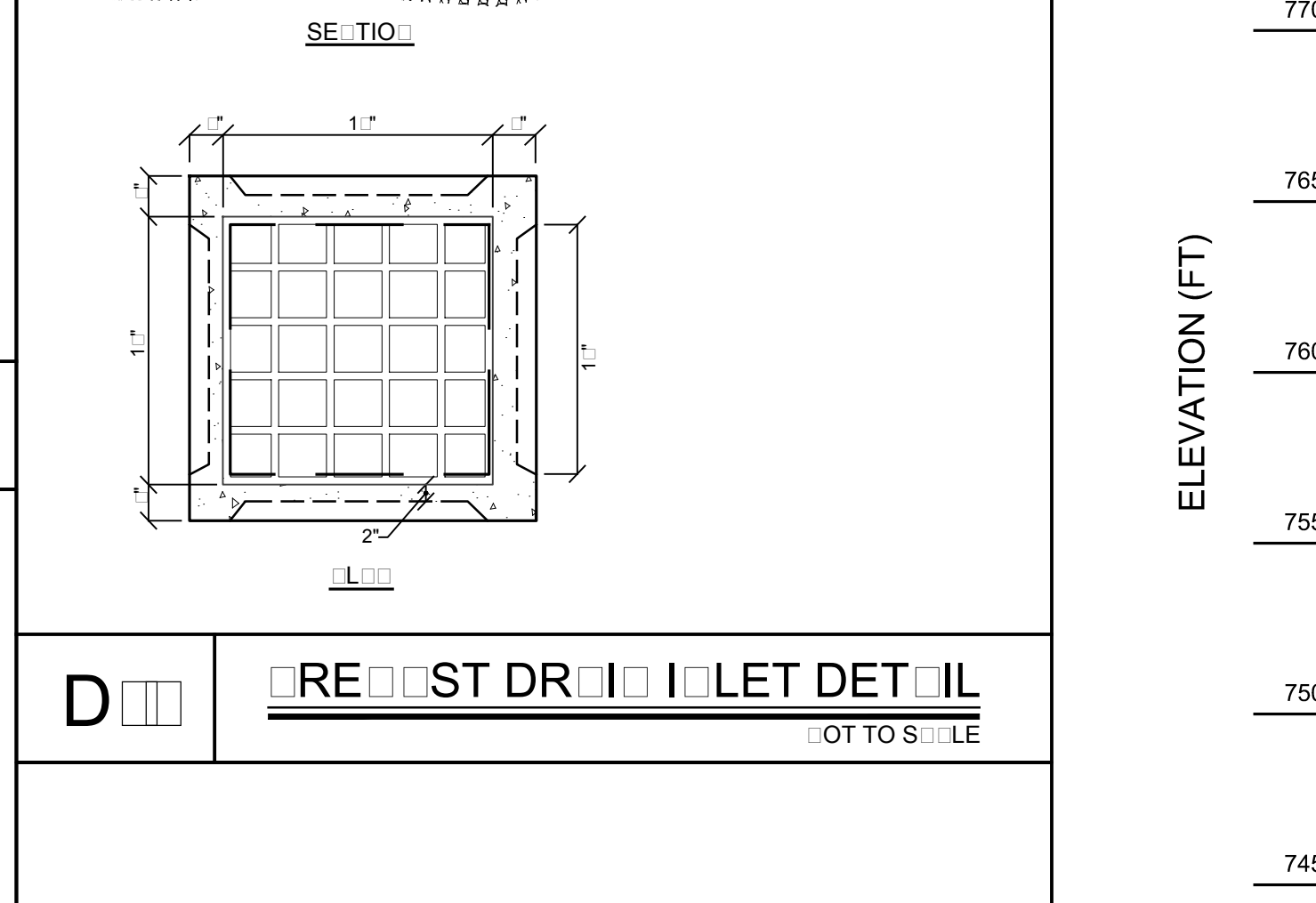
STORM DRAIN DETAIL



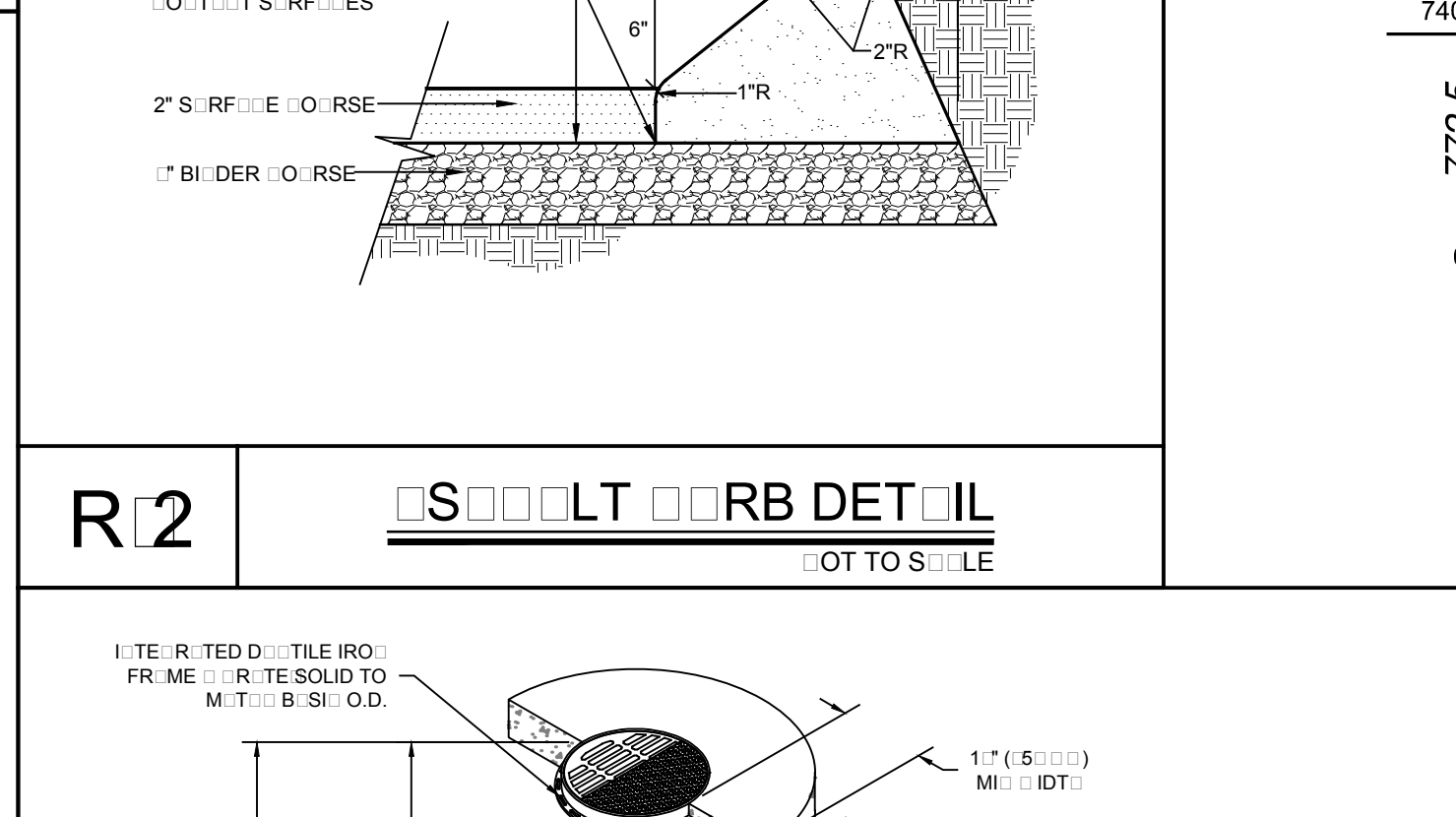
STORM DRAIN DETAIL



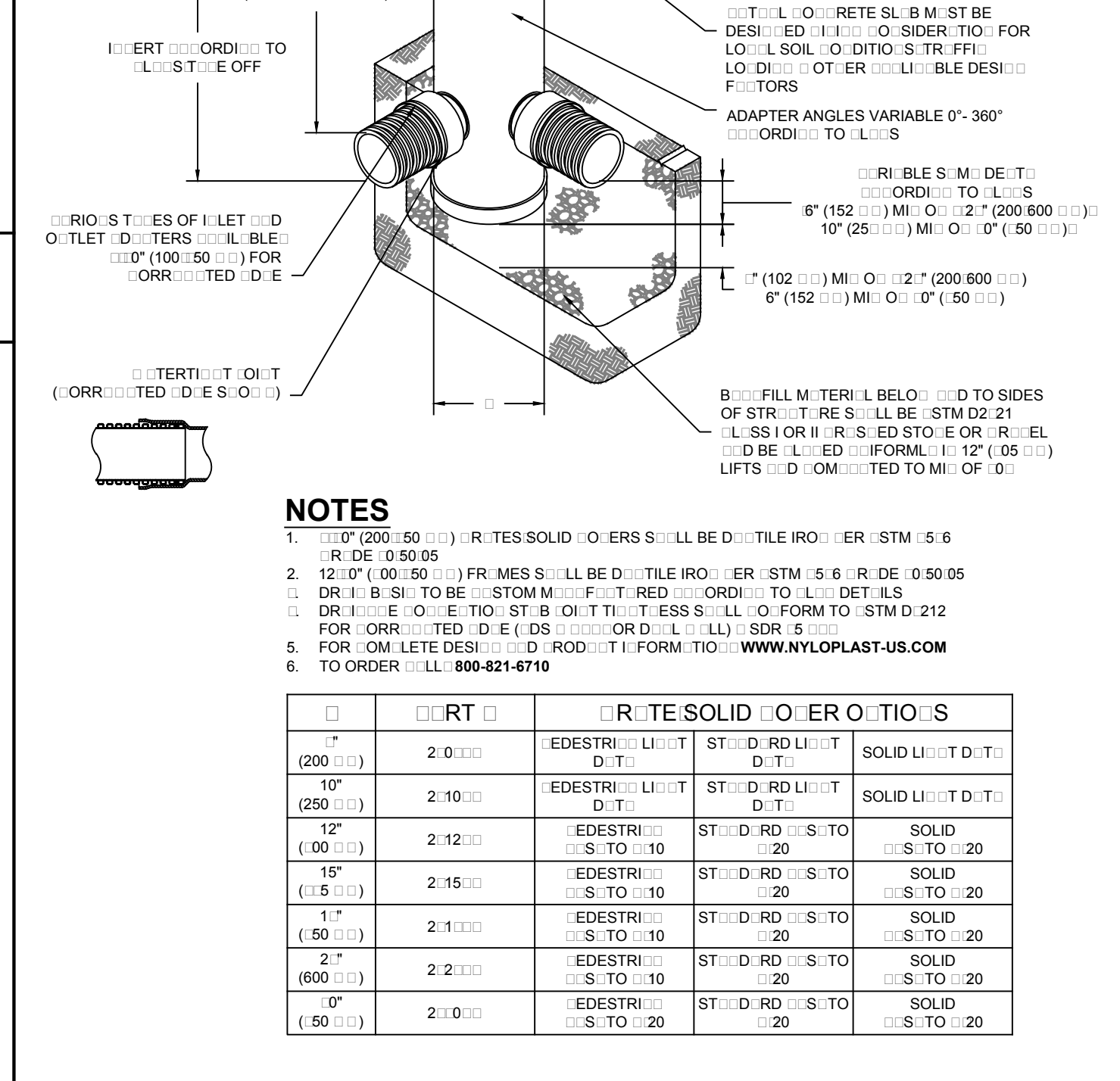
STORM DRAIN DETAIL



STORM DRAIN DETAIL



STORM DRAIN DETAIL



STORM DRAIN DETAIL

772.5 772.49 767.4 768.79 762.5 762.79 759.8 759.58 753.3 753.44 749.8 749.37 751.50

0+00 0+50 1+00 1+50 2+00 2+862.93

GRADE BREAK STA = 0+00.00 ELEV = 772.49

GRADE BREAK STA = 1+29.09 ELEV = 761.46

GRADE BREAK STA = 2+38.04 ELEV = 751.28

GRADE BREAK STA = 2+62.93 ELEV = 751.50

ELEVATION (FT)

DISTANCE (FT)

PROPOSED DRAIN PROFILE

VERT. SCALE 1" = 5'

HORIZ. SCALE 1" = 50'

Revisions:

No.	Date	Comments
1.	7/5/18	H.D. Comm.
2.	12/18/18	Revised basins
3.	2/17/18	Minor revisions

SCALE: AS SHOWN

DRAWN BY: OMJR

DATE: 6/18/18

DETAILS

PROPOSED SEPTIC PLAN

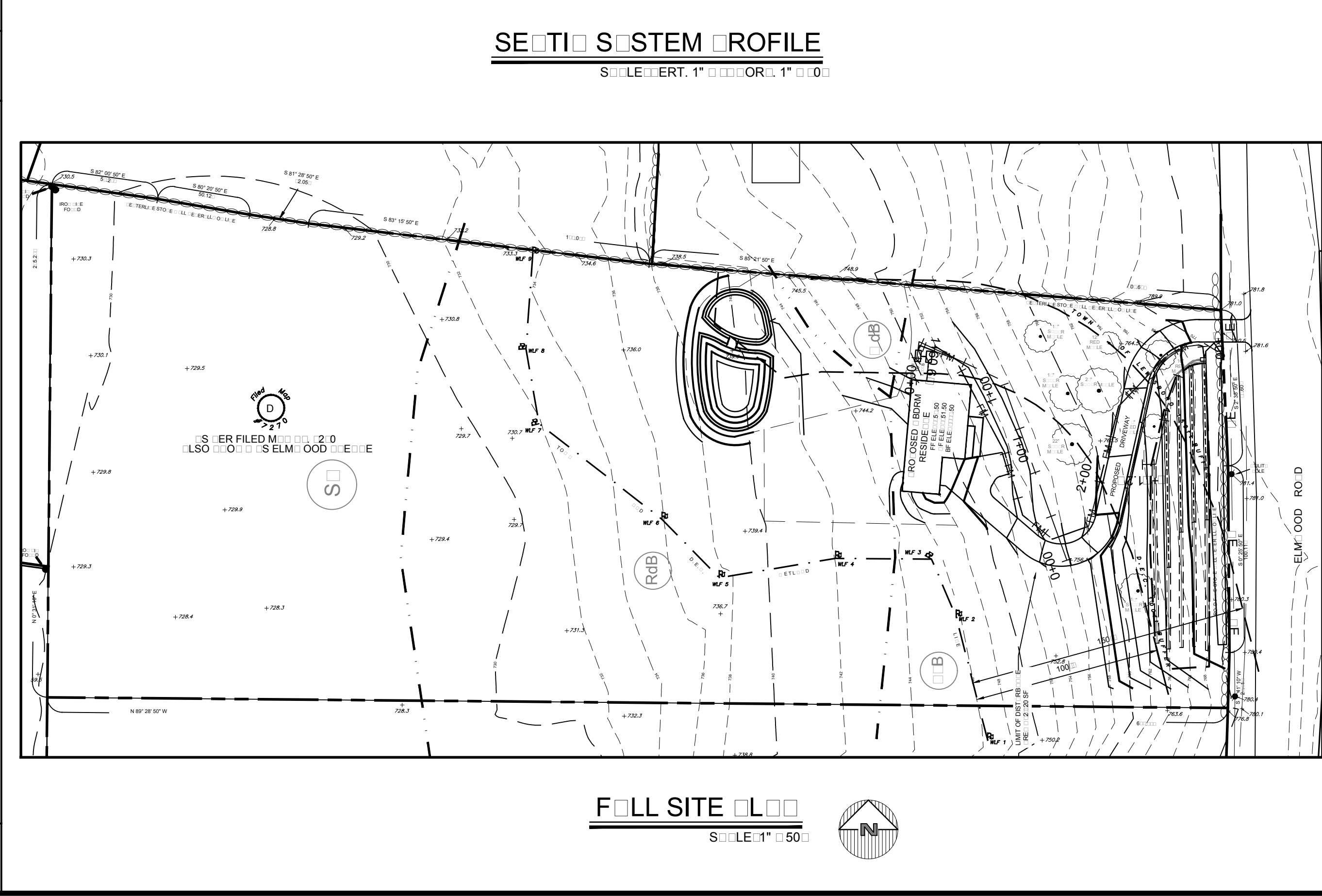
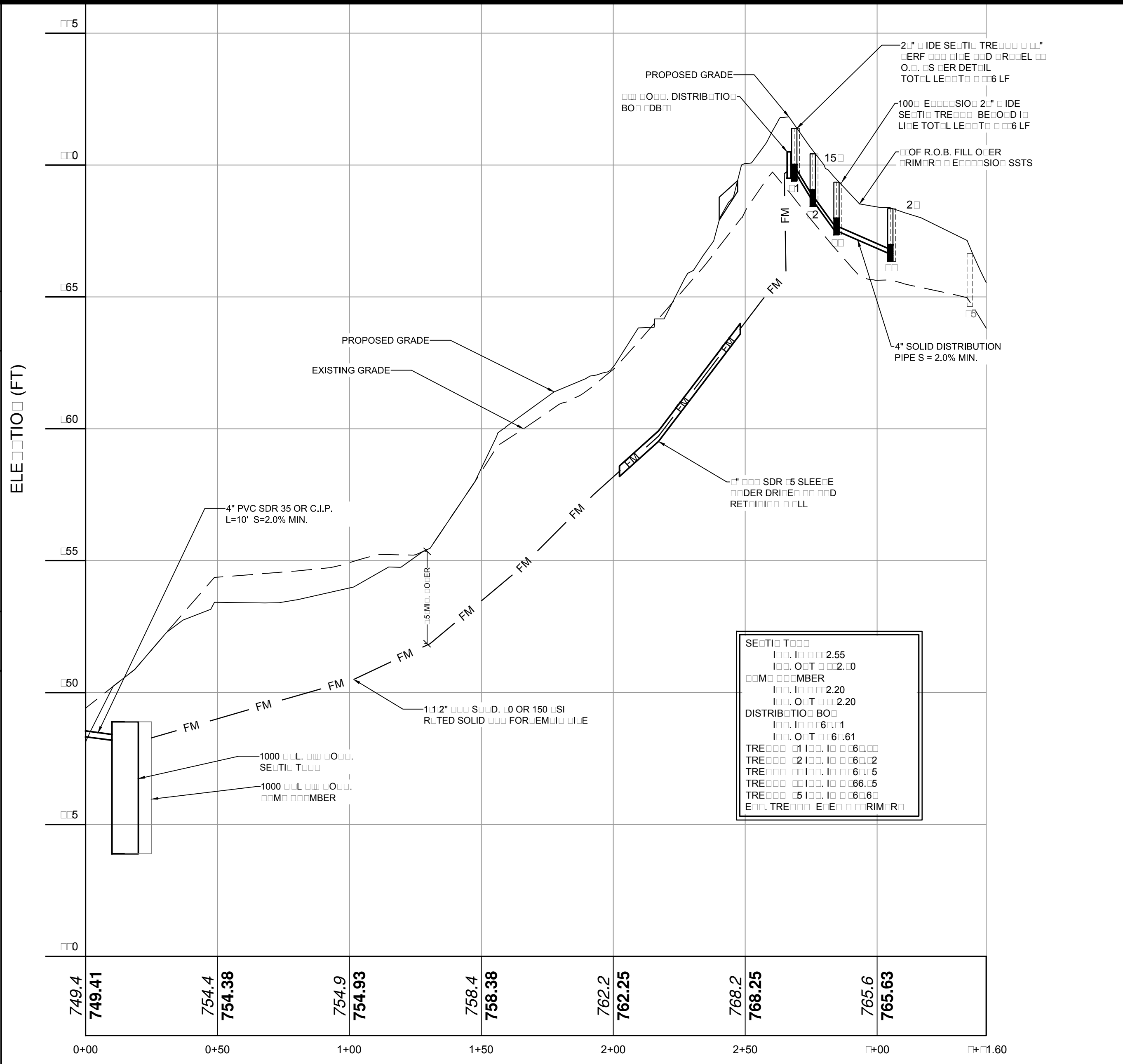
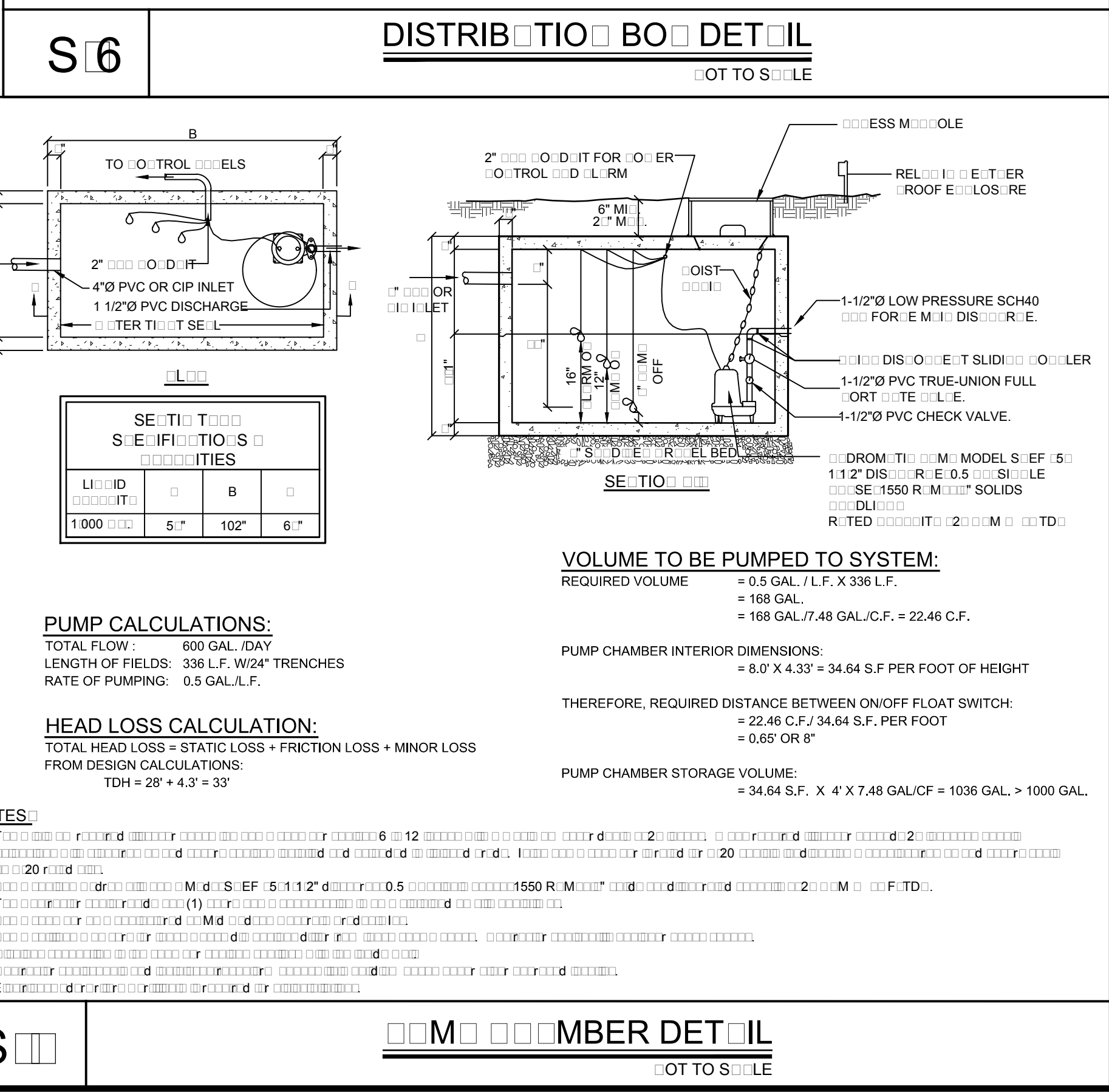
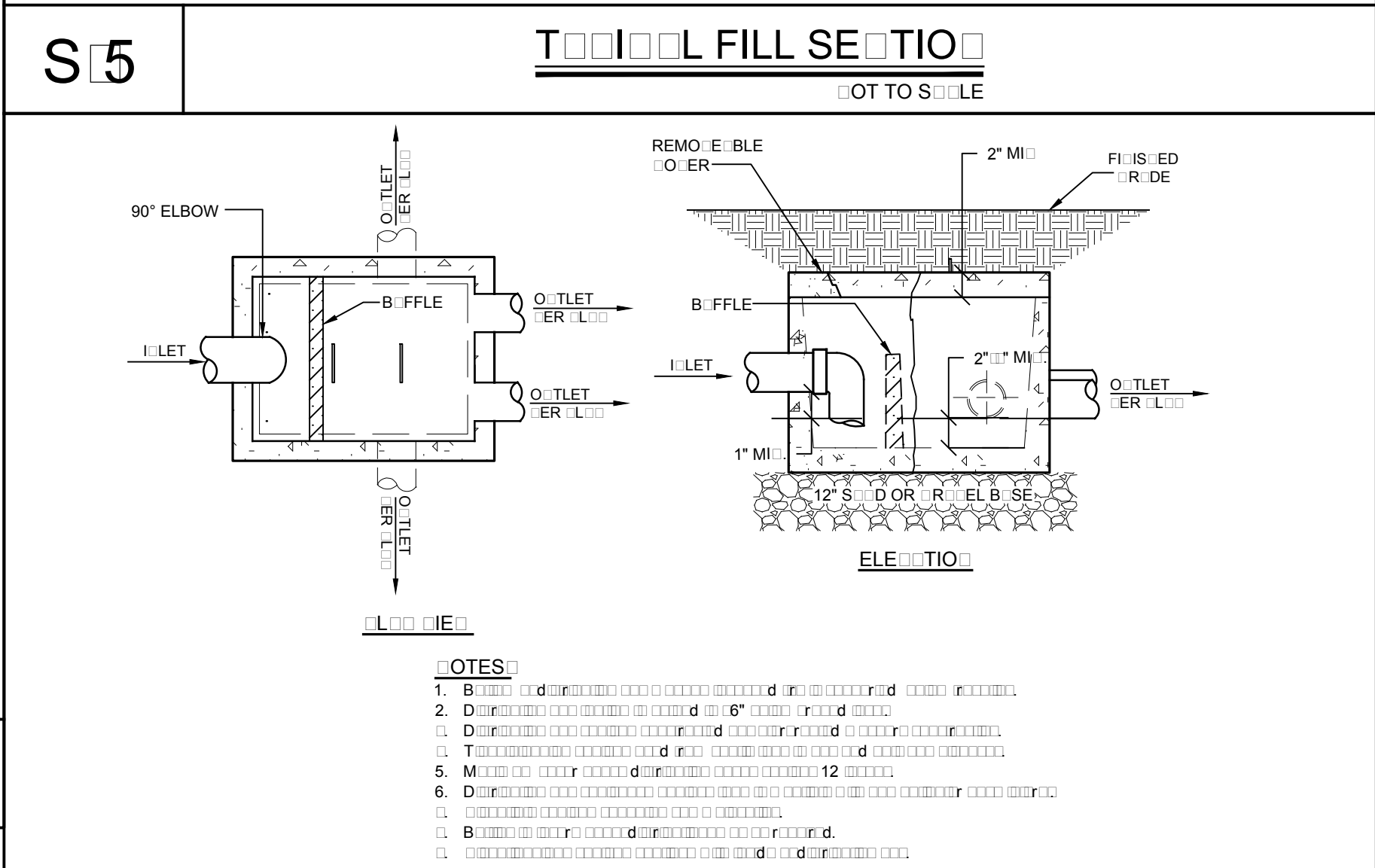
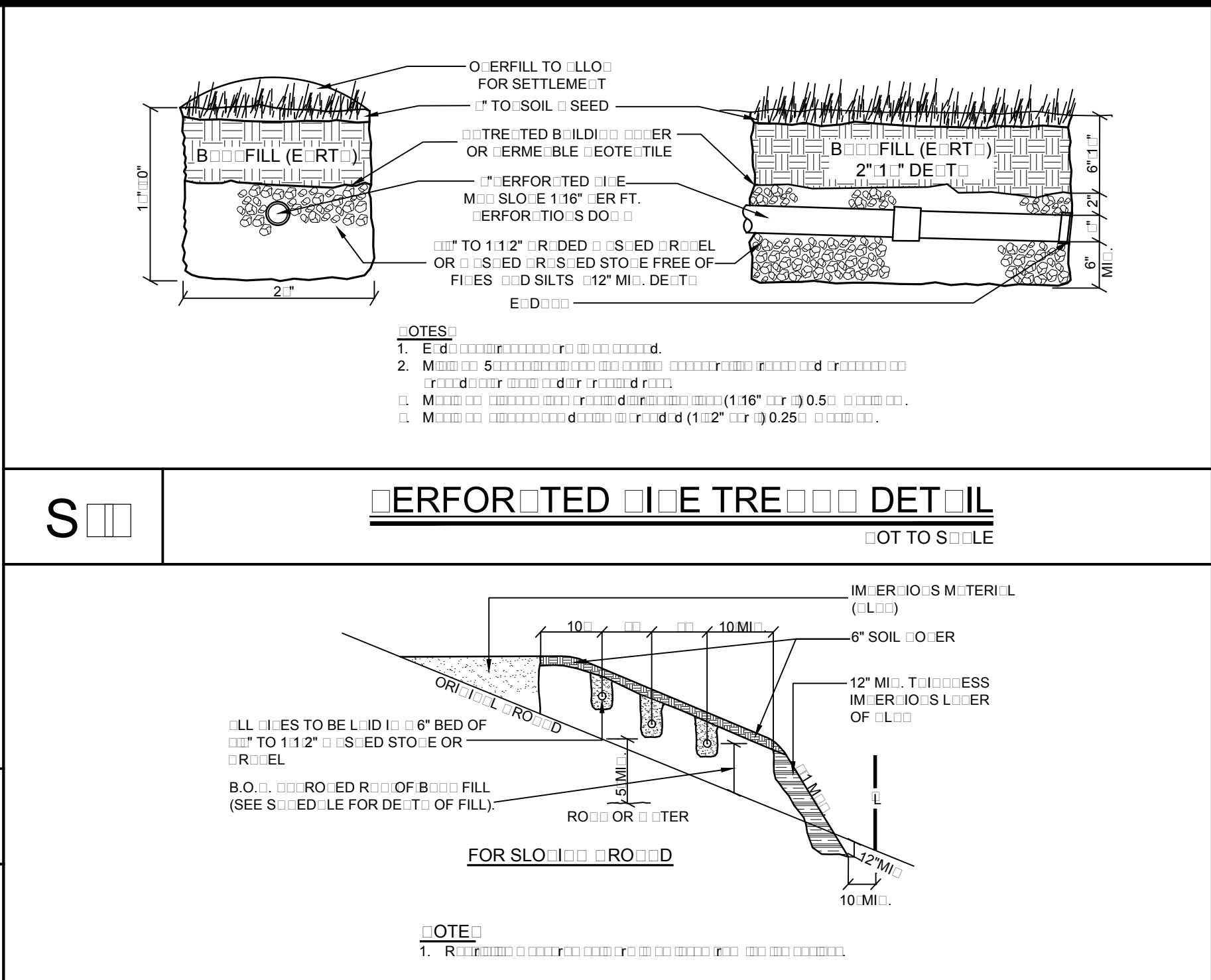
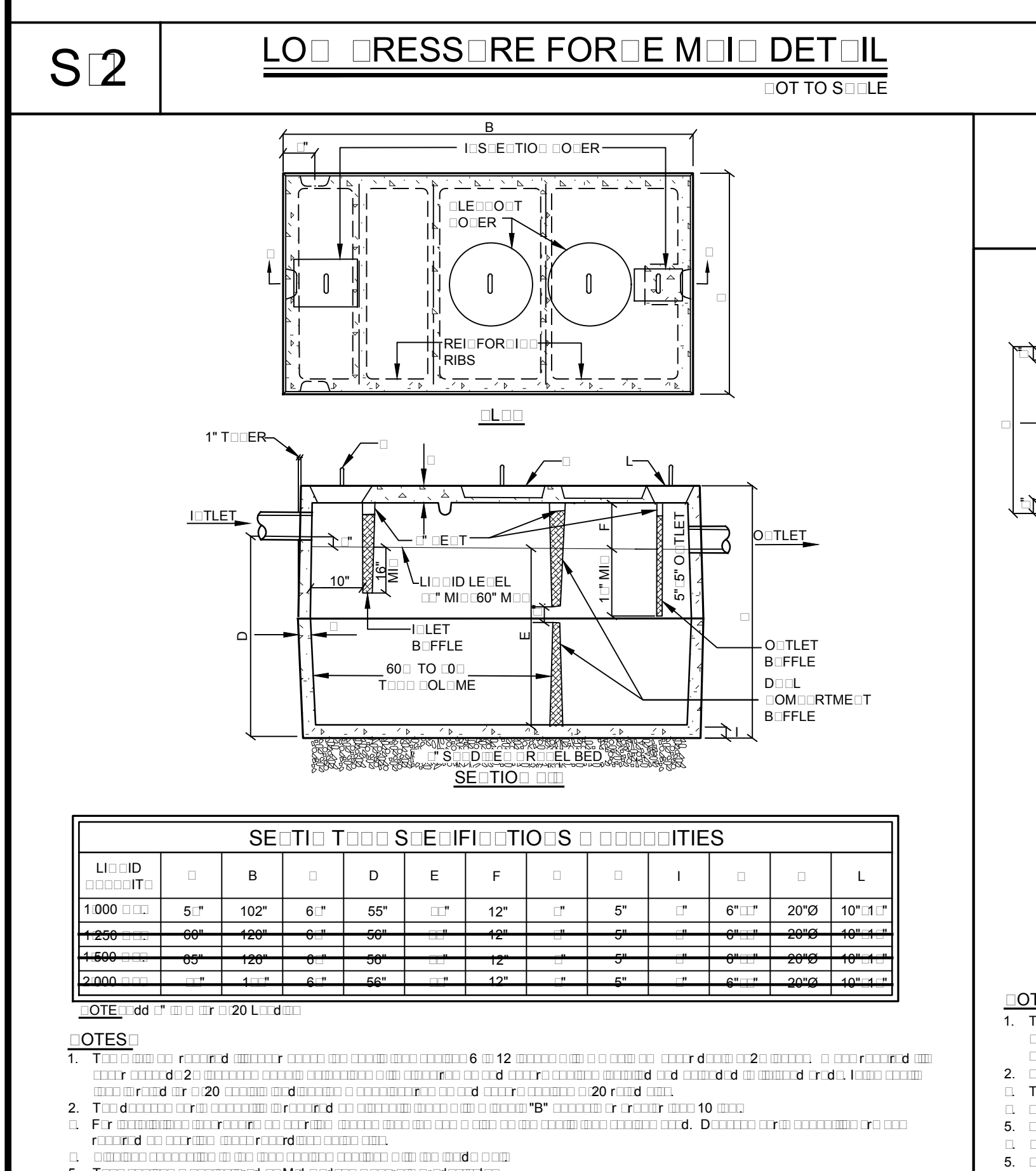
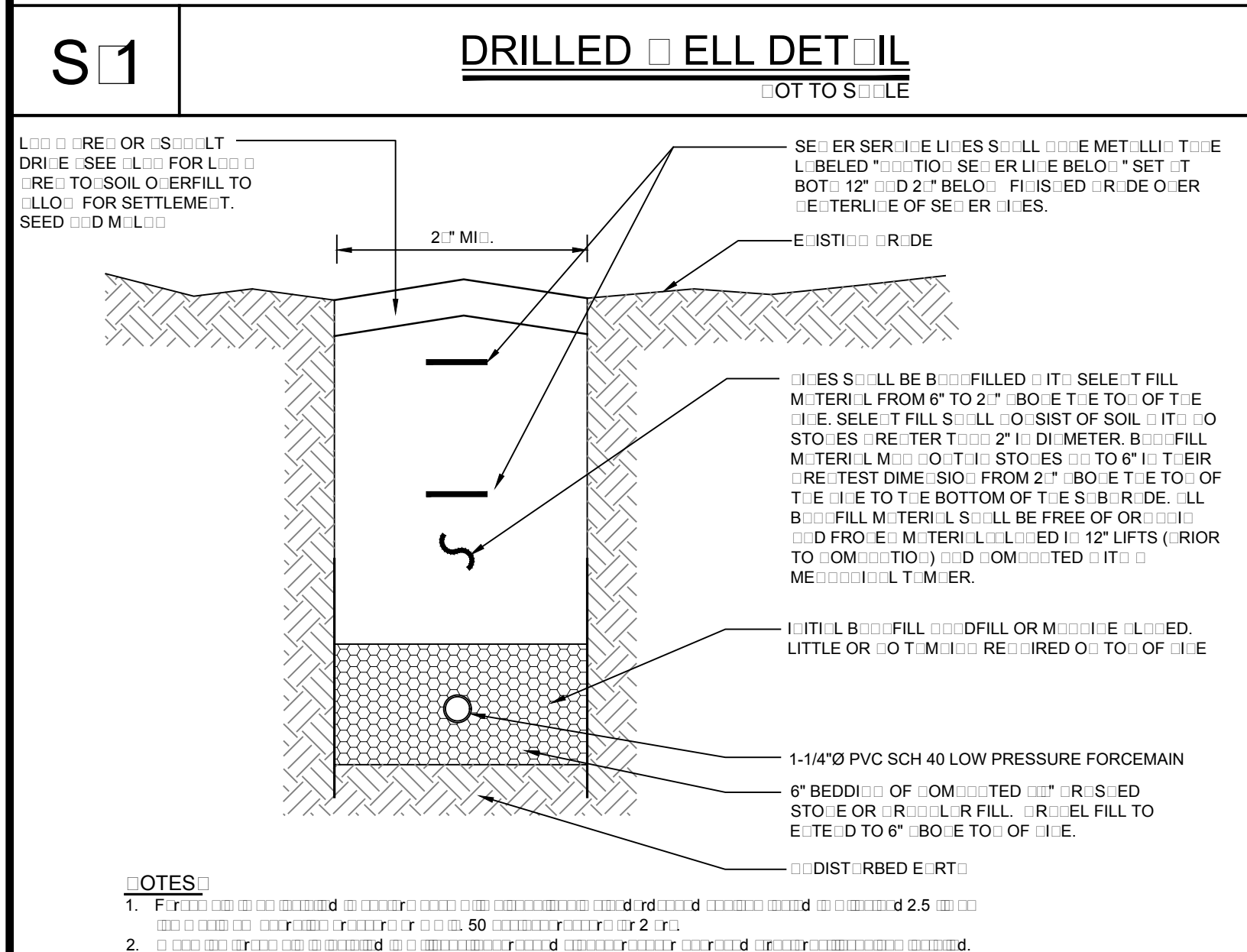
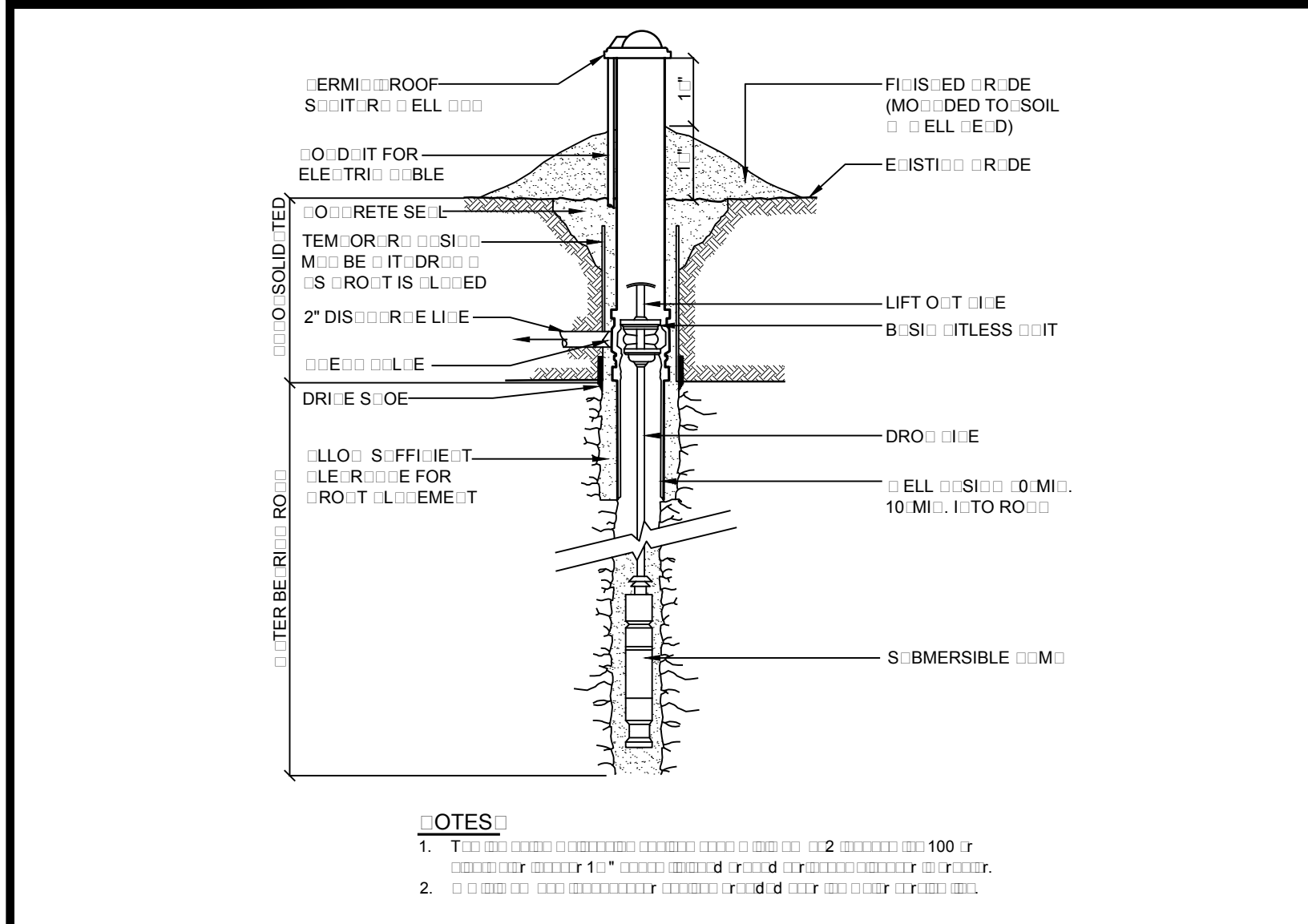
PREPARED FOR: TRUST BEEBROOK

PROJECT LOCATION: ELWOOD ROAD

Town of Lewisboro

Westchester Co., New York





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Engineer: Joseph C. Rina, NYS License No. 64431

Revisions:

No.	Date	Comments
1.	7/5/18	H.D. Comp. Rebased basins
2.	12/18/18	Minor revisions
3.	2/17/18	Minor revisions

SCALE: AS SHOWN

DRAWN BY: OMJR

DATE: 6/18/18

**SEPTIC SYSTEM PROFILE AND DETAILS**

PROPOSED SEPTIC PLAN  
PREPARED FOR: TRUST BETHEEN  
PROJECT LOCATION: ELWOOD ROAD  
Westchester Co., New York  
Town of Lewisboro



PERIMETER EROSION CONTROL NOTES

1. Contractor shall be responsible for the erosion and sediment control measures. The erosion control measures shall be installed prior to the start of any construction. Limits of disturbance shall be marked with the installation of construction fence or approved equal. The extents of all of the stormwater management systems shall be cordoned off to minimize the disturbance on this area.
2. Install all perimeter erosion control measures, construction access as shown on the Erosion and Sediment Control Plan and the associated Details. Install all silt fencing at the bottom of slopes.
3. Strip site and place topsoil in stockpile locations shown on the plan.
4. Begin rough grading the site. Contractor to limit exposure of denuded soils by providing temporary stabilization for work areas that will remain undisturbed for over seven (7) days. Excess material shall be stockpiled in the location shown on the plan as grades allow. Material unable to be stockpiled shall be removed from the site.
5. Rough grade building and driveway.
6. Begin construction of building.
7. Begin the excavation and installation of stormwater management system. Protect trenches and open excavations from erosion. Entry into the system shall be blocked off until site has reached final stabilization. Once system has been installed, backfill, seed where necessary, and reinstall measures to cordon off the system from disturbance.
8. During site construction maintain and re-establish as required erosion control and stabilization measures as required by the site plan and details.
9. Excavate to the sub-grade level. Scarify the existing soil to a depth of 12-inches by rototilling or other means acceptable to the Engineer. Install all courses of stone as per the specifications given on the Plan.
10. Install base course of Item 4 in all pavement areas. Stabilize all open areas with seed and mulch.
11. Construct remainder of building, driveway and parking areas. Install asphalt binder. Once binder course is installed, drainage outlet may be unblocked.
12. Grade, place final soil topping and put in place permanent vegetative cover over all disturbed areas, landscape beds, slopes, etc.
13. Once site stabilization has taken place (An area shall be considered to have achieved final stabilization when it has a minimum uniform 80% perennial vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements), remove all temporary erosion and sediment controls, unplug the drainage system to allow runoff to enter the stormwater management system.

MAINTENANCE OF TEMPORARY EROSION AND SEDIMENT CONTROL STRUCTURES

1. S.D.E., 0.015.002 EROSION RESTRICTIONS (S.D.E. 0.015.002) shall be maintained and controlled during construction.
2. The erosion control measures shall be maintained and controlled during construction.
3. The erosion control measures shall be maintained and controlled during construction.
4. The erosion control measures shall be maintained and controlled during construction.
5. The erosion control measures shall be maintained and controlled during construction.
6. The erosion control measures shall be maintained and controlled during construction.

MAINTENANCE SCHEDULE

	DAILY	DAILY	DAILY	DAILY	DAILY	DAILY
SILT FENCE	---	---	---	---	---	---
SEED	---	---	---	---	---	---
MULCH	---	---	---	---	---	---
EROSION CONTROL	---	---	---	---	---	---
SEDIMENT CONTROL	---	---	---	---	---	---

MAINTENANCE OF PERIMETER CONTROL STRUCTURES DURING CONSTRUCTION

1. The erosion control measures shall be maintained and controlled during construction.
2. The erosion control measures shall be maintained and controlled during construction.
3. The erosion control measures shall be maintained and controlled during construction.
4. The erosion control measures shall be maintained and controlled during construction.
5. The erosion control measures shall be maintained and controlled during construction.
6. The erosion control measures shall be maintained and controlled during construction.

CONSTRUCTION SEQUENCE

Refer to the Plan Set for all plans and details which relate to Construction Sequence.

1. A licensed surveyor must define infrastructure locations, limits of disturbance, stormwater basin limits, and grades in the field prior to start of any construction. Limits of disturbance shall be marked with the installation of construction fence or approved equal. The extents of all of the stormwater management systems shall be cordoned off to minimize the disturbance on this area.
2. Install all perimeter erosion control measures, construction access as shown on the Erosion and Sediment Control Plan and the associated Details. Install all silt fencing at the bottom of slopes.
3. Strip site and place topsoil in stockpile locations shown on the plan.
4. Begin rough grading the site. Contractor to limit exposure of denuded soils by providing temporary stabilization for work areas that will remain undisturbed for over seven (7) days. Excess material shall be stockpiled in the location shown on the plan as grades allow. Material unable to be stockpiled shall be removed from the site.
5. Rough grade building and driveway.
6. Begin construction of building.
7. Begin the excavation and installation of stormwater management system. Protect trenches and open excavations from erosion. Entry into the system shall be blocked off until site has reached final stabilization. Once system has been installed, backfill, seed where necessary, and reinstall measures to cordon off the system from disturbance.
8. During site construction maintain and re-establish as required erosion control and stabilization measures as required by the site plan and details.
9. Excavate to the sub-grade level. Scarify the existing soil to a depth of 12-inches by rototilling or other means acceptable to the Engineer. Install all courses of stone as per the specifications given on the Plan.
10. Install base course of Item 4 in all pavement areas. Stabilize all open areas with seed and mulch.
11. Construct remainder of building, driveway and parking areas. Install asphalt binder. Once binder course is installed, drainage outlet may be unblocked.
12. Grade, place final soil topping and put in place permanent vegetative cover over all disturbed areas, landscape beds, slopes, etc.
13. Once site stabilization has taken place (An area shall be considered to have achieved final stabilization when it has a minimum uniform 80% perennial vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements), remove all temporary erosion and sediment controls, unplug the drainage system to allow runoff to enter the stormwater management system.

Winter Stabilization Notes:

If construction activities are expected to extend into or occur during the winter season the contractor shall anticipate proper stabilization and sequencing. Construction shall be sequenced such that wherever possible areas of disturbance that can be completed and permanently stabilized shall be done by applying and establishing permanent vegetative cover before the first frost. Areas subject to temporary disturbance that will not be worked for an extended

TO SOIL

1. The erosion control measures shall be maintained and controlled during construction.
2. The erosion control measures shall be maintained and controlled during construction.
3. The erosion control measures shall be maintained and controlled during construction.
4. The erosion control measures shall be maintained and controlled during construction.
5. The erosion control measures shall be maintained and controlled during construction.
6. The erosion control measures shall be maintained and controlled during construction.

PERMITS AND REGULATIONS

1. The erosion control measures shall be maintained and controlled during construction.
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4. The erosion control measures shall be maintained and controlled during construction.
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4. The erosion control measures shall be maintained and controlled during construction.
5. The erosion control measures shall be maintained and controlled during construction.
6. The erosion control measures shall be maintained and controlled during construction.

TEMPORARY EROSION CONTROL

1. The erosion control measures shall be maintained and controlled during construction.
2. The erosion control measures shall be maintained and controlled during construction.
3. The erosion control measures shall be maintained and controlled during construction.
4. The erosion control measures shall be maintained and controlled during construction.
5. The erosion control measures shall be maintained and controlled during construction.
6. The erosion control measures shall be maintained and controlled during construction.

CONTRACTOR CERTIFICATION STATEMENT

I, the undersigned, being duly qualified, do hereby certify that the above information is true and correct to the best of my knowledge and belief, and that I am not aware of any false or misleading information being provided.

I, the undersigned, being duly qualified, do hereby certify that the above information is true and correct to the best of my knowledge and belief, and that I am not aware of any false or misleading information being provided.

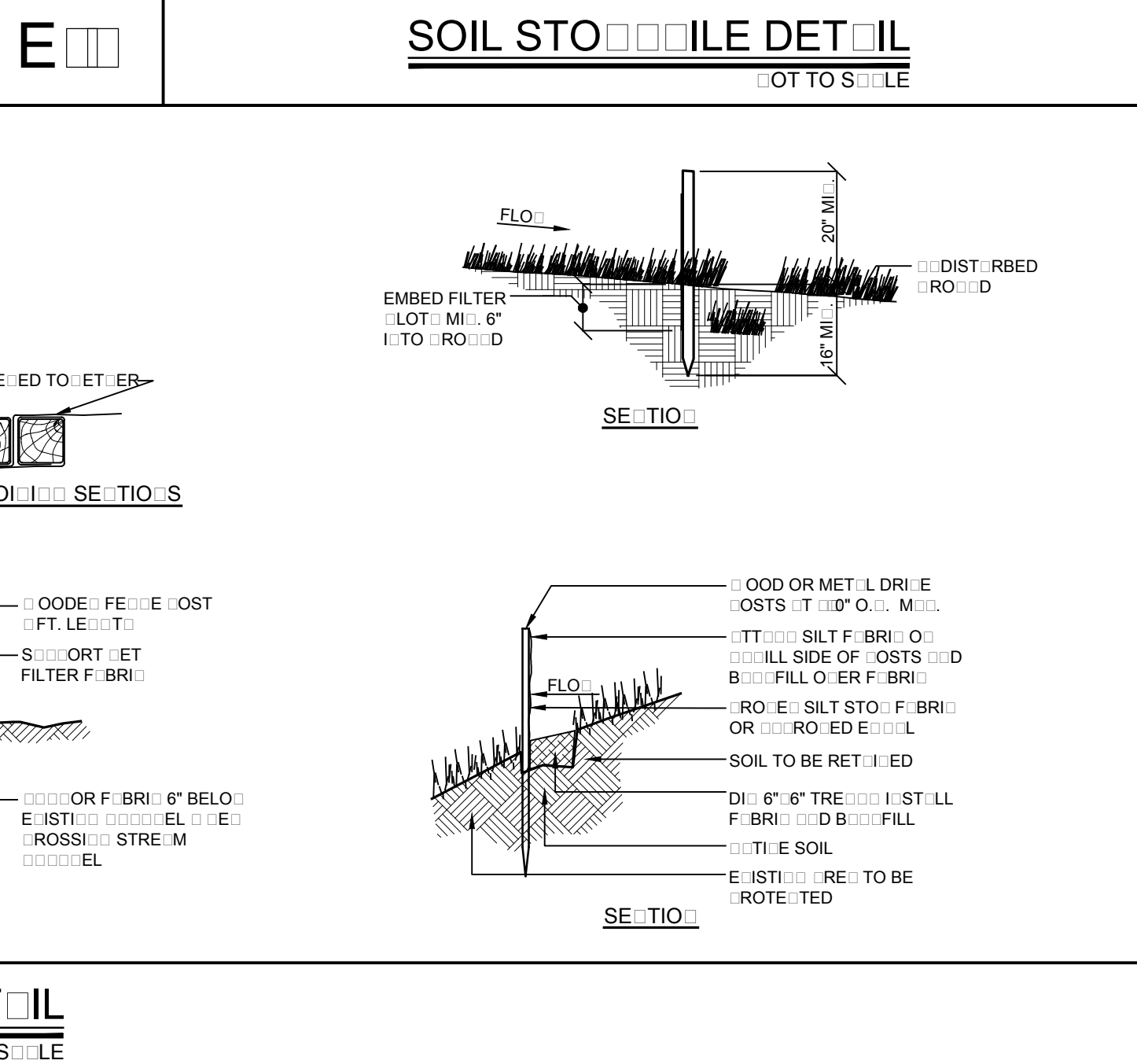
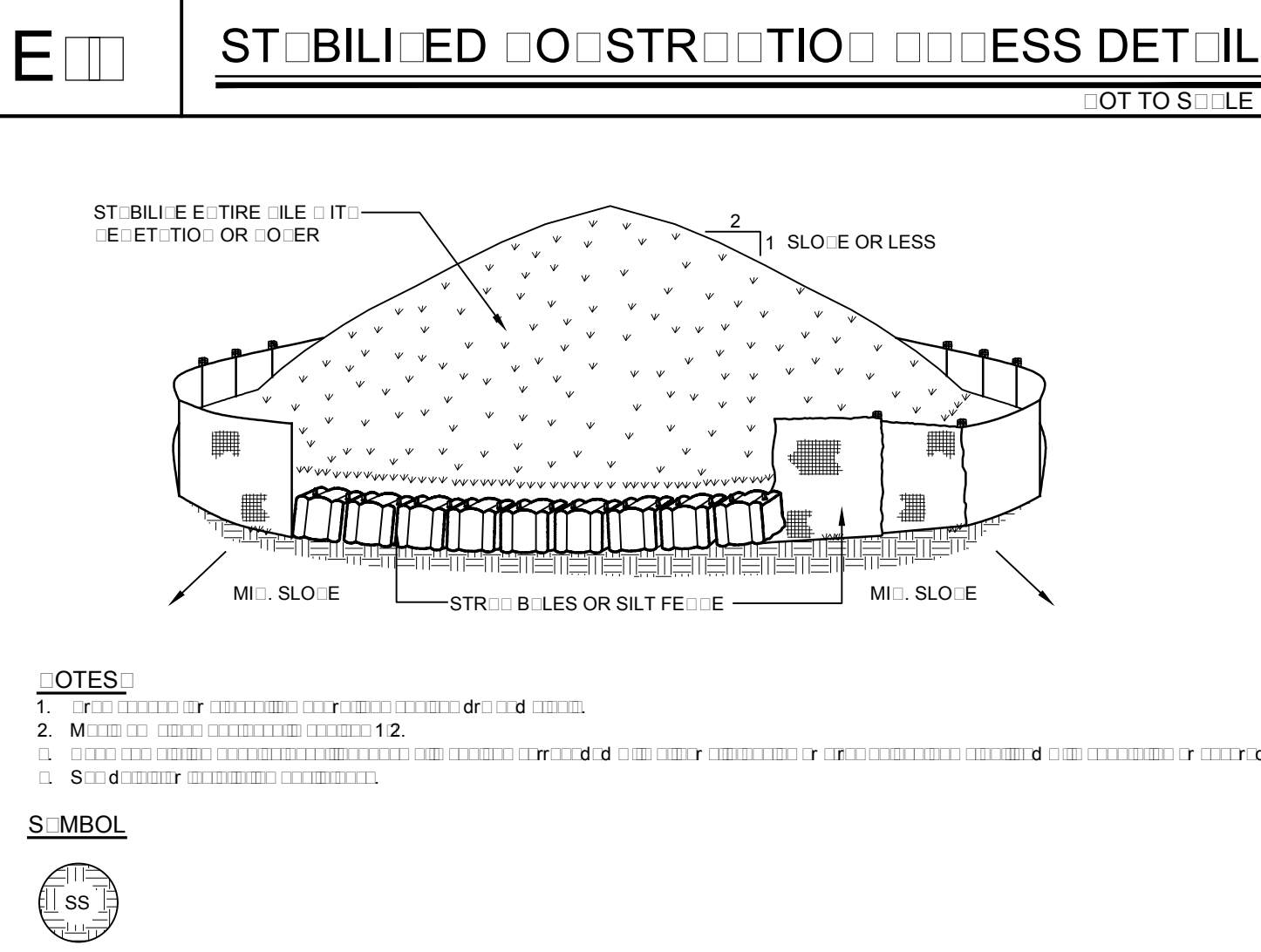
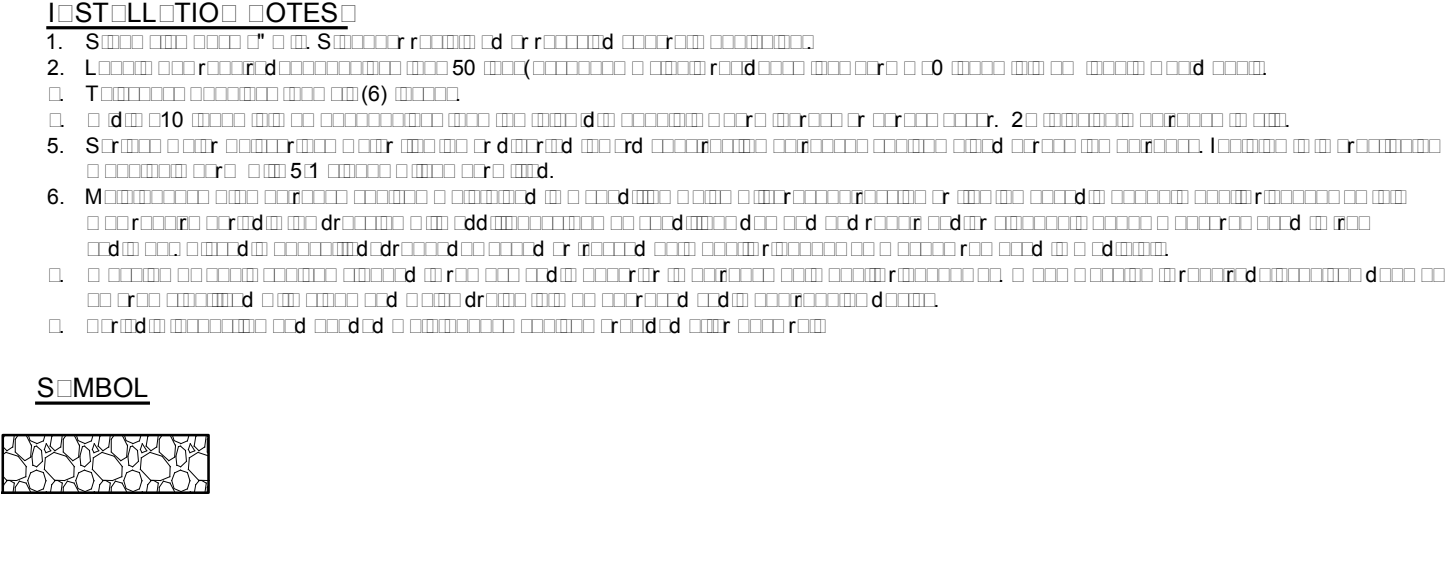
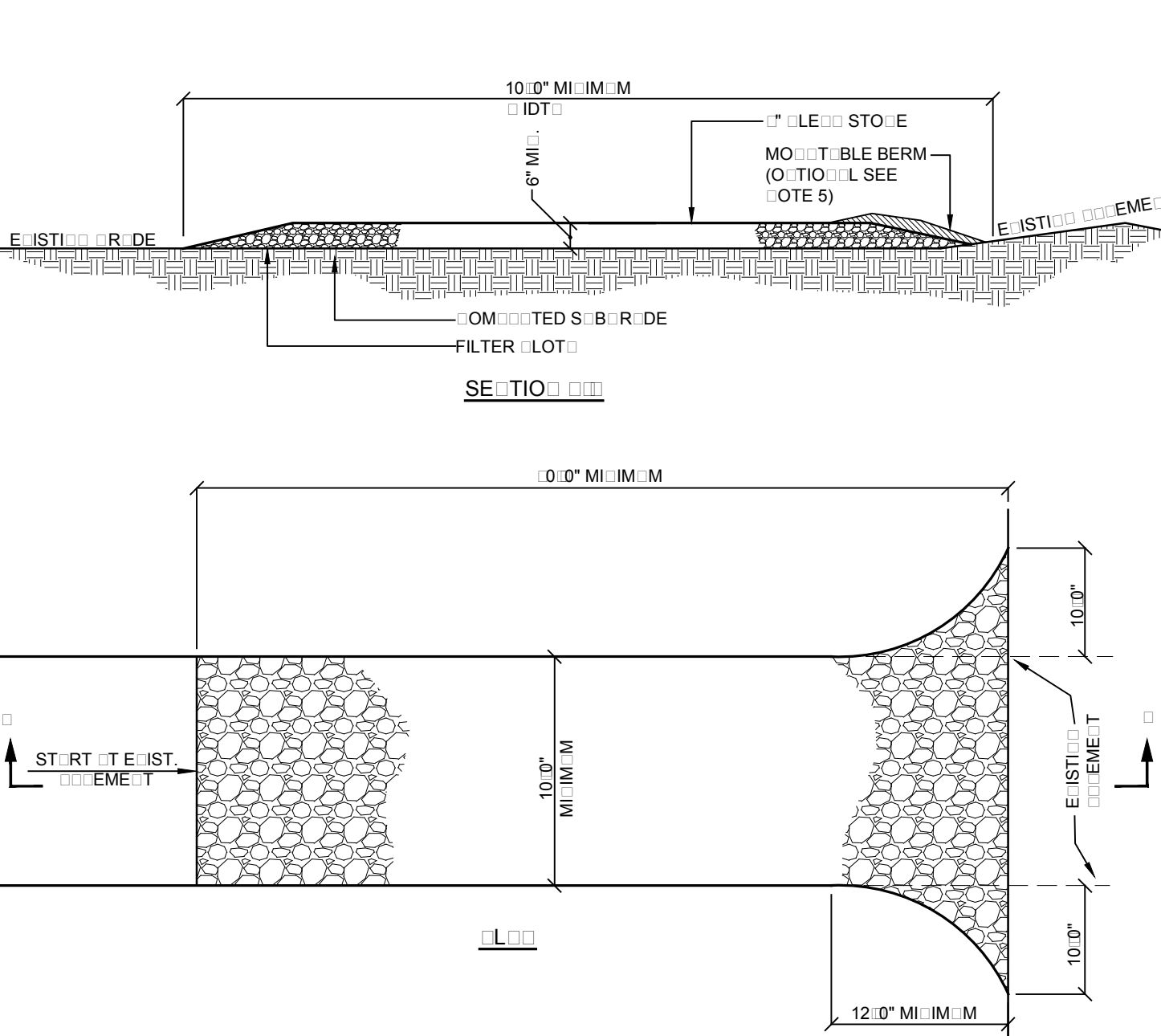
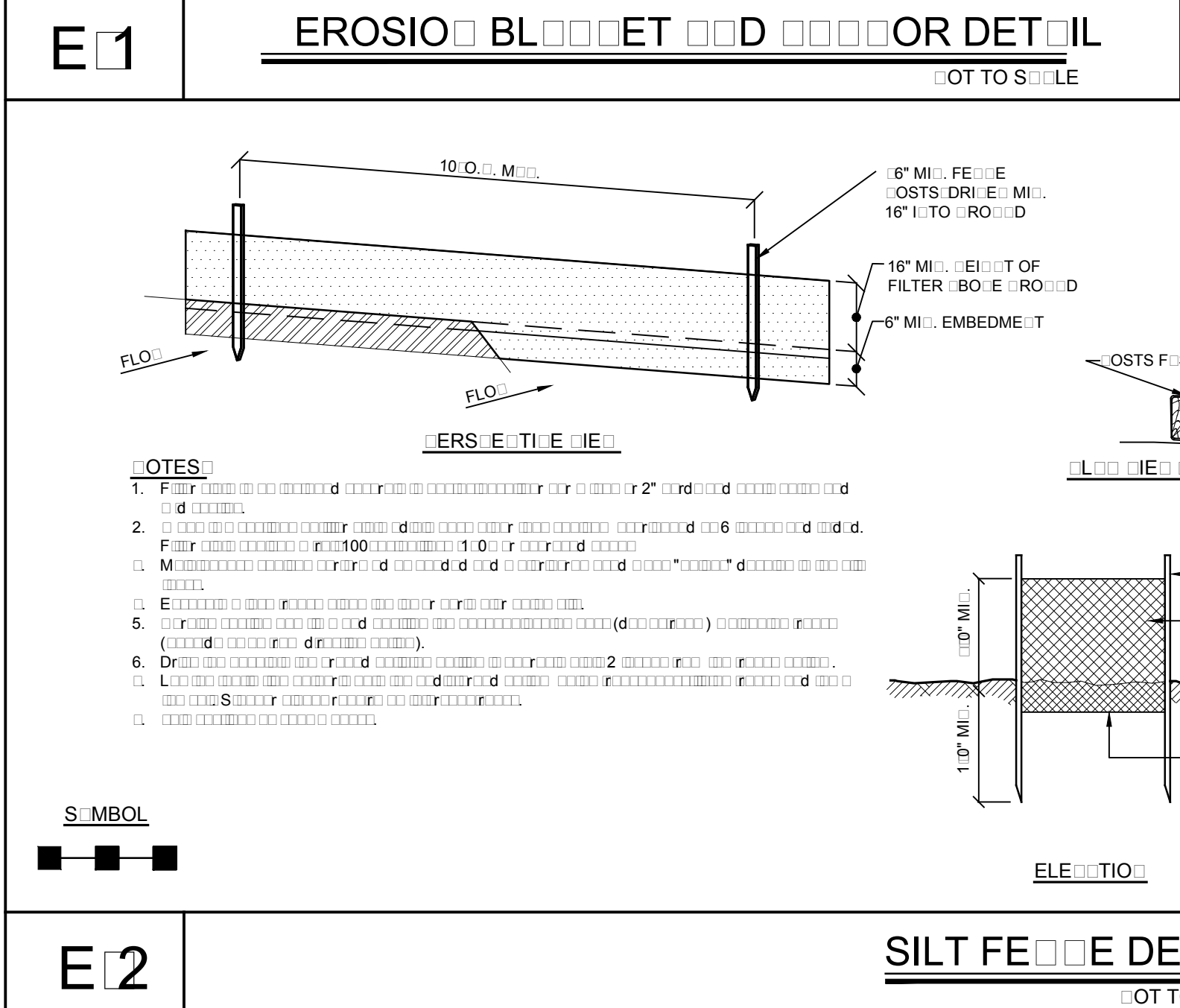
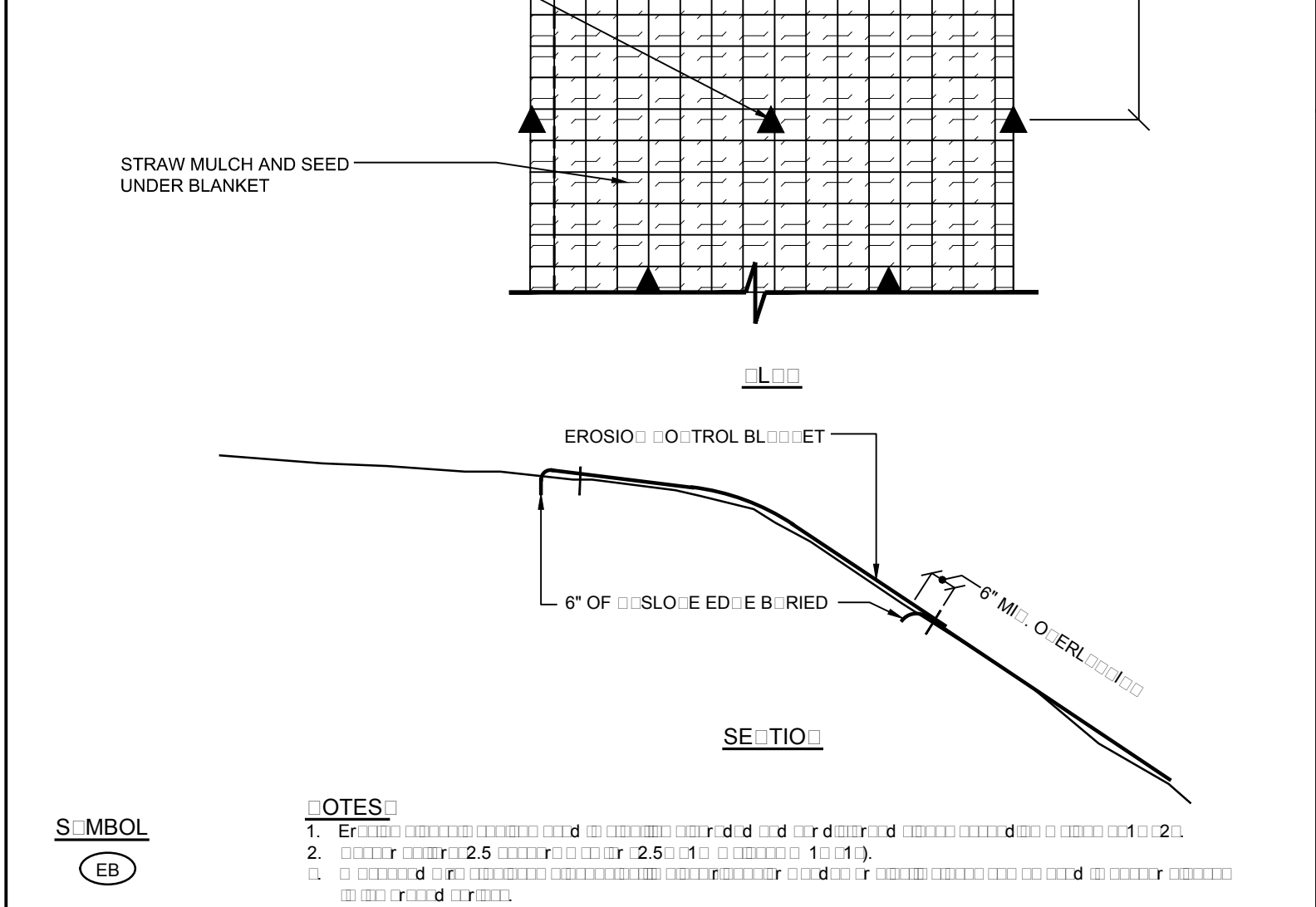
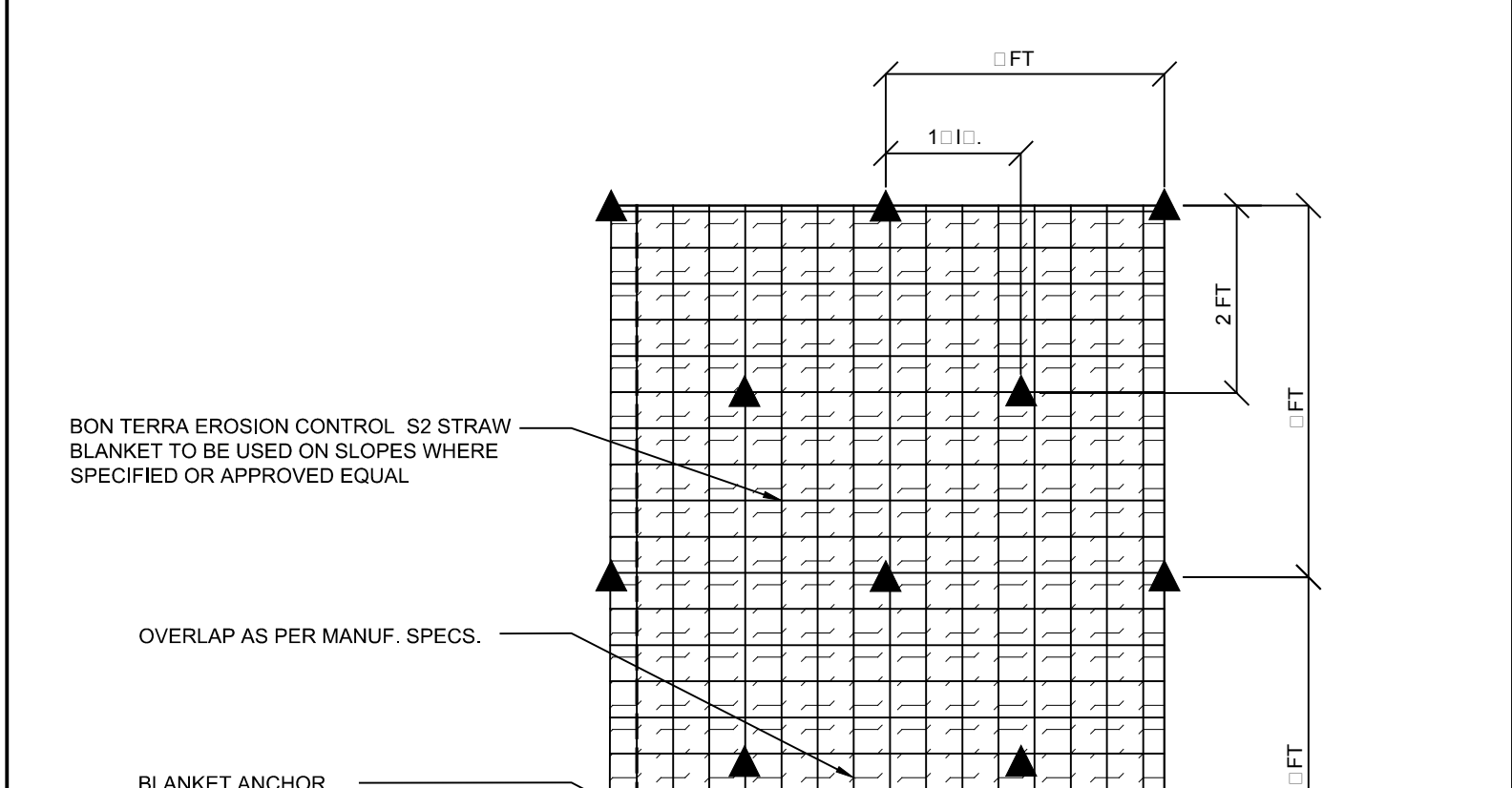
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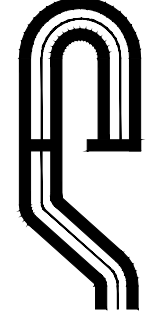
OTHER CONTRACTOR CERTIFICATION

I, the undersigned, being duly qualified, do hereby certify that the above information is true and correct to the best of my knowledge and belief, and that I am not aware of any false or misleading information being provided.

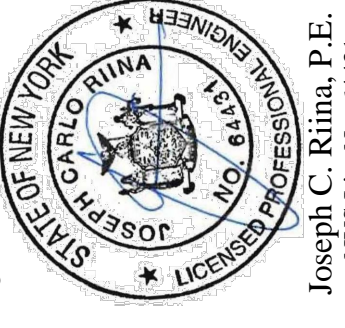
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**Site Design Consultants**  
Civil Engineers • Land Planners  
251-F Underhill Avenue, Yorktown Heights, NY 10598  
(914) 962-4488 • Fax: (914) 962-7386  
www.sitedesignconsultants.com



Engineer:  
Joseph C. Rina, P.E.  
NYS Lic. No. 64431

Revisions:	No.	Date	Comments
	1.	7/5/18	H.D. Comm.
	2.	12/18/18	Revised basins
	3.	2/17/18	Minor revisions

SCALE:  
AS SHOWN

DRAWN BY:  
MD

DATE:  
6/18/18

**SEPTIC SYSTEM  
PROFILE AND  
DETAILS**

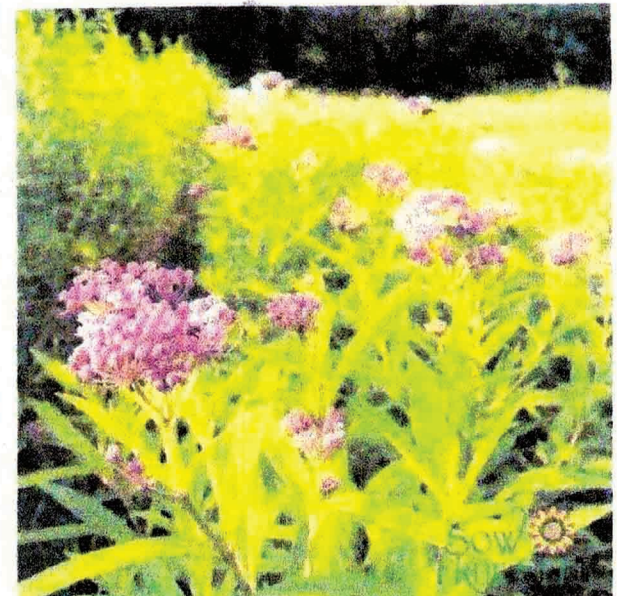
PROPOSED SEPTIC PLAN  
PREPARED FOR  
TRUST BETTER  
ROTTING  
DART  
WOOD ROAD  
ELMWOOD  
Westchester Co., New York

Sheet 7 of 7

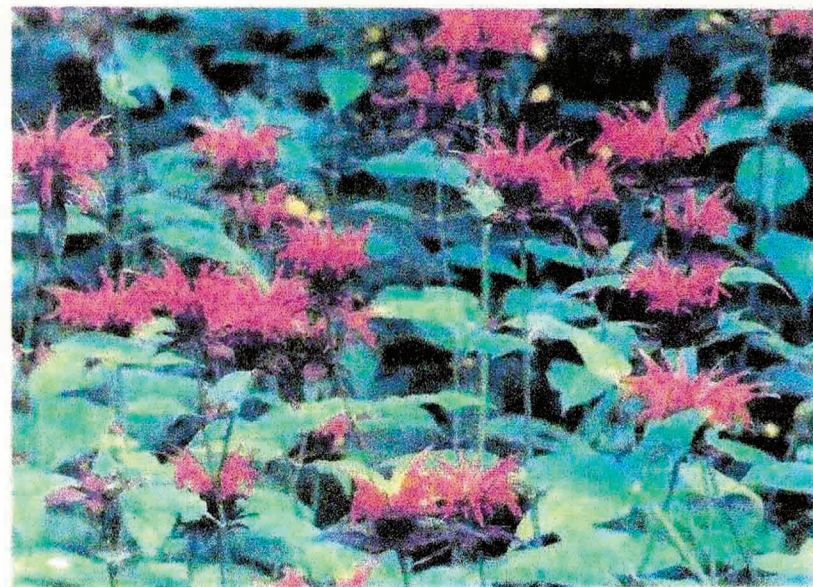




Swamp White Oak  
*Quercus bicolor* (QB)  
Sun  
Ht. 50'-60' / Spd. 50'-60'  
FACW  
Zone 4-8



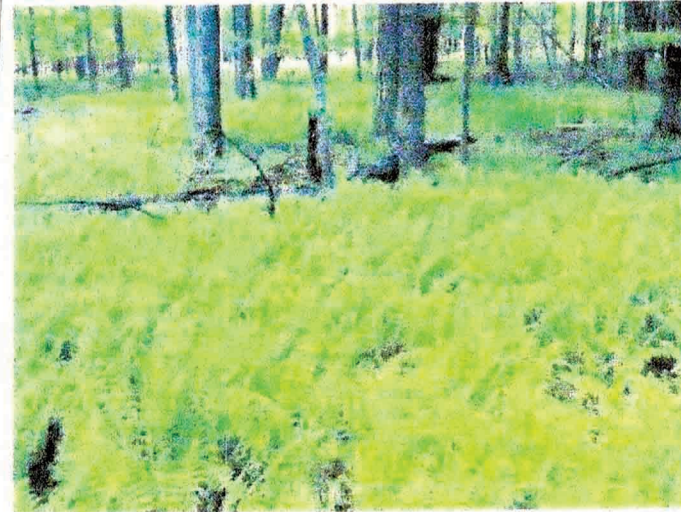
Common Milkweed  
*Asclepias syriaca* (AS)  
Sun-Part Shade  
Ht. 2'-4' / Spd. 2'  
June-Aug  
OBL  
Zone 3-9



Bee Balm  
*Monarda didyma* (MD)  
Sun-Part Shade  
Ht. 1'-3' / Spd. 1'-1'  
Jun-Sept  
FACU  
Zone 4-11'



Christmas Fern  
*Polystichum acrostichoides* (PA)  
Part Shade - Shade  
Ht. 0.5'-2.0'  
FACU



New York Fern  
*Thelypteris noveboracensis* (TN)  
Sun-Part Shade  
Ht. 2'-3'  
FAC



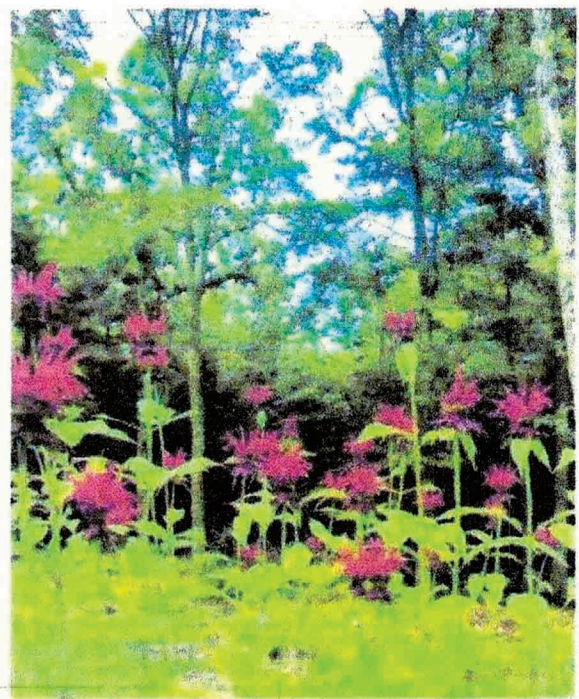
Mt. Airy Fothergilla  
*Fothergilla gardenii* 'Mt. Airy' (FG)  
Sun-Part Shade  
Ht. 3'-5' / Spd. 3'-5'  
April-May  
FACW  
Zone 5-8



Common Milkweed  
*Asclepias syriaca* (AS)  
Sun  
Ht. 3.5'-6.5'  
May-Aug  
FACU  
Zone 3-8



Seed pods



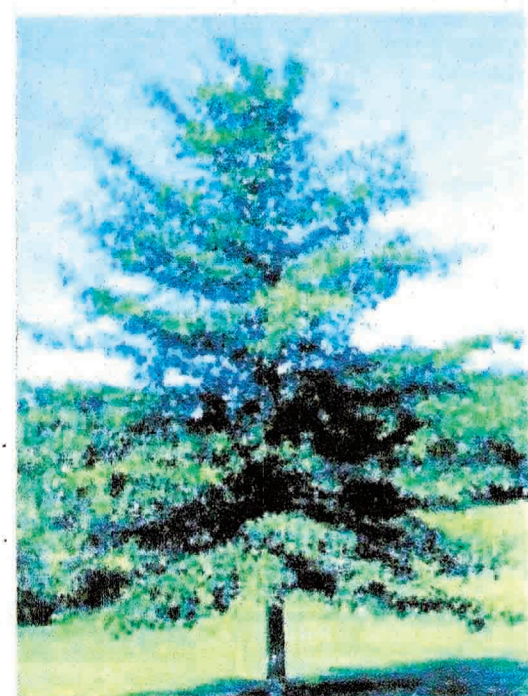
Flower heads



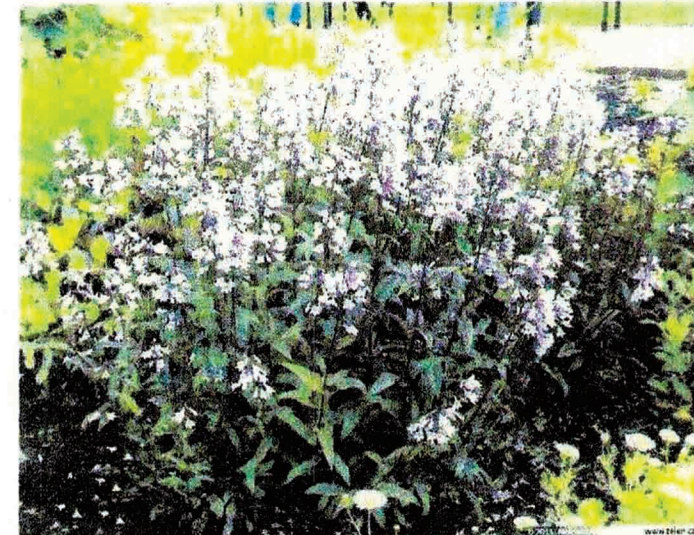
Fall Foliage



Fall Foliage



Black Gum  
*Nyssa sylvatica* (NS)  
Sun-Part Shade  
Ht. 30'-50' / Spd. 20'-30'  
FAC  
Zone 3-9



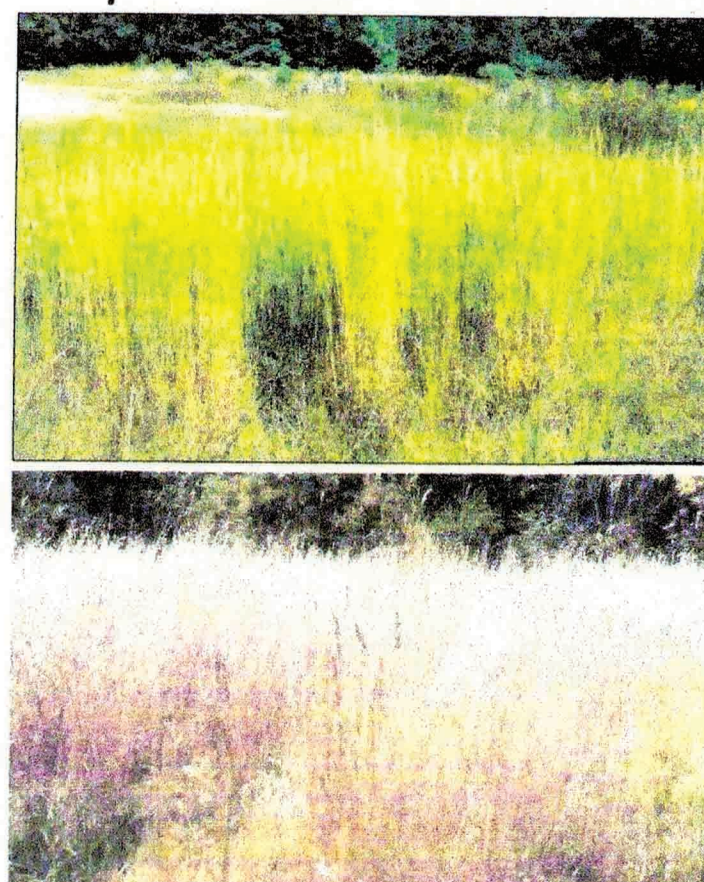
Beaded Penstemon  
*Penstemon digitalis* (PD)  
Sun-Part Shade  
Ht. 2'-5'  
Jun-Aug  
FAC  
Zone 4-8



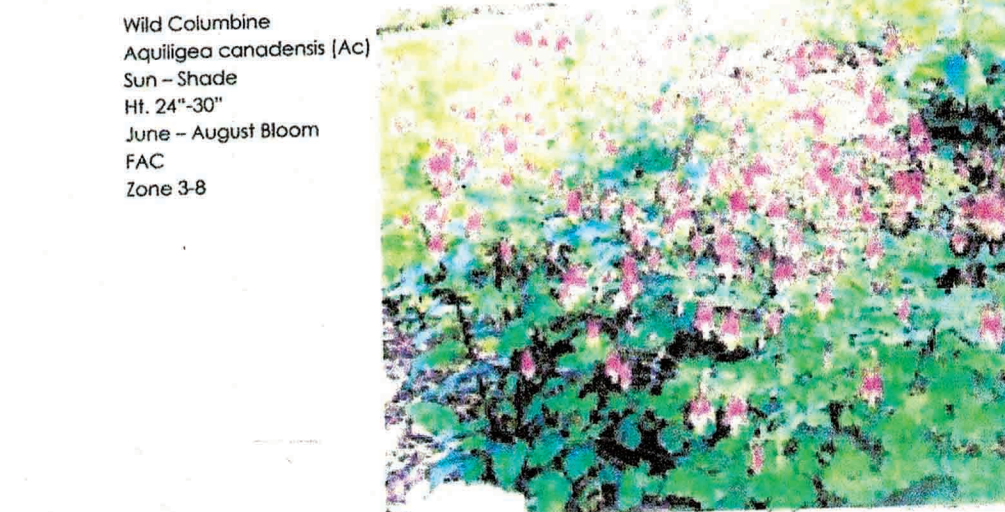
Wild Columbine  
*Aquilegia canadensis* (AC)  
Sun-Part Shade  
Ht. 24"-30"  
June-August Bloom  
FAC  
Zone 3-8



Turk's Cap Lily  
*Lilium superbum* (LS)  
Sun-Part Sh  
Ht. 4'-7'  
July-Aug  
FACW  
Zone 3-9



Great Blue Lobelia  
*Lobelia spicata* (LS)  
Sun-Part Sh  
Ht. 2'-3' / Spd. 1.0'-1.5'  
July-Sept  
FACW  
Zone 4-8

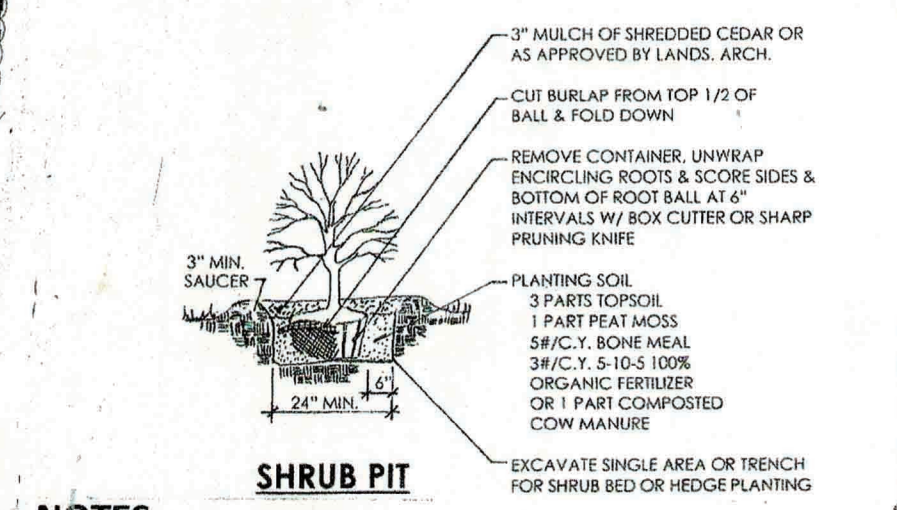
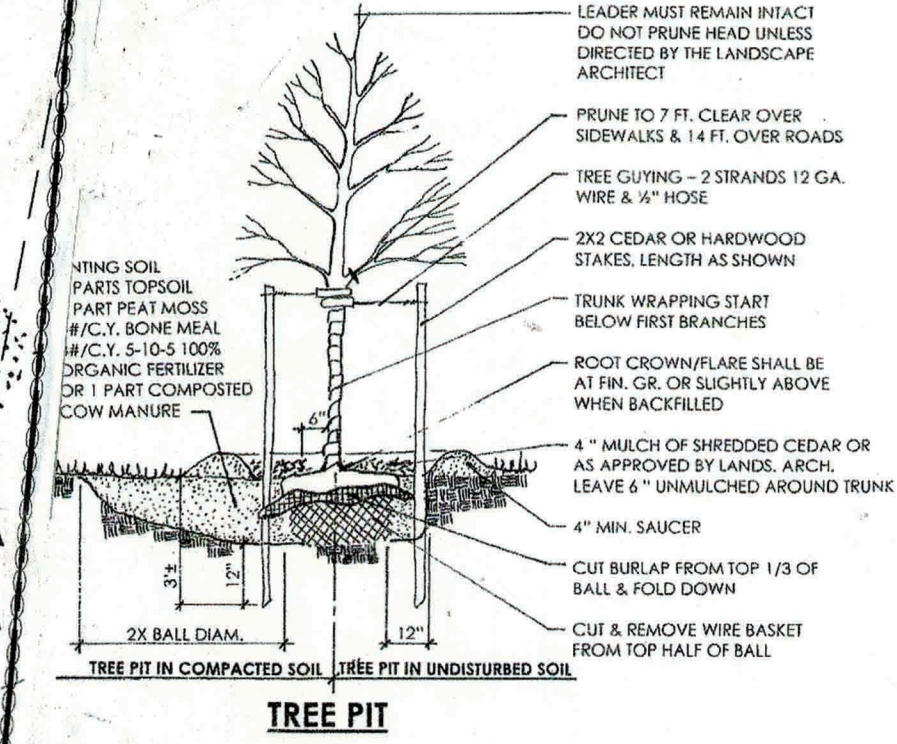
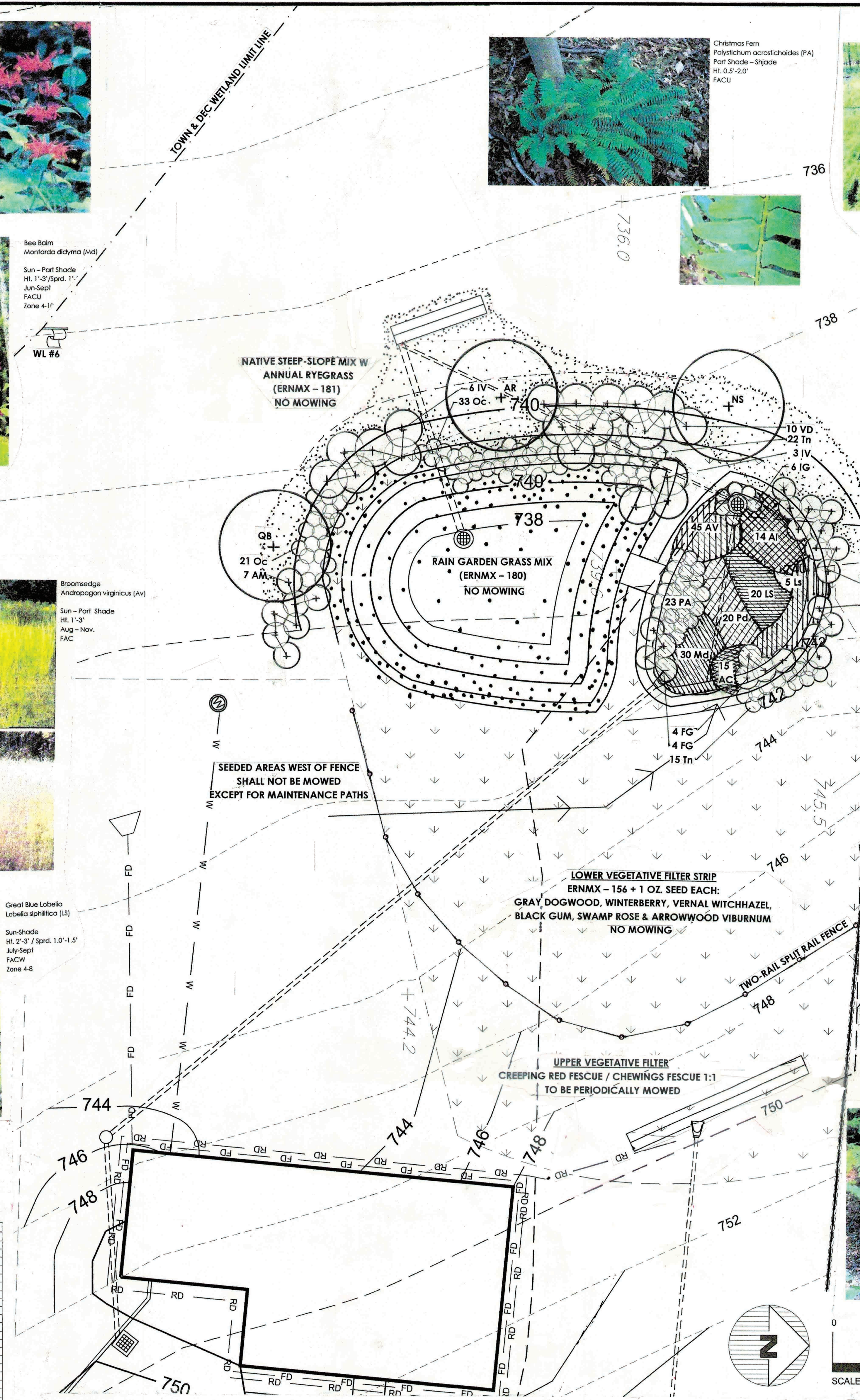


Red Chokeberry  
*Aronia arbutifolia* (AA)  
Sun-Part Shade  
Ht. 6'-10' / Spd. 3'-6'  
FACW



Black Chokeberry  
*Aronia melanocarpa* (AM)  
Sun  
Ht. 4' / Spd. 3'  
FAC

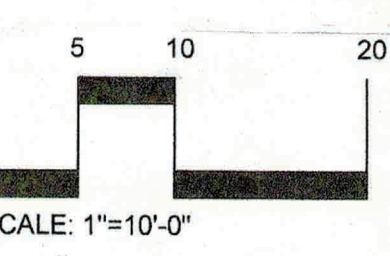
PLANT SCHEDULE				
QUAN	SYM	BOTANICAL NAME/COMMON NAME	SIZE	COMMENTS
TREES				
1	AR	Acer rubrum/Red Maple	2 1/2" - 3" cal	
1	NS	Nyssa sylvatica/Black Gum	2" - 2 1/2" cal	
1	QB	Quercus bicolor/Swamp White Oak	2" - 2 1/2" cal	
SHRUBS				
15	AA	Aronia arbutifolia/Red Chokeberry	3'-4" ht.	
7	Am	A. melanocarpa/Black Chokeberry	3'-4" ht.	
8	FG	Fothergilla gardenii/Dwarf Fothergilla	3'-4" ht.	
6	IG	Ilex glabra/Inkberry	4'-5" ht.	
9	IV	Ilex verticillata/Winterberry	4'-5" ht.	
10	VD	Viburnum dentatum/Arrowwood	4'-5" ht.	
PERENNIALS				
15	AC	Aquilegia canadensis/Wild Columbine	#1 cont.	1' o.c. DR
14	AI	Asclepias incarnata/Swamp Milkweed	#1 cont.	2.0' o.c. DR
90	AV	Andropogon virginicus/Broomsedge	#1 cont.	2.0' o.c. DR
4	LS	Lilium superbum/Turk's Cap Lily	#2 cont.	1.5' o.c. DR
20	LS	Lobelia spicata/Great Blue Lobelia	#2 cont.	2' o.c. DR
30	MD	Monarda didyma/Bee Balm	#2 cont.	2' o.c. DR
20	PD	Penstemon digitalis/Beaded Penstemon	#2 cont.	2.0' o.c. DR
FERNS				
54	OC	Osmunda cinnamomea/Cinnamon Fern	#1 cont.	2.0' o.c. DR
23	PA	Polystichum acrostichoides/Christmas Fern	#1 cont.	2.0' o.c. DR
37	TN	Thelypteris noveboracensis/New York Fern	#1 cont.	2.0' o.c. DR
SEED MIXES				
Rain Garden Grass Mix (ERNMX - 180) - cover of 1/4" Annual Rye seed				1 #11,000 if
Low-growing Wild Flower & Grass Mix (ERNMX - 156) - 1.50 lb. of a woody spp.				1 #11,000 if
1:1 mix Chewing & Red Fescues + 20% Annual Rye seed				1 #11,000 if
DR = Deer resistant				



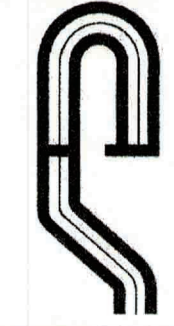
- NOTES**
- Storm drainage runoff shall not be introduced to the Vegetative Filter Strip or the Bioretention and Detention Basins.
  - All seed bed and seed application shall be in strict accordance with the supplier's instructions.
  - Invasive Species Control & Maintenance**  
The shrub layer of these woodlands has a considerable amount of invasive species. These include Winged Euonymus, Japanese Barberry, Japanese Honeyuckle, Oriental Bittersweet, Privet, Japanese Stiltgrass and Garlic-mustard. These will be removed with minimal disturbance. This will be done using a 'Cut & Swab' method resulting in no soil disturbance.
    - Plants to be removed shall be identified and marked in the field by the Project Landscape Architect.
    - A systemic herbicide, such as triclopyr, will be applied with a sponge swab by a State certified applicator. The concentration of the applied liquid shall be in strict accordance with manufacturer's instructions band containing a short duration dye
    - Invasive removal should be done as soon as the site is rough graded to allow adequate time for the removal during the construction of the residence.
    - Invasive removal shall be done utilizing a licensed pesticide applicator.
    - Project Landscape Architect shall prepare and submit reports following the initial invasive removal and each of the subsequent site inspections.



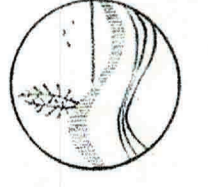
Cinnamon Fern  
*Osmunda cinnamomea* (OC)  
Sun-Part Shade  
Ht. 2.5'  
FACW



SCALE: 1"=10'-0"



**Environmental Design Consulting**  
Bruce M. Donohue, Landscape Architect, B.L.A., M.L.A., N.E. Ecology  
13 Promised Road Westport CT 06880  
Tel: 203-224-0384 Fax: 203-224-0385 email: bdonohue@edcny.com



Revisions:	Date	Comments
No.		
1	7-4-24	

SCALE	AS SHOWN
DRAWN BY	MD
DATE	

## MITIGATION PLAN

**MITIGATION PLAN**  
PREPARED FOR  
**TRUST BETWEEN ABRAHAM KRANTZ, AND NORA KRANTZ, AND ARTHUR KRANTZ**  
PROJECT LOCATION  
**ELMWOOD ROAD**  
Westchester Co., New York  
Town of Lewisboro



# ***Short Environmental Assessment Form***

## ***Part 1 - Project Information***

### **Instructions for Completing**

**Part 1 - Project Information.** The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

<b>Part 1 - Project and Sponsor Information</b>				
Name of Action or Project:				
Project Location (describe, and attach a location map):				
Brief Description of Proposed Action:				
Name of Applicant or Sponsor:			Telephone:	
			E-Mail:	
Address:				
City/PO:		State:	Zip Code:	
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation?			<b>NO</b>	<b>YES</b>
If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.				
2. Does the proposed action require a permit, approval or funding from any other governmental Agency?			<b>NO</b>	<b>YES</b>
If Yes, list agency(s) name and permit or approval:				
3.a. Total acreage of the site of the proposed action? _____ acres				
b. Total acreage to be physically disturbed? _____ acres				
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? _____ acres				
4. Check all land uses that occur on, adjoining and near the proposed action.				
<input type="checkbox"/> Urban <input type="checkbox"/> Rural (non-agriculture) <input type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input type="checkbox"/> Residential (suburban)				
<input type="checkbox"/> Forest <input type="checkbox"/> Agriculture <input type="checkbox"/> Aquatic <input type="checkbox"/> Other (specify): _____				
<input type="checkbox"/> Parkland				

5. Is the proposed action, a. A permitted use under the zoning regulations?  b. Consistent with the adopted comprehensive plan?	<b>NO</b>	<b>YES</b>	<b>N/A</b>
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	<b>NO</b>	<b>YES</b>	
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area? If Yes, identify: _____ _____	<b>NO</b>	<b>YES</b>	
8. a. Will the proposed action result in a substantial increase in traffic above present levels?  b. Are public transportation service(s) available at or near the site of the proposed action?  c. Are any pedestrian accommodations or bicycle routes available on or near site of the proposed action?	<b>NO</b>	<b>YES</b>	
9. Does the proposed action meet or exceed the state energy code requirements? If the proposed action will exceed requirements, describe design features and technologies: _____ _____	<b>NO</b>	<b>YES</b>	
10. Will the proposed action connect to an existing public/private water supply?  If No, describe method for providing potable water: _____ _____	<b>NO</b>	<b>YES</b>	
11. Will the proposed action connect to existing wastewater utilities?  If No, describe method for providing wastewater treatment: _____ _____	<b>NO</b>	<b>YES</b>	
12. a. Does the site contain a structure that is listed on either the State or National Register of Historic Places?  b. Is the proposed action located in an archeological sensitive area?	<b>NO</b>	<b>YES</b>	
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?  b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody? If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: _____ _____ _____	<b>NO</b>	<b>YES</b>	
14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply: <input type="checkbox"/> Shoreline <input type="checkbox"/> Forest <input type="checkbox"/> Agricultural/grasslands <input type="checkbox"/> Early mid-successional <input type="checkbox"/> Wetland <input type="checkbox"/> Urban <input type="checkbox"/> Suburban			
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered?	<b>NO</b>	<b>YES</b>	
16. Is the project site located in the 100 year flood plain?	<b>NO</b>	<b>YES</b>	
17. Will the proposed action create storm water discharge, either from point or non-point sources? If Yes, a. Will storm water discharges flow to adjacent properties? <input type="checkbox"/> NO <input type="checkbox"/> YES  b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)? If Yes, briefly describe: <input type="checkbox"/> NO <input type="checkbox"/> YES _____ _____	<b>NO</b>	<b>YES</b>	



18. Does the proposed action include construction or other activities that result in the impoundment of water or other liquids (e.g. retention pond, waste lagoon, dam)? If Yes, explain purpose and size: _____ _____ _____	<b>NO</b>   	<b>YES</b>   
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? If Yes, describe: _____ _____ _____	<b>NO</b>   	<b>YES</b>   
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? If Yes, describe: _____ _____ _____	<b>NO</b>   	<b>YES</b>   
<b>I AFFIRM THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE</b> Applicant/sponsor name: _____ Date: _____ Signature: _____		

# **STORMWATER MANAGEMENT PLAN**

Prepared for

**Trust Between Abraham Kranz, and Nora Kranz,  
and Arthur Kranz  
Elmwood Rd.  
Town of Lewisboro, NY**

Prepared by:

**Site Design Consultants  
251F Underhill Avenue  
Yorktown Heights, New York 10598  
914-962-4488**

**Joseph C. Riina, P.E.  
NYS Lic. No. 64431  
CPESC No. 2670  
CPSWQ No. 0073**

**February 2019**



**Elmwood Road**

**STORMWATER MANAGEMENT PLAN**

**Prepared for**

**Trust Between Abraham Kranz, and Nora Kranz, and Arthur Kranz**  
Elmwood Rd.  
Town of Lewisboro, NY

**Applicant:** Trust Between Abraham Kranz, and Nora Kranz,  
and Arthur Kranz  
189 Bent Tree Drive  
Palm Beach Gardens, FL 33418

**Site Engineer:** Joseph C. Riina, P.E.  
NYS Lic. No. 64431  
CPESC No. 2670  
CPSQW No. 0073  
  
Site Design Consultants  
251-F Underhill Avenue  
Yorktown Heights, NY 10598  
914-962-4488  
[jriina@sitedesignconsultants.com](mailto:jriina@sitedesignconsultants.com)



**February 2019**



## **Elmwood Road**

### **Table of Contents**

1.0	Project Description
2.0	Site Hydrology
3.0	Soils
4.0	Hydrologic Analysis
5.0	Stormwater Regulatory Requirements Stormwater Impacts Regulatory Obligation
6.0	Reducing Pollutant Impacts Stormwater Management During Construction
7.0	Methodology
8.0	Erosion and Sediment Control Selection
9.0	Maintenance of Stormwater Management Practices During Construction
10.0	Conclusion

### **Appendices**

<u>Figures</u>	Location Map Soil Maps
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<u>Appendix A</u>	List of Approvals and Applications (pending)
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<u>Appendix B</u>	NYS DEC NOI NYS DEC MS4
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<u>Appendix C</u>	Construction Sequence
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<u>Appendix D</u>	Stormwater Runoff Calculations and Stormwater Runoff Management Practices Sizing Calculations  Runoff Analysis and Routing Existing and Proposed Conditions 1, 2, 10, 25, 100 year Storm Event
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## **Elmwood Road**

### **1.0 Project Description**

The subject property is located on Elmwood Road in The Town of Yorktown, Westchester County, New York. The parcel is 3.47 acres and zoned R2-A Single-Family Residential. The site is a vacant lot which is lightly wooded and contains a NYSDEC Wetland. The site is moderately sloped downward toward the west from Elmwood Road..

It is proposed to construct a new residential home, driveway, stormwater management structures, and regrade a portion of the land to accommodate the new home. The proposed home will be accessed by an asphalt driveway. Stormwater management will comprise of a drain inlet system and roof drains which will drain across a vegetated filter to a bioretention basin. The bioretention basin connects into a detention basin and both overflow to the adjacent wetland. The basins are designed for a 100-year storm flow where runoff will be both retained then infiltrated and detained so that there will be no increase in peak runoff volume and treatment of the water quality volume.

The total disturbance to accomplish this work will be approximately 31,700 SF. This disturbance will be managed during construction by implementing erosion and sediment controls as per the erosion & sediment control plan. During construction, temporary erosion and sediment control measures will be kept in place and maintained. After all of the filled and disturbed areas will be topsoiled, seeded and mulched to eventually become lawn. These areas will be maintained jointly with the other existing grass cover on the site by mowing on a regular basis.

The following Report and Plans describe in detail the design and implementation of the Stormwater Management Plan.

### **2.0 Site Hydrology**

Currently, the surface runoff pattern is in the form of sheet and shallow concentrated flow towards the watercourse. Under the proposed condition, impervious area will increase on the lot. All runoff from impervious surfaces and some runoff from open land will be directed towards the retention/detention basins for attenuation and treatment before entering the watercourse.

An Erosion and Sediment Control Plan has been established and will be implemented during all phases of construction until the completion of the project. The erosion and sediment controls are designed in accordance with the NYS Standards and Specifications for Erosion and Sediment Control.

### **3.0 Soils**

On-site soils were classified by using the USDA Natural Resources Conservation Service (NRCS) Websoil survey for Westchester County, NY, see Figure 4.1 – Soil Map.

Paxton – PnB/PnD – fine sandy loam, 3 to 8 percent slopes, 15 to 25 percent slopes, hydrologic soil group C

Ridgebury – RdB – loam, 3 to 8 percent slopes, hydrologic soil group B/D

Sun – Sh – loam, hydrologic soil group C/D

Woodbridge – WdB – loam, 3 to 8 percent slopes, hydrologic soil group C/D

## Elmwood Road

The predominant soil type for the project area subject to development is Ridgebury loam. This soil is a somewhat poorly drained soil. The Hydrologic classification of this soil is "B" for drained areas and "D" for undrained areas.

### 4.0 Hydrologic Analysis

A hydrologic analysis was performed for a 1, 2, 10, 25, & 100-year storm. The proposed action will not result in an increase in peak surface runoff due to the increase in impervious surfaces. The discharge for all analyzed storm events show a decrease in the peak rate of runoff with the exception of the 25-year storm with a calculated increase of 0.20 cfs peak discharge. As other design storms show decrease in peak discharge and the calculated increase is by a small margin, it is likely that this value is due to rounding errors. Therefore, there are likely no downstream impacts associated with this project.

#### Stormwater Runoff Summary

Storm Event (Year)	Peak Discharge Pre-Demolition (cfs)	Peak Discharge Post-Development (cfs)	Change +/- (cfs)
1	0.86	0.66	-0.20
2	1.33	0.97	-0.36
10	3.24	2.79	-0.45
25	4.99	5.19	+0.20
100	8.43	8.35	-0.08

### 5.0 Stormwater Regulatory Requirements

#### Regulatory Obligation

This project has a disturbance under one acre and does not require a Stormwater Permit from the NYC DEP; however, this project will have a disturbance greater than 5,000 SF and is within the NYC Watershed and requires filing a Notice of Intent under the New York State Department of Environmental Conservation General Permit 0-15-002.

Under the Town of Lewisboro Stormwater Management and Erosion and Sediment Control Chapter 189 of the Town Code this project only requires a basic SWPPP which consists of an erosion and sediment control plan.

The proposed stormwater management system has been designed to provide some mitigation toward the buffer intrusion by the proposed development. Based on the standards mentioned above there are no stormwater treatment or attenuation measures required. Therefore, the stormwater management proposed is above and beyond what would normally be provided. The system provided will address water quality treatment and attenuation of peak runoff.

### 6.0 Reducing Pollutant Impact

#### Sources of Impact



## Elmwood Road

For this project, the potential for contamination of stormwater occurs both during construction and after the completion of development. The goal to achieve reduced impacts involves containment and treatment of the various pollutants.

Each phase will require temporary sediment and erosion control measures. The greatest source of pollutants during these phases is the potential of soil erosion. The nature of the construction plan is to have exposed soils which can erode and potentially discharge to sensitive areas. During construction, existing vegetation is removed exposing soils. Also, stockpiling of soils takes place. These conditions if not stabilized, are subject to erosion during rainfall events and wind conditions. Sediment discharged to a wetland can destroy vegetation and habitat affecting the function of the wetland. This degradation potential can be irreversible and eliminate its function in the ecosystem. Increases in turbidity to open water bodies such as streams, ponds, etc., are an additional environmental impact.

The implementation of proper erosion control measures and sediment containment along with a planned construction sequence can minimize or eliminate these potential impacts. The selection and implementation of erosion and sediment practices are described in a later section of this Report.

### Stormwater Management During Construction

Erosion and Sediment Control measures specified on drainage plan will be implemented during all phases of construction until the completion of the project. This will minimize or eliminate the potential short-term adverse impacts which may occur during construction. After completion, the erosion and sediment control will become a maintenance plan to ensure that permanent erosion and sediment controls continue to function and prevent the transport of sediments.

The drainage plan includes the Sequence of Construction and designed measures to be installed, operated and maintained during all aspects of construction. The appropriate measures were selected and detailed in plan for implementation by the site contractor. A main objective of the plan is to prevent erosion from occurring by stabilization of the construction site where possible. Sediment controls are to be used as a containment system to allow the removal of sediment from runoff to the greatest extent possible before leaving the work site. Control methods and standards utilized are provided in the NYS GUE&SC.

Potential sources of destabilization of the site have been determined so that proper measures will be used. The locations and methods designed for erosion and sediment control measures change as the construction sequence progresses. The priority is to stabilize disturbed areas subject to erosion and use containment and / or filtering practices where sediment may concentrate. Some of the practices and methods that will be used for this project are:

Additional methods of practices may be employed dependent on the situation. The NYS GUE&SC consists of NYS DEC accepted and recommended practices. The design requirements of temporary and permanent erosion and sediment control practices of this Manual have been followed.

Prior to completion of the project, all permanent structural features will be cleaned, restored, and re-vegetated as necessary. The erosion and sediment control phase of the project is complete when all work is done and all areas are stabilized. The post-construction Stormwater Management Inspection and Maintenance agreement will describe the long-term inspection schedule, periodic maintenance requirements, and the responsible party.

## **Elmwood Road**

### **7.0 Methodology**

To satisfy the requirements of the Town of Lewisboro standard erosion and sediment control practices have been selected. These practices meet attenuation as well as Stormwater quality goals. The guidelines and practices used in selecting and the sizing analyses are found in Chapters 4, 5, 6, and 10 of the NYS DEC Stormwater Management Design Manual.

### **7.1 Stormwater Management Practices Selection, Justification and Design**

The stormwater management practices selection process detailed in Chapters 3 and 7 of the NYS Stormwater Management Design Manual was followed to help select the practices chosen. These Chapters provide a series of matrices which allows logical selection of treatment practices based on several factors. The factors are as follows:

1. Land Use – urban;
2. Physical Feasibility – location, slope, drainage area, groundwater table;
3. Watershed / Regional Factors – Long Island Sound;
4. Stormwater Management Capability – can meet all requirements;
5. Community and Environmental Factors – meets all requirements.

Limiting factors specific to the site prevented the use of certain management practices. Seasonal groundwater conditions were identified during soil testing in the locations available for the practice making infiltration infeasible. Additional surface applications were not feasible due to surface limitations.

#### **Bioretention (F-5) NYSDEC SMDM:**

The selected stormwater treatment practice is a filtered system designed to capture and treat small volumes of surface runoff. The filtering systems are practices found in the NYS Stormwater Management Design Manual. The benefit to these practices is that they work well for this application. This application is most commonly used for residential application. The bio-retention system has a surface feature for containing the stormwater and has the appearance of a planted landscape bed. The organic filter media is a shallow sub-surface media through which the stormwater passes. The total detention time is designed for several days. After the treated runoff passes through the filter media it infiltrates into existing soil. The practice in this case is designed for flood storage. Pre-treatment is being provided by discharges overland through a grass filter strip or stone traps before discharging to the rain garden.

The selection of the treatment practice was based on evaluating the site to determine what would best fit the conditions providing maximum benefits. The goal was to select practices which would meet treatment and attenuation standards and minimize the disturbance footprint. The selection of Stormwater Practices was based on the surface and subsurface conditions of the site. In addition, the site design concept is to create a natural and environmentally sensitive setting. The well-drained soils made it very conducive to the use of infiltration chambers.

#### **In General:**

- Controls should be inspected periodically for the first few months after construction and on a semi-annual basis thereafter. They should also be inspected after major storm events (greater than 0.5 inches).

## **Elmwood Road**

- All stormwater controls shall be inspected and cleaned of any debris or sediment.
- Any erosion shall be repaired and stabilized with seeding and mulch or stone.

Please note that additional notes regarding maintenance activities are contained on the project Construction Drawings and should be adhered to during and after construction.

The selection and justification of green practices can be found in Appendix G of this Report. The design of the practices can be found in Appendix H of this Report.

### **8.0 Erosion and Sediment Control Selection**

#### **Stabilized Construction Entrance:**

This has been specified for the entrance of the driveway. The installation will occur at the beginning of the project as described in the suggested Construction Sequence. It will be maintained so as to prevent the tracking of sediment off-site.

#### **Silt / Sediment Fence:**

Silt fence has been specified to control and contain sediment from leaving areas under disturbance to undisturbed areas. The type, placement, and installation shall meet the requirements of the NYS GUE&SC. The fence shall be installed as best as possible following the contours and will be spaced in accordance with the same criteria. The fence will be inspected daily, repaired, and sediment removed. The location and details can be found on the site plan.

#### **Temporary and Permanent Vegetative Cover:**

Disturbed areas that will be stabilized. The stabilization will be permanent vegetative cover. The vegetative cover specifications are based on the NYS GUE&SC Manual. On the Construction Plans are notes, locations, and specifications as to the vegetative cover requirements. In the notes, there are specific situations and time constraints related to stabilization of disturbed areas. The specifications give seed and fertilizer mixes as well as placement.

#### **Storm Drain Inlet Protection:**

The inlet protection is specified to provide a permeable barrier around drainage inlets to reduce sediment content in runoff before entering the storm drain system.

#### **Erosion Blankets:**

Erosion blankets and seeding shall be used for the stabilization of slopes 3:1 or greater or as otherwise specified. The blankets shall be installed as per the Plans and Details, and the manufacturer's specifications. They shall be stapled or staked in place as per the manufacturer's specifications. The blankets may be installed at locations other than those shown on the Plans as directed by the Town Engineer, Project Engineer, or other persons inspecting the site under the direction of the aforementioned.



## **Elmwood Road**

### **Soil Restoration:**

Soil restoration is a required practice for construction projects where soil compaction occurs to soils which will be permanently vegetated. This compaction is typically a result of heavy vehicle traffic, cutting or filling, and areas which may receive heavy surcharges. This becomes more pronounced in soils with greater fines content specifically when wet. These actions can change soil properties which affect its ability to drain or absorb surface water and will also affect the survivability of vegetation. In order to maintain the integrity of the stormwater management plan these areas must receive soil restoration. See Figure 8.1 taken from the NYSSMDM for requirements.

This project has soils which fall in the hydrologic soil group HSG "C." Therefore, for most instances, soil restorations are required for the development areas subject to permanent vegetation. Soil restoration can be done by tilling or aerating the soil to a depth of 12-inches. In heavy traffic areas, 3-inches of compost shall be placed over the compacted areas prior to the tilling. After the restoration, a 3/8" metal bar should be able to be hand pushed into the soil. Areas within the drip-line of trees should not be tilled.

### **9.0 Installation and Maintenance of Stormwater Management Practices**

Regular site inspections will be performed by the Town throughout the construction of the project. Inspections will be made weekly and after major rainfall events, i.e. 1/2" or greater. A report will be made of each inspection.

#### **9.1 During Construction**

The Contractor shall be responsible for the installation and maintenance of all temporary erosion control measures. The Contractor shall also be responsible for the installation of permanent control measures. The Operator shall be responsible for the maintenance of all permanent control measures.

All temporary erosion control measures installed on the project site shall be observed and maintained to ensure that they are operating as intended as follows:

1. Temporary measures will be inspected by the trained Contractor daily. Any necessary repairs, replacements, or upgrades will be made immediately.
2. Accumulated sediments will be removed as required to keep the measures functional. In the case of silt fencing (if applicable), remove deposits where accumulations reach half the height of the fence or bale.
3. All erosion of the silt fence will be repaired immediately with compacted backfill materials.
4. Disturbed areas, stockpile areas, areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system or downstream.
5. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.
6. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site sediment tracking.

## Elmwood Road

7. The permanent storm drainage system shall be inspected and cleaned of all sediment prior to completion of project.

### 9.2 After Construction

The long-term operation and maintenance of the stormwater management system will be the responsibility of the Owner.

The following is the proposed Inspection and Maintenance Schedule:

Control to be Inspected	Inspection Frequency	Maintenance Threshold Criteria	Maintenance Procedure
Drain Inlets	Quarterly	3"+ accumulated sediment	Remove debris and sediment annually.
Swales and Channels	Semi-Annually	Debris and leaves and Sediment at 5%	Remove debris and sediment annually.
Bio-Retention*	Quarterly*	Ponding for more than 48 hours*	Remove accumulated sediment and debris; weed and replace plants and mulch as needed.*

\* Bioretention area shall be inspected monthly for the first year for uneven settlement and ponding

### Recommended Maintenance Access:

#### Drain Inlets:

Access through grate structure and remove debris and sediment with hand tools or vacuum truck.

#### In General:

- Controls should be inspected periodically for the first few months after construction and on a semi-annual basis thereafter. They should also be inspected after major storm events (greater than 0.5 inches).
- All stormwater controls shall be inspected and cleaned of any debris or sediment.
- Any erosion shall be repaired and stabilized with seeding and mulch or stone.
- Maintenance and access shall comply with all local, State and Federal safety codes and guidelines.

Please note that additional notes regarding maintenance activities are contained on the project Construction Drawings and should be adhered to during and after construction.

### 10.0 Conclusion



## **Elmwood Road**

The Stormwater Management Plan has been established for this project in accordance with the requirements of the Town Code of Lewisboro. This plan will effectively control stormwater-generated sediment by this project during and after construction. In conclusion, the proposed action will not have negative downstream impacts.

**Joseph C. Riina, P.E.**

**February 1, 2019**

**Figures**

Location Map

Soil Maps



# Mapping Westchester County



June 18, 2018

 Municipal Boundaries

1:5,881

0 265 530  
Westchester County GIS



Map Scale: 1:1,030 if printed on A landscape (11" x 8.5") sheet.

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

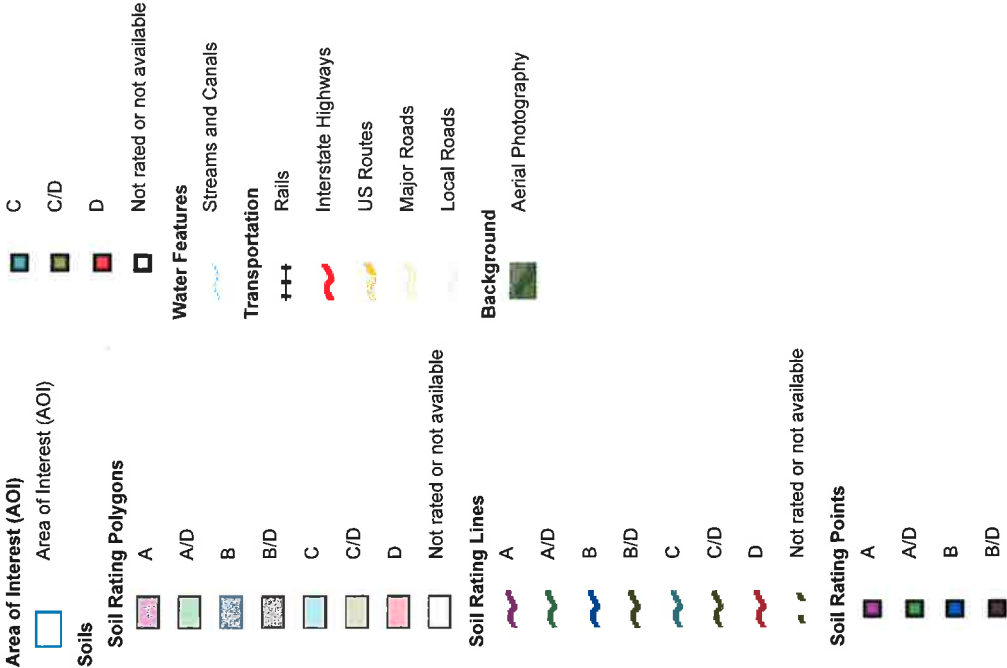


Natural Resources  
Conservation Service

Web Soil Survey  
National Cooperative Soil Survey



MAP LEGEND



MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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

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

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

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

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

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

Soil Survey Area: Westchester County, New York  
Survey Area Data: Version 13, Oct 8, 2017

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

Date(s) aerial images were photographed: Dec 31, 2009—Oct 5, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
PnB	Paxton fine sandy loam, 3 to 8 percent slopes	C	1.3	36.0%
RdB	Ridgebury loam, 3 to 8 percent slopes	B/D	1.7	47.6%
Sh	Sun loam	C/D	0.5	13.7%
WdB	Woodbridge loam, 3 to 8 percent slopes	C/D	0.1	2.6%
<b>Totals for Area of Interest</b>			<b>3.5</b>	<b>100.0%</b>

## Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.



## Rating Options

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

**Appendix A**

**List of Approvals and Applications:**

Town of Lewisboro Stormwater Permit – approval pending  
Town of Lewisboro Building Permit – approval pending



**Appendix B**

NYS DEC NOI

NYS DEC MS4

**NOTICE OF INTENT****New York State Department of Environmental Conservation****Division of Water****625 Broadway, 4th Floor****Albany, New York 12233-3505**
**NYR**        
 (for DEC use only)

**Stormwater Discharges Associated with Construction Activity Under State  
 Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-15-002**

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)

A l e x a n d e r   K r a n z

Owner/Operator Contact Person Last Name (NOT CONSULTANT)

K r a n z

Owner/Operator Contact Person First Name

A l e x a n d e r

Owner/Operator Mailing Address

1 8 9   B e n t   T r e e   D r i v e

City

P a l m   B e a c h   G a r d e n s

State

F L

Zip

3 3 4 1 8 -    

Phone (Owner/Operator)

5 6 1 - 2 5 5 - 9 3 5 0

Fax (Owner/Operator)

   -    

Email (Owner/Operator)

a j k r a n z @ m s n . c o m

FED TAX ID

  -       (not required for individuals)



## Project Site Information

Project/Site Name

T r u s t   B e t w e e n   A b r a h a m   K r a n t z   a n d   N o r a   K r

Street Address (NOT P.O. BOX)

E l m w o o d   R o a d

Side of Street

☐ North   ☐ South   ☐ East   ☐ West

City/Town/Village (THAT ISSUES BUILDING PERMIT)

T o w n   o f   L e w i s b o r o

State   Zip

N Y   1 0 5 9 0 -

County

W e s t c h e s t e r

DEC Region

3

Name of Nearest Cross Street

W e s t   L a n e

Distance to Nearest Cross Street (Feet)

1 5 0 0

Project In Relation to Cross Street

☐ North   ☒ South   ☐ East   ☐ West

Tax Map Numbers

Section-Block-Parcel

1 0 3 0 2 - 2 3 - 4 3

Tax Map Numbers

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](http://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

## Post-Development Future 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

[illegible]

	Number of Lots		
<input checked="" type="radio"/> SINGLE FAMILY HOME			
<input type="radio"/> SINGLE FAMILY SUBDIVISION			
<input type="radio"/> TOWN HOME RESIDENTIAL			
<input type="radio"/> MULTIFAMILY RESIDENTIAL			
<input type="radio"/> INSTITUTIONAL/SCHOOL			
<input type="radio"/> INDUSTRIAL			
<input type="radio"/> COMMERCIAL			
<input type="radio"/> MUNICIPAL			
<input type="radio"/> ROAD/HIGHWAY			
<input type="radio"/> RECREATIONAL/SPORTS FIELD			
<input type="radio"/> BIKE PATH/TRAIL			
<input type="radio"/> LINEAR UTILITY (water, sewer, gas, etc.)			
<input type="radio"/> PARKING LOT			
<input type="radio"/> CLEARING/GRADING ONLY			
<input type="radio"/> DEMOLITION, NO REDEVELOPMENT			
<input type="radio"/> WELL DRILLING ACTIVITY *(Oil, Gas, etc.)			
<input type="radio"/> OTHER			

[illegible]

**\*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

			3	.	5
--	--	--	---	---	---

Total Area To  
Be Disturbed

			0	.	7
--	--	--	---	---	---

Existing Impervious  
Area To Be Disturbed

			0	.	0
--	--	--	---	---	---

Future Impervious  
Area Within  
Disturbed Area

			0	.	1
--	--	--	---	---	---

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	
		0 %

B		
	8	4 %

	C	
	8	8 %

	D	
	1	2 %

7. Is this a phased project?

☐ Yes ☒ No

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

Start Date

	8	/	0	1	/	2	0	1	8
--	---	---	---	---	---	---	---	---	---

End Date

0	8	/	0	1	/	2	0	1	9
---	---	---	---	---	---	---	---	---	---



Name \_\_\_\_\_

☒ 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-0-15-002? ☒ Yes ☐ No

If no, skip question 13.

If Yes, what is the acreage to be disturbed?

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Page 4 of 14





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

N	Y	1	0	5	9	8	-				
---	---	---	---	---	---	---	---	--	--	--	--

Phone

9	1	4	-	9	6	2	-	4	4	8	8
---	---	---	---	---	---	---	---	---	---	---	---

Fax

9	1	4	-	9	6	2	-	7	3	8	6
---	---	---	---	---	---	---	---	---	---	---	---

Email

j	r	i	n	a	@	s	i	t	e	d	e	s	i	g	n	c	o	n	s	u	l	t	a	n	t	s	.	c	o	m
---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

[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-0-15-002. 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

C

Last Name

R	i	i	n	a
---	---	---	---	---

Signature

\_\_\_\_\_

Date \_\_\_\_\_

--	--

/

--	--

/

--	--	--	--

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)
<input type="radio"/> 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"/>
<input checked="" type="radio"/> 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"/> 0 . 1 2 7
<input type="radio"/> 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"/>
<input checked="" type="radio"/> 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"/> 0 . 0 3 9
<b>RR Techniques (Volume Reduction)</b>		
<input type="radio"/> Vegetated Swale (RR-5) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Rain Garden (RR-6) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Stormwater Planter (RR-7) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Rain Barrel/Cistern (RR-8) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Porous Pavement (RR-9) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Green Roof (RR-10) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<b>Standard SMPs with RRv Capacity</b>		
<input type="radio"/> Infiltration Trench (I-1) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Infiltration Basin (I-2) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Dry Well (I-3) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Underground Infiltration System (I-4) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input checked="" type="radio"/> Bioretention (F-5) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	0 . 1 2 7
<input type="radio"/> Dry Swale (O-1) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<b>Standard SMPs</b>		
<input type="radio"/> Micropool Extended Detention (P-1) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Wet Pond (P-2) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Wet Extended Detention (P-3) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Multiple Pond System (P-4) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Pocket Pond (P-5) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Surface Sand Filter (F-1) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Underground Sand Filter (F-2) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Perimeter Sand Filter (F-3) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Organic Filter (F-4) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Shallow Wetland (W-1) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input checked="" type="radio"/> Extended Detention Wetland (W-2) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	0 . 1 2 7
<input type="radio"/> Pond/Wetland System (W-3) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Pocket Wetland (W-4) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>
<input type="radio"/> Wet Swale (O-2) .....	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/> <input type="text"/>	<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)

### Alternative SMP

Total Contributing  
Impervious Area(acres)

- [illegible]

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

[illegible][illegible]

**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.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29.

Total RRv provided



.
acre-feet

31. Is the Total RRV provided (#30) greater than or equal to the total WQV required (#28).

☒ Yes      ☐ No

If Yes, go to question 36.

If No, go to question 32.

32. Provide the Minimum RRv required based on HSG.  
[Minimum RRv Required = (P) (0.95) (Ai)/12, Ai=(S) (Aic)]

Minimum RRv Required

--	--	--

 . 

--	--	--

 acre-feet

- 32a. Is the Total RRV provided (#30) greater than or equal to the Minimum RRV Required (#32)?

☐ Yes      ☐ No

If Yes, go to question 33.

**Note:** Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.

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

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  
   0 .     acre-feet

CPv Provided  
   0 .     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  
   0 .     CFS

Post-development  
   0 .     CFS

Total Extreme Flood Control Criteria (Qf)

Pre-Development  
   0 .     CFS

Post-development  
   0 .     CFS



- 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.

T

- ☐
- None

☐ Yes    ☒ No

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

☒ Yes      ☐ No

☒ Yes      ☐ No

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

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**Owner/Operator Certification**

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.

**Print First Name**

A l e x a n d e r

**MI****Print Last Name**

K r a n z

**Owner/Operator Signature****Date**

/ /



**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: Alexander Kranz  
2. Contact Person: Alexander Kranz  
3. Street Address: 189 Bent Tree Drive  
4. City/State/Zip: Palm Beach Gardens, FL, 33418

**II. Project Site Information**

5. Project/Site Name:  
6. Street Address: Elmwood Road  
7. City/State/Zip: Lewisboro, NY, 10590

**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**



## **Appendix C**

### Construction Sequence

## Elmwood Road

### Construction Sequence

Refer to the Plan Set for all plans and details which relate to Construction Sequence.

1. A licensed surveyor must define infrastructure locations, limits of disturbance, stormwater basin limits, and grades in the field prior to start of any construction. Limits of disturbance shall be marked with the installation of construction fence or approved equal.
2. Install all perimeter erosion control measures, construction entrance as shown on the Erosion and Sediment Control Plan and the associated Details.
3. Start construction of project access point, set-up staging area and install anti-tracking pads as shown on Site Plan.
4. Begin rough grading the site. Contractor to limit exposure of denuded soils by providing temporary stabilization for work areas that will remain undisturbed for over seven (7) days.
5. Rough grade driveway and building.
6. Begin excavation of building foundations, wall, and utilities. Protect open excavations. Where applicable, place fill on the up-slopes and side edges of fill area. Fill should be pushed in place and stabilized with tracking perpendicular to the slope. Place soil stockpiles in locations shown on the Erosion and Sediment Control Plans and associated Details.
7. Begin construction of Building.
8. Upon completion of foundation, backfill to grade and immediately stabilize areas that will not receive traffic or disturbance within seven (7) days.
9. Begin the excavation and installation of utilities and drainage system. Protect trenches and open excavations from erosion. All drainage inlets shall be protected from sediment entering. There shall be no direct unfiltered discharge into the stormwater systems. The drain inlet outlet shall be blocked until all upstream areas have been permanently stabilized.
10. During building and site construction maintain and re-establish as required erosion control and stabilization measures as required by the site plan and details.
11. Excavate to the sub-grade level. Scarify the existing soil to a depth of 12-inches by rototilling or other means acceptable to the Engineer. Install all courses of stone as per the specifications given on the Plan.
12. Stabilize all open areas with seed and mulch.
13. Drainage outlet may be unblocked.
14. Backfill, grade, place final soil topping and put in place permanent vegetative cover over all disturbed areas, landscape beds, slopes, etc.
15. Once site stabilization has taken place (An area shall be considered to have achieved final stabilization when it has a minimum uniform 70% perennial vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated surface erosion and subsurface characteristics sufficient to resist sliding and other movements), remove all temporary erosion and sediment controls.

## **Elmwood Road**

### **Winter Stabilization Notes:**

1. If construction activities are expected to extend into or occur during the winter season the contractor shall anticipate proper stabilization and sequencing. Construction shall be sequenced such that wherever possible areas of disturbance that can be completed and permanently stabilized shall be done by applying and establishing permanent vegetative cover before the first frost. Areas subject to temporary disturbance that will not be worked for an extended period of time shall be treated with temporary seed, mulch, and/or erosion blankets.



**Appendix D**

Stormwater Runoff Calculations  
and Stormwater Runoff Management Practices Sizing Calculations

Runoff Analysis and Routing

Existing and Proposed Conditions

1, 2, 10, 25, & 100-year Storm Event

## Pre-Developed

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### Project Summary

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Title	16-61 Elmwood Rd.
Engineer	Joseph Riina, P.E.
Company	Site Design Consultants
Date	8/3/2018

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### Notes

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## Pre-Developed

Subsection: Master Network Summary

### Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft <sup>3</sup> /s)
Drainage Area 1	Pre-Development 1 year	1	0.077	12.100	0.86
Drainage Area 1	Pre-Development 2 year	2	0.113	12.100	1.33
Drainage Area 1	Pre-Development 10 year	10	0.259	12.100	3.24
Drainage Area 1	Pre-Development 25 year	25	0.398	12.100	4.99
Drainage Area 1	Pre-Development 100 year	100	0.680	12.100	8.43

### Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft <sup>3</sup> /s)
O-2	Pre-Development 1 year	1	0.077	12.100	0.86
O-2	Pre-Development 2 year	2	0.113	12.100	1.33
O-2	Pre-Development 10 year	10	0.259	12.100	3.24
O-2	Pre-Development 25 year	25	0.398	12.100	4.99
O-2	Pre-Development 100 year	100	0.680	12.100	8.43

## Pre-Developed

Subsection: Time-Depth Curve

Label: Westchester County 1-100 2015

Return Event: 1 years

Storm Event: 1 Year

### Time-Depth Curve: 1 Year

Label	1 Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	1 years

### CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.0	0.0	0.0	0.0
1.500	0.0	0.0	0.0	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.1	0.1	0.1	0.1	0.1
3.500	0.1	0.1	0.1	0.1	0.1
4.000	0.1	0.1	0.1	0.1	0.1
4.500	0.1	0.1	0.1	0.2	0.2
5.000	0.2	0.2	0.2	0.2	0.2
5.500	0.2	0.2	0.2	0.2	0.2
6.000	0.2	0.2	0.2	0.2	0.2
6.500	0.2	0.2	0.2	0.2	0.2
7.000	0.3	0.3	0.3	0.3	0.3
7.500	0.3	0.3	0.3	0.3	0.3
8.000	0.3	0.3	0.3	0.3	0.4
8.500	0.4	0.4	0.4	0.4	0.4
9.000	0.4	0.4	0.4	0.4	0.5
9.500	0.5	0.5	0.5	0.5	0.5
10.000	0.5	0.5	0.6	0.6	0.6
10.500	0.6	0.6	0.6	0.7	0.7
11.000	0.7	0.7	0.7	0.8	0.8
11.500	0.8	0.9	1.0	1.0	1.2
12.000	1.4	1.6	1.8	1.8	1.9
12.500	2.0	2.0	2.0	2.1	2.1
13.000	2.1	2.1	2.1	2.2	2.2
13.500	2.2	2.2	2.2	2.2	2.3
14.000	2.3	2.3	2.3	2.3	2.3
14.500	2.3	2.3	2.4	2.4	2.4
15.000	2.4	2.4	2.4	2.4	2.4
15.500	2.4	2.4	2.5	2.5	2.5
16.000	2.5	2.5	2.5	2.5	2.5
16.500	2.5	2.5	2.5	2.5	2.5

## Pre-Developed

Subsection: Time-Depth Curve

Label: Westchester County 1-100 2015

Return Event: 1 years

Storm Event: 1 Year

### CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	2.5	2.6	2.6	2.6	2.6
17.500	2.6	2.6	2.6	2.6	2.6
18.000	2.6	2.6	2.6	2.6	2.6
18.500	2.6	2.6	2.6	2.6	2.6
19.000	2.6	2.6	2.6	2.7	2.7
19.500	2.7	2.7	2.7	2.7	2.7
20.000	2.7	2.7	2.7	2.7	2.7
20.500	2.7	2.7	2.7	2.7	2.7
21.000	2.7	2.7	2.7	2.7	2.7
21.500	2.7	2.7	2.7	2.7	2.7
22.000	2.7	2.7	2.8	2.8	2.8
22.500	2.8	2.8	2.8	2.8	2.8
23.000	2.8	2.8	2.8	2.8	2.8
23.500	2.8	2.8	2.8	2.8	2.8
24.000	2.8	(N/A)	(N/A)	(N/A)	(N/A)



## Pre-Developed

Subsection: Time-Depth Curve  
Label: Westchester County 1-100 2015

Return Event: 10 years  
Storm Event: 10 Year

### Time-Depth Curve: 10 Year

Label	10 Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	10 years

### CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.2	0.2	0.2	0.2	0.2
3.500	0.2	0.2	0.2	0.2	0.2
4.000	0.2	0.2	0.2	0.2	0.2
4.500	0.2	0.3	0.3	0.3	0.3
5.000	0.3	0.3	0.3	0.3	0.3
5.500	0.3	0.3	0.3	0.3	0.4
6.000	0.4	0.4	0.4	0.4	0.4
6.500	0.4	0.4	0.4	0.4	0.4
7.000	0.5	0.5	0.5	0.5	0.5
7.500	0.5	0.5	0.5	0.5	0.6
8.000	0.6	0.6	0.6	0.6	0.6
8.500	0.6	0.7	0.7	0.7	0.7
9.000	0.7	0.7	0.8	0.8	0.8
9.500	0.8	0.9	0.9	0.9	0.9
10.000	0.9	1.0	1.0	1.0	1.1
10.500	1.1	1.1	1.1	1.2	1.2
11.000	1.2	1.3	1.3	1.4	1.4
11.500	1.5	1.6	1.7	1.9	2.1
12.000	2.5	2.9	3.1	3.3	3.4
12.500	3.5	3.6	3.6	3.7	3.7
13.000	3.7	3.8	3.8	3.9	3.9
13.500	3.9	3.9	4.0	4.0	4.0
14.000	4.1	4.1	4.1	4.1	4.1
14.500	4.2	4.2	4.2	4.2	4.3
15.000	4.3	4.3	4.3	4.3	4.3
15.500	4.4	4.4	4.4	4.4	4.4
16.000	4.4	4.4	4.5	4.5	4.5
16.500	4.5	4.5	4.5	4.5	4.5

## Pre-Developed

Subsection: Time-Depth Curve

Label: Westchester County 1-100 2015

Return Event: 10 years

Storm Event: 10 Year

### CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	4.5	4.6	4.6	4.6	4.6
17.500	4.6	4.6	4.6	4.6	4.6
18.000	4.6	4.6	4.7	4.7	4.7
18.500	4.7	4.7	4.7	4.7	4.7
19.000	4.7	4.7	4.7	4.7	4.7
19.500	4.8	4.8	4.8	4.8	4.8
20.000	4.8	4.8	4.8	4.8	4.8
20.500	4.8	4.8	4.8	4.8	4.8
21.000	4.8	4.9	4.9	4.9	4.9
21.500	4.9	4.9	4.9	4.9	4.9
22.000	4.9	4.9	4.9	4.9	4.9
22.500	4.9	4.9	4.9	4.9	4.9
23.000	5.0	5.0	5.0	5.0	5.0
23.500	5.0	5.0	5.0	5.0	5.0
24.000	5.0	(N/A)	(N/A)	(N/A)	(N/A)

## Pre-Developed

Subsection: Time-Depth Curve  
Label: Westchester County 1-100 2015

Return Event: 100 years  
Storm Event: 100 Year

### Time-Depth Curve: 100 Year

Label	100 Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

### CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.1	0.1	0.1	0.1
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.2	0.2	0.2
2.000	0.2	0.2	0.2	0.2	0.2
2.500	0.2	0.2	0.2	0.3	0.3
3.000	0.3	0.3	0.3	0.3	0.3
3.500	0.3	0.3	0.4	0.4	0.4
4.000	0.4	0.4	0.4	0.4	0.4
4.500	0.4	0.5	0.5	0.5	0.5
5.000	0.5	0.5	0.5	0.6	0.6
5.500	0.6	0.6	0.6	0.6	0.6
6.000	0.6	0.7	0.7	0.7	0.7
6.500	0.7	0.7	0.8	0.8	0.8
7.000	0.8	0.8	0.9	0.9	0.9
7.500	0.9	0.9	1.0	1.0	1.0
8.000	1.0	1.0	1.1	1.1	1.1
8.500	1.2	1.2	1.2	1.2	1.3
9.000	1.3	1.3	1.4	1.4	1.5
9.500	1.5	1.5	1.6	1.6	1.7
10.000	1.7	1.7	1.8	1.8	1.9
10.500	1.9	2.0	2.1	2.1	2.2
11.000	2.2	2.3	2.4	2.5	2.6
11.500	2.7	2.8	3.1	3.4	3.7
12.000	4.5	5.3	5.6	5.9	6.2
12.500	6.3	6.4	6.5	6.6	6.7
13.000	6.7	6.8	6.9	6.9	7.0
13.500	7.1	7.1	7.2	7.2	7.3
14.000	7.3	7.3	7.4	7.4	7.5
14.500	7.5	7.5	7.6	7.6	7.7
15.000	7.7	7.7	7.8	7.8	7.8
15.500	7.8	7.9	7.9	7.9	8.0
16.000	8.0	8.0	8.0	8.0	8.1
16.500	8.1	8.1	8.1	8.1	8.2



## Pre-Developed

Subsection: Time-Depth Curve  
 Label: Westchester County 1-100 2015

Return Event: 100 years  
 Storm Event: 100 Year

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.100 hours**  
**Time on left represents time for first value in each row.**

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	8.2	8.2	8.2	8.2	8.3
17.500	8.3	8.3	8.3	8.3	8.3
18.000	8.4	8.4	8.4	8.4	8.4
18.500	8.4	8.4	8.4	8.5	8.5
19.000	8.5	8.5	8.5	8.5	8.5
19.500	8.6	8.6	8.6	8.6	8.6
20.000	8.6	8.6	8.6	8.6	8.7
20.500	8.7	8.7	8.7	8.7	8.7
21.000	8.7	8.7	8.7	8.8	8.8
21.500	8.8	8.8	8.8	8.8	8.8
22.000	8.8	8.8	8.8	8.9	8.9
22.500	8.9	8.9	8.9	8.9	8.9
23.000	8.9	8.9	8.9	8.9	9.0
23.500	9.0	9.0	9.0	9.0	9.0
24.000	9.0	(N/A)	(N/A)	(N/A)	(N/A)

## Pre-Developed

Subsection: Time-Depth Curve  
Label: Westchester County 1-100 2015

Return Event: 2 years  
Storm Event: 2 Year

Time-Depth Curve: 2 Year	
Label	2 Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	2 years

### CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.0	0.0	0.0	0.0
1.500	0.0	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.1	0.1	0.1	0.1	0.1
3.500	0.1	0.1	0.1	0.1	0.1
4.000	0.1	0.1	0.2	0.2	0.2
4.500	0.2	0.2	0.2	0.2	0.2
5.000	0.2	0.2	0.2	0.2	0.2
5.500	0.2	0.2	0.2	0.2	0.2
6.000	0.2	0.2	0.2	0.3	0.3
6.500	0.3	0.3	0.3	0.3	0.3
7.000	0.3	0.3	0.3	0.3	0.3
7.500	0.3	0.3	0.4	0.4	0.4
8.000	0.4	0.4	0.4	0.4	0.4
8.500	0.4	0.4	0.4	0.5	0.5
9.000	0.5	0.5	0.5	0.5	0.5
9.500	0.5	0.6	0.6	0.6	0.6
10.000	0.6	0.6	0.7	0.7	0.7
10.500	0.7	0.7	0.8	0.8	0.8
11.000	0.8	0.9	0.9	0.9	0.9
11.500	1.0	1.0	1.1	1.2	1.4
12.000	1.6	1.9	2.1	2.2	2.3
12.500	2.3	2.4	2.4	2.4	2.4
13.000	2.5	2.5	2.5	2.5	2.6
13.500	2.6	2.6	2.6	2.6	2.7
14.000	2.7	2.7	2.7	2.7	2.7
14.500	2.8	2.8	2.8	2.8	2.8
15.000	2.8	2.8	2.8	2.9	2.9
15.500	2.9	2.9	2.9	2.9	2.9
16.000	2.9	2.9	2.9	2.9	3.0
16.500	3.0	3.0	3.0	3.0	3.0

## Pre-Developed

Subsection: Time-Depth Curve  
 Label: Westchester County 1-100 2015

Return Event: 2 years  
 Storm Event: 2 Year

**CUMULATIVE RAINFALL (in)**  
**Output Time Increment = 0.100 hours**  
**Time on left represents time for first value in each row.**

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	3.0	3.0	3.0	3.0	3.0
17.500	3.0	3.0	3.0	3.1	3.1
18.000	3.1	3.1	3.1	3.1	3.1
18.500	3.1	3.1	3.1	3.1	3.1
19.000	3.1	3.1	3.1	3.1	3.1
19.500	3.1	3.1	3.1	3.1	3.2
20.000	3.2	3.2	3.2	3.2	3.2
20.500	3.2	3.2	3.2	3.2	3.2
21.000	3.2	3.2	3.2	3.2	3.2
21.500	3.2	3.2	3.2	3.2	3.2
22.000	3.2	3.2	3.2	3.2	3.3
22.500	3.3	3.3	3.3	3.3	3.3
23.000	3.3	3.3	3.3	3.3	3.3
23.500	3.3	3.3	3.3	3.3	3.3
24.000	3.3	(N/A)	(N/A)	(N/A)	(N/A)



## Pre-Developed

Subsection: Time-Depth Curve  
Label: Westchester County 1-100 2015

Return Event: 25 years  
Storm Event: 25 Year

Time-Depth Curve: 25 Year	
Label	25 Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	25 years

### CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.1	0.1
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.2
2.500	0.2	0.2	0.2	0.2	0.2
3.000	0.2	0.2	0.2	0.2	0.2
3.500	0.2	0.2	0.3	0.3	0.3
4.000	0.3	0.3	0.3	0.3	0.3
4.500	0.3	0.3	0.3	0.3	0.4
5.000	0.4	0.4	0.4	0.4	0.4
5.500	0.4	0.4	0.4	0.4	0.5
6.000	0.5	0.5	0.5	0.5	0.5
6.500	0.5	0.5	0.5	0.6	0.6
7.000	0.6	0.6	0.6	0.6	0.6
7.500	0.7	0.7	0.7	0.7	0.7
8.000	0.7	0.7	0.8	0.8	0.8
8.500	0.8	0.8	0.9	0.9	0.9
9.000	0.9	1.0	1.0	1.0	1.0
9.500	1.1	1.1	1.1	1.1	1.2
10.000	1.2	1.2	1.3	1.3	1.3
10.500	1.4	1.4	1.5	1.5	1.6
11.000	1.6	1.6	1.7	1.8	1.8
11.500	1.9	2.0	2.2	2.4	2.7
12.000	3.2	3.7	4.0	4.2	4.4
12.500	4.5	4.6	4.6	4.7	4.8
13.000	4.8	4.8	4.9	4.9	5.0
13.500	5.0	5.1	5.1	5.1	5.2
14.000	5.2	5.2	5.3	5.3	5.3
14.500	5.3	5.4	5.4	5.4	5.4
15.000	5.5	5.5	5.5	5.5	5.6
15.500	5.6	5.6	5.6	5.6	5.7
16.000	5.7	5.7	5.7	5.7	5.7
16.500	5.7	5.8	5.8	5.8	5.8

## Pre-Developed

Subsection: Time-Depth Curve

Label: Westchester County 1-100 2015

Return Event: 25 years

Storm Event: 25 Year

### CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	5.8	5.8	5.8	5.9	5.9
17.500	5.9	5.9	5.9	5.9	5.9
18.000	5.9	5.9	6.0	6.0	6.0
18.500	6.0	6.0	6.0	6.0	6.0
19.000	6.0	6.0	6.1	6.1	6.1
19.500	6.1	6.1	6.1	6.1	6.1
20.000	6.1	6.1	6.1	6.1	6.2
20.500	6.2	6.2	6.2	6.2	6.2
21.000	6.2	6.2	6.2	6.2	6.2
21.500	6.2	6.2	6.3	6.3	6.3
22.000	6.3	6.3	6.3	6.3	6.3
22.500	6.3	6.3	6.3	6.3	6.3
23.000	6.3	6.3	6.4	6.4	6.4
23.500	6.4	6.4	6.4	6.4	6.4
24.000	6.4	(N/A)	(N/A)	(N/A)	(N/A)

## Pre-Developed

Subsection: Time of Concentration Calculations  
Label: Drainage Area 1

Return Event: 1 years  
Storm Event: 1 Year

### Time of Concentration Results

---

#### Segment #1: TR-55 Sheet Flow

---

Hydraulic Length	30.00 ft
Manning's n	0.050
Slope	0.066 ft/ft
2 Year 24 Hour Depth	3.3 in
Average Velocity	0.53 ft/s
Segment Time of Concentration	0.016 hours

---

---

#### Segment #2: TR-55 Shallow Concentrated Flow

---

Hydraulic Length	30.00 ft
Is Paved?	False
Slope	0.017 ft/ft
Average Velocity	2.10 ft/s
Segment Time of Concentration	0.004 hours

---

---

#### Segment #3: TR-55 Shallow Concentrated Flow

---

Hydraulic Length	164.00 ft
Is Paved?	False
Slope	0.134 ft/ft
Average Velocity	5.91 ft/s
Segment Time of Concentration	0.008 hours

---

---

#### Segment #4: TR-55 Shallow Concentrated Flow

---

Hydraulic Length	27.00 ft
Is Paved?	False
Slope	0.074 ft/ft
Average Velocity	4.39 ft/s
Segment Time of Concentration	0.002 hours

---

---

#### Segment #5: TR-55 Shallow Concentrated Flow

---

Hydraulic Length	32.45 ft
Is Paved?	False
Slope	0.185 ft/ft
Average Velocity	6.94 ft/s
Segment Time of Concentration	0.001 hours

---

---

#### Segment #6: TR-55 Shallow Concentrated Flow

---



## Pre-Developed

Subsection: Time of Concentration Calculations

Label: Drainage Area 1

Return Event: 1 years

Storm Event: 1 Year

Hydraulic Length	111.42 ft
Is Paved?	False
Slope	0.060 ft/ft
Average Velocity	3.95 ft/s
Segment Time of Concentration	0.008 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.083 hours

## Pre-Developed

Subsection: Time of Concentration Calculations

Label: Drainage Area 1

Return Event: 1 years

Storm Event: 1 Year

### ==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where:

$(L_f / V) / 3600$

R= Hydraulic radius  
A<sub>q</sub>= Flow area, square feet  
W<sub>p</sub>= Wetted perimeter, feet  
V= Velocity, ft/sec  
S<sub>f</sub>= Slope, ft/ft  
n= Manning's n  
T<sub>c</sub>= Time of concentration, hours  
L<sub>f</sub>= Flow length, feet

### ==== SCS TR-55 Shallow Concentration Flow

$$T_c = \frac{\text{Unpaved surface:}}{V = 16.1345 * (S_f^{0.5})}$$

$$\text{Paved Surface:}$$
$$V = 20.3282 * (S_f^{0.5})$$

Where:

$(L_f / V) / 3600$

V= Velocity, ft/sec  
S<sub>f</sub>= Slope, ft/ft  
T<sub>c</sub>= Time of concentration, hours  
L<sub>f</sub>= Flow length, feet

## Pre-Developed

Subsection: Runoff CN-Area  
Label: Drainage Area 1

Return Event: 1 years  
Storm Event: 1 Year

### Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Woods - good - Soil C	70.000	1.530	0.0	0.0	70.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	1.530	(N/A)	(N/A)	70.000



## Pre-Developed

Subsection: Unit Hydrograph Equations

### Unit Hydrograph Method (Computational Notes)

#### Definition of Terms

At	Total area (acres): $At = Ai + Ap$
Ai	Impervious area (acres)
Ap	Pervious area (acres)
CNi	Runoff curve number for impervious area
CNp	Runoff curve number for pervious area
fLoss	f loss constant infiltration (depth/time)
gKs	Saturated Hydraulic Conductivity (depth/time)
Md	Volumetric Moisture Deficit
Psi	Capillary Suction (length)
hK	Horton Infiltration Decay Rate ( $\text{time}^{-1}$ )
fo	Initial Infiltration Rate (depth/time)
fc	Ultimate(capacity)Infiltration Rate (depth/time)
Ia	Initial Abstraction (length)
dt	Computational increment (duration of unit excess rainfall) Default dt is smallest value of $0.1333T_c$ , $r_{tm}$ , and $t_h$ (Smallest dt is then adjusted to match up with $T_p$ )
UDdt	User specified override computational main time increment (only used if UDdt is $\Rightarrow .1333T_c$ )
D(t)	Point on distribution curve (fraction of P) for time step t
K	$2 / (1 + (T_r/T_p))$ : default $K = 0.75$ : (for $T_r/T_p = 1.67$ )
Ks	Hydrograph shape factor = Unit Conversions * $K = ((1\text{hr}/3600\text{sec}) * (1\text{ft}/12\text{in}) * ((5280\text{ft})^2/\text{sq.mi})) * K$ Default $K_s = 645.333 * 0.75 = 484$
Lag	Lag time from center of excess runoff (dt) to $T_p$ : $\text{Lag} = 0.6T_c$
P	Total precipitation depth, inches
Pa(t)	Accumulated rainfall at time step t
Pi(t)	Incremental rainfall at time step t
qp	Peak discharge (cfs) for 1in. runoff, for 1hr, for 1 sq.mi. = $(K_s * A * Q) / T_p$ (where $Q = 1\text{in. runoff}$ , $A = \text{sq.mi.}$ )
Qu(t)	Unit hydrograph ordinate (cfs) at time step t
Q(t)	Final hydrograph ordinate (cfs) at time step t
Rai(t)	Accumulated runoff (inches) at time step t for impervious area
Rap(t)	Accumulated runoff (inches) at time step t for pervious area
Rii(t)	Incremental runoff (inches) at time step t for impervious area
Rip(t)	Incremental runoff (inches) at time step t for pervious area
R(t)	Incremental weighted total runoff (inches)
Rtm	Time increment for rainfall table
Si	S for impervious area: $Si = (1000/CNi) - 10$
Sp	S for pervious area: $Sp = (1000/CNp) - 10$
t	Time step (row) number
Tc	Time of concentration
Tb	Time (hrs) of entire unit hydrograph: $T_b = T_p + T_r$
Tp	Time (hrs) to peak of a unit hydrograph: $T_p = (dt/2) + \text{Lag}$
Tr	Time (hrs) of receding limb of unit hydrograph: $T_r = \text{ratio of } T_p$

## Pre-Developed

Subsection: Unit Hydrograph Equations

### Unit Hydrograph Method

#### Computational Notes

##### Precipitation

Column (1)	Time for time step t
Column (2)	$D(t)$ = Point on distribution curve for time step t
Column (3)	$P_i(t) = P_a(t) - P_a(t-1)$ : Col.(4) - Preceding Col.(4)
Column (4)	$P_a(t) = D(t) \times P$ : Col.(2) $\times$ P

##### Pervious Area Runoff (using SCS Runoff CN Method)

Column (5)	$Rap(t)$ = Accumulated pervious runoff for time step t If $(P_a(t) \leq 0.2Sp)$ then use: $Rap(t) = 0.0$ If $(P_a(t) > 0.2Sp)$ then use: $Rap(t) = (Col.(4) - 0.2Sp) \times 2 / (Col.(4) + 0.8Sp)$
Column (6)	$Rip(t)$ = Incremental pervious runoff for time step t $Rip(t) = Rap(t) - Rap(t-1)$ $Rip(t) = Col.(5)$ for current row - $Col.(5)$ for preceding row.

##### Impervious Area Runoff

Column (7 & 8)...	Did not specify to use impervious areas.
-------------------	--

##### Incremental Weighted Runoff

Column (9)	$R(t) = (A_p/A_t) \times Rip(t) + (A_i/A_t) \times Rii(t)$ $R(t) = (A_p/A_t) \times Col.(6) + (A_i/A_t) \times Col.(8)$
------------	--

##### SCS Unit Hydrograph Method

Column (10)	$Q(t)$ is computed with the SCS unit hydrograph method using $R(t)$ and $Qu(t)$ .
-------------	---

## Pre-Developed

Subsection: Unit Hydrograph Summary  
Label: Drainage Area 1

Return Event: 1 years  
Storm Event: 1 Year

Storm Event	1 Year
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	1.530 acres
Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.122 hours
Flow (Peak, Computed)	0.88 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.86 ft <sup>3</sup> /s
Drainage Area	
SCS CN (Composite)	70.000
Area (User Defined)	1.530 acres
Maximum Retention (Pervious)	4.3 in
Maximum Retention (Pervious, 20 percent)	0.9 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.6 in
Runoff Volume (Pervious)	0.077 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.077 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670



## Pre-Developed

Subsection: Unit Hydrograph Summary  
Label: Drainage Area 1

Return Event: 1 years  
Storm Event: 1 Year

SCS Unit Hydrograph Parameters	
Unit peak, qp	20.80 ft <sup>3</sup> /s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.222 hours
Total unit time, Tb	0.278 hours

## Pre-Developed

Subsection: Unit Hydrograph Summary  
Label: Drainage Area 1

Return Event: 2 years  
Storm Event: 2 Year

Storm Event	2 Year
Return Event	2 years
Duration	24.000 hours
Depth	3.3 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	1.530 acres
Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.111 hours
Flow (Peak, Computed)	1.36 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	1.33 ft <sup>3</sup> /s
Drainage Area	
SCS CN (Composite)	70.000
Area (User Defined)	1.530 acres
Maximum Retention (Pervious)	4.3 in
Maximum Retention (Pervious, 20 percent)	0.9 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.9 in
Runoff Volume (Pervious)	0.113 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.113 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

## Pre-Developed

Subsection: Unit Hydrograph Summary  
Label: Drainage Area 1

Return Event: 2 years  
Storm Event: 2 Year

---

### SCS Unit Hydrograph Parameters

---

Unit peak, qp	20.80 ft <sup>3</sup> /s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.222 hours
Total unit time, Tb	0.278 hours

---



## Pre-Developed

Subsection: Unit Hydrograph Summary  
Label: Drainage Area 1

Return Event: 10 years  
Storm Event: 10 Year

Storm Event	10 Year
Return Event	10 years
Duration	24.000 hours
Depth	5.0 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	1.530 acres
Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.111 hours
Flow (Peak, Computed)	3.26 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	3.24 ft <sup>3</sup> /s
Drainage Area	
SCS CN (Composite)	70.000
Area (User Defined)	1.530 acres
Maximum Retention (Pervious)	4.3 in
Maximum Retention (Pervious, 20 percent)	0.9 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.0 in
Runoff Volume (Pervious)	0.260 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.259 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

## Pre-Developed

Subsection: Unit Hydrograph Summary  
Label: Drainage Area 1

Return Event: 10 years  
Storm Event: 10 Year

---

### SCS Unit Hydrograph Parameters

---

Unit peak, qp	20.80 ft <sup>3</sup> /s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.222 hours
Total unit time, Tb	0.278 hours

---

## Pre-Developed

Subsection: Unit Hydrograph Summary  
Label: Drainage Area 1

Return Event: 25 years  
Storm Event: 25 Year

Storm Event	25 Year
Return Event	25 years
Duration	24.000 hours
Depth	6.4 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	1.530 acres
Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.111 hours
Flow (Peak, Computed)	5.01 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	4.99 ft <sup>3</sup> /s
Drainage Area	
SCS CN (Composite)	70.000
Area (User Defined)	1.530 acres
Maximum Retention (Pervious)	4.3 in
Maximum Retention (Pervious, 20 percent)	0.9 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.1 in
Runoff Volume (Pervious)	0.399 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.398 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670



## Pre-Developed

Subsection: Unit Hydrograph Summary  
Label: Drainage Area 1

Return Event: 25 years  
Storm Event: 25 Year

---

### SCS Unit Hydrograph Parameters

---

Unit peak, qp	20.80 ft <sup>3</sup> /s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.222 hours
Total unit time, Tb	0.278 hours

---

## Pre-Developed

Subsection: Unit Hydrograph Summary  
Label: Drainage Area 1

Return Event: 100 years  
Storm Event: 100 Year

Storm Event	100 Year
Return Event	100 years
Duration	24.000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	1.530 acres
Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.111 hours
Flow (Peak, Computed)	8.44 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	8.43 ft <sup>3</sup> /s
Drainage Area	
SCS CN (Composite)	70.000
Area (User Defined)	1.530 acres
Maximum Retention (Pervious)	4.3 in
Maximum Retention (Pervious, 20 percent)	0.9 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.3 in
Runoff Volume (Pervious)	0.680 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.680 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

## Pre-Developed

Subsection: Unit Hydrograph Summary  
Label: Drainage Area 1

Return Event: 100 years  
Storm Event: 100 Year

---

### SCS Unit Hydrograph Parameters

---

Unit peak, qp	20.80 ft <sup>3</sup> /s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.222 hours
Total unit time, Tb	0.278 hours

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## Pre-Developed

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## Post-Developed

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### Project Summary

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Title	16-61 Elmwood Rd.
Engineer	Joseph Riina, P.E.
Company	Site Design Consultants
Date	8/3/2018

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### Notes

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## Post-Developed

Subsection: Master Network Summary

### Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft <sup>3</sup> /s)
Drainage Area 1	Post-Development 1 year	1	0.066	12.100	0.81
Drainage Area 1	Post-Development 2 year	2	0.091	12.100	1.11
Drainage Area 1	Post-Development 10 year	10	0.182	12.100	2.25
Drainage Area 1	Post-Development 25 year	25	0.265	12.100	3.24
Drainage Area 1	Post-Development 100 year	100	0.425	12.100	5.10
Drainage Area 2	Post-Development 1 year	1	0.055	12.100	0.66
Drainage Area 2	Post-Development 2 year	2	0.078	12.100	0.96
Drainage Area 2	Post-Development 10 year	10	0.167	12.100	2.10
Drainage Area 2	Post-Development 25 year	25	0.249	12.100	3.11
Drainage Area 2	Post-Development 100 year	100	0.412	12.100	5.06

### Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft <sup>3</sup> /s)
O-2	Post-Development 1 year	1	0.099	12.100	0.66
O-2	Post-Development 2 year	2	0.146	12.100	0.97
O-2	Post-Development 10 year	10	0.325	12.150	2.79
O-2	Post-Development 25 year	25	0.488	12.100	5.19
O-2	Post-Development 100 year	100	0.807	12.100	8.35

### Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft <sup>3</sup> /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
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## Post-Developed

Subsection: Master Network Summary

### Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft <sup>3</sup> /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
Bioretention (IN)	Post-Development 1 year	1	0.066	12.100	0.81	(N/A)	(N/A)
Bioretention (OUT)	Post-Development 1 year	1	0.045	12.300	0.46	737.04	0.022
Bioretention (IN)	Post-Development 2 year	2	0.091	12.100	1.11	(N/A)	(N/A)
Bioretention (OUT)	Post-Development 2 year	2	0.069	12.150	1.15	737.11	0.023
Bioretention (IN)	Post-Development 10 year	10	0.182	12.100	2.25	(N/A)	(N/A)
Bioretention (OUT)	Post-Development 10 year	10	0.161	12.100	2.20	737.21	0.025
Bioretention (IN)	Post-Development 25 year	25	0.265	12.100	3.24	(N/A)	(N/A)
Bioretention (OUT)	Post-Development 25 year	25	0.243	12.100	3.18	737.30	0.026
Bioretention (IN)	Post-Development 100 year	100	0.425	12.100	5.10	(N/A)	(N/A)
Bioretention (OUT)	Post-Development 100 year	100	0.404	12.100	5.03	737.47	0.029
Detention Basin (IN)	Post-Development 1 year	1	0.045	12.300	0.46	(N/A)	(N/A)
Detention Basin (OUT)	Post-Development 1 year	1	0.044	13.350	0.09	734.83	0.010
Detention Basin (IN)	Post-Development 2 year	2	0.069	12.150	1.15	(N/A)	(N/A)
Detention Basin (OUT)	Post-Development 2 year	2	0.067	13.150	0.13	735.54	0.021
Detention Basin (IN)	Post-Development 10 year	10	0.161	12.100	2.20	(N/A)	(N/A)

## Post-Developed

Subsection: Master Network Summary

### Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (hours)	Peak Flow (ft <sup>3</sup> /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ac-ft)
Detention Basin (OUT)	Post-Development 10 year	10	0.158	12.250	1.42	736.37	0.040
Detention Basin (IN)	Post-Development 25 year	25	0.243	12.100	3.18	(N/A)	(N/A)
Detention Basin (OUT)	Post-Development 25 year	25	0.239	12.200	2.43	736.78	0.052
Detention Basin (IN)	Post-Development 100 year	100	0.404	12.100	5.03	(N/A)	(N/A)
Detention Basin (OUT)	Post-Development 100 year	100	0.394	12.200	3.77	737.40	0.073

## Post-Developed

Subsection: Time-Depth Curve

Label: Westchester County 1-100 2015

Return Event: 1 years

Storm Event: 1 Year

Time-Depth Curve: 1 Year

Label	1 Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	1 years

### CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.0	0.0	0.0	0.0
1.500	0.0	0.0	0.0	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.1	0.1	0.1	0.1	0.1
3.500	0.1	0.1	0.1	0.1	0.1
4.000	0.1	0.1	0.1	0.1	0.1
4.500	0.1	0.1	0.1	0.2	0.2
5.000	0.2	0.2	0.2	0.2	0.2
5.500	0.2	0.2	0.2	0.2	0.2
6.000	0.2	0.2	0.2	0.2	0.2
6.500	0.2	0.2	0.2	0.2	0.2
7.000	0.3	0.3	0.3	0.3	0.3
7.500	0.3	0.3	0.3	0.3	0.3
8.000	0.3	0.3	0.3	0.3	0.4
8.500	0.4	0.4	0.4	0.4	0.4
9.000	0.4	0.4	0.4	0.4	0.5
9.500	0.5	0.5	0.5	0.5	0.5
10.000	0.5	0.5	0.6	0.6	0.6
10.500	0.6	0.6	0.6	0.7	0.7
11.000	0.7	0.7	0.7	0.8	0.8
11.500	0.8	0.9	1.0	1.0	1.2
12.000	1.4	1.6	1.8	1.8	1.9
12.500	2.0	2.0	2.0	2.1	2.1
13.000	2.1	2.1	2.1	2.2	2.2
13.500	2.2	2.2	2.2	2.2	2.3
14.000	2.3	2.3	2.3	2.3	2.3
14.500	2.3	2.3	2.4	2.4	2.4
15.000	2.4	2.4	2.4	2.4	2.4
15.500	2.4	2.4	2.5	2.5	2.5
16.000	2.5	2.5	2.5	2.5	2.5
16.500	2.5	2.5	2.5	2.5	2.5



## Post-Developed

Subsection: Time-Depth Curve

Label: Westchester County 1-100 2015

Return Event: 1 years

Storm Event: 1 Year

### CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	2.5	2.6	2.6	2.6	2.6
17.500	2.6	2.6	2.6	2.6	2.6
18.000	2.6	2.6	2.6	2.6	2.6
18.500	2.6	2.6	2.6	2.6	2.6
19.000	2.6	2.6	2.6	2.7	2.7
19.500	2.7	2.7	2.7	2.7	2.7
20.000	2.7	2.7	2.7	2.7	2.7
20.500	2.7	2.7	2.7	2.7	2.7
21.000	2.7	2.7	2.7	2.7	2.7
21.500	2.7	2.7	2.7	2.7	2.7
22.000	2.7	2.7	2.8	2.8	2.8
22.500	2.8	2.8	2.8	2.8	2.8
23.000	2.8	2.8	2.8	2.8	2.8
23.500	2.8	2.8	2.8	2.8	2.8
24.000	2.8	(N/A)	(N/A)	(N/A)	(N/A)

## Post-Developed

Subsection: Time-Depth Curve

Label: Westchester County 1-100 2015

Return Event: 10 years

Storm Event: 10 Year

---

### Time-Depth Curve: 10 Year

---

Label	10 Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	10 years

---

### CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.2	0.2	0.2	0.2	0.2
3.500	0.2	0.2	0.2	0.2	0.2
4.000	0.2	0.2	0.2	0.2	0.2
4.500	0.2	0.3	0.3	0.3	0.3
5.000	0.3	0.3	0.3	0.3	0.3
5.500	0.3	0.3	0.3	0.3	0.4
6.000	0.4	0.4	0.4	0.4	0.4
6.500	0.4	0.4	0.4	0.4	0.4
7.000	0.5	0.5	0.5	0.5	0.5
7.500	0.5	0.5	0.5	0.5	0.6
8.000	0.6	0.6	0.6	0.6	0.6
8.500	0.6	0.7	0.7	0.7	0.7
9.000	0.7	0.7	0.8	0.8	0.8
9.500	0.8	0.9	0.9	0.9	0.9
10.000	0.9	1.0	1.0	1.0	1.1
10.500	1.1	1.1	1.1	1.2	1.2
11.000	1.2	1.3	1.3	1.4	1.4
11.500	1.5	1.6	1.7	1.9	2.1
12.000	2.5	2.9	3.1	3.3	3.4
12.500	3.5	3.6	3.6	3.7	3.7
13.000	3.7	3.8	3.8	3.9	3.9
13.500	3.9	3.9	4.0	4.0	4.0
14.000	4.1	4.1	4.1	4.1	4.1
14.500	4.2	4.2	4.2	4.2	4.3
15.000	4.3	4.3	4.3	4.3	4.3
15.500	4.4	4.4	4.4	4.4	4.4
16.000	4.4	4.4	4.5	4.5	4.5
16.500	4.5	4.5	4.5	4.5	4.5

## Post-Developed

Subsection: Time-Depth Curve

Label: Westchester County 1-100 2015

Return Event: 10 years

Storm Event: 10 Year

### CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	4.5	4.6	4.6	4.6	4.6
17.500	4.6	4.6	4.6	4.6	4.6
18.000	4.6	4.6	4.7	4.7	4.7
18.500	4.7	4.7	4.7	4.7	4.7
19.000	4.7	4.7	4.7	4.7	4.7
19.500	4.8	4.8	4.8	4.8	4.8
20.000	4.8	4.8	4.8	4.8	4.8
20.500	4.8	4.8	4.8	4.8	4.8
21.000	4.8	4.9	4.9	4.9	4.9
21.500	4.9	4.9	4.9	4.9	4.9
22.000	4.9	4.9	4.9	4.9	4.9
22.500	4.9	4.9	4.9	4.9	4.9
23.000	5.0	5.0	5.0	5.0	5.0
23.500	5.0	5.0	5.0	5.0	5.0
24.000	5.0	(N/A)	(N/A)	(N/A)	(N/A)



## Post-Developed

Subsection: Time-Depth Curve  
Label: Westchester County 1-100 2015

Return Event: 100 years  
Storm Event: 100 Year

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### Time-Depth Curve: 100 Year

---

Label	100 Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

---

### CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.1	0.1	0.1	0.1
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.2	0.2	0.2
2.000	0.2	0.2	0.2	0.2	0.2
2.500	0.2	0.2	0.2	0.3	0.3
3.000	0.3	0.3	0.3	0.3	0.3
3.500	0.3	0.3	0.4	0.4	0.4
4.000	0.4	0.4	0.4	0.4	0.4
4.500	0.4	0.5	0.5	0.5	0.5
5.000	0.5	0.5	0.5	0.6	0.6
5.500	0.6	0.6	0.6	0.6	0.6
6.000	0.6	0.7	0.7	0.7	0.7
6.500	0.7	0.7	0.8	0.8	0.8
7.000	0.8	0.8	0.9	0.9	0.9
7.500	0.9	0.9	1.0	1.0	1.0
8.000	1.0	1.0	1.1	1.1	1.1
8.500	1.2	1.2	1.2	1.2	1.3
9.000	1.3	1.3	1.4	1.4	1.5
9.500	1.5	1.5	1.6	1.6	1.7
10.000	1.7	1.7	1.8	1.8	1.9
10.500	1.9	2.0	2.1	2.1	2.2
11.000	2.2	2.3	2.4	2.5	2.6
11.500	2.7	2.8	3.1	3.4	3.7
12.000	4.5	5.3	5.6	5.9	6.2
12.500	6.3	6.4	6.5	6.6	6.7
13.000	6.7	6.8	6.9	6.9	7.0
13.500	7.1	7.1	7.2	7.2	7.3
14.000	7.3	7.3	7.4	7.4	7.5
14.500	7.5	7.5	7.6	7.6	7.7
15.000	7.7	7.7	7.8	7.8	7.8
15.500	7.8	7.9	7.9	7.9	8.0
16.000	8.0	8.0	8.0	8.0	8.1
16.500	8.1	8.1	8.1	8.1	8.2

## Post-Developed

Subsection: Time-Depth Curve

Label: Westchester County 1-100 2015

Return Event: 100 years

Storm Event: 100 Year

### CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	8.2	8.2	8.2	8.2	8.3
17.500	8.3	8.3	8.3	8.3	8.3
18.000	8.4	8.4	8.4	8.4	8.4
18.500	8.4	8.4	8.4	8.5	8.5
19.000	8.5	8.5	8.5	8.5	8.5
19.500	8.6	8.6	8.6	8.6	8.6
20.000	8.6	8.6	8.6	8.6	8.7
20.500	8.7	8.7	8.7	8.7	8.7
21.000	8.7	8.7	8.7	8.8	8.8
21.500	8.8	8.8	8.8	8.8	8.8
22.000	8.8	8.8	8.8	8.9	8.9
22.500	8.9	8.9	8.9	8.9	8.9
23.000	8.9	8.9	8.9	8.9	9.0
23.500	9.0	9.0	9.0	9.0	9.0
24.000	9.0	(N/A)	(N/A)	(N/A)	(N/A)

## Post-Developed

Subsection: Time-Depth Curve

Label: Westchester County 1-100 2015

Return Event: 2 years

Storm Event: 2 Year

### Time-Depth Curve: 2 Year

Label	2 Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	2 years

### CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.0	0.0
1.000	0.0	0.0	0.0	0.0	0.0
1.500	0.0	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.1
2.500	0.1	0.1	0.1	0.1	0.1
3.000	0.1	0.1	0.1	0.1	0.1
3.500	0.1	0.1	0.1	0.1	0.1
4.000	0.1	0.1	0.2	0.2	0.2
4.500	0.2	0.2	0.2	0.2	0.2
5.000	0.2	0.2	0.2	0.2	0.2
5.500	0.2	0.2	0.2	0.2	0.2
6.000	0.2	0.2	0.2	0.3	0.3
6.500	0.3	0.3	0.3	0.3	0.3
7.000	0.3	0.3	0.3	0.3	0.3
7.500	0.3	0.3	0.4	0.4	0.4
8.000	0.4	0.4	0.4	0.4	0.4
8.500	0.4	0.4	0.4	0.5	0.5
9.000	0.5	0.5	0.5	0.5	0.5
9.500	0.5	0.6	0.6	0.6	0.6
10.000	0.6	0.6	0.7	0.7	0.7
10.500	0.7	0.7	0.8	0.8	0.8
11.000	0.8	0.9	0.9	0.9	0.9
11.500	1.0	1.0	1.1	1.2	1.4
12.000	1.6	1.9	2.1	2.2	2.3
12.500	2.3	2.4	2.4	2.4	2.4
13.000	2.5	2.5	2.5	2.5	2.6
13.500	2.6	2.6	2.6	2.6	2.7
14.000	2.7	2.7	2.7	2.7	2.7
14.500	2.8	2.8	2.8	2.8	2.8
15.000	2.8	2.8	2.8	2.9	2.9
15.500	2.9	2.9	2.9	2.9	2.9
16.000	2.9	2.9	2.9	2.9	3.0
16.500	3.0	3.0	3.0	3.0	3.0



## Post-Developed

Subsection: Time-Depth Curve

Label: Westchester County 1-100 2015

Return Event: 2 years

Storm Event: 2 Year

### CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	3.0	3.0	3.0	3.0	3.0
17.500	3.0	3.0	3.0	3.1	3.1
18.000	3.1	3.1	3.1	3.1	3.1
18.500	3.1	3.1	3.1	3.1	3.1
19.000	3.1	3.1	3.1	3.1	3.1
19.500	3.1	3.1	3.1	3.1	3.2
20.000	3.2	3.2	3.2	3.2	3.2
20.500	3.2	3.2	3.2	3.2	3.2
21.000	3.2	3.2	3.2	3.2	3.2
21.500	3.2	3.2	3.2	3.2	3.2
22.000	3.2	3.2	3.2	3.2	3.3
22.500	3.3	3.3	3.3	3.3	3.3
23.000	3.3	3.3	3.3	3.3	3.3
23.500	3.3	3.3	3.3	3.3	3.3
24.000	3.3	(N/A)	(N/A)	(N/A)	(N/A)

## Post-Developed

Subsection: Time-Depth Curve  
Label: Westchester County 1-100 2015

Return Event: 25 years  
Storm Event: 25 Year

### Time-Depth Curve: 25 Year

Label	25 Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	25 years

### CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.0	0.0	0.1	0.1
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.1	0.1	0.1
2.000	0.1	0.1	0.1	0.1	0.2
2.500	0.2	0.2	0.2	0.2	0.2
3.000	0.2	0.2	0.2	0.2	0.2
3.500	0.2	0.2	0.3	0.3	0.3
4.000	0.3	0.3	0.3	0.3	0.3
4.500	0.3	0.3	0.3	0.3	0.4
5.000	0.4	0.4	0.4	0.4	0.4
5.500	0.4	0.4	0.4	0.4	0.5
6.000	0.5	0.5	0.5	0.5	0.5
6.500	0.5	0.5	0.5	0.6	0.6
7.000	0.6	0.6	0.6	0.6	0.6
7.500	0.7	0.7	0.7	0.7	0.7
8.000	0.7	0.7	0.8	0.8	0.8
8.500	0.8	0.8	0.9	0.9	0.9
9.000	0.9	1.0	1.0	1.0	1.0
9.500	1.1	1.1	1.1	1.1	1.2
10.000	1.2	1.2	1.3	1.3	1.3
10.500	1.4	1.4	1.5	1.5	1.6
11.000	1.6	1.6	1.7	1.8	1.8
11.500	1.9	2.0	2.2	2.4	2.7
12.000	3.2	3.7	4.0	4.2	4.4
12.500	4.5	4.6	4.6	4.7	4.8
13.000	4.8	4.8	4.9	4.9	5.0
13.500	5.0	5.1	5.1	5.1	5.2
14.000	5.2	5.2	5.3	5.3	5.3
14.500	5.3	5.4	5.4	5.4	5.4
15.000	5.5	5.5	5.5	5.5	5.6
15.500	5.6	5.6	5.6	5.6	5.7
16.000	5.7	5.7	5.7	5.7	5.7
16.500	5.7	5.8	5.8	5.8	5.8

## Post-Developed

Subsection: Time-Depth Curve

Label: Westchester County 1-100 2015

Return Event: 25 years

Storm Event: 25 Year

### CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	5.8	5.8	5.8	5.9	5.9
17.500	5.9	5.9	5.9	5.9	5.9
18.000	5.9	5.9	6.0	6.0	6.0
18.500	6.0	6.0	6.0	6.0	6.0
19.000	6.0	6.0	6.1	6.1	6.1
19.500	6.1	6.1	6.1	6.1	6.1
20.000	6.1	6.1	6.1	6.1	6.2
20.500	6.2	6.2	6.2	6.2	6.2
21.000	6.2	6.2	6.2	6.2	6.2
21.500	6.2	6.2	6.3	6.3	6.3
22.000	6.3	6.3	6.3	6.3	6.3
22.500	6.3	6.3	6.3	6.3	6.3
23.000	6.3	6.3	6.4	6.4	6.4
23.500	6.4	6.4	6.4	6.4	6.4
24.000	6.4	(N/A)	(N/A)	(N/A)	(N/A)



## Post-Developed

Subsection: Time of Concentration Calculations  
Label: Drainage Area 1

Return Event: 1 years  
Storm Event: 1 Year

### Time of Concentration Results

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#### Segment #1: TR-55 Sheet Flow

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Hydraulic Length	30.00 ft
Manning's n	0.016
Slope	0.067 ft/ft
2 Year 24 Hour Depth	3.3 in
Average Velocity	1.32 ft/s
Segment Time of Concentration	0.006 hours

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#### Segment #2: TR-55 Shallow Concentrated Flow

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Hydraulic Length	50.57 ft
Is Paved?	True
Slope	0.128 ft/ft
Average Velocity	7.28 ft/s
Segment Time of Concentration	0.002 hours

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#### Segment #3: TR-55 Shallow Concentrated Flow

---

Hydraulic Length	202.95 ft
Is Paved?	True
Slope	0.023 ft/ft
Average Velocity	3.08 ft/s
Segment Time of Concentration	0.018 hours

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#### Segment #4: TR-55 Shallow Concentrated Flow

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Hydraulic Length	496.04 ft
Is Paved?	True
Slope	0.015 ft/ft
Average Velocity	2.47 ft/s
Segment Time of Concentration	0.056 hours

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#### Segment #5: TR-55 Shallow Concentrated Flow

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Hydraulic Length	35.00 ft
Is Paved?	True
Slope	0.064 ft/ft
Average Velocity	5.15 ft/s
Segment Time of Concentration	0.002 hours

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#### Segment #6: TR-55 Channel Flow

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## Post-Developed

Subsection: Time of Concentration Calculations  
Label: Drainage Area 1

Return Event: 1 years  
Storm Event: 1 Year

Flow Area	0.1 ft <sup>2</sup>
Hydraulic Length	43.00 ft
Manning's n	0.010
Slope	0.144 ft/ft
Wetted Perimeter	0.88 ft
Average Velocity	14.98 ft/s
Segment Time of Concentration	0.001 hours
Segment #7: TR-55 Channel Flow	
Flow Area	0.3 ft <sup>2</sup>
Hydraulic Length	54.00 ft
Manning's n	0.010
Slope	0.015 ft/ft
Wetted Perimeter	1.44 ft
Average Velocity	6.23 ft/s
Segment Time of Concentration	0.002 hours
Segment #8: TR-55 Shallow Concentrated Flow	
Hydraulic Length	80.00 ft
Is Paved?	False
Slope	0.063 ft/ft
Average Velocity	4.03 ft/s
Segment Time of Concentration	0.006 hours
Time of Concentration (Composite)	
Time of Concentration (Composite)	0.093 hours

## Post-Developed

Subsection: Time of Concentration Calculations  
Label: Drainage Area 1

Return Event: 1 years  
Storm Event: 1 Year

### ==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where:  $(L_f / V) / 3600$   
R= Hydraulic radius  
A<sub>q</sub>= Flow area, square feet  
W<sub>p</sub>= Wetted perimeter, feet  
V= Velocity, ft/sec  
S<sub>f</sub>= Slope, ft/ft  
n= Manning's n  
T<sub>c</sub>= Time of concentration, hours  
L<sub>f</sub>= Flow length, feet

### ==== SCS TR-55 Shallow Concentration Flow

$$T_c = \frac{\text{Unpaved surface:}}{V = 16.1345 * (S_f^{0.5})}$$

$$\text{Paved Surface:}$$
$$V = 20.3282 * (S_f^{0.5})$$

Where:  $(L_f / V) / 3600$   
V= Velocity, ft/sec  
S<sub>f</sub>= Slope, ft/ft  
T<sub>c</sub>= Time of concentration, hours  
L<sub>f</sub>= Flow length, feet

### ==== SCS TR-55 Sheet Flow

$$T_c = \frac{(0.007 * ((n * L_f)^{0.8}))}{((P^{0.5}) * (S_f^{0.4}))}$$

Where: T<sub>c</sub>= Time of concentration, hours  
n= Manning's n  
L<sub>f</sub>= Flow length, feet  
P= 2yr, 24hr Rain depth, inches  
S<sub>f</sub>= Slope, %



## Post-Developed

Subsection: Time of Concentration Calculations

Label: Drainage Area 2

Return Event: 1 years

Storm Event: 1 Year

### Time of Concentration Results

#### Segment #1: TR-55 Sheet Flow

Hydraulic Length	30.00 ft
Manning's n	0.030
Slope	0.142 ft/ft
2 Year 24 Hour Depth	3.3 in
Average Velocity	1.08 ft/s
Segment Time of Concentration	0.008 hours

#### Segment #2: TR-55 Shallow Concentrated Flow

Hydraulic Length	29.00 ft
Is Paved?	False
Slope	0.207 ft/ft
Average Velocity	7.34 ft/s
Segment Time of Concentration	0.001 hours

#### Segment #3: TR-55 Shallow Concentrated Flow

Hydraulic Length	14.00 ft
Is Paved?	False
Slope	0.286 ft/ft
Average Velocity	8.62 ft/s
Segment Time of Concentration	0.000 hours

#### Segment #4: TR-55 Shallow Concentrated Flow

Hydraulic Length	78.00 ft
Is Paved?	False
Slope	0.154 ft/ft
Average Velocity	6.33 ft/s
Segment Time of Concentration	0.003 hours

#### Time of Concentration (Composite)

Time of Concentration (Composite)	0.083 hours
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## Post-Developed

Subsection: Time of Concentration Calculations  
Label: Drainage Area 2

Return Event: 1 years  
Storm Event: 1 Year

### ==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

$$\text{Where: } (L_f / V) / 3600$$

R= Hydraulic radius  
Aq= Flow area, square feet  
Wp= Wetted perimeter, feet  
V= Velocity, ft/sec  
Sf= Slope, ft/ft  
n= Manning's n  
Tc= Time of concentration, hours  
Lf= Flow length, feet

### ==== SCS TR-55 Shallow Concentration Flow

$$T_c = \frac{\text{Unpaved surface:}}{V = 16.1345 * (S_f^{0.5})}$$

$$\text{Paved Surface: } V = 20.3282 * (S_f^{0.5})$$

$$\text{Where: } (L_f / V) / 3600$$

V= Velocity, ft/sec  
Sf= Slope, ft/ft  
Tc= Time of concentration, hours  
Lf= Flow length, feet

## Post-Developed

Subsection: Runoff CN-Area  
Label: Drainage Area 1

Return Event: 1 years  
Storm Event: 1 Year

### Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	0.683	0.0	0.0	74.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil C	98.000	0.125	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.808	(N/A)	(N/A)	77.713



## Post-Developed

Subsection: Runoff CN-Area  
Label: Drainage Area 2

Return Event: 1 years  
Storm Event: 1 Year

### Runoff Curve Number Data

Soil/Surface Description	CN	Area (acres)	C (%)	UC (%)	Adjusted CN
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	0.850	0.0	0.0	74.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	0.850	(N/A)	(N/A)	74.000

## Post-Developed

Subsection: Unit Hydrograph Equations

### Unit Hydrograph Method (Computational Notes)

#### Definition of Terms

At	Total area (acres): $A_t = A_i + A_p$
Ai	Impervious area (acres)
Ap	Pervious area (acres)
CNi	Runoff curve number for impervious area
CNp	Runoff curve number for pervious area
fLoss	f loss constant infiltration (depth/time)
gKs	Saturated Hydraulic Conductivity (depth/time)
Md	Volumetric Moisture Deficit
Psi	Capillary Suction (length)
hK	Horton Infiltration Decay Rate ( $\text{time}^{-1}$ )
fo	Initial Infiltration Rate (depth/time)
fc	Ultimate(capacity)Infiltration Rate (depth/time)
Ia	Initial Abstraction (length)
dt	Computational increment (duration of unit excess rainfall) Default dt is smallest value of $0.1333T_c$ , $r_{tm}$ , and $t_h$ (Smallest dt is then adjusted to match up with $T_p$ )
UDdt	User specified override computational main time increment (only used if UDdt is $\Rightarrow .1333T_c$ )
D(t)	Point on distribution curve (fraction of P) for time step t
K	$2 / (1 + (T_r/T_p))$ : default $K = 0.75$ : (for $T_r/T_p = 1.67$ )
Ks	Hydrograph shape factor = Unit Conversions * $K = ((1\text{hr}/3600\text{sec}) * (1\text{ft}/12\text{in}) * ((5280\text{ft})^2/\text{sq.mi})) * K$ Default $K_s = 645.333 * 0.75 = 484$
Lag	Lag time from center of excess runoff (dt) to $T_p$ : $\text{Lag} = 0.6T_c$
P	Total precipitation depth, inches
Pa(t)	Accumulated rainfall at time step t
Pl(t)	Incremental rainfall at time step t
qp	Peak discharge (cfs) for 1in. runoff, for 1hr, for 1 sq.mi. = $(K_s * A * Q) / T_p$ (where $Q = 1\text{in. runoff}$ , $A = \text{sq.mi.}$ )
Qu(t)	Unit hydrograph ordinate (cfs) at time step t
Q(t)	Final hydrograph ordinate (cfs) at time step t
Rai(t)	Accumulated runoff (inches) at time step t for impervious area
Rap(t)	Accumulated runoff (inches) at time step t for pervious area
Rii(t)	Incremental runoff (inches) at time step t for impervious area
Rip(t)	Incremental runoff (inches) at time step t for pervious area
R(t)	Incremental weighted total runoff (inches)
Rtm	Time increment for rainfall table
Si	S for impervious area: $S_i = (1000/CN_i) - 10$
Sp	S for pervious area: $S_p = (1000/CN_p) - 10$
t	Time step (row) number
Tc	Time of concentration
Tb	Time (hrs) of entire unit hydrograph: $T_b = T_p + T_r$
Tp	Time (hrs) to peak of a unit hydrograph: $T_p = (dt/2) + \text{Lag}$
Tr	Time (hrs) of receding limb of unit hydrograph: $T_r = \text{ratio of } T_p$

## Post-Developed

Subsection: Unit Hydrograph Equations

### Unit Hydrograph Method

#### Computational Notes

##### Precipitation

Column (1)	Time for time step t
Column (2)	$D(t)$ = Point on distribution curve for time step t
Column (3)	$P_i(t) = P_a(t) - P_a(t-1)$ ; Col.(4) - Preceding Col.(4)
Column (4)	$P_a(t) = D(t) \times P$ ; Col.(2) $\times$ P

##### Pervious Area Runoff (using SCS Runoff CN Method)

Column (5)	$Rap(t)$ = Accumulated pervious runoff for time step t If $(P_a(t))$ is $\leq 0.2Sp$ then use: $Rap(t) = 0.0$ If $(P_a(t))$ is $> 0.2Sp$ then use:  $Rap(t) = (Col.(4) - 0.2Sp) \times 2 / (Col.(4) + 0.8Sp)$
Column (6)	$Rip(t)$ = Incremental pervious runoff for time step t $Rip(t) = Rap(t) - Rap(t-1)$ $Rip(t) = Col.(5)$ for current row - $Col.(5)$ for preceding row.

##### Impervious Area Runoff

Column (7 & 8)...	Did not specify to use impervious areas.
-------------------	--

##### Incremental Weighted Runoff

Column (9)	$R(t) = (A_p/A_t) \times Rip(t) + (A_i/A_t) \times Rii(t)$ $R(t) = (A_p/A_t) \times Col.(6) + (A_i/A_t) \times Col.(8)$
------------	--

##### SCS Unit Hydrograph Method

Column (10)	$Q(t)$ is computed with the SCS unit hydrograph method using $R(t)$ and $Qu(t)$ .
-------------	---



## Post-Developed

Subsection: Unit Hydrograph Summary  
Label: Drainage Area 1

Return Event: 1 years  
Storm Event: 1 Year

Storm Event	1 Year
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.093 hours
Area (User Defined)	0.808 acres
Computational Time Increment	0.012 hours
Time to Peak (Computed)	12.115 hours
Flow (Peak, Computed)	0.82 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.81 ft <sup>3</sup> /s
Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	0.808 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.0 in
Runoff Volume (Pervious)	0.067 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.066 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.093 hours
Computational Time Increment	0.012 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

## Post-Developed

Subsection: Unit Hydrograph Summary

Label: Drainage Area 1

Return Event: 1 years

Storm Event: 1 Year

---

### SCS Unit Hydrograph Parameters

---

Unit peak, qp	9.85 ft <sup>3</sup> /s
Unit peak time, Tp	0.062 hours
Unit receding limb, Tr	0.248 hours
Total unit time, Tb	0.310 hours

---

## Post-Developed

Subsection: Unit Hydrograph Summary  
Label: Drainage Area 1

Return Event: 2 years  
Storm Event: 2 Year

Storm Event	2 Year
Return Event	2 years
Duration	24.000 hours
Depth	3.3 in
Time of Concentration (Composite)	0.093 hours
Area (User Defined)	0.808 acres
Computational Time Increment	0.012 hours
Time to Peak (Computed)	12.115 hours
Flow (Peak, Computed)	1.13 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	1.11 ft <sup>3</sup> /s
Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	0.808 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	1.3 in
Runoff Volume (Pervious)	0.091 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.091 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.093 hours
Computational Time Increment	0.012 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670



## Post-Developed

Subsection: Unit Hydrograph Summary

Label: Drainage Area 1

Return Event: 2 years

Storm Event: 2 Year

---

### SCS Unit Hydrograph Parameters

---

Unit peak, qp	9.85 ft <sup>3</sup> /s
Unit peak time, Tp	0.062 hours
Unit receding limb, Tr	0.248 hours
Total unit time, Tb	0.310 hours

---

## Post-Developed

Subsection: Unit Hydrograph Summary  
Label: Drainage Area 1

Return Event: 10 years  
Storm Event: 10 Year

Storm Event	10 Year
Return Event	10 years
Duration	24.000 hours
Depth	5.0 in
Time of Concentration (Composite)	0.093 hours
Area (User Defined)	0.808 acres
Computational Time Increment	0.012 hours
Time to Peak (Computed)	12.115 hours
Flow (Peak, Computed)	2.26 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	2.25 ft <sup>3</sup> /s
Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	0.808 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.7 in
Runoff Volume (Pervious)	0.183 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.182 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.093 hours
Computational Time Increment	0.012 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

## Post-Developed

Subsection: Unit Hydrograph Summary  
Label: Drainage Area 1

Return Event: 10 years  
Storm Event: 10 Year

---

### SCS Unit Hydrograph Parameters

---

Unit peak, qp	9.85 ft <sup>3</sup> /s
Unit peak time, Tp	0.062 hours
Unit receding limb, Tr	0.248 hours
Total unit time, Tb	0.310 hours

---



## Post-Developed

Subsection: Unit Hydrograph Summary

Label: Drainage Area 1

Return Event: 25 years

Storm Event: 25 Year

Storm Event	25 Year
Return Event	25 years
Duration	24.000 hours
Depth	6.4 in
Time of Concentration (Composite)	0.093 hours
Area (User Defined)	0.808 acres
Computational Time Increment	0.012 hours
Time to Peak (Computed)	12.102 hours
Flow (Peak, Computed)	3.24 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	3.24 ft <sup>3</sup> /s
Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	0.808 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.9 in
Runoff Volume (Pervious)	0.265 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.265 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.093 hours
Computational Time Increment	0.012 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

## Post-Developed

Subsection: Unit Hydrograph Summary

Label: Drainage Area 1

Return Event: 25 years

Storm Event: 25 Year

---

### SCS Unit Hydrograph Parameters

---

Unit peak, qp	9.85 ft <sup>3</sup> /s
Unit peak time, Tp	0.062 hours
Unit receding limb, Tr	0.248 hours
Total unit time, Tb	0.310 hours

---

## Post-Developed

Subsection: Unit Hydrograph Summary  
Label: Drainage Area 1

Return Event: 100 years  
Storm Event: 100 Year

Storm Event	100 Year
Return Event	100 years
Duration	24.000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.093 hours
Area (User Defined)	0.808 acres
Computational Time Increment	0.012 hours
Time to Peak (Computed)	12.102 hours
Flow (Peak, Computed)	5.11 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	5.10 ft <sup>3</sup> /s
Drainage Area	
SCS CN (Composite)	78.000
Area (User Defined)	0.808 acres
Maximum Retention (Pervious)	2.8 in
Maximum Retention (Pervious, 20 percent)	0.6 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	6.3 in
Runoff Volume (Pervious)	0.426 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.425 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.093 hours
Computational Time Increment	0.012 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670



## Post-Developed

Subsection: Unit Hydrograph Summary  
Label: Drainage Area 1

Return Event: 100 years  
Storm Event: 100 Year

---

### SCS Unit Hydrograph Parameters

---

Unit peak, qp	9.85 ft <sup>3</sup> /s
Unit peak time, Tp	0.062 hours
Unit receding limb, Tr	0.248 hours
Total unit time, Tb	0.310 hours

---

## Post-Developed

Subsection: Unit Hydrograph Summary  
Label: Drainage Area 2

Return Event: 1 years  
Storm Event: 1 Year

Storm Event	1 Year
Return Event	1 years
Duration	24.000 hours
Depth	2.8 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.850 acres
Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.111 hours
Flow (Peak, Computed)	0.67 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.66 ft <sup>3</sup> /s
Drainage Area	
SCS CN (Composite)	74.000
Area (User Defined)	0.850 acres
Maximum Retention (Pervious)	3.5 in
Maximum Retention (Pervious, 20 percent)	0.7 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	0.8 in
Runoff Volume (Pervious)	0.056 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.055 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

## Post-Developed

Subsection: Unit Hydrograph Summary  
Label: Drainage Area 2

Return Event: 1 years  
Storm Event: 1 Year

---

### SCS Unit Hydrograph Parameters

---

Unit peak, qp	11.55 ft <sup>3</sup> /s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.222 hours
Total unit time, Tb	0.278 hours

---



## Post-Developed

Subsection: Unit Hydrograph Summary  
Label: Drainage Area 2

Return Event: 2 years  
Storm Event: 2 Year

Storm Event	2 Year
Return Event	2 years
Duration	24.000 hours
Depth	3.3 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.850 acres
Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.111 hours
Flow (Peak, Computed)	0.97 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.96 ft <sup>3</sup> /s
<b>Drainage Area</b>	
SCS CN (Composite)	74.000
Area (User Defined)	0.850 acres
Maximum Retention (Pervious)	3.5 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<b>Cumulative Runoff</b>	
Cumulative Runoff Depth (Pervious)	1.1 in
Runoff Volume (Pervious)	0.078 ac-ft
<b>Hydrograph Volume (Area under Hydrograph curve)</b>	
Volume	0.078 ac-ft
<b>SCS Unit Hydrograph Parameters</b>	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

## Post-Developed

Subsection: Unit Hydrograph Summary  
Label: Drainage Area 2

Return Event: 2 years  
Storm Event: 2 Year

---

### SCS Unit Hydrograph Parameters

---

Unit peak, qp	11.55 ft <sup>3</sup> /s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.222 hours
Total unit time, Tb	0.278 hours

---

## Post-Developed

Subsection: Unit Hydrograph Summary  
Label: Drainage Area 2

Return Event: 10 years  
Storm Event: 10 Year

Storm Event	10 Year
Return Event	10 years
Duration	24.000 hours
Depth	5.0 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.850 acres
Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.111 hours
Flow (Peak, Computed)	2.11 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	2.10 ft <sup>3</sup> /s
Drainage Area	
SCS CN (Composite)	74.000
Area (User Defined)	0.850 acres
Maximum Retention (Pervious)	3.5 in
Maximum Retention (Pervious, 20 percent)	0.7 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	2.4 in
Runoff Volume (Pervious)	0.167 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.167 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670



## Post-Developed

Subsection: Unit Hydrograph Summary  
Label: Drainage Area 2

Return Event: 10 years  
Storm Event: 10 Year

---

### SCS Unit Hydrograph Parameters

---

Unit peak, qp	11.55 ft <sup>3</sup> /s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.222 hours
Total unit time, Tb	0.278 hours

---

## Post-Developed

Subsection: Unit Hydrograph Summary

Label: Drainage Area 2

Return Event: 25 years

Storm Event: 25 Year

Storm Event	25 Year
Return Event	25 years
Duration	24.000 hours
Depth	6.4 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.850 acres
Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.111 hours
Flow (Peak, Computed)	3.12 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	3.11 ft <sup>3</sup> /s
Drainage Area	
SCS CN (Composite)	74.000
Area (User Defined)	0.850 acres
Maximum Retention (Pervious)	3.5 in
Maximum Retention (Pervious, 20 percent)	0.7 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	3.5 in
Runoff Volume (Pervious)	0.250 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.249 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

## Post-Developed

Subsection: Unit Hydrograph Summary

Label: Drainage Area 2

Return Event: 25 years

Storm Event: 25 Year

---

### SCS Unit Hydrograph Parameters

---

Unit peak, qp	11.55 ft <sup>3</sup> /s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.222 hours
Total unit time, Tb	0.278 hours

---



## Post-Developed

Subsection: Unit Hydrograph Summary

Label: Drainage Area 2

Return Event: 100 years

Storm Event: 100 Year

Storm Event	100 Year
Return Event	100 years
Duration	24.000 hours
Depth	9.0 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	0.850 acres
Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.100 hours
Flow (Peak, Computed)	5.06 ft <sup>3</sup> /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	5.06 ft <sup>3</sup> /s
Drainage Area	
SCS CN (Composite)	74.000
Area (User Defined)	0.850 acres
Maximum Retention (Pervious)	3.5 in
Maximum Retention (Pervious, 20 percent)	0.7 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.8 in
Runoff Volume (Pervious)	0.413 ac-ft
Hydrograph Volume (Area under Hydrograph curve)	
Volume	0.412 ac-ft
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

## Post-Developed

Subsection: Unit Hydrograph Summary

Label: Drainage Area 2

Return Event: 100 years

Storm Event: 100 Year

---

### SCS Unit Hydrograph Parameters

---

Unit peak, qp	11.55 ft <sup>3</sup> /s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.222 hours
Total unit time, Tb	0.278 hours

---

## Post-Developed

Subsection: Elevation vs. Volume Curve  
Label: Bioretention

Return Event: 1 years  
Storm Event: 1 Year

### Elevation-Volume

Pond Elevation (ft)	Pond Volume (ac-ft)
734.00	0.000
736.50	0.015
737.00	0.022
737.50	0.030



## Post-Developed

Subsection: Elevation-Area Volume Curve

Label: Detention Basin

Return Event: 1 years

Storm Event: 1 Year

Elevation (ft)	Planimeter (ft <sup>2</sup> )	Area (acres)	A1+A2+sqr (A1*A2) (acres)	Volume (ac-ft)	Volume (Total) (ac-ft)
734.00	0.0	0.009	0.000	0.000	0.000
736.00	0.0	0.023	0.047	0.031	0.031
737.50	0.0	0.038	0.091	0.045	0.076

## Post-Developed

Subsection: Outlet Input Data

Label: Bioretention Drain

Return Event: 1 years

Storm Event: 1 Year

### Requested Pond Water Surface Elevations

Minimum (Headwater)	734.00 ft
Increment (Headwater)	0.10 ft
Maximum (Headwater)	737.50 ft

### Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Orifice-Circular	Orifice - 1	Forward	Culvert - 1	734.00	737.50
Culvert-Circular	Culvert - 1	Forward	TW	734.00	737.50
Tailwater Settings	Tailwater			(N/A)	(N/A)

## Post-Developed

Subsection: Outlet Input Data  
Label: Bioretention Drain

Return Event: 1 years  
Storm Event: 1 Year

Structure ID: Orifice - 1	
Structure Type: Orifice-Circular	
Number of Openings	1
Elevation	734.00 ft
Orifice Diameter	0.1 in
Orifice Coefficient	0.600
Structure ID: Culvert - 1	
Structure Type: Culvert-Circular	
Number of Barrels	1
Diameter	6.0 in
Length	62.00 ft
Length (Computed Barrel)	62.01 ft
Slope (Computed)	0.018 ft/ft
Outlet Control Data	
Manning's n	0.013
Ke	0.200
Kb	0.079
Kr	0.000
Convergence Tolerance	0.00 ft
Inlet Control Data	
Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.086
T2 ratio (HW/D)	1.188
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.

Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control, interpolate between flows at T1 & T2...

T1 Elevation	734.54 ft	T1 Flow	0.49 ft <sup>3</sup> /s
T2 Elevation	734.59 ft	T2 Flow	0.56 ft <sup>3</sup> /s



## Post-Developed

Subsection: Outlet Input Data

Label: Bioretention Drain

Return Event: 1 years

Storm Event: 1 Year

Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall
Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft <sup>3</sup> /s
Flow Tolerance (Maximum)	10.000 ft <sup>3</sup> /s

## Post-Developed

Subsection: Outlet Input Data

Label: Bioretention Overflow

Return Event: 1 years

Storm Event: 1 Year

### Requested Pond Water Surface Elevations

Minimum (Headwater)	734.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	737.50 ft

### Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Rectangular Weir	Weir - 1	Forward	TW	737.00	737.50
Tailwater Settings	Tailwater			(N/A)	(N/A)

## Post-Developed

Subsection: Outlet Input Data

Label: Bioretention Overflow

Return Event: 1 years

Storm Event: 1 Year

Structure ID: Weir - 1	
Structure Type: Rectangular Weir	
Number of Openings	1
Elevation	737.00 ft
Weir Length	5.00 ft
Weir Coefficient	3.00 (ft <sup>0.5</sup> )/s
Structure ID: TW	
Structure Type: TW Setup, DS Channel	
Tailwater Type	Free Outfall
Convergence Tolerances	
Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft
Flow Tolerance (Minimum)	0.001 ft <sup>3</sup> /s
Flow Tolerance (Maximum)	10.000 ft <sup>3</sup> /s



## Post-Developed

Subsection: Outlet Input Data

Label: Detention Out Alt

Return Event: 1 years

Storm Event: 1 Year

### Requested Pond Water Surface Elevations

Minimum (Headwater)	734.00 ft
Increment (Headwater)	0.50 ft
Maximum (Headwater)	737.50 ft

### Outlet Connectivity

Structure Type	Outlet ID	Direction	Outfall	E1 (ft)	E2 (ft)
Rectangular Weir	Weir - 1	Forward	Culvert - 1	735.75	737.50
Orifice-Circular	Orifice - 1	Forward	TW	734.00	737.50
Stand Pipe	Riser - 1	Forward	TW	736.00	737.50
Culvert-Circular	Culvert - 1	Forward	TW	732.70	737.50
Tailwater Settings	Tailwater			(N/A)	(N/A)

## Post-Developed

Subsection: Outlet Input Data

Label: Detention Out Alt

Return Event: 1 years

Storm Event: 1 Year

Structure ID: Culvert - 1	
Structure Type: Culvert-Circular	

Number of Barrels	1
Diameter	12.0 in
Length	40.00 ft
Length (Computed Barrel)	40.00 ft
Slope (Computed)	0.005 ft/ft

### Outlet Control Data

Manning's n	0.013
Ke	0.200
Kb	0.031
Kr	0.000
Convergence Tolerance	0.00 ft

### Inlet Control Data

Equation Form	Form 1
K	0.0045
M	2.0000
C	0.0317
Y	0.6900
T1 ratio (HW/D)	1.093
T2 ratio (HW/D)	1.195
Slope Correction Factor	-0.500

Use unsubmerged inlet control 0 equation below T1 elevation.

Use submerged inlet control 0 equation above T2 elevation

In transition zone between unsubmerged and submerged inlet control,  
interpolate between flows at T1 & T2...

T1 Elevation	733.79 ft	T1 Flow	2.75 ft <sup>3</sup> /s
T2 Elevation	733.89 ft	T2 Flow	3.14 ft <sup>3</sup> /s

## Post-Developed

Subsection: Outlet Input Data

Label: Detention Out Alt

Return Event: 1 years

Storm Event: 1 Year

---

Structure ID: Riser - 1  
Structure Type: Stand Pipe

---

Number of Openings	1
Elevation	736.00 ft
Diameter	8.0 in
Orifice Area	0.3 ft <sup>2</sup>
Orifice Coefficient	0.600
Weir Length	2.09 ft
Weir Coefficient	3.00 (ft <sup>0.5</sup> )/s
K Reverse	1.000
Manning's n	0.000
Kev, Charged Riser	0.000
Weir Submergence	False
Orifice H to crest	True

---

---

Structure ID: Weir - 1  
Structure Type: Rectangular Weir

---

Number of Openings	1
Elevation	735.75 ft
Weir Length	0.25 ft
Weir Coefficient	3.00 (ft <sup>0.5</sup> )/s

---

---

Structure ID: Orifice - 1  
Structure Type: Orifice-Circular

---

Number of Openings	1
Elevation	734.00 ft
Orifice Diameter	2.0 in
Orifice Coefficient	0.600

---

---

Structure ID: TW  
Structure Type: TW Setup, DS Channel

---

Tailwater Type	Free Outfall
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---

---

### Convergence Tolerances

---

Maximum Iterations	30
Tailwater Tolerance (Minimum)	0.01 ft
Tailwater Tolerance (Maximum)	0.50 ft
Headwater Tolerance (Minimum)	0.01 ft
Headwater Tolerance (Maximum)	0.50 ft

---



## Post-Developed

Subsection: Outlet Input Data  
Label: Detention Out Alt

Return Event: 1 years  
Storm Event: 1 Year

Convergence Tolerances	
Flow Tolerance (Minimum)	0.001 ft <sup>3</sup> /s
Flow Tolerance (Maximum)	10.000 ft <sup>3</sup> /s

## Post-Developed

Subsection: Level Pool Pond Routing Summary  
 Label: Bioretention (IN)

Return Event: 1 years  
 Storm Event: 1 Year

Infiltration			
Infiltration Method (Computed)		No Infiltration	
Initial Conditions			
Elevation (Water Surface, Initial)		734.00 ft	
Volume (Initial)		0.000 ac-ft	
Flow (Initial Outlet)		0.00 ft³/s	
Flow (Initial Infiltration)		0.00 ft³/s	
Flow (Initial, Total)		0.00 ft³/s	
Time Increment		0.050 hours	
Inflow/Outflow Hydrograph Summary			
Flow (Peak In)		0.81 ft³/s	Time to Peak (Flow, In)
Flow (Peak Outlet)		0.46 ft³/s	Time to Peak (Flow, Outlet)
			12.100 hours
			12.300 hours
Peak Conditions			
Elevation (Water Surface, Peak)		737.04 ft	
Volume (Peak)		0.022 ac-ft	
Mass Balance (ac-ft)			
Volume (Initial)		0.000 ac-ft	
Volume (Total Inflow)		0.066 ac-ft	
Volume (Total Infiltration)		0.000 ac-ft	
Volume (Total Outlet Outflow)		0.045 ac-ft	
Volume (Retained)		0.021 ac-ft	
Volume (Unrouted)		0.000 ac-ft	
Error (Mass Balance)		0.0 %	

## Post-Developed

Subsection: Level Pool Pond Routing Summary  
Label: Bioretention (IN)

Return Event: 2 years  
Storm Event: 2 Year

Infiltration			
Infiltration Method (Computed)		No Infiltration	
Initial Conditions			
Elevation (Water Surface, Initial)	734.00 ft		
Volume (Initial)	0.000 ac-ft		
Flow (Initial Outlet)	0.00 ft³/s		
Flow (Initial Infiltration)	0.00 ft³/s		
Flow (Initial, Total)	0.00 ft³/s		
Time Increment	0.050 hours		
Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	1.11 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	1.15 ft³/s	Time to Peak (Flow, Outlet)	12.150 hours
Peak Conditions			
Elevation (Water Surface, Peak)	737.11 ft		
Volume (Peak)	0.023 ac-ft		
Mass Balance (ac-ft)			
Volume (Initial)	0.000 ac-ft		
Volume (Total Inflow)	0.091 ac-ft		
Volume (Total Infiltration)	0.000 ac-ft		
Volume (Total Outlet Outflow)	0.069 ac-ft		
Volume (Retained)	0.021 ac-ft		
Volume (Unrouted)	0.000 ac-ft		
Error (Mass Balance)	0.0 %		



## Post-Developed

Subsection: Level Pool Pond Routing Summary  
 Label: Bioretention (IN)

Return Event: 10 years  
 Storm Event: 10 Year

Infiltration			
Infiltration Method (Computed)		No Infiltration	
Initial Conditions			
Elevation (Water Surface, Initial)	734.00 ft		
Volume (Initial)	0.000 ac-ft		
Flow (Initial Outlet)	0.00 ft³/s		
Flow (Initial Infiltration)	0.00 ft³/s		
Flow (Initial, Total)	0.00 ft³/s		
Time Increment	0.050 hours		
Inflow/Outflow Hydrograph Summary			
Flow (Peak In)	2.25 ft³/s	Time to Peak (Flow, In)	12.100 hours
Flow (Peak Outlet)	2.20 ft³/s	Time to Peak (Flow, Outlet)	12.100 hours
Peak Conditions			
Elevation (Water Surface, Peak)	737.21 ft		
Volume (Peak)	0.025 ac-ft		
Mass Balance (ac-ft)			
Volume (Initial)	0.000 ac-ft		
Volume (Total Inflow)	0.182 ac-ft		
Volume (Total Infiltration)	0.000 ac-ft		
Volume (Total Outlet Outflow)	0.161 ac-ft		
Volume (Retained)	0.021 ac-ft		
Volume (Unrouted)	0.000 ac-ft		
Error (Mass Balance)	0.0 %		

## Post-Developed

Subsection: Level Pool Pond Routing Summary  
 Label: Bioretention (IN)

Return Event: 25 years  
 Storm Event: 25 Year

Infiltration			
Infiltration Method (Computed)		No Infiltration	
Initial Conditions			
Elevation (Water Surface, Initial)		734.00 ft	
Volume (Initial)		0.000 ac-ft	
Flow (Initial Outlet)		0.00 ft³/s	
Flow (Initial Infiltration)		0.00 ft³/s	
Flow (Initial, Total)		0.00 ft³/s	
Time Increment		0.050 hours	
Inflow/Outflow Hydrograph Summary			
Flow (Peak In)		3.24 ft³/s	Time to Peak (Flow, In)
Flow (Peak Outlet)		3.18 ft³/s	Time to Peak (Flow, Outlet)
			12.100 hours
			12.100 hours
Peak Conditions			
Elevation (Water Surface, Peak)		737.30 ft	
Volume (Peak)		0.026 ac-ft	
Mass Balance (ac-ft)			
Volume (Initial)		0.000 ac-ft	
Volume (Total Inflow)		0.265 ac-ft	
Volume (Total Infiltration)		0.000 ac-ft	
Volume (Total Outlet Outflow)		0.243 ac-ft	
Volume (Retained)		0.021 ac-ft	
Volume (Unrouted)		0.000 ac-ft	
Error (Mass Balance)		0.0 %	

## Post-Developed

Subsection: Level Pool Pond Routing Summary  
Label: Bioretention (IN)

Return Event: 100 years  
Storm Event: 100 Year

Infiltration			
Infiltration Method (Computed)		No Infiltration	
Initial Conditions			
Elevation (Water Surface, Initial)		734.00 ft	
Volume (Initial)		0.000 ac-ft	
Flow (Initial Outlet)		0.00 ft³/s	
Flow (Initial Infiltration)		0.00 ft³/s	
Flow (Initial, Total)		0.00 ft³/s	
Time Increment		0.050 hours	
Inflow/Outflow Hydrograph Summary			
Flow (Peak In)		5.10 ft³/s	Time to Peak (Flow, In)
Flow (Peak Outlet)		5.03 ft³/s	Time to Peak (Flow, Outlet)
			12.100 hours
			12.100 hours
Elevation (Water Surface, Peak)			
		737.47 ft	
Volume (Peak)			
		0.029 ac-ft	
Mass Balance (ac-ft)			
Volume (Initial)		0.000 ac-ft	
Volume (Total Inflow)		0.425 ac-ft	
Volume (Total Infiltration)		0.000 ac-ft	
Volume (Total Outlet Outflow)		0.404 ac-ft	
Volume (Retained)		0.021 ac-ft	
Volume (Unrouted)		0.000 ac-ft	
Error (Mass Balance)		0.0 %	



## Post-Developed

Subsection: Level Pool Pond Routing Summary  
 Label: Detention Basin (IN)

Return Event: 1 years  
 Storm Event: 1 Year

Infiltration			
Infiltration Method (Computed)		No Infiltration	
Initial Conditions			
Elevation (Water Surface, Initial)		734.00 ft	
Volume (Initial)		0.000 ac-ft	
Flow (Initial Outlet)		0.00 ft³/s	
Flow (Initial Infiltration)		0.00 ft³/s	
Flow (Initial, Total)		0.00 ft³/s	
Time Increment		0.050 hours	
Inflow/Outflow Hydrograph Summary			
Flow (Peak In)		0.46 ft³/s	Time to Peak (Flow, In)
Flow (Peak Outlet)		0.09 ft³/s	Time to Peak (Flow, Outlet)
			12.300 hours
			13.350 hours
Peak Conditions			
Elevation (Water Surface, Peak)		734.83 ft	
Volume (Peak)		0.010 ac-ft	
Mass Balance (ac-ft)			
Volume (Initial)		0.000 ac-ft	
Volume (Total Inflow)		0.045 ac-ft	
Volume (Total Infiltration)		0.000 ac-ft	
Volume (Total Outlet Outflow)		0.044 ac-ft	
Volume (Retained)		0.001 ac-ft	
Volume (Unrouted)		0.000 ac-ft	
Error (Mass Balance)		0.4 %	

## Post-Developed

Subsection: Level Pool Pond Routing Summary  
 Label: Detention Basin (IN)

Return Event: 2 years  
 Storm Event: 2 Year

Infiltration			
Infiltration Method (Computed)		No Infiltration	
Initial Conditions			
Elevation (Water Surface, Initial)		734.00 ft	
Volume (Initial)		0.000 ac-ft	
Flow (Initial Outlet)		0.00 ft³/s	
Flow (Initial Infiltration)		0.00 ft³/s	
Flow (Initial, Total)		0.00 ft³/s	
Time Increment		0.050 hours	
Inflow/Outflow Hydrograph Summary			
Flow (Peak In)		1.15 ft³/s	Time to Peak (Flow, In)
Flow (Peak Outlet)		0.13 ft³/s	Time to Peak (Flow, Outlet)
			12.150 hours
			13.150 hours
Peak Conditions			
Elevation (Water Surface, Peak)		735.54 ft	
Volume (Peak)		0.021 ac-ft	
Mass Balance (ac-ft)			
Volume (Initial)		0.000 ac-ft	
Volume (Total Inflow)		0.069 ac-ft	
Volume (Total Infiltration)		0.000 ac-ft	
Volume (Total Outlet Outflow)		0.067 ac-ft	
Volume (Retained)		0.001 ac-ft	
Volume (Unrouted)		0.000 ac-ft	
Error (Mass Balance)		0.3 %	

## Post-Developed

Subsection: Level Pool Pond Routing Summary

Label: Detention Basin (IN)

Return Event: 10 years

Storm Event: 10 Year

Infiltration			
Infiltration Method (Computed)		No Infiltration	
Initial Conditions			
Elevation (Water Surface, Initial)		734.00 ft	
Volume (Initial)		0.000 ac-ft	
Flow (Initial Outlet)		0.00 ft³/s	
Flow (Initial Infiltration)		0.00 ft³/s	
Flow (Initial, Total)		0.00 ft³/s	
Time Increment		0.050 hours	
Inflow/Outflow Hydrograph Summary			
Flow (Peak In)		2.20 ft³/s	Time to Peak (Flow, In)
Flow (Peak Outlet)		1.42 ft³/s	Time to Peak (Flow, Outlet)
			12.100 hours
			12.250 hours
Peak Conditions			
Elevation (Water Surface, Peak)		736.37 ft	
Volume (Peak)		0.040 ac-ft	
Mass Balance (ac-ft)			
Volume (Initial)		0.000 ac-ft	
Volume (Total Inflow)		0.161 ac-ft	
Volume (Total Infiltration)		0.000 ac-ft	
Volume (Total Outlet Outflow)		0.158 ac-ft	
Volume (Retained)		0.002 ac-ft	
Volume (Unrouted)		0.000 ac-ft	
Error (Mass Balance)		0.2 %	



## Post-Developed

Subsection: Level Pool Pond Routing Summary

Label: Detention Basin (IN)

Return Event: 25 years

Storm Event: 25 Year

Infiltration			
Infiltration Method (Computed)		No Infiltration	
Initial Conditions			
Elevation (Water Surface, Initial)		734.00 ft	
Volume (Initial)		0.000 ac-ft	
Flow (Initial Outlet)		0.00 ft³/s	
Flow (Initial Infiltration)		0.00 ft³/s	
Flow (Initial, Total)		0.00 ft³/s	
Time Increment		0.050 hours	
Inflow/Outflow Hydrograph Summary			
Flow (Peak In)		3.18 ft³/s	Time to Peak (Flow, In)
Flow (Peak Outlet)		2.43 ft³/s	Time to Peak (Flow, Outlet)
Elevation (Water Surface, Peak)		736.78 ft	
Volume (Peak)		0.052 ac-ft	
Mass Balance (ac-ft)			
Volume (Initial)		0.000 ac-ft	
Volume (Total Inflow)		0.243 ac-ft	
Volume (Total Infiltration)		0.000 ac-ft	
Volume (Total Outlet Outflow)		0.239 ac-ft	
Volume (Retained)		0.004 ac-ft	
Volume (Unrouted)		0.000 ac-ft	
Error (Mass Balance)		0.1 %	

## Post-Developed

Subsection: Level Pool Pond Routing Summary  
 Label: Detention Basin (IN)

Return Event: 100 years  
 Storm Event: 100 Year

Infiltration			
Infiltration Method (Computed)		No Infiltration	
Initial Conditions			
Elevation (Water Surface, Initial)		734.00 ft	
Volume (Initial)		0.000 ac-ft	
Flow (Initial Outlet)		0.00 ft³/s	
Flow (Initial Infiltration)		0.00 ft³/s	
Flow (Initial, Total)		0.00 ft³/s	
Time Increment		0.050 hours	
Inflow/Outflow Hydrograph Summary			
Flow (Peak In)		5.03 ft³/s	Time to Peak (Flow, In)
Flow (Peak Outlet)		3.77 ft³/s	Time to Peak (Flow, Outlet)
			12.100 hours
			12.200 hours
Elevation (Water Surface, Peak)		737.40 ft	
Volume (Peak)		0.073 ac-ft	
Mass Balance (ac-ft)			
Volume (Initial)		0.000 ac-ft	
Volume (Total Inflow)		0.404 ac-ft	
Volume (Total Infiltration)		0.000 ac-ft	
Volume (Total Outlet Outflow)		0.394 ac-ft	
Volume (Retained)		0.009 ac-ft	
Volume (Unrouted)		-0.001 ac-ft	
Error (Mass Balance)		0.1 %	

## Post-Developed

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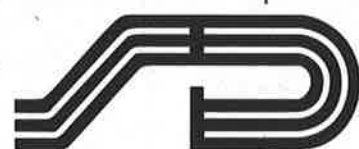
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





## MEMORANDUM

TO: Chairperson Janet Andersen and  
Members of Lewisboro Planning Board

CC: Ciorsdan Conran  
Judson Siebert, Esq.  
Joseph Angiello

FROM: Jan K. Johannessen, AICP   
Joseph M. Cermele, P.E., CFM   
Town Consulting Professionals

DATE: March 14, 2019

RE: John & Kira Ryan  
40 Old Pond Road  
Sheet 33C, Block 11155, Lots 16, 17, 44

---

### PROJECT DESCRIPTION

The subject property consists of three (3) tax lots totaling  $\pm 1.17$  acres of land located at 40 Old Pond Road within the R-2A and R-4A Zoning Districts. The subject property contains a 3-bedroom residence, which is in a state of disrepair, along with a detached garage, asphalt driveway, septic system, potable water well and other ancillary residential improvements. The applicant is proposing a complete renovation and reconstruction of the three (3) bedroom residence and garage and the two (2) buildings are proposed to be connected via "sky bridge". The applicant is also proposing an inground pool, decks, walls, exterior stairs and walkways and new driveway configuration. The subject property is located immediately adjacent to Lake Waccabuc and most of the improvements are proposed within the Town's 150-foot wetland buffer.

### SEQRA

The proposed action is a Type II Action and is categorically exempt from the State Environmental Quality Review Act (SEQRA).

Chairperson Janet Andersen

March 14, 2019

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#### **REQUIRED APPROVALS**

1. A Wetland Permit and Town Stormwater Permit is required from the Planning Board; a public hearing is required to be held on the Wetland Permit.
2. Area variances may be required from the Zoning Board of Appeals (to be determined).
3. Approval from the Westchester County Department of Health (WCDH) may be required for continued use of the existing septic system and private potable well.
4. As disturbance will exceed 5,000 s.f. and as the property is located within the New York City Department of Environmental Protection (NYCDEP) East of Hudson Watershed, coverage under the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002) will be required.

#### **COMMENTS**

We note that the plans submitted are conceptual in nature and no construction details have been provided. The following comments should be considered preliminary in nature, a complete review of the submission materials will take place following initial review and feedback from the Planning Board and resubmission of construction drawings by the applicant:

1. The applicant shall coordinate with the WCDH and NYCDEP to determine the extent of jurisdiction and approval/permits required (if any); provide correspondence to this effect to the Planning Board.
2. Site Development Plan Approval is not required and, therefore, the submitted Site Development Plan Application is not applicable.
3. Exploratory investigation of the septic system involving land disturbance within the wetland buffer may require a wetland permit; any additional work of this nature shall be coordinated with the WCDH and this office.
4. It appears that work is proposed outside of the subject property, specifically between the southerly property line and the lake; the ownership of this land shall be clarified. Further, encroachments onto adjacent properties should be addressed.
5. The applicant shall provide an existing conditions and removals plan at a scale of 1"=10'; much of the underlying text on the submitted existing conditions plan is not readable.



Chairperson Janet Andersen

March 14, 2019

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6. The applicant shall provide a separate sheet at a scale of 1"=10' overlaying the proposed improvements on the existing conditions plan; existing conditions (to be removed) should not be illustrated on the proposed site plan.
7. The applicant shall provide a survey illustrating the applicant's contiguous holdings; topography and trees need not be shown in areas of the property that are not proposed to be disturbed.
8. The names of the adjacent property owners and the location of any neighboring structures and buildings shall appear on the plans.
9. The zoning district boundary lines shall be clearly illustrated on the plans.
10. A separate landscaping plan shall be provided.
11. A wetland mitigation plan must be provided which achieves 1:1 mitigation for all disturbance proposed within the wetland buffer. Stormwater management practices, and plantings proposed in connection therewith, are typically not counted towards fulfilling the mitigation requirement, as such practices would be required regardless of whether the project requires a Wetland Permit. As currently designed, the project falls short of the minimum required mitigation per the wetland ordinance.
12. A wetland report shall be submitted and must contain the information required under Section 217-7A(5) and (6).
13. All proposed drainage improvements shall be designed by a New York State Professional Engineer; the applicant shall submit a Stormwater Pollution Prevention Plan (SWPPP) in compliance with Town, NYSDEC and NYCDEP regulations.
14. Soil testing related to proposed stormwater management practices shall be conducted and witnessed by this office; the soil test locations and results shall be provided on the plan.
15. The wetland boundary line must be confirmed by this office.
16. The applicant shall quantify the proposed area of disturbance and net increase in impervious cover within the wetland buffer.
17. The applicant shall provide existing conditions foundation and floor plans of the existing residence and garage; these plans shall clearly identify the extent of proposed demolition.

Chairperson Janet Andersen

March 14, 2019

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18. We note that there appears to be minor discrepancies between the proposed floor plans and the proposed site plan. Further, the architectural plans must be advanced to demonstrate the constructability of the proposed buildings and structures.
19. All plans submitted to the Planning Board shall be signed and sealed by the design professional.
20. It is recommended that the plans be referred to the Building Inspector for zoning compliance review.
21. It is recommended that the Planning Board conduct a site visit.

In order to expedite the review of subsequent submissions, the applicant should provide annotated responses to each of the comments outlined herein.

**PLANS REVIEWED, PREPARED BY J.D. BARRETT & ASSOCIATES, LLC, DATED JANUARY 28, 2019:**

- Site Information Plan (Sheet 1 of 3)
- Site Plan (Sheet 2 of 3)
- Erosion Control Plan (Sheet 3 of 3)

**DOCUMENTS REVIEWED:**

- Letter, prepared by J.D. Barrett & Associates, LLC, dated January 28, 2019
- Site Development Plan Approval Application
- Wetland Permit Application
- Stormwater Permit Application
- Short EAF
- Septic Investigation Field Map, dated January 14, 2019
- Custom Soil Resource Report
- Survey of Property, prepared by Link Land Surveyors
- Architecturals, prepared by Teo Siguenza Architect, dated August 8, 2018

JKJ/JMC/dc

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**TO:** Town of Lewisboro Planning Board

**FROM:** Lewisboro Conservation Advisory Council

**SUBJECT:** Ryan Residence  
40 Old Pond Road

**DATE:** March 7, 2019

---

The Conservation Advisory Council (CAC) reviewed the applicant's submission of a sketch plan for a single-family home on Old Pond Road.

The planned renovation and new construction for this project is entirely in the wetland buffer with the house within 20 feet of Old Pond. Given this, the CAC would like to have a better understanding of how much tear down of the house and other buildings is involved and how will the lake be protected if there is extensive site disturbance due to the teardown. The CAC would like to see a detailed plan including inspection schedule to keep sediments and other materials from ending up in the lake.

The plans also show and the construction with a new in-ground pool. Much of the area near the lake is rock. The CAC would like to understand the construction plans for this pool and if any blasting is required. If so, what are the plans to keep material from the pool construction ending up in the lake.

A site walk would be helpful to better understand this project.



January 28, 2019

Mr. Jerome Kerner, RA, Chairman  
Town of Lewisboro Planning Board (PB)  
79 Bouton Road  
South Salem, NY 10590-1430

**Re: Ryan Property Renovation  
40 Old Pond Road – 1.1719 Acres  
Sheet 33C, Block 11155, Lots 16, 44, 17  
R-2 Zone – Lots 16 & 44  
R-4 Zone – Lot 17**

Dear Chairman Kerner and Members of the PB:

On behalf of John and Kira Ryan and their project team, we are now providing the PB with the following information in support of a Site Development Plan Application, Wetland Permit Application and Stormwater Permit Application to reconstruct and renovate the above property to create a new home for the Ryan family. We provide six full-size and three half-size copies of the following materials for the PB's consideration.

- This explanatory **Cover Letter**, prepared by J.D. Barrett & Associates, LLC, dated January 28, 2019.
- **Town of Lewisboro Site Development Plan Application** (copies only-originals under separate cover)
- **Town of Lewisboro Stormwater Permit Application** (copies only-original under separate cover)
- **Town of Lewisboro Wetland Permit Application** (copies only-original under separate cover)
- **Town of Lewisboro Environmental Questionnaire** (copies only-original under separate cover)
- **Town of Lewisboro Affidavit of Ownership** (original under separate cover)
- **Town of Lewisboro Tax Payment Affidavit Form** (original under separate cover)
- **NYSDEC Short Environmental Assessment Form** (copies only-original under separate cover)
- **NRCS Custom Soil Resource Report for Westchester County New York**, dated January 28, 2019.
- **Septic Investigation Field Map**, prepared by Campbell Engineering, dated January 14, 2019.
- **PB Fees**, including \$2,000 Project Escrow Review Fee, \$205 Sketch Plan Review Fee, \$255 Wetland Permit Review Fee, \$155 Stormwater Permit Review Fee (under separate cover).
- **Topographic Survey** of a portion of the property prepared by Link Land Surveyors, P.C., dated March 29, 2017.
- **Site Plans**, prepared by J.D. Barrett & Associates, LLC, dated January 28, 2019, including:
  - Sheet 1 of 3 Site Information Plan
  - Sheet 2 of 3 Site Plan
  - Sheet 3 of 3 Erosion Control Plan

- **Architectural Plans**, prepared by Teo Siguenza Architect, dated August 8, 2018, including:
  - Dwg A100 Proposed Lower Level Floor Plan
  - Dwg A101 Proposed First Floor Plan
  - Dwg A102 Proposed Second Floor Plan
  - Dwg A200 Proposed Exterior Elevation

### **Overview / Existing Conditions**

The Ryan's have recently purchased the subject property and have plans to renovate and restore the existing property to provide a new lake house for their family. The property is comprised of three tax lots measuring in total 1.1719 acres. Two of the tax lots (16 and 44) are located in the R-2A Zoning District and this is where the house and yard areas are located. Tax Lot 17 is in the R-4 Zoning District. This is the most northerly tax lot and this lot will remain undisturbed in its current wooded condition.

The home and property are currently in a state of severe disrepair as the property has suffered from years of deferred maintenance and neglect. Inasmuch, the house requires a total renovation. The existing home dates back to the 1940's and is constructed as a three-bedroom home that is serviced by an on-site well, septic system and electrical service. The property enjoys approximately 160 LF of lake frontage on Lake Waccabuc with spectacular views down the lake. The lake side portion of the property where the house is positioned is relatively flat, with some lawn areas around the house, but the remainder of the property slopes steeply to the north and is currently vegetated with trees and understory vegetation, vines, etc. There are rock outcrops scattered throughout the property. The on-site soils that occur on the developed, more southerly portion of the property are the Chatfield-Charlton Complex soils – 15-35% slope, very rocky and the more northerly soils on the undeveloped portion of the property are the Hollis-Rock Overland Complex soils, 35-60% slopes.

There is currently a very long driveway (+/- 4500 SF) that travels from the top of the property where a two-car garage is located down to the house area by the lake. The driveway is paved with asphalt and very steep (+/- 25%), and directs stormwater runoff directly into the lake but gets flatter down by the lake where a parking area is located. It is proposed that this very steep and long driveway be removed as part of this project.

### **Zoning Information**

We have provided a Zoning Table on Sheet 2 of 3. We believe that this property can be considered a legally non-compliant lot because it is zoning deficient in the existing condition in several regards, including lot area, minimal circle diameter, side yard and rear yard setbacks. Moving forward, once a site plan layout is agreed to and approved by the PB, the project will need to be reviewed by the ZBA as the zoning deficiencies noted above will continue to be deficient in the proposed condition.

### **Lot Coverage**

We have also provided a Coverage Chart on Sheet 2 of 3. The chart compares the cover types and impervious areas in both the existing and proposed conditions. The PB will note from the chart that the proposed building coverage on the property will increase slightly, but the overall development coverage will actually decrease due to the removal of the very large existing asphalt driveway, which will be replaced with a much smaller driveway. We also note here that, as a result of the removal of this very large and steep asphalt driveway, the proposed on-site impervious areas will actually decrease by approximately 536 SF as a result of this project.

## **Existing Septic System**

Campbell Engineering (CE), Chappaqua, NY, has been retained to investigate the existing septic system on the property. The previous owner had previously explained to the project team that his family did an extensive septic repair to the system in the 1970's. He explained that the septic system is located on top of the hill just west of the existing garage where there is a flat area of grass.

CE has contacted the Westchester County Department of Health (WCDH) to obtain records of the system, but so far there appears to be no records available. Inasmuch, on January 14, 2019, CE had engaged East Coast Septic Company (ECS) to investigate the existing septic system. The following was noted.

1. On Monday, January 14, 2019 the septic system at 40 Old Pond Road was uncovered and inspected by ECS and MC.
2. The subject septic area west of the barn was excavated to locate the septic system reported to be installed in that area. It was reported that two six-foot diameter and three-foot depth drywells (DW) were uncovered. They were uncovered approximately two feet below the ground surface. CE states it appears that DW1 appears to overflow into DW2, but they could not locate where the septic force main from the septic pump (adjacent to the house below) enters DW1. CE will continue to investigate this.
3. CE reports that the drywells appear to measure approximately six feet (inside) in diameter and approximately three feet deep set on a thick gravel bed. Each drywell is also surrounded with a ring of gravel that is approximately four feet wide, by three-four feet deep.
4. CE reports that the soils in this area appear to be acceptable soils for septic systems/drywells.
5. CE reports that DW1 does have sludge in the bottom of it that needs to be removed. He also reports that DW1 appears to have never overflowed into DW2, given that DW2 appears to be clean (and new) inside.
6. CE reports that at this point he would describe the septic system as a series of cesspools/drywells.
7. Moving forward, CE suggested that ECS test the system. This would involve turning the water on in the house and running water into the septic tank and pump chamber to determine if the pump system is working properly. In addition, this would allow that the system be run to gauge how effectively the drywells/cesspools are working, i.e., will DW1 fill up and overflow into DW2? CE suggests that the existing septic tank, pump and overflow chamber positioned just west of the existing house be replaced with a new septic tank, pump and overflow tank to serve the new house



8. CE states that the existing septic force main that runs up the hill from the septic tank to the drywells/cesspools be checked/tested to determine if it is functioning properly. If not, this too can be replaced.
9. CE reports that once the system is thoroughly tested, he will review his findings with the WCDH.

### **Proposed Architecture/New House**

The owners have retained architect Teo Siguenza of Bedford, NY to work with them to develop a new architectural plan for the house renovation. Preliminary plans have been prepared and are enclosed with this information. The renovated home will also feature three bedrooms, however, the home will be unique in that the bedrooms for the home will be located on the lower level (lake side elevation) while the common family living areas, kitchen, etc., will be on the upper level. (Mr. Siguenza refers to this as an “upside-down house”. This has been done to allow the common areas to enjoy the spectacular views of Lake Waccabuc. In addition to the renovated home, a new garage is proposed to be positioned below the existing garage. A new driveway will allow access into the new garage. The new garage will have a flat roof that can also be used as a deck space to complement the existing garage that is proposed to be renovated to house an activity studio, exercise room, etc.

### **Proposed Site Plan and Architecture**

The office of J.D. Barrett has worked closely with the architect’s office and owners to develop a site plan to renovate the property and create a functional and aesthetically pleasing landscape to frame the new home and property. Early on, it was agreed that the challenge for this property will be how to get the owners into their new home without negotiating multiple sets of stairs or a long steep driveway to the house by the lake area. The solution that was developed was to create a “sky bridge” that would link the new garage area to the home. The sky bridge is now positioned three steps down from the new garage area and then walks directly into the house at the third level, or attic level. Once inside, an elevator is being considered to carry the owners down to the second and first levels. Underneath the sky bridge is a set of masonry steps and landings that allow access into the second floor of the home.

### **Site Features**

The Site Plan, Sheet 2 of 3, provides a keyed legend that describes the site features included on the plan. You will note that the driveway has been greatly reduced in size. There are also several site retaining walls that will be required, in addition to graded and stabilized slopes to negotiate the grade change elevations that occur on the property, i.e., the upper garage is positioned at elevation 510, while the yard area around the house by the lake is at 475, or there is approximately a 35-foot grade change from the upper to lower property areas.

A proposed concrete swimming pool and timber deck system is also being considered at the home’s second floor “living area” level. The swimming pool would be built partially

out of grade with the pool wall serving as a retaining wall, as well. This could create a boat storage and patio furniture storage area under the pool deck. A patio area and outdoor kitchen are also proposed in this area, which will generally function as a “sun pocket” area where the house provides a backdrop to reflect the sun back out to the pool and patio areas, creating a protected private sunny outdoor entertainment area.

### **Landscaping**

Once the improvements are in place, an extensive landscaping plan will be developed to stabilize and frame the property. Landscape plan features will include the conversion of existing lawn areas by the lake edge to low native plantings that can serve as a filter strip for the storm flows traveling toward the lake. A dense hedgerow of trees and shrubs is proposed along the east property line to provide privacy for the new home and also buffer the existing adjacent home positioned east of the property. Low growing groundcovers/slope plantings will be proposed on all newly graded slopes. Additional trees and shrubs will also be added throughout the property. A small lawn area at the lower level, adjacent to the house and lake, will be preserved to provide play space for the family’s children. Subtle night lighting will also be proposed to illuminate activity and path lighting in the evening.

### **Drainage**

Once the project site plan is reviewed and discussed with the PB and Town Staff, the applicant will engage the project engineer to develop a stormwater management plan for the property. However, as can be seen from our coverage summary provided on Sheet 2 of 3, it appears that we will actually be decreasing the impervious areas on the site by removing the very large driveway. Nonetheless, the project team will be working on stormwater management measures to provide as much protection to the lake from stormwater runoff that will be flowing into the lake from the new development.

### **Erosion Control During Construction**

It is acknowledged that controlling erosion and sedimentation on this very steep site, positioned above the lake, will be challenging and require careful attention throughout the construction process. You will note from the preliminary erosion control plan we have prepared, that we will be employing several systems to help manage erosion and sedimentation during the construction process. For example, above the work area we will be installing dense coir logs, staked to the ground, to serve as diversions to route overland runoff around the work area. Similarly, at the bottom of the work area, we will be installing redundant erosion control measures to filter sediment before it can enter the lake. Here, we are proposing silt fencing all along the lake edge, reinforced with a staked coir log behind the silt fence for “double” protection. In addition, we are proposing two temporary sediment basins on either side of the house at the lower areas where stormwater can gather and pool, thereby allowing sediments to settle out of the stormwater. Other erosion control measures to be employed include an anti-tracking entry pad at the driveway and the immediate stabilization of all newly graded slopes with straw mats stapled to the freshly seeded and graded slopes. We believe that the erosion controls can be effective in controlling erosion and sedimentation during construction

and, of course, long-term site stabilization will be provided by the re-vegetation of the site after construction with trees, shrubs, groundcovers and vines.

**Summary**

We trust that the above narrative, as well as the project applications, plans and reports will be helpful to the PB's review and understanding of this project. The project team looks forward to discussing the project with the PB at the February 26, 2019 PB meeting.

Sincerely,

*Jeri Barrett*

Jeri D. Barrett, R.L.A.

Enc.

cc: John & Kira Ryan

Michael Sirignano, Esq.

Michael Campbell, PE

Teo Siguenza, RA



Site Development Plan/Subdivision Plat Application - Check all that apply:

Waiver of Site Development Plan Procedures  
Site Development Plan Approval  
Special Use Permit Approval  
Subdivision Plat Approval

<input type="checkbox"/>
Step I <input checked="" type="checkbox"/>
Step I <input type="checkbox"/>
Step I <input type="checkbox"/>

Step II <input type="checkbox"/>
Step II <input type="checkbox"/>
Step II <input type="checkbox"/>

Step III <input type="checkbox"/>
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Project Information

Project Name: Ryan Property

Project Address: 40 Old Pond Road

Gross Parcel Area: 51,048 SF Zoning District: R-2A Sheet(s): 33.C Block(s): 11155 Lot(s): 22, 23, 24  
16, 44, 17

Project Description: Proposed home + site renovations

Is the site located within 500 feet of any Town boundary?

YES ☒

NO ☐

Is the site located within the New York City Watershed?

YES ☒

NO ☐

Is the site located on a State or County Highway?

YES ☐

NO ☒

Does the proposed action require any other permits/approvals from other agencies/departments?

Town Board ☐  
ACARC ☐  
NYSDOT ☐

ZBA ☒  
NYSDEC ☐  
Town Wetland ☒

Building Dept. ☒  
NYCDEP ☐  
Town Stormwater ☒

Town Highway ☐  
WCDH ☐

Other \_\_\_\_\_

Owner's Information

Name: John + Kira Ryan Email: johnbuckleysryan@gmail.com

Address: 6 Heritage Lane, Rye, NY 10580 Phone: 917-318-6018

Applicant's Information (if different)

Name: Same Email: \_\_\_\_\_

Address: \_\_\_\_\_ Phone: \_\_\_\_\_

Authorized Agent's Information

Name: Michael Sirignano Email: michael@sirignano.us

Address: 892 Route 35 P.O Box 784 Phone: 914-736-5500  
Cross River, NY 10518

THE APPLICANT understands that any application is considered complete only when all information and documents required have been submitted and received by the Planning Board. The applicant further understands that the applicant is responsible for the payment of all application and review fees incurred by the Planning Board.

THE UNDERSIGNED WARRANTS the truth of all statements contained herein and in all supporting documents according to the best of his/her knowledge and belief, and authorizes visitation and inspection of the subject property by the Town of Lewisboro and its agents.

APPLICANT'S SIGNATURE

OWNER'S SIGNATURE

DATE

DATE

1/25/17  
1/25/17

Application No: 6-19WP  
Fee: \$255 Date: 1/30/19  
(pd)

**TOWN OF LEWISBORO  
WETLAND PERMIT APPLICATION**

79 Bouton Road, South Salem, NY 10590  
Phone: 914-763-5592  
Fax: 914-763-3637  
planning@lewisborogov.com

rec# 691224  
ch# 9871611206

**Project Information**

Project Address: 40 Old Pond Road

Sheet: 33.C Block: 1155 Lot(s): 22, 23, 24  
16, 44, 17

Project Description (identify the improvements proposed within the wetland/wetland buffer and the approximate amount of wetland/wetland buffer disturbance): Proposed home + site renovations

**Owner's Information**

Owner's Name: John + Kira Ryan Phone: 917-318-6018

Owner's Address: 6 Heritage Lane, Rye, NY 10580 Email: johnbuckleryan@gmail.com

**Applicant's Information** (if different)

Applicant's Name: Same Phone: \_\_\_\_\_

Applicant's Address: \_\_\_\_\_ Email: \_\_\_\_\_

**Authorized Agent's Information** (if applicable)

Agent's Name: Michael Sirignano Phone: 914-736-5500

Agent's Address: 892 Route 35 P.O. Box 784 Email: michael@sirignano.us  
Cross River, NY 10518

**To Be Completed By Owner/Applicant**

- What type of Wetland Permit is required? (see §217-5C and §217-5D of the Town Code)  
☐ Administrative ☒ Planning Board
- Is the project located within the NYCDEP Watershed? ☒ Yes ☐ No
- Total area of proposed disturbance: ☐ < 5,000 s.f. ☒ 5,000 s.f. - < 1 acre ☐ ≥ 1 acre
- Does the proposed action require any other permits/approvals from other agencies/departments? (Planning Board, Town Board, Zoning Board of Appeals, Building Department, Town Highway, ACARC, NYSDEC, NYCDEP, WCDOH, NYSDOT, etc): Identify all other permits/approvals required: PB, ZBA, Building

Note: Initially, all applications shall be submitted with a plan that illustrates the existing conditions and proposed improvements. Said plan must include a line which encircles the total area of proposed land disturbance and the approximate area of disturbance must be calculated (square feet). The Planning Board and/or Town Wetland Inspector may require additional materials, information, reports and plans, as determined necessary, to review and evaluate the proposed action. If the proposed action requires a Planning Board Wetland Permit, the application materials outlined under §217-7 of the Town Code must be submitted, unless waived by the Planning Board. The Planning Board may establish an initial escrow deposit to cover the cost of application/plan review and inspections conducted by the Town's consultants.

For administrative wetland permits, see attached Administrative Wetland Permit Fee Schedule.

X Owner/Applicant Signature: [Signature]

Date: 1/25/19

FILE

Application No: 4-19SW  
Fee: \$155 (PD) Date: 1/30/19

TOWN OF LEWISBORO  
STORMWATER PERMIT APPLICATION

79 Bouton Road, South Salem, NY 10590  
Phone: 914-763-5592  
Fax: 914-763-3637  
planning@lewisborogov.com

Net # 69/223  
CW # 4746

Project Information

Project Address: 40 Old Pond Road  
Sheet: 33.C Block: 1155 Lot(s): 22, 23, 24 16, 44, 17  
Project Description (describe overall project including all proposed land development activities):  
Proposed home & site renovations

FILE

Owner's Information

Owner's Name: John + Kira Ryan Phone: 917-318-6018  
Owner's Address: 6 Heritage Lane Email: johnbuckleyryan@gmail.com

Applicant's Information (if different)

Applicant's Name: Same Phone:  
Applicant's Address: Email:

Authorized Agent's Information

Agent's Name: Michael Sirignano Phone: 914-736-5500  
Agent's Address: 892 Rte. 35 P.O. Box 784  
Cross River, NY 10518 Email: michael@sirignano.us

To Be Completed By Owner/Applicant/Agent

- The approval authority is? (see §189-5 of the Town Code)  
☐ Town Engineer and SMO ☒ 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: PB, ZBA, Building

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.

X Owner/Applicant Signature: [Signature] Date: 1/25/19



## TOWN OF LEWISBORO PLANNING BOARD

79 Bouton Road, South Salem, NY 10590  
Email: [planning@lewisborogov.com](mailto:planning@lewisborogov.com)  
Tel: (914) 763-5592 Fax: (914) 763-3637

### Tax Payment Affidavit Requirement

*This form must accompany all applications to the Planning Board.*

*Under regulations adopted by the Town of Lewisboro, the Planning Board may not accept any application unless an affidavit from the Town of Lewisboro Receiver of Taxes is on file in the Planning Board office. The affidavit must show that all amounts due to the Town of Lewisboro as real estate taxes and special assessments on the total area encompassed by the application, together with all penalties and interest thereon, have been paid.*

*Under New York State law, the Westchester County Clerk may not accept any subdivision map for filing unless the same type of affidavit from the Town of Lewisboro Receiver of Taxes is submitted by the applicant at the time of filing.*

This form must be completed by the applicant and must accompany all applications to the Planning Board. Upon receipt, the Planning Board Secretary will send the form to the Receiver of Taxes for signature and notarization. If preferred, the applicant may directly obtain the signature of the Receiver of Taxes and notarization prior to submission.

#### To Be Completed by Applicant (Please type or print)

John Ryan  
Name of Applicant

Ryan Property  
Project Name

#### Property Description

Tax Block(s): 1 11155

Tax Lot(s): 22, 23, 24 16, 17  
244

Tax Sheet(s): 33.1 33C

#### Property Assessed to:

Name

Address

City

State

Zip

The undersigned, being duly sworn deposes and says that a search of the tax records in the office of the Receiver of Taxes, Town of Lewisboro, reveals that all amounts due to the Town of Lewisboro as real estate taxes and special assessments, together with all penalties and interest thereon, affecting the premises described below, have been paid.

Signature - Receiver of Taxes:

Date

Sworn to before me this

25<sup>th</sup> day of Jan, 2019

Janet L. Donohue  
Signature - Notary Public (affix stamp)

JANET L. DONOHUE  
NOTARY PUBLIC, STATE OF NEW YORK  
No. 01DO6259627  
Qualified in Westchester County  
Commission Expires April 16, 2020

TOWN OF LEWISBORO PLANNING BOARD

79 Bouton Road, South Salem, NY 10590  
Email: [planning@lewisborogov.com](mailto:planning@lewisborogov.com)  
Tel: (914) 763-5592  
Fax: (914) 763-3637

FILE

Affidavit of Ownership

State of : \_\_\_\_\_

County of: \_\_\_\_\_

\_\_\_\_\_ John Ryan \_\_\_\_\_, being duly sworn, deposes and says that he/she  
resides at \_\_\_\_\_ 40 Old Pond Road \_\_\_\_\_  
in the County of \_\_\_\_\_ Westchester \_\_\_\_\_, State of \_\_\_\_\_ New York \_\_\_\_\_  
and that he/she is (check one) ☒ the owner, or ☐ the \_\_\_\_\_  
of \_\_\_\_\_ Title \_\_\_\_\_  
\_\_\_\_\_ Name of corporation, partnership, or other legal entity \_\_\_\_\_

which is the owner, in fee of all that certain log, piece or parcel of land situated, lying and being in the  
Town of Lewisboro, New York, aforesaid and know and designated on the Tax Map in the Town of  
Lewisboro as:

Block \_\_\_\_\_ 1 \_\_\_\_\_, Lot \_\_\_\_\_ 22, 23, 24 \_\_\_\_\_, on Sheet \_\_\_\_\_ 33.1 \_\_\_\_\_.

X \_\_\_\_\_  
Owner's Signature

Sworn to before me this

25<sup>th</sup> day of \_\_\_\_\_ January \_\_\_\_\_, 2019 \_\_\_\_\_

\_\_\_\_\_ Robert D. Ryan \_\_\_\_\_  
Notary Public - affix stamp

ROBERT D. RYAN  
Notary Public, State of New York  
No. 4508167  
Qualified in Westchester County  
Commission Expires April 30, 2019

# Short Environmental Assessment Form

## Part 1 - Project Information

### Instructions for Completing

**Part 1 - Project Information.** The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

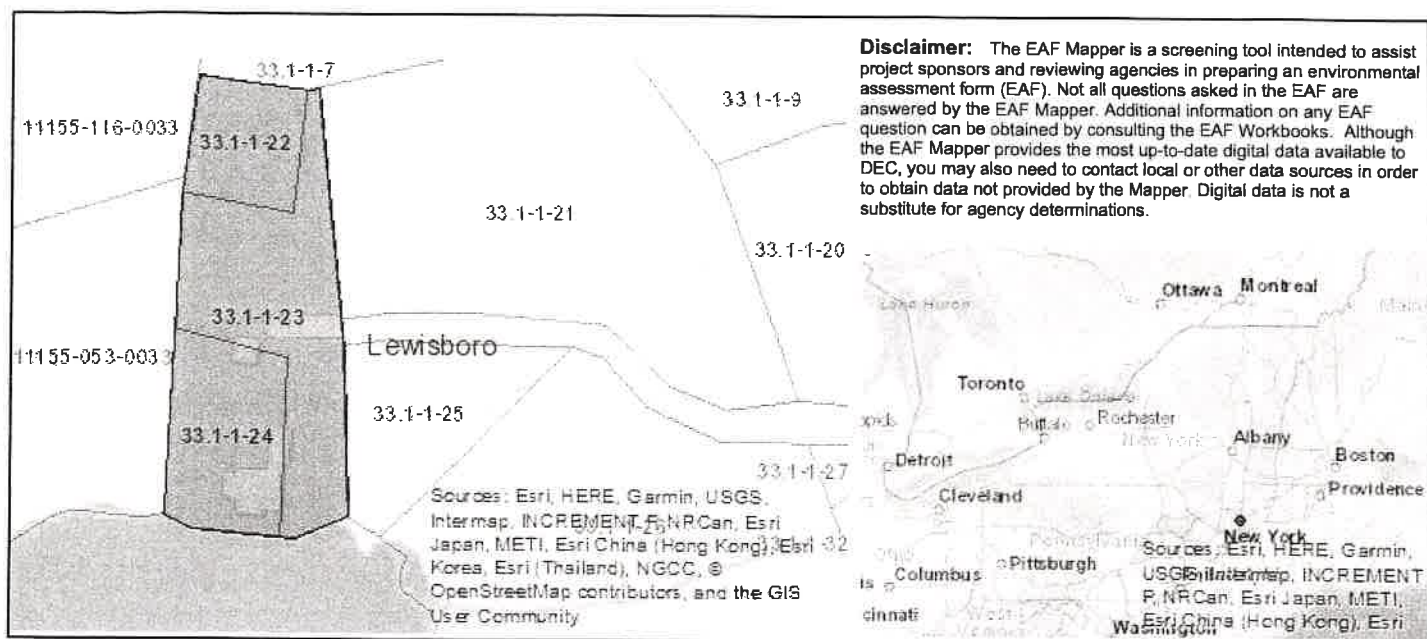
Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

<b>Part 1 - Project and Sponsor Information</b>			
Name of Action or Project: <i>Ryan Property</i>			
Project Location (describe, and attach a location map): <i>40 Old Pond Rd</i>			
Brief Description of Proposed Action: <i>Proposed home + site renovations</i>			
Name of Applicant or Sponsor: <i>John Ryan</i>		Telephone: <i>917 - 318-6018</i>	
		E-Mail: <i>johnbuckleyryan@gmail.com</i>	
Address: <i>6 Heritage Lane</i>			
City/PO: <i>Rye</i>		State: <i>NY</i>	Zip Code: <i>10580</i>
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation?			NO YES
If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.			<input checked="" type="checkbox"/> <input type="checkbox"/>
2. Does the proposed action require a permit, approval or funding from any other governmental Agency? If Yes, list agency(s) name and permit or approval:			NO YES
<i>Planning Bd - Site Plan, Wetland Permit, Stormwater Permit</i> <i>ZBA - Variance Bldg Dept. - Bldg Permit</i>			<input type="checkbox"/> <input checked="" type="checkbox"/>
3.a. Total acreage of the site of the proposed action?		<i>1.17</i> acres	
b. Total acreage to be physically disturbed?		<i>.48</i> acres	
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor?		<i>1.17</i> acres	
4. Check all land uses that occur on, adjoining and near the proposed action.			
<input type="checkbox"/> Urban <input type="checkbox"/> Rural (non-agriculture) <input type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Residential (suburban) <input checked="" type="checkbox"/> Forest <input type="checkbox"/> Agriculture <input checked="" type="checkbox"/> Aquatic <input type="checkbox"/> Other (specify): _____ <input type="checkbox"/> Parkland			



5. Is the proposed action, a. A permitted use under the zoning regulations?	NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>
b. Consistent with the adopted comprehensive plan?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/>	
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area? If Yes, identify: _____	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>	
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>	
b. Are public transportation service(s) available at or near the site of the proposed action?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
c. Are any pedestrian accommodations or bicycle routes available on or near site of the proposed action?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
9. Does the proposed action meet or exceed the state energy code requirements? If the proposed action will exceed requirements, describe design features and technologies: _____	NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/>	
10. Will the proposed action connect to an existing public/private water supply? If No, describe method for providing potable water: _____	NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/>	
11. Will the proposed action connect to existing wastewater utilities? If No, describe method for providing wastewater treatment: _____	NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/>	
12. a. Does the site contain a structure that is listed on either the State or National Register of Historic Places?	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>	
b. Is the proposed action located in an archeological sensitive area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?	NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/>	
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody? If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: _____ <i>Wetland buffer impact only (+/- .41 Ac)</i>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply: <input checked="" type="checkbox"/> Shoreline <input checked="" type="checkbox"/> Forest <input type="checkbox"/> Agricultural/grasslands <input type="checkbox"/> Early mid-successional <input type="checkbox"/> Wetland <input type="checkbox"/> Urban <input checked="" type="checkbox"/> Suburban			
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered?	NO <input checked="" type="checkbox"/>	YES <input type="checkbox"/>	
16. Is the project site located in the 100 year flood plain?	NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/>	
17. Will the proposed action create storm water discharge, either from point or non-point sources? If Yes, a. Will storm water discharges flow to adjacent properties? <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES	NO <input type="checkbox"/>	YES <input checked="" type="checkbox"/>	
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)? If Yes, briefly describe: _____ <i>Onsite stormwater to be collected in a series of roof leaders, catch basins, drainage pipes, infiltrators, etc. to be detailed by project stormwater engineer</i>	<input type="checkbox"/> NO <input checked="" type="checkbox"/> YES		

18. Does the proposed action include construction or other activities that result in the impoundment of water or other liquids (e.g. retention pond, waste lagoon, dam)? If Yes, explain purpose and size: _____ _____ _____	NO  <input checked="checked" type="checkbox"/>	YES  <input type="checkbox"/>
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? If Yes, describe: _____ _____ _____	NO  <input checked="checked" type="checkbox"/>	YES  <input type="checkbox"/>
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? If Yes, describe: _____ _____ _____	NO  <input checked="checked" type="checkbox"/>	YES  <input type="checkbox"/>
<b>I AFFIRM THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE</b> Applicant/sponsor name: <u>Kira/John Ryan</u> Date: _____ Signature: _____		

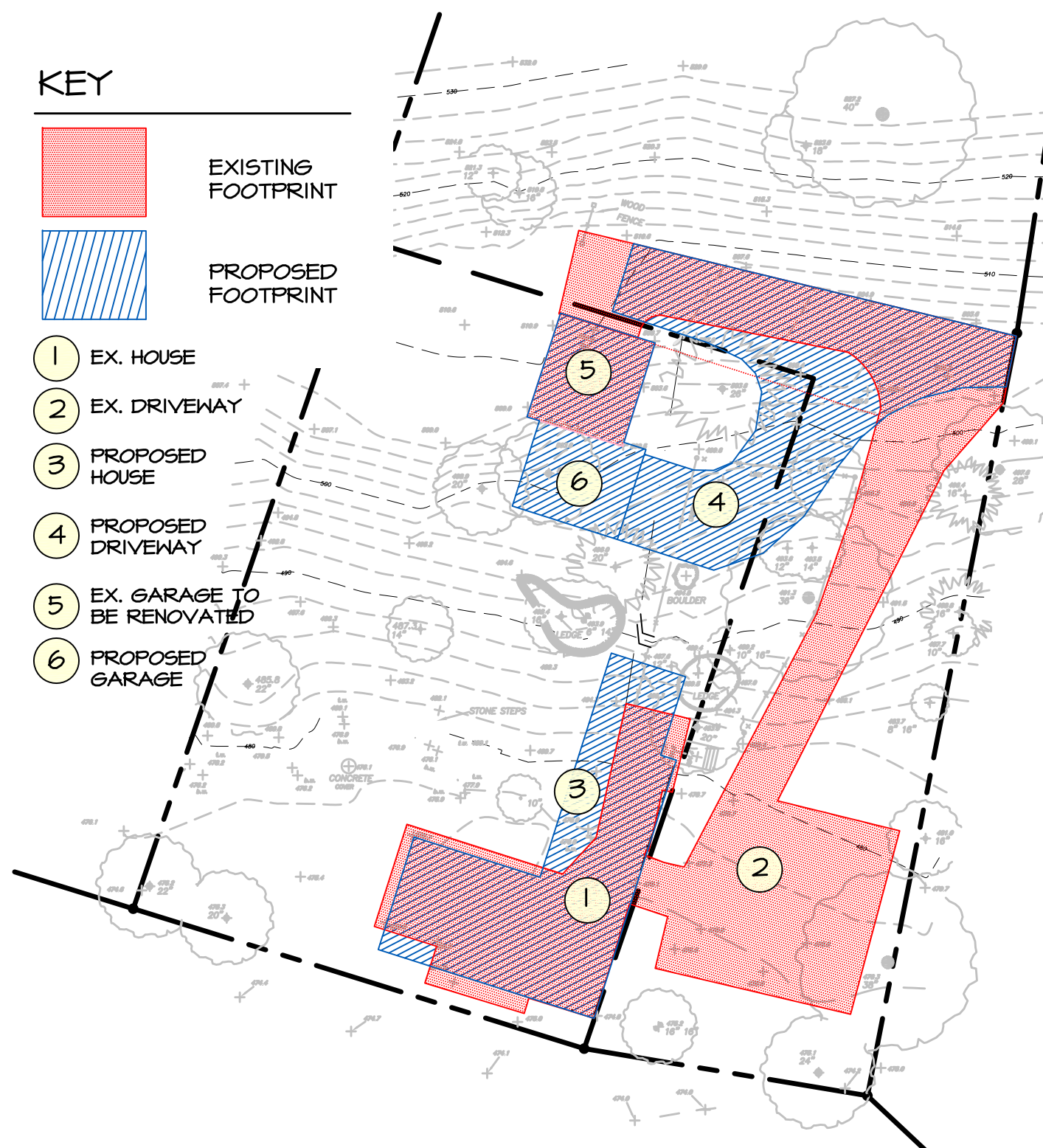


Part 1 / Question 7 [Critical Environmental Area]	No
Part 1 / Question 12a [National Register of Historic Places]	No
Part 1 / Question 12b [Archeological Sites]	Yes
Part 1 / Question 13a [Wetlands or Other Regulated Waterbodies]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
Part 1 / Question 15 [Threatened or Endangered Animal]	No
Part 1 / Question 16 [100 Year Flood Plain]	Yes
Part 1 / Question 20 [Remediation Site]	No

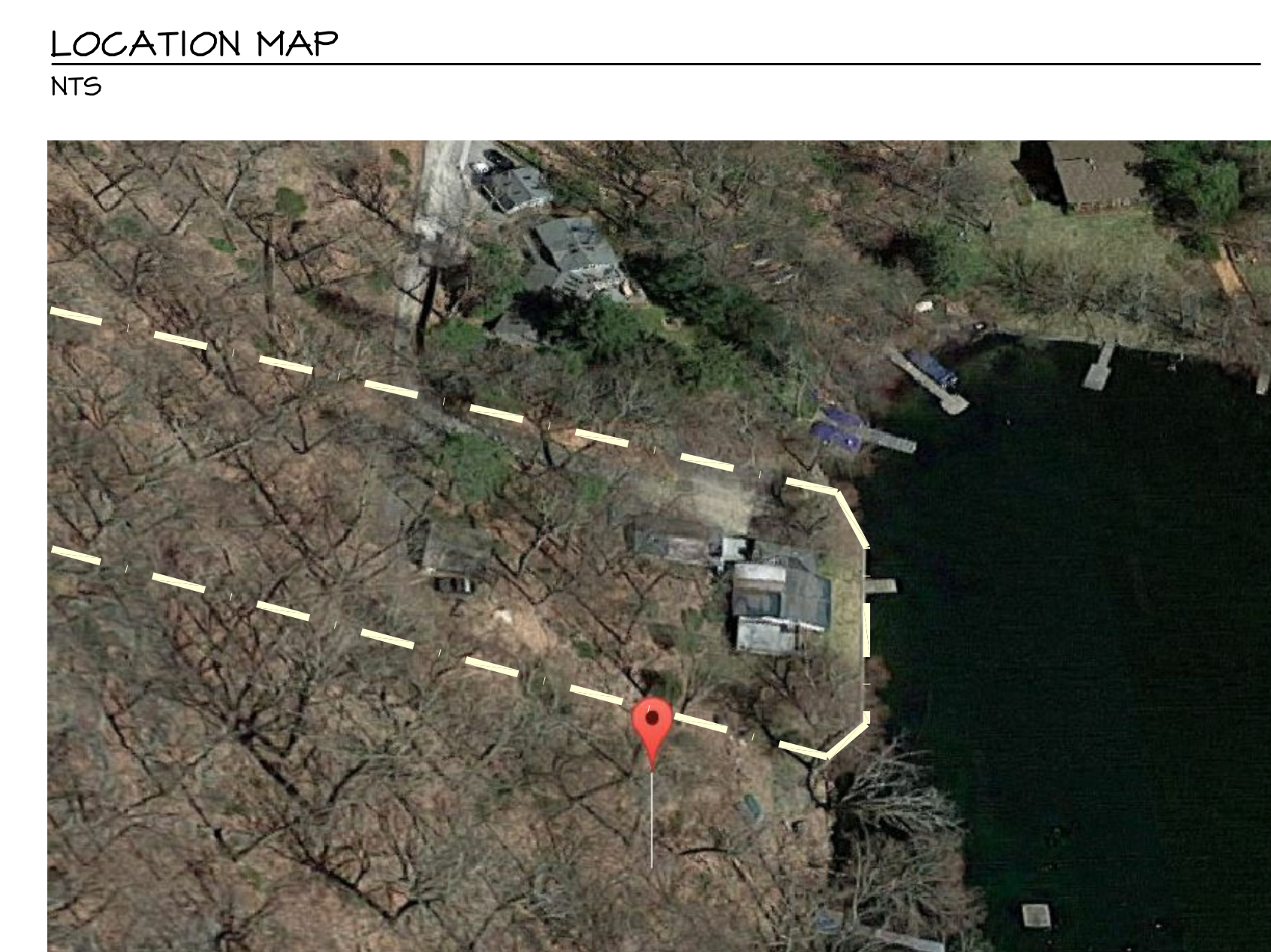
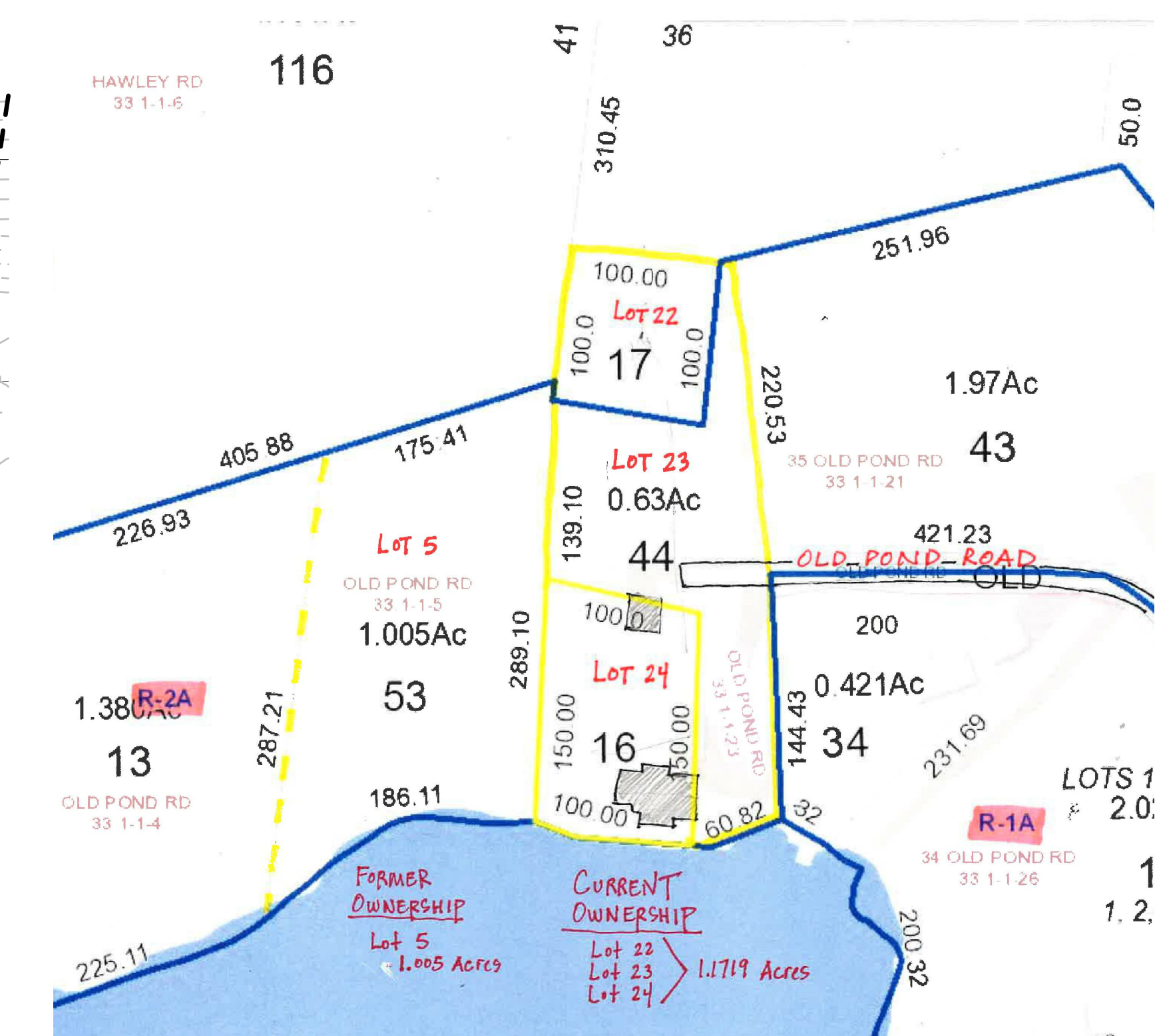




SLOPE ANALYSIS MAP  
1"= 20'



COMPOSITE OF EXISTING/ PROPOSED FOOTPRINT  
NTS



BIRDS EYE AERIAL - 40 OLD POND ROAD  
NTS

### GENERAL NOTES

1. THESE PLANS ARE PREPARED FOR REVIEW BY THE TOWN OF LEWISBORO PLANNING BOARD FOR A SITE DEVELOPMENT PLAN APPLICATION FOR PROPOSED RENOVATIONS TO THE EXISTING RESIDENCE AND SITE FEATURES.
2. PROPERTY OWNERS, CONTACTS AND APPLICANTS FOR THIS APPLICATION ARE JOHN AND KIRA RYAN, 40 OLD POND ROAD, LEWISBORO, NEW YORK.
3. SURVEY INFORMATION FOR THE PROJECT HAS BEEN PREPARED BY LINK SURVEYORS, 21 CLARK PLACE, SUITE I-B, MAHOPAC, NEW YORK.
4. SITE PLANS HAVE BEEN PREPARED BY J.D. BARRETT & ASSOCIATES, LLC., EASTON, CT, LANDSCAPE ARCHITECTS AND ENVIRONMENTAL PLANNERS.
5. ARCHITECTURAL PLANS HAVE BEEN PREPARED BY TEO SIGUENZA ARCHITECTS, 460 OLD POST ROAD, BEDFORD, NEW YORK.

### DRAWING INDEX

SH. 1 OF 3	SITE INFORMATION
SH. 2 OF 3	SITE PLAN
SH. 3 OF 3	EROSION CONTROL PLAN

### SITE INFORMATION PLAN

Prepared For :  
JOHN AND KIRA RYAN  
40 OLD POND ROAD  
LEWISBORO, NEW YORK  
SEC. 33 C, Block 1155, Lots 16, 44 & 17  
Area: 1.1719 acres

Prepared By :  
Landscape Architect/Environmental Planner :  
J.D. BARRETT & ASSOCIATES, LLC  
109 SPORT HILL ROAD  
EASTON, CONNECTICUT 06612  
Tel: 203.372.5805 Fax 203.372.0499

Architect :  
TEO SIGUENZA ARCHITECTS  
460 OLD POST ROAD  
BEDFORD, NEW YORK, 10506  
TEL: 914.234.6284 FAX 914.234.0619

Attorney  
MICHAEL FULLER SIRIGNANO  
OLD POST ROAD PROFESSIONAL BUILDING  
842 ROUTE 35, PO BOX 184  
CROSS RIVER, NY 10518  
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Civil Engineer:  
CAMPBELL ENGINEERING, LLP  
160 KING STREET  
CHAPPAQUA, NEW YORK 10514  
Tel: 914.238.3555

Surveyor :  
LINK SURVEYORS, P.C.  
21 CLARK PLACE, SUITE I-B  
MAHOPAC, NEW YORK 10541  
TEL: 845.628.5851 FAX 845.621.0013

Scale : As shown  
Date: January 28, 2018



EXISTING CONDITIONS MAP  
1"= 20'



1 VIEW OF EXISTING GARAGE AND DRIVEWAY  
PARKING AREA AT NORTH OF PROPERTY.  
EXISTING SEPTIC AREA IS BEHIND GARAGE.



2 VIEW SOUTH TOWARD EXISTING HOUSE AND LAKE.  
EXISTING DRIVEWAY IS AT LEFT OF PHOTO. HOME  
IS IN SEVERE STATE OF DISREPAIR.



3 VIEW WEST TOWARD EXISTING HOUSE AND  
GARAGE FROM DRIVEWAY. BOTH STRUCTURES TO  
BE RENOVATED. MAJORITY OF DRIVEWAY TO BE  
REMOVED.



4 VIEW WEST TOWARD EXISTING HOUSE TO BE  
RENOVATED. DOMESTIC WELL FOR PROPERTY IS  
POSITIONED UNDER DRIVEWAY.



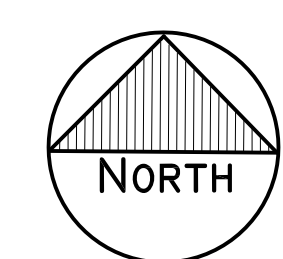
5 VIEW TOWARD BACK OF EXISTING HOUSE THAT  
FRONTS ON LAKE. NOTE FLAT YARD AREAS  
ADJACENT TO HOUSE.



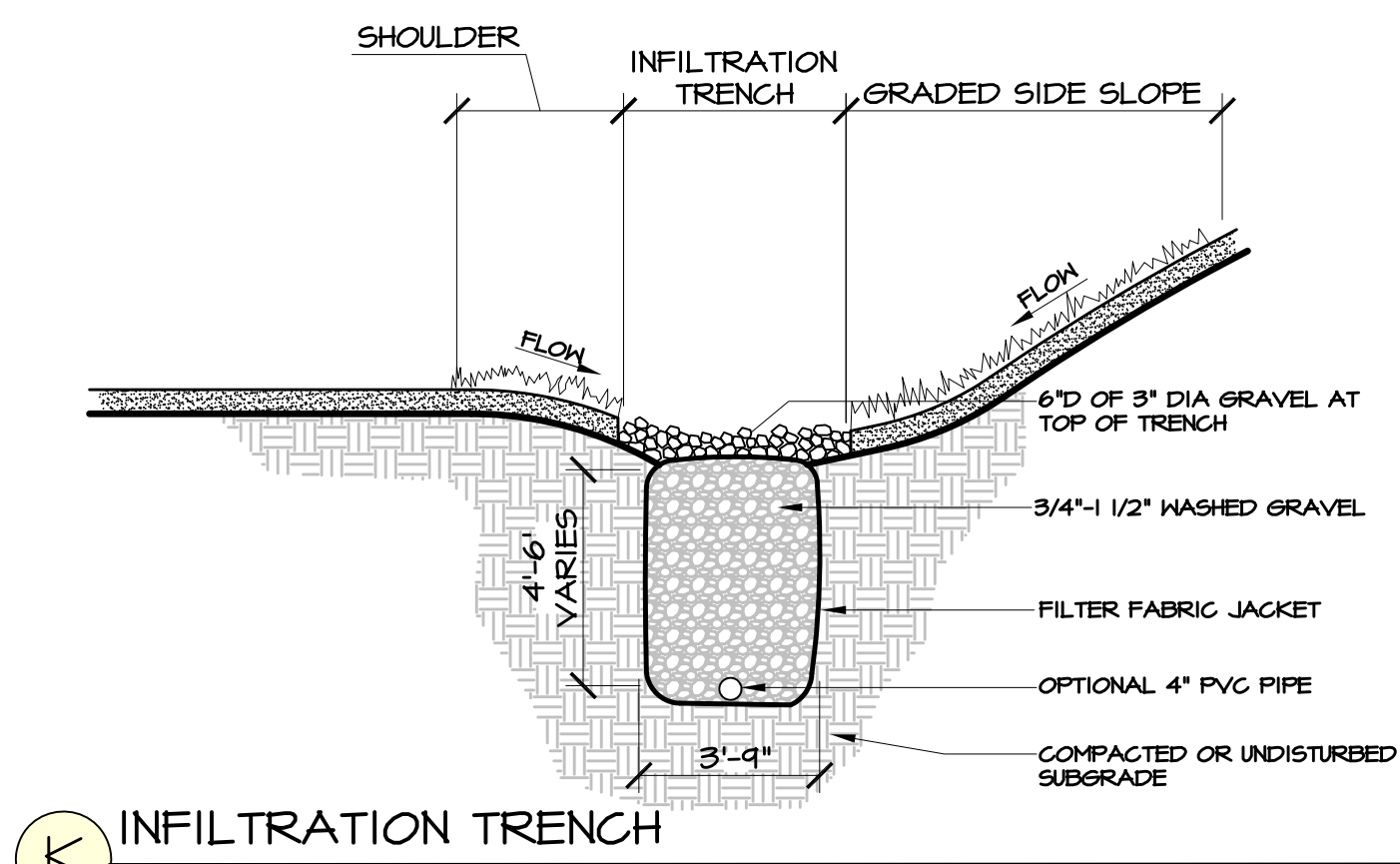
6 VIEW OF EAST OF EXISTING HOUSE TO BE  
RENOVATED. PROPERTY ENJOYS APPROXIMATELY  
160 FT OF LAKE FRONTAGE.



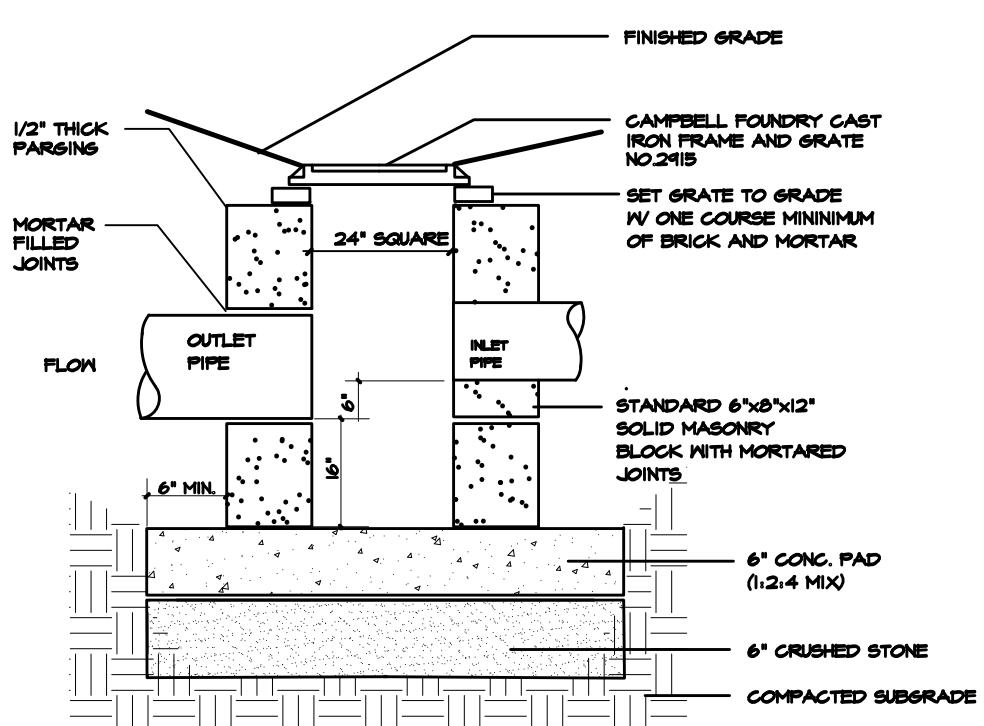
7 VIEW SOUTH TOWARD EXISTING HOUSE AND  
DRIVEWAY AT LEFT. FENCING TO BE REMOVED.  
LARGE LEANING OAK AT LEFT PHOTO TO BE  
REMOVED, ALONG WITH SMALLER TREES.







**K** INFILTRATION TRENCH  
Scale: nts



**Q** CATCH BASIN  
Scale: nts

ZONING CONFORMANCE TABLE			
REGULATION - R2A ZONE	REQUIRED	EXISTING	PROPOSED
MINIMUM LOT AREA	2 ACRES	1.1719 AC	1.1719 AC
WIDTH/CIRCLE (FEET)	200'	141'-4"	141'-4"
MINIMUM YARD (FEET)			
FRONT:	50'	52'-5"	53'-4"
SIDE	50'	6.7'	1'-10"
REAR	50'	51.9' (Residence) 44.5' (Garage)	51.9' (Residence) 44.5' (Garage) 25' (Pool Deck)
MAXIMUM BUILDING HEIGHT			
STORIES	2 1/2	2	2 1/2
FEET	35'	< 35'	< 35'
MAXIMUM BUILDING COVERAGE (PERCENTAGE OF LOT AREA)	9%	4.6%	5.2%

COVERAGE CHART				
	EX. CONDITION	PROP. CONDITION	NET CHANGE	NET IMPERVIOUS CHANGE
RESIDENCE (OVERHANGS)	1540 SF	2124 SF	+ 526 SF	+ 526 SF
ACCESSORY STRUCTURE (GARAGE/ STUDIO)	286 SF	0 SF	- 286 SF	- 286 SF
	480 SF	422 SF	+ 442 SF	+ 442 SF
DRIVEWAY	4416 SF	2631 SF	- 1774 SF	- 1774 SF
POOL	0 SF	512 SF	+ 512 SF	+ 512 SF
DECK	0 SF	960 SF	+ 960 SF	0 SF
WALKWAYS/ STEPS	130 SF	360 SF	+ 230 SF	+ 230 SF
STONE PATIO	401 SF	0 SF	- 401 SF	- 401 SF
STONE WALLS	180 SF	400 SF	+ 220 SF	+ 220 SF
TOTAL	7,491 SF	7,415 SF	+ 424 SF	+ 536 SF

- LEGEND**
- A REMODELED AND EXPANDED RESIDENCE
  - B PROPOSED GARAGE WITH DECK ABOVE
  - C EXISTING GARAGE TO BE CONVERTED TO A STUDIO
  - D CONNECTION BETWEEN DRIVEWAY AND RESIDENCE TO INCLUDE SERIES OF STEPS AND LANDINGS AS WELL AS UPPER LEVEL BRIDGE (SKY BRIDGE)
  - E PROPOSED REALIGNED ASPHALT DRIVEWAY
  - F ELEVATED POOL DECK WITH SMALL BOAT STORAGE BELOW
  - G PROPOSED 16' X 32' CONCRETE POOL
  - H PROPOSED OUTDOOR KITCHEN
  - I EXISTING DRIVEWAY TO BE REMOVED
  - J PROPOSED NEW SEPTIC TANK, PUMP CHAMBER AND OVERFLOW TANK
  - K PROPOSED INFILTRATION TRENCH/ LEVEL SPREADER
  - L PROPOSED STORMWATER MANAGEMENT AREA
  - M BOAT STORAGE UNDERNEATH DECK
  - N EXISTING WALL TO BE REBUILT
  - O PROPOSED MITIGATION PLANTING AREAS/ BUFFER HEDGEROW
  - P PROPOSED STEPPING STONES
  - Q PROPOSED DRAINAGE SYSTEM
  - R EXISTING DOCK TOP BE REBUILT
  - S APPROXIMATE LOCATION OF 2" SEPTIC FORCE MAIN
  - T EXISTING DOMESTIC WELL
  - U GRAVEL INFILTRATION TO CURTAIN DRAIN
  - V PROPOSED STONE WALL
  - W LAKE SIDE PLANTINGS REPLACE GRASS
  - X EXISTING SEPTIC DRYWELL

**TREE REMOVAL SUMMARY** X

ID	DBH	Species
1	14"	OAK
2	16"	MAPLE
3	6"	OAK
4	14"	MAPLE
5	12"	OAK
6	20"	OAK
7	10"	MAPLE
8	36"	OAK (LEANING)
9	12"	OAK
10	14"	OAK
11	16"	MAPLE
12	20"	MAPLE
13	22"	OAK
14	20"	SPRUCE

**SITE PLAN**

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LEWISBORO, NEW YORK  
SEC. 33 C, Block 11155, Lots 16, 44 & 17  
Area: 1.1719 acres

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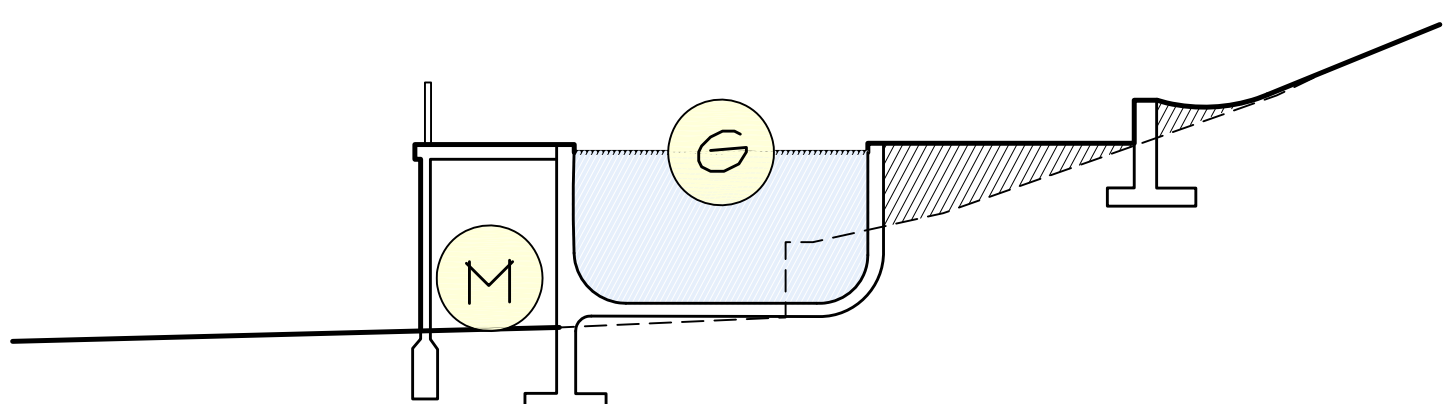
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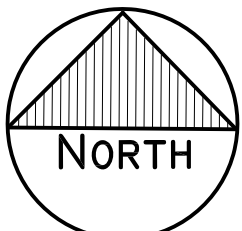
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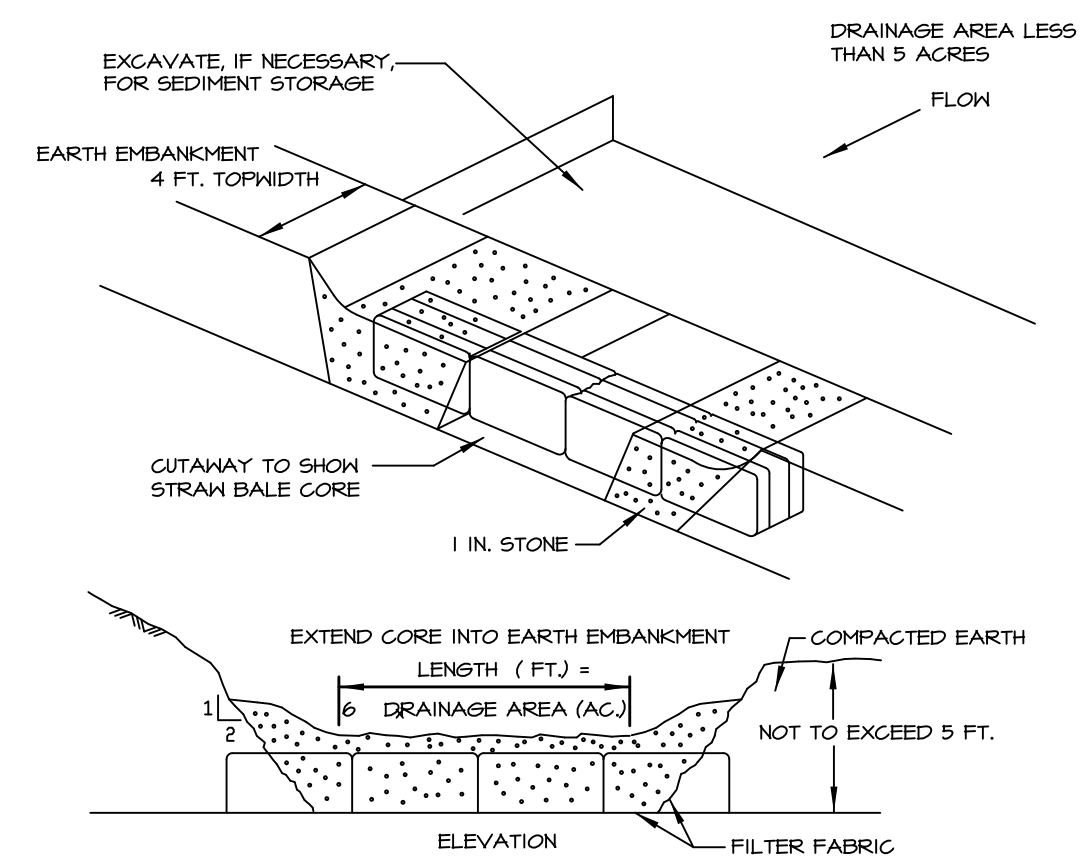
Section A-a  
Scale: 1"=10'



POOL AND DECK SECTION  
Scale: 1"=10'







- INSTALLATION NOTES**
1. AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED AS WELL.
  2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER VEGETATION AS WELL AS COVER SIZED STONES, ROCKS, ORGANIC MATERIAL, AND OTHER QUESTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVELING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
  3. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT DRAIN.
  4. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
  5. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER THAT EROSION AND WATER POLLUTION IS MINIMIZED.
  6. THE STRUCTURE SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
  7. ALL CUT AND FILL SLOPES SHALL BE 1 : 2 OR FLATTER.

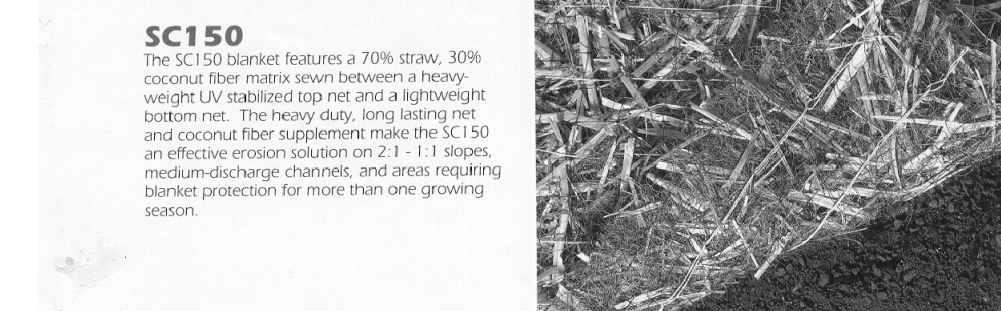
## TEMPORARY SEDIMENT SUMP

SCALE: NTS

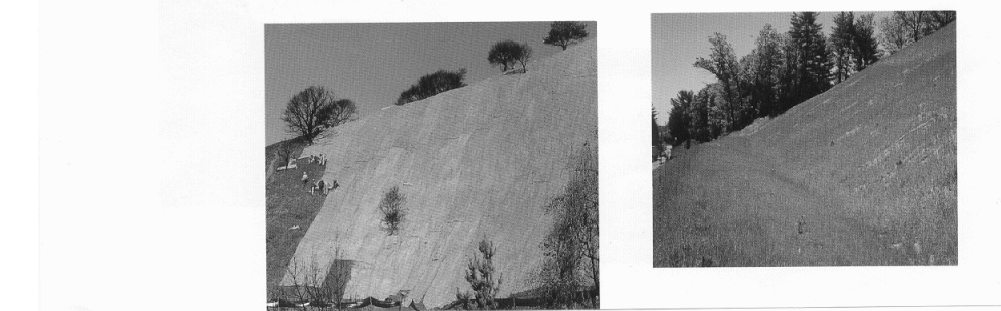
## BLANKETS

### North American Green® Straw/Coconut Fiber Erosion Control Blankets

Developed for severe slopes, erosion control blankets, and applications requiring extended protection during vegetation establishment. The North American Green® Straw/Coconut Fiber Erosion Control Blanket consists of a heavy-duty, long-lasting net and coconut fiber substrate made from SC150 an effective erosion control on 2 : 1 - 1 : 1 slopes, medium to steep slopes, and areas requiring extended protection for more than one growing season.

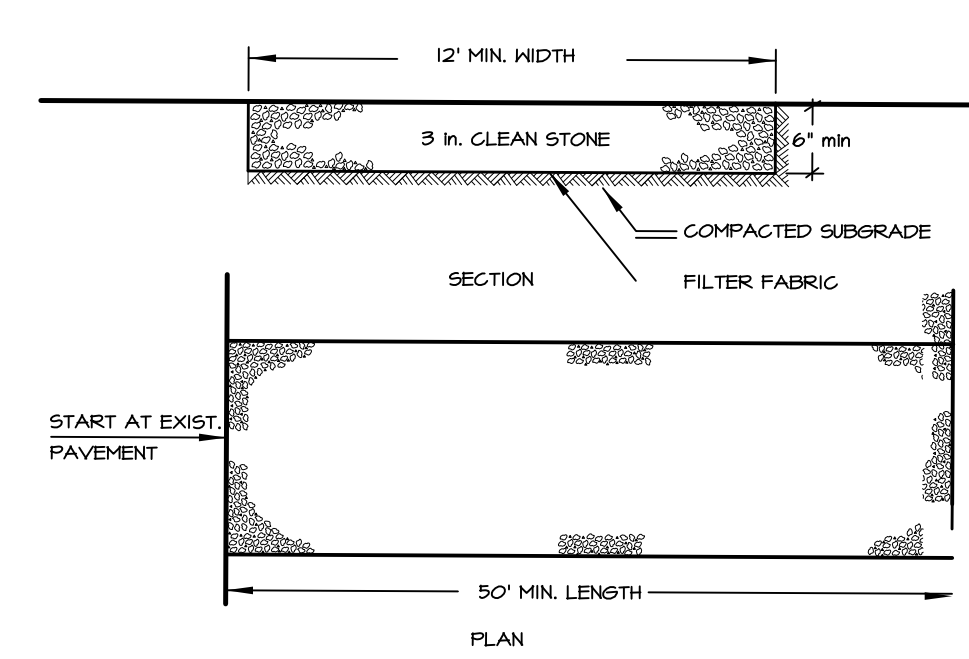


SC150 Specifications:	
Material Composition:	35% straw, 65% coconut fiber
Weight:	15 lbs/sq yd (1.1 kg/sq m)
Coverage:	15 sq yd/sq (10 sq m/sq ft)
Length:	100 ft (30.5 m)
Width:	4 ft (1.2 m)
Area:	400 sq ft (37 sq m)



## SLOPE PROTECTION MAT

SCALE: NTS

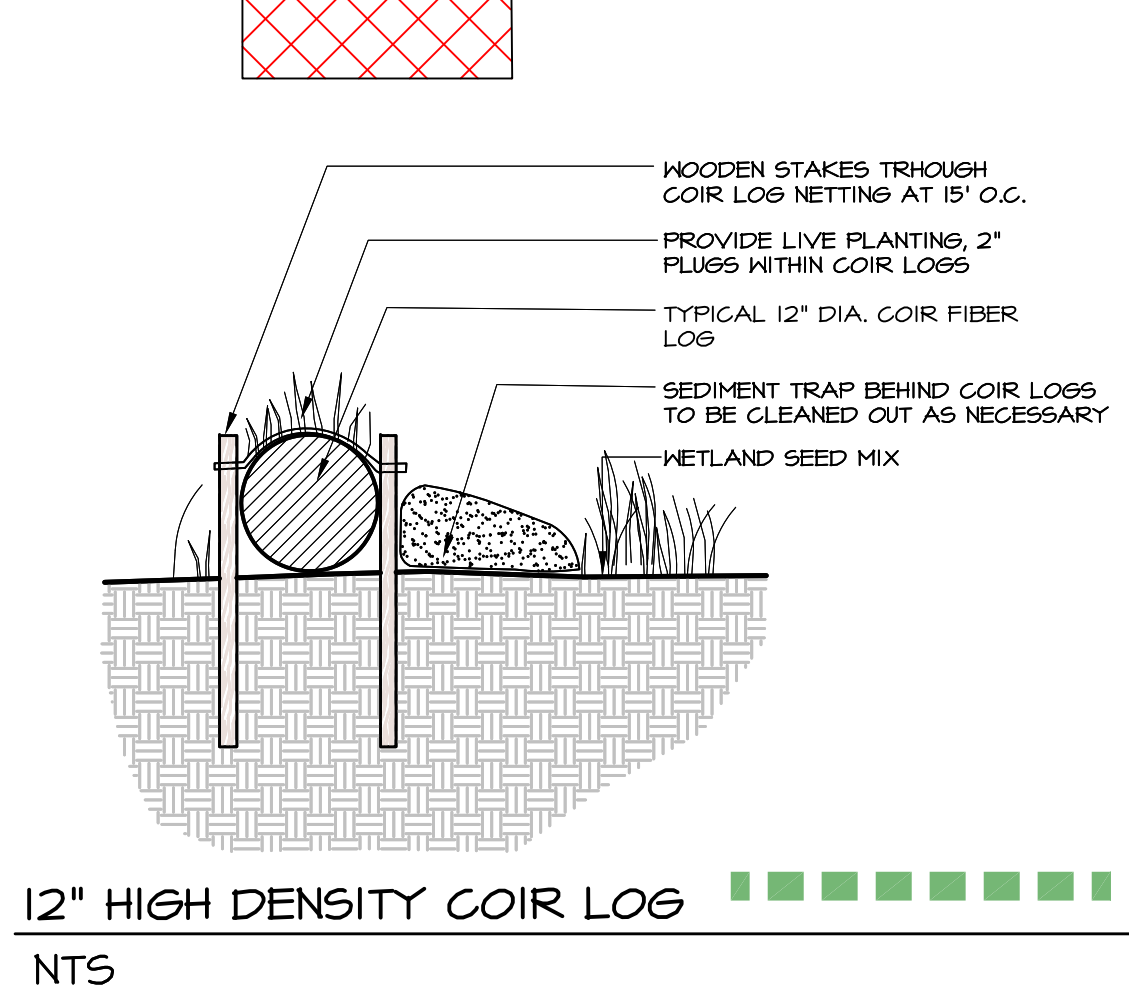


## INSTALLATION NOTES

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. WASHINGS - 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.

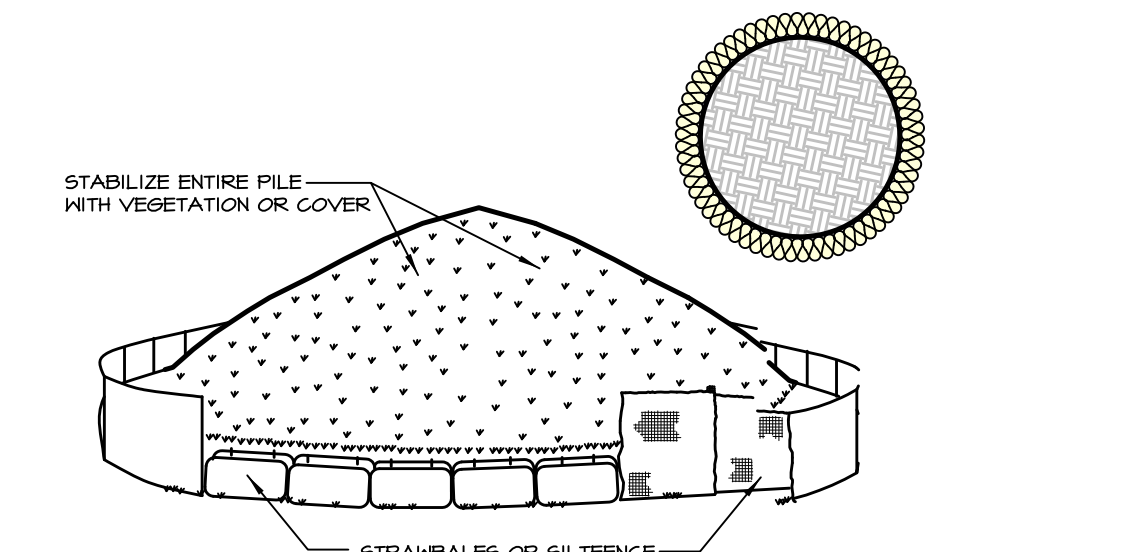
## STABILIZED CONSTRUCTION ENTRANCE/ ANTI-TRACKING PAD

SCALE: NTS



## 12" HIGH DENSITY COIR LOG

NTS

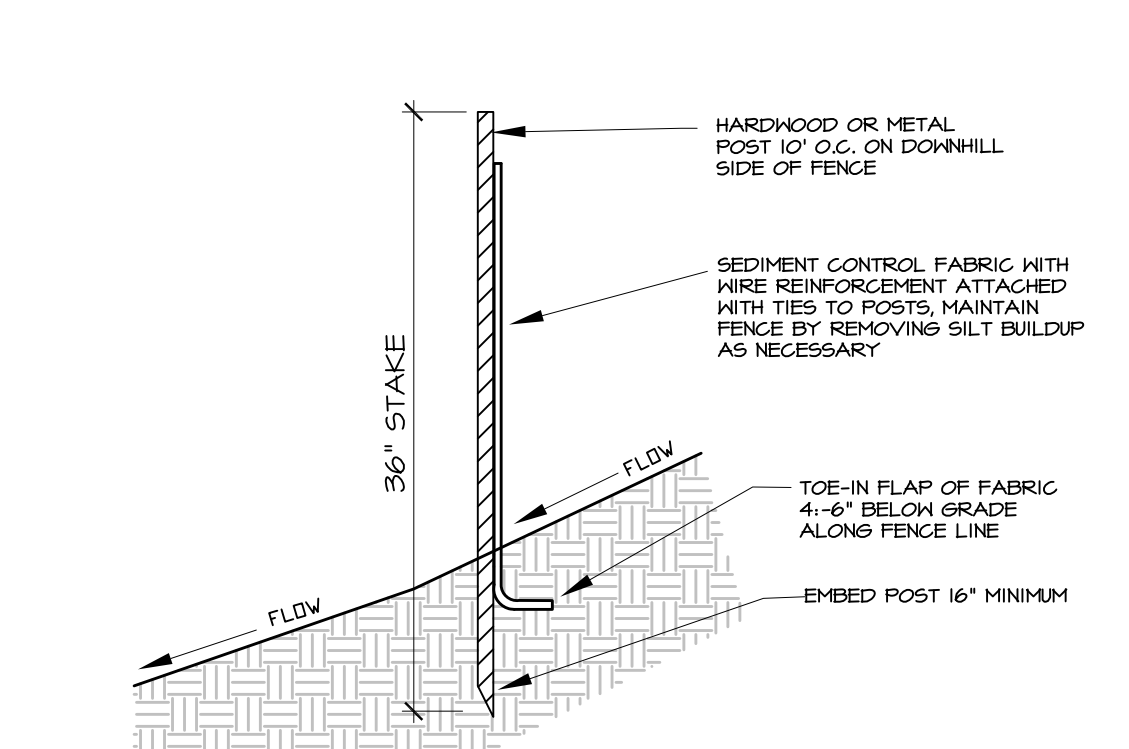


## INSTALLATION NOTES

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 SILT FENCE.

## TOPSOIL STOCKPILE

SCALE: NTS



## INSTALLATION NOTES

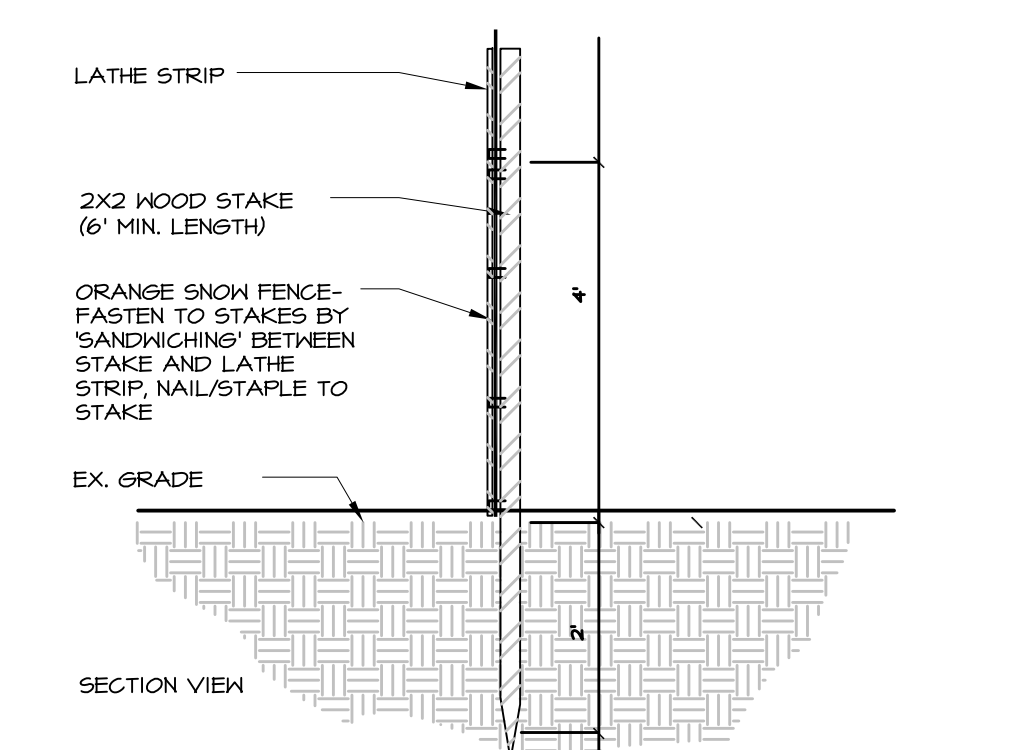
1. WIRE REINFORCED SILT FENCING FABRIC TO BE FASTENED SECURELY TO POSTS WITH WIRES OR STAPLES. POSTS SHALL BE STEEL, EITHER "1" OR "1 1/2" SHAPE TYPE OR HARDWOOD.
2. WHEN TWO SECTIONS OF FABRIC CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
3. PREFABRICATED UNITS SHALL BE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

## SILT FENCE

SCALE: NTS

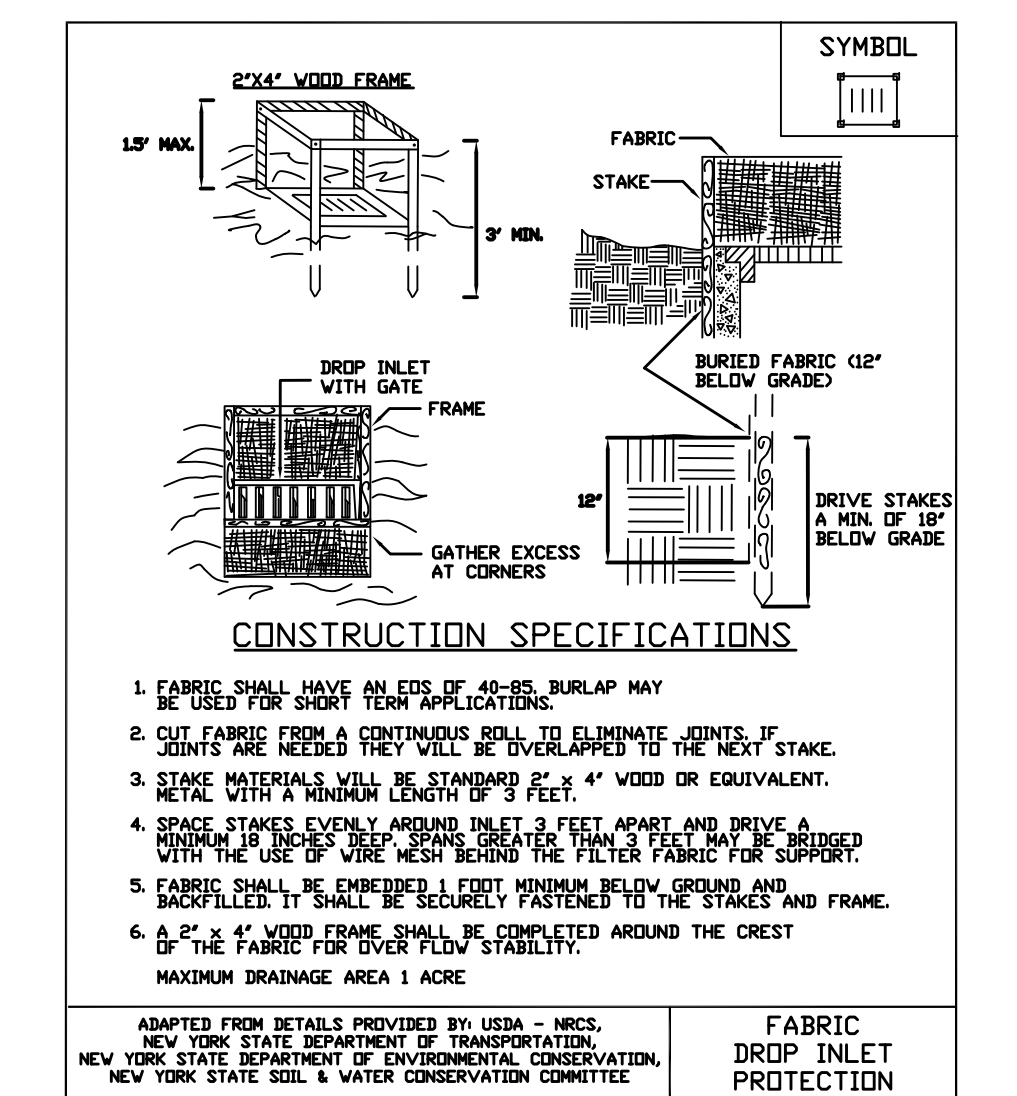
## EROSION CONTROL NOTES

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 ORDERED 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 GRADINGS AND STORED ON SITE SHALL BE LIMED, 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 SEASONALITY OF THE ESTABLISHMENT OF A TEMPORARY COVER, DISTURBED AREAS SHALL BE LIMED AND FERTILIZED PRIOR TO SEEDING. FINAL STABILIZATION SHALL BE APPLIED UPON COMPLETION OF FINAL GRADING AND SOIL RESTORATION WITHIN 7 DAYS.
6. ALL DISTURBED AREAS WITHIN 500 FEET OF AN INHABITED DWELLING SHALL BE MULCHED 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 IF UNTIL VEGETATIVE STABILIZATION OCCURS ON ALL DISTURBED AREAS.



## ORANGE SAFETY FENCE

SCALE: NTS



## INLET PROTECTION

NTS

## EROSION CONTROL PLAN

Prepared For :  
JOHN AND KIRA RYAN  
40 OLD POND ROAD  
LEWISBORO, NEW YORK

SEC. 33 C, Block 11155, Lots 16, 44 & 17  
Area: 1.1714 acres

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TOPOGRAPHIC SURVEY  
OF A PORTION OF PROPERTY  
SITUATE IN THE  
**TOWN OF LEWISBORO**  
WESTCHESTER COUNTY  
NEW YORK

SCALE: 1"= 20'

SURVEYED: MARCH 13, 2017

AMENDED TO SHOW TOPOGRAPHIC INFORMATION: MARCH 29, 2017

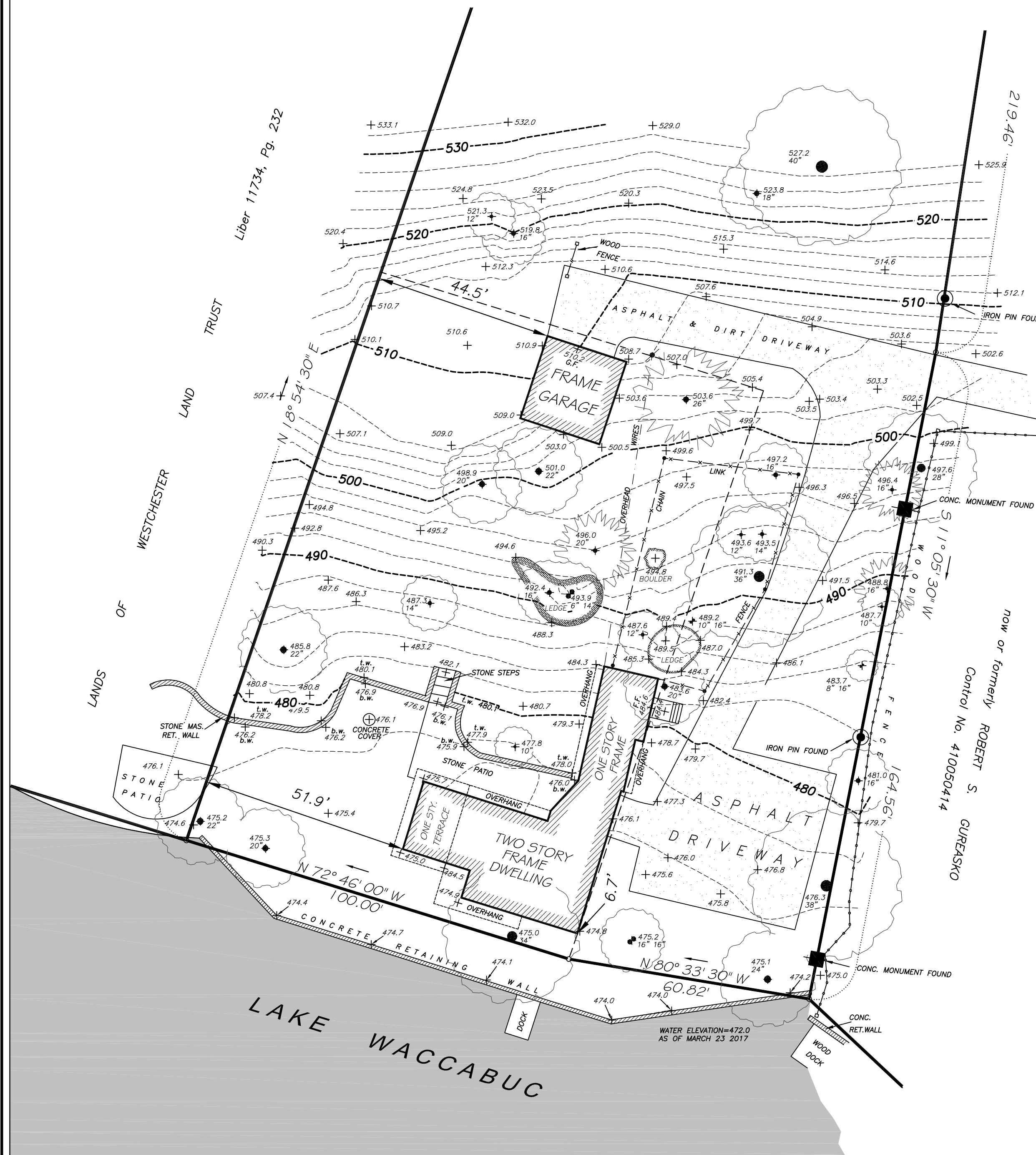
- PREMISES ARE DESIGNATED ON THE TAX MAPS FOR THE TOWN OF LEWISBORO  
SECTION: 33.1 BLOCK: 1 LOTS: 22, 23 & 24  
STREET ADDRESS: 40 OLD POND ROAD  
PROPERTY AREA: 51,048 Sq. Ft. / 1.1719 Acres
- THE PREMISES SHOWN HEREON BEING PROPERTY DESCRIBED TITLE REPORT PREPARED BY COURT STREET ABSTRACT, INC., UNDER TITLE REPORT No. CSA17- 07018-W.
- THE ELEVATIONS SHOWN HEREON ARE APPROXIMATELY IN THE "NAVD 88", (NORTH AMERICAN VERTICAL DATUM 1988).
- THE OFFSETS SHOWN HEREON ARE NOT INTENDED TO ESTABLISH PROPERTY LINES FOR THE ERECTION OF FENCES, STRUCTURES OR ANY OTHER IMPROVEMENTS.
- ENCROACHMENTS BELOW GRADE AND/OR SUBSURFACE FEATURES, IF ANY, NOT LOCATED OR SHOWN HEREON.
- UNAUTHORIZED ALTERATION OR ADDITION TO A SURVEY MAP BEARING A LICENSED LAND SURVEYOR'S SEAL IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAWS.
- THE INFORMATION DEPICTED HEREON IS BASED UPON AN ACTUAL FIELD SURVEY AND IS AN OPINION BASED UPON SAID SURVEY. VARIATIONS IN OFFSETS FROM THAT OF THE OTHERS CAN AND MAY EXIST.
- ONLY COPIES FROM THE ORIGINAL OF THIS SURVEY MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S SEAL SHALL BE CONSIDERED TO BE TRUE VALID COPIES.
- THIS MAP WAS PREPARED FROM AN ACTUAL FIELD SURVEY CONDUCTED ON THE DATE SHOWN AND THAT SAID SURVEY WAS PERFORMED IN ACCORDANCE WITH THE EXISTING " CODE OF PRACTICE FOR LAND SURVEYS " ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS.

PREPARED FOR: JOHN B. RYAN &amp; KIRA W. RYAN

**Link**  
**Land Surveyors P.C.**  
21 Clark Place, Suite 1-B Phone 845-628-5857  
Mahopac N.Y. 10541 Fax 845-621-0013

**ERIK J. LINK**  
NEW YORK STATE LICENSED  
LAND SURVEYOR NO. 050542

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United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for **Westchester County, New York**

**40 Old Pond Road, Lewisboro**



January 28, 2019



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# Soil Map

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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report Soil Map








MAP LEGEND


- Area of Interest (AOI)


Area of Interest (AOI)
- Soils


Soil Map Unit Polygons


Soil Map Unit Lines

Soil Map Unit Points
- Special Point Features


Blowout


Borrow Pit


Clay Spot


Closed Depression


Gravel Pit

Gravelly Spot


Landfill

Lava Flow


Marsh or swamp


Mine or Quarry


Miscellaneous Water


Perennial Water


Rock Outcrop


Saline Spot


Sandy Spot


Severely Eroded Spot


Sinkhole


Slide or Slip


Sodic Spot
- Water Features


Streams and Canals
- Transportation


Railroads

Interstate Highways

US Routes

Major Roads

Local Roads
- Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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

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

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

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

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

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

Soil Survey Area: Westchester County, New York  
Survey Area Data: Version 14, Sep 3, 2018

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

Date(s) aerial images were photographed: Dec 31, 2009—Oct 5, 2016

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres In AOI	Percent of AOI
CsD	Chatfield-Charlton complex, 15 to 35 percent slopes, very rocky	0.7	64.7%
HrF	Hollis-Rock outcrop complex, 35 to 60 percent slopes	0.4	35.3%
<b>Totals for Area of Interest</b>		<b>1.1</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the

## Custom Soil Resource Report

development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.



## Westchester County, New York

### CsD—Chatfield-Charlton complex, 15 to 35 percent slopes, very rocky

#### Map Unit Setting

*National map unit symbol:* 2w69k  
*Elevation:* 0 to 1,290 feet  
*Mean annual precipitation:* 36 to 71 inches  
*Mean annual air temperature:* 39 to 55 degrees F  
*Frost-free period:* 140 to 240 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Chatfield, very stony, and similar soils:* 45 percent  
*Charlton, very stony, and similar soils:* 35 percent  
*Minor components:* 20 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Chatfield, Very Stony

##### Setting

*Landform:* Hills, ridges  
*Landform position (two-dimensional):* Summit, shoulder, backslope  
*Landform position (three-dimensional):* Crest, side slope, nose slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear, convex  
*Parent material:* Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

##### Typical profile

*Oi - 0 to 1 inches:* slightly decomposed plant material  
*A - 1 to 2 inches:* fine sandy loam  
*Bw - 2 to 30 inches:* gravelly fine sandy loam  
*2R - 30 to 40 inches:* bedrock

##### Properties and qualities

*Slope:* 15 to 35 percent  
*Percent of area covered with surface fragments:* 1.6 percent  
*Depth to restrictive feature:* 20 to 41 inches to lithic bedrock  
*Natural drainage class:* Well drained  
*Runoff class:* High  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low (0.00 to 0.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline (0.0 to 1.9 mmhos/cm)  
*Available water storage in profile:* Low (about 4.3 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* B  
*Hydric soil rating:* No

## Custom Soil Resource Report

### Description of Charlton, Very Stony

#### Setting

*Landform:* Ridges, hills  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear, convex  
*Across-slope shape:* Convex  
*Parent material:* Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

#### Typical profile

*Oe - 0 to 2 inches:* moderately decomposed plant material  
*A - 2 to 4 inches:* fine sandy loam  
*Bw - 4 to 27 inches:* gravelly fine sandy loam  
*C - 27 to 65 inches:* gravelly fine sandy loam

#### Properties and qualities

*Slope:* 15 to 35 percent  
*Percent of area covered with surface fragments:* 1.6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Well drained  
*Runoff class:* Medium  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to high (0.14 to 14.17 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline (0.0 to 1.9 mmhos/cm)  
*Available water storage in profile:* Moderate (about 8.7 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* B  
*Hydric soil rating:* No

### Minor Components

#### Leicester, very stony

*Percent of map unit:* 6 percent  
*Landform:* Depressions, drainageways, hills, ground moraines  
*Landform position (two-dimensional):* Toeslope, footslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Linear, concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

#### Hollis, very stony

*Percent of map unit:* 5 percent  
*Landform:* Ridges, hills  
*Landform position (two-dimensional):* Backslope, shoulder, summit  
*Landform position (three-dimensional):* Side slope, nose slope, crest  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex, linear  
*Hydric soil rating:* No

## Custom Soil Resource Report

### **Rock outcrop**

*Percent of map unit:* 5 percent

*Landform:* Hills, ridges

*Hydric soil rating:* No

### **Sutton, very stony**

*Percent of map unit:* 4 percent

*Landform:* Hills, ground moraines

*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Hydric soil rating:* No

## **HrF—Hollis-Rock outcrop complex, 35 to 60 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2w69q

*Elevation:* 0 to 1,540 feet

*Mean annual precipitation:* 36 to 71 inches

*Mean annual air temperature:* 39 to 55 degrees F

*Frost-free period:* 145 to 240 days

*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Hollis, very stony, and similar soils:* 60 percent

*Rock outcrop:* 20 percent

*Minor components:* 20 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Hollis, Very Stony**

#### **Setting**

*Landform:* Hills, ridges

*Landform position (two-dimensional):* Shoulder, summit, backslope

*Landform position (three-dimensional):* Nose slope, crest, side slope

*Down-slope shape:* Convex

*Across-slope shape:* Linear, convex

*Parent material:* Coarse-loamy melt-out till derived from granite, gneiss, and/or schist

#### **Typical profile**

*Oi - 0 to 2 inches:* slightly decomposed plant material

*A - 2 to 7 inches:* gravelly fine sandy loam

*Bw - 7 to 16 inches:* gravelly fine sandy loam

*2R - 16 to 26 inches:* bedrock

#### **Properties and qualities**

*Slope:* 35 to 60 percent



## Custom Soil Resource Report

*Percent of area covered with surface fragments:* 1.6 percent  
*Depth to restrictive feature:* 8 to 23 inches to lithic bedrock  
*Natural drainage class:* Somewhat excessively drained  
*Runoff class:* Very high  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low (0.00 to 0.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Salinity, maximum in profile:* Nonsaline (0.0 to 1.9 mmhos/cm)  
*Available water storage in profile:* Very low (about 2.7 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 7s  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* No

### Description of Rock Outcrop

#### Setting

*Landform:* Hills, ridges  
*Parent material:* Igneous and metamorphic rock

#### Typical profile

*R - 0 to 79 inches:* bedrock

### Properties and qualities

*Slope:* 35 to 60 percent  
*Depth to restrictive feature:* 0 inches to lithic bedrock  
*Runoff class:* Very high  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low (0.00 to 0.00 in/hr)  
*Available water storage in profile:* Very low (about 0.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 8  
*Hydrologic Soil Group:* D  
*Hydric soil rating:* No

### Minor Components

#### Chatfield, very stony

*Percent of map unit:* 10 percent  
*Landform:* Hills, ridges  
*Landform position (two-dimensional):* Backslope, shoulder, summit  
*Landform position (three-dimensional):* Crest, side slope, nose slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear, convex  
*Hydric soil rating:* No

#### Charlton, very stony

*Percent of map unit:* 5 percent  
*Landform:* Hills, ridges  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Linear, convex

## Custom Soil Resource Report

*Across-slope shape:* Convex

*Hydric soil rating:* No

### **Leicester, very stony**

*Percent of map unit:* 4 percent

*Landform:* Hills, ground moraines, depressions, drainageways

*Landform position (two-dimensional):* Toeslope, footslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Concave, linear

*Across-slope shape:* Concave

*Hydric soil rating:* Yes

### **Sutton, very stony**

*Percent of map unit:* 1 percent

*Landform:* Ground moraines, hills

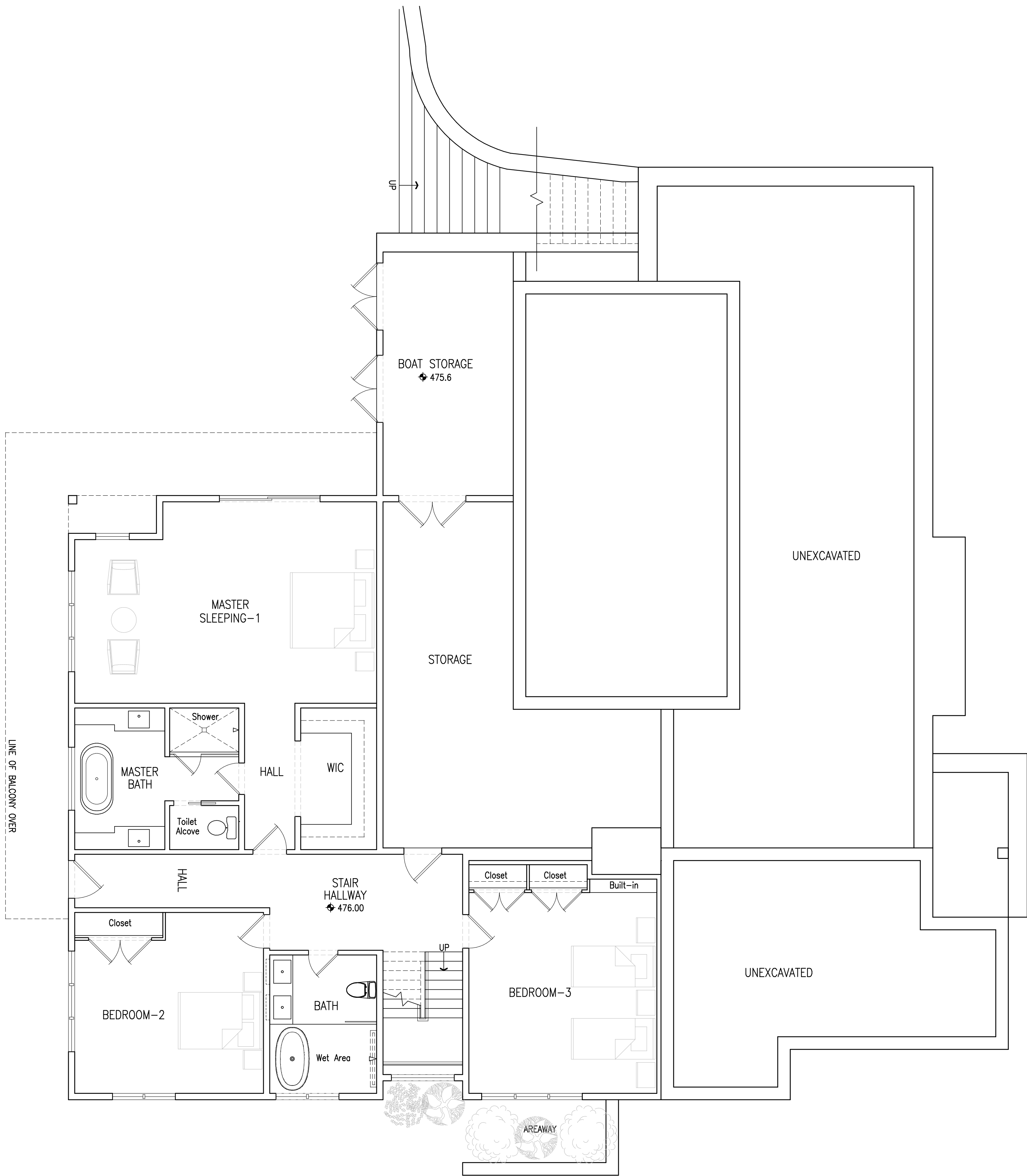
*Landform position (two-dimensional):* Footslope

*Landform position (three-dimensional):* Base slope

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Hydric soil rating:* No



TEO SIGÜENZA  
ARCHITECT  
480 OLD POST ROAD 2A BEDFORD, NY 10506  
TEL: 914.234.8289 FAX: 914.234.0619  
www.teosiguenza.com

GENERAL NOTES:  
1. DO NOT SCALE DRAWINGS FOR CONSTRUCTION PURPOSES  
2. ALL DIMENSIONS TO BE CHECKED  
3. CONTRACTOR IS OBLIGED TO REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECT

DATE:	REVISION

PROJECT  
RYAN RESIDENCE  
SINGLE FAMILY RESIDENCE  
40 OLD POND ROAD  
SOUTH SALEM, NY

DRAWING TITLE  
PROPOSED LOWER LEVEL  
FLOOR PLAN

SEAL

DATE  
8-8-18

SCALE  
3/16" =1'-0"

DRAWING NO.  
A100.00

PAGE NO.



GENERAL NOTES:  
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DATE:	REVISION

PROJECT  
RYAN RESIDENCE  
SINGLE FAMILY RESIDENCE  
40 OLD POND ROAD  
SOUTH SALEM, NY

DRAWING TITLE  
PROPOSED FIRST FLOOR PLAN

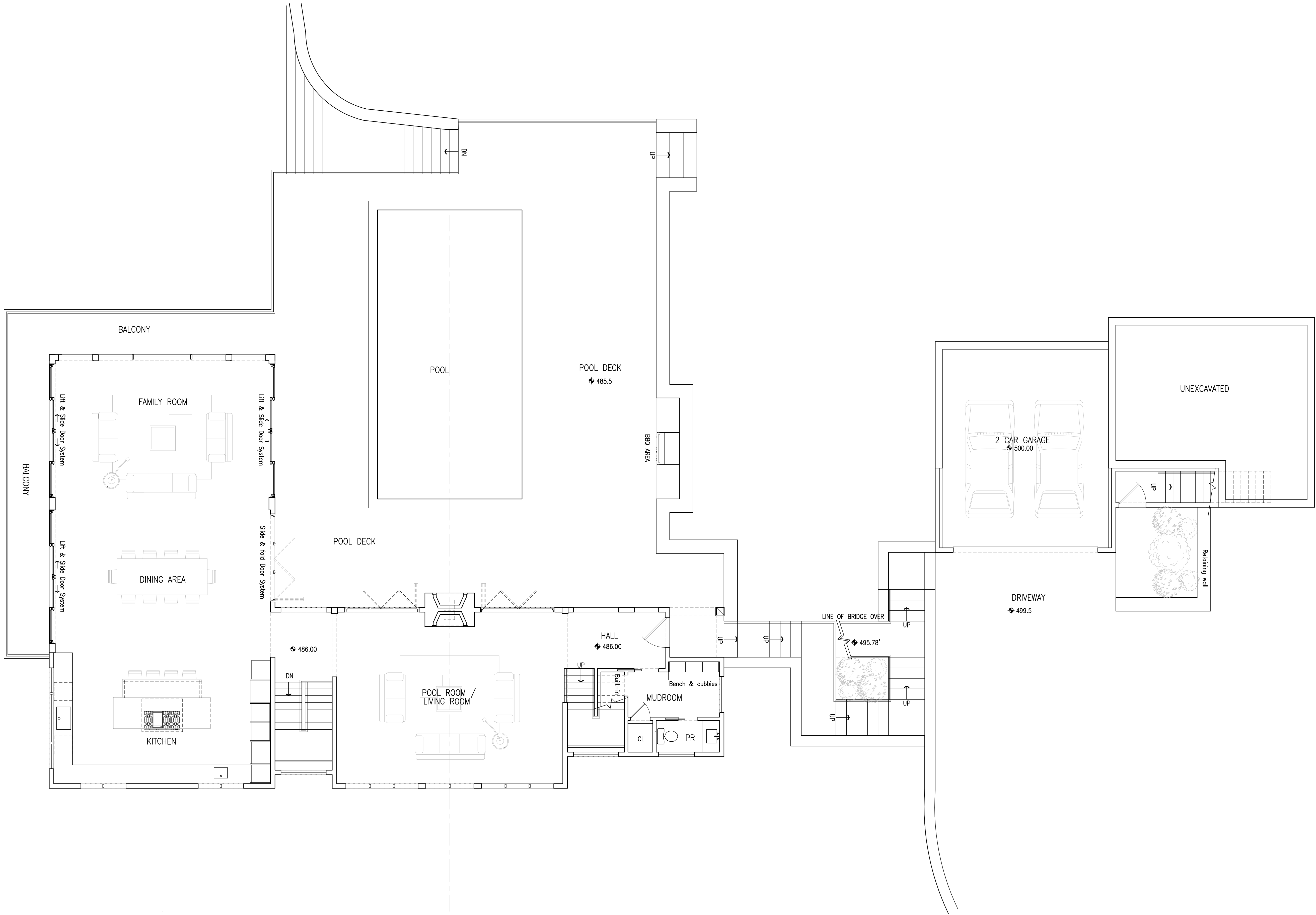
SEAL

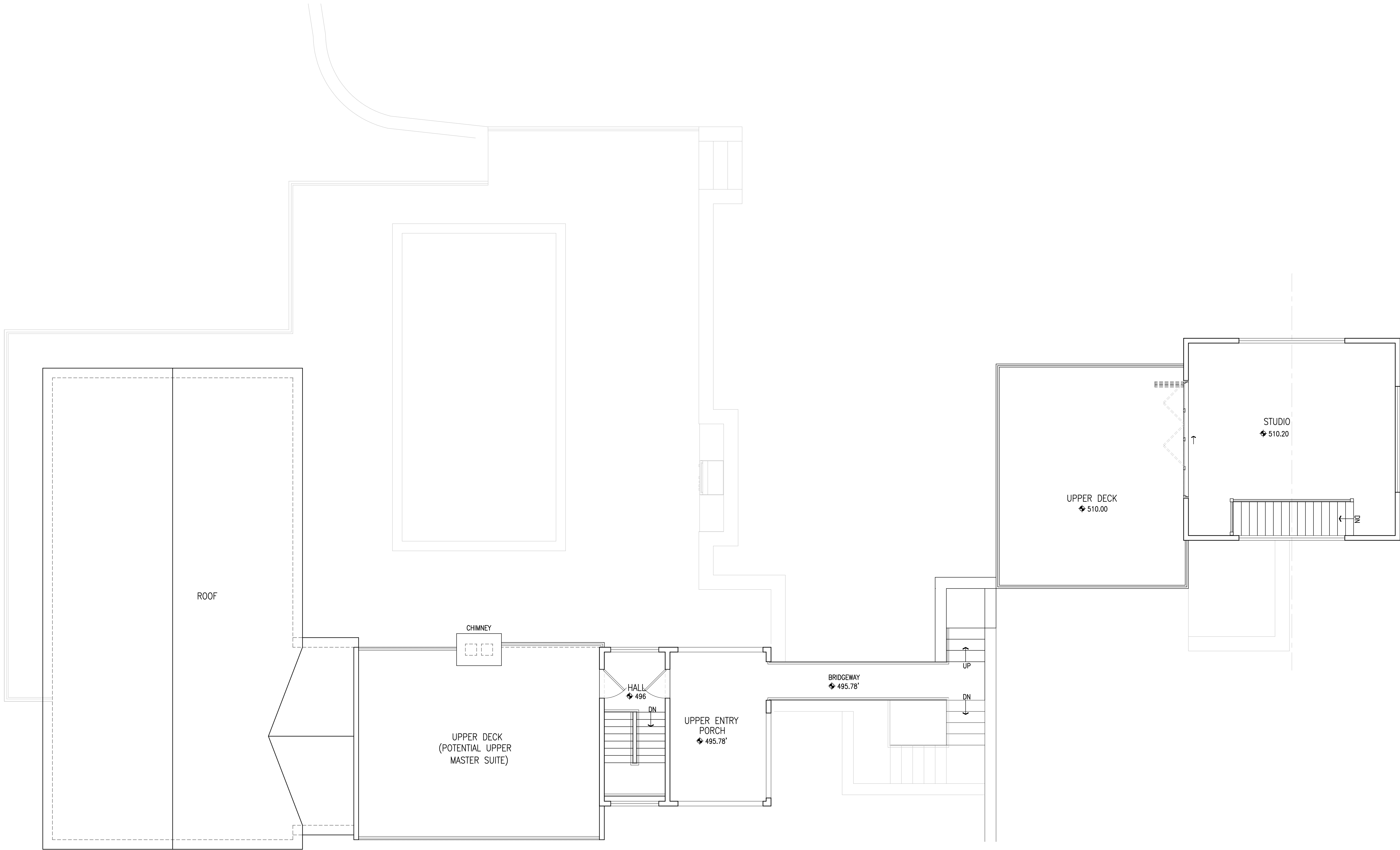
DATE  
8-8-18

SCALE  
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DRAWING NO.  
A101.00

PAGE NO.





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DATE:	REVISION

PROJECT  
RYAN RESIDENCE  
SINGLE FAMILY RESIDENCE  
40 OLD POND ROAD  
SOUTH SALEM, NY

DRAWING TITLE  
PROPOSED SECOND FLOOR PLAN

SEAL

DATE  
8-8-18

SCALE  
3/16" = 1'-0"

DRAWING NO.  
A102.00

PAGE NO.

GENERAL NOTES:  
1. DO NOT SCALE DRAWINGS FOR CONSTRUCTION PURPOSES  
2. ALL DIMENSIONS TO BE CHECKED  
3. CONTRACTOR IS OBLIGED TO REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECT



DATE:	REVISION

PROJECT  
RYAN RESIDENCE  
SINGLE FAMILY RESIDENCE  
40 OLD POND ROAD  
SOUTH SALEM, NY

DRAWING TITLE  
PROPOSED EXTERIOR ELEVATION

SEAL

DATE  
8-8-18

SCALE  
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DRAWING NO.  
A200.00



PAGE NO.



## MEMORANDUM

TO: Chairwoman Janet Andersen and  
Members of Lewisboro Planning Board

CC: Ciorsdan Conran  
Judson Siebert, Esq.  
Joseph Angiello

FROM: Jan K. Johannessen, AICP   
Joseph M. Cermele, P.E., CFM   
Town Consulting Professionals

DATE: March 14, 2019

RE: Marianne & William Lordi  
2 Cheyenne Court  
Sheet 10, Block 11152, Lot 140

---

### PROJECT DESCRIPTION

The subject application results from a Wetland Violation that was issued to the property owner on May 7, 2018 relating to the unauthorized removal of vegetation and trees within the wetland and wetland buffer and deposition of wood chips within the regulated area. Application to the Planning Board for a Wetland Permit to restore the area, including preparation of a wetland mitigation and planting plan.

### SEQRA

The proposed action is a Type II Action and is categorically exempt from the State Environmental Quality Review Act (SEQRA).

### REQUIRED APPROVALS

1. A Wetland Permit is required from the Planning Board; a public hearing is required to be held on the Wetland Permit.
2. A Wetland Permit may be required from the New York State Department of Environmental Conservation (NYSDEC) for planting and within the NYSDEC regulated area.

CIVIL ENGINEERING | LANDSCAPE ARCHITECTURE | SITE & ENVIRONMENTAL PLANNING

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Chairwoman Janet Andersen

March 14, 2019

Page 2 of 2

**COMMENTS**

1. The on-site wetland has been delineated by Evans Associates and confirmed by this office as being accurate. According to the applicant, the wetland boundary has also been confirmed by Josh Fisher of the New York State Department of Environmental Conservation (NYSDEC).
2. The ownership of the adjacent property to the southwest of the subject parcel shall be identified on the plan.
3. The violation stems from the unauthorized removal of trees and vegetation within the wetland and wetland buffer area, including the removal of tree stumps; woodchips were also deposited within the wetland and buffer area. While this office supports the mitigation plan proposed by the applicant, it appears that all of the plant material is proposed within the wetland proper and no wetland buffer restoration is identified. Further, we note that eight (8) trees are proposed off-site, on lands presumably owned by the Town of Lewisboro.

It is recommended that the applicant seeks authorization from the adjacent property owner in connection with planting proposed off-site, that the applicant seek approval from the NYSDEC for work proposed within the NYSDEC regulated area, and that additional plantings be considered within the wetland buffer, adjacent to the wetland boundary line. It is further suggested that a limited mow zone be established along the upland side of the wetland boundary (minimum 20 feet wide) and that a physical barrier (split-rail fence, boulders, etc.) or monuments be installed to identify the limits of the mitigation area. The plan shall also address deer protection measures and the removal of any remaining woodchips from the wetland and wetland buffer area.

In order to expedite the review of subsequent submissions, the applicant should provide annotated responses to each of the comments outlined herein.

**PLANS REVIEWED, PREPARED BY EVANS ASSOCIATES, DATED FEBRUARY 15, 2019:**

- Mitigation Planting Plan (MP-1)

**DOCUMENTS REVIEWED:**

- Letters, prepared by Evans Associates, dated February 11, 2019 and February 22, 2019
- Cost Estimate for Wetland Mitigation Plantings, dated February 15, 2019
- Wetland Permit Application
- Survey of Property, prepared by Link Land Surveyors

JKJ/JMC/dc

T:\Lewisboro\Correspondence\2019-03-14\_LWPB-Lordi-Review-Memo.docx

Application No: 14-19WP

Fee: \$255 Date: 2/26/19

**TOWN OF LEWISBORO  
WETLAND PERMIT APPLICATION**

79 Bouton Road, South Salem, NY 10590

Phone: 914-763-5592

Fax: 914-763-3637

planning@lewisborogov.com

\$255 + \$2,000 escrow  
\$1500 escrow  
need

**Project Information**

Project Address: 2 Cheyenne Ct., Katonah, NY 10536

Sheet: 10 Block: 11152 Lot(s): 140

Project Description (identify the improvements proposed within the wetland/wetland buffer and the approximate amount of wetland/wetland buffer disturbance): mitigation of disturbance of plants and DEAD trees and removal of wood chips within wetland buffer area (re-planting)

**Owner's Information**

Owner's Name: Marianne + William Lordi Phone: (914) 420-8920

Owner's Address: 2 Cheyenne Court, Katonah, NY 10536 Email: MKL182optonline.net

**Applicant's Information** (if different)

Applicant's Name: Same Phone: Same

Applicant's Address: Same Email: Same

**Authorized Agent's Information** (if applicable)

Agent's Name: Beth Evans, PWS Phone: (203) 393-0690 x112 office

Agent's Address: Evans Associates Environmental Consulting, Inc. 162 Falls Road, Bethany, CT 06524 Email: beth@eaec-inc.com

**To Be Completed By Owner/Applicant**

- What type of Wetland Permit is required? (see §217-5C and §217-5D of the Town Code)  
☐ Administrative ☒ Planning Board
- Is the project located within the NYCDEP Watershed? ☐ Yes ☐ No
- Total area of proposed disturbance: ☒ < 5,000 s.f. ☐ 5,000 s.f. - < 1 acre ☐ ≥ 1 acre
- Does the proposed action require any other permits/approvals from other agencies/departments? (Planning Board, Town Board, Zoning Board of Appeals, Building Department, Town Highway, ACARC, NYSDEC, NYCDEP, WCDOH, NYSDOT, etc): Identify all other permits/approvals required: None

Note: Initially, all applications shall be submitted with a plan that illustrates the existing conditions and proposed improvements. Said plan must include a line which encircles the total area of proposed land disturbance and the approximate area of disturbance must be calculated (square feet). The Planning Board and/or Town Wetland Inspector may require additional materials, information, reports and plans, as determined necessary, to review and evaluate the proposed action. If the proposed action requires a Planning Board Wetland Permit, the application materials outlined under §217-7 of the Town Code must be submitted, unless waived by the Planning Board. The Planning Board may establish an initial escrow deposit to cover the cost of application/plan review and inspections conducted by the Town's consultants.

For administrative wetland permits, see attached Administrative Wetland Permit Fee Schedule.

Owner/Applicant Signature: Marianne Lordi

Date: 2/26/19



# TOWN OF LEWISBORO PLANNING BOARD

79 Bouton Road, South Salem, NY 10590

Email: [planning@lewisborogov.com](mailto:planning@lewisborogov.com)

Tel: (914) 763-5592

Fax: (914) 763-3637

## Affidavit of Ownership

State of: New York

County of: Westchester

Marianne Lordi, being duly sworn, deposes and says that he/she  
resides at 2 Cheyenne Court, Katonah, NY 10536  
in the County of Westchester, State of New York

and that he/she is (check one) ☒ the owner, or ☐ the \_\_\_\_\_  
of \_\_\_\_\_ Title

*Name of corporation, partnership, or other legal entity*

which is the owner, in fee of all that certain log, piece or parcel of land situated, lying and being in the  
Town of Lewisboro, New York, aforesaid and know and designated on the Tax Map in the Town of  
Lewisboro as:

Block 11152, Lot 140, on Sheet 10

Marianne Lordi  
Owner's Signature

☒ Sworn to before me this 26 day of February, 2 019

JANET L. DONOHUE  
NOTARY PUBLIC, STATE OF NEW YORK  
No. 01DO6259627  
Qualified in Westchester County  
Commission Expires April 16, 2020

JANET L. DONOHUE  
NOTARY PUBLIC, STATE OF NEW YORK  
No. 01DO6259627  
Qualified in Westchester County  
Commission Expires April 16, 2020

Janet L. Donohue  
Notary Public - affix stamp

## TOWN OF LEWISBORO PLANNING BOARD

79 Bouton Road, South Salem, NY 10590  
Email: [planning@lewisborogov.com](mailto:planning@lewisborogov.com)  
Tel: (914) 763-5592 Fax: (914) 763-3637

### Tax Payment Affidavit Requirement

*This form must accompany all applications to the Planning Board.*

*Under regulations adopted by the Town of Lewisboro, the Planning Board may not accept any application unless an affidavit from the Town of Lewisboro Receiver of Taxes is on file in the Planning Board office. The affidavit must show that all amounts due to the Town of Lewisboro as real estate taxes and special assessments on the total area encompassed by the application, together with all penalties and interest thereon, have been paid.*

*Under New York State law, the Westchester County Clerk may not accept any subdivision map for filing unless the same type of affidavit from the Town of Lewisboro Receiver of Taxes is submitted by the applicant at the time of filing.*

This form must be completed by the applicant and must accompany all applications to the Planning Board. Upon receipt, the Planning Board Secretary will send the form to the Receiver of Taxes for signature and notarization. If preferred, the applicant may directly obtain the signature of the Receiver of Taxes and notarization prior to submission.

To Be Completed by Applicant (Please type or print)	
<u>MARIANNE LORD</u> Name of Applicant	<u>LORD / WETLAND VIOLATION</u> Project Name
<u>Property Description</u>	<u>Property Assessed to:</u>
Tax Block(s): <u>11152</u>	Name <u>MARIANNE LORD</u>
Tax Lot(s): <u>140</u>	<u>2 CHEYENNE COURT</u>
Tax Sheet(s): <u>10</u>	Address <u>KATONAH</u> <u>NY</u> <u>10536</u>
	City State Zip

The undersigned, being duly sworn deposes and says that a search of the tax records in the office of the Receiver of Taxes, Town of Lewisboro, reveals that all amounts due to the Town of Lewisboro as real estate taxes and special assessments, together with all penalties and interest thereon, affecting the premises described below, have been paid.

Signature - Receiver of Taxes: [Signature]

Date 1/16/2019

Sworn to before me this

16<sup>th</sup> day of Jan

, 2 019

SAMANTHA L INCLEDON  
Notary Public - State of New York  
No. 01IN6304669  
Qualified In Westchester County  
My Commission Expires June 2, 2022  
10/4

Signature - Notary Public (affix stamp)



**Evans Associates**  
Environmental Consulting, Incorporated

February 22, 2019

Honorable Jerome Kerner and Members of the Planning Board  
79 Bouton Road  
South Salem, NY 10590

**Re: Lordi Property: Wetland Violation**  
**2 Cheyenne Court, Town of Lewisboro, New York**

Dear Chairman Kerner and Members of the Planning Board:

Enclosed please find nine (9) copies of the Mitigation Planting Plan which we have prepared for the Lordi property. We have also prepared a cost estimate to accompany the plan.

I will attend the March 19<sup>th</sup> meeting to review the remediation plan with your Board. If there are any questions or concerns regarding this matter, please do not hesitate to contact me.

Sincerely,  
**Evans Associates Environmental Consulting, Inc.**

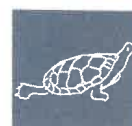
Beth Evans, PWS

cc: Marianne Lordi

RECEIVED  
LEWISBORO

FEB 25 2019

PLANNING  
BOARD



FILE

162 Falls Road  
Bethany, CT 06524  
Tel: 203.393.0690



COST ESTIMATE FOR WETLAND MITIGATION PLANTINGS

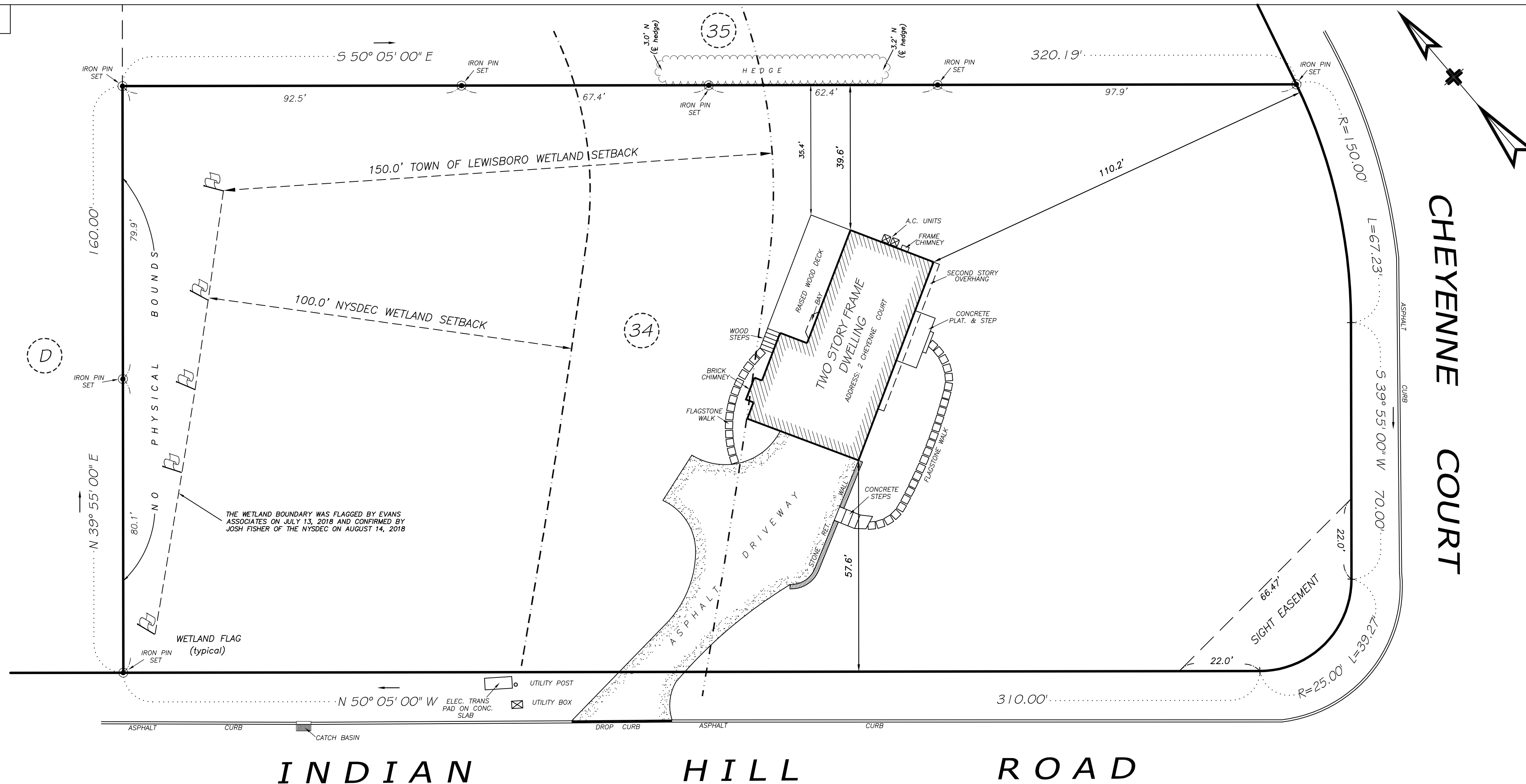
Project: Lordi Wetland Violation  
Address: 2 Cheyenne Court  
Katonah, NY

Date: 2/15/2019  
Prepared by: ALP

TREE PLANTINGS

Item	Code	Name	Size	Qty	Unit	Unit Price	Nursery Price	Install Price
1.00		TREES AND SHRUBS						
1.01	AA	Aronia arbutifolia	#2 cont.	3	ea.	20.00	60.00	180.00
1.02	AR	Acer rubrum	2" cal.	5	ea.	200.00	1,000.00	3,000.00
1.03	BN	Betula nigra	2" cal.	1	ea.	200.00	200.00	1,200.00
1.04	CA	Clethra alnfolia	#2 cont.	6	ea.	22.00	132.00	396.00
1.05	CM	Cornus amomum	#2 cont.	3	ea.	22.00	66.00	198.00
1.07	CS	Cornus sericea 'Bayleyi'	#3 cont.	7	ea.	25.00	175.00	525.00
1.08	HV	Hamamelis virginiana	#3 cont.	2	ea.	50.00	100.00	300.00
1.09	IV	Ilex verticillata	#3 cont.	3	ea.	22.00	66.00	198.00
1.10	LB	Lindera benzoin	#2 cont.	2	ea.	22.00	44.00	132.00
1.12	QB	Quercus bicolor	2" cal.	2	ea.	200.00	400.00	1,200.00
1.13	SL	Spirea latifolia	#2 cont.	9	ea.	18.00	162.00	486.00

Total = 2,405.00 7,815.00



- THE PREMISES SHOWN HEREON BEING KNOWN AND DESIGNATED AS LOT No. 34 ON A CERTAIN MAP ENTITLED, "SUBDIVISION PLAT OF 'SECTION ONE INDIAN HILL'", PREPARED BY DONALD J DONNELLY ON MARCH 26, 1980 WITH A REVISION DATE OF NOVEMBER 24, 1980 AND FILED IN THE WESTCHESTER COUNTY CLERK'S OFFICE, DIVISION OF LAND RECORDS, ON MARCH 4, 1981 AS FILED MAP No. 20512.
- THIS MAP IS BASED UPON THE INFORMATION SUPPLIED BY THE CLIENT AND/OR HIS REPRESENTATIVE AND SUBJECT TO THE FINDINGS THAT A COMPLETE ABSTRACT OF TITLE MAY UNCOVER
- THE OFFSETS SHOWN HEREON ARE NOT INTENDED TO ESTABLISH PROPERTY LINES FOR THE ERECTION OF FENCES, STRUCTURES OR ANY OTHER IMPROVEMENTS.
- ENCROACHMENTS BELOW GRADE AND/OR SUBSURFACE FEATURES, IF ANY, NOT LOCATED OR SHOWN HEREON.
- THE WETLAND BOUNDARY WAS FLAGGED BY EVANS ASSOCIATES ON JULY 13, 2018 AND CONFIRMED BY JOSH FISHER OF THE NYSDEC ON AUGUST 14, 2018
- UNAUTHORIZED ALTERATION OR ADDITION TO A SURVEY MAP BEARING A LICENSED LAND SURVEYOR'S SEAL IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAWS.
- THE INFORMATION DEPICTED HEREON IS BASED UPON AN ACTUAL FIELD SURVEY AND IS AN OPINION BASED UPON SAID SURVEY. VARIATIONS IN OFFSETS FROM THAT OF THE OTHERS CAN AND MAY EXIST.
- ONLY COPIES FROM THE ORIGINAL OF THIS SURVEY MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S SEAL SHALL BE CONSIDERED TO BE TRUE VALID COPIES.
- THIS MAP WAS PREPARED FROM AN ACTUAL FIELD SURVEY CONDUCTED ON THE DATE SHOWN AND THAT SAID SURVEY WAS PERFORMED IN ACCORDANCE WITH THE EXISTING " CODE OF PRACTICE FOR LAND SURVEYS " ADOPTED BY THE NEW YORK STATE ASSOCIATION OF PROFESSIONAL LAND SURVEYORS.

SURVEY OF PROPERTY  
SITUATE IN THE  
TOWN OF LEWISBORO  
WESTCHESTER COUNTY  
NEW YORK

SCALE: 1" = 20'  
PROPERTY MARKERS SET: OCTOBER 12, 2018  
SURVEYED: JANUARY 29, 2019  
SURVEY AMENDED TO ADDED WETLAND NOTE: FEBRUARY 5, 2019

- PREMISES ARE DESIGNATED ON THE TAX MAPS FOR THE TOWN OF LEWISBORO  
SECTION 31.4: BLOCK 3: LOT 39:  
STREET ADDRESS: 2 CHEYENNE COURT
- PROPERTY AREA: 53,151 SQ. FT. / 1.2202 AC.



**ERIK J. LINK**  
NEW YORK STATE LICENSED  
LAND SURVEYOR NO. 050542

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AND IS A VIOLATION UNDER UNITED STATES COPYRIGHT LAWS.



**Evans** Associates  
Environmental Consulting, Incorporated

February 11, 2019

Honorable Jerome Kerner and Members of the Planning Board  
79 Bouton Road  
South Salem, NY 10590

**Re: Lordi Property: Wetland Violation  
2 Cheyenne Court, Town of Lewisboro, New York**

Dear Chairman Kerner and Members of the Planning Board:

Enclosed please find nine (9) copies of the recently completed survey for the Lordi property. We just received this last week, and we have not had enough time to prepare a Mitigation Planting Plan. However, I expect that we can have the mitigation plan completed and submitted by February 26, 2019, which is the supplemental submission deadline for the March 19, 2019 meeting.

As requested at the January meeting, I will attend the March 19<sup>th</sup> meeting to review the remediation plan with your Board.

If there are any questions or concerns regarding this matter, please do not hesitate to contact me.

Sincerely,  
**Evans Associates Environmental Consulting, Inc.**

Beth Evans, PWS

cc: Marianne Lordi



162 Falls Road  
Bethany, CT 06524  
Tel: 203.393.0690



## COST ESTIMATE FOR WETLAND MITIGATION PLANTINGS

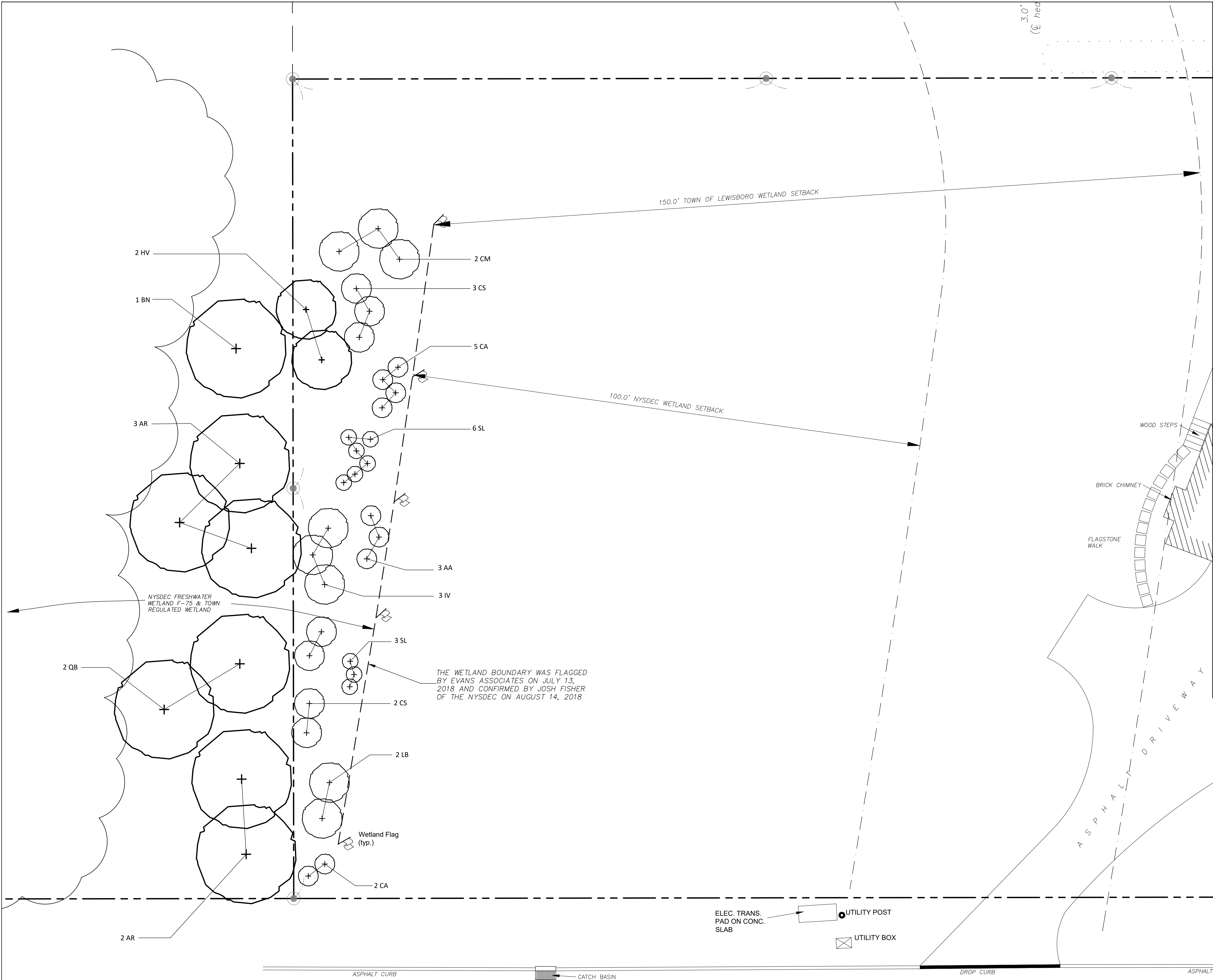
**Project:** Lordi Wetland Violation  
**Address:** 2 Cheyenne Court  
 Katonah, NY

**Date:** 2/15/2019  
**Prepared by:** ALP

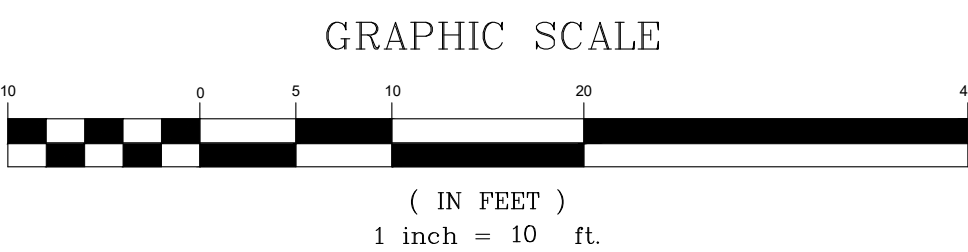
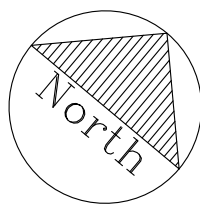
### TREE PLANTINGS

Item	Code	Name	Size	Qty	Unit	Unit Price	Nursery Price	Install Price
1.00		TREES AND SHRUBS						
1.01	AA	Aronia arbutifolia	#2 cont.	3	ea.	20.00	60.00	180.00
1.02	AR	Acer rubrum	2" cal.	5	ea.	200.00	1,000.00	3,000.00
1.03	BN	Betula nigra	2" cal.	1	ea.	200.00	200.00	1,200.00
1.04	CA	Clethra alnifolia	#2 cont.	6	ea.	22.00	132.00	396.00
1.05	CM	Cornus amomum	#2 cont.	3	ea.	22.00	66.00	198.00
1.07	CS	Cornus sericea 'Bayleyi'	#3 cont.	7	ea.	25.00	175.00	525.00
1.08	HV	Hamamelis virginiana	#3 cont.	2	ea.	50.00	100.00	300.00
1.09	IV	Ilex verticillata	#3 cont.	3	ea.	22.00	66.00	198.00
1.10	LB	Lindera benzoin	#2 cont.	2	ea.	22.00	44.00	132.00
1.12	QB	Quercus bicolor	2" cal.	2	ea.	200.00	400.00	1,200.00
1.13	SL	Spirea latifolia	#2 cont.	9	ea.	18.00	162.00	486.00

Total = 2,405.00 7,815.00



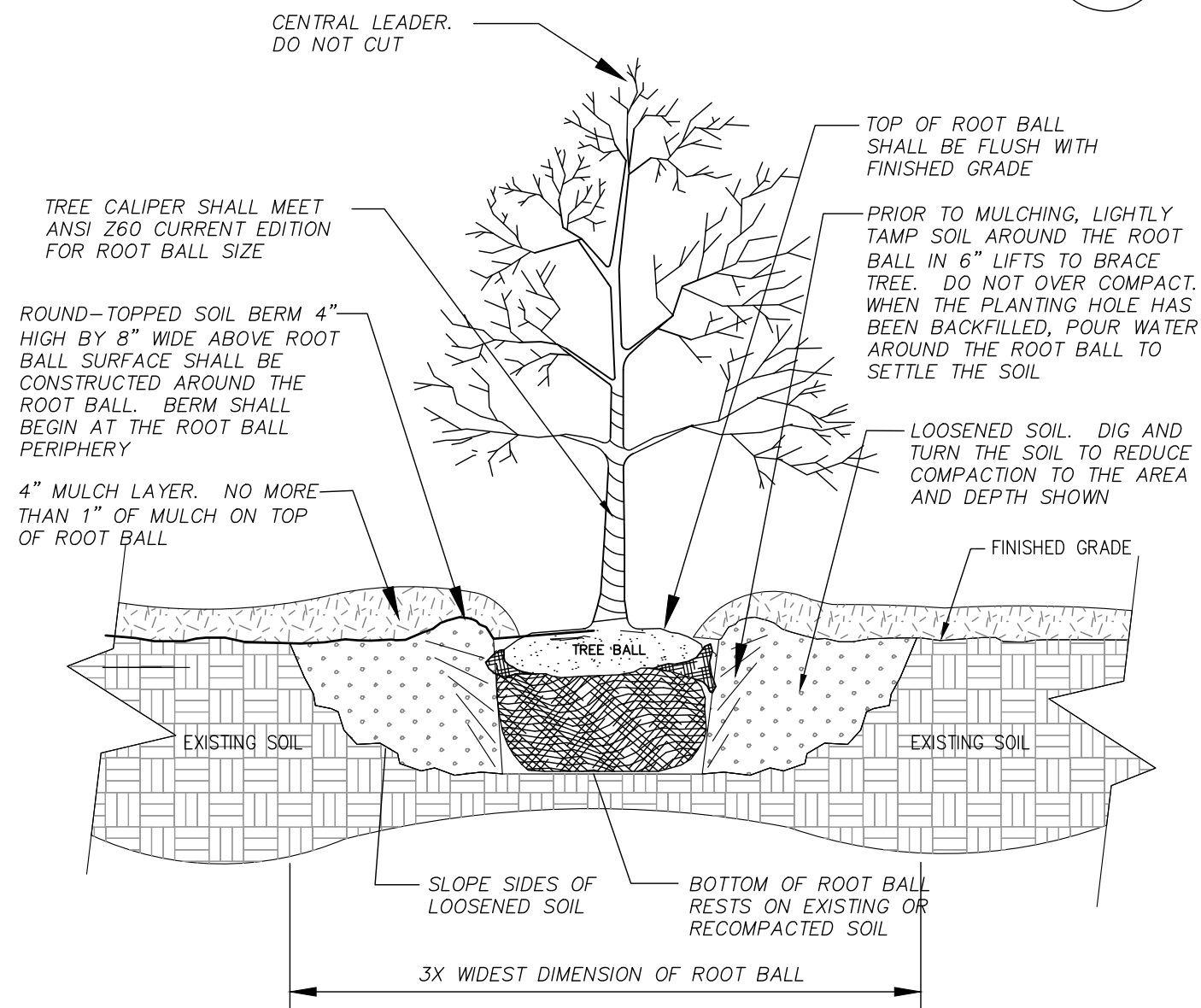
- Names must agree with nomenclature of standard Plant Names: American Joint Committee on Horticultural Nomenclature, latest edition.
- Size and grading must conform to American Standard for Nursery Stock.
- Quality shall be typical of species or variety, with normal, well-developed branches and vigorous root systems. Plants shall be free from defects, injury, disease, or insect infestation.
- For measurement, a plant shall be dimensioned as it stands in its normal position. Trees shall be calipered at breast height (DBH).
- Landscape architect must approve any plant or size substitutions. Landscape architect shall approve locations of plant materials on site prior to the plants being installed. Plant spacing as depicted on plant list shall be followed; however, spacing depicted on plan shall rule.
- Topsoil shall be a minimum of 4" deep - 6" is preferred - and shall contain a 12% organic carbon content by weight. Clean leaf compost is the preferred soil amendment to achieve these standards. If other soil amendments are more readily available than clean leaf compost, they can be used to meet the requirement for 12% organic carbon content.
- Plant herbaceous BR (bare root) plants in "drifts", avoiding straight rows.
- Planting pits for woody plants shall be twice as wide as the root ball diameter and shall be backfilled with screened topsoil. Subsoil from planting excavations shall be removed from the site. In the case of herbaceous bare-root plantings, the entire bed shall be screened topsoil with ample organic matter mixed in.
- If the roots of containerized plants are tightly wound, they shall be loosened and separated (scarified) prior to planting. All trees are to be thoroughly watered during and after planting operations and afterward for the duration of the maintenance period, with a minimum of 1 deep watering per week after planting. Care must be taken not to expose roots to air for long periods during the planting process.
- Plants shall be mulched immediately after planting with 3" of aged, undyed hardwood bark mulch. Do not overmulch newly planted trees and shrubs. Seeded areas shall be mulched with salt hay or straw mulch applied at 50 to 90 lbs., (1 to 2 bales) per 1,000 square feet. Approximately 25% of the soil is to be visible through the mulch.
- In the event there is a discrepancy between the number of plants shown in the plant list and the number depicted on the drawing, the number shown on the drawing shall rule.



MITIGATION PLANT LIST						
TREES AND SHRUBS						
Code	Quantity	Botanical Name	Common Name	Size at Planting/Container Size	Spacing at Planting	
AA	3	Aronia arbutifolia	Red Chokeberry	#2 container	4 feet on center	
AR	5	Acer rubrum	Red Maple	2" cal. B&B	As Shown	
BN	1	Betula nigra	River Birch	2" cal. B&B	As Shown	
CA	6	Clethra alnifolia	Summersweet Clethra	#2 container	5 feet on center	
CM	3	Cornus amomum	Silky Dogwood	#2 container	7 feet on center	
CS	7	Cornus sericea	Red Osier Dogwood	#3 container	6 feet on center	
HV	2	Hamamelis virginiana	Witch Hazel	#3 container	As Shown	
IV	3 (2-F, 1-M)	Ilex verticillata	Winterberry	#3 container	7 feet on center	
LB	2	Lindera benzoin	Spicebush	#2 container	7 feet on center	
QB	1	Quercus bicolor	Swamp White Oak	2" cal. B&B	As Shown	
SL	9	Spiraea latifolia	Elderberry	#2 container	3 feet on center	

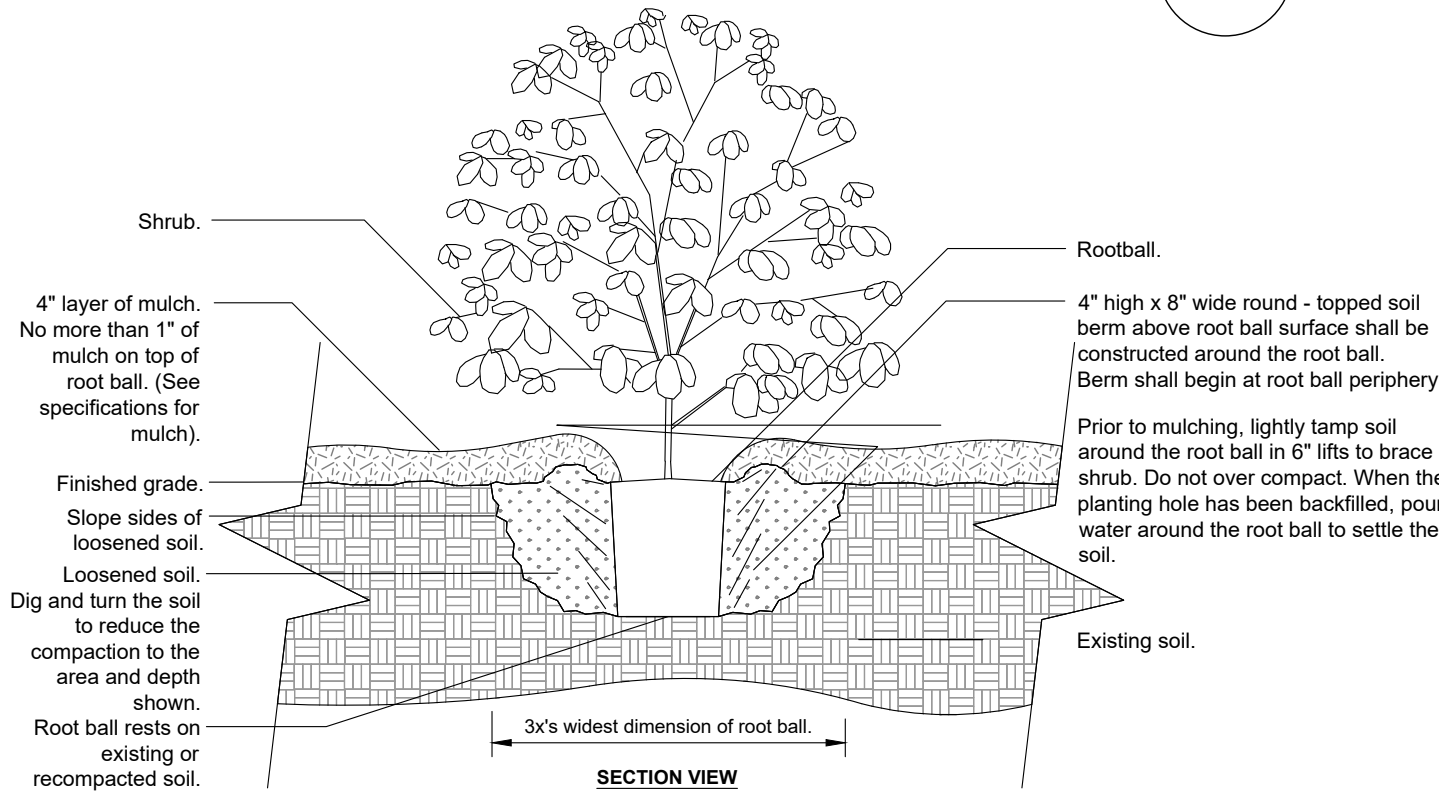
## Tree Planting

1



## Shrub Planting

2



- Notes:
- Shrubs shall be of quality prescribed in the root observations detail and specifications.
  - See specifications for further requirements related to this detail.

CONSULTANTS:

SURVEYOR:  
Link Land Surveyors, P.C.  
21 Clark Place, Suite 1-B Phone 845-628-5857  
Mahopac N.Y. 10541 Fax 845-621-0013

ISSUED:

OWNERSHIP AND USE OF DOCUMENTS

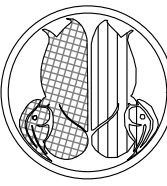
These drawings and specifications are the property of Evans Associates Environmental Consulting, Inc. No part thereof shall be copied, disclosed to others or used in connection with any work or project other than for which they have been prepared without the express written consent of the licensed professional who prepared the document.

SEAL:



PROJECT NAME:  
**LORDI PROPERTY**  
2 Chyenne Court  
Katonah, New York

ENVIRONMENTAL CONSULTANT & LANDSCAPE ARCHITECT:  
**EVANS ASSOCIATES**  
ENVIRONMENTAL CONSULTING, INC.  
162 Falls Road  
Bethany, Connecticut 06524  
T: (203) 373-0690



Drawing Title:

**Mitigation Planting Plan**

Date: February 15, 2019

Dwn. by: alp

ID: 2 Chyenne Mitigation Plan\_02-2019

MP-1