TOWN OF NORTH CASTLE
WESTCHESTER COUNTY
17 Bedford Road
Armonk, New York 10504-1898

PLANNING DEPARTMENT
Adam R. Kaufman, AICP
Director of Planning

Telephone: (914) 273-3542
Fax: (914) 273-3554
www.northcastleny.com

Application for Site Development Plan Approval

Application Name

Keith Rosenthal

TOWN OF NORTH CASTLE

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Application for Special Use Permit Approval

Application Name

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APPLICATIONS REQUIRING PLANNING BOARD APPROVAL
SCHEDULE OF APPLICATION FEES

Type of Application	Application Fee
Site Development Plan	$200.00
Each proposed Parking Space	$10
Special Use Permit (each)	$200 (each)
Preliminary Subdivision Plat	$300 1st Lot $200 (each additional lot)
Final Subdivision Plat	$250 1st Lot $100 (each additional lot)
Tree Removal Permit	$75
Wetlands Permit	$50 (each)
Short Environmental Assessment Form	$50
Long Environmental Assessment Form	$100
Recreation Fee	$10,000 Each Additional Lot
Discussion Fee	$200.00

Prior to submission of a sketch or preliminary subdivision Plat, an applicant or an applicant's representative wishes to discuss a subdivision proposal to the Planning Board, a discussion fee of $200.00 shall be submitted for each informal appearance before the board.

Any amendment to previously approved applications requires new application forms and Fes

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PLANNING BOARD SCHEDULE OF ESCROW ACCOUNT DEPOSITS

Type of Application Deposit*	Amount of Initial Escrow Account
Concept Study	$500.00
Site Plan Waiver for Change of Use	$500.00
Site Development Plan for:	
Multifamily Developments	$3,000.00 plus $100.00 per proposed dwelling unit
Commercial Developments	$3,000.00 plus $50.00 for each required parking space
1 or 2 Family Projects	$2,000.00
Special Use Permit	$2,000.00 plus $50.00 for each required parking space
Subdivision:	
Lot Line Change resulting in no new lots	$1,500.00
All Others	$3,000.00 plus $200.00 per proposed new lot in excess of two (2)
Preparation or Review of Environmental Impact Statement	$15,000.00

* If a proposed action involves multiple approvals, a single escrow account will be established. The total amount of the initial deposit shall be the sum of the individual amounts indicated. When the balance in such escrow account is reduced to one-third (1/3) of its initial amount, the applicant shall deposit additional funds into such account to restore its balance to the amount of the initial deposit.

3-12-22

Applicant Signature Date:

I. IDENTIFICATION OF PROPERTY OWNER, APPLICANT AND PROFESSIONAL REPRESENTATIVES

Name of Property Owner: Keith Rosenthal

Mailing Address: 10 Creemer Road - Armonk, NY 10504

Telephone: 914-643-0321 Fax: _____ e-mail krosenthal@phoenixrg.com

Name of Applicant (if different): _____

Address of Applicant: _____

Telephone: _____ Fax: _____ e-mail _____

Interest of Applicant, if other than Property Owner:

_____

Is the Applicant (if different from the property owner) a Contract Vendee?

Yes ☐ No ☐

If yes, please submit affidavit sating such. If no, application cannot be reviewed by Planning Board

Name of Professional Preparing Site Plan:
Joseph C. Riina, P.E.

Address: 251 F Underhill Avenue - Yorktown Heights, NY 10598

Telephone: 914-962-4488 Fax: 914-962-7386 e-mail jriina@sitedesignconsultants.com

Name of Other Professional: Justin F. Minieri, AIA

Address: 55 Webster Avenue, Loft 404, New Rochelle, NY 10801

Telephone: 914-576-7087 Fax: _____ e-mail tracepaper@aol.com

Name of Attorney (if any): N/A

Address: _____

Telephone: _____ Fax: _____ e-mail _____

Applicant Acknowledgement

By making this application, the undersigned Applicant agrees to permit Town officials and their designated representatives to conduct on-site inspections in connection with the review of this application.

The Applicant also agrees to pay all expenses for the cost of professional review services required for this application.

It is further acknowledged by the Applicant that all bills for the professional review services shall be mailed to the Applicant, unless the Town is notified in writing by the Applicant at the time of initial submission of the application that such mailings should be sent to a designated representative instead.

Signature of Applicant: _____ Date: 3-12-22

Signature of Property Owner: _____ Date: 3-12-22

MUST HAVE BOTH SIGNATURES

II. IDENTIFICATION OF SUBJECT PROPERTY

Street Address: 10 Creemer Road

Location (in relation to nearest intersecting street):

950 feet (~~north~~ ~~south~~ east ~~west~~) of Rte. 22

Abutting Street(s): _____

Tax Map Designation (NEW): Section 108.02 Block 2 Lot 60

Tax Map Designation (OLD): Section _____ Block _____ Lot _____

Zoning District: R-2A Total Land Area 5.66 acres

Land Area in North Castle Only (if different) _____

Fire District(s) #2 School District(s) Byram Hills

Is any portion of subject property abutting or located within five hundred (500) feet of the following:

The boundary of any city, town or village?
No X Yes (adjacent) _____ Yes (within 500 feet) _____
If yes, please identify name(s): _____

The boundary of any existing or proposed County or State park or any other recreation area?
No X Yes (adjacent) _____ Yes (within 500 feet) _____

The right-of-way of any existing or proposed County or State parkway, thruway, expressway, road or highway?
No X Yes (adjacent) _____ Yes (within 500 feet) _____

The existing or proposed right-of-way of any stream or drainage channel owned by the County or for which the County has established channel lines?
No X Yes (adjacent) _____ Yes (within 500 feet) _____

The existing or proposed boundary of any county or State owned land on which a public building or institution is situated?
No X Yes (adjacent) _____ Yes (within 500 feet) _____

The boundary of a farm operation located in an agricultural district?
No X Yes (adjacent) _____ Yes (within 500 feet) _____

Does the Property Owner or Applicant have an interest in any abutting property?
No X Yes _____

If yes, please identify the tax map designation of that property:

_____

III. DESCRIPTION OF PROPOSED DEVELOPMENT

Proposed Use: Residential home addition and cottage addition

Gross Floor Area: Existing Main House 2,475 sf Guest 1,238 sf S.F. Proposed Main House 4,494 sf Guest 1,513 S.F.

Proposed Floor Area Breakdown:

Retail _____ S.F.; Office _____ S.F.;

Industrial _____ S.F.; Institutional _____ S.F.;

Other Nonresidential _____ S.F.; Residential 11,267 S.F.;

Number of Dwelling Units: 2

Number of Parking Spaces: Existing 4+ Required 4 Proposed 4+

Number of Loading Spaces: Existing _____ Required _____ Proposed _____

Earthwork Balance: Cut 450 C.Y. Fill 0 C.Y.

Will Development on the subject property involve any of the following:

Areas of special flood hazard? No X Yes _____
(If yes, application for a Development Permit pursuant to Chapter 177 of the North Castle Town Code may also be required)

Trees with a diameter at breast height (DBH) of 8" or greater?

No X Yes _____
(If yes, application for a Tree Removal Permit pursuant to Chapter 308 of the North Castle Town Code may also be required.)

Town-regulated wetlands? No _____ Yes X
(If yes, application for a Town Wetlands Permit pursuant to Chapter 340 of the North Castle Town Code may also be required.)

State-regulated wetlands? No X Yes _____
(If yes, application for a State Wetlands Permit may also be required.)

V. INFORMATION TO BE INCLUDED ON SITE DEVELOPMENT PLAN

The following checklist is provided to enable the Applicant to determine if he/she has provided enough information on the site development plan for the Planning Board to review his/her proposal. Applicants are advised to review ARTICLE VIII, Site Development Plan of the North Castle Town Code for a complete enumeration of pertinent requirements and standards prior to making application for site development plan approval.

The application for site development plan approval will not be accepted for Planning Board review unless all items identified below are supplied and **so indicated with a check mark in the blank line provided.** If a particular item is not relevant to the subject property or the development proposal, **the letters "NA" should be entered instead.** In addition, the project will not be scheduled on a Planning Board agenda until the Applicant receives an initialed "site plan checklist" from the Planning Department.

The information to be included on a site development plan shall include:

Legal Data:

X Name of the application or other identifying title.

X Name and address of the Property Owner and the Applicant, (if different).

X Name, address and telephone number of the architect, engineer or other legally qualified professional who prepared the plan.

X Names and locations of all owners of record of properties abutting and directly across any and all adjoining streets from the subject property, including the tax map designation of the subject property and abutting and adjoining properties, as shown on the latest tax records.

X Existing zoning, fire, school, special district and municipal boundaries.

X Size of the property to be developed, as well as property boundaries showing dimensions and bearings as determined by a current survey; dimensions of yards along all property lines; name and width of existing streets; and lines of existing lots, reservations, easements and areas dedicated to public use.

X Reference to the location and conditions of any covenants, easements or deed restrictions that cover all or any part of the property, as well as identification of the document where such covenants, easements or deed restrictions are legally established.

X Schedule of minimum zoning requirements, as well as the plan's proposed compliance with those requirements, including lot area, frontage, lot width, lot depth, lot coverage, yards, off-street parking, off-street loading and other pertinent requirements.

X Locator map, at a convenient scale, showing the Applicant's entire property in relation to surrounding properties, streets, etc., within five hundred (500) feet of the site.

X North arrow, written and graphic scales, and the date of the original plan and all revisions, with notation identifying the revisions.

X A signature block for Planning Board endorsement of approval.

Existing Conditions Data:

X Location of existing use and design of buildings, identifying first floor elevation, and other structures.

X Location of existing parking and truck loading areas, with access and egress drives thereto.

X Location of existing facilities for water supply, sanitary sewage disposal, storm water drainage, and gas and electric service, with pipe sizes, grades, rim and inverts, direction of flow, etc. indicated.

X Location of all other existing site improvements, including pavement, walks, curbing, retaining walls and fences.

N/A Location, size and design of existing signs.

N/A Location, type, direction, power and time of use of existing outdoor lighting.

N/A Location of existing outdoor storage, if any.

X Existing topographical contours with a vertical interval of two (2) feet or less.

X Location of existing floodplains, wetlands, slopes of 15% or greater, wooded areas, landscaped areas, single trees with a DBH of 8" or greater, rock outcrops, stone walls and any other significant existing natural or cultural features.

Proposed Development Data:

X Proposed location of lots, streets, and public areas, and property to be affected by proposed easements, deed restrictions and covenants.

X Proposed location, use and architectural design of all buildings, including proposed floor elevations and the proposed division of buildings into units of separate occupancy.

X Proposed means of vehicular and pedestrian access to and egress from the site onto adjacent streets.

N/A Proposed sight distance at all points of vehicular access.

N/A Proposed number of employees for which buildings are designed

N/A Proposed streets, with profiles indicating grading and cross-sections showing the width of the roadway; the location and width of sidewalks; and the location and size of utility lines.

N/A Proposed location and design of any pedestrian circulation on the site and off-street parking and loading areas, including handicapped parking and ramps, and including details of construction, surface materials, pavement markings and directional signage.

X Proposed location and design of facilities for water supply, sanitary sewage disposal, storm water drainage, and gas and electric service, with pipe sizes, grades, rim and inverts, direction of flow, etc. indicated.

__X__ Proposed location of all structures and other uses of land, such as walks, retaining walls, fences, designated open space and/or recreation areas and including details of design and construction.

__N/A__ Location, size and design of all proposed signs.

__N/A__ Location, type, direction, power and time of use of proposed outdoor lighting.

__N/A__ Location and design of proposed outdoor garbage enclosure.

__N/A__ Location of proposed outdoor storage, if any.

__N/A__ Location of proposed landscaping and buffer screening areas, including the type (scientific and common names), size and amount of plantings.

__N/A__ Type of power to be used for any manufacturing

__N/A__ Type of wastes or by-products to be produced and disposal method

__N/A__ In multi-family districts, floor plans, elevations and cross sections

__N/A__ The proposed location, size, design and use of all temporary structures and storage areas to be used during the course of construction.

__X__ Proposed grade elevations, clearly indicating how such grades will meet existing grades of adjacent properties or the street.

__X__ Proposed soil erosion and sedimentation control measures.

__N/A__ For all proposed site development plans containing land within an area of special flood hazard, the data required to ensure compliance with Chapter 177 of the North Castle Town Code.

__N/A__ For all proposed site development plans involving clearing or removal of trees with a DBH of 8" or greater, the data required to ensure compliance with Chapter 308 of the North Castle Town Code.

__N/A__ For all proposed site development plans involving disturbance to Town-regulated wetlands, the data required to ensure compliance with Chapter 340 of the North Castle Town Code.

Short Environmental Assessment Form
Part 1 - Project Information

Instructions for Completing

Part 1 - Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 - Project and Sponsor Information

Keith Rosenthal

Name of Action or Project:

Proposed Residential Additions for Keith Rosenthal

Project Location (describe, and attach a location map):

10 Creemer Road - Armonk, NY

Brief Description of Proposed Action:

Proposed Expansion and additions to an existing single family residence and guest cottage.

Name of Applicant or Sponsor:	Telephone: 914-643-0321
Keith Rosenthal	E-Mail: krosenthal@phoenixrg.com

Address:

10 Creemer Road

City/PO:	State:	Zip Code:
Armonk	NY	10504

	NO	YES
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.	☑	☐
2. Does the proposed action require a permit, approval or funding from any other governmental Agency? If Yes, list agency(s) name and permit or approval: Special use permit and site plan approval - North Castle Planning Board, Building Permit - North Castle Building Dept., Construction Permit Westchester County Dept. of Health	☐	☑

3.a. Total acreage of the site of the proposed action? 5.66 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? 5.66 acres

4. Check all land uses that occur on, adjoining and near the proposed action.

☐ Urban ☐ Rural (non-agriculture) ☐ Industrial ☐ Commercial ☑ Residential (suburban)

☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other (specify): _____

☐ Parkland

	NO	YES	N/A
5. Is the proposed action,			
a. A permitted use under the zoning regulations?	☐	☑	☐
b. Consistent with the adopted comprehensive plan?	☐	☑	☐
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	NO ☐	YES ☑	
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area? If Yes, identify:	NO ☑	YES ☐	
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	NO ☑	YES ☐	
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?	☑	☐	
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: Project will meet all NYS energy codes	NO ☐	YES ☑	
10. Will the proposed action connect to an existing public/private water supply? If No, describe method for providing potable water: Existing connection to a drilled well	NO ☑	YES ☐	
11. Will the proposed action connect to existing wastewater utilities? If No, describe method for providing wastewater treatment: New septic system will be constructed	NO ☑	YES ☐	
12. a. Does the site contain a structure that is listed on either the State or National Register of Historic Places?	NO ☑	YES ☐	
b. Is the proposed action located in an archeological sensitive area?	☑	☐	
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 ☑	YES ☐	
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody? If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres:	☑	☐	
14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply: ☐ Shoreline ☐ Forest ☐ Agricultural/grasslands ☐ Early mid-successional ☐ Wetland ☐ Urban ☑ Suburban			
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 ☑	YES ☐	
16. Is the project site located in the 100 year flood plain?	NO ☑	YES ☐	
17. Will the proposed action create storm water discharge, either from point or non-point sources? If Yes,	NO ☐	YES ☑	
a. Will storm water discharges flow to adjacent properties? ☑ NO ☐ YES			
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)? If Yes, briefly describe: ☑ NO ☐ YES Proposed on-site stormwater management			

	NO	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: _____	☑	☐
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? If Yes, describe: _____	☑	☐
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? If Yes, describe: _____	☑	☐

I AFFIRM THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Applicant/sponsor name: Keith Rosenthal Date: 3-12-22

Signature: _____

PRINT FORM

Town of North Castle Planning Department
17 Bedford Road Armonk, New York 10504
(914) 273-3542 (914) 273-3554 (fax)

PRELIMINARY SITE PLAN COMPLETENESS REVIEW FORM

This form represents the standard requirements for a completeness review for all preliminary site plans. Failure to provide all of the information requested will result in a determination that the site plan application is incomplete. The review of the site plan for completeness will be based on the requirements of the Town of North Castle Town Code.

Project Name on Plan: Keith Rosenthal

☐Initial Submittal ☐Revised Preliminary

Street Location: 10 Creemer Road

Zoning District: 2A Property Acreage: 5.66 Tax Map Parcel ID: 108.02-2-60

Date: 3-11-22

DEPARTMENTAL USE ONLY

Date Filed: _____ Staff Name: _____

Preliminary Plan Completeness Review Checklist
Items marked with a "☒" are complete, items left blank "☐" are incomplete and must be completed, "NA" means not applicable.

☐1. A complete application for site development plan approval form

☐2. Plan prepared by a registered architect or professional engineer

☐3. Map showing the applicant's entire property and adjacent properties and streets

☐4. A locator map at a convenient scale

☐5. The proposed location, use and design of all buildings and structures

☐6. Proposed division of buildings into units of separate occupancy, detailed breakdowns of all proposed floor space by type of use and floor level

☐7. Existing topography and proposed grade elevations

☐8. Location of drives

- ☐ 9. Location of any outdoor storage
- ☐ 10. Location of all existing and proposed site improvements, including drains, culverts, retaining walls and fences
- ☐ 11. Description of method of water supply and sewage disposal and location of such facilities
- ☐ 12. Location, design and size of all signs
- ☐ 13. Location and design of lighting, power and communication facilities
- ☐ 14. In an industrial district, specific uses proposed, number of employees for which buildings are designed, type of power to be used for any manufacturing process, type of wastes or by-products to be produced by any manufacturing process and proposed method of disposal of such wastes or by-products
- ☐ 15. In a multifamily district, floor plans of each dwelling unit shall be shown, and elevations and cross sections also may be required
- ☐ 16. The name and address of the applicant, property owner(s) if other than the applicant and of the planner, engineer, architect, surveyor and/or other professionals engaged to work.
- ☐ 17. Submission of a Zoning Conformance Table depicting the plan's compliance with the minimum requirements of the Zoning District
- ☐ 18. If a tree removal permit is being sought, submission of a plan depicting the location and graphical removal status of all Town-regulated trees within the proposed area of disturbance. In addition, the tree plan shall be accompanied by a tree inventory includes a unique ID number, the species, size, health condition and removal status of each tree.
- ☐ 19. If a wetlands permit is being sought, identification of the wetland and the 100-foot wetland buffer.

More information about the items required herein can be obtained from the North Castle Planning Department. A copy of the Town Code can be obtained from Town Clerk or on the North Castle homepage: http://www.northcastleny.com

_____ On this date, all items necessary for a technical review of the proposed site plan have been submitted and constitute a COMPLETE APPLICATION.

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WESTCHESTER COUNTY
17 Bedford Road
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PLANNING DEPARTMENT
Adam R. Kaufman, AICP
Director of Planning

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Fax: (914) 273-3554
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Application for Special Use Permit Approval

Application Name

Keith Rosenthal

Town of North Castle Planning Department
17 Bedford Road Armonk, New York 10504
(914) 273-3542 (914) 273-3554 (fax)

SPECIAL USE PERMIT COMPLETENESS REVIEW FORM

This form represents the standard requirements for a completeness review for all preliminary special use permit plans. Failure to provide all of the information requested will result in a determination that the special use permit application is incomplete. The review of the plan for completeness will be based on the requirements of the Town of North Castle Town Code.

Project Name on Plan: Keith Rosenthal

☒ Initial Submittal ☐ Revised Preliminary

Street Location: 10 Creemer Road

Zoning District: R-2A Property Acreage: 5.66 ac Tax Map Parcel ID: 108.02-2-60

Date: 3-12-2022

DEPARTMENTAL USE ONLY

Date Filed: _____ Staff Name: _____

Preliminary Plan Completeness Review Checklist
Items marked with a "☒" are complete, items left blank "☐" are incomplete and must be completed, "NA" means not applicable.

☐1. A written statement describing the nature of the proposed special use and how it will serve to implement the intent and purposes of the Town Code

☐2. A complete application for special use permit approval form

☐3. Plan prepared by a registered architect or professional engineer

☐4. Map showing the applicant's entire property and adjacent properties and streets

☐5. A locator map at a convenient scale

☐6. The proposed location, use and design of all buildings and structures

☐7. Proposed division of buildings into units of separate occupancy, detailed breakdowns of all proposed floor space by type of use and floor level

☐ 8. Existing topography and proposed grade elevations

☐ 9. Location of drives

☐ 10. Location of any outdoor storage

☐ 11. Location of all existing and proposed site improvements, including drains, culverts, retaining walls and fences

☐ 12. Description of method of water supply and sewage disposal and location of such facilities

☐ 13. Location, design and size of all signs

☐ 14. Location and design of lighting, power and communication facilities

☐ 15. In an industrial district, specific uses proposed, number of employees for which buildings are designed, type of power to be used for any manufacturing process, type of wastes or by-products to be produced by any manufacturing process and proposed method of disposal of such wastes or by-products

☐ 16. In a multifamily district, floor plans of each dwelling unit shall be shown, and elevations and cross sections also may be required

☐ 17. The name and address of the applicant, property owner(s) if other than the applicant and of the planner, engineer, architect, surveyor and/or other professionals engaged to work

☐ 18. Submission of a Zoning Conformance Table depicting the plan's compliance with the minimum requirements of the Zoning District

☐ 19. If a tree removal permit is being sought, submission of a plan depicting the location and graphical removal status of all Town-regulated trees within the proposed area of disturbance. In addition, the tree plan shall be accompanied by a tree inventory includes a unique ID number, the species, size, health condition and removal status of each tree.

☐ 20. If a wetlands permit is being sought, identification of the wetland and the 100-foot wetland buffer.

More information about the items required herein can be obtained from the North Castle Planning Department. A copy of the Town Code can be obtained from Town Clerk or on the North Castle homepage: http://www.northcastleny.com

_____ On this date, all items necessary for a technical review of the proposed special use permit plan have been submitted and constitute a COMPLETE APPLICATION.

WETLANDS AND DRAINAGE APPLICATION
TOWN OF NORTH CASTLE BUILDING DEPARTMENT

DATE: 3 / 12 /2022 $50 (min.) for Residential Apps. $250 (min.) for Commercial Apps. FEE: $_____

1. **NAME & ADDRESS OF APPLICANT:**
   Keith Rosenthal
   10 Creemer Road
   Armonk, NY 10504
   TELEPHONE: (914) 643-0321

   OWNER (IF DIFFERENT):
   _____
   _____
   _____
   TELEPHONE: (___)____-____

2. **STREET ADDRESS OF PROPERTY:** 10 Creemer Road
   SECTION: 108.02 BLOCK: 2 LOT: 60

3. **DESCRIPTION OF PROPOSED WORK & MATERIALS:** PLANS & SPECIFICATIONS ANNEXED HERETO. STATE NAME AND OCCUPATION OF PREPARER:
   Installation of two 1250 gal. tanks and 220 lf of 1-1/2' dia. forcemain for septic system.
   Joseph Riina, P.E.

4. **IMPACT STATEMENT** (IF REQUIRED) PREPARED BY: _____

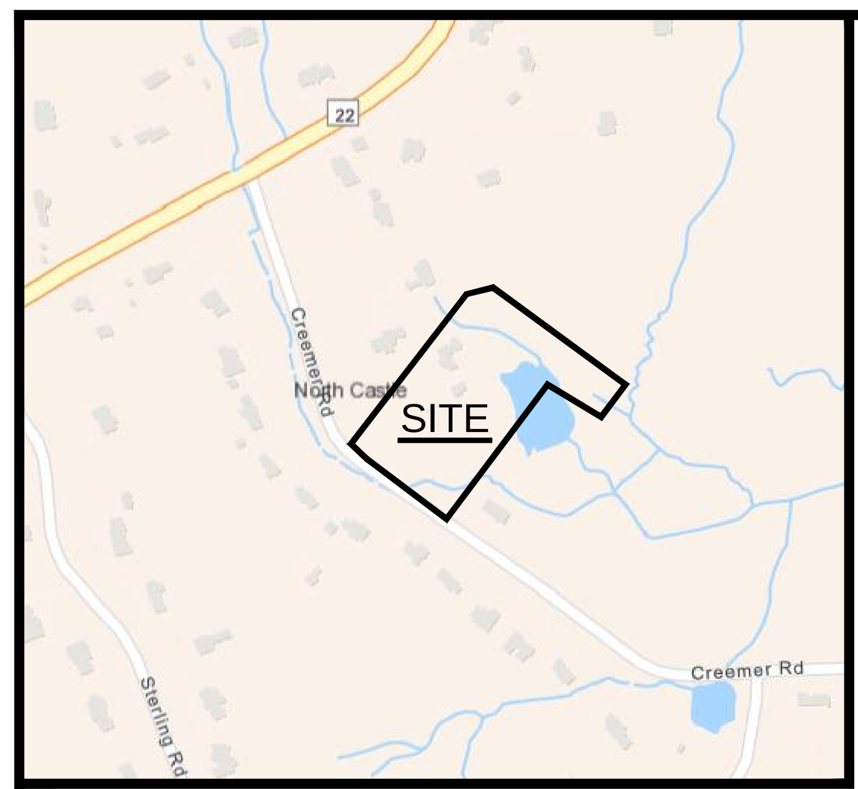
DATED: 3 / 12 / 2022 APPLICANT'S SIGNATURE: _____

NOTE: WETLANDS APPLICATIONS WILL BE REVIEWED BY THE TOWN BOARD, THE PLANNING BOARD, THE CONSERVATION BOARD, OR THE TOWN ENGINEER AT THE DISCRETION OF THE TOWN ENGINEER.

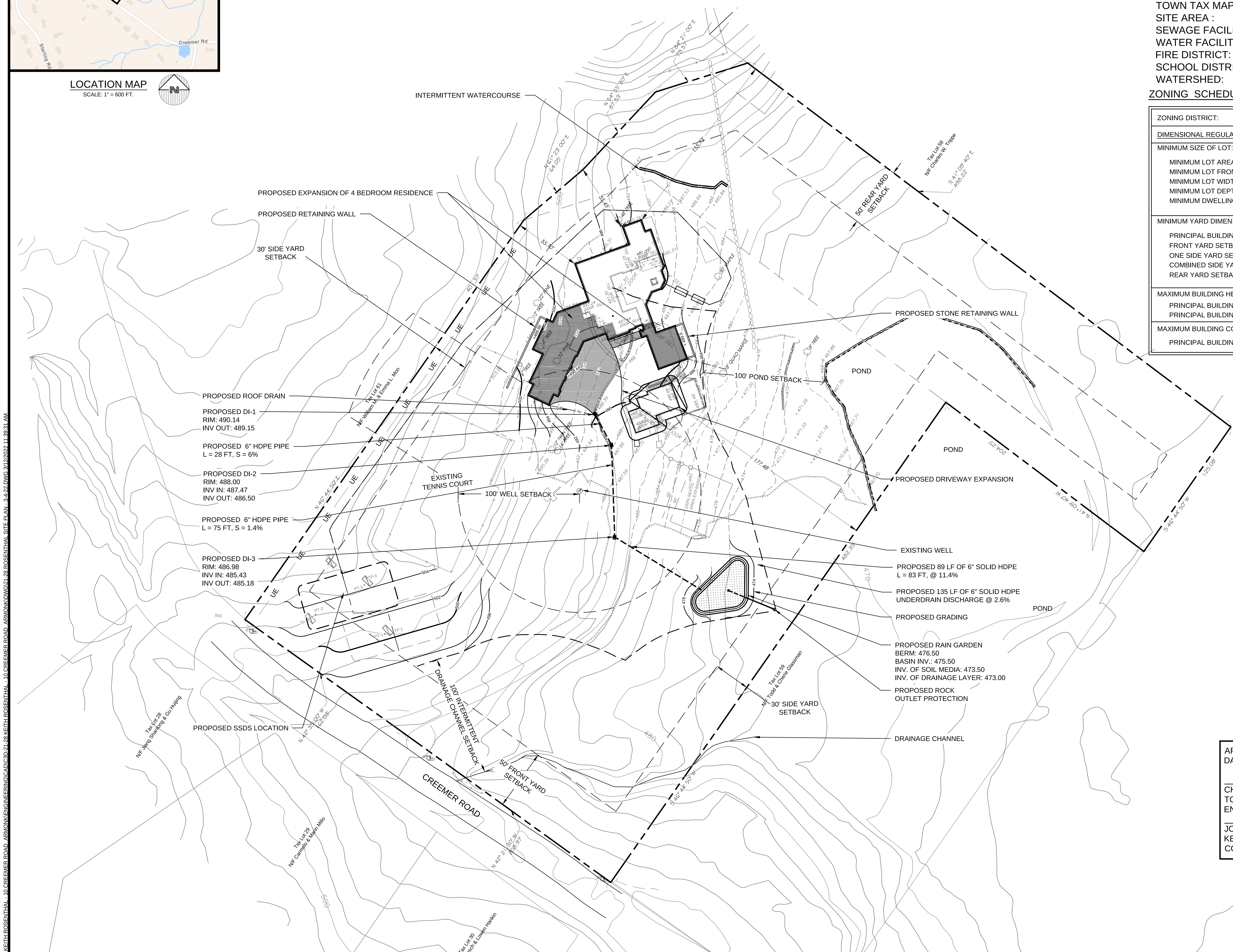
Do you have any intention of tearing down a house to build a new house within the next SIX (6) months?
☐ Yes ☑ No

Do you have any intention to expand a house over 1500 square feet within the next SIX (6) months?
☐ Yes ☑ No

If the Planning Board has granted you approval previously, on what dates were you approved? (List Below)



LOCATION MAP
SCALE: 1" = 600 FT.



SITE DATA:

OWNER / DEVELOPER:	KEITH ROSENTHAL
STREET ADDRESS	10 CREEMER ROAD ARMONK, NY 10504
PROJECT LOCATION:	10 CREEMER ROAD ARMONK, NY 10504
EXISTING TOWN ZONING:	R-2A SINGLE FAMILY RESIDENTIAL
TOWN TAX MAP DATA:	SECTION 108.02, BLOCK 2, LOT 60
SITE AREA :	5.66 ACRES (246,467 SF)
SEWAGE FACILITIES:	ONSITE WASTEWATER TREATMENT SYSTEM
WATER FACILITIES:	DRILLED WELL
FIRE DISTRICT:	#2
SCHOOL DISTRICT:	BYRAM HILLS
WATERSHED:	LONG ISLAND SOUND

ZONING SCHEDULE:

ZONING DISTRICT:	R-2A, ONE FAMILY RESIDENCE DISTRICT (2 acres)		
DIMENSIONAL REGULATIONS:	REQUIRED	PROVIDED	VARIANCE REQUIRED
MINIMUM SIZE OF LOT:			
MINIMUM LOT AREA:	2 AC.	5.66 AC.	NONE
MINIMUM LOT FRONTAGE:	150 FT.	371 FT.	NONE
MINIMUM LOT WIDTH:	150 FT.	370 FT.	NONE
MINIMUM LOT DEPTH:	150 FT.	482 FT.	NONE
MINIMUM DWELLING SIZE:	1,400 S.F.	7,657 S.F.	NONE
MINIMUM YARD DIMENSIONS:			
PRINCIPAL BUILDING:			
FRONT YARD SETBACK:	50 FT.	286 FT.	NONE
ONE SIDE YARD SETBACK:	30 FT.	55 FT.	NONE
COMBINED SIDE YARD SETBACK:	60 FT.	232 FT.	NONE
REAR YARD SETBACK:	50 FT.	156 FT.	NONE
MAXIMUM BUILDING HEIGHT:			
PRINCIPAL BUILDING - STORIES:	--	2 STORIES	NONE
PRINCIPAL BUILDING - FEET:	30 FEET	> 30 FEET	NONE
MAXIMUM BUILDING COVERAGE:			
PRINCIPAL BUILDING :	8% OF LOT AREA	3.1% OF LOT AREA	NONE

LIST OF DRAWINGS:

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD RESOLUTION
DATED:______________________

____Date: ________________________
CHRISTOPHER CARTHY, CAHIRMAN,
TOWN OF NORTH CASTLE PLANNING BOARD
ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:
____Date: ________________________
JOSEPH M. CERMELE, PE
KELLARD SESSIONS CONSULTING
CONSULTING TOWN ENGINEERS

0 20 40 80
SCALE: 1"=40'-0"

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NOTE:
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PROJECT # 21-28

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. Riina, P.E.
NYS Lic. No. 64431

Revisions:

No.	Date	Comments:
1	12-7-21	HD Department
2	2-14-22	HD Department
3	3-4-22	HD Department
4	3-12-22	Plan updates

SCALE: 1" = 40'
DRAWN BY: CS
DATE: 10/01/21

SITE PLAN

SITE PLAN
PREPARED FOR
KEITH ROSENTHAL
10 CREEMER ROAD
Town of North Castle

Sheet 1 of 6

0 20 40 80

SCALE: 1"=40'-0"

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD RESOLUTION DATED:______________________

_________________________________Date: _______________________

CHRISTOPHER CARTHY, CAHIRMAN,
TOWN OF NORTH CASTLE PLANNING BOARD
ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:

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SCALE: 1" = 40'

DRAWN BY: CS

DATE: 10/01/21

EXISTING CONDITIONS PLAN

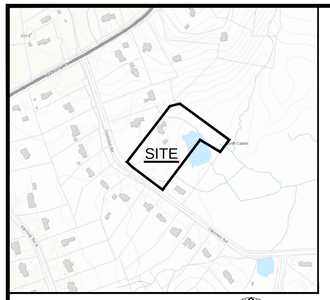
SITE PLAN
PREPARED FOR
KEITH ROSENTHAL

10 CREEMER ROAD

Town of North Castle

###########################

Sheet 2 of 6



LOCATION MAP
NOT TO SCALE

SITE DATA:

OWNER / DEVELOPER:	KEITH ROSENTHAL
STREET ADDRESS	10 CREEMER ROAD ARMONK, NY 10504
PROJECT LOCATION:	10 CREEMER ROAD ARMONK, NY 10504
EXISTING TOWN ZONING:	R-2A SINGLE FAMILY RESIDENTIAL
TOWN TAX MAP DATA:	SECTION 108.02, BLOCK 2, LOT 60
SITE AREA :	5.66 ACRES (246,467 SF)
SEWAGE FACILITIES:	ONSITE WASTEWATER TREATMENT SYSTEM
WATER FACILITIES:	DRILLED WELL
WATERSHED:	LONG ISLAND SOUND

LIST OF DRAWINGS:

GENERAL NOTES:

1. A written permit and/or approval issued by the WCHD to construct an individual sewerage system shall terminate and therefore be null and void unless construction is undertaken within one (1) year of the date of issuance.
2. If for any reason the approved construction plan cannot be followed, a revised plan must be prepared, submitted and approved by the WCHD.
3. All construction to be in accordance with these plans and last revised set of WCHD Rules and Regulations
4. All SSTS and wells shall be located in the exact location as shown on this plan unless otherwise authorized by the WCHD.
5. Existing wells and SDS shown on this map were installed prior to approval date and are not part of this approval.
6. All laundry and kitchen wastes shall be discharged into the SSTS.
7. No cellar, roof or footing drains shall be discharged into the SSTS or within 25' of any well.
8. The WCHD shall be notified WITHIN 24 HOURS prior to the backfilling of any completed SSTS so that a final inspection can be made. Upon completion of any backfilling, the area shall be covered with a minimum of 4" of topsoil, seeded and mulched.
9. Prior to commencement of operation, a Certificate of Compliance must be applied for and received from WCHD.
10. The proposed SSDS shall be isolated and protected against damage by erosion, storage of earth or materials, displacement,compaction or other adverse physical change in the characteristics of the soil or in the drainage of area
11. Proposed septic area to be kept free of traffic and debris during house construction and install adequate drainage to prevent erosion after septic is installed.
12. Any modifications or deviations from this plan must be approved by the Design Engineer and WCHD prior to construction.
13. The Engineer shall not be held responsible or held accountable for the integrity of any structures constructed or under construction prior to the approval of the plans.
14. All conditions, locations, and dimensions shall be field verified and the Engineer shall be immediately notified of any discrepancies.
15. All written dimensions on the drawings shall take precedence over any scaled dimensions.
16. The Design Engineer shall supervise the construction of the SSTS and make an open works inspection.
17. The Design Engineer disclaims any liability for damage or loss incurred during or after construction.
18. The Contractor must have a valid license from the WCHD.
19. Contractor to verify all substructures encountered during construction.
20. The Contractor shall supervise and direct the work using his best skill and attention. He shall be solely responsible for all construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the work under the contract.
21. The Contractor shall be responsible to the owner for the acts and omissions of his employees, subcontractors, and their agents and employees, and any other persons performing any of the work under a contract with the Contractor.
22. Unauthorized alterations or additions to this drawing is a violation of Section 7209 (2) of the New York State Education Law.
23. Survey and topographical information shown hereon prepared by surveyor: SCOTT GRAY

SEPTIC CONSTRUCTION REQUIREMENTS:

1. The construction of the septic system shall meet all requirements of the latest publications and amendments of "The Westchester County Health Department Rules and Regulations for The Design and Construction of Residential Subsurface Sewage Treatment Systems and Drilled Wells in Westchester County" and "The Rules and Regulations of The New York State Department of Health" as set form in 10 NYCRR, Part 75, Appendix75-A.
2. The Westchester County Health Department approval expires one year from the date on the approval stamp and is required to be renewed on or before the expiration date. The approval is revocable for cause or may be amended or modified when considered necessary by the department.
3. All work performed including new installations, repairs, relocations, etc. shall have all current required permits or approvals.
4. No regrading in OWTS area except as shown on this plan.
5. Boulders, if any on surface of ground shall be cleared away prior to construction of the OWTS.
6. The house sewer to tank connection shall be a minimum 4" diameter at a minimum slope of 2.0%. The pipe shall be cast iron, ductile iron, or sewer grade PVC. All materials shall comply to the NYS Uniform Fire Prevention and Building Code(9NYCRR). The house trap shall have a cleanout and fresh air intake having a minimum diameter of one-half.
7. If cover exceeds 2 ft over any installed tank or chamber, a manhole and collar to grade is required for access. Minimum requirement of 6-12" of cover over all tanks and chambers.
8. Absorption Fields to be constructed of 4" perforated PVC pipe or equal, encased in crushed stone over pipe with standard precast junction boxes at influent connection and 4" solid PVC pipe running from septic tank outlet to and between junction boxes.
9. Minimum Trench Depth = 18", Trench Width = 24".
10. Total depth of stone in trench = 12" (washed gravel 3/4" to 1 1/2").
11. Maximum backfill over trench - 14".
12. All septic field laterals shall be of equal length (60' max. w/o dosing and 100' max. if dosed) and parallel to contours at a slope rate of 1/32" per foot or 0.25%.
13. All pipes connecting to tank and boxes shall be cut flush with the inside wall of box.
14. PVC pipe to meet minimum standards of ASTM D-2729.
15. Absorption trenches shall not be installed or backfilled in wet, frozen, frost or snow covered soils.
16. Backfill material for the trenches shall contain no particles with any dimension greater than 4". Backfill septic material must be inspected and approved by the WCHD before installation.
17. No laterals shall be placed beneath a driveway or paved areas.
18. End caps to be placed at end of all 4" perforated P.V.C. pipe in absorption fields.
19. Run of bank sand and gravel and impervious material to be inspected and approved by the Design Engineer prior to installation of the proposed system. Fill shall contain no particles greater than 4" in diameter. Fill shall be placed over expansion area where shown as required by WCHD.
20. Fill stabilization may not be achieved by mechanical compaction Only by a natural settling, for a period required by W.C.H.D. which may include a freeze-thaw cycle. Percolation tests must be done in stabilized fill and must meet the design rate.
21. Prior to submission of Certificate of Compliance to WCHD, fill section must be stabilized with grass seed and hay cover.
22. Spa pool drainage and filter backwash will not discharge to any SSTA.

WCHD NOTES:

1. The design professional shall supervise the construction of the OWTS and make an open works inspection.
2. Within 24-hours of the completion of the OWTS, the design professional must notify the Westchester County Department of Health that the OWTS is ready for inspection by submitting a completed request for an open works inspection on the appropriate form to the Department.
3. There are no DEC wetlands on site nor within 200' of OWTS. There are streams, ponds etc. with in 200' of SSTS. There are no reservior/reservior stems or controlled lake with in 500' of OWTS.
4. There is 47,505 sqft of proposed disturbance.
5. There are no existing or proposed wells within 100 feet of the proposed OWTS nor within 200 feet in the line of drainage.
6. There are no existing OWTS within 200 ft of well unless otherwise shown on this plan.
7. Estimated construction and completion date: January 2022 to January 2023.
   a) Within 24 hours of the completion of the OWTS, the design professional must notify the Westchester County Department of Health (WCDH) that the OWTS is ready for inspection by submitting a completed request for an open works inspection on the appropriate form to WCDH.
   b) That no backfilling of a completed OWTS can occur until after it has been inspected and accepted by the Westchester County Department of Health.
   c) After backfilling the OWTS, the area shall be covered with a minimum of 4 inches of clean top soil, seeded and mulched.
8. There shall be no trees within 10' of the OWTS.
9. Prior to any excavation, all underground utilities must be located. Call 1-800-962-7962.

MINIMUM RESTRICTIVE DISTANCES TO WELL:

1.	Property Line	10 feet
2.	Sewage System Tankage	50 feet
3.	Foundation	10 feet
4.	Swimming Pools	10 feet
5.	Watercourse or Waterbody	50 feet
6.	Absorption Trench	100 feet; 200 feet general path of drainage
7.	Seepage Pit	150 feet; 200 feet general path of drainage
8.	Tri-gallery, 4x4	150 feet; 200 feet general path of drainage
9.	Flow Diffusor	100 feet; 200 feet general path of drainage

SEPARATION DISTANCES FROM WASTEWATER SOURCES

WASTEWATER SOURCES	DRILLED WELL (AT HIGHER ELEVATION)	TO STREAM LAKE WATERCOURSE (B)(C) OR WETLAND	DWELLING	PROPERTY LINES
HOUSE SEWER (WATERTIGHT JOINTS) (CIP, DIP, OR SIMILAR)	25'	25'	---	10'
SEPTIC TANK	50'	50'	10'	10'
EFFLUENT LINE TO DISTRIBUTION BOX	50'	50'	10'	10'
DISTRIBUTION BOX	100'	100'	20'	10'
ABSORPTION FIELD	100' (A)	100'	20'	10'
SEEPAGE PIT	150' (A)	100'	20'	10'
DRY WELL (ROOF & FOOTINGS)	50'	25'	20'	10'

NOTES:

A. Wells located in the general path of drainage of a SSTS must be located 200 feet or more away. All public water supply wells must be 200 feet from absorption fields or seepage pits.
B. Mean high water mark of defined stream or lake.
C. NYSDEC Wetland.
D. Trees: There shall be no trees within 10 feet of SSTS.
E. Dry Wells not allowed above a SSTS.

ADDITIONAL SEPERATION DISTANCES FROM SSTA TO:

1.	Dry Well	50 feet (horizontal or below)
2.	Piped Drainage	25 feet
3.	Open Channel Drainage	50 feet
4.	Curtain Drain (upgrade from SSTS)	15 feet
5.	Curtain Drain (downgrade from SSTS)	50 feet

SWIMMING POOLS:

1. A minimum distance of 50 feet shall be maintained between any uphill SSTA (including 100% grade replacement area) and any downhill in-ground pool.
2. A minimum distance of 20 feet shall be maintained between the pool and any portion of the sewage treatment area in all other directions.
3. Above ground pools shall not be located over or within 10 feet of the SSTA, including the 100% replacement area.

DECKS:

1. The minimum seperation distance for deck support posts (pilings, sonotubes, etc.) to the absorption field is 10 feet and all tanks used in the SSTS (septic tanks, pump chambers, overflow tanks or pits) is 5 feet.
2. This provision also supplies to the deck around and above ground pool.
3. In all circumstances, access to the tanks for repairs and pump-outs shall not be compromised by the deck installation.

SOILS CLASSIFICATIONS

TYPE	NAME	DESCRIPTION	HYDROLOGICAL GROUP
Ce	CATDEN	MUCK	B/D
CsD	CHATFIELD-CHARTON	VERY ROCKY	B
NcA	NATCHAUG	MUCK	B/D
PnB	PAXTON	FINE SANDY LOAM	C
PnC	PAXTON	FINE SANDY LOAM	C
Sh	SUN	LOAM	C/D
W	WATER	-	-

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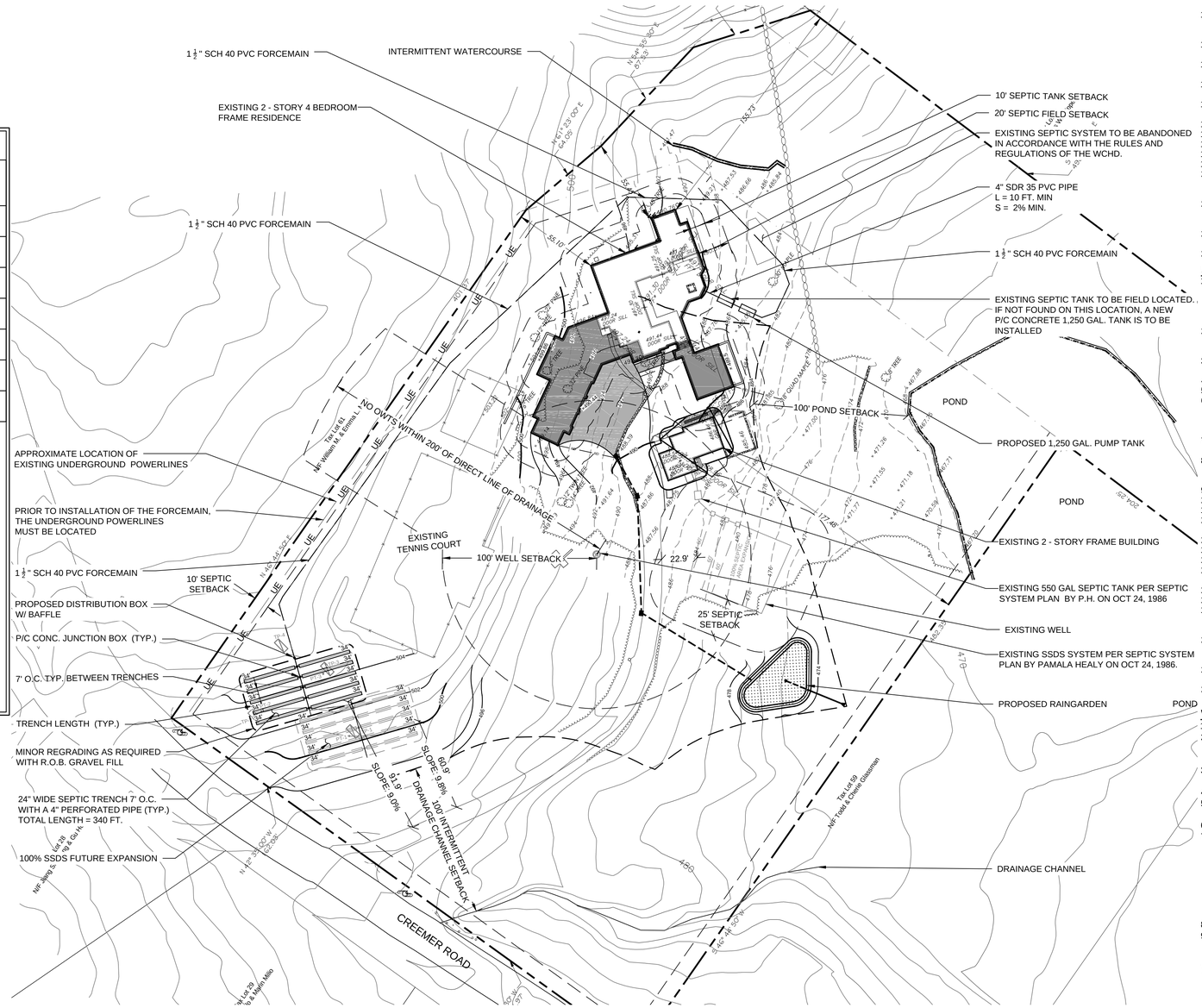

HEALTH DEPARTMENT SEPTIC SCHEDULE

S.S.T.A. AREA (S.F.)	LOT AREA (S.F.)	TEST HOLE NO.	DEEP TEST PIT DESCRIPTION	TOTAL DEPTH	DEPTH TO WATER	DEPTH TO ROCK	PERCENT SLOPE AREA	PERC TEST NO.	PERC. RATE (MIN/IN)	DESIGN DATA: MIN. DESIGN RATE	APPLICATION RATE (GPD/SF)	NO. OF BEDROOMS	DESIGN FLOW RATE	TANK SIZE	REQD. TRENCH LENGTH	BANK RUN FILL DEPTH	BANK RUN FILL VOLUME	CURTAIN DRAIN DEPTH	CURTAIN DRAIN LENGTH	REMARKS
2,912 S.F.	246,467 S.F.	TP-#1	6" T.SOIL, 6"-84" FINE MED SANDY LOAM, NO ROCK, NO GROUNDWATER	7'-0"	——	——	8.7 %	PT-1	1.2 MIN.	1-5 MIN.	1.2	4 BRM	800 GPD	1,250 GAL	336 LF	2 FT	11,360 FT³	——	——	DOSING REQ'D.
		TP-#2	6" T.SOIL, 6"-84" FINE MED SANDY LOAM, NO ROCK, NO GROUNDWATER	7'-0"	——	——		PT-2	3 MIN.											
		TP-#3	6" T.SOIL, 6"-84" FINE MED SANDY LOAM, NO ROCK, NO GROUNDWATER	7'-0"	——	——		PT-3	3 MIN.											
		TP-#4	12" T.SOIL, 12"-84" FINE SANDY LOAM, NO ROCK, NO GROUNDWATER	7'-0"	——	——													

SEPTIC DESIGN AREA:

EXISTING PRIMARY SYSTEM AREA	12.3%
PROPOSED PRIMARY SYSTEM AREA	9.3%
EXISTING EXPANSION AREA	9.3%
PROPOSED EXPANSION AREA	9.3%

SLOPE

0 20 40 80
SCALE: 1"=40'-0"

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Engineer:
STATE OF NEW YORK JOSEPH CARLO RINA 076449 LICENSED PROFESSIONAL ENGINEER
Joseph C. Rina, P.E.
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DRAWN BY: CS
DATE: 10/01/21

SEPTIC PLAN

SITE PLAN
PREPARED FOR
KEITH ROSENTHAL
10 CREEMER ROAD
Town of North Castle Westchester County, New York

Sheet 3 of 6

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GENERAL 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. Road surface flows from the site should be dissipated with tracking pad or appropriate measures during adjacent road shoulder regrading. Contractor is responsible for the installation and maintenance of all soil erosion and sedimentation control devices throughout the course of construction.
2. Catch basin inlet protection must be installed and operating at all times until tributary areas have been stabilized. When possible flows should be stabilized before reaching inlet protection structure. Timely maintenance of sediment control structures is the responsibility of the Contractor.
3. 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 engineer. 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.
4. The locations and the installation times of the sediment capturing standards shall be as specified in these plans, as ordered by the Engineer, and in accordance with the latest edition of the "New York Standards and Specifications for Erosion and Sediment Control" (NYSSESC).
5. All topsoil shall be placed in a stabilized stockpile for reuse on the site. All stockpile material required for final grading and stored on site shall be temporarily seeded and mulched within 7 days. Refer to soil stockpile details.
6. Any disturbed areas that will be left exposed more than 7 days and not subject to construction traffic, shall immediately receive temporary seeding. Mulch shall be used if the season prevents the establishment of a temporary cover. Disturbed areas shall not be limed and fertilized prior to temporary seeding.
7. All disturbed areas within 500 feet of an inhabited dwelling shall be wetted as necessary to provide dust control.
8. 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.
9. Sediment and erosion control structures shall be removed and the area stabilized when the drainage area has been properly stabilized by permanent measures.
10. All sediment and erosion control measures shall be installed in accordance with current edition of NYSSESC.
11. All regraded areas must be stabilized appropriately prior to any rock blasting, cutting, and/or filling of soils. Special care should be taken during construction to insure stability during maintenance and integrity of control structures.
12. Any slopes graded at 3:1 or greater shall be stabilized with erosion blankets to be staked into place in accordance with the manufactures requirements. Erosion blankets may also be required at the discretion of Town officials or Project Engineer. When stabilized blanket is utilized for channel stabilization, place all of the volume of seed mix prior to laying net, or as recommended by the manufacturer.
13. To prevent heavy construction equipment and trucks from tracking soil off-site, construct a pervious crushed stone pad. Locate and construct pads as detailed in these plans.
14. Contractor is responsible for controlling dust by sprinkling exposed soil areas periodically with water as required. Contractor to supply all equipment and water.
15. Contractor shall be responsible for construction inspections as per NYSDEC GP-0-20-001 and Town of North Castle Code.

MAINTENANCE OF TEMPORARY EROSION AND SEDIMENT CONTROL STRUCTURES:

N.Y.S.D.E.C. GP-0-20-001 EXPOSURE RESTRICTIONS - States that any exposed earthwork shall be stabilized in accordance with the guidelines of this plan.

1. Trees and vegetation shall be protected at all times as shown on the detail drawing and as directed by the Engineer.
2. Care should be taken so as not to channel concentrated runoff through the areas of construction activity on the site.
3. Fill and site disturbances should not be created which causes water to pond off site or on adjacent properties.
4. Runoff from land disturbances shall not be discharged or have the potential to discharge off site without first being intercepted by a control structure, such as a sediment trap or silt fence. Sediment shall be removed before exceeding 50% of the retention structure's capacity.
5. For finished grading, adequate grade shall be provided so that water will not pond on lawns for more than 24 hours after rainfall, except in swale flow areas which may drain for as long as 48 hours after rainfall.
6. All swales and other areas of concentrated flow shall be properly stabilized with temporary control measures to prevent erosion and sediment travel. Surface flows over cut and fill areas shall be stabilized at all times.
7. All sites shall be stabilized with erosion control materials within 7 days of final grading.
8. Temporary sediment trapping devices shall be removed from the site within 30 days of final stabilization.

MAINTENANCE SCHEDULE:

	DAILY	WEEKLY	MONTHLY	AFTER RAINFALL	NECESSARY TO MAINTAIN FUNCTION	AFTER APPROVAL OF INSPECTOR
SILT FENCE	— — —	INSP.	INSP.	INSP.	CLEAN/ REPLACE	REMOVE
PROTECTION	— — —	INSP.	INSP.	CLEAN	REPLACE	REMOVE
C. ENTRANCE	— — —	INSP.	INSP.	INSP.	CLEAN/ REPLACE	REMOVE

MAINTENANCE OF PERMANENT CONTROL STRUCTURES DURING CONSTRUCTION:

The stormwater management system and outlet structure shall be inspected on a regular basis and after every rainfall event. Sediment build up shall be removed from the inlet protection regularly to insure detention capacity and proper drainage. Outlet structure shall be free of obstructions. All piping and drain inlets shall be free of obstruction. Any sediment build up shall be removed.

MAINTENANCE OF CONTROLS AFTER CONSTRUCTION:

Controls (including respective outlet structures) should be inspected periodically for the first few months after construction and on an annual basis thereafter. They should also be inspected after major storm events.

DEBRIS AND LITTER REMOVAL:

Twice a year, inspect outlet structure and drain inlets for accumulated debris. Also, remove any accumulations during each mowing operation.

STRUCTURAL REPAIR/REPLACEMENT:

Outlet structure must be inspected twice a year for evidence of structural damage and repaired immediately.

EROSION CONTROL:

Unstable areas tributary to the basin shall immediately be stabilized with vegetation or other appropriate erosion control measures.

SEDIMENT REMOVAL:

Sediment should be removed after it has reached a maximum depth of five inches above the stormwater management system floor.

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. Cut and clear trees within work area. Timbered trees, wood chips, and stumps shall be removed off-site. Strip site and place topsoil in stockpile locations shown on the plan.
4. Start construction of project access points, set-up staging areas as shown on Erosion and Sediment Control Plan.
5. Begin rough grading the site.
6. Rough grade of foundation for additions. Soil shall be stockpiled as shown and stabilized the next day if they are to be left alone for over seven days.
7. 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.
8. Septic system may be constructed at any point after step 7.
9. Begin construction of the house addition.
10. Upon completion of foundation, backfill to grade and immediately stabilize areas that will not receive traffic or disturbance within seven (7) days.
11. 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 stormwater outlet shall be blocked until all upstream areas have been permanently stabilized.
12. During building and site construction maintain and re-establish as required erosion control and stabilization measures as required by the site plan and details.
13. Installation of proposed raingarden.
14. Topsoil, rake, seed and mulch all disturbed areas. Once all proposed disturbances are completed, begin full stabilization of the site. Once the site has been stabilized, remove all temporary erosion control measures. This shall be done during optimum weather conditions to avoid sediment transport. A site shall be considered stabilized when it has a minimum uniform 80% perennial vegetation cover or other permanent non vegetative cover with a density sufficient to resist accelerated surface erosion. Once final stabilization has been achieved, unblock piping to infiltrators in order to allow flow to enter.

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 period of time shall be treated with temporary seed, mulch, and/or erosion blankets.

NOTE:

1. *THIS IS NOT A SURVEY.* ALL SURVEY INFORMATION SHOWN ON THIS PLAN HAS BEEN TAKEN FROM SURVEY MAP PREPARED BY SCOTT GRAY, DATED 12/03/20, LAST REVISED 12/21/20. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR ITS ACCURACY.

F:\2021\21-28 KEITH ROSENTHAL - 10 CREEMER ROAD ARMONK\ENGINEERING\CAD\C3D-21-28 KEITH ROSENTHAL - 10 CREEMER ROAD ARMONK\DWG\21-28 ROSENTHAL SITE PLAN - 3-4-22.DWG 3/12/2022 11:39:31 AM

TOPSOIL:

Existing topsoil will be removed and stored in piles sufficiently as to avoid mixing with other excavation. Stockpiles shall be surrounded by erosion control as outlined on these plans. The furnishing of new topsoil shall be of a better or equal to the following criteria (SS713.01 NYSDOT):

1. The pH of the material shall be 5.5 to 7.6.
2. The organic content shall not be less than 2% or more than 70%.
3. Gradation:

SIEVE SIZE	% PASSING BY WGT.
2 INCH	100
1 INCH	85 TO 100
1/4 INCH	65 TO 100
NO. 200 MESH	20 TO 80

PERMANENT VEGETATIVE COVER:

1. Site preparation:
   - 1.1. Install erosion control measures.
   - 1.2. Scarify compacted soil areas.
   - 1.3. Lime as required to ph 6.5.
   - 1.4. Fertilize with 10-6-4 4 lbs/1,000 S.F.
   - 1.5. Incorporate amendments into soil with disc harrow.
2. Seed mixtures for use on swales and cut and fill areas.

MIXTURE		LBS./ACRE
ALT. A	KENTUCKY BLUE GRASS	20
	CREEPING RED FESCUE	28
	RYE GRASS OR REDTOP	5
ALT. B	CREEPING RED FESCUE	20
	REDTOP	2
	TALL FESCUE/SMOOTH BLOOMGRASS	20

3. SEEDING
   - 1.1. Prepare seed bed by raking to remove stones, twigs, roots and other foreign material.
   - 1.2. Apply soil amendments and integrate into soil.
   - 1.3. Apply seed uniformly by cyclone seeder culti-packer or hydro-seeder at rate indicated.
   - 1.4. Stabilize seeded areas in drainage swales.
   - 1.5. Irrigate to fully saturate soil layer, but not to dislodge planting soil.
   - 1.6. Seed between April 1st and May 15th or August 15th and October 15th.
   - 1.7. Seeding may occur May 15th and August 15th if adequate irrigation is provided.

TEMPORARY VEGETATIVE COVER:

SITE PREPARATION:

1. Install erosion control measures.
2. Scarify areas of compacted soil.
3. Fertilize with 10-10-10 at 400/acre.
4. Lime as required to ph 6.5.

SEED SPECIES:

MIXTURE	LBS./ACRE
Rapidly germinating annual ryegrass (or approved equal)	20
Perennial ryegrass	20
Cereal oats	36

SEEDING:
Same as permanent vegetative cover

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD RESOLUTION DATED:______________________

________________________________Date: ________________________
CHRISTOPHER CARTHY, CAHIRMAN,
TOWN OF NORTH CASTLE PLANNING BOARD
ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:
________________________________Date: ________________________
JOSEPH M. CERMELE, PE
KELLARD SESSIONS CONSULTING
CONSULTING TOWN ENGINEERS

SCALE: 1"=40'-0"

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PROJECT # 21-28

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www.sitedesignconsultants.com

Engineer:
Joseph C. Riina, P.E.
NYS Lic. No. 64431

Revisions:

No.	Date	Comments:
1	1-7-21	HD Department
2	2-14-22	HD Department
3	3-4-22	HD Department
4	3-12-22	Plan updates

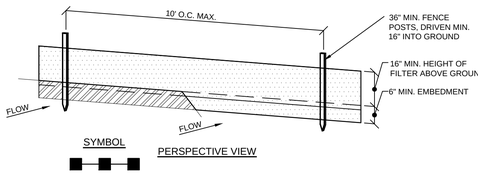
SCALE: 1" = 40'
DRAWN BY: CS
DATE: 10/01/21

EROSION AND SEDIMENT CONTROL PLAN

SITE PLAN
PREPARED FOR
KEITH ROSENTHAL
10 CREEMER ROAD
Town of North Castle
##########################

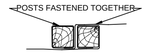
Sheet 4 of 6

NOTE: UNAUTHORIZED ALTERATIONS OR ADDITIONS TO THIS DRAWING IS A VIOLATION OF SECTION 7209 (2) OF THE NEW YORK STATE EDUCATION LAW.

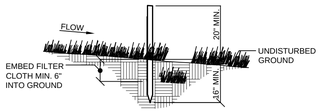


SYMBOL

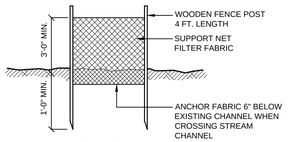
PERSPECTIVE VIEW



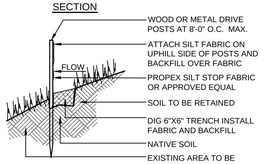
PLAN VIEW: JOINING SECTIONS



SECTION



ELEVATION

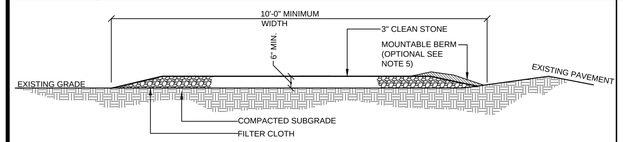


SECTION

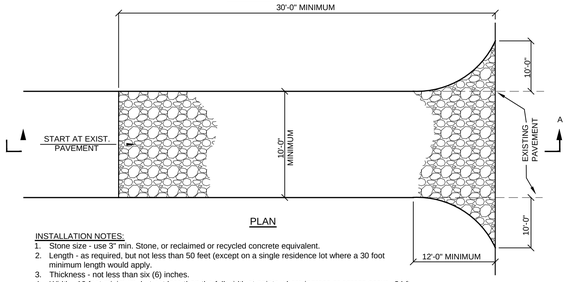
NOTES:
1. Filter cloth to be fastened securely to post: steel either t or u type or 2" hardwood posts at top and mid section.
2. When two sections of filter cloth adjoin each other they shall be overlapped by 6 inches and folded. Filter cloth shall be mirafi 100x, stabilinka t140n or approved equal
3. Maintenance shall be performed as needed and material removed when "bulges" develop in the silt fence.
4. Excavate 4 inch trench along the lower perimeter of the site.
5. Unroll a section at a time and position the post against the back (downstream) wall of the trench (net side away from direction of flow).
6. Drive the post into the ground until the netting is approximately 2 inches from the trench bottom.
7. Lay the toe-in flap of fabric onto the undisturbed bottom of the trench, backfill the trench and tamp the soil. Steeper slopes require an intercept trench.
8. Join sections as shown above.

E-1 SILT FENCE DETAIL

NOT TO SCALE



SECTION A-A

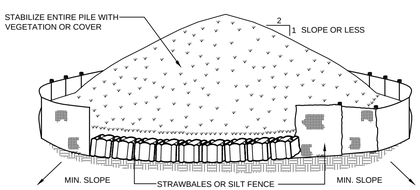


PLAN

INSTALLATION NOTES:
1. Stone size - use 3" min. Stone, or reclaimed or recycled concrete equivalent.
2. Length - as required, but not less than 50 feet (except on a single residence lot where a 30 foot minimum length would apply.
3. Thickness - not less than six (6) inches.
4. Width - 10 foot minimum, but not less than the full width at points where ingress or egress occur. 24 ft if single entrance to site.
5. 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.
6. 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 cleanouts of any measures used to trap sediment. All sediment spilled, dropped, washed or tracked onto public right of way must be removed immediately.
7. Washing - wheels shall be cleaned to remove sediment prior to entrance onto public right of way. When washing is required, it shall be done on an area stabilized with stone and which drains into an approved sediment trapping device.
8. Periodic inspection and needed maintenance shall be provided after each rain

E-2 STABILIZED CONSTRUCTION ENTRANCE DETAIL

NOT TO SCALE



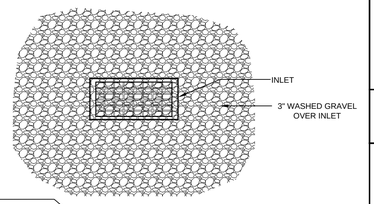
SYMBOL

SS

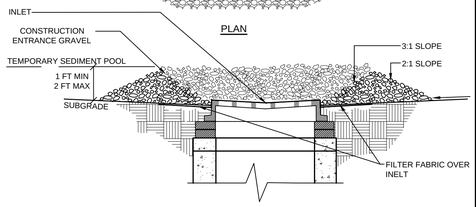
NOTES:
1. Area chosen for stockpiling operations shall be dry and stable.
2. Maximum slope of stockpile shall be 1:2.
3. Upon completion of soil stockpiling, each pile shall be surrounded with either silt fencing or strawbales, then stabilized with vegetation or covered.
4. See detail for installation of silt fence.

E-4 SOIL STOCKPILE DETAIL

NOT TO SCALE



PLAN



SECTION

SYMBOL

E-3 INLET PROTECTION DETAIL

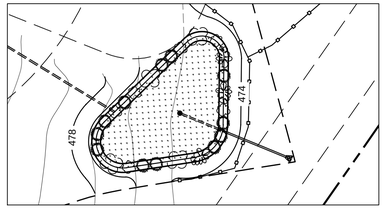
NOT TO SCALE

RAINGARDEN WORKSHEET

DA:	RAIN GARDEN	WQv (cf)	Nsm	Dsm (ft)	Vsm	Ndl	Ddl (ft)	Vdl	Dp (ft)	Af Required (sf)
1	1	914	0.2	2	433.2	0.4	0.5	216.6	0.5	830.91

Af Provided (sf)	Volume Provided (cf)	RRv provided		Total Area(ac):	Impervious Area(ac):
1083	1191.3	476.52	0.011	0.1465	0.1465

SW-3 RAIN GARDEN WORKSHEET



PLANT SPECIFICATIONS:

Suggested Shrubs List
WITCH HAZEL(Hamemelis virginiana)
WINTERBERRY(Ilex verticillata)
ARROWWOOD (Viburnum dentatum)
BROOK-SIDE ALDER (Alnus serrulata)
RED-OISER DOGWOOD (Cornus stolonifera)
SWEET PEPPERBUSH (Clethra alnifolia)

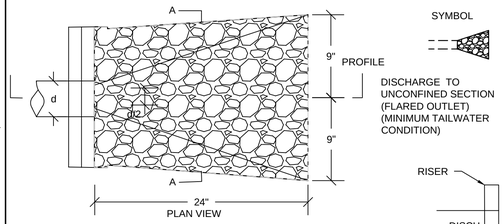
Suggested Herbaceous Plant List
CINNAMON FERN (Osmunda cinnamomea)
CUTLEAF CONEFLOWER (Rudbeckia laciniata)
WOOLGRASS (Scirpus cyperinus)
NEW ENGLAND ASTER (Aster novea-angliae)
FOX SEDGE (Carex culpinoidea)
SPOTTED JOE-PYE WEED (Eupatorium maculatum)
SWITCH GRASS (Panicum virgatum)
GREAT BLUE LOBELIA (Lobelia siphatica)
WILD BERGAMOT (Monarda fisulosa)
RED MILKWEED (Asclepias incarnata)

PLANTING SOIL SPECIFICATIONS:

- CLASSIFICATION	SM OR ML-UNIFIED SOIL CLASSIFICATION SYSTEM
- PERMEABILITY	1.0 FEET PER DAY OR 0.5% INCHES PER HOUR
- PH RANGE	5.2 TO 7.0%
- ORGANIC MATTER	1.5 TO 4.0%
- MAGNESIUM	35 LBS / ACRE PER MIN.
- PHOSPHORUS	75 LBS / ACRE PER MIN.
- POTASSIUM	85 LBS / ACRE PER MIN.
- SOLUBLE SALTS	≤ 500 PPM
- CLAY	UP TO 5%
- SILT	UP TO 30%
- SAND	UP TO 70%

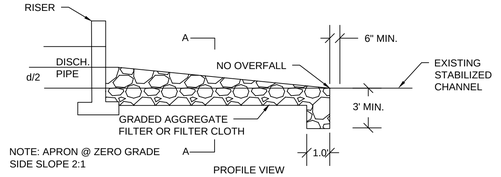
SW-1 RAIN GARDENS DETAIL

NOT TO SCALE

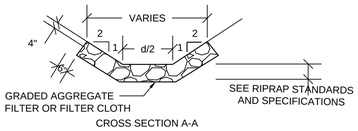


SYMBOL

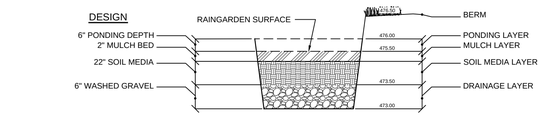
DISCHARGE TO UNCONFINED SECTION (FLARED OUTLET) (MINIMUM TAILWATER CONDITION)



NOTE: APRON @ ZERO GRADE
SIDE SLOPE 2:1



CROSS SECTION A-A



SOIL MEDIA SPECIFICATIONS:

THE SOIL FOR RAIN GARDEN AREAS SHALL BE A UNIFORM MIX, FREE OF STONES, STUMPS, ROOTS OR OTHER OBJECTS LARGER THAN 50 MM IN DIAMETER. THE RAIN GARDEN SOIL SHALL BE VISIBLY FREE OF NOXIOS WEEDS. RAIN GARDEN SOIL SHALL BE A WELL BLENDED MIXTURE OF THREE(3) PARTS SAND AND ONE(1) PART TOPSOIL BY VOLUME. SAND SHALL MEET THE REQUIREMENTS OF DOT §703-07 CONCRETE SAND. TOPSOIL SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF §713-01 TOPSOIL FOR TOPSOIL TYPE A, EXCEPT AS FOLLOWS:

- ALL TOPSOIL SHALL BE SAMPLED AND TESTED, REGARDLESS OF THE SOURCE
- SAMPLING OF TOPSOIL, AMENDED TOPSOIL, AND THE RAIN GARDEN SOIL SHALL BE DONE BY THE CONTRACTOR/ SUPPLIER. SAMPLING PROTOCOLS SHALL BE IN ACCORDANCE WITH §713-01 TOPSOIL.

THE RAIN GARDEN SOIL SHALL HAVE A PH RANGE OF 5.2 TO 7.6, AND AN ORGANIC CONTENT OF 3-7%. SOIL AMENDEMENTS TO INCREASE ORGANIC CONTENT SHALL BE PEAT MOSS IN ACCORDANCE WITH §713-15 ORGANIC MATTER.

DRAINAGE LAYER SPECIFICATIONS:

POROSITY - 0.40

NOTE:
1. All shrubs shall be placed 5' O.C., and herbacious plants shall be spaced 18" O.C.
2. The upland side of the rain garden shall be protected from upgradient subsurface conditions with the installation of either a 12" thick clay barrier or placement of 6 mil polyethylene sheeting along the excavated side-walls of the drainage layers.

SW-2 RIP-RAP DETAIL

NOT TO SCALE

APPROVED BY THE TOWN OF NORTH CASTLE PLANNING BOARD RESOLUTION
DATED:_____

_____Date: _____
CHRISTOPHER CARTHY, CAHIRMAN,
TOWN OF NORTH CASTLE PLANNING BOARD
ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:
_____Date: _____
JOSEPH M. CERMELE, PE
KELLARD SESSIONS CONSULTING
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PROJECT # 21-28

Engineer:
STATE OF NEW YORK JOSEPH L. RINA 076431 LICENSED PROFESSIONAL ENGINEER
Joseph L. Rina, P.E.
NYS Lic. No 64431

Revisions:

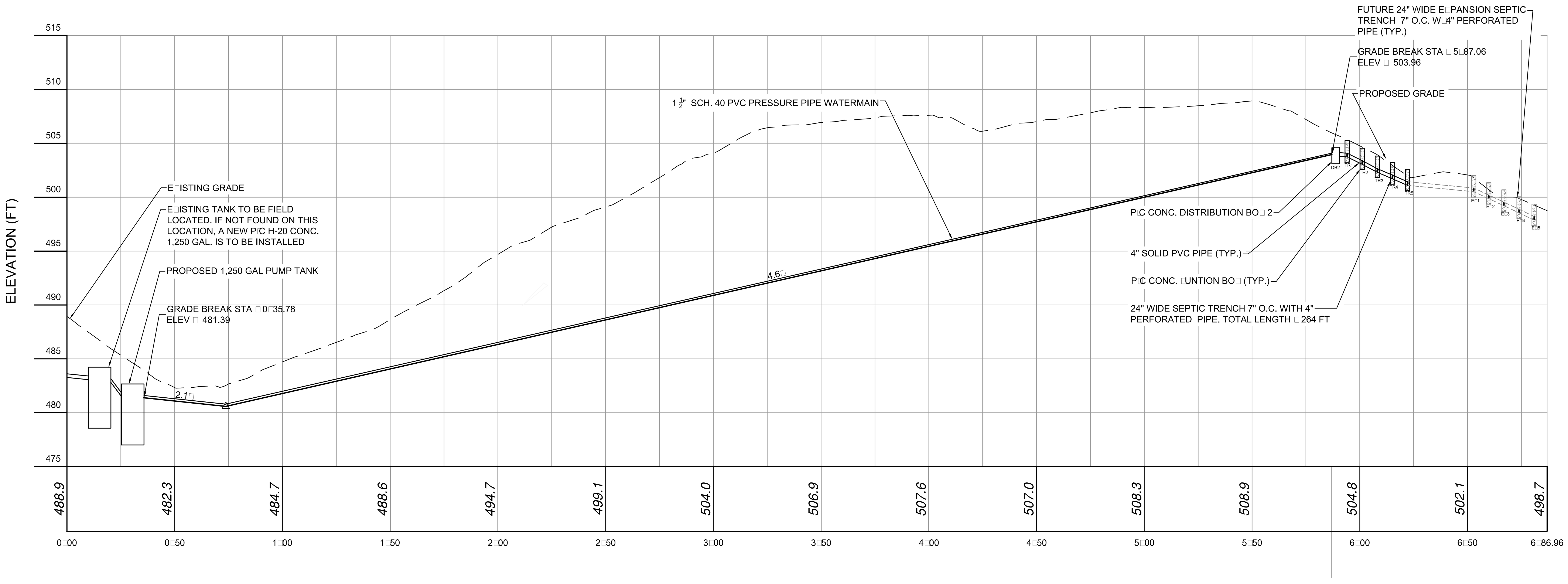
No.	Date	Comments:
1	1-12-22	HD Department
2	2-14-22	HD Department
3	3-4-22	HD Department
4	3-12-22	Plan updates

SCALE: AS NOTED
DRAWN BY: CS
DATE: 10/01/21

EROSION AND STORMWATER DETAILS

SITE PLAN
PREPARED FOR
KEITH ROSENTHAL
10 CREEMER ROAD
Town of North Castle

Sheet 5 of 6

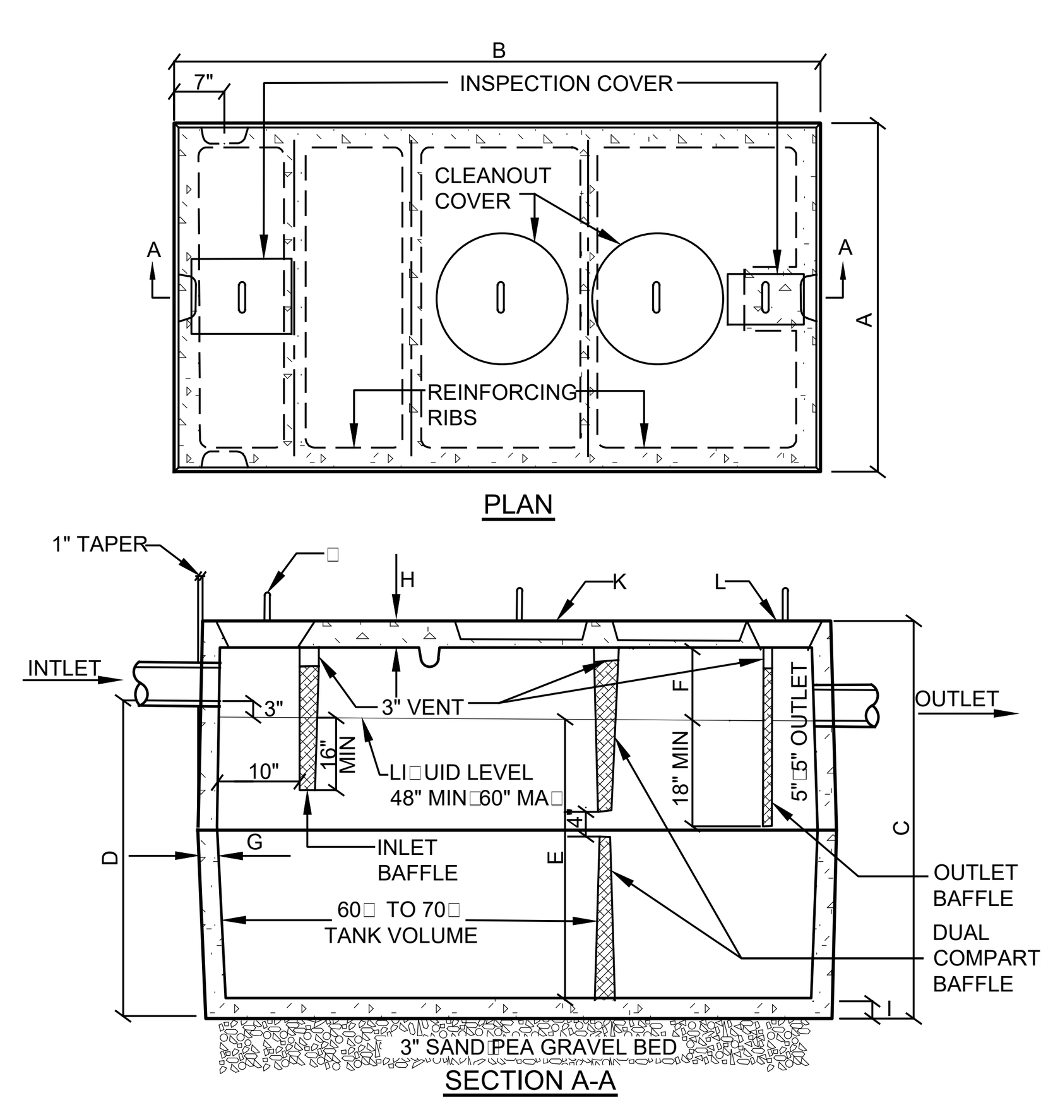


HOUSE SEWER	
INV. OUT	483.27'
SEPTIC TANK	
INV. IN	483.07'
INV. OUT	482.81'
PUMP TANK	
INV. IN	481.52'
INV. OUT	481.47'
DISTRIBUTION BOX 1	
INV. IN	503.96'
INV. OUT	503.80'
TRENCH 1 INV. IN	503.74'
TRENCH 2 INV. IN	503.64'
TRENCH 3 INV. IN	502.31'
TRENCH 4 INV. IN	501.70'
TRENCH 5 INV. IN	501.09'
EXP. TRENCH 1 INV. IN	500.51'
EXP. TRENCH 2 INV. IN	499.85'
EXP. TRENCH 3 INV. IN	499.20'
EXP. TRENCH 4 INV. IN	498.54'
EXP. TRENCH 5 INV. IN	497.88'

Septic Profile
VERT. SCALE: 1" = 8
HORIZ. SCALE: 1" = 40

S-1 SEPTIC SYSTEM PROFILE DETAIL

SCALE 1" = 30'



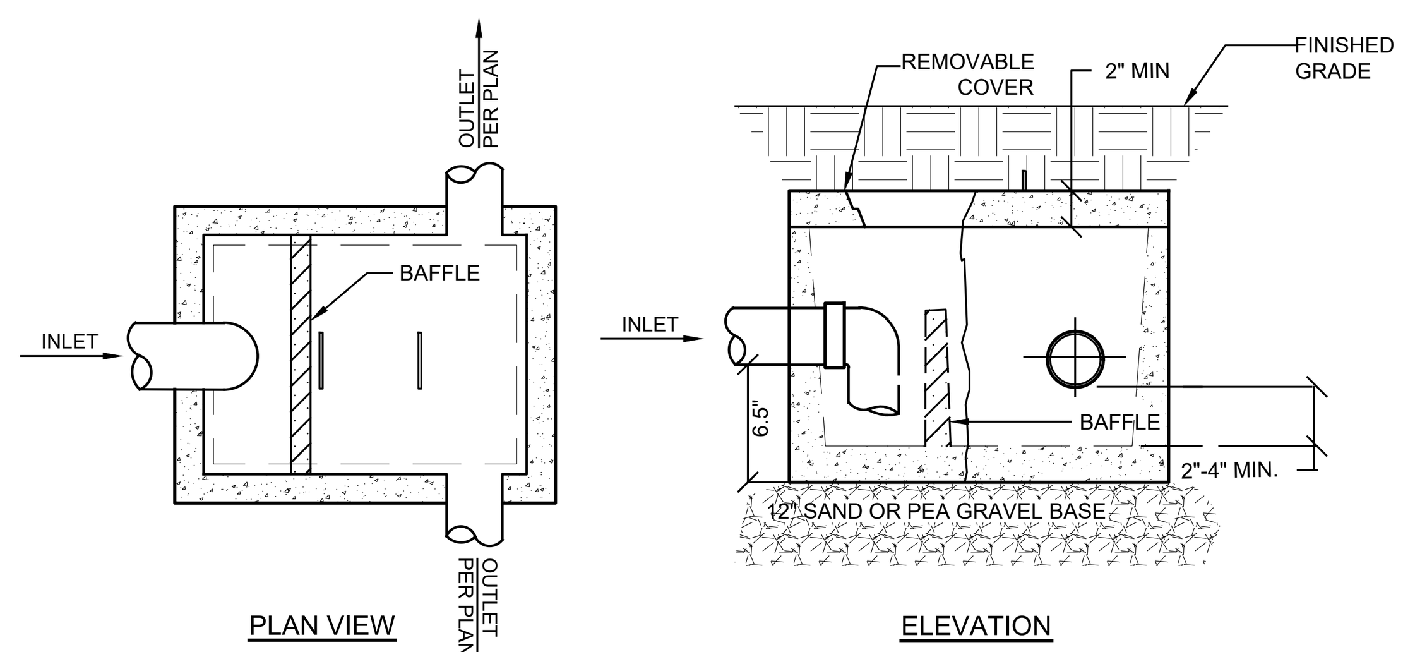
SEPTIC TANK SPECIFICATIONS & CAPACITIES												
LIQUID CAPACITY	A	B	C	D	E	F	G	H	I	J	K	
~~1,000 GAL~~	~~58"~~	~~102"~~	~~67"~~	~~55"~~	~~48"~~	~~12"~~	~~3"~~	~~5"~~	~~4"~~	~~6"-9"~~	~~20"~~	~~10"-14"~~
1,250 GAL	60"	120"	67"	56"	48"	12"	3"	5"	4"	6"-9"	20"	10"-14"
~~1,500 GAL~~	~~65"~~	~~120"~~	~~67"~~	~~56"~~	~~48"~~	~~12"~~	~~3"~~	~~5"~~	~~4"~~	~~6"-9"~~	~~20"~~	~~10"-14"~~
~~2,000 GAL~~	~~78"~~	~~144"~~	~~67"~~	~~56"~~	~~48"~~	~~12"~~	~~3"~~	~~5"~~	~~4"~~	~~6"-9"~~	~~20"~~	~~10"-14"~~

NOTE: Add 4" [illegible] H-20 Loading

NOTES:
1. [illegible] 6 [illegible] 12 [illegible] 24 [illegible] H-20 [illegible] H-20 [illegible]
2. [illegible] "B" [illegible] 10 [illegible]
3. [illegible]
4. [illegible]
5. [illegible] 300 [illegible]
6. [illegible] Mid Hudson Concrete Products, Inc.

S-2 PRECAST CONCRETE SEPTIC TANK DETAIL AND OVERFLOW TANK DETAIL

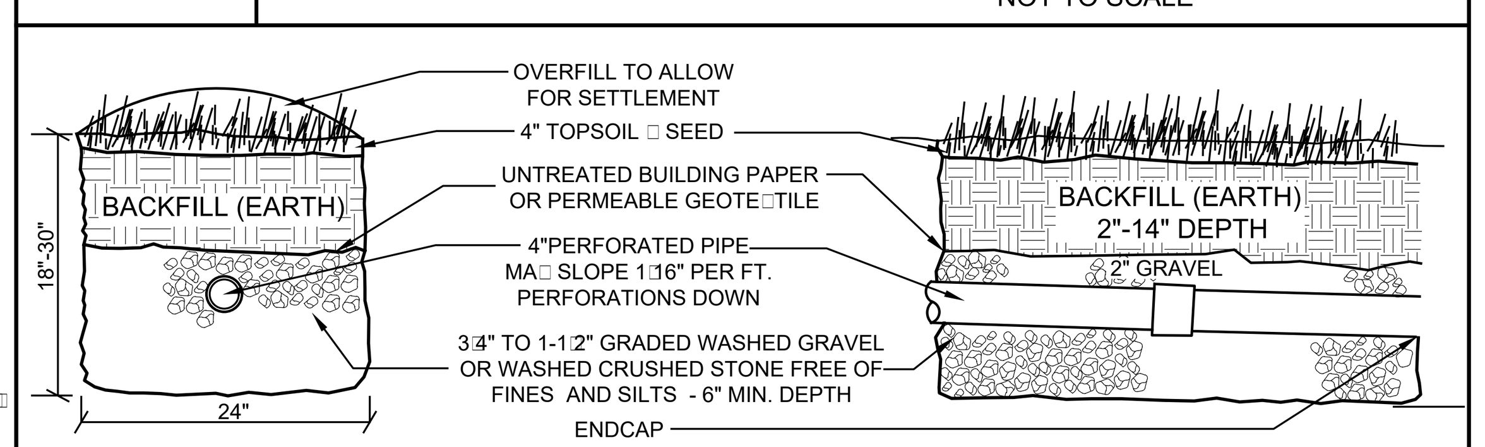
NOT TO SCALE



NOTES:
1.–10. [illegible]

S-3 DISTRIBUTION BOX DETAIL

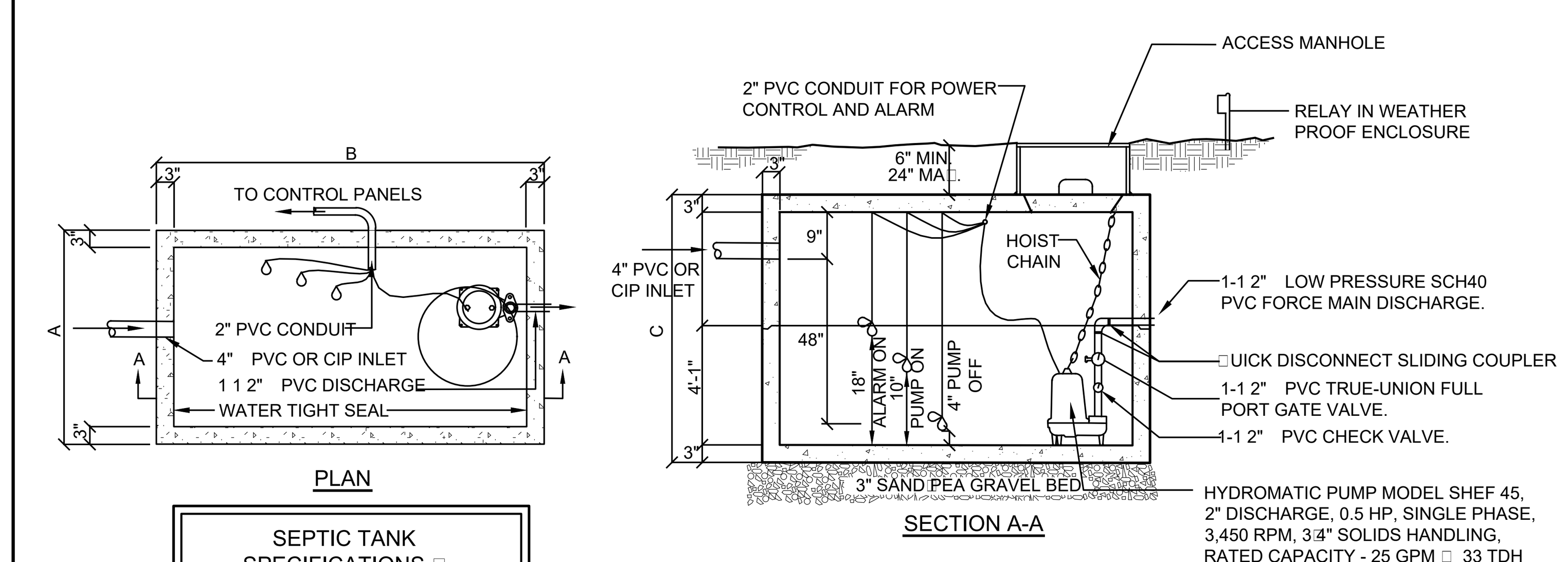
NOT TO SCALE



NOTES:
1.–4. [illegible]

S-4 PERFORATED PIPE TRENCH DETAIL

NOT TO SCALE



SEPTIC TANK SPECIFICATIONS & CAPACITIES			
LIQUID CAPACITY	A	B	C
1,250 GAL	60"	120"	67"

PUMP CALCULATIONS:
TOTAL FLOW : 800 GAL. /DAY
LENGTH OF FIELDS: 340 L.F. W/24" TRENCHES
RATE OF PUMPING: 0.5 GAL./L.F.

HEAD LOSS CALCULATION:
TOTAL HEAD LOSS = STATIC LOSS + FRICTION LOSS + MINOR LOSS
FROM DESIGN CALCULATIONS:
TDH = 29' + 4' = 33'

VOLUME TO BE PUMPED TO SYSTEM:
REQUIRED VOLUME = 0.5 GAL. /L.F. × 340 L.F.
= 170 GAL.
= 170 GAL./7.48 GAL./C.F. = 22.7 C.F.

PUMP CHAMBER INTERIOR DIMENSIONS:
= 4.5' × 9.5' = 42.75 S.F PER FOOT OF HEIGHT

THEREFORE, REQUIRED DISTANCE BETWEEN ON/OFF FLOAT SWITCH:
= 22.7 C.F./42.75 S.F. PER FOOT
= 0.5' OR 6"

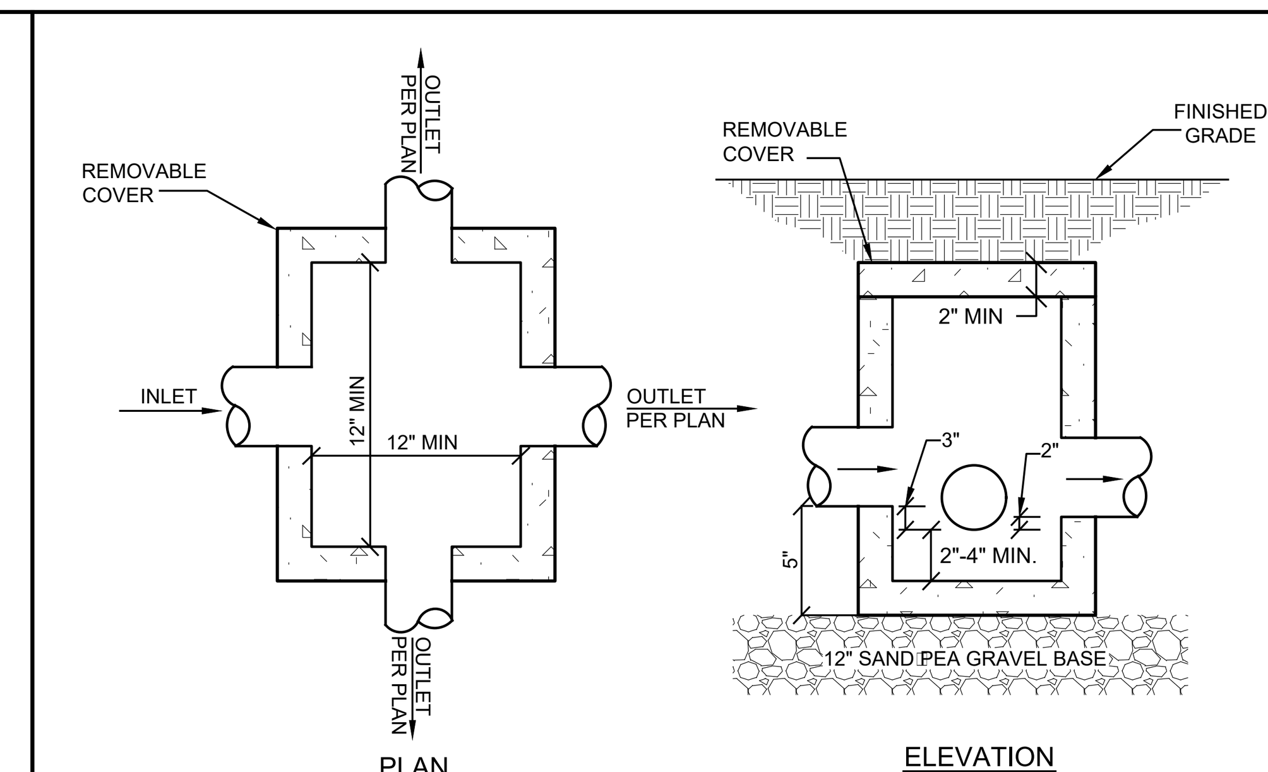
PUMP CHAMBER STORAGE VOLUME:
= 42.75 S.F. × 4' × 7.48 GAL/CF = 1279 GAL. > 1,250 GAL.

STORAGE VOLUME:
BETWEEN ALARM-ON ELEVATION AND INVERT OF INLET PIPE:
STORAGE = 2.8' (9.5' × 4.5') = 119.7 C.F.
119.7 C.F. × (7.481 GAL/1 C.F.) = 895 GAL.

NOTES:
1. [illegible] 6 [illegible] 12 [illegible] 24 [illegible] 24 [illegible] H-20 [illegible] H-20 [illegible]
2. [illegible] Hydromatic [illegible] Model SHEF 45, 2" discharge, 0.5 HP, [illegible], 3,450 RPM, 3/4" [illegible], rated capacity 25 GPM @ 33 FT TDH.
3. [illegible] (1) [illegible]
4. [illegible] Mid Hudson Concrete Products Inc.
5. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]

S-5 PUMP CHAMBER DETAIL

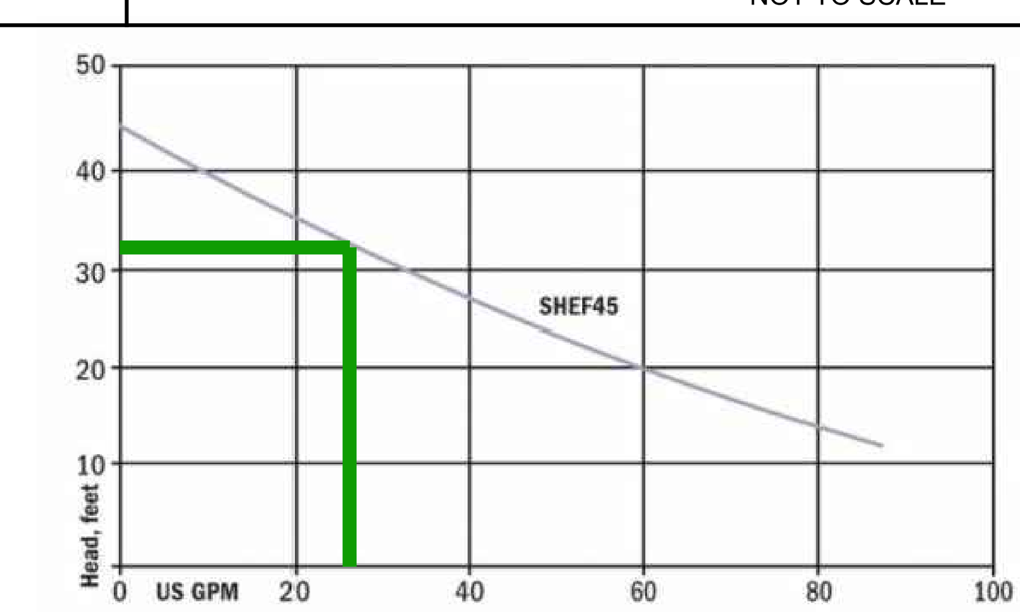
NOT TO SCALE



NOTES:
1.–8. [illegible]

S-6 JUNCTION BOX DETAIL

NOT TO SCALE

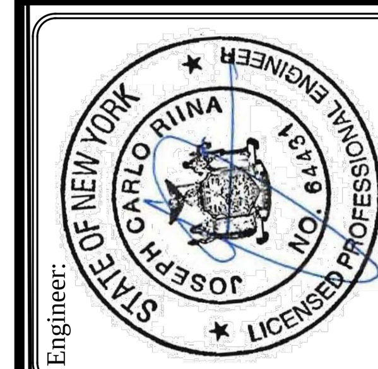


S-7 PUMP CURVE DETAIL

NOT TO SCALE

PROJECT # 21-28

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. Riina, P.E.
NYS Lic. No. 64431

Revisions:		
No.	Date	Comments:
1	12-21	HD Department
2	2-14-22	HD Department
3	3-4-22	HD Department
4	3-12-22	Plan updates

SCALE: AS NOTED
DRAWN BY: CS
DATE: 10/01/21

SEPTIC DETAILS

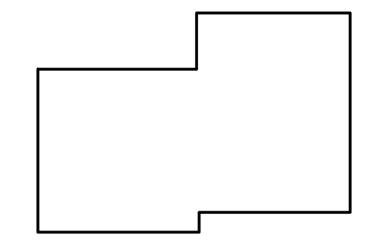
SITE PLAN
PREPARED FOR
KEITH ROSENTHAL
10 CREEMER ROAD
Town of North Castle Westchester County, New York

Sheet 6 of 6

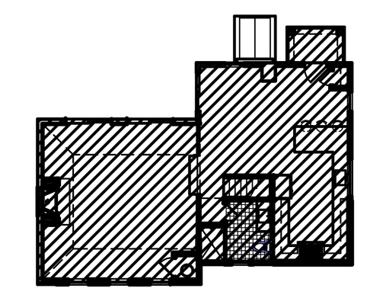
Rosenthal

10 Creemer Road Armonk, NY

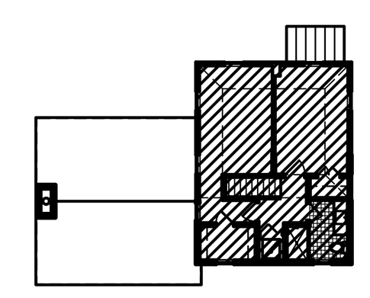
GUEST HOUSE FLOOR PLANS
(NOT TO SCALE)



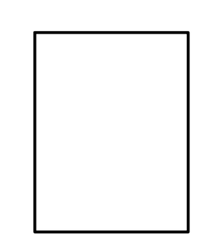
BASEMENT FLOOR: 0 S.F.



FIRST FLOOR: 993 S.F.



SECOND FLOOR: 520 S.F.

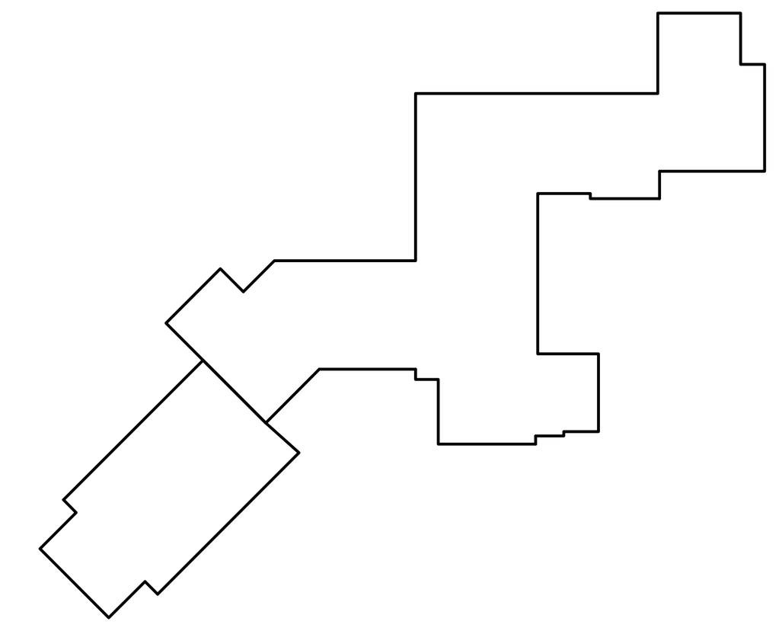


ATTIC FLOOR: 0 S.F.

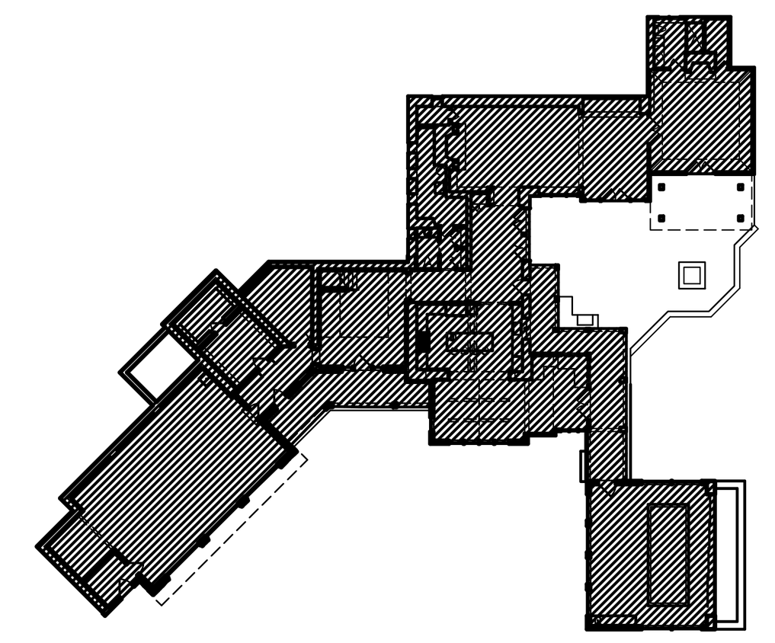
F.A.R. SCHEDULE

ZONE: R-2A	FAR: WORKSHEET	NET LOT: 233,3921 SF
PERMITTED FLOOR AREA:		15,397 SF
FLOOR AREA CALCULATIONS AS CURRENTLY DEFINED IN THE TOWN OF NORTH CASTLE ZONING CODE		
	EXISTING	PROPOSED
BASEMENT FLOOR	0 SF	0 SF
FIRST FLOOR	881 SF	993 SF
SECOND FLOOR	357 SF	520 SF
ATTIC FLOOR	0 SF	0 SF
TOTAL FLOOR AREA	1,238 SF	1,513 SF
MAIN HOUSE		9,754 SF
CODE: 15,397 SF	>	11,267 SF

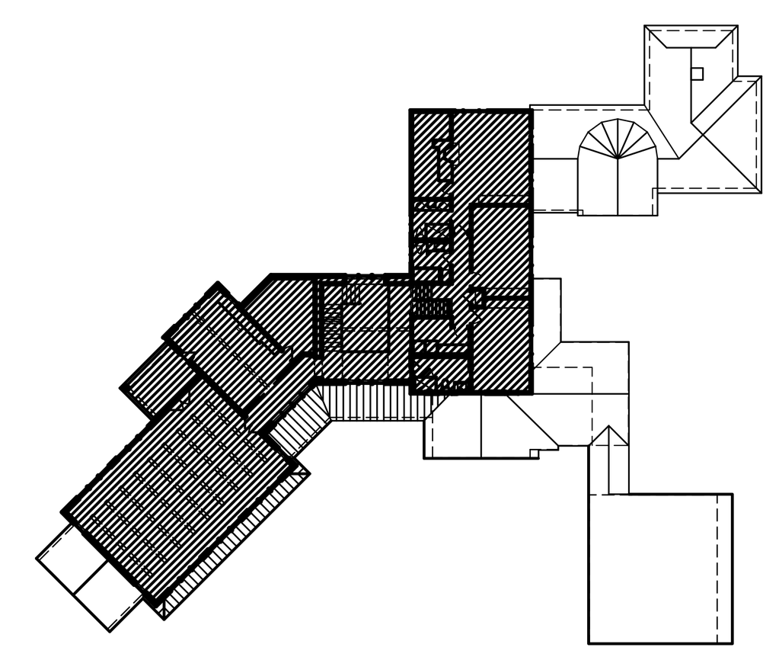
MAIN HOUSE FLOOR PLANS
(NOT TO SCALE)



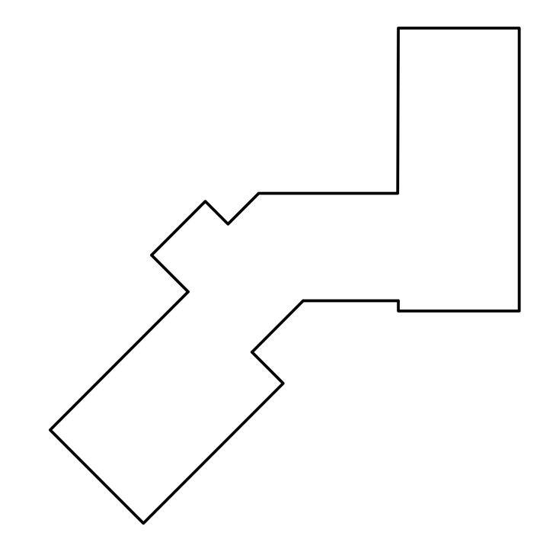
BASEMENT FLOOR: 0 S.F.



FIRST FLOOR: 6,319 S.F.



SECOND FLOOR: 3,435 S.F.



ATTIC FLOOR: 0 S.F.

F.A.R. SCHEDULE

ZONE: R-2A	FAR: WORKSHEET	NET LOT: 233,921 SF
PERMITTED FLOOR AREA:		15,397 SF
FLOOR AREA CALCULATIONS AS CURRENTLY DEFINED IN THE TOWN OF NORTH CASTLE ZONING CODE		
	EXISTING	PROPOSED
BASEMENT FLOOR	0 SF	0 SF
FIRST FLOOR	2,776 SF	6,319 SF
SECOND FLOOR	1,329 SF	3,435 SF
ATTIC FLOOR	0 SF	0 SF
TOTAL FLOOR AREA	4,105 SF	9,754 SF
GUEST HOUSE		1,513 SF
CODE: 15,397 SF	>	11,267 SF

SECTION: 108.02 BLOCK: 02 LOT: 60

SHEET INDEX

No.	DRAWING MAIN HOUSE		GUEST HOUSE
A01	TITLE SHEET		
A02	DEMOLITION PLAN	B01	DEMOLITION PLAN
A03	DEMOLITION PLAN	B02	
A04		B03	
A05		B04	FLOOR PLANS
A06		B05	
A07	FIRST FLOOR PLAN	B06	ELEVATIONS
A08	SECOND FLOOR PLAN		
A09			
A10			
A11			
A12			
A13	ELEVATIONS		
A14	ELEVATIONS		
A15	ELEVATIONS		
A16	ELEVATIONS		
A17			
A18			
A19			

STATEMENT OF COMPLIANCE

THE ARCHITECT, JUSTIN F. MINIERI A.I.A. (N.Y.S. LIC. NO. 18332) HAS PREPARED THE CONSTRUCTION DOCUMENTS, WRITTEN & FIGURATIVELY IN COMPLIANCE WITH THE LATEST APPLICABLE SECTIONS OF LOCAL AND STATE BUILDING CODES, 2020 RESIDENTIAL CODE OF NEW YORK STATE.

REQUIRED SYMBOL	TRUSS IDENTIFICATION SIGN
V FR	• THE SIGN SHALL BE IN CONFORMANCE WITH NYCRR SECTION 1265 FOR ONE & TWO FAMILY DWELLINGS. • THE SIGN SHALL BE SECURELY AFFIXED TO THE EXTERIOR ELECTRIC METER OR AN ALTERNATE LOCATION APPROVED BY CODE, WHENEVER IT IS NOT POSSIBLE TO DO SO. REVIEW LOCATION WITH THE BUILDING OFFICIAL PRIOR TO INSTALLATION.

GENERAL NOTES

1. G.C. SHALL REVIEW PLANS AND SPECIFICATIONS PRIOR TO START OF WORK. ARCHITECT SHALL BE IMMEDIATELY NOTIFIED OF ANY DISCREPANCY.
2. DO NOT SCALE DRAWINGS, USE WRITTEN DIMENSIONS. LARGE SCALE DETAILS AND DRAWINGS TAKE PRECEDENCE OVER SMALL SCALE DRAWINGS.
3. G.C. SHALL INCLUDE ALL LABOR, MATERIAL, AND EQUIPMENT FOR ALL SHOWN OR SPECIFIED, INCLUDING TEMPORARY FACILITIES AND/OR SUPPORTING STRUCTURES.
4. G.C. SHALL BE RESPONSIBLE TO SECURE ALL PERMITS FOR CONSTRUCTION.
5. G.C. SHALL OBTAIN THE CERTIFICATE OF OCCUPANCY UPON COMPLETION OF WORK AND SUBMIT TO OWNER.
6. G.C. SHALL CHECK ALL EXISTING CONDITIONS PRIOR TO START OF WORK. G.C. SHALL BE RESPONSIBLE TO VERIFY THE LOCATION OF ALL VISIBLE AND NON-VISIBLE UTILITY SERVICES.
7. ALL LABOR, MATERIALS, AND CONSTRUCTION SHALL COMPLY AND CONFORM WITH ALL RULES, REGULATIONS, CODES AND ORDINANCES OF ALL FEDERAL, STATE AND AND LOCAL AUTHORITIES HAVING JURISDICTION OVER THE WORK.
8. THE G.C. SHALL KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIAL, RUBBISH, IMPLEMENTS AND SURPLUS MATERIALS. THE G.C. SHALL LEAVE THE BUILDING BROOM CLEAN.
9. G.C. SHALL PROVIDE UNDERSLAB PIPING FOR FUTURE RADON MITIGATION MAKE AND PROVISIONS FOR FUTURE VENTING. G.C. SHALL BE RESPONSIBLE FOR ALL RADON TESTING.
10. THE H.V.A.C. SYSTEM SHALL BE DESIGNED BY A QUALIFIED, CERTIFIED H.V.A.C. CONTRACTOR AND / OR MECHANICAL ENGINEER RETAINED BY THE G.C. ALL APPROVALS SHALL BE OBTAINED BY THE G.C. HVAC CONTRACTORSHALL PROVIDE COMPLETE MANUEL J & MANUEL S CALCULATIONS.
11. ALL ELECTRICAL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH LOCAL & NATIONAL FIRE UNDERWRITER CODES & LOCAL UTILITY CO.
12. A MINIMUM OF 90 PERCENT OF LAMPS IN PERMANENTLY INSTALLED LIGHTING FIXTURES ARE HIGH EFFICACY LAMPS PER 404.1 OF 2020 RCNYS.
13. ALL CHIMNEYS, FLUES AND GAS VENTS SHALL COMPLY WITH THE REQUIREMENTS OF CHAPTERS 10 AND 18 OF THE NYS RESIDENTIAL CODE.
14. FIREPLACES SHALL BE COMPLETE WITH FRESH AIR INTAKE DUCT. ALL HEARTHS TO BE 20 - IN. DEEP (MIN.). PROVIDE TIGHT-FITTING NON-COMBUSTIBLE GLASS DOORS AT EACH FIREPLACE IN CONFORMANCE WITH N1102.4.2 (R402.4.2) OF THE 2020 RCNYS. OWNER SHALL SELECT DOOR TYPE.
15. G.C. SHALL INSTALL A COMPLETE SMOKE AND CARBON MONOXIDE ALARM SYSTEM THROUGHOUT HOUSE. PROVIDE A SMOKE ALARM UNIT IN EACH BEDROOM AND SMOKE/CARBON ALARM(S) ON EACH FLOOR INCLUDING BASEMENT IN COMPLIANCE WITH N.Y.S. RESIDENTIAL CODE, SECTION R 317.1.1. SMOKE AND CARBON MONOXIDE ALARMS SHALL BE HARD WIRED WITH BATTERY BACK - UP. ALL ALARMS SHALL ACTUATE SIMULTANEOUSLY BUT DISTINCTIVE ALARM SIGNAL SHALL BE USED TO DIFFERENTIATE EACH TYPE OF ALARM. ALARMS SHALL BE CODE APPROVED AND U.L. LISTED.
16. G.C. SHALL HAVE PROFESSIONAL APPLIED CHEMICAL-TERMICIDE TREATMENT TO SOIL FOR PROTECTION AGAINST SUBTERRANEAN TERMITES AS PER R318.2 OF THE 2020 RCNYS. G.C. SHALL PROVIDE ALL REQUIRED DOCUMENTATIONS TO LOCAL MUNICIPALITY.
17. G.C. SHALL BE RESPONSIBLE TO RETAIN THE SERVICES OF A CERTIFIED "HERS" RATER. THE "HERS" RATER SHALL PROVIDE A COPY OF PROJECTED COMPLIANCE REPORT PER 2020 RCNYS AND PERFORM THE DOOR BLOWER TEST AND PROVIDE REQUIRED CERTIFICATIONS.

MANUAL J DESIGN CRITERIA

ELEVATION	LATITUDE	WINTER HEATING	SUMMER COOLING	ALTITUDE CORRECT. FACTOR	INDOOR DESIGN TEMP.	DESIGN TEMP. COOLING	HEATING TEMP. DIFF.	COOLING TEMP. DIFF.	WIND VELOCITY HEATING	WIND VELOCITY COOLING	COINCIDENT WET BULB	DAILY RANGE	WINTER HUMIDITY	SUMMER HUMIDITY
439	41	12	87		70	75	68	20				M	30	

DESIGN LOADS

SOIL BEARING:	4000 PSF	
FLOOR:	60 PSF	(40 L + 20 D)
ATTIC: (4'-6" AND GREATER HEADROOM)	45 PSF	(30 L + 15 D)
ATTIC: (LESS THAN 4'-6" HEADROOM)	30 PSF	(20 L + 10 D)
ROOF: (SNOW LOAD)	60 PSF	(45 L + 15 D)
PORCH & DECK:	70 PSF	(60 L + 10 D)
GUARDRAILS & HANDRAILS:	200 PLF	

MATERIAL STRENGTHS

CONCRETE:	4000 PSI
DIMENSIONAL LUMBER:	950 PSI
ENGINEERED LUMBER:	
• GLULAM	2400 PSI
• LAMINATED VENEER LUMBER	2600 PSI
• PARALLEL STRAND LUMBER	2900 PSI
STRUCTURAL STEEL:	36,000 PSI

2020 ECCCNYS

BUILDING TYPE: ONE & TWO FAMILY DWELLING
DESIGN DEGREE DAYS: 5000 - 6000
DESIGN TEMPERATURE: 0 DEGREES F. / 72 DEGREES F.
CODE DESIGN METHOD: CHAPTER 4; PRESCRIPTIVE BUILDING ENVELOPE (SECTIONS 402.1-402.3)

TABLE 402.1.2 INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT

CLIMATE ZONE	FENESTRATION U-FACTOR[b]	SKYLIGHT[b] U-FACTOR	GLAZED FENESTRATION SHGC[b,e]	CEILING R-VALUE	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE	FLOOR R-VALUE	BASEMENT[c] WALL R-VALUE	SLAB[d] R-VALUE & DEPTH	CRAWL SPACE WALL R-VALUE
4	0.31	0.55	0.40	49	20 or 13 + 5	8/13	19	10/13	10, 2 FT	10/13

a. R-VALUES ARE MINIMUMS. U-FACTORS & SHGC ARE MAXIMUMS. WHEN INSULATION IS INSTALLED IN THE CAVITY WHICH IS LESS THAN THE LABEL OR DESIGN THICKNESS OF THE INSULATION, THE INSTALLED R-VALUE OF THE INSULATION SHALL NOT BE LESS THAN THE R-VALUE SPECIFIED IN THE TABLE.

b. THE FENESTRATION U-FACTOR COLUMN EXCLUDES SKYLIGHTS. THE SHGC COLUMN APPLIES TO ALL GLAZED FENESTRATION. EXCEPTION: SKYLIGHTS MAY BE EXCLUDED FROM GLAZED FENESTRATION SHGC REQUIREMENTS IN CLIMATES ZONES 1 THROUGH 3 WHERE THE SHGC FOR SUCH SKYLIGHTS DOES NOT EXCEED 0.30.

c. "15/19" MEANS R-15 CONTINUOUS INSULATION ON THE INTERIOR OR EXTERIOR OF THE HOME OR R-19 CAVITY INSULATION AT THE INTERIOR OF THE BASEMENT WALL. "15/19" SHALL BE PERMITTED TO MET WITH R-13 CAVITY INSULATION ON THE INTERIOR OF THE BASEMENT WALL PLUS R-5 CONTINUOUS INSULATION ON THE INTERIOR OR EXTERIOR OF THE HOME. "10/13" MEANS R-10 CONTINUOUS INSULATION ON THE INTERIOR OR EXTERIOR OF THE HOME OR R-13 CAVITY INSULATION AT THE INTERIOR OF THE BASEMENT WALL.

d. R-5 SHALL BE ADDED TO THE REQUIRED SLAB EDGE R-VALUES FOR HEATED SLABS. INSULATION DEPTHS SHALL BE THE DEPTH OF THE FOOTING OR 2 FEET, WHICHEVER IS LESS IN ZONES 1 THROUGH 3 FOR HEATED SLABS.

e. THERE IS NO SHGC REQUIREMENTS IN THE MARINE ZONE.

h. THE FIRST VALUE IS CAVITY INSULATION, THE SECOND VALUE IS CONTINUOUS, SO "13+5" MEANS R-13 CAVITY INSULATION PLUS R-5 CONTINUOUS INSULATION.

i. THE SECOND R-VALUE APPLIES WHEN MORE THAN HALF THE INSULATION IS ON THE INTERIOR OF THE MASS WALL.

I, JUSTIN F. MINIERI, AIA (N.Y.S. LIC. NO. 18332) CERTIFY THAT TO THE BEST OF MY KNOWLEDGE AND BELIEF, THESE PLANS AND SPECIFICATIONS CONFORM WITH THE APPLICABLE SECTIONS OF THE ENERGY CONSERVATION CONSTRUCTION CODE OF NEW YORK STATE.

CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA
TABLE R301.2(1)

GROUND SNOW LOAD	WIND DESIGN				SEISMIC DESIGN CAT.	SUBJECT TO DAMAGE FROM			WINTER DESIGN TEMP.	ICE BARRIER UNDERLAYMENT REQUIRED	FLOOD HAZARDS	AIR FREEZING INDEX	MEAN ANNUAL TEMP
	SPEED	TOPO GRAPHIC EFFECTS	SPECIAL REGION WINDS	WIND-BORNE DEBRIS ZONE		WEATHERING	FROST LINE DEPTH	TERMITE					
20 PSF	115-120 MPH	NONE	YES	YES	B	SEVERE	42"	MODERATE TO HEAVY	0°- 10° F	YES	YES (ZONE X)	1000 OR LESS	52.2 F

Armonk, NY

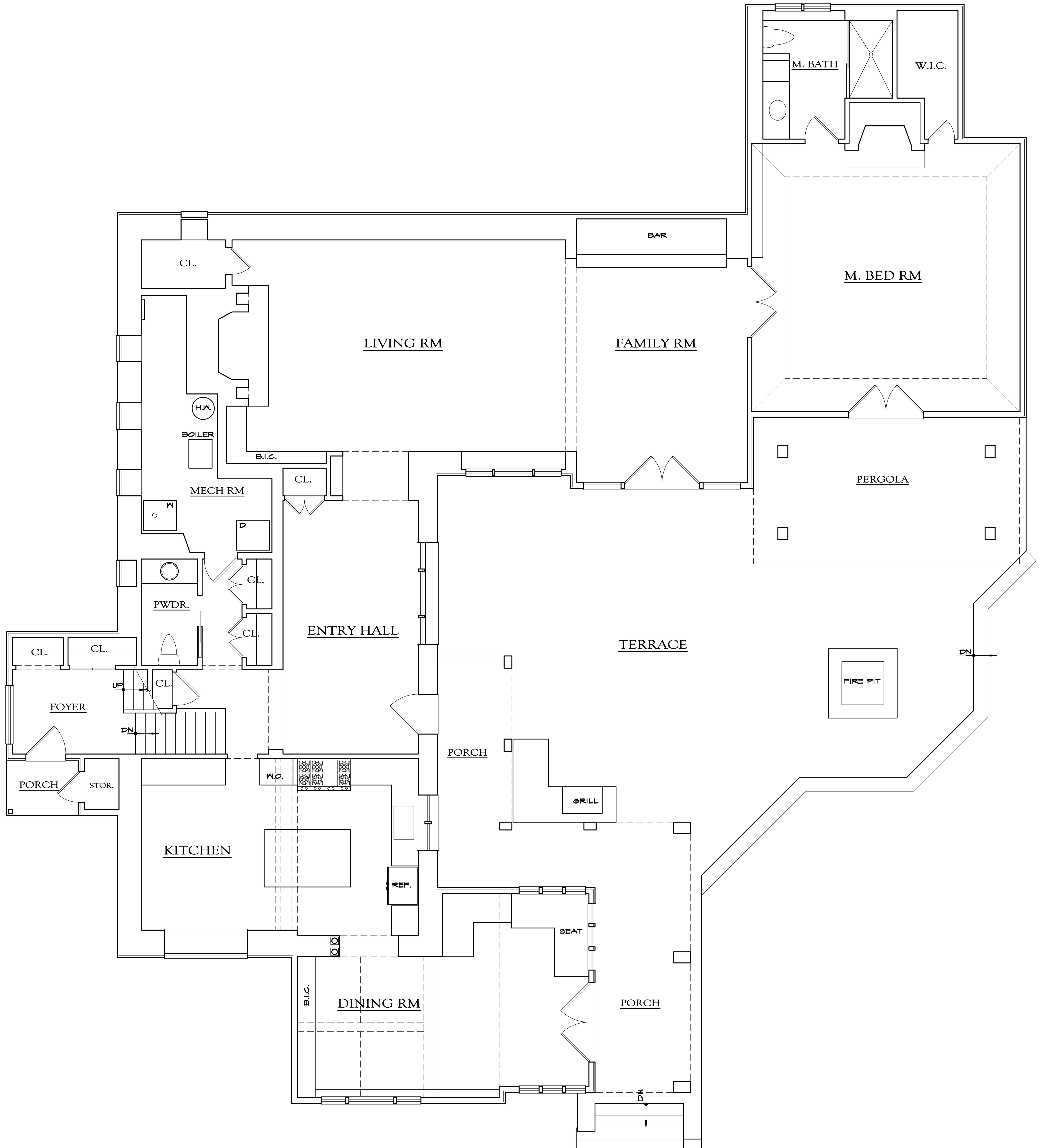
Proposed Addition & Alteration to
Rosenthal Residence
10 Creemer Road

JUSTIN F. MINIERI, AIA
NCARB MEMBER
P.O. BOX 1439 • NEW ROCHELLE NY 10802
914.576.7087 TEL 914.355.5238 FAX

DATE: 1/31/22
REVISIONS:

DWG No.
A01
TITLE

Rosenthal / 220079



FIRST FLOOR PLAN

SCALE: 1/4"= 1'-0" EXISTING

GENERAL NOTES

1. GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO ALL RULES AND REGULATIONS HAVING JURISDICTION.
2. GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO CHECK AND VERIFY ALL EXISTING CONDITIONS INCLUDING CONCEALED AREAS IF POSSIBLE, PRIOR TO START OF WORK.
3. G.C. SHALL LOCATE AND IDENTIFY UNDERGROUND UTILITY LINES, IF ANY, PRIOR TO START OF EXCAVATION. G.C. SHALL BE RESPONSIBLE TO REPAIR DAMAGED OR INTERRUPTED SERVICES RESULTING FROM THE WORK BEING PERFORMED.
4. G.C. SHALL NOTIFY ARCHITECT IMMEDIATELY OF ANY DISCREPANCY AND/OR DISCOVERY OF AN UNKNOWN CONDITION.
5. MATERIALS OR ITEMS NOTED TO BE RE-USED, SHALL BE CAREFULLY REMOVED, PROTECTED AND STORED ON SITE.
6. G.C. SHALL OBTAIN FROM THE OWNER A LIST OF ITEMS, IF ANY, TO BE SALVAGED AND CLAIMED BY THE OWNER. ITEMS SHALL BE STORED AND PROTECTED ON SITE UNLESS OTHERWISE DIRECTED BY THE OWNER.
7. G.C. SHALL PROVIDE REQUIRED SHORING, BRACING, TEMPORARY RAILS, FENCES, AND ENCLOSURES AS REQUIRED TO MAINTAIN PUBLIC SAFETY CONTINUOUSLY DURING CONSTRUCTION.
8. PROVIDE TARPS AS REQUIRED TO PROTECT STRUCTURE(S) FROM WEATHER. MAINTAIN TARPS IN GOOD CONDITION AND REPLACE WHEN DAMAGED.
9. IDENTIFY HAZARDOUS MATERIALS, IF ANY, PRIOR TO DEMOLITION. REMOVAL AND/OR CONTAINMENT AS REQUIRED SHALL BE PERFORMED IN ACCORDANCE WITH GUIDELINES SET BY THE APPLICABLE GOVERNING AGENCIES.
10. REMOVE AND REPLACE ANY DAMAGED OR ROTTED LUMBER. REVIEW QUESTIONABLE CONDITIONS WITH ARCHITECT.
11. ALL CONSTRUCTION AND DEMOLITION DEBRIS SHALL BE REMOVED AND LEGALLY DISPOSED OFF-SITE BY G.C.
12. G.C. SHALL PROTECT ALL AREAS NOT WITHIN THE SCOPE OF WORK FROM DAMAGE OR DUST DURING DEMOLITION AND CONSTRUCTION.
13. WINDOW AND DOOR REMOVAL SHALL INCLUDE FRAMES, EXPOSING ROUGH OPENING UNLESS OTHERWISE NOTED.
14. UTILITIES SERVING OCCUPIED SPACES SHALL NOT BE INTERRUPTED WITHOUT THE OWNER'S PERMISSION AND PROVIDE TEMPORARY UTILITIES AS NECESSARY.
15. HEATING SYSTEM SHALL REMAIN IN SERVICE THROUGHOUT CONSTRUCTION DURING HEATING SEASON WHETHER OR NOT THE RESIDENCE IS OCCUPIED UNLESS CIRCUMSTANCES MADE KNOWN TO THE OWNER DICTATE OTHERWISE.
16. REMOVE ALL ABANDONED PLUMBING AND ELECTRICAL LINES.
17. REPLACE PLUMBING AND/OR ELECTRICAL LINES WITHIN THE CONSTRUCTION AREA THAT ARE FOUND TO BE NON-CONFORMING WITH APPLICABLE CODES.

Armonk, NY

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P.O. BOX 1439 • NEW ROCHELLE NY 10802
914.576.7087 TEL 914.355.5238 FAX

LEGEND

	EXISTING WALL REMAIN (VERIFY WALL TYPE IN FIELD)
	EXISTING WALL TO BE REMOVED
E	WINDOW OR DOOR TO REMAIN
R	WINDOW OR DOOR TO BE REMOVED
S	WINDOW OR DOOR TO BE SALVAGED (STORE ON SITE FOR RE-USE)

DATE: 1/31/22

REVISIONS:

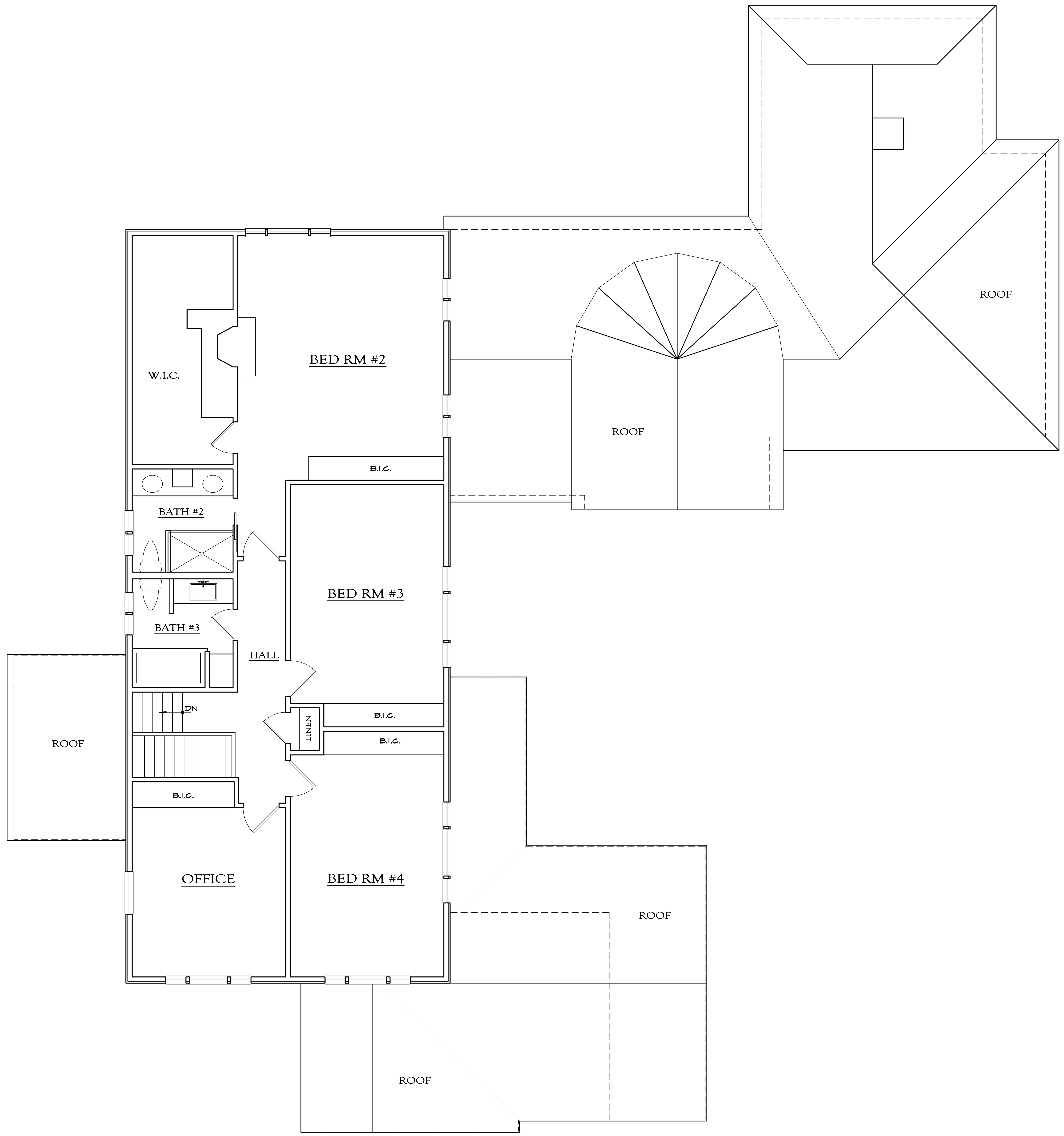
DWG No.

A02

FLOOR PLAN

DO NOT SCALE PRINTS

Rosenthal / 220079



SECOND FLOOR PLAN
SCALE: 1/4"= 1'0" EXISTING

GENERAL NOTES

1. GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO ALL RULES AND REGULATIONS HAVING JURISDICTION.
2. GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO CHECK AND VERIFY ALL EXISTING CONDITIONS INCLUDING CONCEALED AREAS IF POSSIBLE, PRIOR TO START OF WORK.
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10. REMOVE AND REPLACE ANY DAMAGED OR ROTTED LUMBER. REVIEW QUESTIONABLE CONDITIONS WITH ARCHITECT.
11. ALL CONSTRUCTION AND DEMOLITION DEBRIS SHALL BE REMOVED AND LEGALLY DISPOSED OFF-SITE BY G.C.
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14. UTILITIES SERVING OCCUPIED SPACES SHALL NOT BE INTERRUPTED WITHOUT THE OWNER'S PERMISSION AND PROVIDE TEMPORARY UTILITIES AS NECESSARY.
15. HEATING SYSTEM SHALL REMAIN IN SERVICE THROUGHOUT CONSTRUCTION DURING HEATING SEASON WHETHER OR NOT THE RESIDENCE IS OCCUPIED UNLESS CIRCUMSTANCES MADE KNOWN TO THE OWNER DICTATE OTHERWISE.
16. REMOVE ALL ABANDONED PLUMBING AND ELECTRICAL LINES.
17. REPLACE PLUMBING AND/OR ELECTRICAL LINES WITHIN THE CONSTRUCTION AREA THAT ARE FOUND TO BE NON-CONFORMING WITH APPLICABLE CODES.

Armonk, NY

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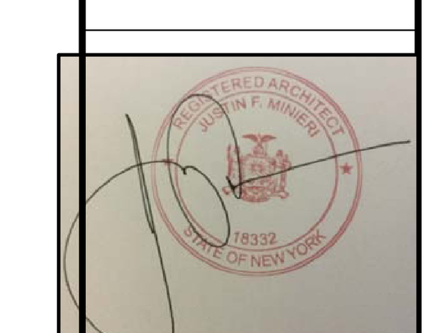
LEGEND

	EXISTING WALL REMAIN (VERIFY WALL TYPE IN FIELD)
	EXISTING WALL TO BE REMOVED
E	WINDOW OR DOOR TO REMAIN
R	WINDOW OR DOOR TO BE REMOVED
S	WINDOW OR DOOR TO BE SALVAGED (STORE ON SITE FOR RE-USE)

DATE: 1/31/22

REVISIONS:



DWG No.
A03
FLOOR PLAN

DO NOT SCALE PRINTS

Rosenthal / 220079

Rosenthal Residence

Proposed Addition & Alteration to

10 Cremer Road

Armonk, NY

JUSTIN F. MINIERI, AIA
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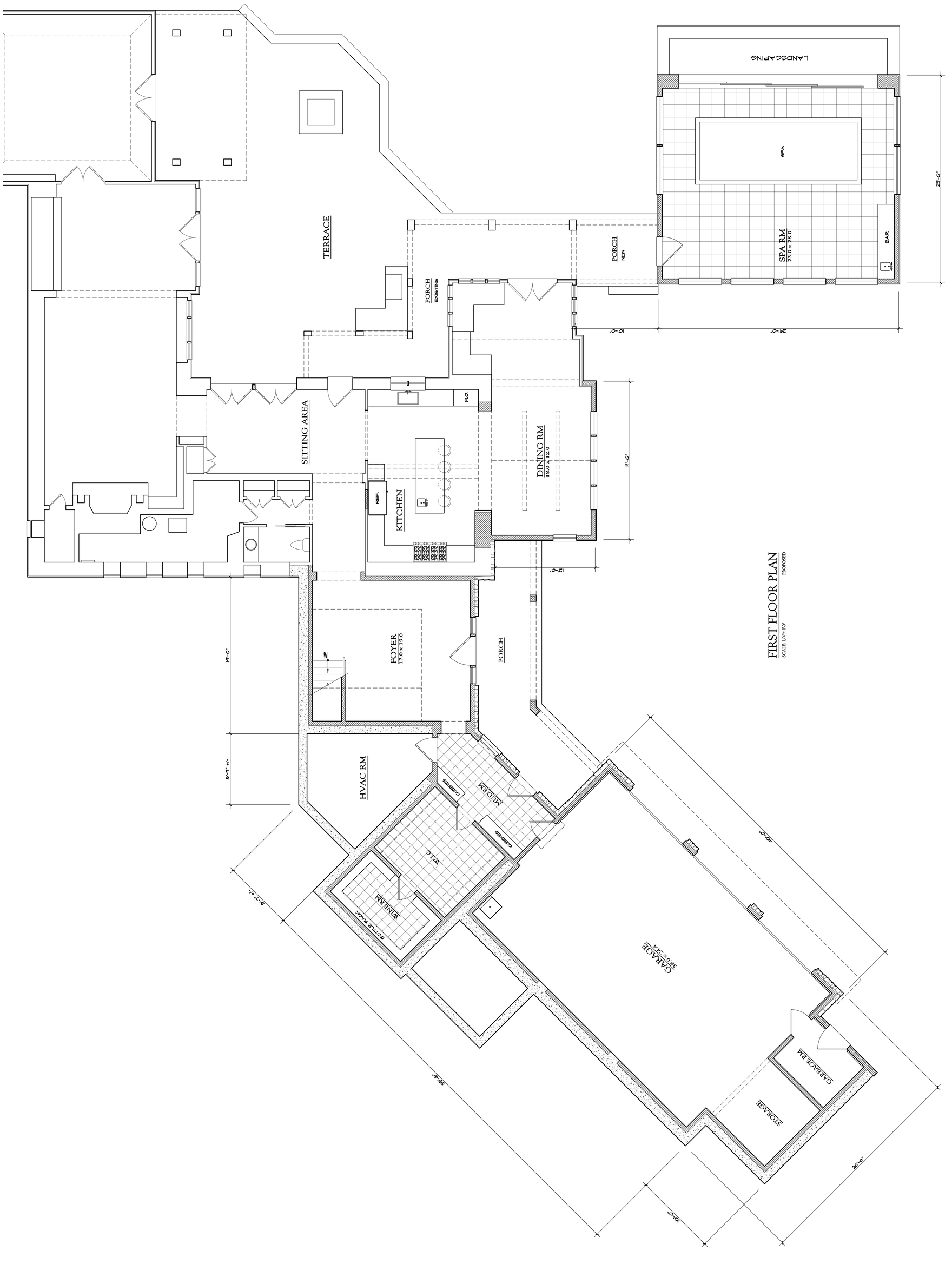
DATE: 1/31/22

REVISIONS:

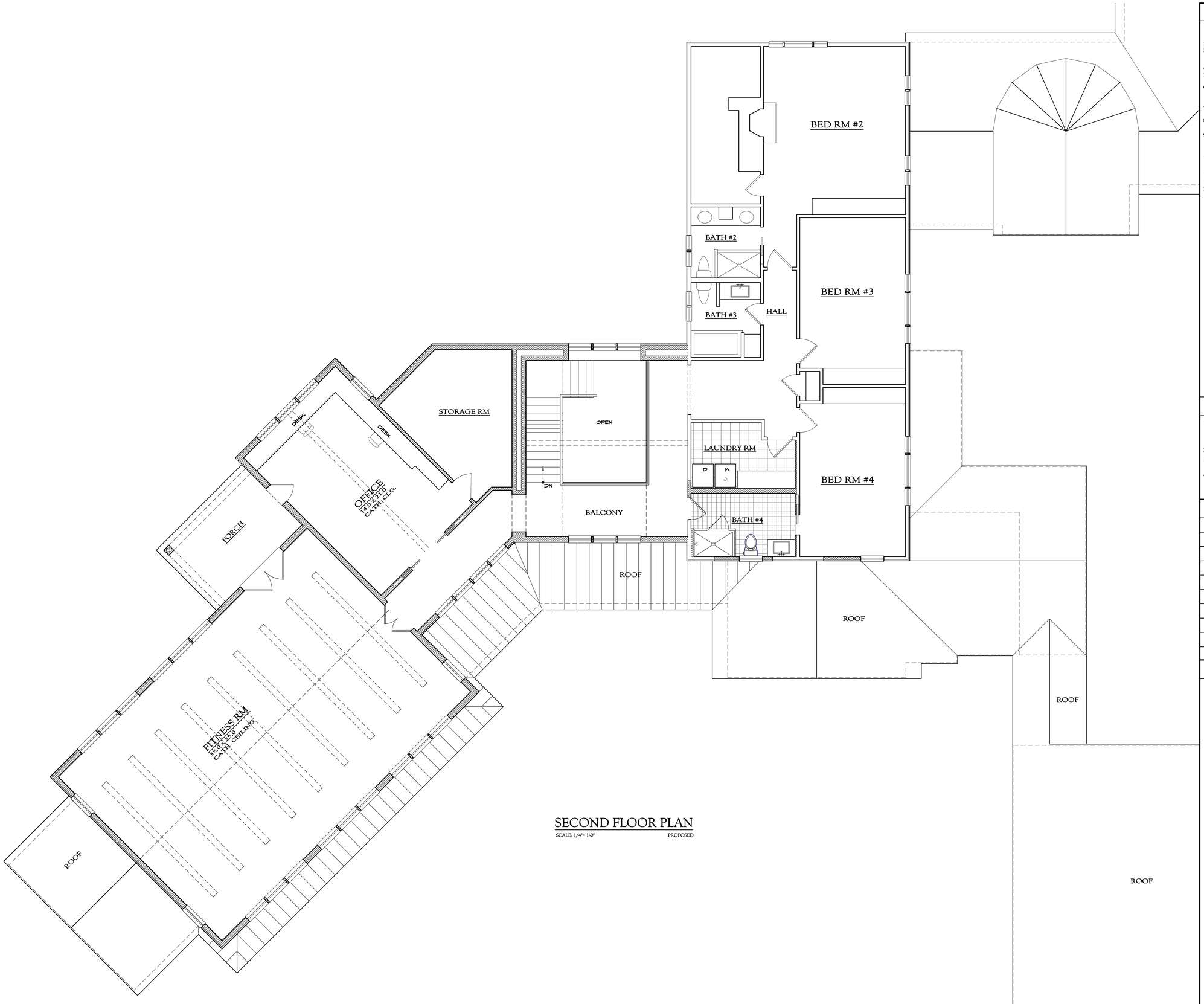
DWG No. A07

FLOOR PLAN

Rosenthal / 220079



FIRST FLOOR PLAN
PROPOSED
SCALE: 1/4"= 1'-0"



SECOND FLOOR PLAN

SCALE: 1/4"= 1'-0" PROPOSED

GENERAL NOTES

1. SEE PLANS PREPARED BY DESIGNER FOR KITCHEN CABINET, PLUMBING FIXTURES AND APPLIANCE LAYOUT. G.C. SHALL PROVIDE CABINET SOFFIT AS REQUIRED.
2. SEE WINDOW AND DOOR SCHEDULE FOR TYPES.
3. PROVIDE 16 OZ. COPPER SILL PAN FLASHING AT ALL EXTERIOR DOOR ROUGH OPENINGS AND AT WINDOWS IMMEDIATELY ABOVE A ROOF (REVIEW WITH ARCHITECT).
4. PROVIDE FIREBLOCKING AT ALL SOFFITS AND TUBS.
5. FLUE CHASES SHALL BE FIREBLOCKED AT EACH FLOOR LEVEL INCLUDING ATTIC.
6. INSULATE ALL INTERIOR WALLS THROUGHOUT AS WELL AS ENTIRE FLOOR UNDER SECOND FLOOR ROOMS W/ "ROXUL" FOR SOUND DEADENING.
7. PROVIDE 1/2" GYPSUM BOARD THROUGHOUT WALLS AND CEILING UNLESS OTHERWISE NOTED.
8. FLOORING IN NON-TILED ROOMS UNLESS NOTED OTHERWISE SHALL BE STRIP OAK AND MATCH EXISTING.
9. STAIR SHALL BE SOLID WOOD CONSTRUCTION WITH OAK TREADS AND POPLAR RISERS. STAIR RAILING STYLE SHALL BE SELECTED BY OWNER G.C. SHALL SUBMIT SAMPLES FOR OWNER'S APPROVAL.
10. TILE WORK SHALL BE AS PER TCA SPECS (LATEST EDITION).
11. INTERIOR DOORS SHALL MATCH EXISTING.
12. OWNER SHALL SELECT ALL CABINETRY.
13. OWNER SHALL SELECT DOOR HARDWARE.
14. PRIME AND PAINT DRYWALL (3 COATS; 1 PRIME & FINISH) STAIN AND POLYURETHANE ALL OAK WOOD (FURNITURE QUALITY FINISH). REVIEW TYPES AND COLORS WITH OWNER PRIOR TO START OF WORK. SUBMIT SAMPLES TO OWNER'S FOR REVIEW AND APPROVAL.

HVAC

1. CONTRACTOR SHALL REVIEW HEATING AND AIR CONDITIONING REQUIREMENTS WITH OWNER. SUBMIT PROPOSED SYSTEM WITH SPECIFICATIONS FOR OWNER'S REVIEW AND APPROVAL.
2. GARAGE SHALL BE HEATED ON A SEPARATE SYSTEM.
3. HVAC CONTRACTOR SHALL PROVIDE COMPLETE MANUAL J & MANUAL S CALCULATIONS.
4. HVAC CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE DETAILED DUCT PLAN IF REQUESTED BY LOCAL OFFICAL

STAIR & RAILING

SHALL COMPLY WITH SECTION R311 OF THE 2020 RCNYS

STAIR LOCATION	MAIN	BACK	BASEMENT
WIDTH	48"	N.A.	N.A.
TREAD	9"		
RISER	7.6" +/-		
HEADROOM	80" <		
HANDRAIL GRIP	TYPE 1		
BALUSTER SPACING	LESS THAN 4" O.C.		
HANDRAIL HEIGHT	36" (SECTION R311.7.8)		
GUARDRAIL HEIGHT	42" (SECTION R312.1)		

LEGEND

- EXISTING WALL (VERIFY IN FIELD)
- NEW WOOD STUD WALL 2 x @ 16" O.C.
- POURED CONCRETE WALL
- CMU WALL (CEMENT GROUT SOLID)
- STONE VENEER
- BRICK VENEER
- 32 — DOOR SIZE (NOTED IN INCHES)
- A — WINDOW TYPE *
- A — EGRESS WINDOW *
- H-I — HEADER SIZE *
- L-I — LINTEL SIZE *
- COP — COPPER SILL PAN
- NUMBER OF STUDS (MULL OR JACK)
- H — FROST FREE HOSE BIB
- E — EXHAUST FAN (50 CFM, MIN.) VENT TO EXTERIOR W/ METAL DUCT
- H — HEAT SENSOR HARD WIRED W/ BATTERY BACKUP (U.L. LISTED) INTERCONNECTED, NFPA 72 COMPLIANCE
- SMOKE ALARM HARD WIRED W/ BATTERY BACKUP (U.L. LISTED) INTERCONNECTED, NFPA 72 COMPLIANCE
- CARBON MONOXIDE ALARM HARD WIRED W/ BATTERY BACKUP (U. L. LISTED) INTERCONNECTED, NFPA 72 COMPLIANCE

* REFER TO WINDOW & DOOR SCHEDULE SHEET FOR SCHEDULES AND SPECIFICATIONS

DO NOT SCALE PRINTS

Rosenthal Residence

Proposed Addition & Alteration to

10 Creemer Road

Armonk, NY

JUSTIN F. MINIERI, AIA
NCARB MEMBER
P.O. BOX 1439 • NEW ROCHELLE NY 10802
914.576.7097 TEL 914.355.5238 FAX

DATE: 1/31/22

REVISIONS:

DWG No. A08

FLOOR PLAN

Rosenthal / 220079

FRONT ELEVATION
SCALE: 1/4"= 1'-0" EXISTING

FRONT ELEVATION
SCALE: 1/4"= 1'-0" PROPOSED

FRONT ELEVATION - SPA SHED
SCALE: 1/4"= 1'-0" PROPOSED

Armonk, NY

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DATE: 1/31/22
REVISIONS:

DWG No.
A13
ELEVATION

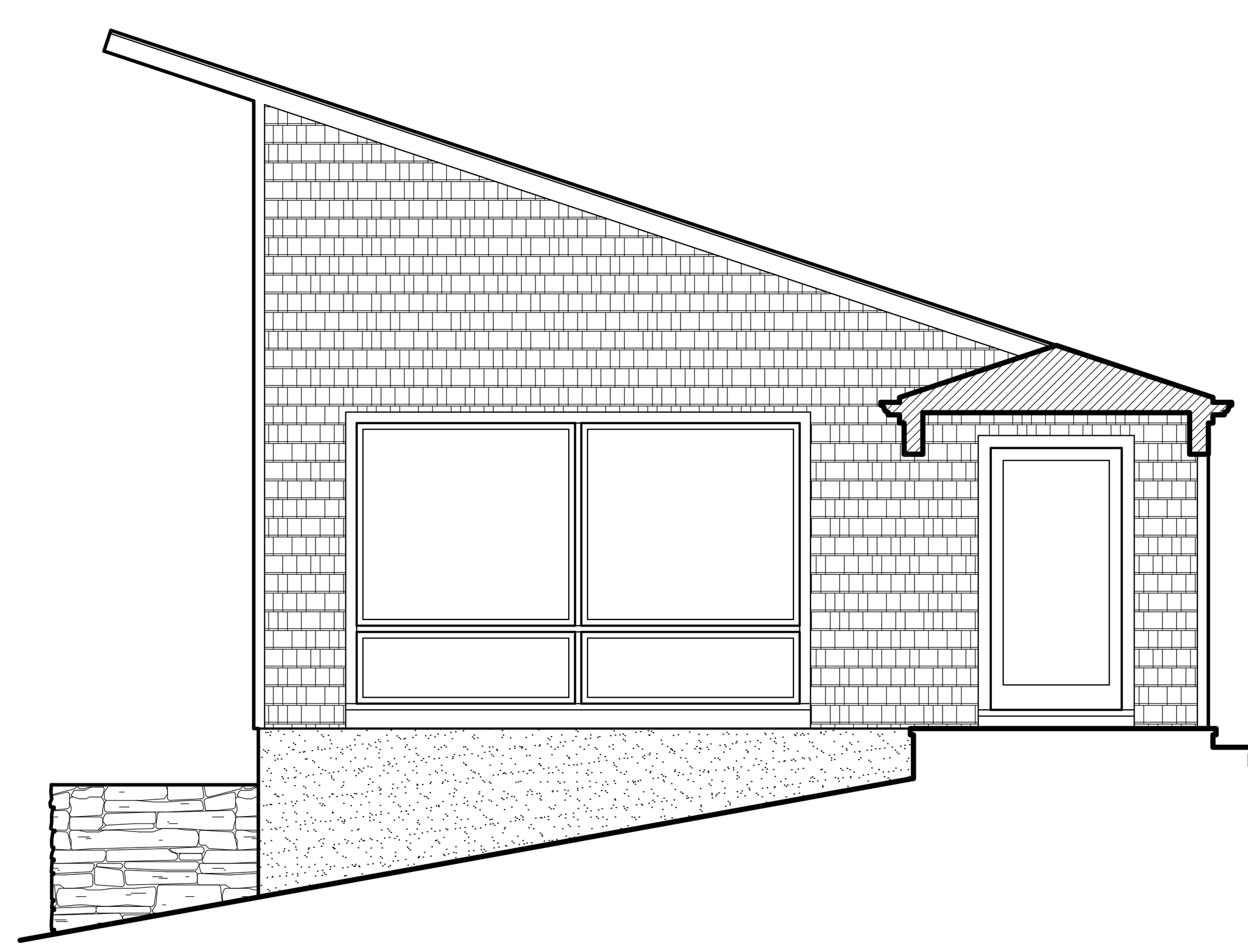
Rosenthal / 220079

RIGHTSIDE ELEVATION

SCALE: 1/4"= 1'-0" EXISTING

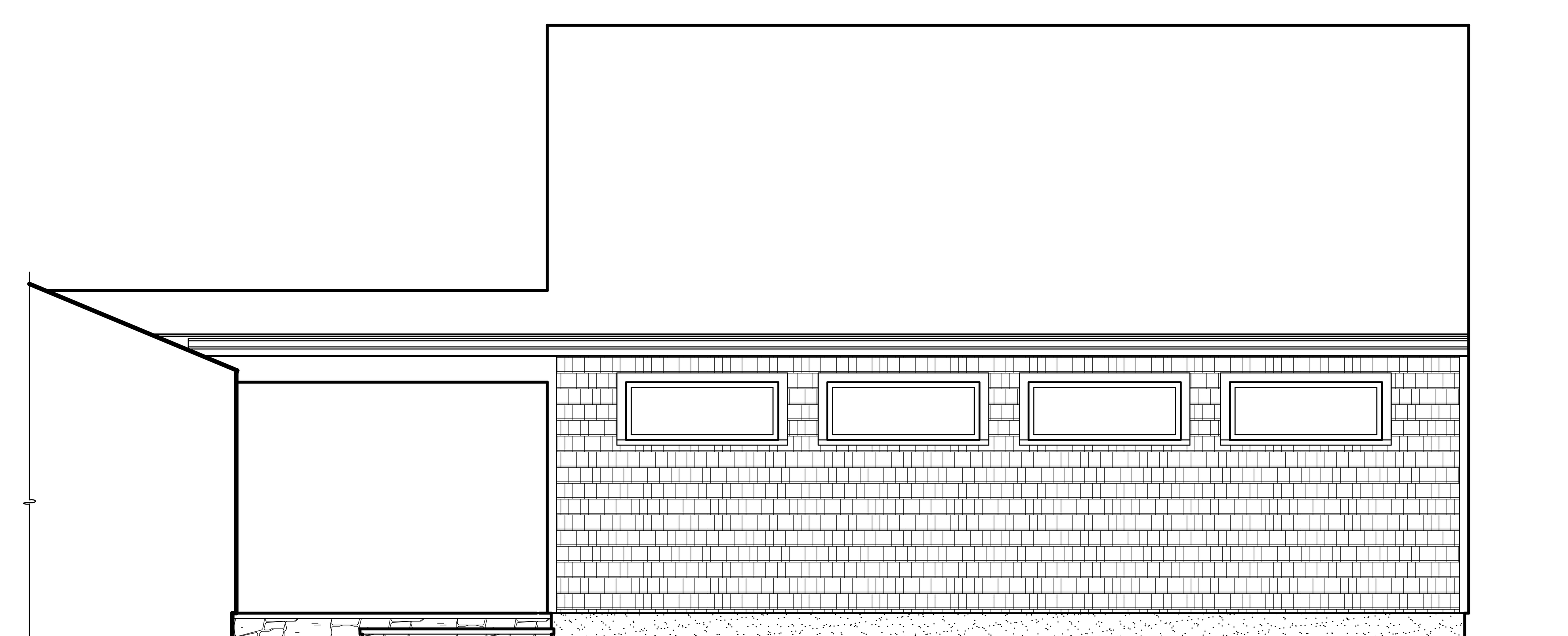
RIGHTSIDE ELEVATION - SPA SHED

SCALE: 1/4"= 1'-0" PROPOSED



REAR ELEVATION - SPA SHED

SCALE: 1/4"= 1'-0" PROPOSED



LEFTSIDE ELEVATION - SPA SHED

SCALE: 1/4"= 1'-0" PROPOSED

GENERAL NOTES

1. PROVIDE "GRACE ICE & WATER SHIELD" SELF-ADHERED ROOFING UNDERLAYMENT AT ALL EAVES, VALLEYS AND CRICKETS. COVER ENTIRE INFILL LOW-PITCH ROOF WITH WATERPROOF MEMBRANE.
2. PROVIDE HIGH TEMPERATURE UNDERLAYMENT AT METAL ROOF. STANDARD "ICE-SHIELD" IS NOT PERMITTED FOR USE. UNDERLAYMENT SHALL BE "GRACE ICE & WATER SHIELD HT" ENTIRE INFILL LOW-PITCH ROOF WITH WATERPROOF MEMBRANE.
3. ALL EXTERIOR TRIM SHALL BE "AZEK".
4. ROOFING SHALL BE ASPHALT SHINGLES.
5. GUTTERS & LEADERS SHALL BE BAKED ENAMEL ALUMINUM. GUTTER SHALL BE 6"w. K-STYLE.
6. FLASHING SHALL BE 16 OZ. COPPER.
7. PROVIDE 16 OZ. COPPER SILL PAN FLASHING, AS PER DETAIL, AT ALL EXTERIOR DOOR OPENINGS AND WINDOWS WITHIN MASONRY OPENINGS, WINDOWS DIRECTLY ON TOP OF A LOWER ROOF AND DORMERS.
8. PROVIDE COPPER DRIP EDGE AT ALL EAVES.
9. RIDGE VENTS SHALL BE SHINGLEVENT BY AIRVENT, INC. OR EQUAL.
10. PROVIDE "AIR & VAPOR BARRIER" WRAP BY "GRACE" AT ALL WINDOW AND DOOR ROUGH OPENINGS AS PER DETAIL.
11. EXTERIOR WALL SHEATHING SHALL BE WRAPPED WITH "HYDROGAP" HOUSEWRAP BY BENJAMIN OBDYKE. ALL SEAMS SHALL BE TAPPED AS PER MANUFACTURER'S SPECIFICATIONS.
12. SIDING SHALL BE HARDIE SHINGLE.
13. PROVIDE 5/4 COMPOSITE KICK BOARD AT EACH DOORSILL.
14. PROVIDE COPPER DRIP EDGE FLASHING AT ALL FRIEZES, COLUMN CAPS, AND WINDOW & DOOR HEAD TRIM.
15. PROVIDE "AZEK" J-BLOCKS AT EXTERIOR WALLS FOR MOUNTING OF LANTERNS, HOSE BIBS, ELECTRICAL OUTLETS, ETC. AS PER DETAIL.
16. REFER TO SPECIFICATIONS FOR PAINTING AND STAINING SCHEDULE SUBMIT SAMPLES AS REQUESTED, FOR REVIEW AND APPROVAL.

THERMAL ENVELOPE
2020 RCNYS

LOCATION	TYPE	R-VALUE
ROOF	SPRAY FOAM (C)	R-49
CEILING	N/A	N/A
FLOOR (1)	SPRAY FOAM (C)	R-30 / R-49
FLOOR (2)	SPRAY FOAM (C)	R-21
WALLS (3)	SPRAY FOAM (C)	R-21
WALLS (4)	SPRAY FOAM (C)	R-21

(1) OVER UNHEATED SPACE (2) EXTERIOR PERIMETER
(3) EXTERIOR WALL (4) BASEMENT WALL PERIMETER
(O) OPEN CELL (C) CLOSED CELL

REFER TO WALL SECTION FOR DETAIL

FINISH SCHEDULE

BUILDING COMPONENT	NAME	TYPE	COLOR
ROOFING	GAF	ASPHALT	MATCH EXISTING
ROOFING	STANDING SEAM	ALUMINUM	BLACK
SIDING	JAMES HARDIE	HARDIE-SHINGLE	MATCH EXISTING
TRIM	AZEK	FLAT STOCK & MOULDING PROFILES	WHITE
WINDOWS	ANDERSEN	CLAD	WHITE
ENTRY DOORS	CUSTOM	MAHOGANY	DARK MAHOGANY
GARAGE DOORS	CUSTOM	COMPOSITE	WHITE
MASONRY VENEER	STONE	CONNECTICUT	MATCH EXISTING

DO NOT SCALE PRINTS

Proposed Addition & Alteration to

Rosenthal Residence

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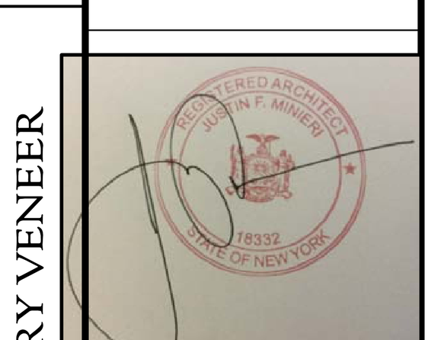
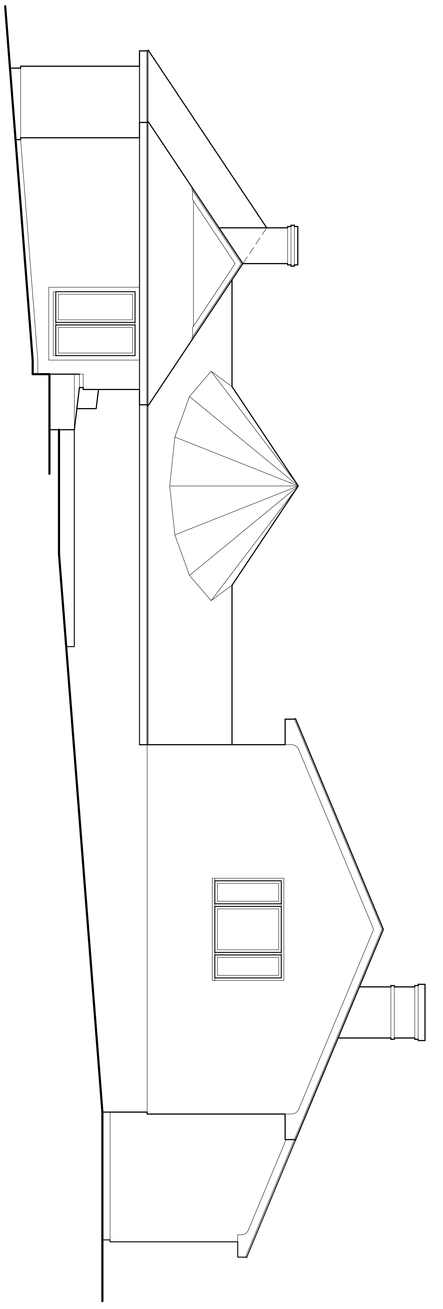
REVISIONS:



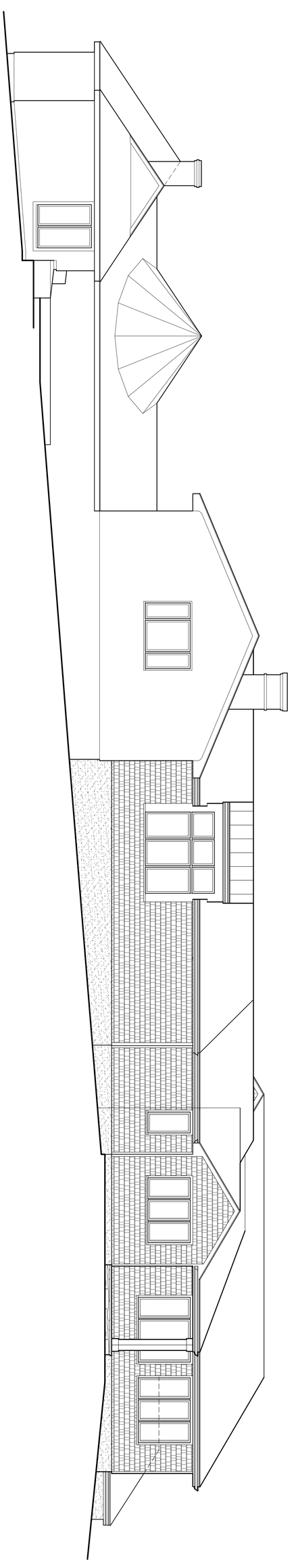
DWG No.
A14
ELEVATION

Rosenthal / 220079

REAR ELEVATION
SCALE: 1/4"= 1'-0"
EXISTING



REAR ELEVATION
SCALE: 1/4"= 1'-0"
PROPOSED



Rosenthal / 220079

ELEVATION

DWG No. A15

REVISIONS:

DATE: 1/31/22

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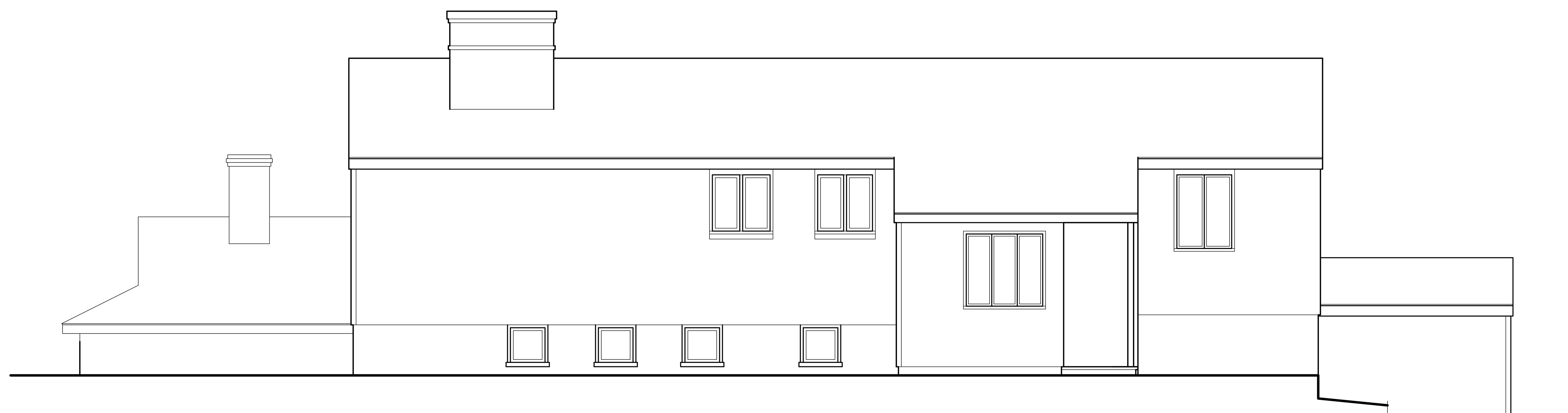
Proposed Addition & Alteration to

Rosenthal Residence

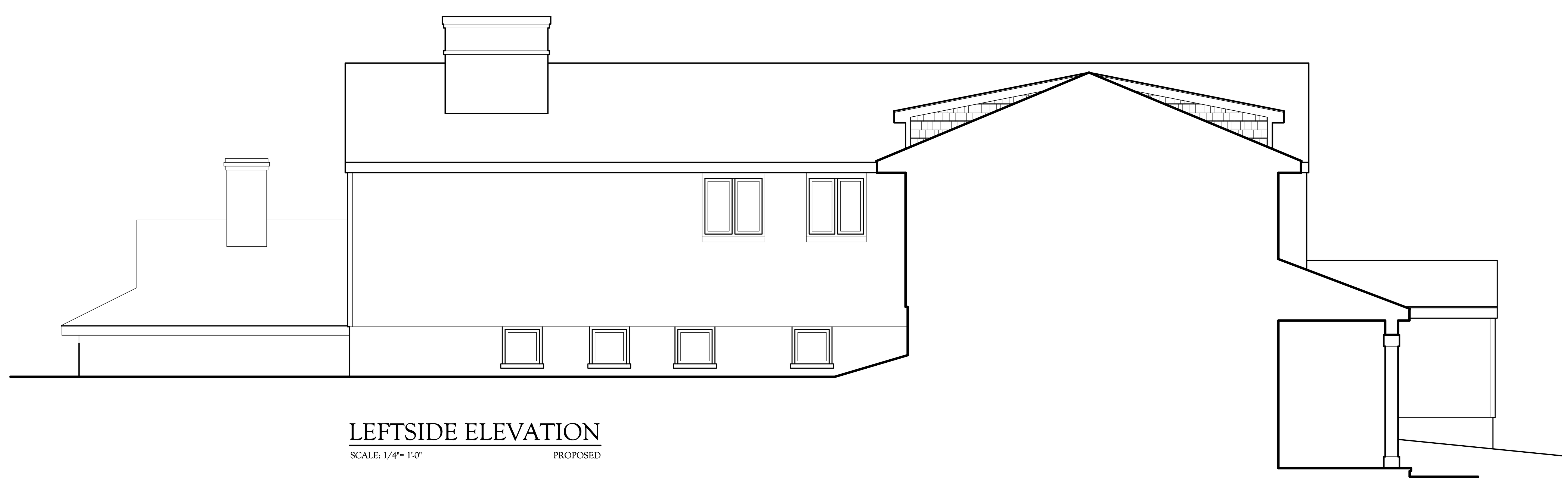
10 Creemer Road

Armonk, NY



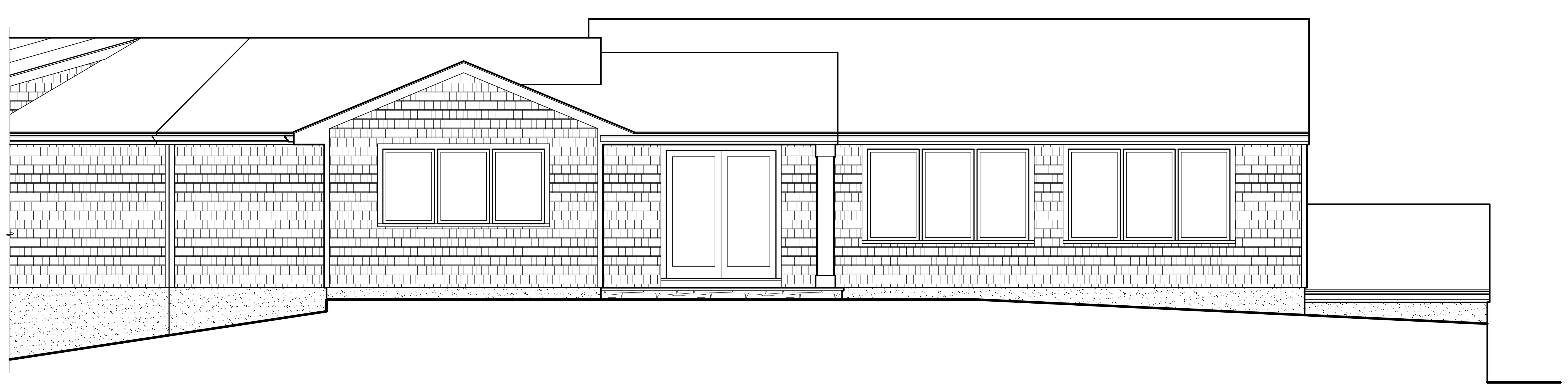
LEFTSIDE ELEVATION

SCALE: 1/4"= 1'-0" EXISTING



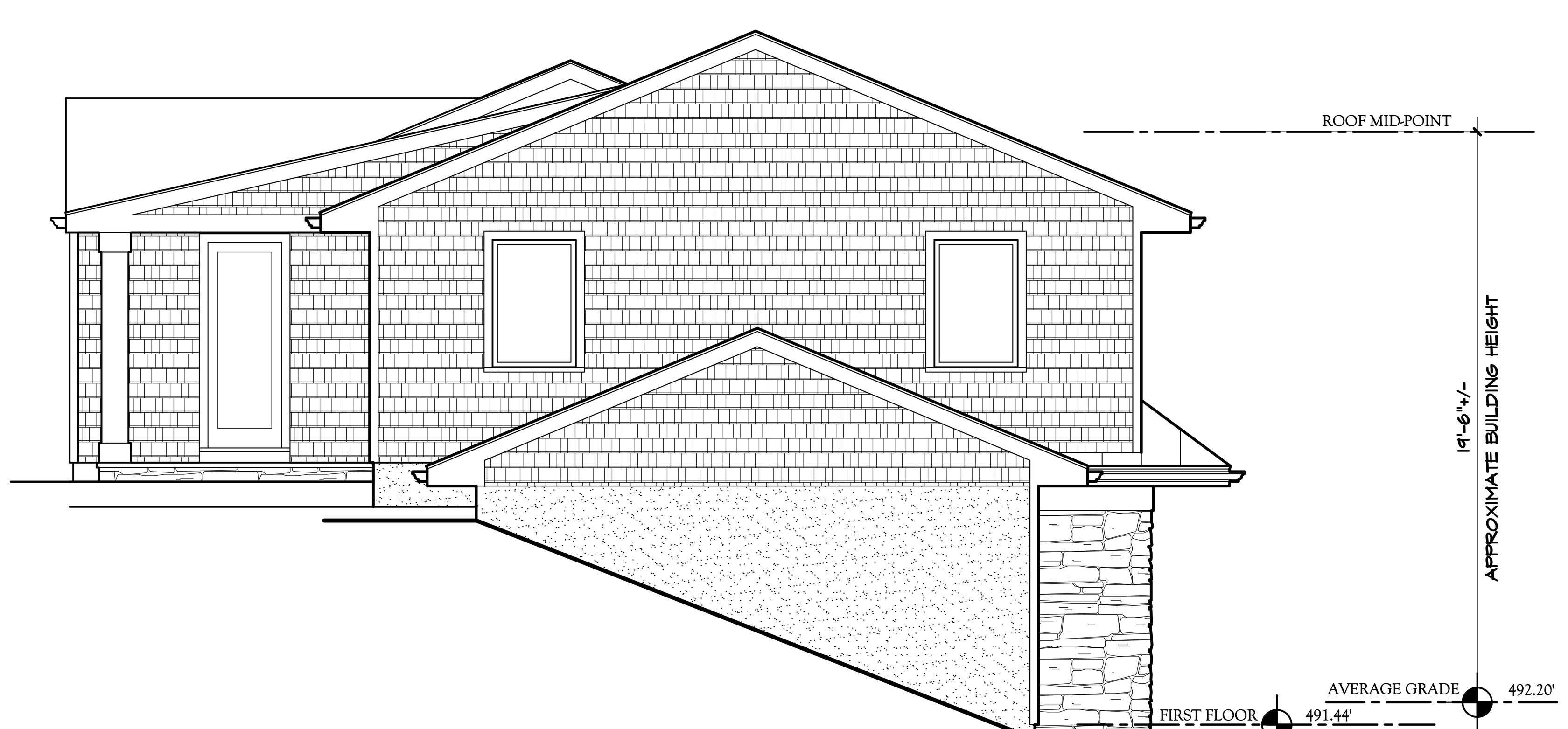
LEFTSIDE ELEVATION

SCALE: 1/4"= 1'-0" PROPOSED



REAR ELEVATION

SCALE: 1/4"= 1'-0" PROPOSED



RIGHTSIDE ELEVATION

SCALE: 1/4"= 1'-0" PROPOSED

Armonk, NY

Proposed Addition & Alteration to

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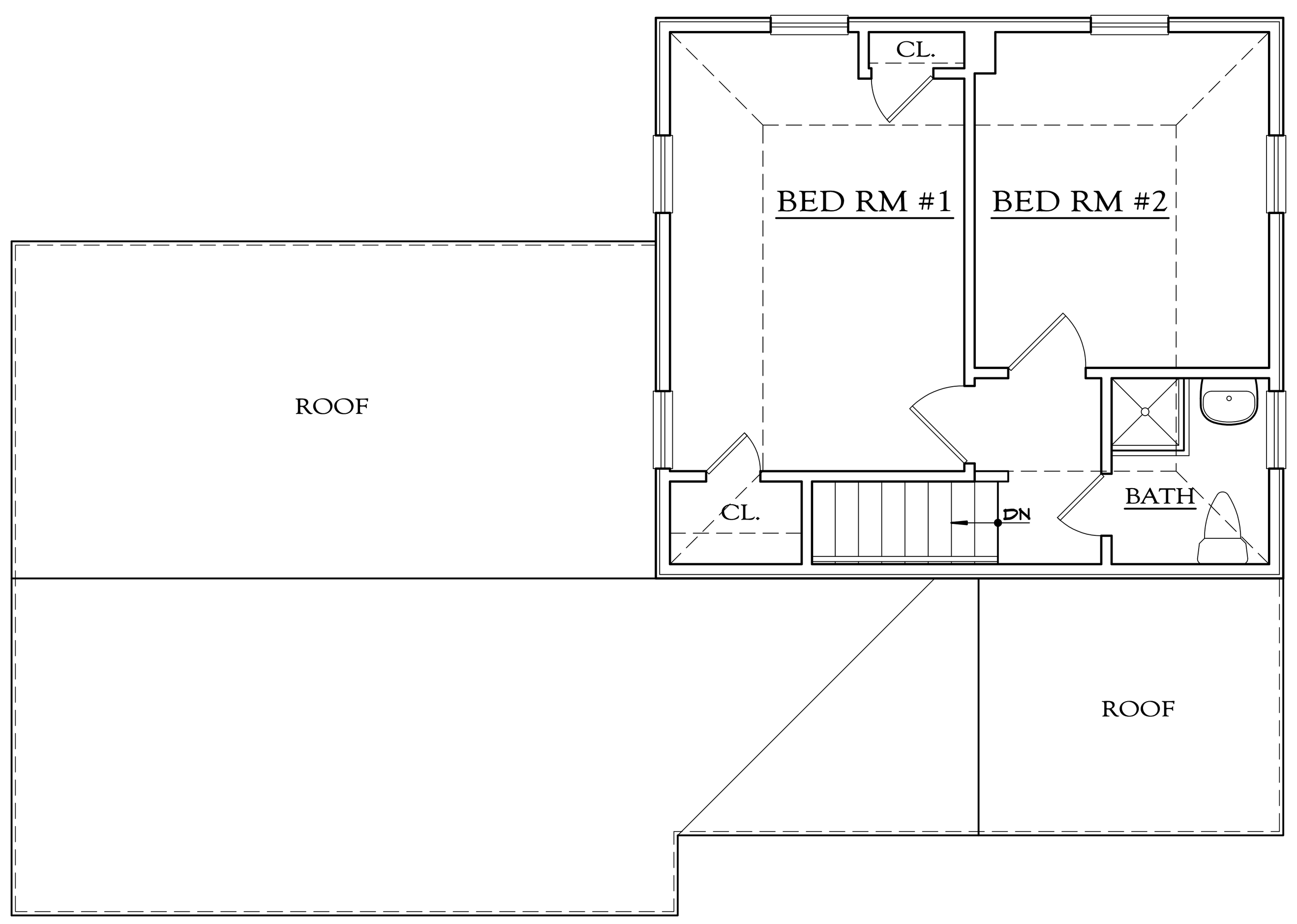
REVISIONS:

DWG No.

A16

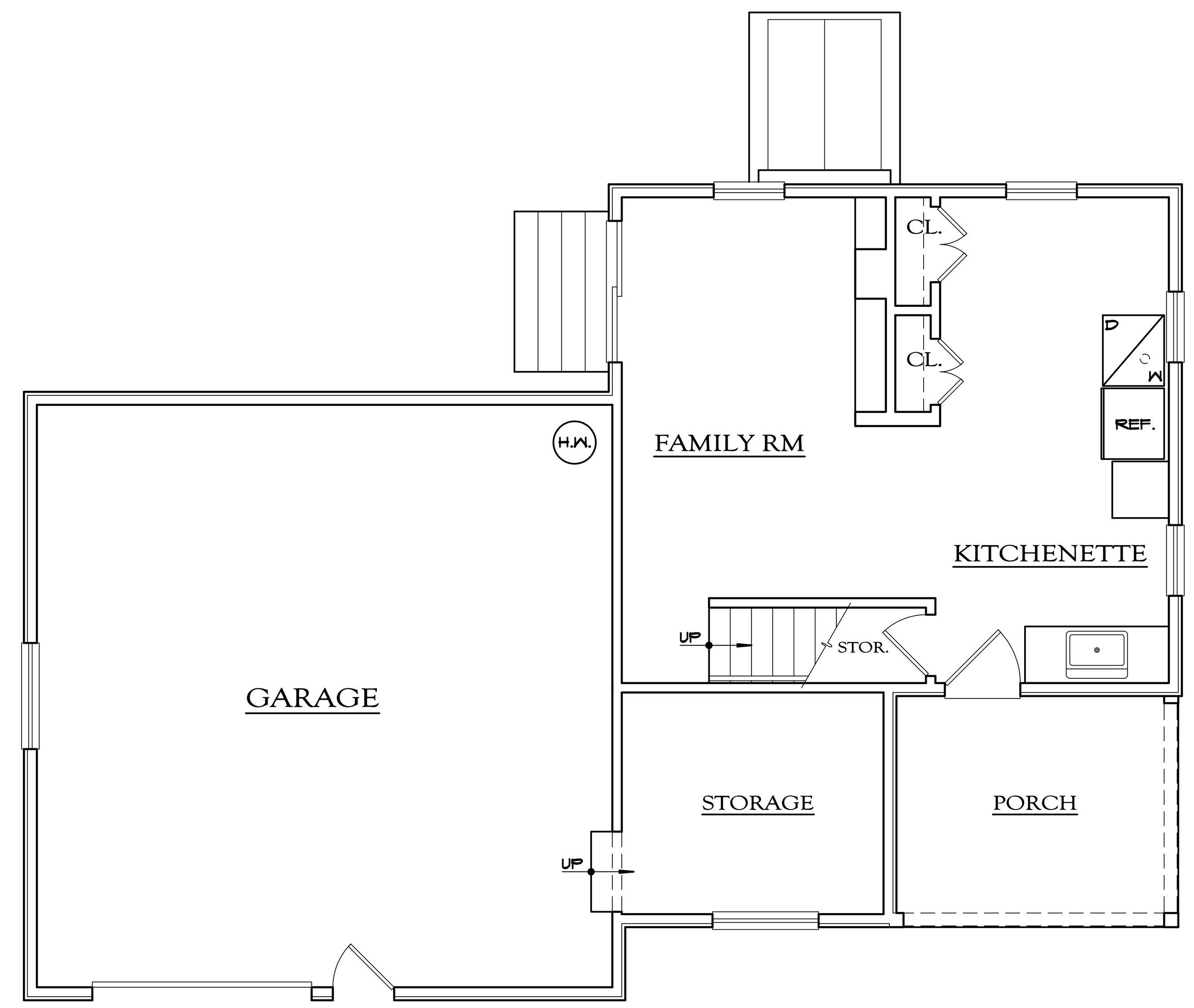
ELEVATION

Rosenthal / 220079



SECOND FLOOR PLAN

SCALE: 1/4"= 1'0" EXISTING



FIRST FLOOR PLAN

SCALE: 1/4"= 1'0" EXISTING

GENERAL NOTES

1. GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO ALL RULES AND REGULATIONS HAVING JURISDICTION.
2. GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO CHECK AND VERIFY ALL EXISTING CONDITIONS INCLUDING CONCEALED AREAS IF POSSIBLE, PRIOR TO START OF WORK.
3. G.C. SHALL LOCATE AND IDENTIFY UNDERGROUND UTILITY LINES, IF ANY, PRIOR TO START OF EXCAVATION. G.C. SHALL BE RESPONSIBLE TO REPAIR DAMAGED OR INTERRUPTED SERVICES RESULTING FROM THE WORK BEING PERFORMED.
4. G.C. SHALL NOTIFY ARCHITECT IMMEDIATELY OF ANY DISCREPANCY AND/OR DISCOVERY OF AN UNKNOWN CONDITION.
5. MATERIALS OR ITEMS NOTED TO BE RE-USED, SHALL BE CAREFULLY REMOVED, PROTECTED AND STORED ON SITE.
6. G.C. SHALL OBTAIN FROM THE OWNER A LIST OF ITEMS, IF ANY, TO BE SALVAGED AND CLAIMED BY THE OWNER. ITEMS SHALL BE STORED AND PROTECTED ON SITE UNLESS OTHERWISE DIRECTED BY THE OWNER.
7. G.C. SHALL PROVIDE REQUIRED SHORING, BRACING, TEMPORARY RAILS, FENCES, AND ENCLOSURES AS REQUIRED TO MAINTAIN PUBLIC SAFETY CONTINUOUSLY DURING CONSTRUCTION.
8. PROVIDE TARPS AS REQUIRED TO PROTECT STRUCTURE(S) FROM WEATHER. MAINTAIN TARPS IN GOOD CONDITION AND REPLACE WHEN DAMAGED.
9. IDENTIFY HAZARDOUS MATERIALS, IF ANY, PRIOR TO DEMOLITION. REMOVAL AND/OR CONTAINMENT AS REQUIRED SHALL BE PERFORMED IN ACCORDANCE WITH GUIDELINES SET BY THE APPLICABLE GOVERNING AGENCIES.
10. REMOVE AND REPLACE ANY DAMAGED OR ROTTED LUMBER. REVIEW QUESTIONABLE CONDITIONS WITH ARCHITECT.
11. ALL CONSTRUCTION AND DEMOLITION DEBRIS SHALL BE REMOVED AND LEGALLY DISPOSED OFF-SITE BY G.C.
12. G.C. SHALL PROTECT ALL AREAS NOT WITHIN THE SCOPE OF WORK FROM DAMAGE OR DUST DURING DEMOLITION AND CONSTRUCTION.
13. WINDOW AND DOOR REMOVAL SHALL INCLUDE FRAMES, EXPOSING ROUGH OPENING UNLESS OTHERWISE NOTED.
14. UTILITIES SERVING OCCUPIED SPACES SHALL NOT BE INTERRUPTED WITHOUT THE OWNER'S PERMISSION AND PROVIDE TEMPORARY UTILITIES AS NECESSARY.
15. HEATING SYSTEM SHALL REMAIN IN SERVICE THROUGHOUT CONSTRUCTION DURING HEATING SEASON WHETHER OR NOT THE RESIDENCE IS OCCUPIED UNLESS CIRCUMSTANCES MADE KNOWN TO THE OWNER DICTATE OTHERWISE.
16. REMOVE ALL ABANDONED PLUMBING AND ELECTRICAL LINES.
17. REPLACE PLUMBING AND/OR ELECTRICAL LINES WITHIN THE CONSTRUCTION AREA THAT ARE FOUND TO BE NON-CONFORMING WITH APPLICABLE CODES.

LEGEND

EXISTING WALL REMAIN (VERIFY WALL TYPE IN FIELD)

EXISTING WALL TO BE REMOVED

E — WINDOW OR DOOR TO REMAIN

R — WINDOW OR DOOR TO BE REMOVED

S — WINDOW OR DOOR TO BE SALVAGED (STORE ON SITE FOR RE-USE)

DO NOT SCALE PRINTS

Armonk, NY

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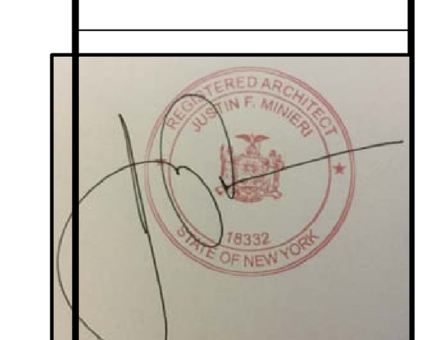
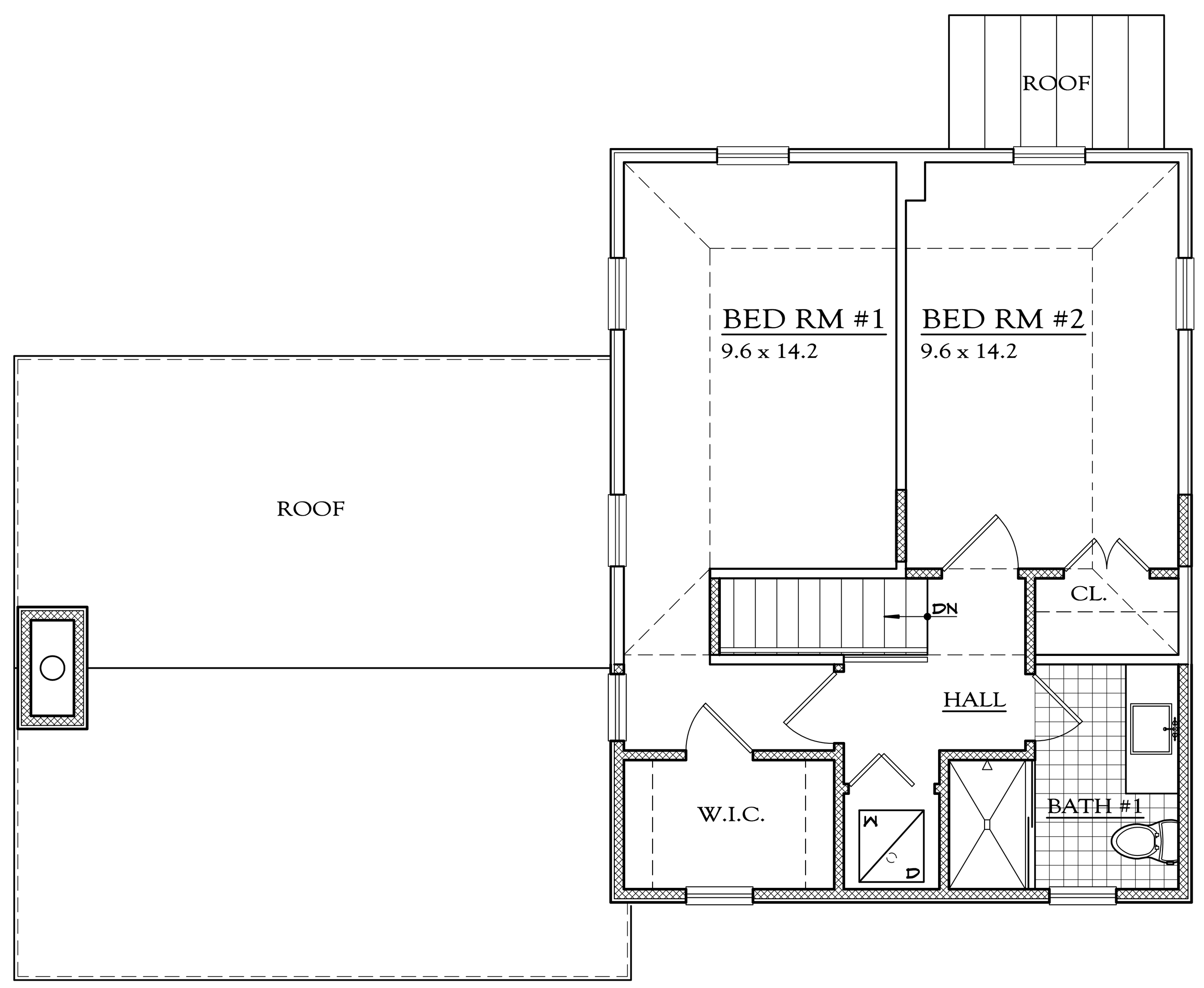


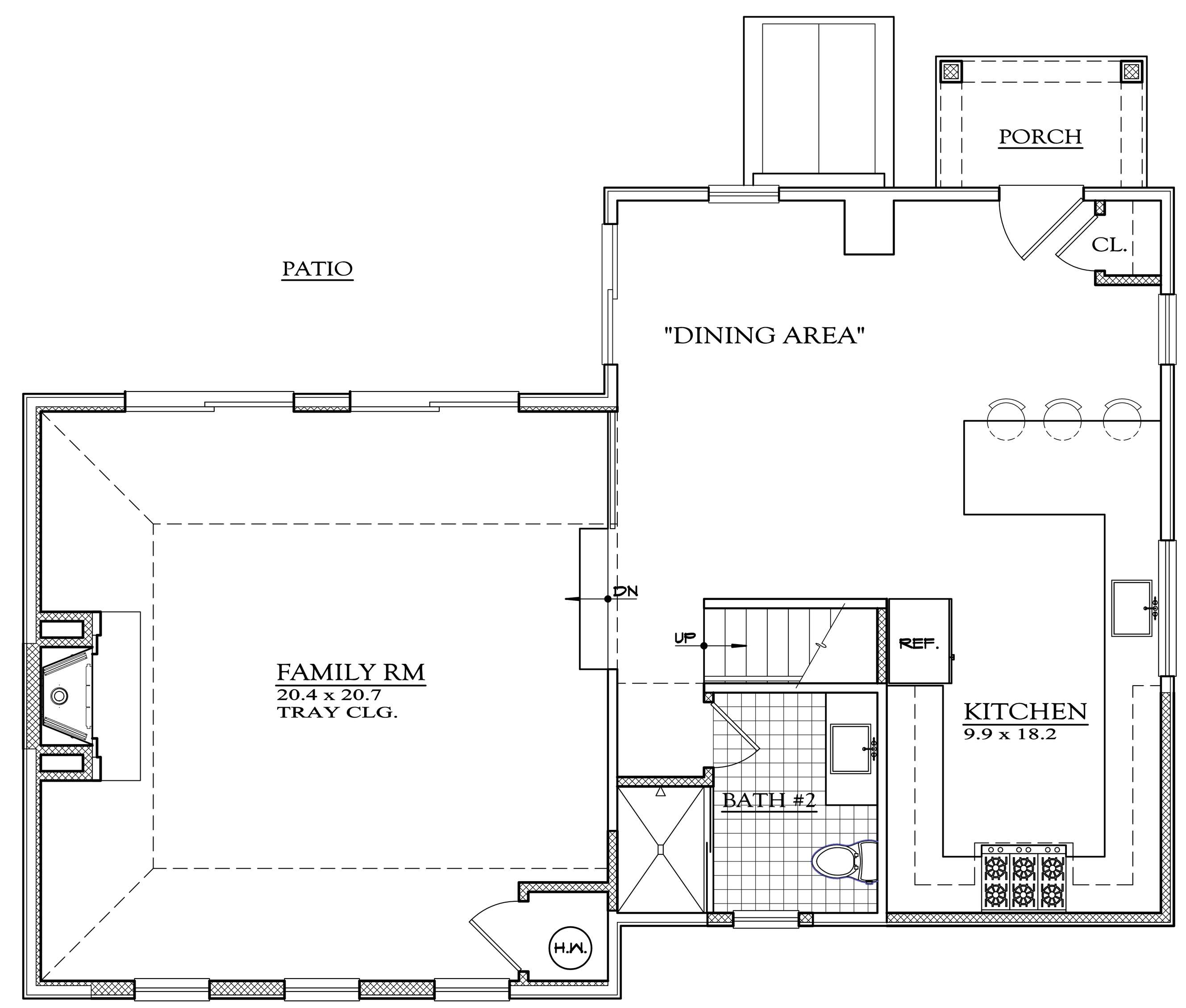
DWG No.
B01
EXISTING

Rosenthal / 220079



SECOND FLOOR PLAN

SCALE: 1/4"= 1'-0" PROPOSED



FIRST FLOOR PLAN

SCALE: 1/4"= 1'-0" PROPOSED

GENERAL NOTES

1. SEE PLANS PREPARED BY DESIGNER FOR KITCHEN CABINET, PLUMBING FIXTURES AND APPLIANCE LAYOUT. G.C. SHALL PROVIDE CABINET SOFFIT AS REQUIRED.
2. SEE WINDOW AND DOOR SCHEDULE FOR TYPES.
3. PROVIDE 16 OZ. COPPER SILL PAN FLASHING AT ALL EXTERIOR DOOR ROUGH OPENINGS AND AT WINDOWS IMMEDIATELY ABOVE A ROOF (REVIEW WITH ARCHITECT).
4. PROVIDE FIREBLOCKING AT ALL SOFFITS AND TUBS.
5. FLUE CHASES SHALL BE FIREBLOCKED AT EACH FLOOR LEVEL INCLUDING ATTIC.
6. INSULATE ALL INTERIOR WALLS THROUGHOUT AS WELL AS ENTIRE FLOOR UNDER SECOND FLOOR ROOMS W/ "ROXUL" FOR SOUND DEADENING.
7. PROVIDE 1/2" GYPSUM BOARD THROUGHOUT WALLS AND CEILING UNLESS OTHERWISE NOTED.
8. FLOORING IN NON-TILED ROOMS UNLESS NOTED OTHERWISE SHALL BE STRIP OAK AND MATCH EXISTING.
9. STAIR SHALL BE SOLID WOOD CONSTRUCTION WITH OAK TREADS AND POPLAR RISERS. STAIR RAILING STYLE SHALL BE SELECTED BY OWNER G.C. SHALL SUBMIT SAMPLES FOR OWNER'S APPROVAL.
10. TILE WORK SHALL BE AS PER TCA SPECS (LATEST EDITION).
11. INTERIOR DOORS SHALL MATCH EXISTING.
12. OWNER SHALL SELECT ALL CABINETRY.
13. OWNER SHALL SELECT DOOR HARDWARE.
14. PRIME AND PAINT DRYWALL (3 COATS; 1 PRIME & FINISH) STAIN AND POLYURETHANE ALL OAK WOOD (FURNITURE QUALITY FINISH). REVIEW TYPES AND COLORS WITH OWNER PRIOR TO START OF WORK. SUBMIT SAMPLES TO OWNER'S FOR REVIEW AND APPROVAL.

HVAC

1. CONTRACTOR SHALL REVIEW HEATING AND AIR CONDITIONING REQUIREMENTS WITH OWNER. SUBMIT PROPOSED SYSTEM WITH SPECIFICATIONS FOR OWNER'S REVIEW AND APPROVAL.
2. GARAGE SHALL BE HEATED ON A SEPARATE SYSTEM.
3. HVAC CONTRACTOR SHALL PROVIDE COMPLETE MANUAL J & MANUAL S CALCULATIONS.
4. HVAC CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE DETAILED DUCT PLAN IF REQUESTED BY LOCAL OFFICAL

STAIR & RAILING

SHALL COMPLY WITH SECTION R311 OF THE 2020 RCNYS

STAIR LOCATION	MAIN	BACK	BASEMENT
WIDTH	48"	N.A.	N.A.
TREAD	9"		
RISER	7.6" +/-		
HEADROOM	80" <		
HANDRAIL GRIP	TYPE 1		
BALUSTER SPACING	LESS THAN 4" O.C.		
HANDRAIL HEIGHT	36" (SECTION R311.7.8)		
GUARDRAIL HEIGHT	42" (SECTION R312.1)		

LEGEND

- EXISTING WALL (VERIFY IN FIELD)
- NEW WOOD STUD WALL 2 x @ 16" O.C.
- POURED CONCRETE WALL
- CMU WALL (CEMENT GROUT SOLID)
- STONE VENEER
- BRICK VENEER
- 32 — DOOR SIZE (NOTED IN INCHES)
- A — WINDOW TYPE *
- A — EGRESS WINDOW *
- H-1 — HEADER SIZE *
- L-1 — LINTEL SIZE *
- CSP — COPPER SILL PAN
- 1 — NUMBER OF STUDS (MULL OR JACK)
- H — FROST FREE HOSE BIB
- E — EXHAUST FAN (50 CFM, MIN.) VENT TO EXTERIOR W/ METAL DUCT
- H — HEAT SENSOR HARD WIRED W/ BATTERY BACKUP (U.L. LISTED) INTERCONNECTED, NFPA 72 COMPLIANCE
- SMOKE ALARM HARD WIRED W/ BATTERY BACKUP (U.L. LISTED) INTERCONNECTED, NFPA 72 COMPLIANCE
- CARBON MONOXIDE ALARM HARD WIRED W/ BATTERY BACKUP (U. L. LISTED) INTERCONNECTED, NFPA 72 COMPLIANCE

* REFER TO WINDOW & DOOR SCHEDULE SHEET FOR SCHEDULES AND SPECIFICATIONS

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Armonk, NY

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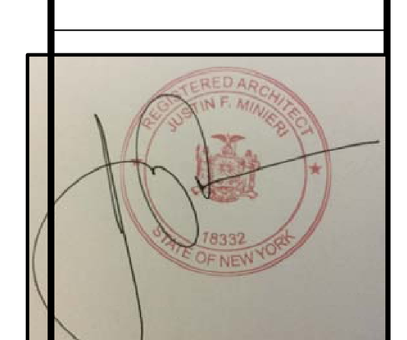
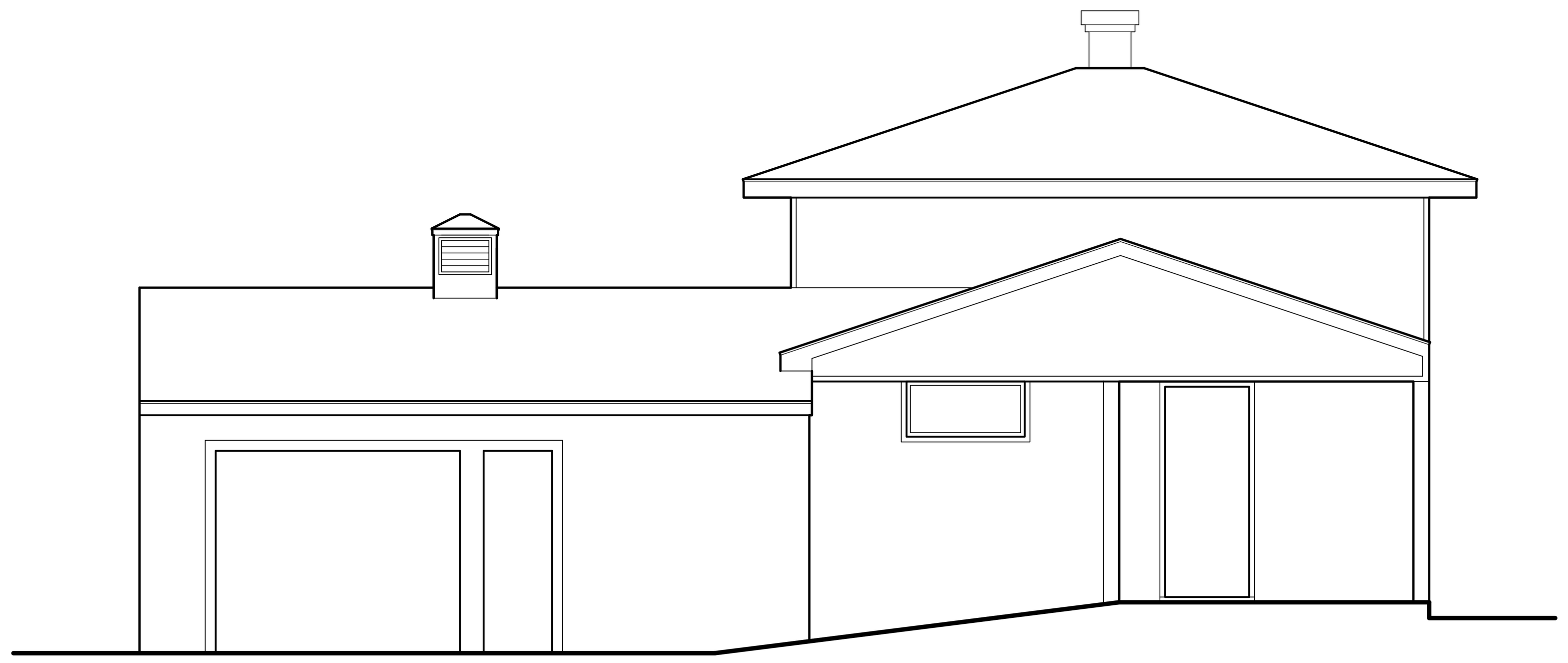


DWG No. B04

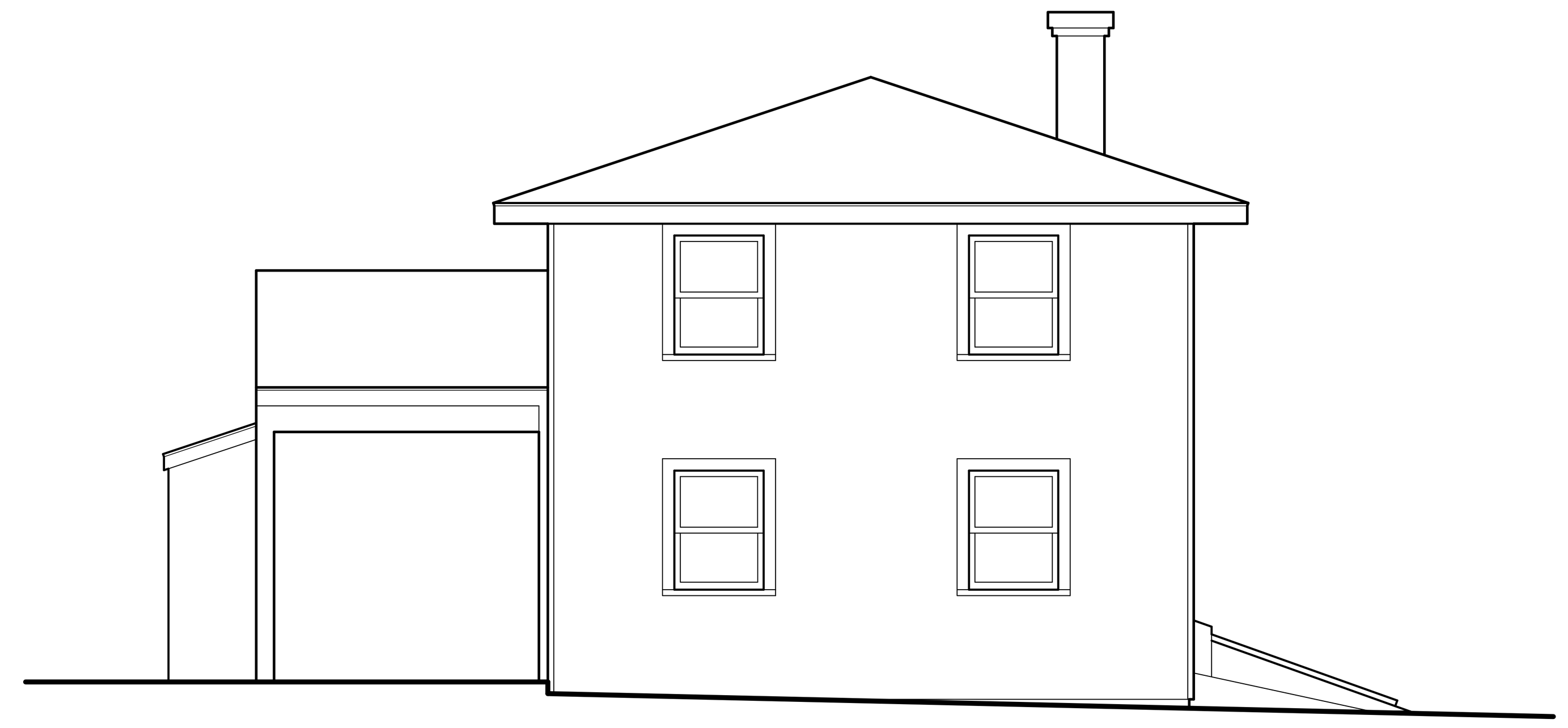
FLOOR PLAN

Rosenthal / 220079



FRONT ELEVATION

SCALE: 1/4"= 1'-0" EXISTING

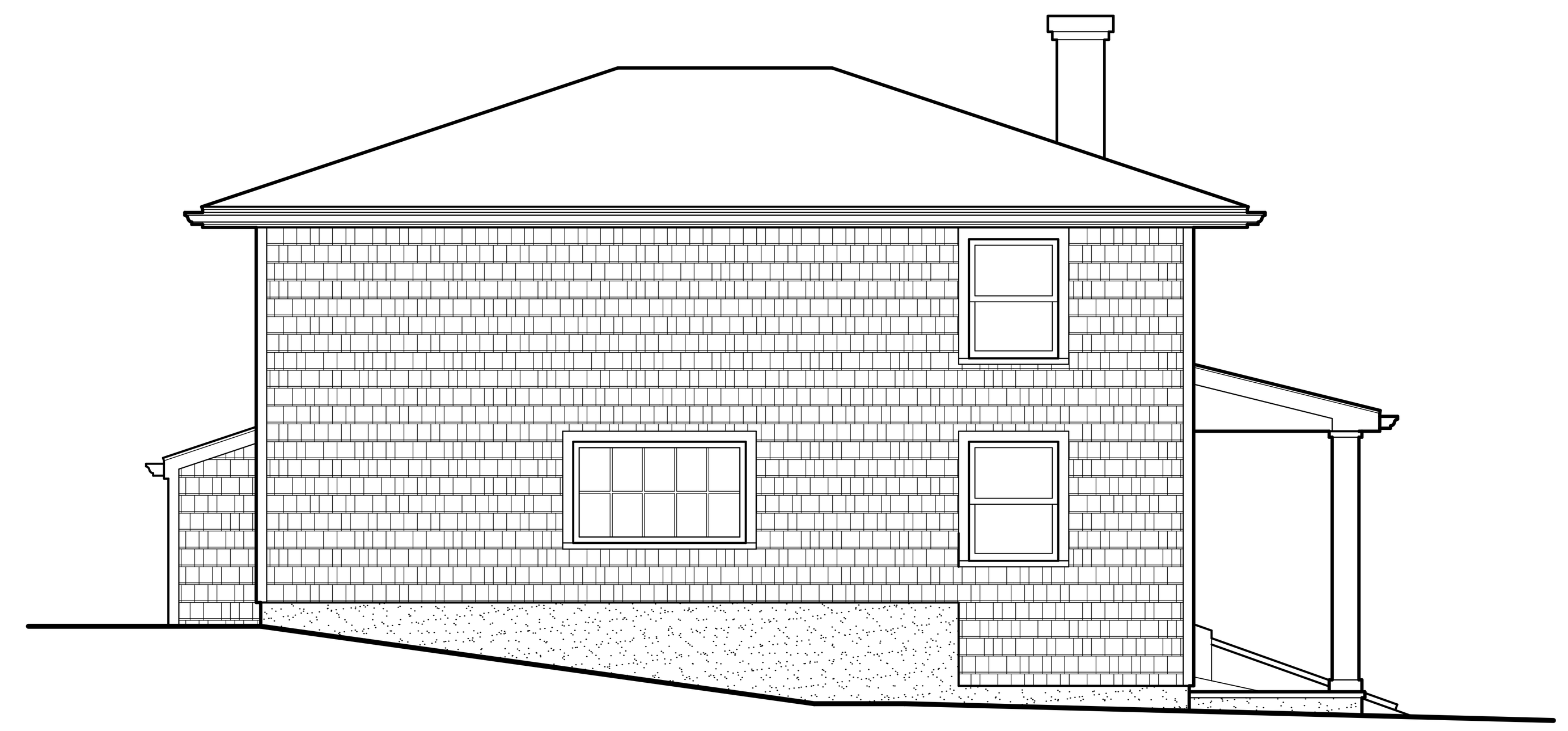


RIGHTSIDE ELEVATION

SCALE: 1/4"= 1'-0" EXISTING

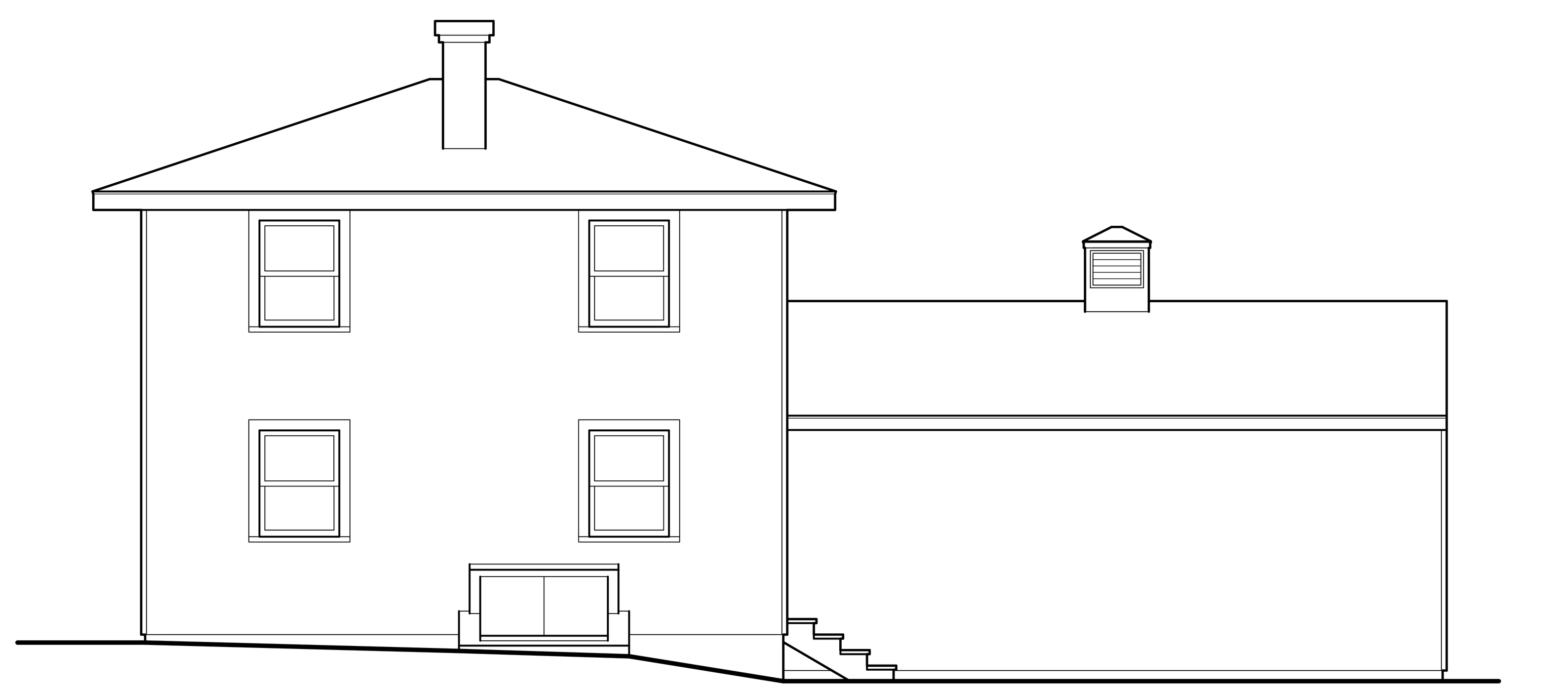
REAR ELEVATION

SCALE: 1/4"= 1'-0" PROPOSED



LEFTSIDE ELEVATION

SCALE: 1/4"= 1'-0" PROPOSED



REAR ELEVATION

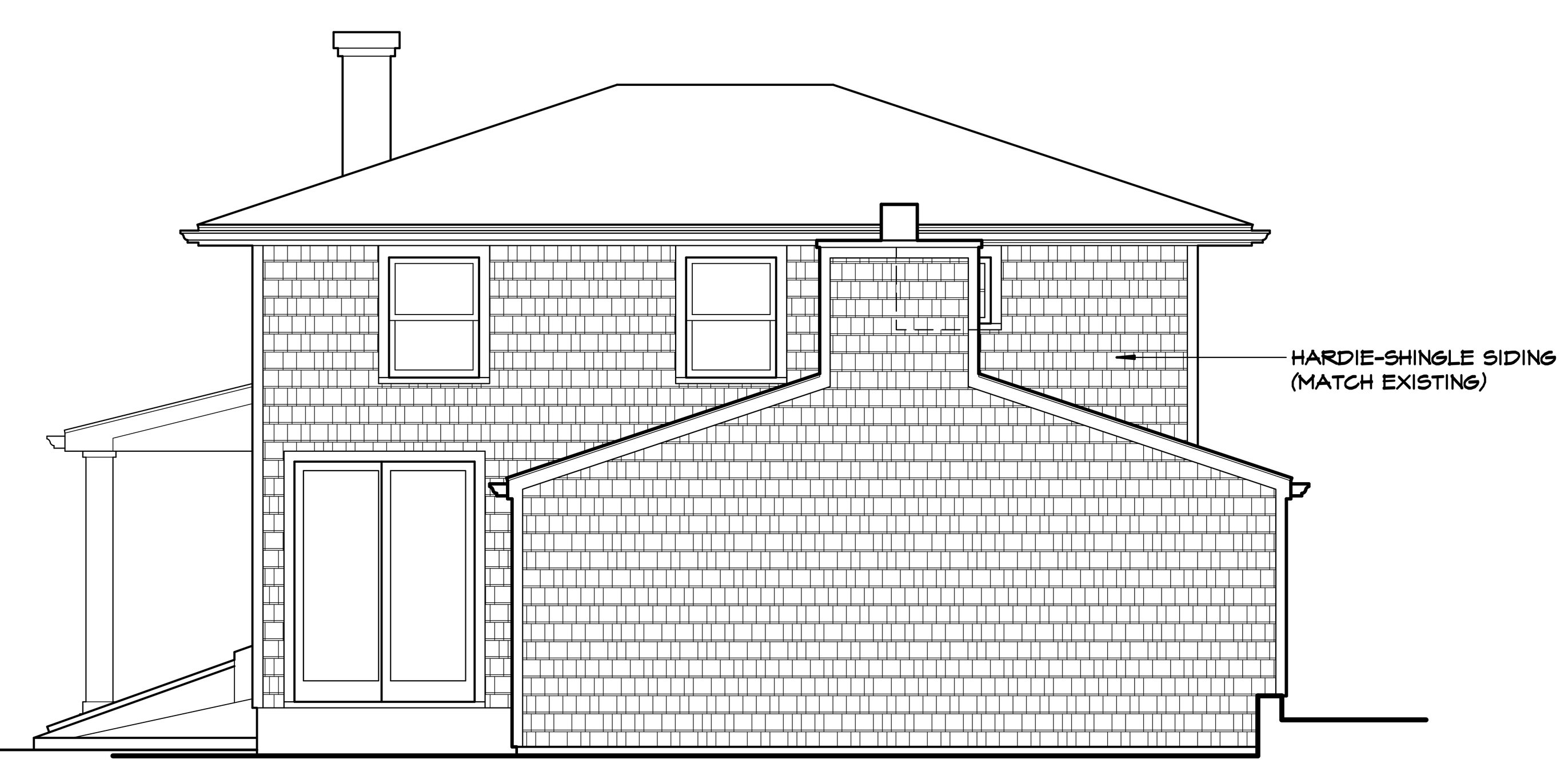
SCALE: 1/4"= 1'-0" EXISTING

LEFTSIDE ELEVATION

SCALE: 1/4"= 1'-0" EXISTING

FRONT ELEVATION

SCALE: 1/4"= 1'-0" PROPOSED



RIGHTSIDE ELEVATION

SCALE: 1/4"= 1'-0" PROPOSED

GENERAL NOTES

1. PROVIDE "GRACE ICE & WATER SHIELD" SELF-ADHERED ROOFING UNDERLAYMENT AT ALL EAVES, VALLEYS AND CRICKETS. COVER ENTIRE INFILL LOW-PITCH ROOF WITH WATERPROOF MEMBRANE.
2. PROVIDE HIGH TEMPERATURE UNDERLAYMENT AT METAL ROOF. STANDARD "ICE-SHIELD" IS NOT PERMITTED FOR USE. UNDERLAYMENT SHALL BE "GRACE ICE & WATER SHIELD HT" ENTIRE INFILL LOW-PITCH ROOF WITH WATERPROOF MEMBRANE.
3. ALL EXTERIOR TRIM SHALL BE "AZEK".
4. ROOFING SHALL BE ASPHALT SHINGLES.
5. GUTTERS & LEADERS SHALL BE BAKED ENAMEL ALUMINUM. GUTTER SHALL BE 6"w. K-STYLE.
6. FLASHING SHALL BE 16 OZ. COPPER.
7. PROVIDE 16 OZ. COPPER SILL PAN FLASHING, AS PER DETAIL, AT ALL EXTERIOR DOOR OPENINGS AND WINDOWS WITHIN MASONRY OPENINGS, WINDOWS DIRECTLY ON TOP OF A LOWER ROOF AND DORMERS.
8. PROVIDE COPPER DRIP EDGE AT ALL EAVES.
9. RIDGE VENTS SHALL BE SHINGLEVENT BY AIRVENT, INC. OR EQUAL.
10. PROVIDE "AIR & VAPOR BARRIER" WRAP BY "GRACE" AT ALL WINDOW AND DOOR ROUGH OPENINGS AS PER DETAIL.
11. EXTERIOR WALL SHEATHING SHALL BE WRAPPED WITH "HYDROGAP" HOUSEWRAP BY BENJAMIN OBDYKE. ALL SEAMS SHALL BE TAPPED AS PER MANUFACTURER'S SPECIFICATIONS.
12. SIDING SHALL BE HARDIE SHINGLE.
13. PROVIDE 5/4 COMPOSITE KICK BOARD AT EACH DOORSILL.
14. PROVIDE COPPER DRIP EDGE FLASHING AT ALL FRIEZES, COLUMN CAPS, AND WINDOW & DOOR HEAD TRIM.
15. PROVIDE "AZEK" J-BLOCKS AT EXTERIOR WALLS FOR MOUNTING OF LANTERNS, HOSE BIBS, ELECTRICAL OUTLETS, ETC. AS PER DETAIL.
16. REFER TO SPECIFICATIONS FOR PAINTING AND STAINING SCHEDULE SUBMIT SAMPLES AS REQUESTED, FOR REVIEW AND APPROVAL.

THERMAL ENVELOPE
2020 RCNYS

LOCATION	TYPE	R-VALUE
ROOF	SPRAY FOAM (C)	R-49
CEILING	N/A	N/A
FLOOR (1)	SPRAY FOAM (C)	R-30 / R-49
FLOOR (2)	SPRAY FOAM (C)	R-21
WALLS (3)	SPRAY FOAM (C)	R-21
WALLS (4)	SPRAY FOAM (C)	R-21

(1) OVER UNHEATED SPACE (2) EXTERIOR PERIMETER
(3) EXTERIOR WALL (4) BASEMENT WALL PERIMETER
(O) OPEN CELL (C) CLOSED CELL

REFER TO WALL SECTION FOR DETAIL

FINISH SCHEDULE

BUILDING COMPONENT	NAME	TYPE	COLOR
ROOFING	GAF	ASPHALT	MATCH EXISTING
ROOFING	STANDING SEAM	ALUMINUM	BLACK
SIDING	JAMES HARDIE	HARDIE-SHINGLE	MATCH EXISTING
TRIM	AZEK	FLAT STOCK & MOULDING PROFILES	WHITE
WINDOWS	ANDERSEN	CLAD	WHITE
ENTRY DOORS	CUSTOM	MAHOGANY	DARK MAHOGANY
GARAGE DOORS	CUSTOM	COMPOSITE	WHITE
MASONRY VENEER	STONE	CONNECTICUT	MATCH EXISTING

DO NOT SCALE PRINTS

Armonk, NY

Proposed Addition & Alteration to

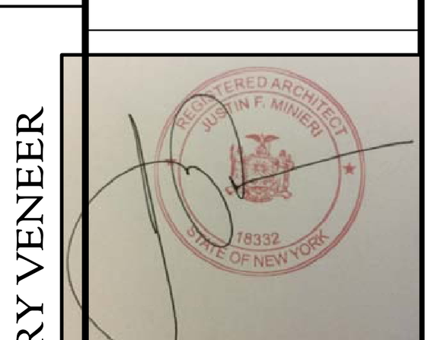
Rosenthal Residence

10 Creemer Road

JUSTIN F. MINIERI, AIA
NCARB MEMBER
P.O. BOX 1439 • NEW ROCHELLE NY 10802
914.576.7087 TEL 914.355.5238 FAX

DATE: 1/31/22

REVISIONS:



DWG No.
B06
ELEVATION

Rosenthal / 220079

TOWN OF NORTH CASTLE

WESTCHESTER COUNTY
17 Bedford Road
Armonk, New York 10504-1898

PLANNING DEPARTMENT
Adam R. Kaufman, AICP
Director of Planning

Telephone: (914) 273-3542
Fax: (914) 273-3554
www.northcastleny.com

GROSS LAND COVERAGE CALCULATIONS WORKSHEET

Application Name or Identifying Title: Keith Rosenthal Site Plan Date: 2/11/2022

Tax Map Designation or Proposed Lot No.: 108.02-2-60

Gross Lot Coverage

1.	Total lot Area (Net Lot Area for Lots Created After 12/13/06):	233,921 S.F.
2.	**Maximum** permitted gross land coverage (per Section 355-26.C(1)(b)):	13,270 S.F.
3.	**BONUS** maximum gross land cover (per Section 355-26.C(1)(b)):	11,761 S.F.
	Distance principal home is beyond minimum front yard setback 236 FT. x 10 = 2,360 FT.	2,360 FT.
4.	**TOTAL Maximum Permitted gross land coverage** = Sum of lines 2 and 3	27,391 S.F.
5.	Amount of lot area covered by **principal building:** 2,886 S.F. existing + 4,771 S.F. proposed =	7,657 S.F.
6.	Amount of lot area covered by **accessory buildings:** 905 S.F. existing + 0 S.F. proposed =	905 S.F.
7.	Amount of lot area covered by **decks:** N/A existing + N/A proposed =	
8.	Amount of lot area covered by **porches:** 105 S.F. existing + 338 S.F proposed =	443 S.F.
9.	Amount of lot area covered by **driveway, parking areas and walkways:** 7,153 S.F. existing + +69 S.F. proposed =	7,222 S.F.
10.	Amount of lot area covered by **terraces:** N/A existing + N/A proposed =	
11.	Amount of lot area covered by **tennis court, pool and mechanical equip:** 7,406 S.F. existing + 0 S.F. proposed =	7,406 S.F.
12.	Amount of lot area covered by **all other structures:** 2,013 S.F. existing + (-1,439 S.F.) proposed =	574 S.F.
13.	Proposed **gross land coverage:** Total of Lines 5 - 12 =	24,207 S.F.

If Line 13 is less than or equal to Line 4, your proposal complies with the Town's maximum gross land coverage regulations and the project may proceed to the Residential Project Review Committee for review. If Line 13 is greater than Line 4 your proposal does not comply with the Town's regulations.

Signature and Seal of Professional Preparing Worksheet

2.15.22
Date

TOWN OF NORTH CASTLE

WESTCHESTER COUNTY
17 Bedford Road
Armonk, New York 10504-1898

PLANNING DEPARTMENT
Adam R. Kaufman, AICP
Director of Planning

January 29, 2019
Telephone: (914) 273-3542
Fax: (914) 273-3554
www.northcastleny.com

FLOOR AREA CALCULATIONS WORKSHEET

Application Name or Identifying Title: Rosenthal Residence Date: 2.1.22

Tax Map Designation or Proposed Lot No.: 108.02-02-60

Floor Area

1.	Total Lot Area (Net Lot Area for Lots Created After 12/13/06):	233,921
2.	**Maximum** permitted floor area (per Section 355-26.B(4)):	15,397
3.	Amount of floor area contained within first floor: 2475 existing + 2019 proposed =	4,494
4.	Amount of floor area contained within second floor: 1329 existing + 1996 proposed =	3,325
5.	Amount of floor area contained within garage: 0 existing + 1204 proposed =	1,204
6.	Amount of floor area contained within porches capable of being enclosed: 301 existing + 430 proposed =	731
7.	Amount of floor area contained within basement (if applicable – see definition): 0 existing + 0 proposed =	0
8.	Amount of floor area contained within attic (if applicable – see definition): 0 existing + 0 proposed =	0
9.	Amount of floor area contained within all accessory buildings: 1238 existing + 275 proposed =	1,513
10.	Proposed **floor area:** Total of Lines 3 – 9 =	11,267

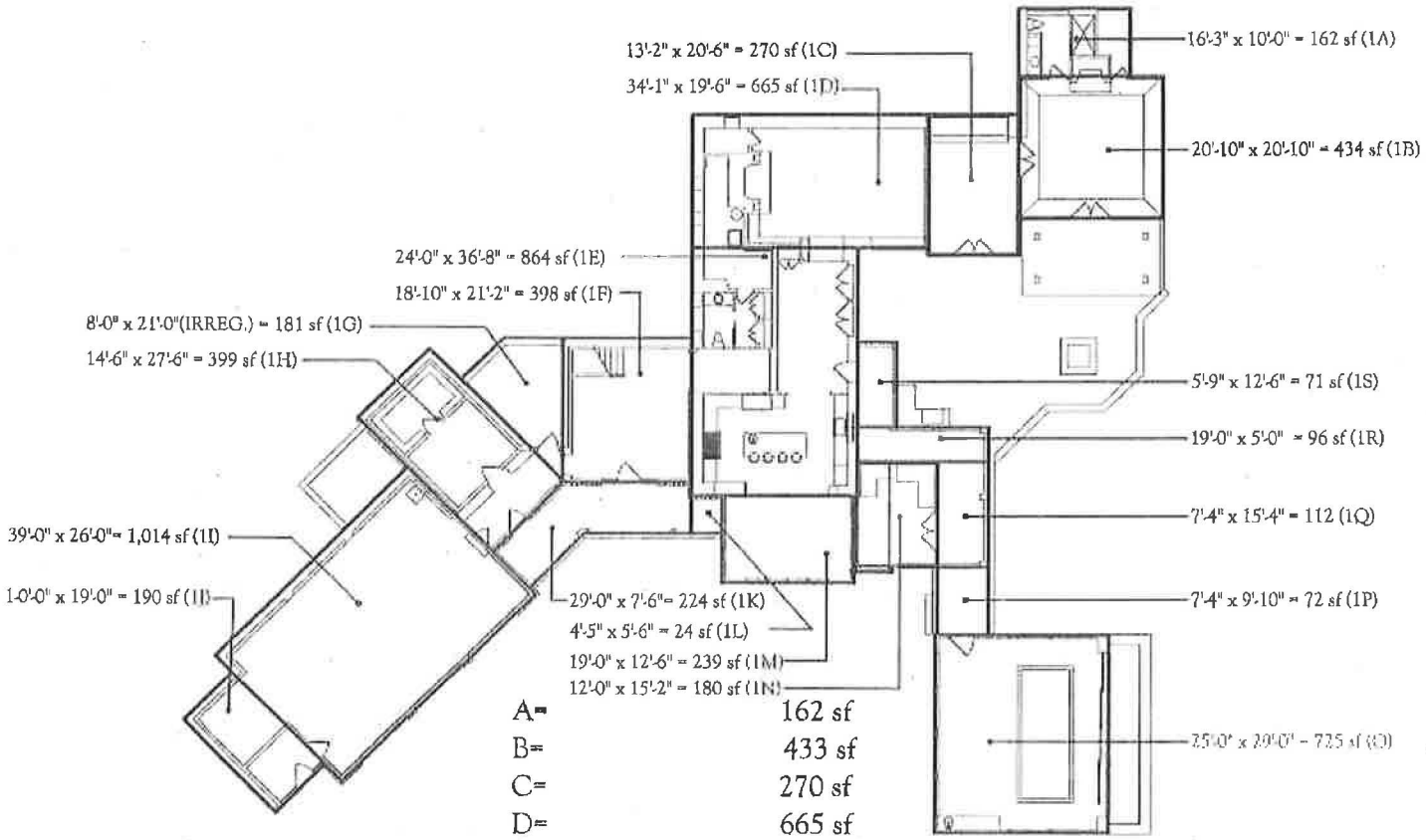
If Line 10 is less than or equal to Line 2, your proposal **complies** with the Town's maximum floor area regulations and the project may proceed to the Residential Project Review Committee for review. If Line 10 is greater than Line 2 your proposal does not comply with the Town's regulations.

Signature and Seal of Professional Preparing Worksheet

2.1.22
Date

GROSS FLOOR AREA WORKSHEET

10 CREEMER ROAD (MAIN HOUSE)

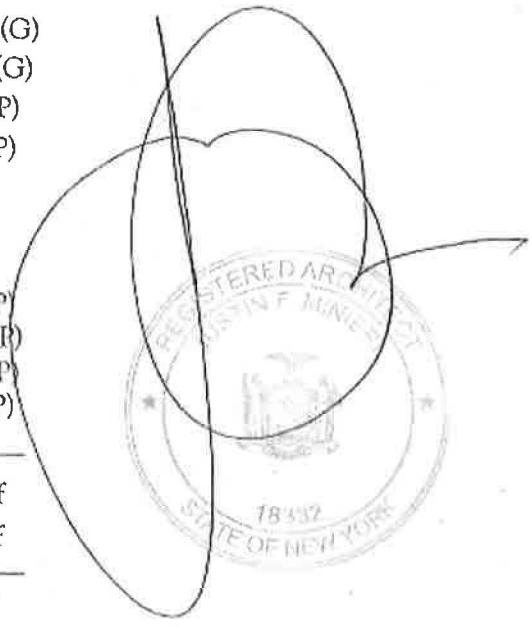


FIRST FLOOR PLAN

(P) PORCH
(G) GARAGE

A=	162 sf
B=	433 sf
C=	270 sf
D=	665 sf
E=	864 sf
F=	398 sf
G=	181 sf
H=	399 sf
I=	1,014 sf (G)
J=	190 sf (G)
K=	224 sf (P)
L=	24 sf (P)
M=	239 sf
N=	180 sf
O=	725 sf
P=	72 sf (P)
Q=	112 sf (P)
R=	96 sf (P)
S=	71 sf (P)

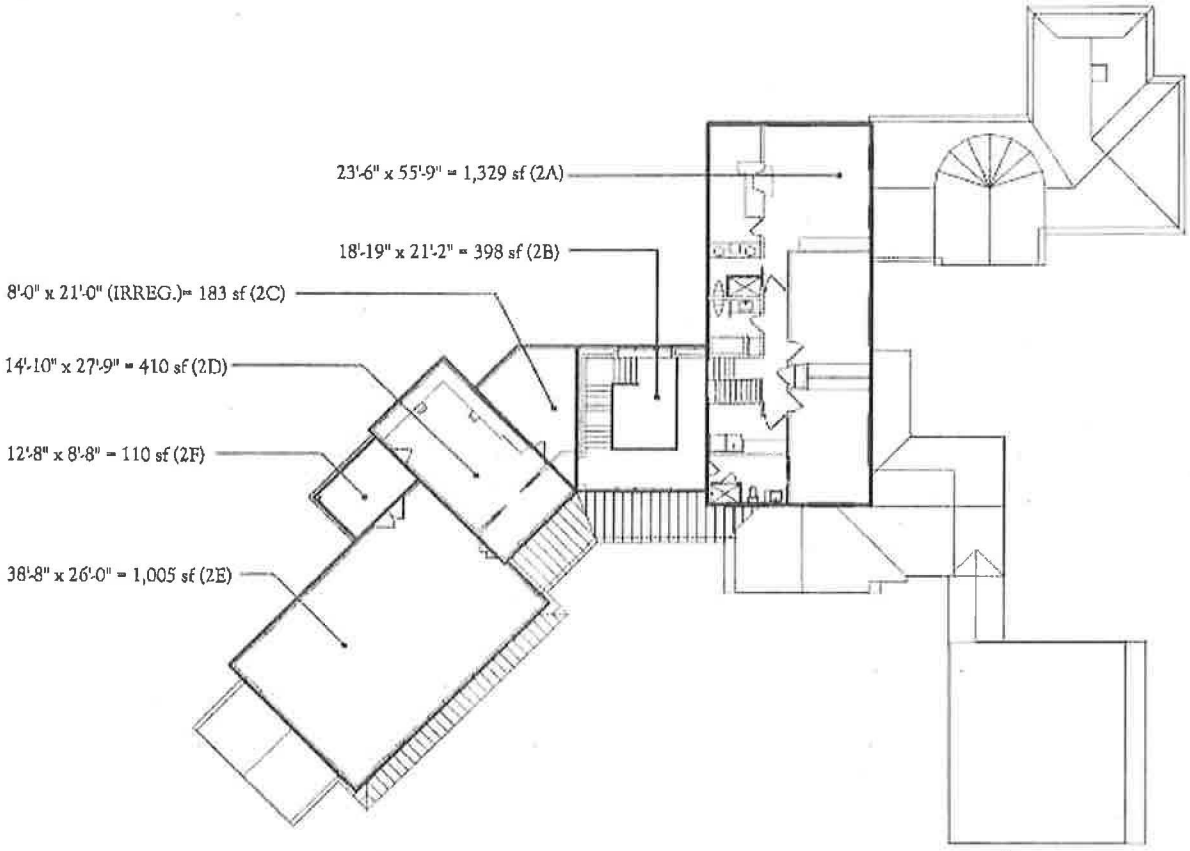
FIRST FLOOR:	6,319 sf
SECOND FLOOR:	3,435 sf
TOTAL:	9,754 sf



PREPARED BY JUSTIN F. MINIERI , AIA

GROSS FLOOR AREA WORKSHEET

10 CREEMER ROAD (MAIN HOUSE)



SECOND FLOOR PLAN

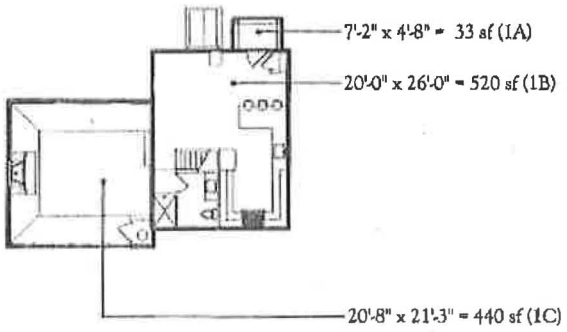
(P) PORCH

A=	1,329 sf
B=	398 sf
C=	183 sf
D=	410 sf
E=	1,005 sf
F=	110 sf (P)
SECOND FLOOR:	3,435 sf
FIRST FLOOR:	6,319 sf
TOTAL:	9,754 sf

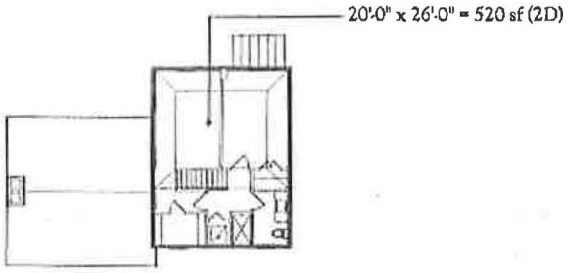
PREPARED BY JUSTIN F. MINIERI , AIA

GROSS FLOOR AREA WORKSHEET

10 CREEMER ROAD (GUEST HOUSE)



FIRST FLOOR PLAN



SECOND FLOOR PLAN

(P) PORCH

A=	33 sf (P)
B=	520 sf
C=	440 sf
D=	520 sf
FIRST FLOOR:	993 sf
SECOND FLOOR:	520 sf
TOTAL:	1,513 sf

PREPARED BY JUSTIN F. MINIERI , AIA

STORMWATER MANAGEMENT PLAN

Prepared for

Keith Rosenthal

10 Creemer Road

Town of North Castle, NY

Prepared by:

Site Design Consultants
251F Underhill Avenue
Yorktown Heights, NY 10598
914-962-4488

Joseph C. Riina, P.E.
NYS Lic. No. 64431
CPESC No. 2670
CPSWQ No. 0073

November 2021

STORMWATER MANAGEMENT PLAN

Prepared for

Keith Rosenthal
10 Creemer Road
Town of North Castle, NY

Property Owner: Keith Rosenthal
10 Creemer Road
Armonk, NY 11598

Site Engineer: Joseph C. Riina, P.E.
NYS Lic. No. 64431
CPESC No. 2670
CPSQW No. 0073
jriina@sitedesignconsultants.com

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www.sitedesignconsultants.com

November 2021

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Appendices

1.0 Project Description

The subject property is located at 10 Creemer Road, Town of North Castle, Westchester County, New York (see Figure 1.1 - Location Map and Figure 1.2 - Vicinity Map). The parcel is identified as tax lot 108.22-2-60 with a total area of 5.66 acres. The site is within the R-2A Single Family Residential zoning ordinance, which requires a minimum lot size of 2 acres. Topography varies greatly throughout the site with a total elevation difference of 42 feet. The highest contour elevation of 510 feet is located by the west section of the site and the lowest of 468 is located by the east corner section of the site where the pond is located. The parcel is already developed for residential use. Current coverage of the site consists of a two-story one-family residence, forested area, grassed areas, a local pond located at the northeast section of the parcel, and a intermittent drainage channel runs through the south-east section of the parcel. An existing driveway to the south of the site provides access to the existing residence.

The Proposed Project consists of building a house addition at the south and southeast section of the house as well as a driveway addition following the new garage location. In addition to the existing drainage system of the property, a stormwater raingarden will be added to accommodate the 25-year storm for the new impervious surfaces. The total disturbance expected for the project is 0.93 acres.

As required by the NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-20-001, Part IIIA.8, an historic resource screening determination was conducted. This was done using the online tools at the NYS Office of Parks, Recreation and Historic Places (OPRHP) website. This screening determined that there are no areas with historic or archeological sensitivity near the site. Figure 1.3 - NYS OPRHP Historic Resource Map was created from the website showing sensitive areas in Town of North Castle.

The following Report and Plans included in Appendix I describe, in detail, the design and implementation of the Stormwater Management Plan.

2.0 Stormwater Regulatory Requirements

2.1 Stormwater Impacts

Urban stormwater impacts relate to significant changes to stormwater quantity and quality as a result of land development. "Urban Development has a profound influence on the quality of New York's waters."[1] This proposed development will change the runoff characteristics of this site altering the quantity and quality of the surface stormwater. The impacts of this must be mitigated by managing the stormwater prior to discharge. This would be accomplished by the capture and treatment of surface runoff prior to discharge.

Development of a site alters the hydrology therefore changing the characteristics of the surface and groundwater discharge of runoff. Changing the surface conditions alters a site's natural ability to store, treat, or infiltrate runoff. The change also allows for the discharge of potentially damaging pollutants and sediments to adjoining water bodies. This can occur during the construction phase, and long-term after

[1] New York State Stormwater Management Design Manual, January 2015.

development. During the construction phase, graded, destabilized, areas are subject to erosion which can cause the displacement of sediment. After development, changes in the surface conditions, such as impervious surfaces, roofs and pavement, or lawn surfaces can generate pollutants which would be collected and discharged through runoff. Some of the pollutants of concern are: Total Suspended Solids (TSS); Biological Oxygen Demand (BOD); Total Phosphorus (TP); and Total Nitrogen (TN), as well as oil or grease, and chloride.

The most common sources of these pollutants from developed sites are atmospheric deposition, fertilizers, pesticides, and leaked discharges from vehicle. These pollutants would collect on these impervious surfaces and quickly wash off during even the smallest storm event.

In the planning and design of the development, stormwater will be managed to minimize potential impacts. A Stormwater Management and Pollution Prevention Plan will be prepared. This Plan will deal with all aspects of the stormwater management programs such as identifying potential pollutant sources, design of temporary and permanent features, implementation, and maintenance.

2.2 Regulatory Obligation

2.2.1 USEPA/NYSDEC

The Federal Government's Clean Water Act (CWA), Section 402 states "Stormwater discharges from certain construction activities are unlawful unless they are authorized by a National Pollutant Discharge Elimination System ("NPDES") permit or by a state permit program." New York State is a NPDES delegated State. The necessary permitting is administered through the State Pollutant Discharge Elimination System (SPDES) under the General Permit, GP-0-20-001, for Stormwater Discharges from Construction Activity. The Permit requires that any development meeting the disturbance thresholds listed in Tables 1 and 2 of Appendix B of the General Permit must prepare a SWPPP. Activities listed in Table 1 requires preparation of only an Erosion and Sediment Control Plan. Those listed in Table 2 would additionally require post-construction stormwater management practices. This project does not meet the threshold requiring filing a notice of intent (NOI) with the NYS DEC.

The Plan identifies the potential sources of pollution, and a design prepared and implemented to reduce pollutant loadings. This project will be required to prepare the following to be in compliance:

- Prepare an Erosion and Sediment Control Plan;
- Design and implement a stormwater management system to capture and attenuate all storm events up to the 25-year storm.

2.2.2 Local Municipality

Since the project disturbance is less than one acre, the filing of a Notice of Intent with the NYS DEC for compliance with General Permit 0-20-001 is not required. Therefore, the project only needs to comply with the provisions of the Town of North Castle Code Chapter 267 Stormwater Management. Therefore, the project must provide management of the 25-year storm event.

The technical standards providing guidance in the preparation of the E&SC and SWPPP are the latest revisions of the following:

- "New York Standards & Specifications for Erosion and Sediment Control" (NYSSESC) published by the Empire State Chapter of the Soil and Water Conservation Society; and;
- "New York State Stormwater Management Design Manual" prepared by the Center of Watershed Protection, for the NYS DEC;
- Town of North Castle – Town Code Chapter 267 Stormwater Management;

3.0 Reducing Pollutant Impacts

3.1 Sources of Impact

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.

The proposed project 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.

3.2 Stormwater Management During Construction

The Erosion and Sediment Control 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 Erosion and Sediment Control 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. The 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 NYSSESC.

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:

- Minimization of open disturbance by use of stabilizers such as seed, mulch, and erosion blankets, stone, etc. Areas not subject to construction traffic for extended periods will be temporarily stabilized.
- The work areas will be contained. Down grade perimeters will be lined with barriers such as silt fence, diversions, berms, etc.
- Where possible, clean stormwater will be diverted away or around the work site to reduce the amount of runoff requiring treatment.
- Sediment traps will be constructed where heavy concentrations of runoff may accumulate.
- Dust control measures will be maintained on-site such as water trucks.
- Runoff will be prevented from gaining erosive velocities on long slopes. This can be achieved with seed and mulch, erosion control blankets, curb dams and multiple rows of silt fence.
- Existing drainage structures will be protected from sediment-laden runoff.
- Regular weekly inspections and reports, if required, will be filed with the Operator by the Town.

Additional methods of practices may be employed dependent on the situation. The NYSSESC 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 finished, and all areas are stabilized.

3.3 Stormwater Management Post-Construction

The post-construction design of the project must be included in the Stormwater Pollution Prevention and Stormwater Management Plans to minimize or eliminate potential long-term adverse impacts which might be caused by surface runoff from the site. This will deal with the management of the stormwater upon completion and operation of the site. The plan will be an analysis of all potential impacts due to stormwater and the means of protecting adjoining water bodies.

The management plan begins with conceptual designs of the collection and conveyance system and the proposed treatment practices. The treatment practices are subject to different parameters and must be designed to best fit the site including green infrastructure planning. Some of the limitations that may be encountered include soil types and properties, depth to groundwater or bedrock, distance to structures, and maintenance. A list of acceptable practices can be found in Chapters 3, 5, and 10 of the NYS Stormwater Design Manual (SMDM). Chapter 3 states “The Practices on this list are selected based on the following criteria:

1. Can capture and treat the full water quality volume (WQV)
2. Are capable of 80% TSS removal and 40% TP removal

3. Have acceptable longevity in the field
4. Have a pre-treatment mechanism."

Green Infrastructure Practices include:

I. Preservation of Natural Resources
II. Reduction of Impervious Cover
III. Runoff Reduction Techniques

The five broad groups of standard stormwater management practices are:

I. Stormwater Ponds
II. Stormwater Wetlands
III. Infiltration Practices
IV. Filtering Practices
V. Open-channel Practices

These practices "are presumed to meet water quality requirements set forth in this manual if designed in accordance with the sizing criteria presented in Chapter 4 and constructed in accordance with the performance criteria in Chapter 6."[2]

4.0 Site Characteristics

4.1 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.

The predominant soil type for this project is Paxton, PnC. This soil is well drained. It has a depth to bedrock of over 6 feet. The Hydrologic classification of this soil is "C". These soils have a slow infiltration rate when thoroughly wet. The erosion hazard level for these soils is moderate. These soil properties are essential in the design and proper construction management of the site. Independent soil tests were performed, and the results are located in the Appendix D of this Report.

- Catden muck - Consists of deep, very poorly drained soils. Typically characterized by depressional or basinlike areas that remain ponded for extensive period. Slopes range between 0 and 2 percent. Very poorly drained soil;
- Chatfield-Charlton - Consists of well drained soils with 15 to 35 percent slopes. Typically, very rocky;
- Natchaug - Muck. Very poorly drained soils with 0 to 2 perfect slopes;
- Paxton - Well drained soils with 3 to 8 percent slopes.
- Sun loam - Very poorly drained soils.

Deep Test Soil Logs and soil percolation test data are included in Appendix D of this Report. The locations of these deep soil tests are indicated on the Construction Drawings. On-site soil investigation and knowledge of the soil groups facilitated the selection of coefficient values used for the pre- and post-development

[2] Pg. 3-7 NYS Stormwater Management Design Manual, January 2015.

pollutant load scenarios. Additionally, curve numbers were determined for use in the analysis.

4.2 Hydrology

The proposed improvements will not significantly change the surface runoff patterns. Currently, the surface runoff pattern is in a west to east direction, toward the east side yard of the property. The surface runoff pattern is a combination of shallow concentrated flow and channel flow from existing paved and pervious surfaces. The site consists of a 3-bedroom residence, forested areas, a patio, enclosed porch and a pond which borders a NYS DEC wetlands to the east. Flow starts on the west side of the site and travels east towards an existing intermittent drainage channel and an existing pond, both located east of the parcel.

Under the proposed condition the general direction of the surface runoff will not be altered. Almost the entire amount of surface runoff from the additional impervious areas will be collected and attenuated. Since the land is developed, the predeveloped condition being analyzed is the area where the new development will be placed with current cover. Therefore, there will be a minor increase in the peak rate of runoff generated by the site for a given rainfall event. This will be mitigated with stormwater management practices.

In the planning, design and construction of the development, stormwater will be managed to minimize or eliminate potential off-site impacts. The proper implementation of temporary sediment and erosion control measures are used to achieve this goal. An Erosion and Sediment Control Plan has been established and will be implemented during construction until the completion of the project. The Erosion and Sediment Control Plan incorporates the sequence of construction and designed measures to be installed, operated and maintained during all aspects of each phase. The erosion and sediment controls are designed in accordance with the NYS Standards and Specifications for Erosion and Sediment Control.

5.0 Hydrologic Analysis

The method used to compute project runoff was the Soil Conservation Service TR-55. The basis for the analysis was the Type III, 24-hour storm, for the 1- year, 2-year, 10-year, 25-year storm event. The rainfall depth for the respective storm events are 2.8, 3.4, 4.3, 5.1, and 6.5. The runoff coefficient “CN” and Time of Concentration for existing and post-development conditions were computed using Standard TR-55 criteria.

5.1 Pre-Development Condition

As stated, the proposed site consists of an addition to the house and a addition to the patio area. Therefore, these areas along with the existing house will be considered as impervious surface for the site. Pre-development condition will include the current house, patio area, and forested areas on the site. This project was analyzed in its pre-developed condition in order to understand current drainage patterns. The contributing watersheds are shown on Figure 5.1 – Pre-Development Watershed Map.

The Drainage Basin sizes, curve numbers and travel times used in the analysis are summarized in the Table below:

Pre-Development Conditions Watershed Analysis Variables

Drainage Basin	Area (acres)	Curve Number CN	Travel Time, Tc (hrs)
Pre DA-1	0.157	84	5

5.2 Post-Development Condition

A hydrologic analysis has been done for the site to determine the expected runoff depth for each storm event. The results of this analysis were used to calculate the rain garden sizes required for this parcel. The rain garden were sized to accommodate the 25-year storm event. The contributing watersheds are shown on Figure 5.2 - Post-Development Watershed Map.

The hydrologic analysis assumes that full soil restoration as required in Chapter 5 of SMDM will be implemented. The areas of soil restoration will be shown on the E&SC Plan if required.

A portion of the volume of runoff generated from the watersheds analyzed is being infiltrated into the ground. Therefore, there is no increase in the peak rate of runoff discharge or volume up to the 25-year 24-hour rainfall for the project.

The Drainage Basin sizes, curve numbers and travel times used in the analysis are summarized in the Table below:

Post-Development Conditions Watershed Analysis Variables

Drainage Basin	Area (acres)	Curve Number CN	Travel Time, Tc (hrs)
Post DA-1	0.157	98	5

6.0 Unified Stormwater Sizing Criteria

6.1 Flood Control Criteria

The purpose of the extreme flood analysis is to prevent flood damage from large storm events by maintaining predevelopment 25-year flood plain boundaries and protecting the integrity of stormwater management practices. The basis of the analysis, as per Town code, is to maintain pre-development peak rates of runoff for the 25-year, 24-hour storm event with proper stormwater management. Detailed criteria can be found in Chapter 267 of the Town code.

A summary of peak discharge rates at each design point for the pre and post-developed storm events analyzed for each drainage basin is summarized in the tables below:

Design Point 1:

Storm Event (year)	Pre-Developed Peak Flow (cfs)	Post-Developed Peak Flow (cfs)	Net Change of Peak Flow (cfs)	% Change
1	0.23	0.05	0.18	-78.3%
2	0.32	0.20	0.12	-37.5%
5	0.45	0.43	0.02	-4.0%
10	0.58	0.49	0.09	-15.5%
25	0.78	0.58	0.20	-25.6%

As can be seen by the results, peak discharge rates are decreased for the 25-year storm. Slight increases for some of the storm events are shown but they are relatively insignificant and can be attributed to rounding errors in the analysis and are well within acceptable ranges.

See Hydrologic Analysis (Appendix E) and Subsurface Detention Chamber Design for input values and results.

7.0 Stormwater Management Practices Selection, Justification and Design

Since the only requirement is the attenuation of the increase in stormwater runoff during the 25-year storm event most of the runoff from the impervious areas is being collected and detained with a controlled release with no increase in peak runoff over existing conditions.

The selected practices are as follows:

Rain Garden NYS DEC SMDM:

A Water Quality Volume was determined for each of the treatment areas and discharged into the associated Rain Garden. The Stormwater Management Practice selected is a Rain Garden as described in the NYS DEC SMDM. This design is a combination of an extended detention and peat/sand filter bed for the treatment of water. The basin is supplemented with plantings and blended into the landscape features of the project. The Basin has been located at the lowest possible hydraulic location to intercept and treat runoff. As described in earlier sections of this report, the required Water Quality Volume has been exceeded in the design. The Water Quality Volumes are summarized in Section 6.2. A typical cross section of the proposed Rain Garden can be found in the Plan Set.

The Rain Garden is designed to have runoff sheet flow directly into the system. The Rain Garden has been sized to provide attenuation of peak flows up to the 25-year storm. Attenuation is provided through extended detention and exfiltration of runoff through the filter bed. This will provide the necessary storage for channel and flood protection. The bottom of the pond should maintain a 2 foot separation from the ground water table. The soil logs noted above indicate that sufficient depth is available at the proposed location to provide the required separation.

The following is the size criteria for the practice as per Chapter 6 of the NYS SMDM:

- Typical length to width ratio of 1.5:1;
- Filter media shall be a peat/sand mix (reed-sedge hemic peat shall be used);
- Provide the required minimum filter bed surface area;

The design of the practices can be found in Appendix H of this Report.

8.0 Erosion and Sediment Control

Erosion and sediment control practices were selected and designed in accordance with the NYSSESC. The practices proposed for this project are described below. Standard details and specifications are included in Appendix H as well as on the Construction Plans. Initial locations of each practice are shown on the Plans as construction progresses it may become necessary to repair, replace or relocate these practices as conditions warrant.

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 and Haybales:

Silt fence and haybales have been specified to control and contain sediment from leaving areas under disturbance to undisturbed areas. The fence shall be installed as best as possible following the contours and will be spaced in accordance with the NYSSESC. The fence will be inspected daily, repaired, and sediment removed as necessary.

Soil Stockpile:

Areas are provided for temporary stockpiling of delivered soil material for the construction. These areas will be contained with sediment fence to prevent the movement of sediment. The stockpiles, if not active for more than seven (7) days, will be seeded and mulched. The stockpile areas were placed to best suit the proposed construction activity. The stockpile will be installed as described in the Construction Sequence.

Stabilization:

The Contractor shall initiate stabilization measures as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than seven (7) days after the construction activity in that portion of the site has temporarily or permanently ceased. This requirement does not apply in the following instance:

Where the initiation of stabilization measures by the 7th day after construction activity temporarily or permanently ceased is precluded by snow cover or frozen ground conditions, stabilization measures shall be initiated as soon as practicable.

All areas not designated as buildings, roads, driveways, parking lots, walks, or aprons shall be established as lawn or vegetative areas. Permanent planting and vegetation shall be provided per approved the landscaping plan.

9.0 Construction Sequence

A key objective of the SWPPP is to reduce erosion and sedimentation potentials for the project. As a means to accomplish this, a suggested construction sequence was developed to assist the developer with incorporating, into the project, various controls designed to reduce such potentials. The sequence considers the performance of development activities in a phased approach, in conjunction with the installation, construction and monitoring of erosion and sedimentation control devices prior to and during construction.

Appendix C contains the project specific Suggested Construction Sequence. Essentially, the sequence has been broken down into various activities designed to ensure that certain erosion/sedimentation controls are in place, prior to and during construction, in recognition of site development.

The Responsible Party during and after Construction is as follows:

Keith Rosenthal
10 Creemer Road
North Castle, NY 10504
Phone: (914) 643-0321

10.0 Installation and Maintenance of Stormwater Management Practices

10.1 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 and haybales (if applicable), remove deposits where accumulations reach half the height of the fence or bale. In the case of sediment basins, remove deposits whenever their capacity has been reduced by fifty percent (50%) from the design capacity.

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.

7. The permanent storm drainage system shall be inspected and cleaned of all sediment prior to completion of project.

10.2 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.
Rain Garden	Quarterly	Ponding for more than 48 hours	Remove accumulated sediment and debris; weed and replace plants and mulch as needed.

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.

11.0 Conclusion

The Stormwater Management Plan has been established for this project in accordance with the requirements of NYS DEC GP-0-20-001 and the Town Code of North Castle. This plan will effectively control stormwater generated by this project during and after construction. The management of the stormwater is based on controlling increases in peak runoff. The design of the stormwater management system will accommodate storm flows up to the 25-year storm. Overall, it would improve even the existing conditions.

The final design of the project will detail the proposed practices and will establish the method with which they will be constructed. The detail will include layout, grading, plantings, outlet structures, and any other component as required for the design based on the Erosion and Sediment Control established in this Report. These will be part of the project Construction Drawings. The Sequence of Construction and required maintenance will also be set forth as part of the final construction plan. The full Construction Plan shall be considered part of the Stormwater Management Plan or Stormwater Pollution Prevention Plan.

The effectiveness of the stormwater practices selected in design will be insured by implementing a maintenance plan. The maintenance plan details specific activities, safeguards and provisions to be monitored and performed by specified frequencies. By adhering to the maintenance plan, optimum performance of the stormwater practices can be expected.

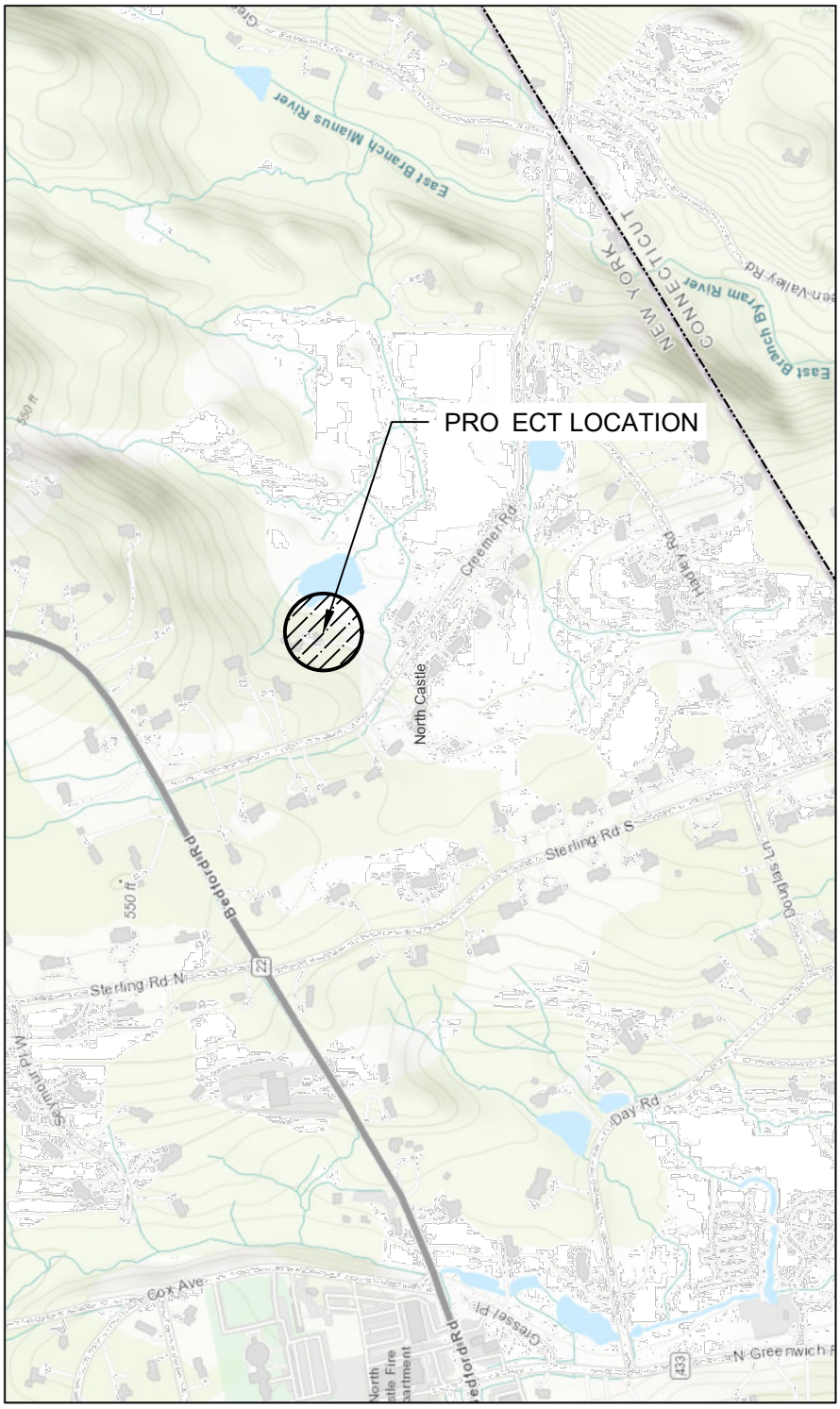
Based on the results of the analysis and recommended maintenance practices for the collection and treatment system, the proposed stormwater control designs will provide maximum control efficiency, high effectiveness for removal of pollutants of concern, and the best attainable post-development pollutant loading scenario.

In conclusion, the Stormwater Management Plan will not create negative downstream impacts as a result of this project.

Joseph C. Riina, P.E

November 3, 2021

FIGURES



NOTE:

1. M S rc : USGS 7.5 M S r T r dr M (1:2,000 c) r Ar , W c r C , N Y r

FIG 1.1 LOCATION MAP

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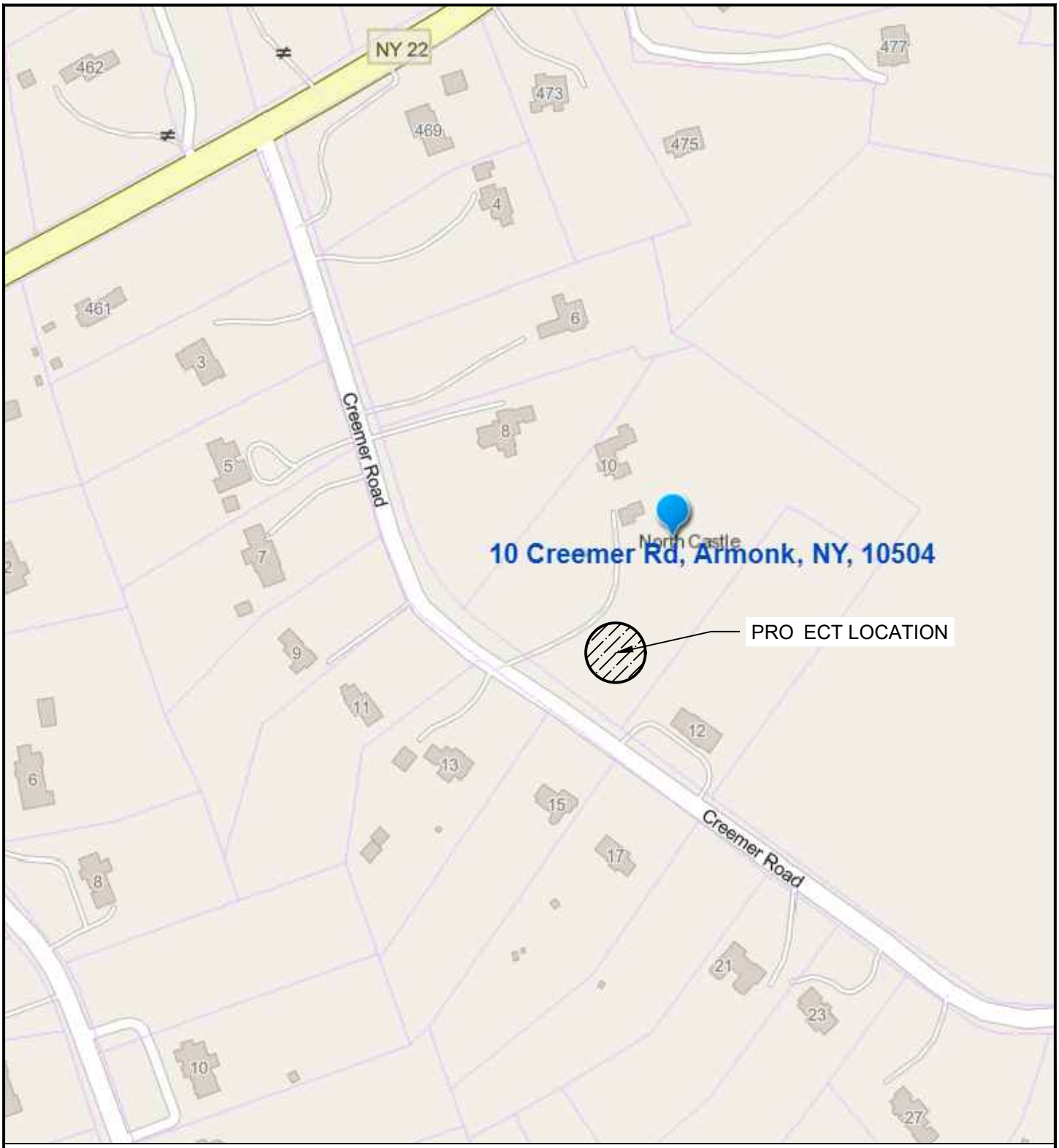
www.sitedesignconsultants.com

NOT TO SCALE
DATE: 10/6/2021



NOTE:
1. M S rc : GIS M W c r C r Ar , W c r C , N Y r

FIG 1.2 VICINITY MAP

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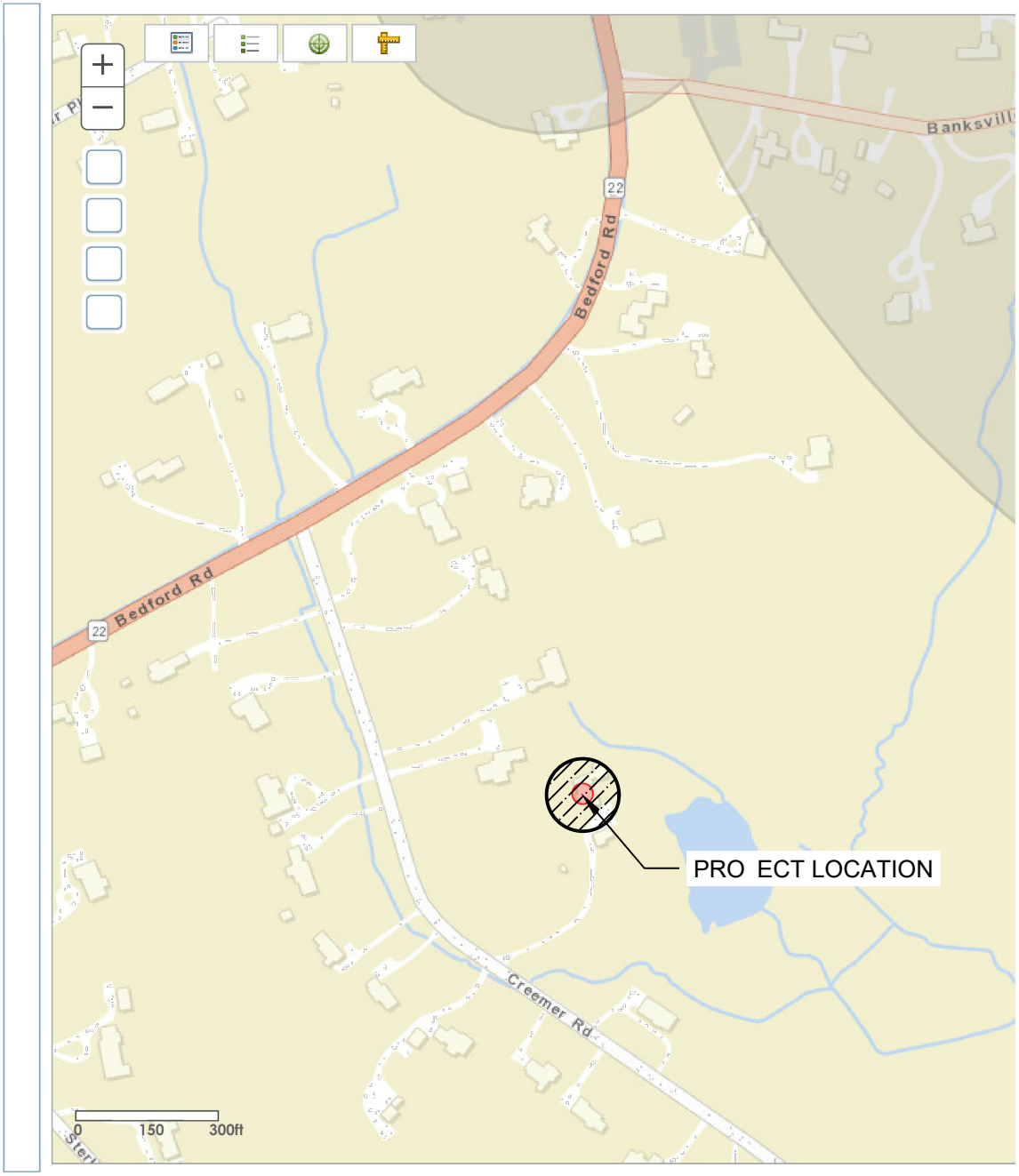
CRIS Cultural Resource Information System

HOME SUBMIT SEARCH COMMUNICATE



NOTE:
1. M S rc : C r R rc l r S (CRIS)

FIG 1.3 NYS OPRHP Historic Resource Map

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NOTE:

1. M S rc : USDA N R rc C r S r c , N C r S S r , W S S r M .

FIG 4.1 SOILS MAP

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Hydrologic Soil Group—Westchester County, New York

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
  - **Water Features**
    - Streams and Canals
  - **Transportation**
    - Rails
    - Interstate Highways
    - US Routes
    - Major Roads
    - Local Roads
  - **Background**
    - Aerial Photography
  - **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

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 17, Sep 1, 2021

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 16, 2017

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.

Natural Resources Conservation Service

Web Soil Survey
National Cooperative Soil Survey

10/7/2021
Page 2 of 4

NOTE:
1. M S rc : USDA N R rc C r S r c , N C r S S r , W S S r M .

FIG 4.1 SOILS MAP

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Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ce	Catden muck, 0 to 2 percent slopes	B/D	1.1	18.9%
CsD	Chatfield-Charlton complex, 15 to 35 percent slopes, very rocky	B	0.0	0.1%
NcA	Natchaug muck, 0 to 2 percent slopes	B/D	1.2	21.3%
PnB	Paxton fine sandy loam, 3 to 8 percent slopes	C	0.0	0.7%
PnC	Paxton fine sandy loam, 8 to 15 percent slopes	C	2.1	38.0%
Sh	Sun loam	C/D	0.8	13.4%
W	Water		0.4	7.6%
Totals for Area of Interest			**5.6**	**100.0%**

NOTE:
1. M S rc : USDA N R rc C r S r c , N C r S S r , W S S r M .

FIG 4.1 SOILS MAP

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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

NOTE:
1. M S rc : USDA N R rc C r S r c , N C r S S r , W S S r M .

FIG 4.1 SOILS MAP

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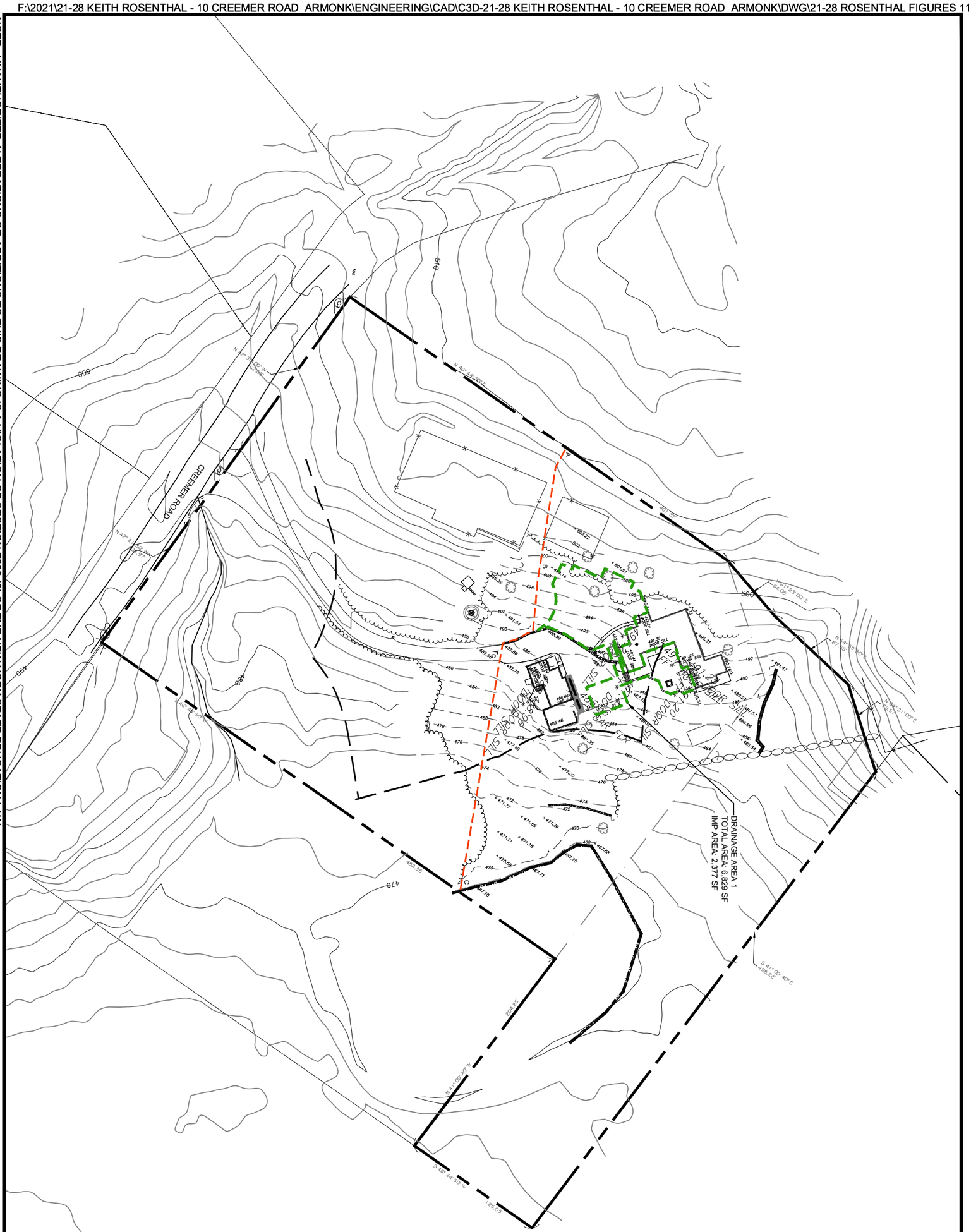

FIG 5.1 PRE DEVELOPMENT CONDITION WATERSHED

PREPARED FOR

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Westchester County, New York

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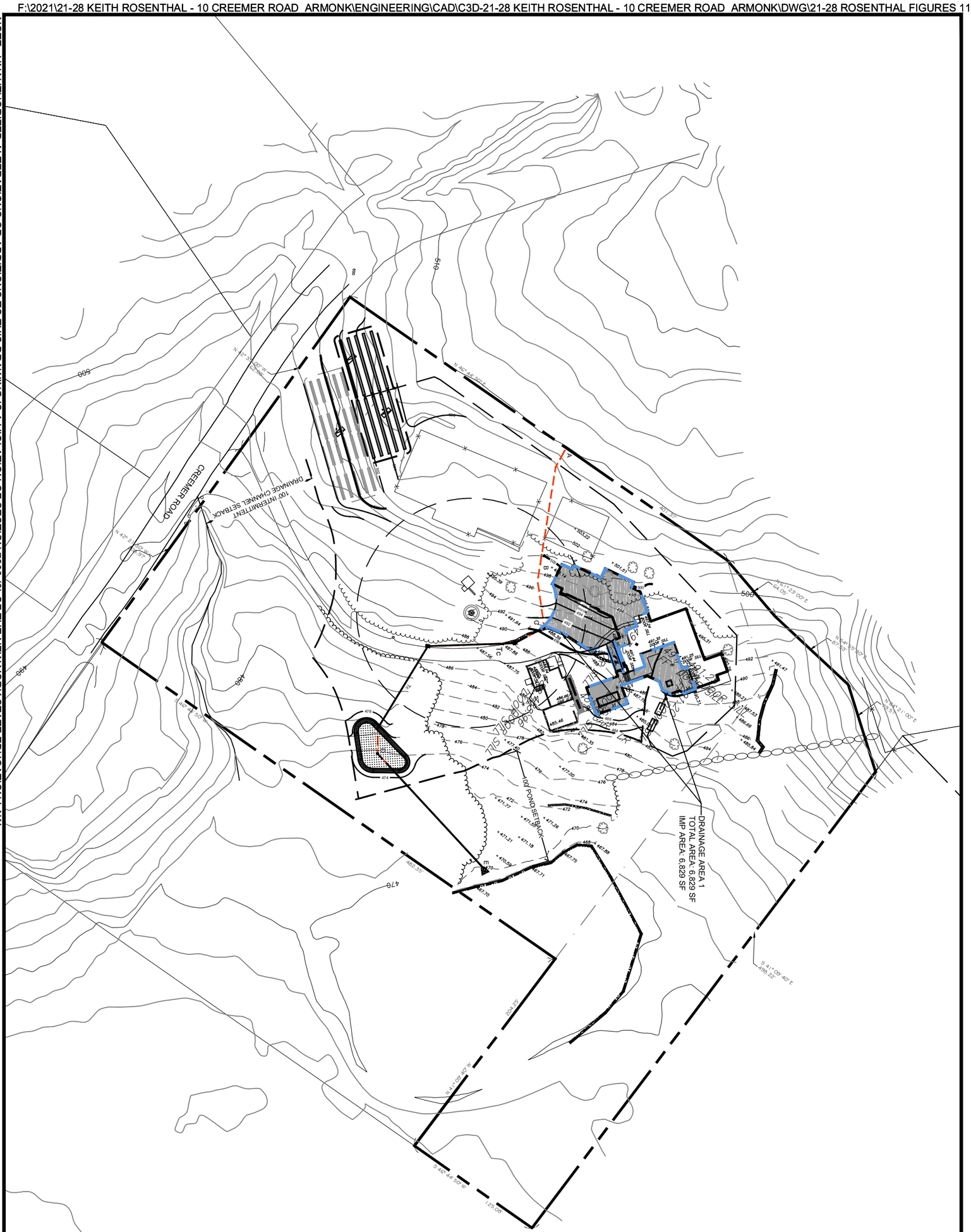

FIG 5.1 POST DEVELOPMENT CONDITION WATERSHED

PREPARED FOR

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DATE: 10/14/2021

APPENDIX A

List of Required Approvals and Applications:

Town of North Castle Site Plan Approval – approval pending

Town of North Castle Building Permit – approval pending

APPENDIX B

Regulatory Ordinances:

Local Ordinance

[HISTORY: Adopted by the Town Board of the Town of North Castle 12-19-2007 by L.L. No. 22-2007 (Ch. 173 of the 1987 Code). Amendments noted where applicable.]

GENERAL REFERENCES

Building code administration and enforcement — See Ch. **127**.
Excavations — See Ch. 157.
Filling and grading — See Ch. **161**.
Flood damage prevention — See Ch. **177**.
Sewers — See Ch. **250**.
Subdivision of land — See Ch. **275**.
Water — See Ch. **336**.
Wetlands and watercourses — See Ch. **340**.
Zoning — See Ch. **355**.

Article I **Stormwater Management and Erosion and Sediment Control**

§ 267-1 **Title.**

This chapter shall be known and cited as the "Stormwater Management, Erosion and Sediment Control Law and Illicit Discharges, Activities and Connections to Separate Storm Sewer System of the Town of North Castle."

§ 267-2 **Statutory authority.**

In accordance with § 10 of the Municipal Home Rule Law of the State of New York, the Town Board of North Castle has the authority to enact local laws and amend local laws for the purpose of promoting the health, safety or general welfare of the Town of North Castle and for the protection and enhancement of its physical environment. The Town Board of North Castle may include in any such local law provisions for the appointment of any municipal officer, employees or independent contractor to effectuate, administer and enforce such local law.

§ 267-3 **Findings; purpose; applicability; exemptions.**

A. Findings. The Town Board of the Town of North Castle hereby finds that:

(1) Land development activities and associated increases in site impervious cover often alter the hydrologic response of local watersheds and increase stormwater runoff rates and volumes, flooding, stream channel erosion, or sediment transport and deposition.

(2) This stormwater runoff contributes to increased quantities of waterborne pollutants, including siltation of aquatic habitat for fish and other desirable species.

(3) Clearing and grading during construction tends to increase soil erosion and add to the loss of native vegetation necessary for terrestrial and aquatic habitat.

(4) Improper design and construction of stormwater management practices can increase the velocity of stormwater runoff, thereby increasing stream bank erosion and sedimentation.

(5) Impervious surfaces allow less water to percolate into the soil, thereby decreasing groundwater recharge and stream base flow.

(6) Substantial economic losses can result from these adverse impacts on the waters of the municipality.

(7) Stormwater runoff, soil erosion and nonpoint source pollution can be controlled and minimized through the regulation of stormwater runoff from land development activities.

(8) The regulation of stormwater runoff discharges from land development activities in order to control and minimize increases in stormwater runoff rates and volumes, soil erosion, stream channel erosion, and nonpoint source pollution associated with stormwater runoff is in the public interest and will minimize threats to public health and safety.

(9) Regulation of land development activities by means of performance standards governing stormwater management and site design will produce development compatible with the natural functions of a particular site or an entire watershed and thereby mitigate the adverse effects of erosion and sedimentation from development.

B. Purpose. The purpose of this chapter is to establish minimum stormwater management requirements and controls to protect and safeguard the general health, safety and welfare of the public residing within this jurisdiction and to address the findings of fact identified in § **267-3** of this chapter. This chapter seeks to meet those purposes by achieving the following objectives:

(1) Meet the requirements of Minimum Control Measures four and five of the New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System SPDES General Permit for Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s), Permit No. GP-15-003, or as amended or revised;
[Amended 11-18-2015 by L.L. No. 9-2015]

(2) Require land development activities to conform to the substantive requirements of the New York State Department of Environmental Conservation State Pollutant Discharge Elimination System (SPDES) General Permit for Construction Activities, Permit No. GP-15-002, or as amended or revised;
[Amended 11-18-2015 by L.L. No. 9-2015]

(3) Minimize increases in stormwater runoff from land development activities in order to reduce flooding, siltation, increases in stream temperature and stream bank erosion and maintain the integrity of stream channels;

(4) Minimize increases in pollution caused by stormwater runoff from land development activities which would otherwise degrade local water quality;

(5) Minimize the total annual volume of stormwater runoff which flows from any specific site during and following development to the maximum extent practicable; and

(6) Reduce stormwater runoff rates and volumes, soil erosion and nonpoint source pollution, wherever possible, through stormwater management practices and to ensure that these management practices are properly maintained and eliminate threats to public safety.

C. Applicability.

(1) This chapter shall be applicable to all land development activities as defined in § **267-4B** of this chapter.

(2) The municipality shall designate a Stormwater Management Officer (SMO), who shall accept and review all stormwater pollution prevention plans and forward such plans to the applicable municipal board. The Stormwater Management Officer may:

(a) Review the plans.

(b) Upon approval by the Town Board of the Town of North Castle, engage the services of a registered professional engineer to review the plans, specifications and related documents.

(3) All land development activities subject to review and approval by the applicable board of the Town of North Castle under subdivision, site plan and/or special permit regulations shall be reviewed subject to the standards contained in this chapter.

(4) All land development activities not subject to review as stated in § **267-3C(3)** of this chapter shall be required to submit a stormwater pollution prevention plan (SWPPP) to the Stormwater Management Officer, who shall approve the SWPPP if it complies with the requirements of this chapter.

(5) The provisions of this chapter shall not apply to any project that has been physically completed prior to the effective date of this chapter.
[Added 11-18-2015 by L.L. No. 9-2015]

(6) A project that was approved prior to the effective date of this chapter, but which is not in conformity with the provisions of this chapter, may be continued, subject to the following:
[Added 11-18-2015 by L.L. No. 9-2015]

(a) All such activities shall continue to be governed by the present regulations of the Town of North Castle.

(b) No such activity shall be expanded, changed, enlarged or altered without compliance with this chapter.

(c) If such activity is discontinued for 12 consecutive months, any resumption of the activity shall conform to this chapter.

(d) If any use or activity is destroyed by human activities, a force of nature or an act of God, it shall not be resumed except in conformity with the provisions of this chapter.

D. Exemptions.

(1) Repairs to any stormwater management practice or facility deemed necessary by the Stormwater Management Officer.

(2) Any part of a subdivision if a plat for the subdivision has been approved by the Town of North Castle on or before the effective date of this chapter.

(3) Land development activities for which a building permit has been approved on or before the effective date of this chapter.

(4) Cemetery graves.

(5) Installation of fence, sign, telephone and electric poles and other kinds of posts or poles.

(6) Emergency activity immediately necessary to protect life, property or natural resources.

(7) Activities of an individual engaging in home gardening by growing flowers, vegetables and other plants primarily for use by that person and his or her family.

(8) Landscaping and horticultural activities in connection with an existing structure.

§ 267-4 **Definitions and word usage.**

A. Unless specifically defined below, words and phrases used in this chapter shall be interpreted to have the meaning they have in common English usage, to give effect to the purpose set forth in § **267-3B**, and to provide reasonable application of this chapter.

B. As used in this chapter, the following terms shall have the meanings indicated:

AGRICULTURAL ACTIVITY
The activity of an active farm, including grazing and watering livestock, irrigating crops, harvesting crops, using land for growing agricultural products, and cutting timber for sale, but shall not include the operation of a dude ranch or similar operation or the construction of new structures associated with agricultural activities.

APPLICANT
A property owner or agent of a property owner who has filed an application for a land development activity.

BEST MANAGEMENT PRACTICES (BMPs)
Schedules of activities, prohibitions of practices, general good housekeeping practices, pollution prevention and educational practices, maintenance procedures and other management practices to prevent or reduce the discharge of pollutants directly or indirectly to stormwater, receiving waters or stormwater conveyance systems. BMPs also include treatment practices, operating procedures and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw materials storage.

BUILDING

Any structure, either temporary or permanent, having walls and a roof, designed for the shelter of any person, animal or property, and occupying more than 100 square feet of area.

CHANNEL

A natural or artificial watercourse with a definite bed and banks that conducts continuously or periodically flowing water.

CLEAN WATER ACT

The Federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), and any subsequent amendments thereto.

CLEARING

Any activity that removes the vegetative surface cover.

CONSTRUCTION ACTIVITY

Activity requiring authorization under the NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity, GP-15-002, as amended or revised. These activities include construction projects resulting in land disturbance of one or more acres. Such activities include, but are not limited to, clearing and grubbing, grading, excavating and demolition.

[Amended 11-18-2015 by L.L. No. 9-2015]

DEDICATION

The deliberate appropriation of property by its owner for general public use.

DEPARTMENT

The New York State Department of Environmental Conservation.

DESIGN MANUAL

The New York State Stormwater Management Design Manual, most recent version, including applicable updates, that serve as the official guide for stormwater management principles, methods and practices.

DEVELOPER

A person who undertakes land development activities.

EROSION CONTROL MANUAL

The most recent version of the New York Standards and Specifications for Erosion and Sediment Control manual, commonly known as the "Blue Book."

GREEN INFRASTRUCTURE PRACTICE

As set forth in Chapter 5 of the New York State Stormwater Management Design Manual.

[Added 11-18-2015 by L.L. No. 9-2015]

GRADING

Excavation or fill of material, including the resulting conditions thereof.

HAZARDOUS MATERIAL

Any material, including any substance, waste or combination thereof, which, because of its quantity, concentration or physical, chemical or infectious characteristics, may cause or significantly contribute to a substantial present or potential hazard to human health, safety, property or the environment when improperly treated, stored, transported, disposed of or otherwise managed.

ILLICIT CONNECTION

Any drain or conveyance, whether on the surface or subsurface, which allows an illegal discharge to enter the MS4, including but not limited to:

(1) Any conveyances which allow any nonstormwater discharge, including treated or untreated sewage, process wastewater and wash water, to enter the MS4 and any connections to the storm drain system from indoor drains

and sinks, regardless of whether said drain or connection had been previously allowed, permitted or approved by an authorized enforcement agency; or

(2) Any drain or conveyance connected from a commercial or industrial land use to the MS4 which has not been documented in plans, maps or equivalent records and approved by an authorized enforcement agency.

ILLICIT DISCHARGE

Any direct or indirect nonstormwater discharge to the MS4, except as exempted in § 267-12 of this chapter.

IMPERVIOUS COVER

Those surfaces, improvements and structures that cannot effectively infiltrate rainfall, snowmelt and water (e.g., building rooftops, pavement, sidewalks, driveways, etc.).

INDUSTRIAL ACTIVITY

Activities requiring the NYSDEC SPDES Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity, GP-0-12-001, as amended or revised.

[Amended 11-18-2015 by L.L. No. 9-2015]

INDUSTRIAL STORMWATER PERMIT

A State Pollutant Discharge Elimination System permit issued to a commercial industry or group of industries, which regulates the pollutant levels associated with industrial stormwater discharges or specifies on-site pollution control strategies.

INFILTRATION

The process of percolating stormwater into the subsoil.

JURISDICTIONAL WETLAND

An area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions, commonly known as "hydrophytic vegetation."

LAND DEVELOPMENT ACTIVITY

Construction activity, including clearing, grubbing, grading, filling, excavating or stockpiling activities, that results in soil disturbance equal to or greater than 5,000 square feet. Clearing activities include, but are not limited to, logging equipment operations, the cutting and skidding of trees, and stump removal and/or brush root removal. Land development activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility.

[Amended 11-18-2015 by L.L. No. 9-2015]

LANDOWNER

The legal or beneficial owner of land, including those holding the right to purchase or lease the land, or any other person holding proprietary rights in the land.

LARGER COMMON PLAN OF DEVELOPMENT OR SALE

A contiguous area where multiple separate and distinct land development activities are occurring, or will occur, under one plan. The term "plan" in "larger common plan of development or sale" is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) application, zoning request, computer design, etc.) or physical demarcation (including signs, lot stakes, surveyor markings, etc.) indicating that land development activities may occur on a specific plot. For discrete construction projects that are located within a "larger common plan of development or sale" that are at least 1/4 mile apart, each activity can be treated as a separate plan of development or sale, provided any interconnecting road, pipeline or utility project that is part of the same common plan is not concurrently being disturbed.

[Added 11-18-2015 by L.L. No. 9-2015]

MAINTENANCE AGREEMENT

A legally recorded document that acts as a property deed restriction and which provides for long-term maintenance of stormwater management practices.

MS4
Municipal separate storm sewer system.

MUNICIPALITY
The Town of North Castle.

MUNICIPAL SEPARATE STORM SEWER SYSTEM
A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels or storm drains):

(1) Owned or operated by the Town of North Castle;

(2) Designed or used for collecting or conveying stormwater;

(3) Which is not a combined sewer; and

(4) Which is not part of a publicly owned treatment works (POTW) as defined at 40 CFR 122.2.

NONPOINT SOURCE POLLUTION
Pollution from any source other than from any discernible, confined and discrete conveyances and shall include, but not be limited to, pollutants from agricultural, silvicultural, mining, construction, subsurface disposal and urban runoff sources.

NONSTORMWATER DISCHARGE
Any discharge to the MS4 that is not composed entirely of stormwater.

PERSON
Any individual, association, organization, partnership, firm, corporation or other entity recognized by law and acting as either the owner or as the owner's agent.

PHASING
Clearing a parcel of land in distinct pieces or parts, with the stabilization of each piece completed before the clearing of the next.

POINT SOURCE POLLUTION
Pollution from a single identifiable localized source, typically a discernible, confined and discrete conveyance.
[Added 11-18-2015 by L.L. No. 9-2015]

POLLUTANT
Dredged spoil, filter backwash, solid waste, incinerator residue, treated or untreated sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water, which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards.

POLLUTANT OF CONCERN
Sediment or a water quality measurement that addresses sediment (such as total suspended solids, turbidity or siltation) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the land development activity.

PREMISES
Any building, lot, parcel of land or portion of land, whether improved or unimproved, including adjacent sidewalks and parking strips.

PROJECT
Land development activity.

QUALIFIED INSPECTOR

A person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed professional engineer, certified professional in erosion and sediment control (CPESC), registered landscape architect, or other NYSDEC endorsed individual(s). It can also mean someone working under the direct supervision of, and at the same company as, the licensed professional engineer or registered landscape architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed professional engineer or registered landscape architect has received four hours of NYSDEC endorsed training in proper erosion and sediment control principles every three years.

[Added 11-18-2015 by L.L. No. 9-2015]

QUALIFIED PROFESSIONAL

A person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed professional engineer, registered landscape architect or other NYSDEC endorsed individual(s). Individuals preparing SWPPPs that require post-construction stormwater management practices must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design and, in many cases, the principles of hydraulics, in order to prepare a SWPPP that conforms to the NYSDEC's technical standard. All components of the SWPPP that involve the practice of engineering, as defined by the New York State Education Law, shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

[Added 11-18-2015 by L.L. No. 9-2015]

RECHARGE

The replenishment of underground water reserves.

SEDIMENT CONTROL

Measures that prevent eroded sediment from leaving the site.

SENSITIVE AREAS

Cold-water fisheries, shellfish beds, swimming beaches, groundwater recharge areas, water supply reservoirs, habitats for threatened, endangered or special concern species.

SPDES GENERAL PERMIT FOR CONSTRUCTION ACTIVITIES GP-15-002

A permit under the New York State Pollutant Discharge Elimination System (SPDES) issued to developers of construction activities to regulate disturbance of one or more acres of land, or 5,000 square feet or more within the New York City east of Hudson Watershed.

[Amended 11-18-2015 by L.L. No. 9-2015]

SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM MUNICIPAL SEPARATE STORMWATER SEWER SYSTEMS GP-15-003

A permit under the New York State Pollutant Discharge Elimination System (SPDES) issued to municipalities to regulate discharges from municipal separate storm sewers for compliance with EPA-established water quality standards and/or to specify stormwater control standards.

[Amended 11-18-2015 by L.L. No. 9-2015]

SPECIAL CONDITION

(1) Discharge compliance with water quality standards: the condition that applies where a municipality has been notified that the discharge of stormwater authorized under its MS4 permit may have caused or has the reasonable potential to cause or contribute to the violation of an applicable water quality standard. Under this condition, the municipality must take all necessary actions to ensure future discharges do not cause or contribute to a violation of water quality standards.

(2) Section 303(d)-listed waters: the condition in the municipality's MS4 permit that applies where the MS4 discharges to a 303(d)-listed water. Under this condition, the stormwater management program must ensure no increase of the listed pollutant of concern to the 303(d)-listed water.

(3) Total maximum daily load (TMDL) strategy: the condition in the municipality's MS4 permit where a TMDL including requirements for control of stormwater discharges has been approved by the EPA for a water body or

watershed into which the MS4 discharges. If the discharge from the MS4 did not meet the TMDL stormwater allocations prior to September 10, 2007, the municipality was required to modify its stormwater management program to ensure that reduction of the pollutant of concern specified in the TMDL is achieved.

(4) The condition in the municipality's MS4 permit that applies if a TMDL is approved in the future by the EPA for any water body or watershed into which an MS4 discharges. Under this condition, the municipality must review the applicable TMDL to see if it includes requirements for control of stormwater discharges. If an MS4 is not meeting the TMDL stormwater allocations, the municipality must, within six months of the TMDL's approval, modify its stormwater management program to ensure that reduction of the pollutant of concern specified in the TMDL is achieved.

303(D) LIST

A list of all surface waters in the state for which beneficial uses of the water (drinking, recreation, aquatic habitat and industrial use) are impaired by pollutants, prepared periodically by the Department as required by Section 303(d) of the Clean Water Act. Section 303(d)-listed waters are estuaries, lakes and streams that fall short of state surface water quality standards and are not expected to improve within the next two years.

STABILIZATION

The use of practices that prevent exposed soil from eroding.

STABILIZED

That all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a minimum density of 80% over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock riprap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

[Added 11-18-2015 by L.L. No. 9-2015]

STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM (SPDES) STORMWATER DISCHARGE PERMIT

A permit issued by the Department that authorizes the discharge of pollutants to waters of the state.

STOP-WORK ORDER

An order issued which requires that all construction activity on a site be stopped.

STORMWATER

Rainwater, surface runoff, snowmelt and drainage.

STORMWATER HOT SPOT

A land use or activity that generates higher concentrations of hydrocarbons, trace metals or toxicants than are found in typical stormwater runoff, based on monitoring studies.

STORMWATER MANAGEMENT

The use of structural or nonstructural practices that are designed to reduce stormwater runoff and mitigate its adverse impacts on property, natural resources and the environment.

STORMWATER MANAGEMENT FACILITY

One or a series of stormwater management practices installed, stabilized and operating for the purpose of controlling stormwater runoff.

STORMWATER MANAGEMENT OFFICER (SMO)

An employee or officer designated by the municipality to accept and review stormwater pollution prevention plans, forward the plans to the applicable municipal board and inspect stormwater management practices. In addition, the SMO enforces the prohibition of illicit discharges, activities and connections to the separate storm sewer system.

STORMWATER MANAGEMENT PRACTICES (SMPS)

Measures, either structural or nonstructural, that are determined to be the most-effective practical means of preventing flood damage and preventing or reducing point source or nonpoint source pollution inputs to stormwater runoff and water bodies.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A plan for controlling stormwater runoff and pollutants from a site during and after construction activities, prepared in conformance with this chapter, the SPDES General Permit for Construction Activities, and applicable NYSDEC technical standards.

[Amended 11-18-2015 by L.L. No. 9-2015]

STORMWATER RUNOFF

Flow on the surface of the ground, resulting from precipitation.

SURFACE WATERS OF THE STATE OF NEW YORK

Lakes, bays, sounds, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic Ocean within the territorial seas of the State of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface or underground waters), which are wholly or partially within or bordering the state or within its jurisdiction. Storm sewers and waste treatment systems, including treatment ponds or lagoons which also meet the criteria of this definition, are not waters of the state. This exclusion applies only to man-made bodies of water which neither were originally created in waters of the state (such as a disposal area in wetlands) nor resulted from impoundment of waters of the state.

TMDL

Total maximum daily load.

TOTAL MAXIMUM DAILY LOAD

The maximum amount of a pollutant to be allowed to be released into a water body so as not to impair uses of the water, allocated among the sources of that pollutant.

TRAINED CONTRACTOR

An employee from the contracting (construction) company that has received four hours of NYSDEC-endorsed training in proper erosion and sediment control principles. After receiving the initial training, the trained contractor shall receive four hours of training every three years. It can also mean an employee from the contracting (construction) company that meets the qualified inspector qualifications as defined herein.

[Added 11-18-2015 by L.L. No. 9-2015]

WASTEWATER

Water that is not stormwater, is contaminated with pollutants, and is or will be discarded.

WATERCOURSE

A permanent or intermittent stream or other body of water, either natural or man-made, which gathers or carries surface water.

WATERWAY

A channel that directs surface runoff to a watercourse or to the public storm drain.

§ 267-5 **Stormwater pollution prevention plans.**

[Amended 11-18-2015 by L.L. No. 9-2015]

A. Stormwater pollution prevention plan requirement. No application for approval of a land development activity shall be reviewed until either the SMO or the appropriate board has received a stormwater pollution prevention plan (SWPPP) prepared in accordance with the specifications in this chapter. For projects also requiring coverage under the SPDES General Permit for Construction Activities, applications must also be accompanied by all related NYSDEC forms and certifications.

B. All SWPPPs shall be prepared by a qualified professional, as defined in § **267-4** of this chapter.

C. All SWPPPs shall be prepared in conformance with this chapter, the SPDES General Permit for Construction Activities, and the NYSDEC technical standards, as applicable.

D. Contents of stormwater pollution prevention plans.

(1) All SWPPPs shall provide the following background information and erosion and sediment controls:

(a) Background information about the scope of the project, including location, type and size of project;

(b) Site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map should show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); wetlands and drainage patterns that could be affected by the construction activity; existing and final slopes; locations of off-site material, waste, borrow or equipment storage areas; and location(s) of the stormwater discharge(s);

(c) Description of the soil(s) present at the site;

(d) Construction phasing plan describing the intended sequence of construction activities, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance. Consistent with the New York Standards and Specifications for Erosion and Sediment Control (Erosion Control Manual), not more than five acres shall be disturbed at any one time unless a greater amount is determined necessary pursuant to an approved SWPPP;

(e) Description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a pollutant source in stormwater runoff;

(f) Description of construction and waste materials expected to be stored on site, with updates as appropriate, and a description of controls to reduce pollutants from these materials, including storage practices to minimize exposure of the materials to stormwater, and spill prevention and response;

(g) Temporary and permanent structural and vegetative measures to be used for soil stabilization, runoff control and sediment control for each stage of the project, from initial land clearing and grubbing to project closeout;

(h) A site map/construction drawing(s) specifying the location(s), size(s) and length(s) of each erosion and sediment control practice;

(i) Dimensions, material specifications and installation details for all erosion and sediment control practices, including the siting and sizing of any temporary sediment basins;

(j) Temporary practices that will be converted to permanent control measures;

(k) Implementation schedule for staging temporary erosion and sediment control practices, including the timing of initial placement and the duration that each practice should remain in place;

(l) Maintenance schedule to ensure continuous and effective operation of the erosion and sediment control practice;

(m) Name(s) of the receiving water(s);

(n) Delineation of SWPPP implementation responsibilities for each part of the site;

(o) Description of structural practices designed to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree attainable;

(p) Any existing data that describes the stormwater runoff at the site; and

(q) Post-construction stormwater quantity and quality controls, at the discretion of the SMO and/or the Town Engineer, may be required.

(2) Post-construction stormwater management practice component.

(a) All construction projects identified as needing post-construction stormwater management practices pursuant to the SPDES General Permit for Construction Activities shall prepare a SWPPP that includes practices designed in conformance with the Design Manual, including green infrastructure practices, in addition to the items listed under § **267-5D(1)** above. Where post-construction stormwater management practices are not designed in conformance with this technical standard, the applicant must demonstrate equivalence to the technical standard.

(b) At a minimum, the post-construction stormwater practice component of the SWPPP shall include the following:

[1] Identification of all post-construction stormwater management practices to be constructed as part of the project.

[2] Site map/construction drawing(s) showing the specific location(s) and size(s) of each post-construction stormwater management practice.

[3] Hydrologic and hydraulic analysis for all structural components of the stormwater management control system for the applicable design storms. The analysis shall include tributary area maps with two-foot contours for the predevelopment and post-development conditions.

[4] Detailed summary (including calculations) of the sizing criteria that was used to design all post-construction stormwater management practices. At a minimum, the summary shall address the required design criteria from the applicable chapter of the Design Manual; including the identification of and justification for any deviations from the Design Manual, and identification of any design criteria that are not required based on the design criteria or waiver criteria included in the Design Manual.

[5] Identification of any elements of the design that are not in conformance with the Design Manual. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is equivalent to the technical standards.

[6] Comparison of post-development stormwater runoff conditions with predevelopment conditions.

[7] Dimensions, material specifications and installation details for each post-construction stormwater management practice or facility.

[8] Site maps must include existing topography with two-foot contours, a proposed grading plan with a limit of disturbance line, and the calculated area of disturbance in acres.

[9] An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice or facility. The plan shall identify the entity that will be responsible for the long-term operation and maintenance of each practice.

[10] Maintenance easements to ensure access to all stormwater management practices at the site for the purpose of inspection and repair. Easements shall be recorded on the plan and shall remain in effect with transfer of title to the property.

[11] Inspection and maintenance agreement binding on all subsequent landowners served by the on-site stormwater management measures in accordance with § **267-7** of this chapter.

(3) Enhanced phosphorus. All projects that are required to conform to the Enhanced Phosphorus Removal Standards, pursuant to the SPDES General Permit for Construction Activities, shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items D(2)(b)[1] through D(2)(b)[11] above.

E. Other environmental permits. The applicant shall assure that all other applicable environmental permits have been or will be acquired for the land development activity prior to approval of the final stormwater design plan.

F. Contractor certification.

(1) All certifications required pursuant to the SPDES General Permit for Construction Activities shall be submitted, endorsed and incorporated into the SWPPP.

(2) Each contractor and subcontractor identified in the SWPPP who will be responsible for installing, constructing, repairing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP and the post-construction stormwater management practice installation must sign and date a copy of the following contractor certification statement before undertaking any land development activity: "I hereby certify 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 or 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 understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings."

(3) The certification must include the name and title of the person providing the signature, address and telephone number of the contracting firm, the address (or other identifying description) of the site, and the date the certification is made.

(4) The certification statement(s) shall become part of the SWPPP for the land development activity.

G. A copy of the SWPPP shall be retained at the site of the land development activity during construction from the date of initiation of construction activities to the date of final stabilization.

§ 267-6 **Performance and design criteria.**

All land development activities shall be subject to the following performance and design criteria:

A. Technical standards. For the purpose of this chapter, the following documents shall serve as the official guides and specifications for stormwater management. Stormwater management practices that are designed and constructed in accordance with these technical documents shall be presumed to meet the standards imposed by this chapter.

(1) The New York State Stormwater Management Design Manual (New York State Department of Environmental Conservation, most current version or its successor, hereafter referred to as the "Design Manual").

(2) New York Standards and Specifications for Erosion and Sediment Control (Empire State Chapter of the Soil and Water Conservation Society, 2004, most current version or its successor, hereafter referred to as the "Erosion Control Manual").

B. Equivalence to technical standards. Where stormwater management practices are not in accordance with technical standards, the applicant or developer must demonstrate equivalence to the technical standards set forth in Subsection **A** of this section, and the SWPPP shall be prepared by a licensed professional.

C. Water quality standards. Any land development activity shall not cause an increase in turbidity that will result in substantial visible contrast to natural conditions in surface waters of the State of New York.

§ 267-7 **Maintenance, inspection and repair of stormwater facilities.**

A. Maintenance and inspection during construction.
[Amended 11-18-2015 by L.L. No. 9-2015]

(1) Inspection requirements shall be as specified within the SPDES General Permit for Construction Activities.

(2) The applicant or developer of the land development activity or his or her representative shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the applicant or developer to achieve compliance with the conditions of this chapter. Sediment shall be removed from sediment traps or sediment ponds whenever their design capacity has been reduced by 50%.

(3) The applicant/developer must ensure that all erosion and sediment control practices and all post-construction stormwater management practices identified in the SWPPP are maintained in effective operating condition at all times.

(4) The applicant/developer shall inspect, in accordance with the requirements of the most current version of the Erosion Control Manual, the erosion and sediment controls identified in the SWPPP to ensure that they are being maintained in effective operating condition at all times. The applicant/developer shall have each of the contractors and subcontractors 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 applicant/developer shall ensure that at least one trained contractor is on site on a daily basis when soil disturbance activities are being performed.

(5) For land development activities that disturb one or more acres of land, the applicant shall have a qualified inspector conduct site inspections and document the effectiveness of all erosion and sediment control practices every seven calendar days. Inspection reports shall be prepared in compliance with standards outlined within the SPDES General Permit for Construction Activities. Inspection reports shall be maintained on site and copies furnished to the SMO upon request.

(6) Inspections of any post-construction stormwater management practice that includes structural components shall be performed by a New York State licensed professional engineer.

B. Maintenance easement(s). Prior to the issuance of any approval that has a stormwater management facility as one of the requirements, the applicant or developer must execute a maintenance easement agreement that shall be binding on all subsequent landowners served by the stormwater management facility. The easement shall provide for access to the facility at reasonable times for periodic inspection by the Town of North Castle to ensure that the facility is maintained in proper working condition to meet design standards and any other provisions established by this chapter. The easement shall be recorded by the grantor in the office of the County Clerk after approval by the North Castle Town Attorney.

C. Maintenance after construction. The owner or operator of permanent stormwater management practices installed in accordance with this chapter shall ensure they are operated and maintained to achieve the goals of this chapter. Proper operation and maintenance also includes, as a minimum, the following:

(1) A preventive/corrective maintenance program for all critical facilities and systems of treatment and control (or related appurtenances) which are installed or used by the owner or operator to achieve the goals of this chapter.

(2) Written procedures for operation and maintenance and training new maintenance personnel.

(3) Discharges from the SMPs shall not exceed design criteria or cause or contribute to water quality standard violations in accordance with § **267-6C** of this chapter.

D. Maintenance agreements. The Town of North Castle shall approve a formal maintenance agreement for stormwater management facilities binding on all subsequent landowners and recorded in the office of the County Clerk as a deed restriction on the property prior to final plan approval. The maintenance agreement shall be consistent with the terms and conditions of the Town of North Castle Stormwater Control Facility Maintenance Agreement on file with the Town Attorney. The Town of North Castle, in lieu of a maintenance agreement, at its sole discretion, may accept dedication of any existing or future stormwater management facility, provided such facility meets all the requirements of this chapter and includes adequate and perpetual access and sufficient area, by easement or otherwise, for inspection and regular maintenance.

§ 267-8 **Inspections; performance guarantees; enforcement; penalties for offenses; fees.**

A. Construction inspections.

(1) Erosion and sediment control inspection.

(a) The Town of North Castle Stormwater Management Officer may require such inspections as necessary to determine compliance with this Chapter **267** of the Town Code and may either approve that portion of the work completed or notify the applicant wherein the work fails to comply with the requirements of this Chapter **267** of

the Town Code and the stormwater pollution prevention plan (SWPPP) as approved. To obtain inspections, the applicant shall notify the Town of North Castle Building Department 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.

(b) If any violations are found, the applicant and developer shall be notified in writing of the nature of the violation and the required corrective actions. No further land development activity shall be conducted except for site stabilization until any violations are corrected and all work previously completed has received approval by the Stormwater Management Officer.

(2) Stormwater management practice inspections. The Town of North Castle Stormwater Management Officer is responsible for conducting inspections of stormwater management practices (SMPs). All applicants are required to submit as-built plans for any stormwater management practices located on site after final construction is completed. The plan must show the final design specifications for all stormwater management facilities and must be certified by a professional engineer.

(3) Inspection of stormwater facilities after project completion. Inspection programs shall be established on any reasonable basis, including but not limited to routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; inspection of drainage basins or areas identified as higher-than-typical sources of sediment or other contaminants or pollutants; inspections of businesses or industries of a type associated with higher-than-usual discharges of contaminants or pollutants or with discharges of a type which are more likely than the typical discharge to cause violations of state or federal water or sediment quality standards or the SPDES stormwater permit; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to, reviewing maintenance and repair records; sampling discharges, surface water, groundwater and material or water in drainage control facilities; and evaluating the condition of drainage control facilities and other stormwater management practices.

(4) Submission of reports. The Town of North Castle Stormwater Management Officer may require monitoring and reporting from entities subject to Chapter **267** of the Town Code as are necessary to determine compliance with this Chapter **267** of the Town Code.

(5) Right of entry for inspection. When any new stormwater management facility is installed on private property or when any new connection is made between private property and the public stormwater system, the landowner shall grant to the Town of North Castle the right to enter the property at reasonable times and in a reasonable manner for the purpose of inspection as specified in Subsection **A(3)** of this section.

B. Performance guarantee.

(1) Construction completion guarantee. In order to ensure the full and faithful completion of all land development activities related to compliance with all conditions set forth by the Town of North Castle in its approval of the stormwater pollution prevention plan, the Town of North Castle may require the applicant or developer to provide, prior to construction, a performance bond, cash escrow or irrevocable letter of credit from an appropriate financial or surety institution which guarantees satisfactory completion of the project and names the Town of North Castle as the beneficiary. The security shall be in an amount to be determined by the Town of North Castle based on

submission of final design plans, with reference to actual construction and landscaping costs. The performance guarantee shall remain in force until the surety is released from liability by the Town of North Castle, provided that such period shall not be less than one year from the date of final acceptance or such other certification that the facility(ies) has (have) been constructed in accordance with the approved plans and specifications and that a one-year inspection has been conducted and the facilities have been found to be acceptable to the Town of North Castle. Per annum interest on cash escrow deposits shall be reinvested in the account until the surety is released from liability.

(2) Maintenance guarantee. Where stormwater management and erosion and sediment control facilities are to be operated and maintained by the developer or by a corporation that owns or manages a commercial or industrial facility, the developer, prior to construction, may be required to provide the Town of North Castle with an irrevocable letter of credit from an approved financial institution or surety to ensure proper operation and maintenance of all stormwater management and erosion control facilities both during and after construction and until the facilities are removed from operation. If the developer or landowner fails to properly operate and maintain stormwater management and erosion and sediment control facilities, the Town of North Castle may draw upon the account to cover the costs of proper operation and maintenance, including engineering and inspection costs.

(3) Recordkeeping. The Town of North Castle may require entities subject to Chapter **267** of the Town Code to maintain records demonstrating compliance with this Chapter **267** of the Town Code.

C. Enforcement and penalties.

(1) Notice of violation. When the Town of North Castle determines that a land development activity is not being carried out in accordance with the requirements of this Chapter **267** of the Town Code, it may issue a written notice of violation to the landowner. The notice of violation shall contain:

(a) The name and address of the landowner, developer or applicant.

(b) The address, when available, or a description of the building, structure or land upon which the violation is occurring.

(c) A statement specifying the nature of the violation.

(d) A description of the remedial measures necessary to bring the land development activity into compliance with this chapter and a time schedule for the completion of such remedial action.

(e) A statement of the penalty or penalties that shall or may be assessed against the person to whom the notice of violation is directed.

(f) A statement that the determination of violation may be appealed to the municipality by filing a written notice of appeal within 15 days of service of notice of violation.

(2) Stop-work orders. The Town of North Castle may issue a stop-work order for violations of Chapter **267** of the Town Code. Persons receiving a stop-work order shall be required to halt all land development activities, except those activities that address the violations leading to the stop-work order. The stop-work order shall be in effect until the Town of North Castle confirms that the land development activity is in compliance and the violation has been satisfactorily addressed. Failure to address a stop-work order in a timely manner may result in civil, criminal or monetary penalties in accordance with the enforcement measures authorized in this Chapter **267** of the Town Code.

(3) Violations. Any land development activity that is commenced or is conducted contrary to this chapter may be restrained by injunction or otherwise abated in a manner provided by law.

(4) Penalties. In addition to or as an alternative to any penalty provided herein or by law, any person who violates the provisions of this article shall be guilty of a violation punishable by a fine not exceeding $350 or imprisonment for a period not to exceed six months, or both, for conviction of a first offense; for conviction of a second offense, both of which were committed within a period of five years, punishable by a fine not less than $350 nor more than $700 or imprisonment for a period not to exceed six months, or both; and upon conviction for a third or subsequent offense, all of which were committed within a period of five years, punishable by a fine not less than $700 nor more than $1,000 or imprisonment for a period not to exceed six months, or both. However, for the purpose of conferring

jurisdiction upon courts and judicial officers generally, violations of this article shall be deemed misdemeanors, and for such purpose only, all provisions of law relating to misdemeanors shall apply to such violations. Each week's continued violation shall constitute a separate additional violation.

(5) Withholding of certificate of occupancy. If any building or land development activity is installed or conducted in violation of this chapter, the Stormwater Management Officer may prevent the occupancy of said building or land.

(6) Restoration of lands. Any violator may be required to restore land to its undisturbed condition. In the event that restoration is not undertaken within a reasonable time after notice, the Town of North Castle may take necessary corrective action, the cost of which shall become a lien upon the property until paid.

D. Fees for services. The Town of North Castle may require any person undertaking land development activities regulated by Chapter **267** of the Town Code to pay reasonable costs at prevailing rates for review of SWPPPs, inspections or SMP maintenance performed by the Town of North Castle or performed by a third party for the Town of North Castle in such amounts as set forth in the Master Fee Schedule.
[Amended 8-14-2013 by L.L. No. 7-2013]

Article II **Illicit Discharges and Connections to Storm Sewer System**

§ 267-9 **Purpose.**

The purpose of this article is to provide for the health, safety and general welfare of the citizens of the Town of North Castle through the regulation of nonstormwater discharges to the municipal separate storm sewer system (MS4) to the maximum extent practicable as required by federal and state law. This chapter establishes methods for controlling the introduction of pollutants into the MS4 in order to comply with requirements of the SPDES General Permit for Municipal Separate Storm Sewer Systems. The objectives of this article are:

A. To meet the requirements of the SPDES General Permit for Stormwater Discharges from MS4s, Permit No. GP-15-003, or as amended or revised;
[Amended 11-18-2015 by L.L. No. 9-2015]

B. To regulate the contribution of pollutants to the MS4 since such systems are not designed to accept, process or discharge nonstormwater wastes;

C. To prohibit illicit connections, activities and discharges to the MS4;

D. To establish legal authority to carry out all inspection, surveillance and monitoring procedures necessary to ensure compliance with this chapter; and

E. To promote public awareness of the hazards involved in the improper discharge of trash, yard waste, lawn chemicals, pet waste, wastewater, grease, oil, petroleum products, cleaning products, paint products, hazardous waste, sediment and other pollutants into the MS4.

§ 267-10 **Applicability.**

This article shall apply to all water entering the MS4 generated on any developed and undeveloped lands unless explicitly exempted by an authorized enforcement agency.

§ 267-11 **Responsibility for administration.**

The Stormwater Management Officer(s) [SMO(s)] shall administer, implement and enforce the provisions of this article. Such powers granted or duties imposed upon the authorized enforcement official may be delegated in writing by the SMO as may be authorized by the municipality.

§ 267-12 **Discharge prohibitions.**

A. Prohibition of illegal discharges. No person shall discharge or cause to be discharged into the MS4 any materials other than stormwater except as provided in Subsection **A(1)**. The commencement, conduct or continuance of any illegal discharge

to the MS4 is prohibited except as described as follows:

(1) The following discharges are exempt from discharge prohibitions established by this chapter, unless the Department or the municipality has determined them to be substantial contributors of pollutants: waterline flushing or other potable water sources; landscape irrigation or lawn watering; existing diverted stream flows; rising groundwater; uncontaminated groundwater infiltration to storm drains; uncontaminated pumped groundwater; foundation or footing drains; crawl space or basement sump pumps; air-conditioning condensate; irrigation water; springs; water from individual residential car washing; natural riparian habitat or wetland flows; dechlorinated swimming pool discharges; residential street wash water; water from firefighting activities; and any other water source not containing pollutants. Such exempt discharges shall be made in accordance with an appropriate plan for reducing pollutants.

(2) Discharges approved in writing by the SMO to protect life or property from imminent harm or damage, provided that such approval shall not be construed to constitute compliance with other applicable laws and requirements, and further provided that such discharges may be permitted for a specified time period and under such conditions as the SMO may deem appropriate to protect such life and property while reasonably maintaining the purpose and intent of this chapter.

(3) Dye testing in compliance with applicable state and local laws is an allowable discharge but requires a verbal notification to the SMO prior to the time of the test.

(4) The prohibition shall not apply to any discharge permitted under an SPDES permit, waiver or waste discharge order issued to the discharger and administered under the authority of the Department, provided that the discharger is in full compliance with all requirements of the permit, waiver or order and other applicable laws and regulations, and provided that written approval has been granted for any discharge to the MS4.

B. Prohibition of illicit connections.

(1) The construction, use, maintenance or continued existence of illicit connections to the MS4 is prohibited.

(2) This prohibition expressly includes, without limitation, illicit connections made in the past, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

(3) A person is considered to be in violation of this article if the person connects a line conveying sewage to the municipality's MS4 or allows such a connection to continue.

§ 267-13 **Prohibition against activities contaminating stormwater.**

A. Activities that are subject to the requirement of this article are those types of activities that:

(1) Cause or contribute to a violation of the municipality's MS4 SPDES permit.

(2) Cause or contribute to the municipality being subject to a special condition, as defined in § **267-4** of this chapter.

B. Upon notification to a person that he or she is engaged in activities that cause or contribute to violations of the municipality's MS4 SPDES permit authorization, that person shall take all reasonable actions to correct such activities such that he or she no longer causes or contributes to violations of the municipality's MS4 SPDES permit authorization.

§ 267-14 **Use of best management practices to prevent, control and reduce stormwater pollutants.**

A. Best management practices. Where the SMO has identified illicit discharges as defined in § **267-4** of this chapter or activities contaminating stormwater as defined in § **267-13**, the municipality may require implementation of best management practices (BMPs) to control those illicit discharges and activities.

(1) The owner or operator of a commercial or industrial establishment shall provide, at its own expense, reasonable protection from accidental discharge of prohibited materials or other wastes into the MS4 through the use of structural and nonstructural BMPs.

(2) Any person responsible for a property or premises, which is or may be the source of an illicit discharge as defined in § 267-4 of this chapter or an activity contaminating stormwater as defined in § 267-13, may be required to implement, at said person's expense, additional structural and nonstructural BMPs to reduce or eliminate the source of pollutant(s) to the MS4.

(3) Compliance with all terms and conditions of a valid SPDES permit authorizing the discharge of stormwater associated with industrial activity, to the extent practicable, shall be deemed compliance with the provisions of this article.

§ 267-15 **Suspension of access to MS4; illicit discharges in emergency situations.**

A. The SMO may, without prior notice, suspend MS4 discharge access to a person when such suspension is necessary to stop an actual or threatened discharge which presents or may present imminent and substantial danger to the environment, to the health or welfare of persons, or to the MS4. The SMO shall notify the person of such suspension within a reasonable time thereafter, in writing, of the reasons for the suspension. If the violator fails to comply with a suspension order issued in an emergency, the SMO may take such steps as deemed necessary to prevent or minimize damage to the MS4 or to minimize danger to persons.

B. Suspension due to the detection of illicit discharge. Any person discharging to the municipality's MS4 in violation of this chapter may have his or her MS4 access terminated if such termination would abate or reduce an illicit discharge. The SMO will notify a violator in writing of the proposed termination of its MS4 access and the reasons therefor. The violator may petition the SMO for a reconsideration and hearing. Access may be granted by the SMO if he/she finds that the illicit discharge has ceased and the discharger has taken steps to prevent its recurrence. Access may be denied if the SMO determines in writing that the illicit discharge has not ceased or is likely to recur. A person commits an offense if the person reinstates MS4 access to premises terminated pursuant to this section without the prior approval of the SMO.

§ 267-16 **Industrial or construction activity discharges.**

Any person subject to an industrial or construction activity SPDES stormwater discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the Town prior to the allowing of discharges to the MS4.

§ 267-17 **Access to facilities; monitoring of discharges.**

A. Applicability. This section applies to all facilities that the SMO must inspect to enforce any provision of this article or whenever the authorized enforcement agency has cause to believe that there exists, or potentially exists, in or upon any premises, any condition which constitutes a violation of this article.

B. Access to facilities.

(1) The SMO shall be permitted to enter and inspect facilities subject to regulation under this chapter as often as may be necessary to determine compliance with this article. If a discharger has security measures in force which require proper identification and clearance before entry into its premises, the discharger shall make the necessary arrangements to allow access to the SMO.

(2) Facility operators shall allow the SMO ready access to all parts of the premises for the purposes of inspection, sampling, examination and the copying of records as may be required to implement this article.

(3) The Town shall have the right to set up on any facility subject to this chapter such devices as are necessary in the opinion of the SMO to conduct monitoring and/or sampling of the facility's stormwater discharge.

(4) The Town has the right to require the facilities subject to this article to install monitoring equipment as is reasonably necessary to determine compliance with this article. The facility's sampling and monitoring equipment shall be maintained at all times in a safe and proper operating condition by the discharger at its own expense. All devices used to measure stormwater flow and quality shall be calibrated to ensure their accuracy.

(5) Unreasonable delays in allowing the Town access to a facility subject to this chapter are a violation of this article. A person who is the operator of a facility subject to this article commits an offense if the person denies the Town reasonable access to the facility for the purpose of conducting any activity authorized or required by this article.

(6) If the SMO has been refused access to any part of the premises from which stormwater is discharged and he/she is able to demonstrate probable cause to believe that there may be a violation of this article or that there is a need to inspect and/or sample as part of a routine inspection and sampling program designed to verify compliance with this article or any order issued hereunder, then the SMO may seek issuance of a search warrant from any court of competent jurisdiction.

§ 267-18 **Notification of spills.**

Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation, has information of any known or suspected release of materials which are resulting or may result in illegal discharges or pollutants discharging into the MS4, said person shall take all necessary steps to ensure the discovery, containment and cleanup of such release. In the event of such a release of hazardous materials, said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services. In the event of a release of nonhazardous materials, said person shall notify the Town in person or by telephone or facsimile no later than the next business day. Notifications in person or by telephone shall be confirmed by written notice addressed and mailed to the Town within three business days of the telephone notice. If the discharge of prohibited materials emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

§ 267-19 **Enforcement.**

A. Notice of violation.

(1) When the Town's SMO finds that a person has violated a prohibition or failed to meet a requirement of this article, he/she may order compliance by written notice of violation to the responsible person. Such notice may require, without limitation:

(a) The elimination of illicit connections or discharges;

(b) That violating discharges, practices or operations shall cease and desist;

(c) The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property;

(d) The performance of monitoring, analyses and reporting;

(e) Payment of a fine; and

(f) The implementation of source control or treatment BMPs.

(2) If abatement of a violation and/or restoration of affected property is required, the notice shall set forth a deadline within which such remediation or restoration must be completed. Said notice shall further advise that, should the violator fail to remediate or restore within the established deadline, the work will be done by a designated governmental agency or a contractor, and the expense thereof shall be charged to the violator.

B. Penalties. In addition to or as an alternative to any penalty provided herein or by law, any person who violates the provisions of this article shall be guilty of a violation punishable by a fine not exceeding $1,000 or by imprisonment for a period not to exceed 15 days, or by both such fine and imprisonment. However, for the purposes of conferring jurisdiction upon courts and judicial officers generally, violations of this article shall be deemed misdemeanors, and for such purpose only, all provisions of law relating to misdemeanors shall apply to such violations. Each day's continued violation shall constitute a separate additional violation.
[Amended 4-29-2020 by L.L. No. 3-2020]

§ 267-20 **Appeal of notice of violation.**

Any person receiving a notice of violation may appeal the determination of the SMO to the Town Board within 15 days of its issuance, which Board shall hear the appeal within 30 days after the filing of the appeal and, within five days of making its decision, file its decision in the office of the Town Clerk and mail a copy of its decision by certified mail to the discharger.

§ 267-21 **Corrective measures after appeal.**

A. If the violation has not been corrected pursuant to the requirements set forth in the notice of violation or, in the event of an appeal, within five business days of the decision of the municipal authority upholding the decision of the SMO, then the SMO shall request the owner's permission for access to the subject private property to take any and all measures reasonably necessary to abate the violation and/or restore the property.

B. If refused access to the subject private property, the SMO may seek a warrant in a court of competent jurisdiction to be authorized to enter upon the property to determine whether a violation has occurred. Upon determination that a violation has occurred, the SMO may seek a court order to take any and all measures reasonably necessary to abate the violation and/or restore the property. The cost of implementing and maintaining such measures shall be the sole responsibility of the discharger.

§ 267-22 **Injunctive relief.**

It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this article. If a person has violated or continues to violate the provisions of this article, the SMO may petition for a preliminary or permanent injunction restraining the person from activities which would create further violations or compelling the person to perform abatement or remediation of the violation.

§ 267-23 **Alternative remedies.**

A. Where a person has violated a provision of this article, he/she may be eligible for alternative remedies in lieu of a civil penalty, upon recommendation of the Town Attorney and concurrence of the Town Building Inspector, where:

(1) The violation was unintentional.

(2) The violator has no history of previous violations of this article.

(3) Environmental damage was minimal.

(4) The violator acted quickly to remedy the violation.

(5) The violator cooperated in investigation and resolution.

B. Alternative remedies may consist of one or more of the following:

(1) Attendance at compliance workshops.

(2) Storm drain stenciling or storm drain marking.

(3) River, stream or creek cleanup activities.

§ 267-24 **Violations deemed public nuisance.**

In addition to the enforcement processes and penalties provided, any condition caused or permitted to exist in violation of any of the provisions of this article is a threat to public health, safety and welfare and is declared and deemed a nuisance, and may be summarily abated or restored at the violator's expense, and/or a civil action to abate, enjoin or otherwise compel the cessation of such nuisance may be taken.

§ 267-25 **Remedies not exclusive.**

The remedies listed in this article are not exclusive of any other remedies available under any applicable federal, state or local law, and it is within the discretion of the authorized enforcement agency to seek cumulative remedies.

APPENDIX C

Construction Sequence

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. Cut and clear trees within work area. Timbered trees, wood chips, and stumps shall be removed off-site. Strip site and place topsoil in stockpile locations shown on the plan.
4. Start construction of project access points, set-up staging areas as shown on Erosion and Sediment Control Plan.
5. Begin rough grading the site.
6. Rough grade of foundation for additions. Soil shall be stockpiled as shown and stabilized the next day if they are to be left alone for over seven days.
7. 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.
8. Septic system may be constructed at any point after step 7.
9. Begin construction of the house addition.
10. Upon completion of foundation, backfill to grade and immediately stabilize areas that will not receive traffic or disturbance within seven (7) days.
11. 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 stormwater outlet shall be blocked until all upstream areas have been permanently stabilized.
12. During building and site construction maintain and re-establish as required erosion control and stabilization measures as required by the site plan and details.
13. Installation of proposed raingarden.
14. Topsoil, rake, seed and mulch all disturbed areas. Once all proposed disturbances are completed, begin full stabilization of the site. Once the site has been stabilized, remove all temporary erosion control measures. This shall be done during optimum weather conditions to avoid sediment transport. A site shall be considered stabilized when it has a minimum uniform 80% perennial vegetation cover or other permanent non vegetative cover with a density sufficient to resist accelerated surface erosion. Once final stabilization has been achieved, unblock piping to infiltrators in order to allow flow to enter.

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

Soil Testing Data

TEST PIT DATA REQUIRED TO BE SUBMITTED WITH APPLICATION

DESCRIPTION OF SOILS ENCOUNTERED IN TEST HOLES

DEPTH	HOLE NO. 1	HOLE NO. 2	HOLE NO. 3	HOLE NO.
G.L.	Topsoil	Topsoil		
	"	"		
6"				
	8" - 24" sandy loam	8"-18" sandy loam mod.		
12"		compacted		
	"	"		
18"		18"-96" compact heavily		
	"	mottled silt clay loam,		
24"	24"-60" silt clay loam	gritty		
	mottled	"		
30"				
	"	"		
36"				
	"	"		
42"				
	"	"		
48"				
	"	"		
54"				
	"	"		
60"	60"-96" silt loam with			
	motling	@62" groundwater		
66"	@66" groundwater entering			
	"	"		
72"				
	"	"		
78"				
	"	"		
84"	to 96"	to 96"		

WAS GROUND WATER ENCOUNTERED: YES X NO _____

INDICATE LEVEL AT WHICH GROUND WATER IS ENCOUNTERED _____ Ft./In.

INDICATE LEVEL FOR WHICH WATER LEVEL RISES AFTER BEING ENCOUNTERED _____ Ft./In.

TESTS MADE BY SITE DESIGN CONSULTANTS DATE August, 2021

DESIGN

Soil Rate Used _____ Min/1" Drop: _____ S.F. Usable Area Provided _____

No. of Bedrooms _____ Septic Tank Capacity _____ Gals. Masonry ___ Metal _____

Absorption Area Provided by _____ L.F. x 24" _____ width trench Other _____

Design Professional Name Joseph C. Riina, P.E. Signature _____

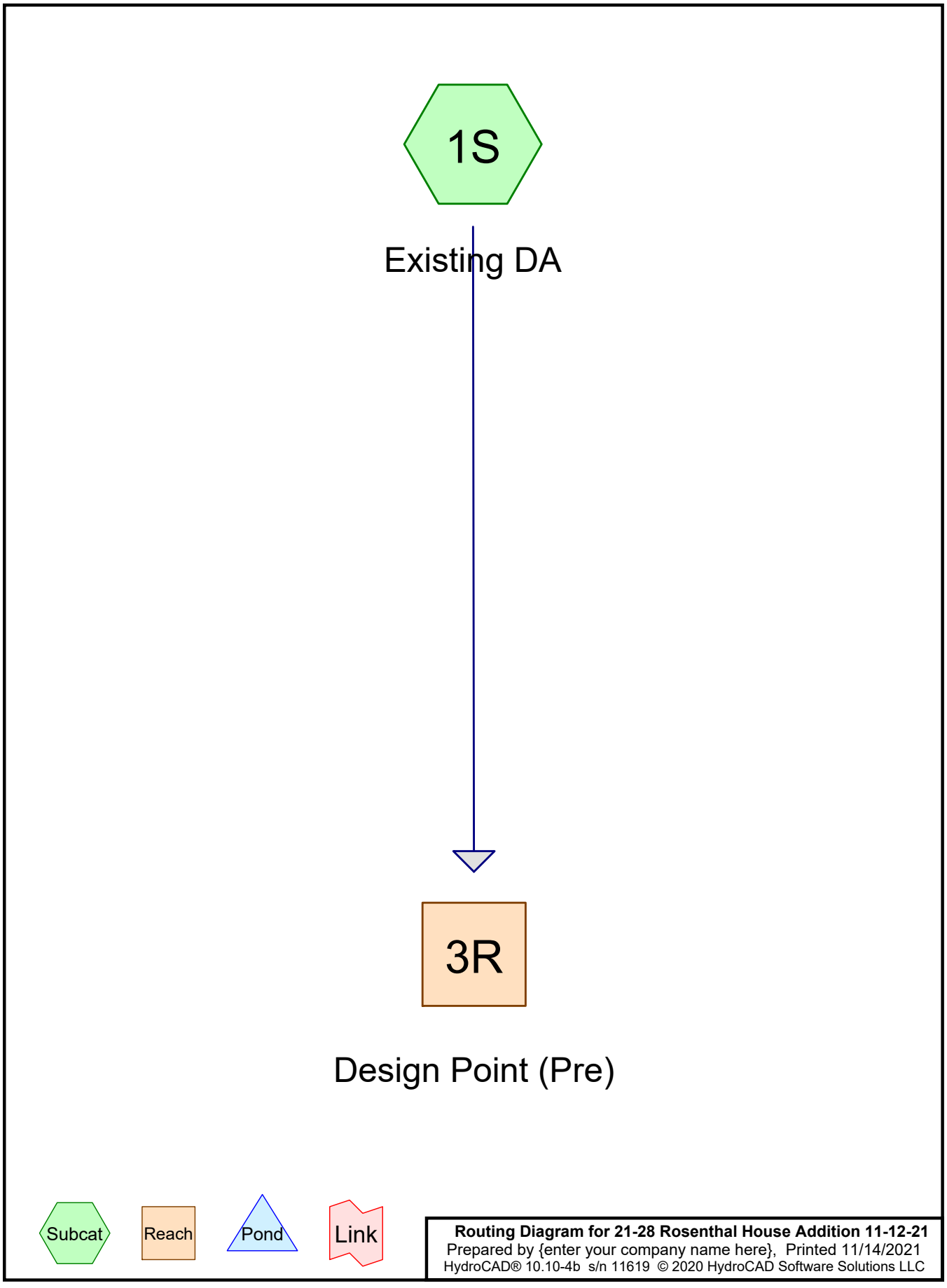
Address Site Design Consultants SEAL

251-F Underhill Avenue

Yorktown Heights, NY 10598

APPENDIX E

Hydrologic Analysis



Routing Diagram for 21-28 Rosenthal House Addition 11-12-21
Prepared by {enter your company name here}, Printed 11/14/2021

Project Notes

Rainfall events imported from "NRCS-Rain.txt" for 7139 NY Westchester

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	NRCC 24-hr	D	Default	24.00	1	2.78	2
2	2-Year	NRCC 24-hr	D	Default	24.00	1	3.41	2
3	5-Year	NRCC 24-hr	D	Default	24.00	1	4.30	2
4	10-Year	NRCC 24-hr	D	Default	24.00	1	5.13	2
5	25-Year	NRCC 24-hr	D	Default	24.00	1	6.49	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.056	79	50-75% Grass cover, Fair, HSG C (1S)
0.055	98	Paved parking, HSG C (1S)
0.046	73	Woods, Fair, HSG C (1S)
0.157	**84**	**TOTAL AREA**

Soil Listing (selected nodes)

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

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.056	0.000	0.000	0.056	50-75% Grass cover, Fair	1S
0.000	0.000	0.055	0.000	0.000	0.055	Paved parking	1S
0.000	0.000	0.046	0.000	0.000	0.046	Woods, Fair	1S
0.000	**0.000**	**0.157**	**0.000**	**0.000**	**0.157**	**TOTAL AREA**	

Time span=1.00-24.00 hrs, dt=0.05 hrs, 461 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing DA Runoff Area=0.157 ac 35.03% Impervious Runoff Depth>1.34"
Tc=5.0 min CN=84 Runoff=0.23 cfs 0.017 af

Reach 3R: Design Point (Pre) Inflow=0.23 cfs 0.017 af
Outflow=0.23 cfs 0.017 af

Total Runoff Area = 0.157 ac Runoff Volume = 0.017 af Average Runoff Depth = 1.34"
64.97% Pervious = 0.102 ac 35.03% Impervious = 0.055 ac

Summary for Subcatchment 1S: Existing DA

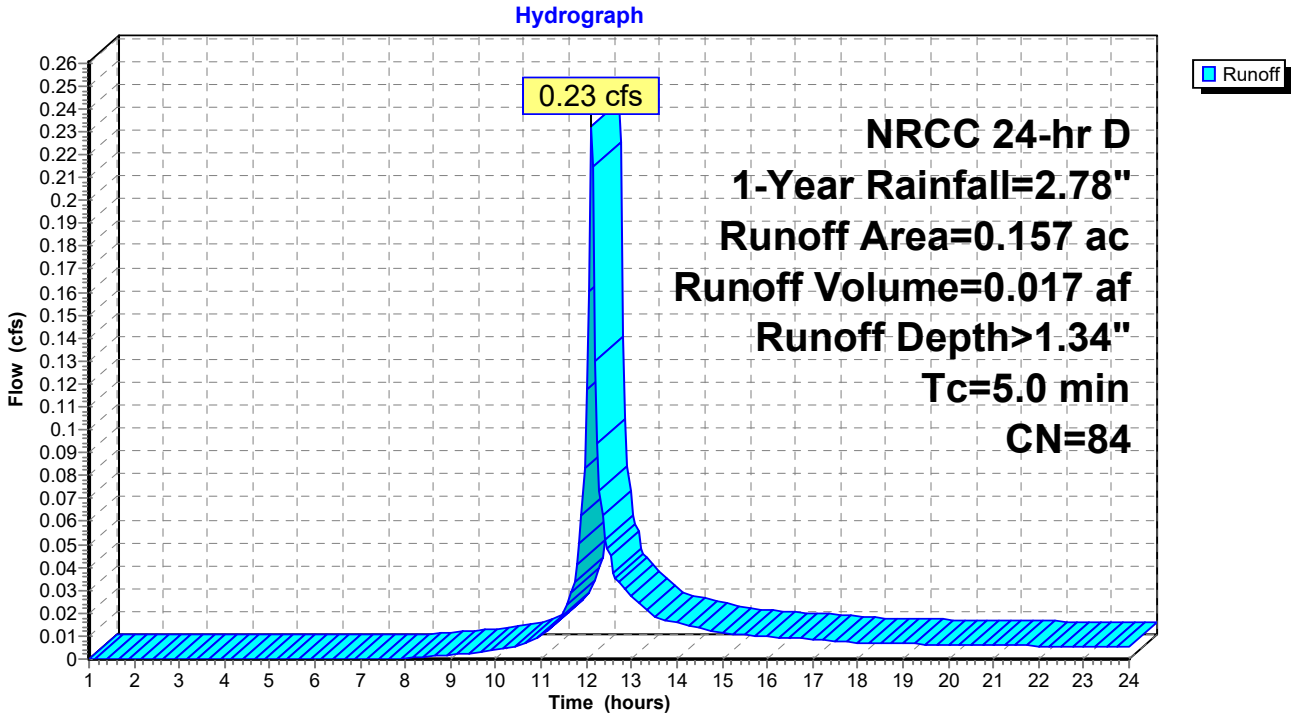
Runoff = 0.23 cfs @ 12.12 hrs, Volume= 0.017 af, Depth> 1.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 1-Year Rainfall=2.78"

Area (ac)	CN	Description
0.056	79	50-75% Grass cover, Fair, HSG C
0.055	98	Paved parking, HSG C
0.046	73	Woods, Fair, HSG C
0.157	84	Weighted Average
0.102		64.97% Pervious Area
0.055		35.03% Impervious Area

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

Subcatchment 1S: Existing DA

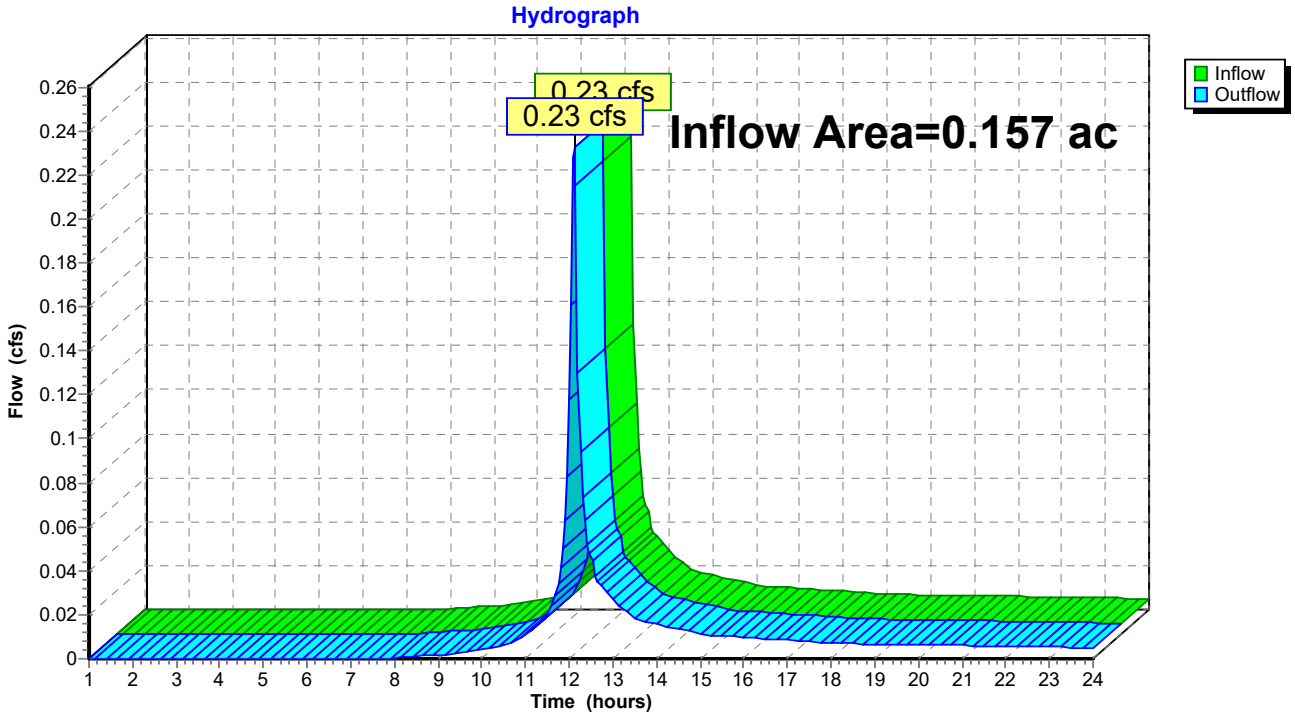


Summary for Reach 3R: Design Point (Pre)

Inflow Area = 0.157 ac, 35.03% Impervious, Inflow Depth > 1.34" for 1-Year event
Inflow = 0.23 cfs @ 12.12 hrs, Volume= 0.017 af
Outflow = 0.23 cfs @ 12.12 hrs, Volume= 0.017 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs

Reach 3R: Design Point (Pre)



Time span=1.00-24.00 hrs, dt=0.05 hrs, 461 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing DA Runoff Area=0.157 ac 35.03% Impervious Runoff Depth>1.86"
Tc=5.0 min CN=84 Runoff=0.32 cfs 0.024 af

Reach 3R: Design Point (Pre) Inflow=0.32 cfs 0.024 af
Outflow=0.32 cfs 0.024 af

Total Runoff Area = 0.157 ac Runoff Volume = 0.024 af Average Runoff Depth = 1.86"
64.97% Pervious = 0.102 ac 35.03% Impervious = 0.055 ac

Summary for Subcatchment 1S: Existing DA

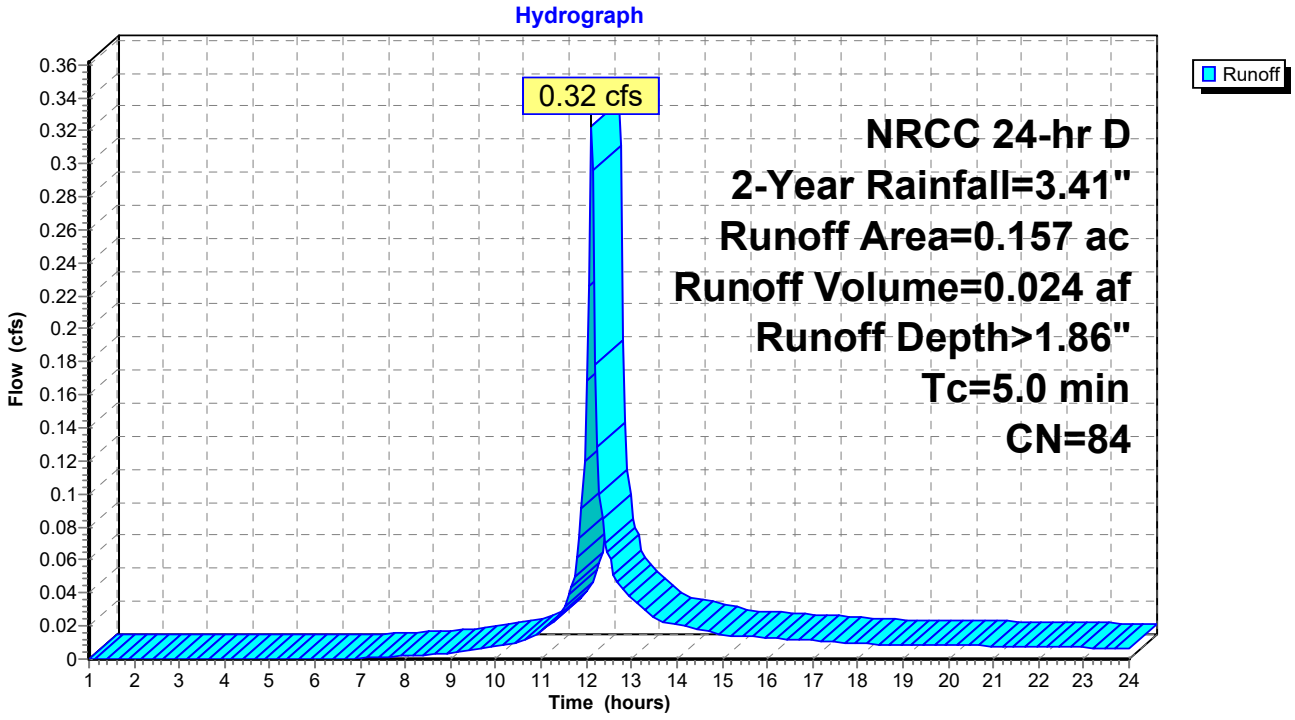
Runoff = 0.32 cfs @ 12.12 hrs, Volume= 0.024 af, Depth> 1.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 2-Year Rainfall=3.41"

Area (ac)	CN	Description
0.056	79	50-75% Grass cover, Fair, HSG C
0.055	98	Paved parking, HSG C
0.046	73	Woods, Fair, HSG C
0.157	84	Weighted Average
0.102		64.97% Pervious Area
0.055		35.03% Impervious Area

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

Subcatchment 1S: Existing DA

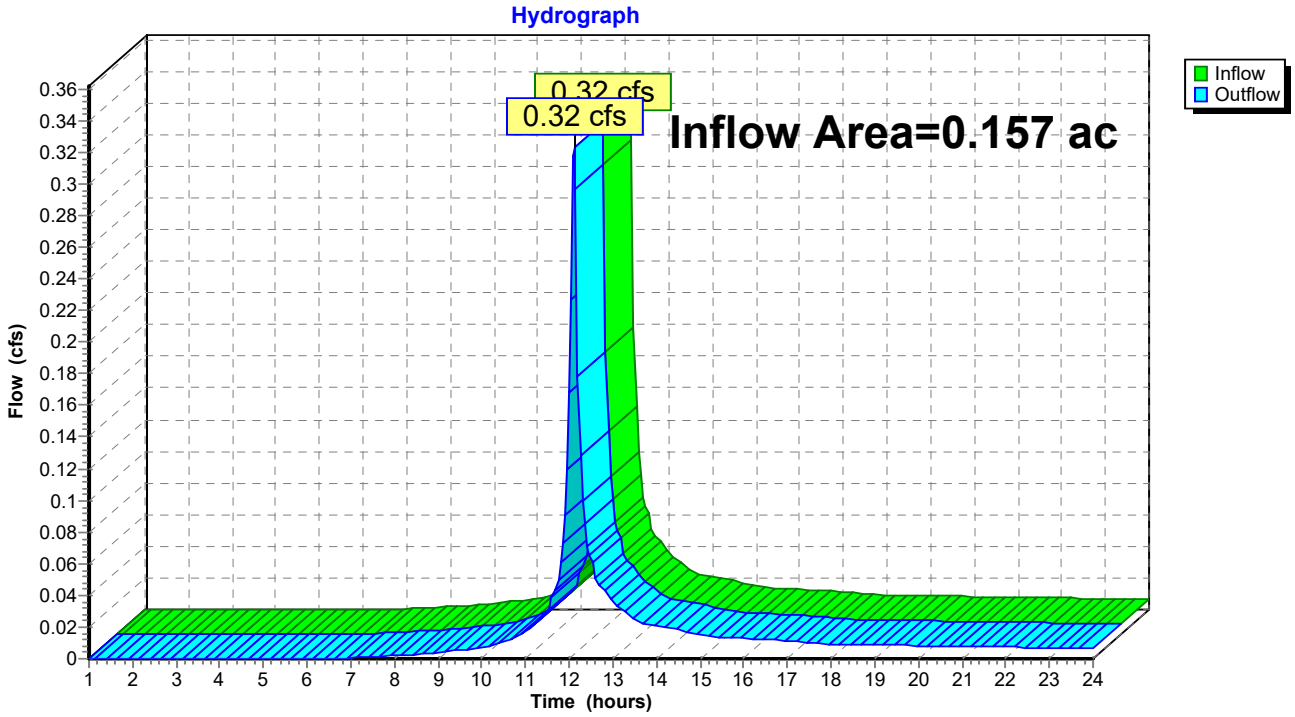


Summary for Reach 3R: Design Point (Pre)

Inflow Area = 0.157 ac, 35.03% Impervious, Inflow Depth > 1.86" for 2-Year event
Inflow = 0.32 cfs @ 12.12 hrs, Volume= 0.024 af
Outflow = 0.32 cfs @ 12.12 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs

Reach 3R: Design Point (Pre)



Time span=1.00-24.00 hrs, dt=0.05 hrs, 461 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing DA Runoff Area=0.157 ac 35.03% Impervious Runoff Depth>2.63"
Tc=5.0 min CN=84 Runoff=0.45 cfs 0.034 af

Reach 3R: Design Point (Pre) Inflow=0.45 cfs 0.034 af
Outflow=0.45 cfs 0.034 af

Total Runoff Area = 0.157 ac Runoff Volume = 0.034 af Average Runoff Depth = 2.63"
64.97% Pervious = 0.102 ac 35.03% Impervious = 0.055 ac

Summary for Subcatchment 1S: Existing DA

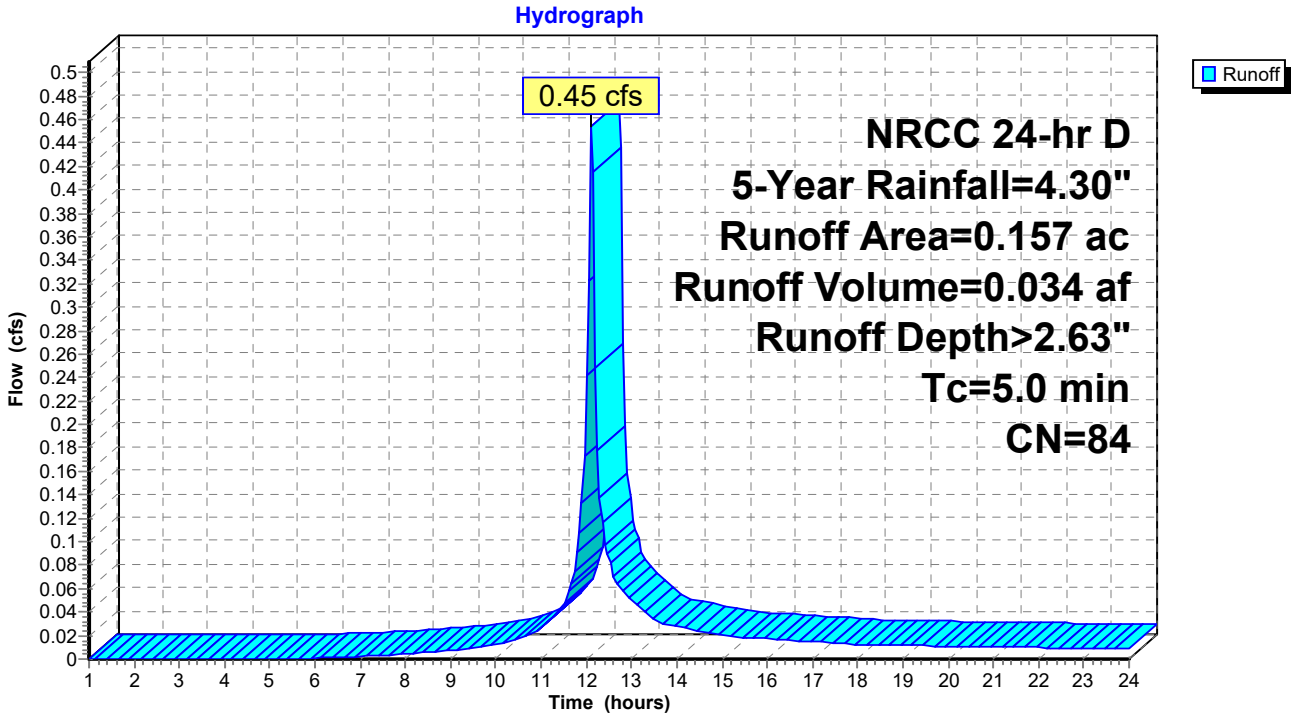
Runoff = 0.45 cfs @ 12.11 hrs, Volume= 0.034 af, Depth> 2.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 5-Year Rainfall=4.30"

Area (ac)	CN	Description
0.056	79	50-75% Grass cover, Fair, HSG C
0.055	98	Paved parking, HSG C
0.046	73	Woods, Fair, HSG C
0.157	84	Weighted Average
0.102		64.97% Pervious Area
0.055		35.03% Impervious Area

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

Subcatchment 1S: Existing DA

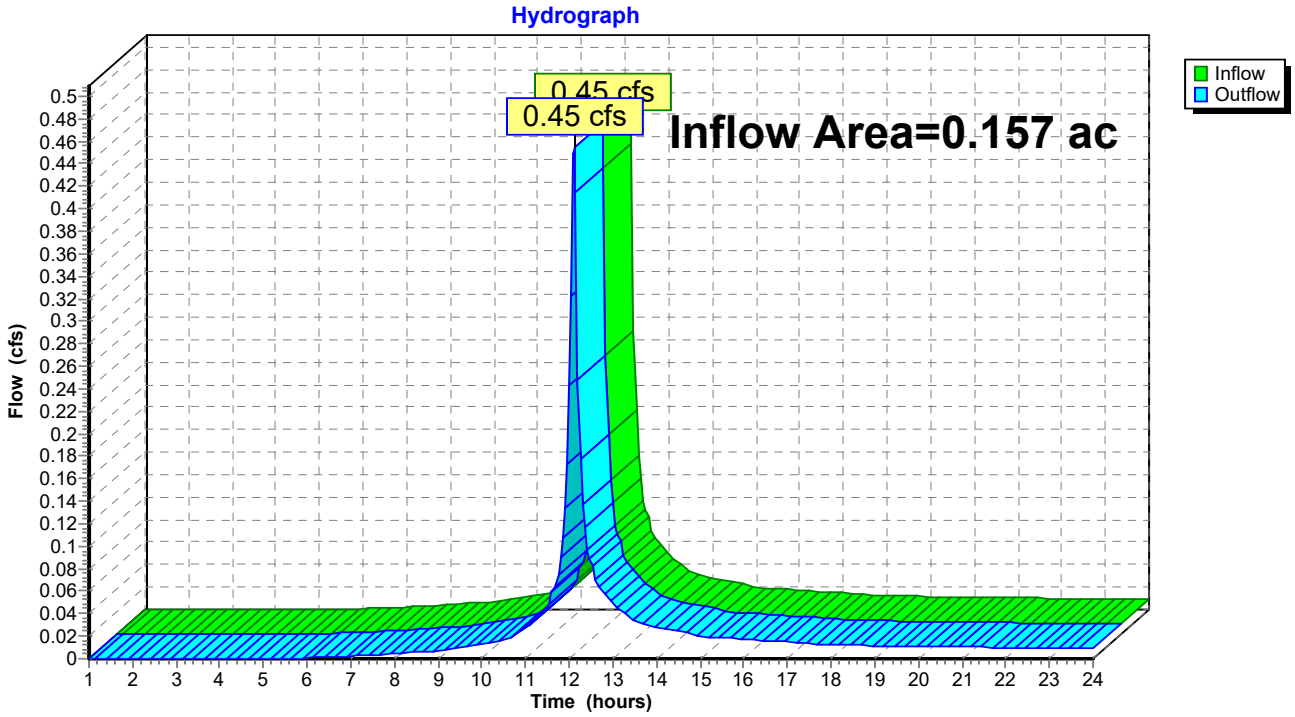


Summary for Reach 3R: Design Point (Pre)

Inflow Area = 0.157 ac, 35.03% Impervious, Inflow Depth > 2.63" for 5-Year event
Inflow = 0.45 cfs @ 12.11 hrs, Volume= 0.034 af
Outflow = 0.45 cfs @ 12.11 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs

Reach 3R: Design Point (Pre)



Time span=1.00-24.00 hrs, dt=0.05 hrs, 461 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing DA Runoff Area=0.157 ac 35.03% Impervious Runoff Depth>3.39"
Tc=5.0 min CN=84 Runoff=0.58 cfs 0.044 af

Reach 3R: Design Point (Pre) Inflow=0.58 cfs 0.044 af
Outflow=0.58 cfs 0.044 af

Total Runoff Area = 0.157 ac Runoff Volume = 0.044 af Average Runoff Depth = 3.39"
64.97% Pervious = 0.102 ac 35.03% Impervious = 0.055 ac

Summary for Subcatchment 1S: Existing DA

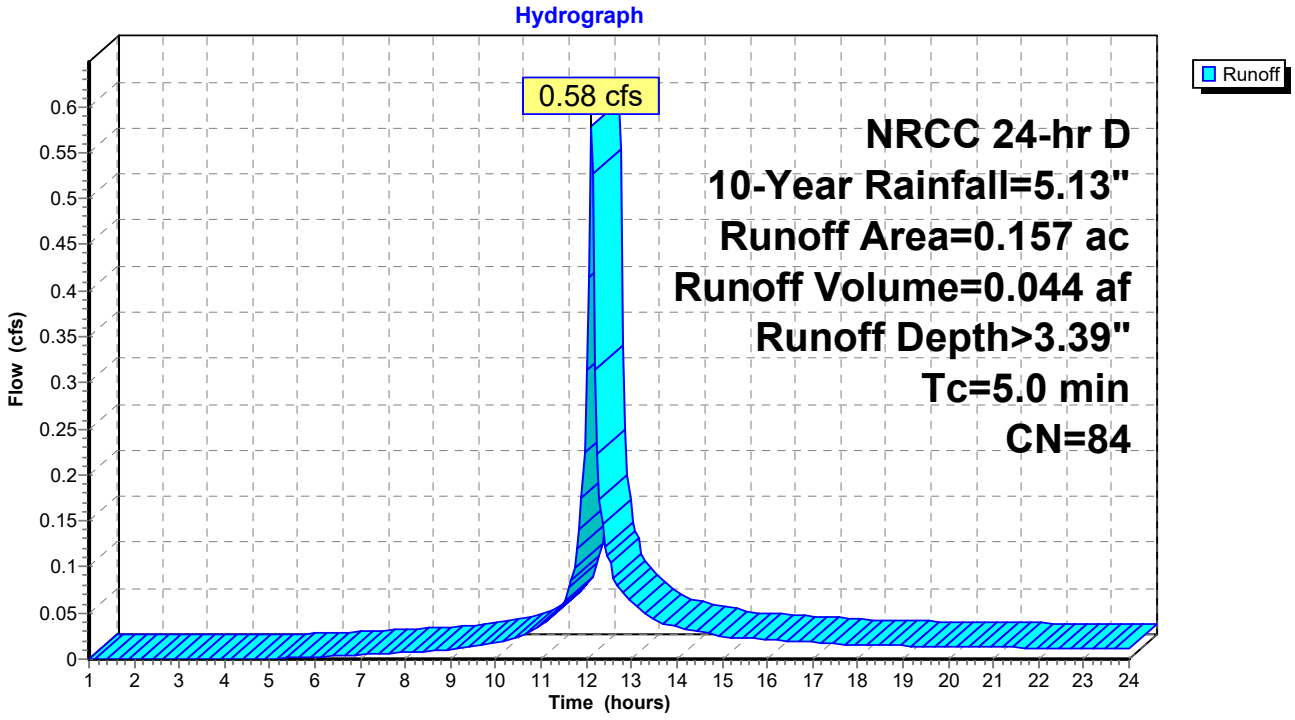
Runoff = 0.58 cfs @ 12.11 hrs, Volume= 0.044 af, Depth> 3.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 10-Year Rainfall=5.13"

Area (ac)	CN	Description
0.056	79	50-75% Grass cover, Fair, HSG C
0.055	98	Paved parking, HSG C
0.046	73	Woods, Fair, HSG C
0.157	84	Weighted Average
0.102		64.97% Pervious Area
0.055		35.03% Impervious Area

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

Subcatchment 1S: Existing DA

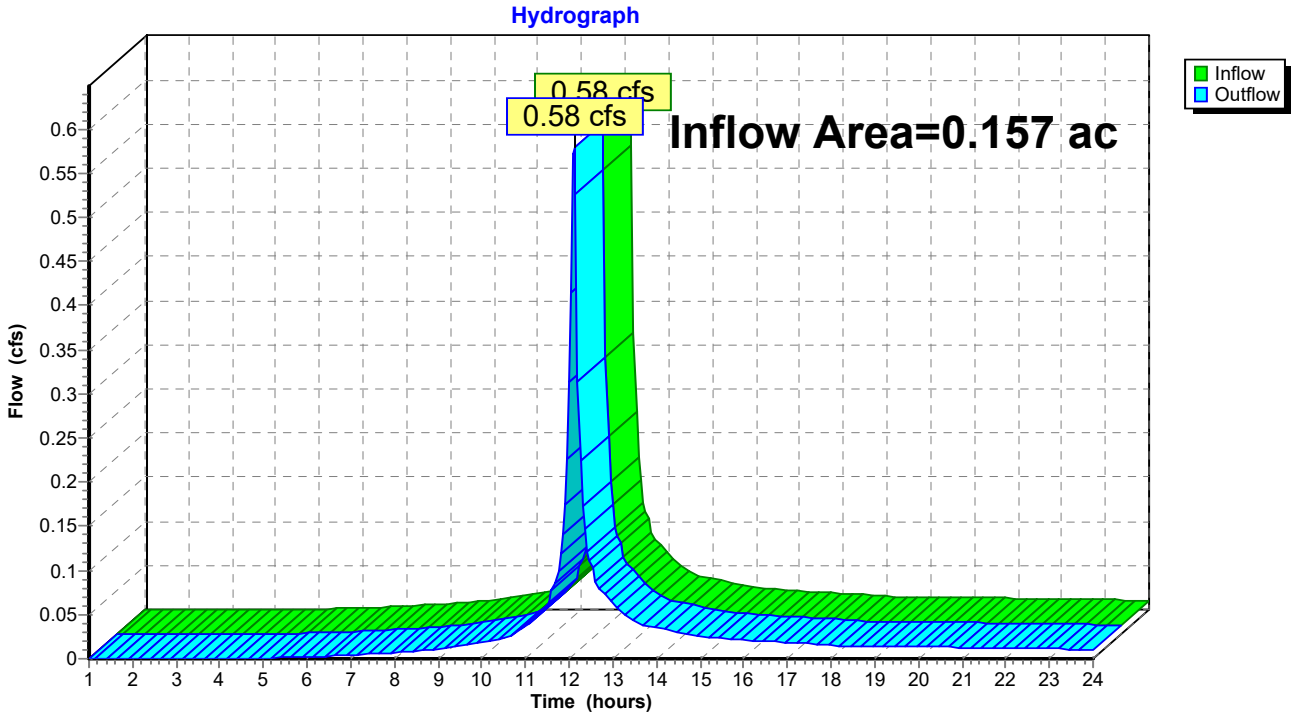


Summary for Reach 3R: Design Point (Pre)

Inflow Area = 0.157 ac, 35.03% Impervious, Inflow Depth > 3.39" for 10-Year event
Inflow = 0.58 cfs @ 12.11 hrs, Volume= 0.044 af
Outflow = 0.58 cfs @ 12.11 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs

Reach 3R: Design Point (Pre)



Time span=1.00-24.00 hrs, dt=0.05 hrs, 461 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 1S: Existing DA Runoff Area=0.157 ac 35.03% Impervious Runoff Depth>4.65"
Tc=5.0 min CN=84 Runoff=0.78 cfs 0.061 af

Reach 3R: Design Point (Pre) Inflow=0.78 cfs 0.061 af
Outflow=0.78 cfs 0.061 af

Total Runoff Area = 0.157 ac Runoff Volume = 0.061 af Average Runoff Depth = 4.65"
64.97% Pervious = 0.102 ac 35.03% Impervious = 0.055 ac

Summary for Subcatchment 1S: Existing DA

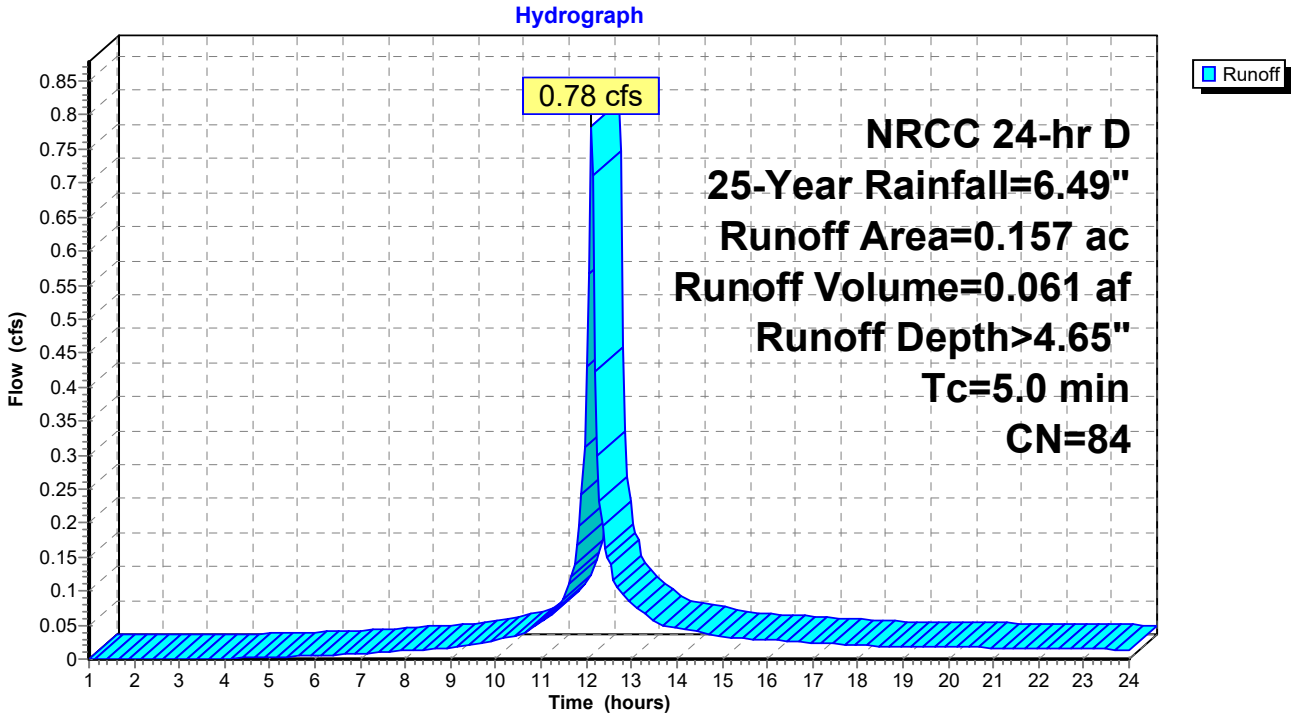
Runoff = 0.78 cfs @ 12.11 hrs, Volume= 0.061 af, Depth> 4.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 25-Year Rainfall=6.49"

Area (ac)	CN	Description
0.056	79	50-75% Grass cover, Fair, HSG C
0.055	98	Paved parking, HSG C
0.046	73	Woods, Fair, HSG C
0.157	84	Weighted Average
0.102		64.97% Pervious Area
0.055		35.03% Impervious Area

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

Subcatchment 1S: Existing DA

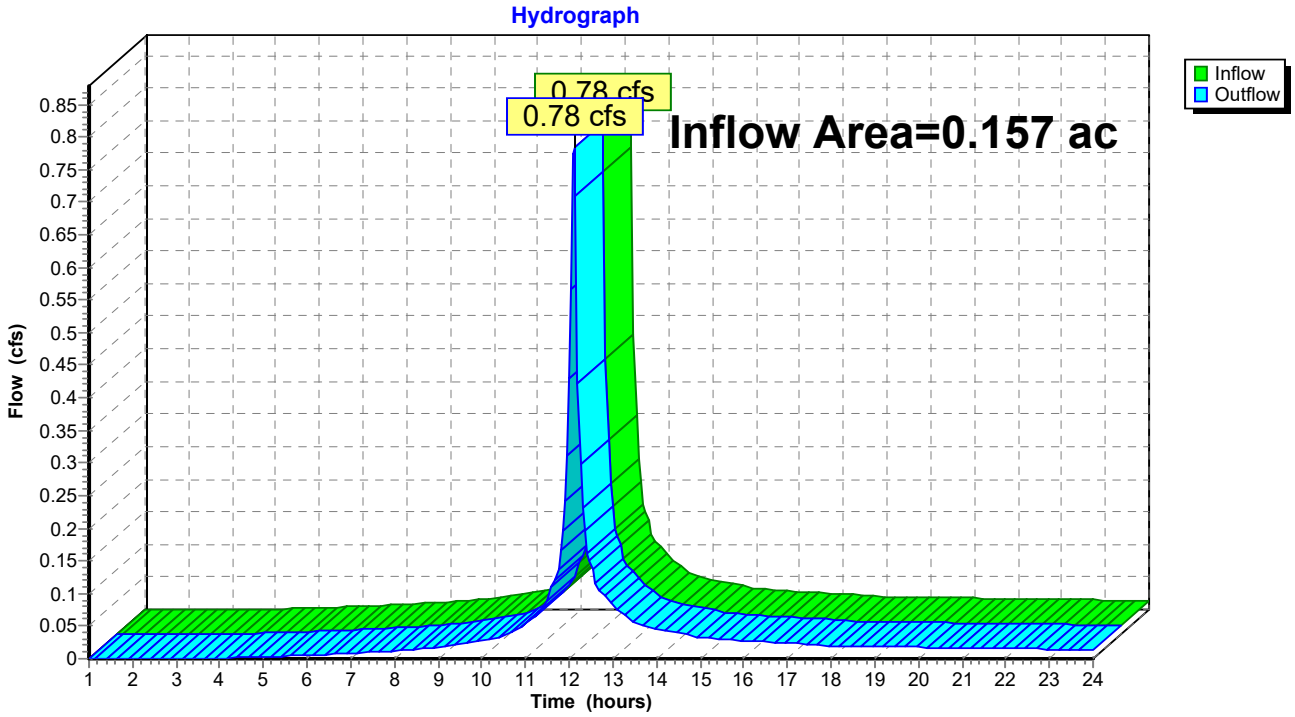


Summary for Reach 3R: Design Point (Pre)

Inflow Area = 0.157 ac, 35.03% Impervious, Inflow Depth > 4.65" for 25-Year event
Inflow = 0.78 cfs @ 12.11 hrs, Volume= 0.061 af
Outflow = 0.78 cfs @ 12.11 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs

Reach 3R: Design Point (Pre)



Events for Subcatchment 1S: Existing DA

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-Year	2.78	0.23	0.017	1.34
2-Year	3.41	0.32	0.024	1.86
5-Year	4.30	0.45	0.034	2.63
10-Year	5.13	0.58	0.044	3.39
25-Year	**6.49**	**0.78**	**0.061**	**4.65**

Events for Reach 3R: Design Point (Pre)

Event	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
1-Year	0.23	0.23	**0.00**	**0**
2-Year	0.32	0.32	0.00	0
5-Year	0.45	0.45	0.00	0
10-Year	0.58	0.58	0.00	0
25-Year	**0.78**	**0.78**	0.00	0

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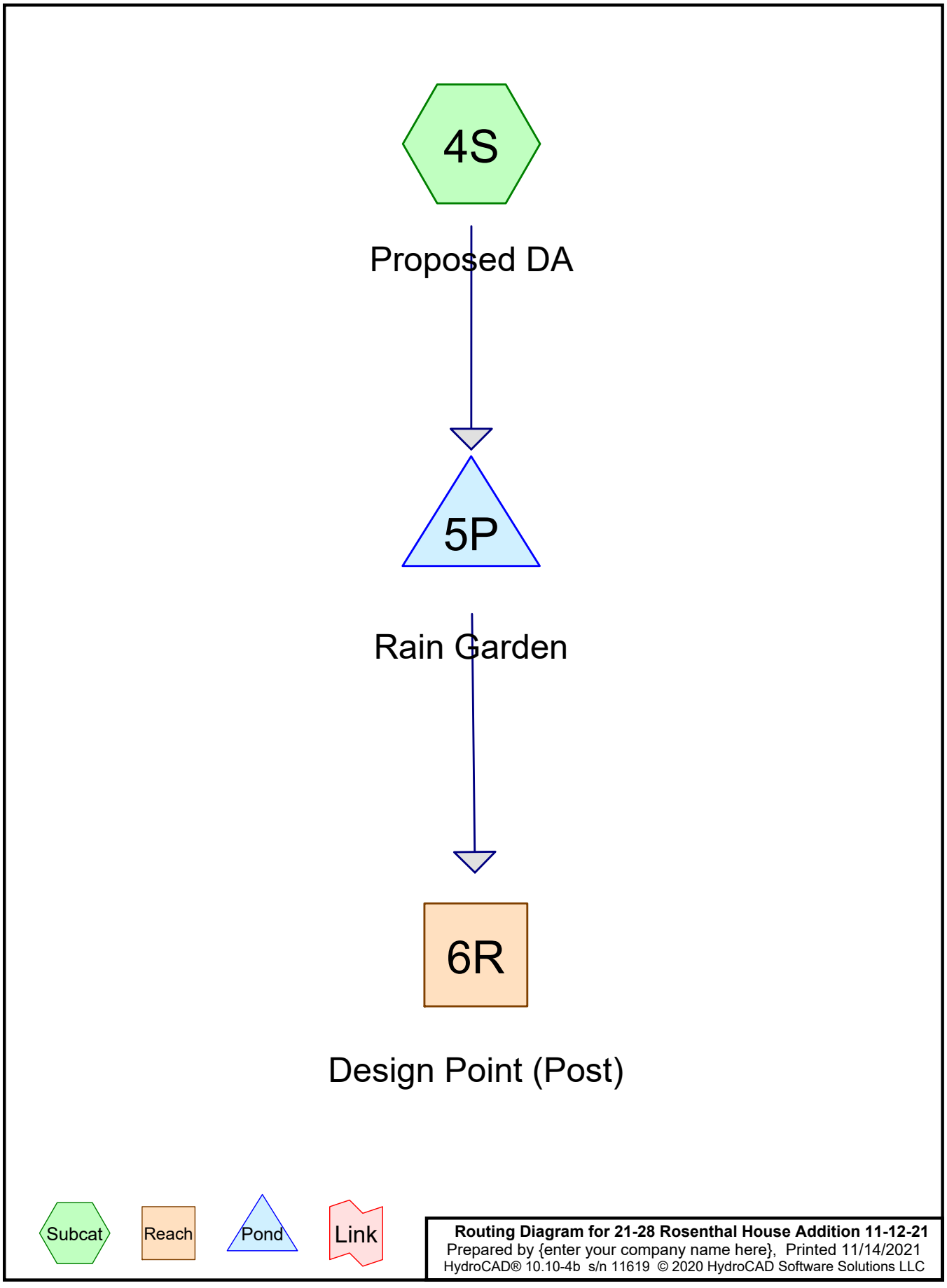


Routing Diagram for 21-28 Rosenthal House Addition 11-12-21
Prepared by {enter your company name here}, Printed 11/14/2021

Project Notes

Rainfall events imported from "NRCS-Rain.txt" for 7139 NY Westchester

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	NRCC 24-hr	D	Default	24.00	1	2.78	2
2	2-Year	NRCC 24-hr	D	Default	24.00	1	3.41	2
3	5-Year	NRCC 24-hr	D	Default	24.00	1	4.30	2
4	10-Year	NRCC 24-hr	D	Default	24.00	1	5.13	2
5	25-Year	NRCC 24-hr	D	Default	24.00	1	6.49	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.157	98	Paved parking, HSG C (4S)
0.157	**98**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.157	HSG C	4S
0.000	HSG D	
0.000	Other	
0.157		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.157	0.000	0.000	0.157	Paved parking	4S
0.000	**0.000**	**0.157**	**0.000**	**0.000**	**0.157**	**TOTAL AREA**	

Time span=1.00-24.00 hrs, dt=0.05 hrs, 461 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 4S: Proposed DA Runoff Area=0.157 ac 100.00% Impervious Runoff Depth>2.55"
Tc=5.0 min CN=98 Runoff=0.39 cfs 0.033 af

Reach 6R: Design Point (Post) Inflow=0.05 cfs 0.013 af
Outflow=0.05 cfs 0.013 af

Pond 5P: Rain Garden Peak Elev=476.04' Storage=0.021 af Inflow=0.39 cfs 0.033 af
Outflow=0.05 cfs 0.013 af

Total Runoff Area = 0.157 ac Runoff Volume = 0.033 af Average Runoff Depth = 2.55"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.157 ac

Summary for Subcatchment 4S: Proposed DA

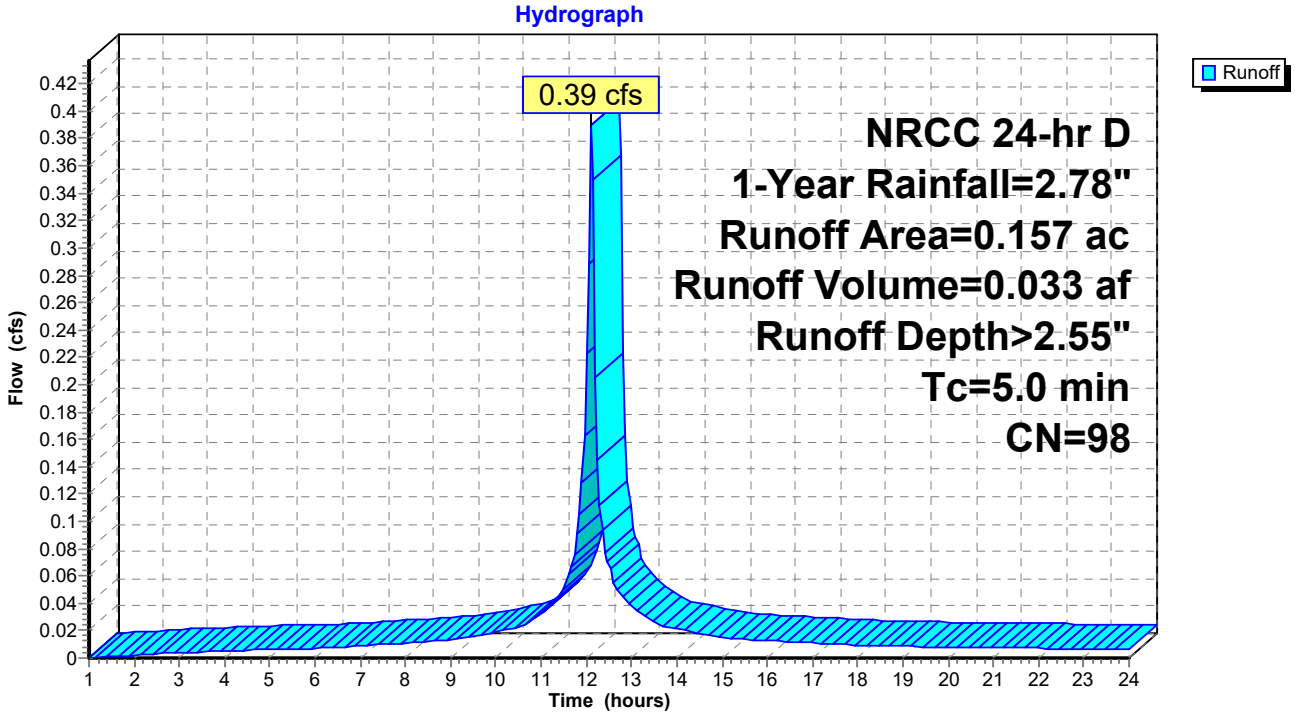
Runoff = 0.39 cfs @ 12.11 hrs, Volume= 0.033 af, Depth> 2.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 1-Year Rainfall=2.78"

Area (ac)	CN	Description
0.097	98	Paved parking, HSG C
0.060	98	Paved parking, HSG C
0.157	98	Weighted Average
0.157		100.00% Impervious Area

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

Subcatchment 4S: Proposed DA

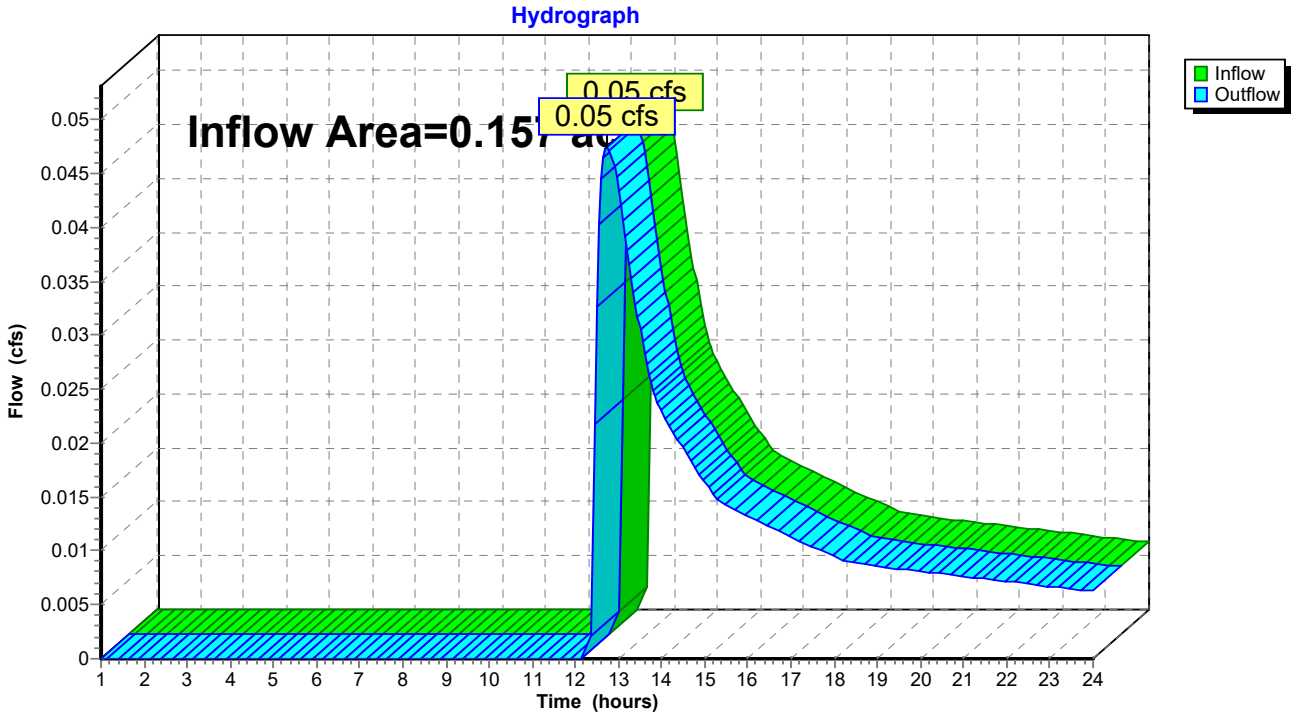


Summary for Reach 6R: Design Point (Post)

Inflow Area = 0.157 ac,100.00% Impervious, Inflow Depth > 1.00" for 1-Year event
Inflow = 0.05 cfs @ 12.74 hrs, Volume= 0.013 af
Outflow = 0.05 cfs @ 12.74 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs

Reach 6R: Design Point (Post)



Summary for Pond 5P: Rain Garden

Inflow Area = 0.157 ac,100.00% Impervious, Inflow Depth > 2.55" for 1-Year event
Inflow = 0.39 cfs @ 12.11 hrs, Volume= 0.033 af
Outflow = 0.05 cfs @ 12.74 hrs, Volume= 0.013 af, Atten= 88%, Lag= 38.0 min
Primary = 0.05 cfs @ 12.74 hrs, Volume= 0.013 af

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 476.04' @ 12.74 hrs Storage= 0.021 af

Plug-Flow detention time= 404.9 min calculated for 0.013 af (39% of inflow)
Center-of-Mass det. time= 214.6 min (977.3 - 762.6)

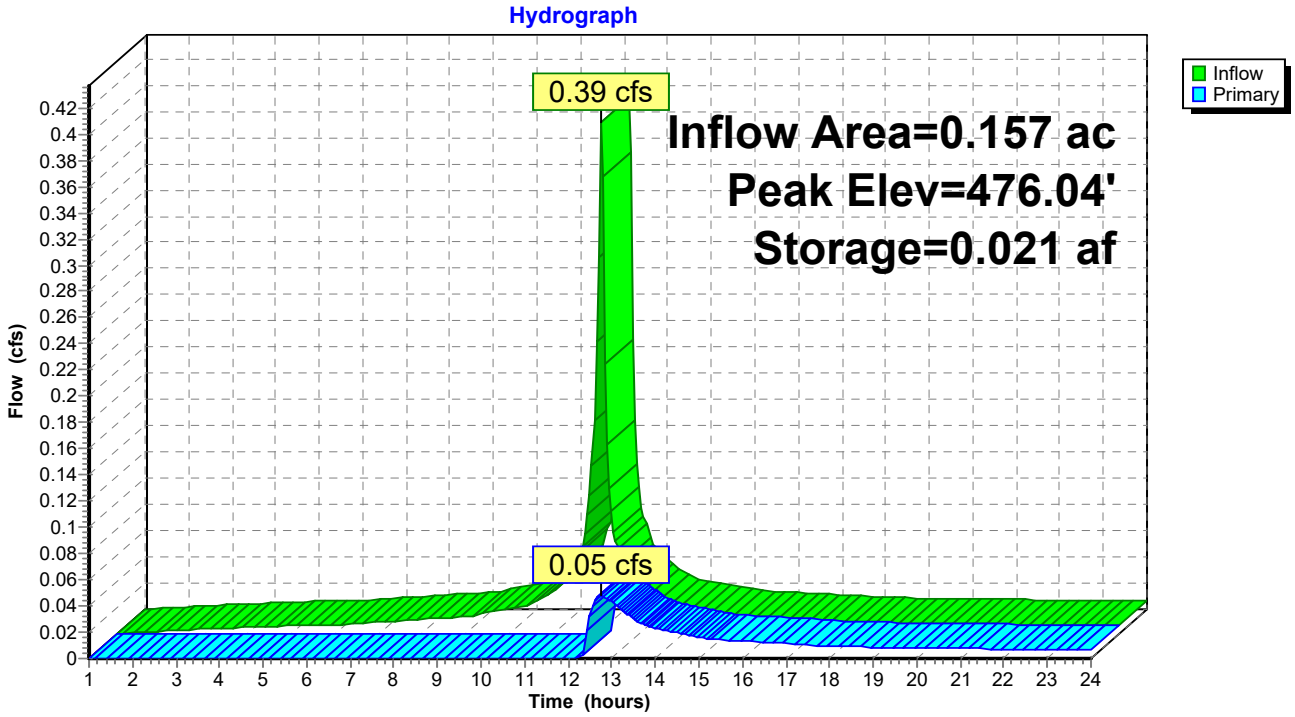
Volume	Invert	Avail.Storage	Storage Description
#1	473.00'	0.030 af	**Custom Stage Data** Listed below

Elevation (feet)	Cum.Store (acre-feet)
473.00	0.000
473.50	0.005
475.50	0.010
476.50	0.030

Device	Routing	Invert	Outlet Devices
#1	Primary	476.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.05 cfs @ 12.74 hrs HW=476.04' (Free Discharge)
↑—**1=Orifice/Grate** (Weir Controls 0.05 cfs @ 0.68 fps)

Pond 5P: Rain Garden



Time span=1.00-24.00 hrs, dt=0.05 hrs, 461 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 4S: Proposed DA Runoff Area=0.157 ac 100.00% Impervious Runoff Depth>3.17"
Tc=5.0 min CN=98 Runoff=0.48 cfs 0.042 af

Reach 6R: Design Point (Post) Inflow=0.20 cfs 0.021 af
Outflow=0.20 cfs 0.021 af

Pond 5P: Rain Garden Peak Elev=476.11' Storage=0.022 af Inflow=0.48 cfs 0.042 af
Outflow=0.20 cfs 0.021 af

Total Runoff Area = 0.157 ac Runoff Volume = 0.042 af Average Runoff Depth = 3.17"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.157 ac

Summary for Subcatchment 4S: Proposed DA

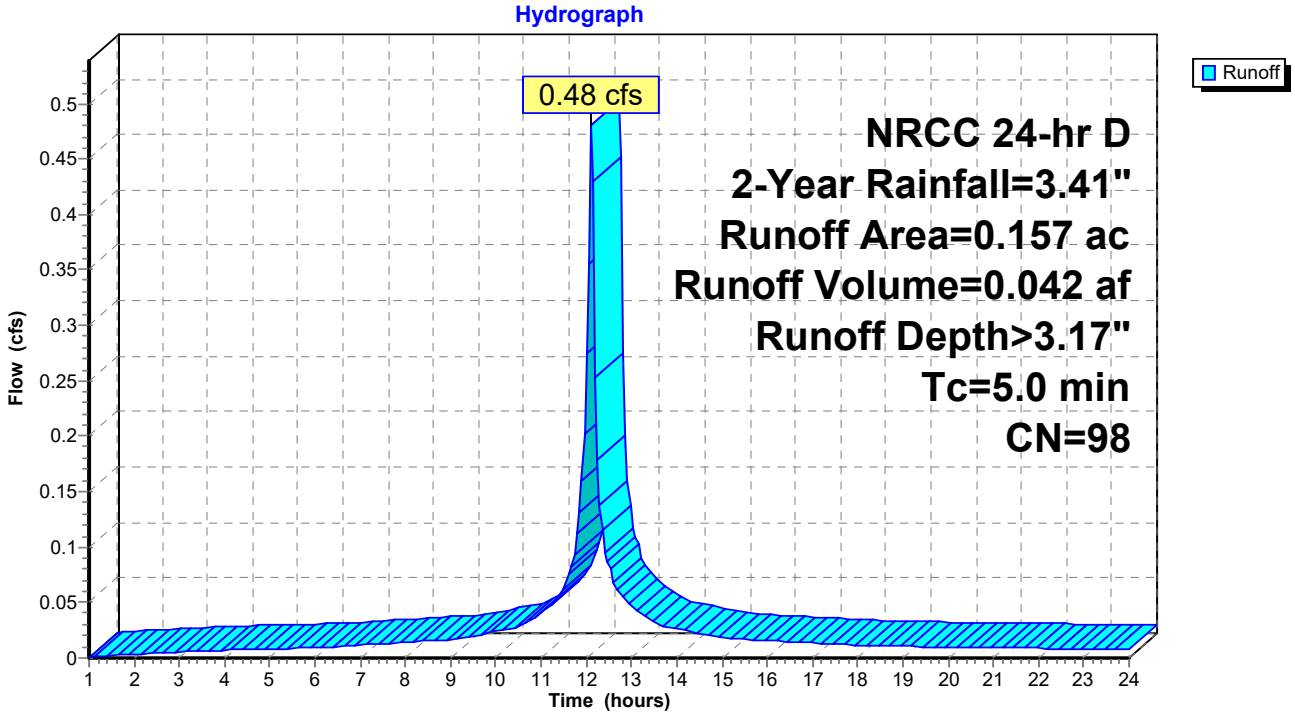
Runoff = 0.48 cfs @ 12.11 hrs, Volume= 0.042 af, Depth> 3.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 2-Year Rainfall=3.41"

Area (ac)	CN	Description
0.097	98	Paved parking, HSG C
0.060	98	Paved parking, HSG C
0.157	98	Weighted Average
0.157		100.00% Impervious Area

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

Subcatchment 4S: Proposed DA

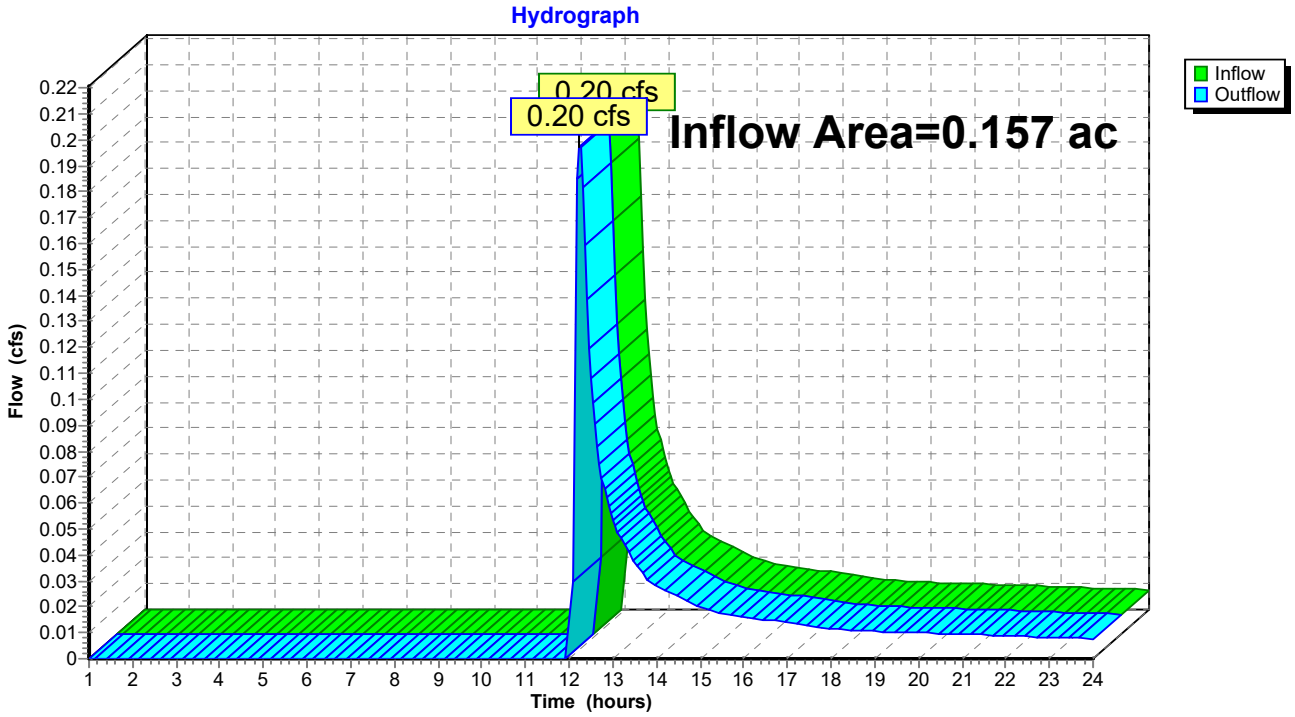


Summary for Reach 6R: Design Point (Post)

Inflow Area = 0.157 ac,100.00% Impervious, Inflow Depth > 1.63" for 2-Year event
Inflow = 0.20 cfs @ 12.25 hrs, Volume= 0.021 af
Outflow = 0.20 cfs @ 12.25 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs

Reach 6R: Design Point (Post)



Summary for Pond 5P: Rain Garden

Inflow Area = 0.157 ac,100.00% Impervious, Inflow Depth > 3.17" for 2-Year event
Inflow = 0.48 cfs @ 12.11 hrs, Volume= 0.042 af
Outflow = 0.20 cfs @ 12.25 hrs, Volume= 0.021 af, Atten= 59%, Lag= 8.1 min
Primary = 0.20 cfs @ 12.25 hrs, Volume= 0.021 af

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 476.11' @ 12.25 hrs Storage= 0.022 af

Plug-Flow detention time= 318.6 min calculated for 0.021 af (51% of inflow)
Center-of-Mass det. time= 162.3 min (919.7 - 757.4)

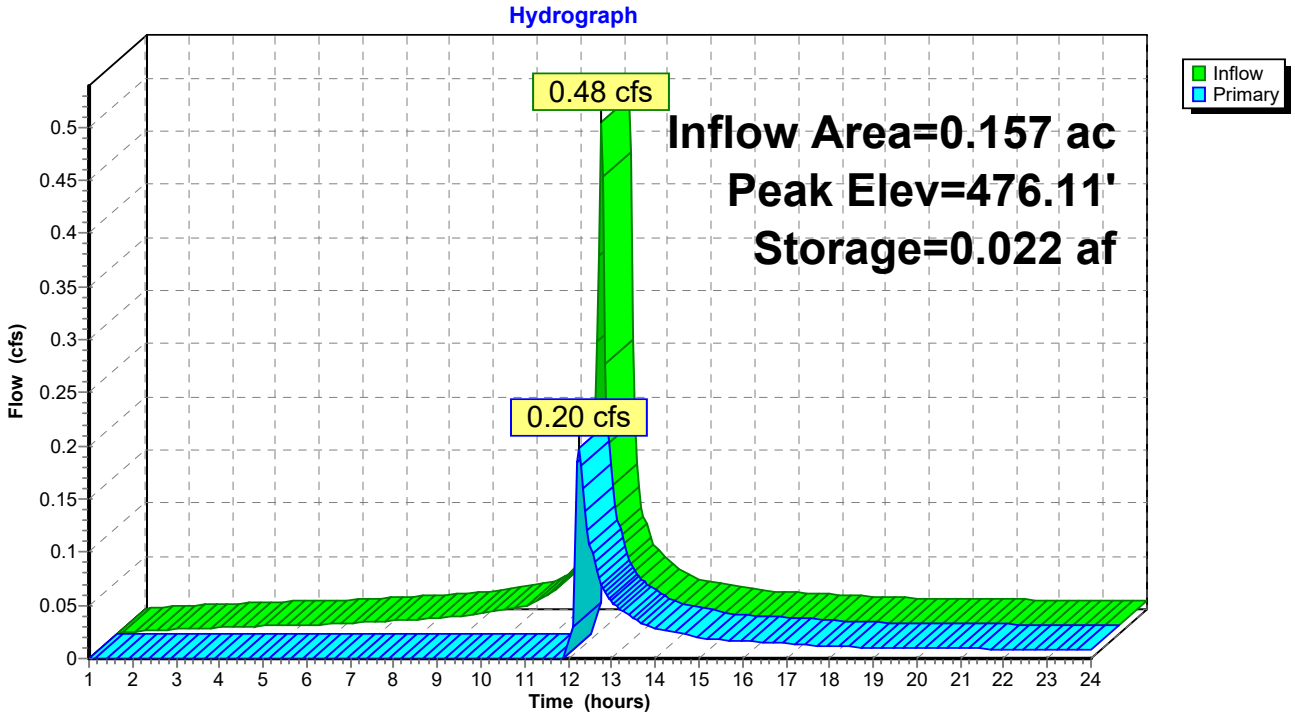
Volume	Invert	Avail.Storage	Storage Description
#1	473.00'	0.030 af	**Custom Stage Data** Listed below

Elevation (feet)	Cum.Store (acre-feet)
473.00	0.000
473.50	0.005
475.50	0.010
476.50	0.030

Device	Routing	Invert	Outlet Devices
#1	Primary	476.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.20 cfs @ 12.25 hrs HW=476.11' (Free Discharge)
↑**1=Orifice/Grate** (Weir Controls 0.20 cfs @ 1.10 fps)

Pond 5P: Rain Garden



Time span=1.00-24.00 hrs, dt=0.05 hrs, 461 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 4S: Proposed DA Runoff Area=0.157 ac 100.00% Impervious Runoff Depth>4.06"
Tc=5.0 min CN=98 Runoff=0.61 cfs 0.053 af

Reach 6R: Design Point (Post) Inflow=0.43 cfs 0.033 af
Outflow=0.43 cfs 0.033 af

Pond 5P: Rain Garden Peak Elev=476.21' Storage=0.024 af Inflow=0.61 cfs 0.053 af
Outflow=0.43 cfs 0.033 af

Total Runoff Area = 0.157 ac Runoff Volume = 0.053 af Average Runoff Depth = 4.06"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.157 ac

Summary for Subcatchment 4S: Proposed DA

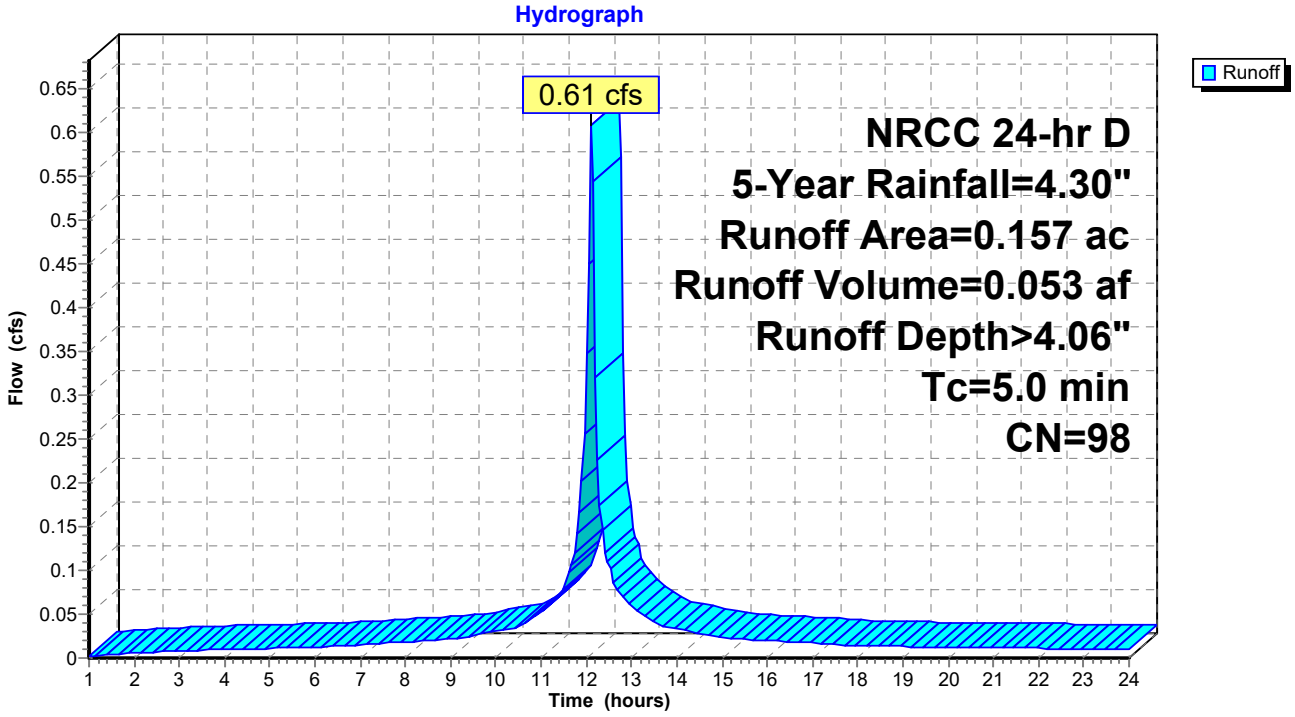
Runoff = 0.61 cfs @ 12.11 hrs, Volume= 0.053 af, Depth> 4.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 5-Year Rainfall=4.30"

Area (ac)	CN	Description
0.097	98	Paved parking, HSG C
0.060	98	Paved parking, HSG C
0.157	98	Weighted Average
0.157		100.00% Impervious Area

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

Subcatchment 4S: Proposed DA

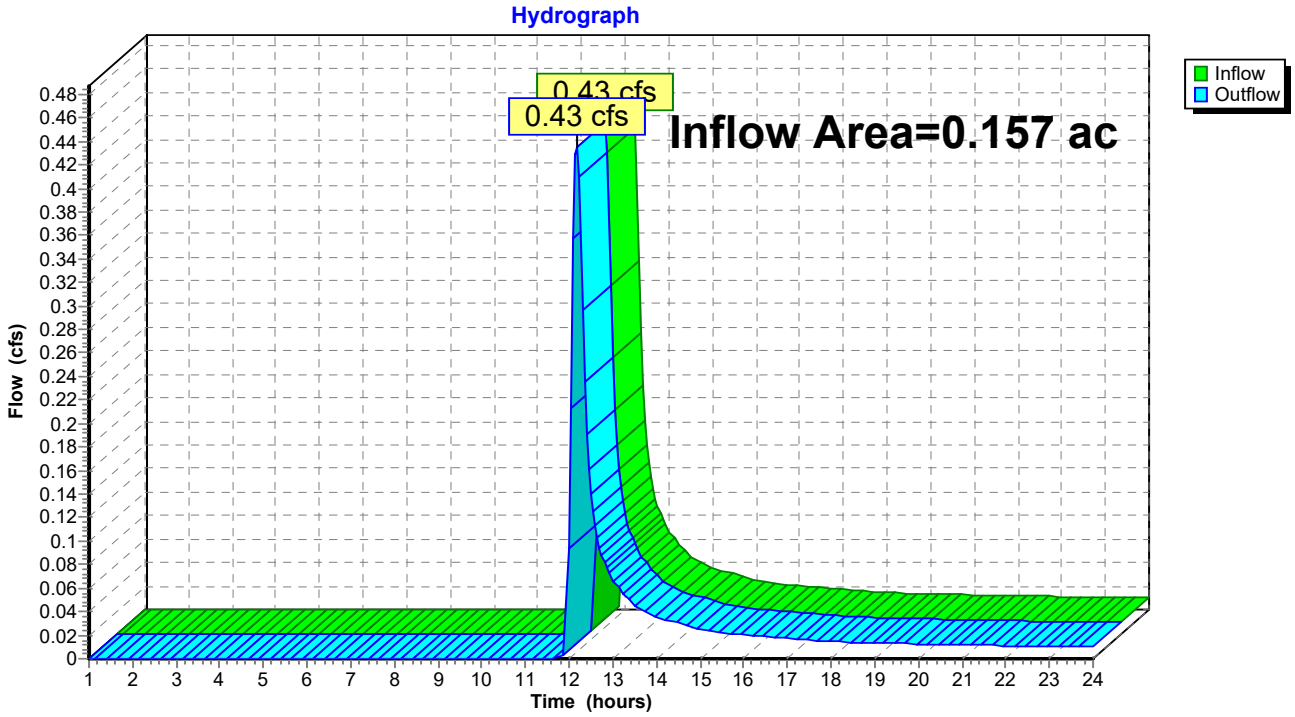


Summary for Reach 6R: Design Point (Post)

Inflow Area = 0.157 ac,100.00% Impervious, Inflow Depth > 2.51" for 5-Year event
Inflow = 0.43 cfs @ 12.18 hrs, Volume= 0.033 af
Outflow = 0.43 cfs @ 12.18 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs

Reach 6R: Design Point (Post)



Summary for Pond 5P: Rain Garden

Inflow Area = 0.157 ac,100.00% Impervious, Inflow Depth > 4.06" for 5-Year event
Inflow = 0.61 cfs @ 12.11 hrs, Volume= 0.053 af
Outflow = 0.43 cfs @ 12.18 hrs, Volume= 0.033 af, Atten= 29%, Lag= 3.9 min
Primary = 0.43 cfs @ 12.18 hrs, Volume= 0.033 af

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 476.21' @ 12.18 hrs Storage= 0.024 af

Plug-Flow detention time= 268.1 min calculated for 0.033 af (62% of inflow)
Center-of-Mass det. time= 132.6 min (884.8 - 752.3)

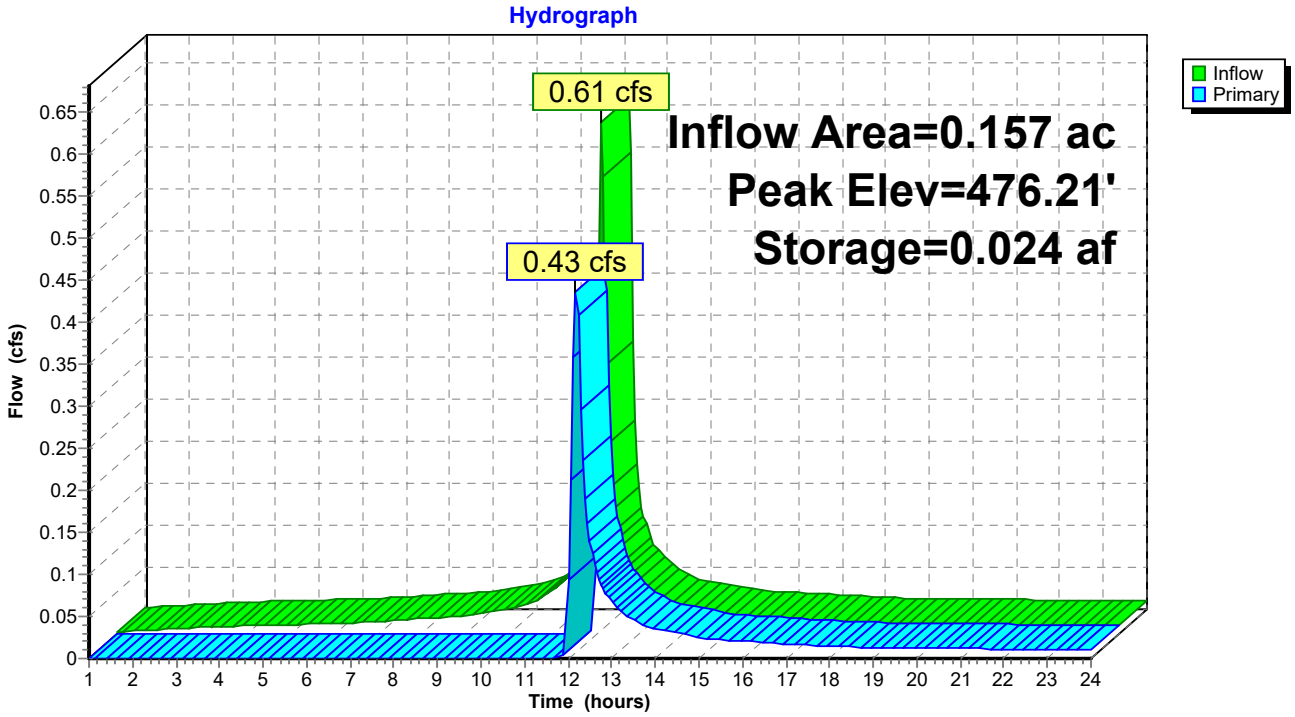
Volume	Invert	Avail.Storage	Storage Description
#1	473.00'	0.030 af	**Custom Stage Data** Listed below

Elevation (feet)	Cum.Store (acre-feet)
473.00	0.000
473.50	0.005
475.50	0.010
476.50	0.030

Device	Routing	Invert	Outlet Devices
#1	Primary	476.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.43 cfs @ 12.18 hrs HW=476.21' (Free Discharge)
1=Orifice/Grate (Orifice Controls 0.43 cfs @ 2.19 fps)

Pond 5P: Rain Garden



Time span=1.00-24.00 hrs, dt=0.05 hrs, 461 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 4S: Proposed DA Runoff Area=0.157 ac 100.00% Impervious Runoff Depth>4.89"
Tc=5.0 min CN=98 Runoff=0.73 cfs 0.064 af

Reach 6R: Design Point (Post) Inflow=0.49 cfs 0.044 af
Outflow=0.49 cfs 0.044 af

Pond 5P: Rain Garden Peak Elev=476.27' Storage=0.025 af Inflow=0.73 cfs 0.064 af
Outflow=0.49 cfs 0.044 af

Total Runoff Area = 0.157 ac Runoff Volume = 0.064 af Average Runoff Depth = 4.89"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.157 ac

Summary for Subcatchment 4S: Proposed DA

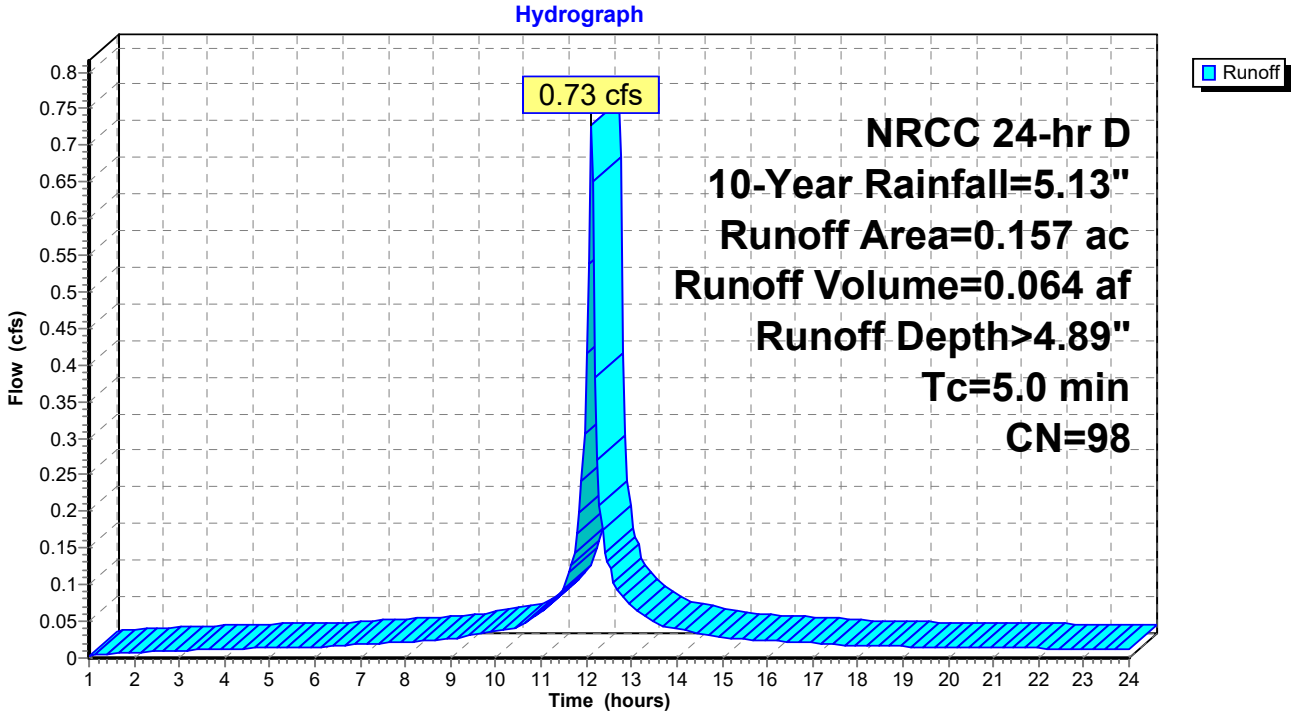
Runoff = 0.73 cfs @ 12.11 hrs, Volume= 0.064 af, Depth> 4.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 10-Year Rainfall=5.13"

Area (ac)	CN	Description
0.097	98	Paved parking, HSG C
0.060	98	Paved parking, HSG C
0.157	98	Weighted Average
0.157		100.00% Impervious Area

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

Subcatchment 4S: Proposed DA

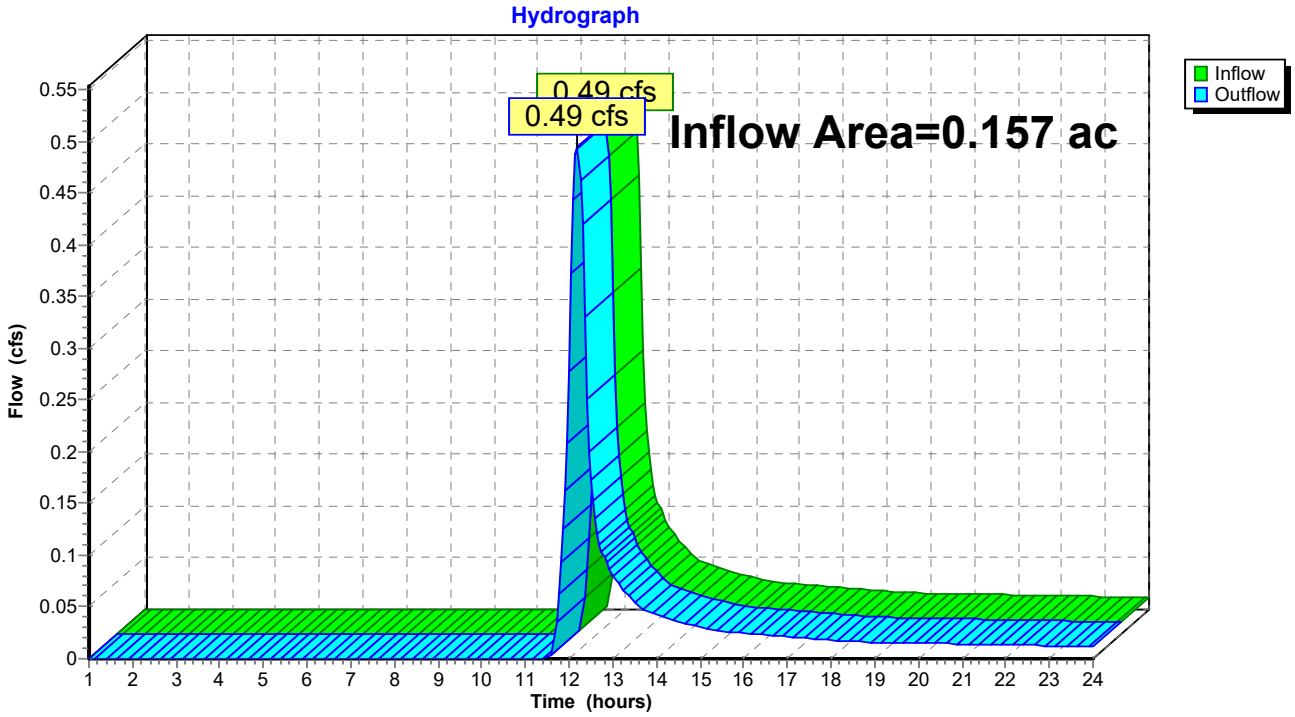


Summary for Reach 6R: Design Point (Post)

Inflow Area = 0.157 ac,100.00% Impervious, Inflow Depth > 3.33" for 10-Year event
Inflow = 0.49 cfs @ 12.18 hrs, Volume= 0.044 af
Outflow = 0.49 cfs @ 12.18 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs

Reach 6R: Design Point (Post)



Summary for Pond 5P: Rain Garden

Inflow Area = 0.157 ac,100.00% Impervious, Inflow Depth > 4.89" for 10-Year event
Inflow = 0.73 cfs @ 12.11 hrs, Volume= 0.064 af
Outflow = 0.49 cfs @ 12.18 hrs, Volume= 0.044 af, Atten= 32%, Lag= 4.3 min
Primary = 0.49 cfs @ 12.18 hrs, Volume= 0.044 af

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 476.27' @ 12.18 hrs Storage= 0.025 af

Plug-Flow detention time= 240.9 min calculated for 0.044 af (68% of inflow)
Center-of-Mass det. time= 118.8 min (867.8 - 749.0)

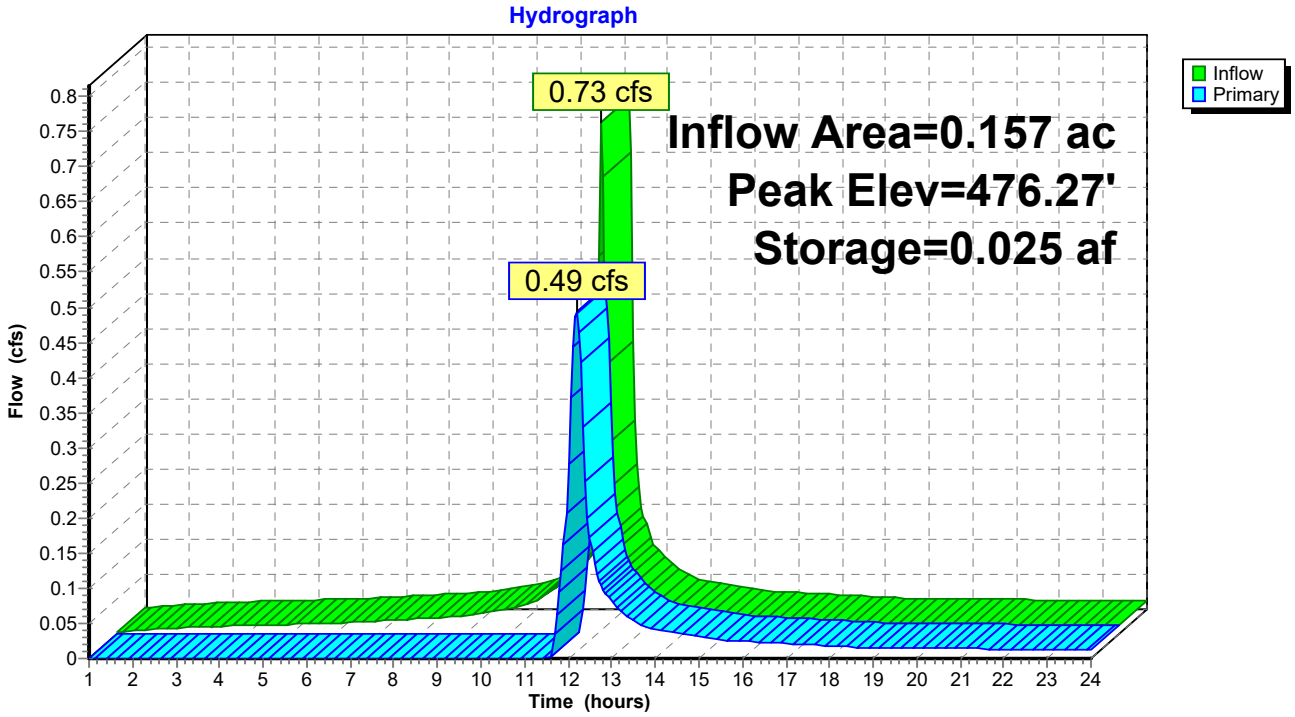
Volume	Invert	Avail.Storage	Storage Description
#1	473.00'	0.030 af	**Custom Stage Data** Listed below

Elevation (feet)	Cum.Store (acre-feet)
473.00	0.000
473.50	0.005
475.50	0.010
476.50	0.030

Device	Routing	Invert	Outlet Devices
#1	Primary	476.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.49 cfs @ 12.18 hrs HW=476.27' (Free Discharge)
↑**1=Orifice/Grate** (Orifice Controls 0.49 cfs @ 2.50 fps)

Pond 5P: Rain Garden



Time span=1.00-24.00 hrs, dt=0.05 hrs, 461 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 4S: Proposed DA Runoff Area=0.157 ac 100.00% Impervious Runoff Depth>6.24"
Tc=5.0 min CN=98 Runoff=0.92 cfs 0.082 af

Reach 6R: Design Point (Post) Inflow=0.58 cfs 0.061 af
Outflow=0.58 cfs 0.061 af

Pond 5P: Rain Garden Peak Elev=476.37' Storage=0.027 af Inflow=0.92 cfs 0.082 af
Outflow=0.58 cfs 0.061 af

Total Runoff Area = 0.157 ac Runoff Volume = 0.082 af Average Runoff Depth = 6.24"
0.00% Pervious = 0.000 ac 100.00% Impervious = 0.157 ac

Summary for Subcatchment 4S: Proposed DA

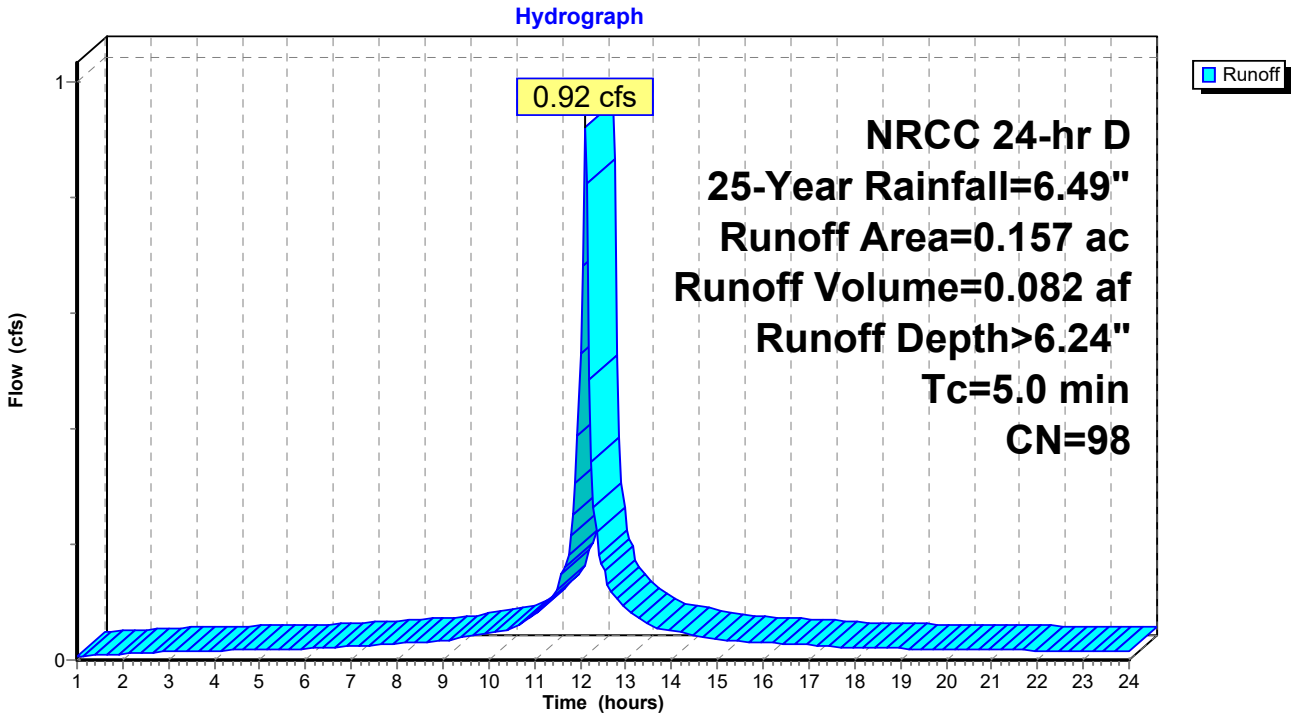
Runoff = 0.92 cfs @ 12.11 hrs, Volume= 0.082 af, Depth> 6.24"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 25-Year Rainfall=6.49"

Area (ac)	CN	Description
0.097	98	Paved parking, HSG C
0.060	98	Paved parking, HSG C
0.157	98	Weighted Average
0.157		100.00% Impervious Area

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

Subcatchment 4S: Proposed DA

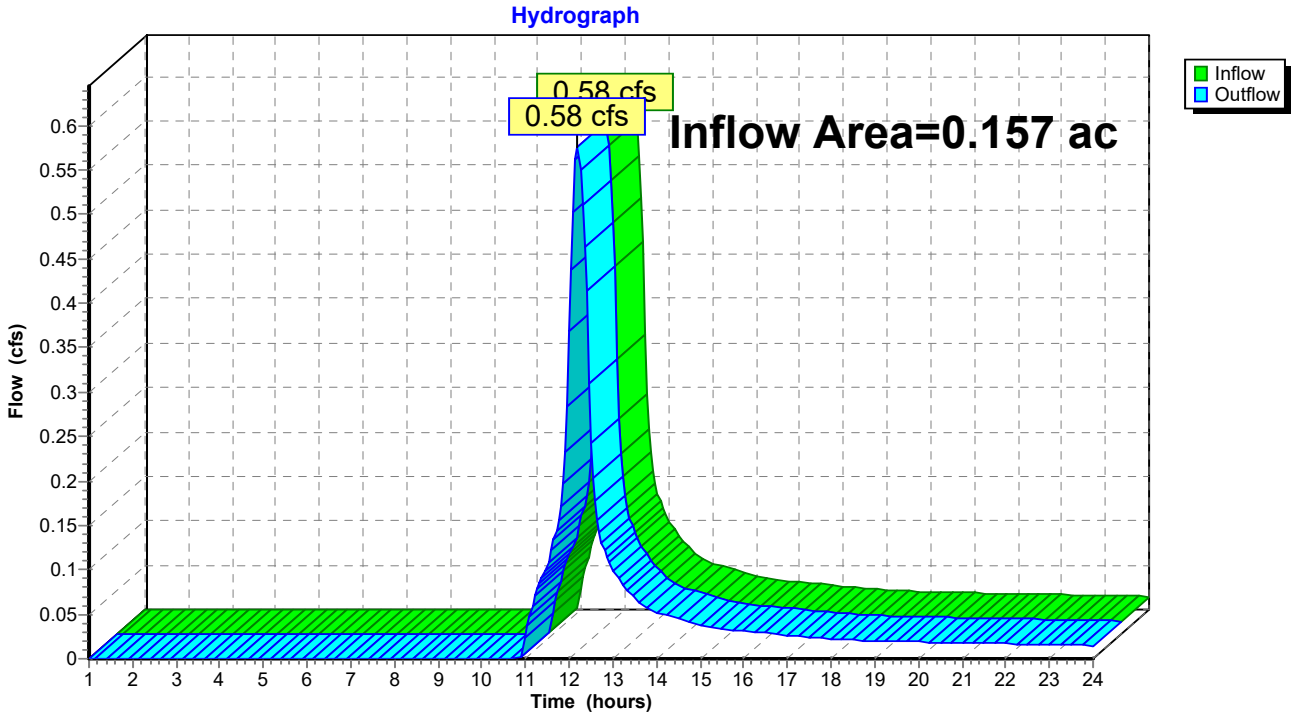


Summary for Reach 6R: Design Point (Post)

Inflow Area = 0.157 ac,100.00% Impervious, Inflow Depth > 4.68" for 25-Year event
Inflow = 0.58 cfs @ 12.19 hrs, Volume= 0.061 af
Outflow = 0.58 cfs @ 12.19 hrs, Volume= 0.061 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs

Reach 6R: Design Point (Post)



Summary for Pond 5P: Rain Garden

Inflow Area = 0.157 ac,100.00% Impervious, Inflow Depth > 6.24" for 25-Year event
Inflow = 0.92 cfs @ 12.11 hrs, Volume= 0.082 af
Outflow = 0.58 cfs @ 12.19 hrs, Volume= 0.061 af, Atten= 38%, Lag= 4.9 min
Primary = 0.58 cfs @ 12.19 hrs, Volume= 0.061 af

Routing by Stor-Ind method, Time Span= 1.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 476.37' @ 12.19 hrs Storage= 0.027 af

Plug-Flow detention time= 213.0 min calculated for 0.061 af (75% of inflow)
Center-of-Mass det. time= 104.9 min (850.2 - 745.2)

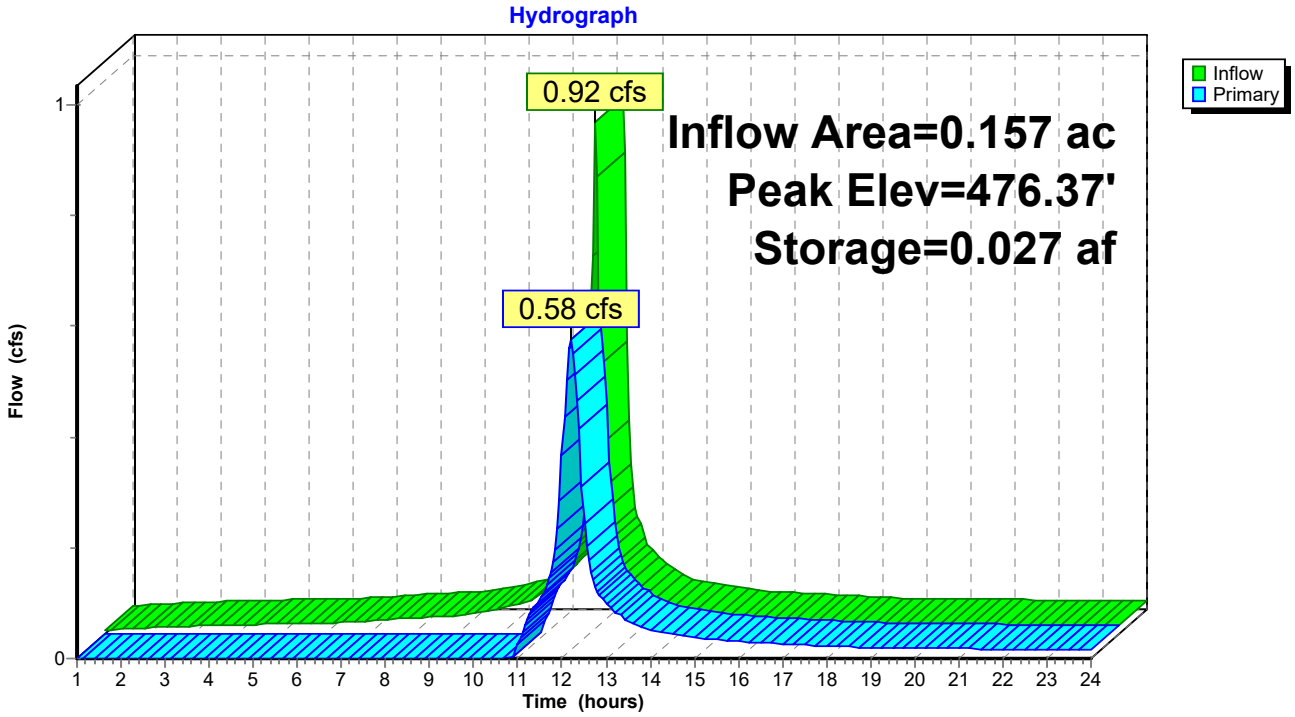
Volume	Invert	Avail.Storage	Storage Description
#1	473.00'	0.030 af	**Custom Stage Data** Listed below

Elevation (feet)	Cum.Store (acre-feet)
473.00	0.000
473.50	0.005
475.50	0.010
476.50	0.030

Device	Routing	Invert	Outlet Devices
#1	Primary	476.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=0.57 cfs @ 12.19 hrs HW=476.37' (Free Discharge)
↑**1=Orifice/Grate** (Orifice Controls 0.57 cfs @ 2.92 fps)

Pond 5P: Rain Garden



Events for Subcatchment 4S: Proposed DA

Event	Rainfall (inches)	Runoff (cfs)	Volume (acre-feet)	Depth (inches)
1-Year	2.78	0.39	0.033	2.55
2-Year	3.41	0.48	0.042	3.17
5-Year	4.30	0.61	0.053	4.06
10-Year	5.13	0.73	0.064	4.89
25-Year	**6.49**	**0.92**	**0.082**	**6.24**

Events for Reach 6R: Design Point (Post)

Event	Inflow (cfs)	Outflow (cfs)	Elevation (feet)	Storage (cubic-feet)
1-Year	0.05	0.05	**0.00**	**0**
2-Year	0.20	0.20	0.00	0
5-Year	0.43	0.43	0.00	0
10-Year	0.49	0.49	0.00	0
25-Year	**0.58**	**0.58**	0.00	0

Events for Pond 5P: Rain Garden

Event	Inflow (cfs)	Primary (cfs)	Elevation (feet)	Storage (acre-feet)
1-Year	0.39	0.05	476.04	0.021
2-Year	0.48	0.20	476.11	0.022
5-Year	0.61	0.43	476.21	0.024
10-Year	0.73	0.49	476.27	0.025
25-Year	**0.92**	**0.58**	**476.37**	**0.027**

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APPENDIX F

Hydraulic Storm Sewer Capacity Analysis

Channel Report

Hydraflow Express Extension for Autodesk® Civil 3D® by Autodesk, Inc. Thursday, Oct 14 2021

21-28 Rosenthal Residence Addition

Circular

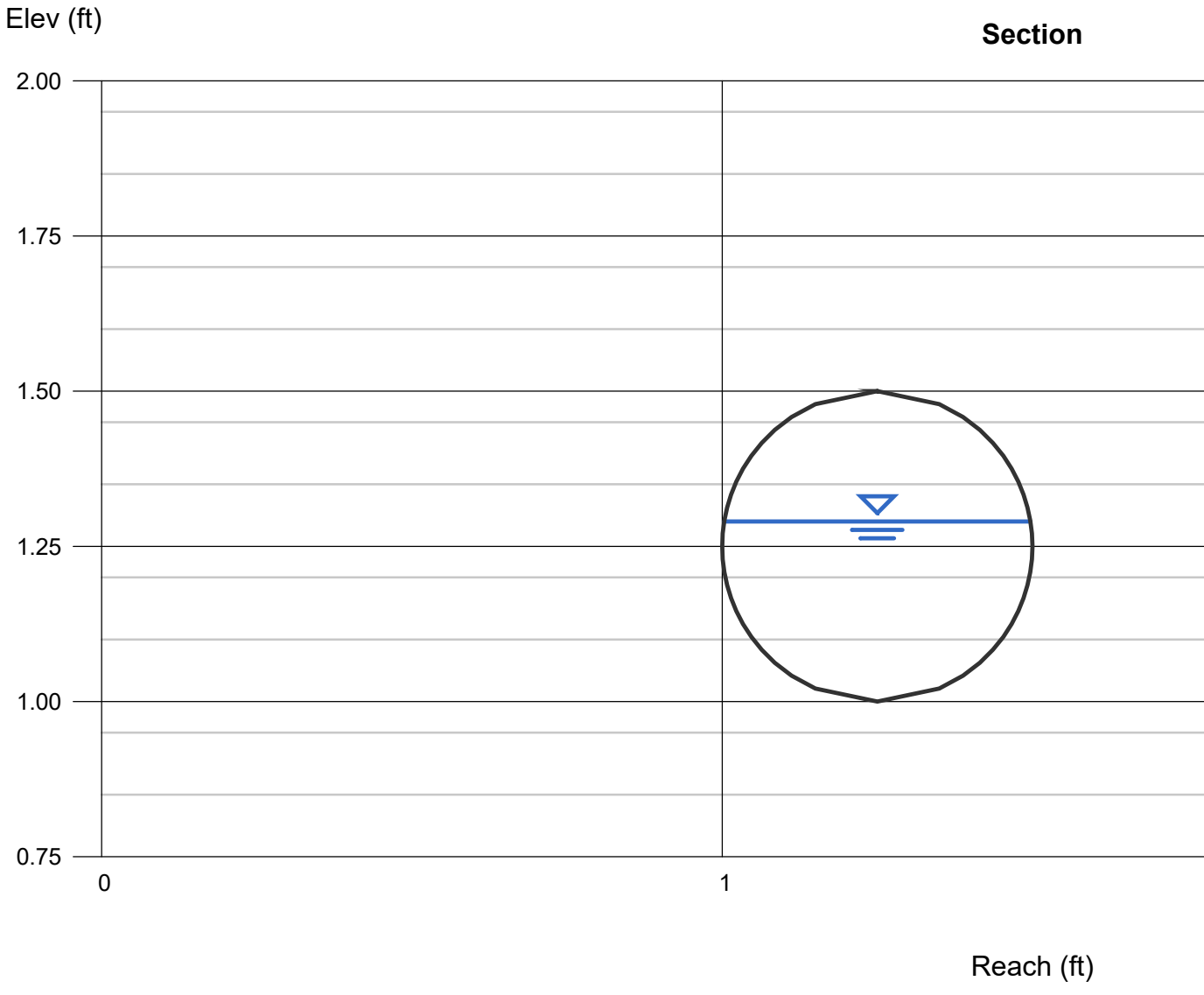
Diameter (ft)	= 0.50
Invert Elev (ft)	= 1.00
Slope (%)	= 2.60
N-Value	= 0.012

Calculations

Compute by:	Known Q
Known Q (cfs)	= 0.60

Highlighted

Depth (ft)	= 0.29
Q (cfs)	= 0.600
Area (sqft)	= 0.12
Velocity (ft/s)	= 5.06
Wetted Perim (ft)	= 0.87
Crit Depth, Yc (ft)	= 0.40
Top Width (ft)	= 0.49
EGL (ft)	= 0.69



APPENDIX G

Stormwater Management Practices Design:

Rain Garden Stormwater Management System Volume Calculations

DA:	RAIN GARDEN	WQv (cf)	Nsm	Dsm (ft)	Vsm	Ndl	Ddl (ft)	Vdl	Dp (ft)	Af Required (sf)	Af Provided (sf)	Volume Provided (cf)	RRv provided		Total Area(ac):	Impervious Area(ac):
1	1	914	0.2	2	433.2	0.4	0.5	216.6	0.5	830.91	1083	1191.3	476.52	0.011	0.1465	0.1465

APPENDIX H

Standard and Specifications for Erosion and Sediment Control Measures

STANDARD AND SPECIFICATIONS FOR CONCRETE TRUCK WASHOUT

Definition & Scope

A temporary excavated or above ground lined constructed pit where concrete truck mixers and equipment can be washed after their loads have been discharged, to prevent highly alkaline runoff from entering storm drainage systems or leaching into soil.

Conditions Where Practice Applies

Washout facilities shall be provided for every project where concrete will be poured or otherwise formed on the site. This facility will receive highly alkaline wash water from the cleaning of chutes, mixers, hoppers, vibrators, placing equipment, trowels, and screeds. Under no circumstances will wash water from these operations be allowed to infiltrate into the soil or enter surface waters.

Design Criteria

Capacity: The washout facility should be sized to contain solids, wash water, and rainfall and sized to allow for the evaporation of the wash water and rainfall. Wash water shall be estimated at 7 gallons per chute and 50 gallons per hopper of the concrete pump truck and/or discharging drum. The minimum size shall be 8 feet by 8 feet at the bottom and 2 feet deep. If excavated, the side slopes shall be 2 horizontal to 1 vertical.

Location: Locate the facility a minimum of 100 feet from drainage swales, storm drain inlets, wetlands, streams and other surface waters. Prevent surface water from entering the structure except for the access road. Provide appropriate access with a gravel access road sloped down to the structure. Signs shall be placed to direct drivers to the facility after their load is discharged.

Liner: All washout facilities will be lined to prevent leaching of liquids into the ground. The liner shall be plastic sheeting with a minimum thickness of 10 mils with no holes or tears, and anchored beyond the top of the pit with an earthen berm, sand bags, stone, or other structural appurtenance except at the access point.

If pre-fabricated washouts are used they must ensure the capture and containment of the concrete wash and be sized based on the expected frequency of concrete pours. They shall be sited as noted in the location criteria.

Maintenance

- All concrete washout facilities shall be inspected daily. Damaged or leaking facilities shall be deactivated and repaired or replaced immediately. Excess rainwater that has accumulated over hardened concrete should be pumped to a stabilized area, such as a grass filter strip.
- Accumulated hardened material shall be removed when 75% of the storage capacity of the structure is filled. Any excess wash water shall be pumped into a containment vessel and properly disposed of off site.
- Dispose of the hardened material off-site in a construction/demolition landfill. On-site disposal may be allowed if this has been approved and accepted as part of the projects SWPPP. In that case, the material should be recycled as specified, or buried and covered with a minimum of 2 feet of clean compacted earthfill that is permanently stabilized to prevent erosion.
- The plastic liner shall be replaced with each cleaning of the washout facility.
- Inspect the project site frequently to ensure that no concrete discharges are taking place in non-designated areas.

STANDARD AND SPECIFICATIONS FOR DUST CONTROL

Definition & Scope

The control of dust resulting from land-disturbing activities, to prevent surface and air movement of dust from disturbed soil surfaces that may cause off-site damage, health hazards, and traffic safety problems.

Conditions Where Practice Applies

On construction roads, access points, and other disturbed areas subject to surface dust movement and dust blowing where off-site damage may occur if dust is not controlled.

Design Criteria

Construction operations should be scheduled to minimize the amount of area disturbed at one time. Buffer areas of vegetation should be left where practical. Temporary or permanent stabilization measures shall be installed. No specific design criteria is given; see construction specifications below for common methods of dust control.

Water quality must be considered when materials are selected for dust control. Where there is a potential for the material to wash off to a stream, ingredient information must be provided to the NYSDEC.

No polymer application shall take place without written approval from the NYSDEC.

Construction Specifications

A. **Non-driving Areas** – These areas use products and materials applied or placed on soil surfaces to prevent airborne migration of soil particles.

Vegetative Cover – For disturbed areas not subject to traffic, vegetation provides the most practical method of dust control (see Section 3).

Mulch (including gravel mulch) – Mulch offers a fast effective means of controlling dust. This can also include rolled erosion control blankets.

Spray adhesives – These are products generally composed of polymers in a liquid or solid form that are mixed with water to form an emulsion that is sprayed on the soil surface with typical hydroseeding equipment. The mixing ratios and application rates will be in accordance with the manufacturer's recommendations for the specific soils on the site. In no case should the application of these adhesives be made on wet soils or if there is a probability of precipitation within 48 hours of its proposed use. Material Safety Data Sheets will be provided to all applicators and others working with the material.

B. **Driving Areas** – These areas utilize water, polymer emulsions, and barriers to prevent dust movement from the traffic surface into the air.

Sprinkling – The site may be sprayed with water until the surface is wet. This is especially effective on haul roads and access route to provide short term limited dust control.

Polymer Additives – These polymers are mixed with water and applied to the driving surface by a water truck with a gravity feed drip bar, spray bar or automated distributor truck. The mixing ratios and application rates will be in accordance with the manufacturer's recommendations. Incorporation of the emulsion into the soil will be done to the appropriate depth based on expected traffic. Compaction after incorporation will be by vibratory roller to a minimum of 95%. The prepared surface shall be moist and no application of the polymer will be made if there is a probability of precipitation within 48 hours of its proposed use. Material Safety Data Sheets will be provided to all applicators working with the material.

Barriers – Woven geo-textiles can be placed on the driving surface to effectively reduce dust throw and particle migration on haul roads. Stone can also be used for construction roads for effective dust control.

Windbreak – A silt fence or similar barrier can control air currents at intervals equal to ten times the barrier height. Preserve existing wind barrier vegetation as much as practical.

Maintenance

Maintain dust control measures through dry weather periods until all disturbed areas are stabilized.

STANDARD AND SPECIFICATIONS FOR PROTECTING VEGETATION DURING CONSTRUCTION

Definition & Scope

The protection of trees, shrubs, ground cover and other vegetation from damage by construction equipment. In order to preserve existing vegetation determined to be important for soil erosion control, water quality protection, shade, screening, buffers, wildlife habitat, wetland protection, and other values.

Conditions Where Practices Applies

On planned construction sites where valued vegetation exists and needs to be preserved.

Design Criteria

1. Planning Considerations

   A. Inventory:

      1) Property boundaries, topography, vegetation and soils information should be gathered. Identify potentially high erosion areas, areas with tree windthrow potential, etc. A vegetative cover type map should be made on a copy of a topographic map which shows other natural and manmade features. Vegetation that is desirable to preserve because of its value for screening, shade, critical erosion control, endangered species, aesthetics, etc., should be identified and marked on the map.

      2) Based upon this data, general statements should be prepared about the present condition, potential problem areas, and unique features of the property.

   B. Planning:

      1) After engineering plans (plot maps) are prepared, another field review should take place and recommendations made for the vegetation to be saved. Minor adjustments in location of roads, dwellings, and utilities may be needed. Construction on steep slopes, erodible soils, wetlands, and streams should be avoided. Clearing limits should be delineated (See "Determine Limits of Clearing and Grading" on page 2.2).

      2) Areas to be seeded and planted should be identified. Remaining vegetation should blend with their surroundings and/or provide special function such as a filter strip, buffer zone, or screen.

      3) Trees and shrubs of special seasonal interest, such as flowering dogwood, red maple, striped maple, serviceberry, or shadbush, and valuable potential shade trees should be identified and marked for special protective treatment as appropriate.

      4) Trees to be cut should be marked on the plans. If timber can be removed for salable products, a forester should be consulted for marketing advice.

      5) Trees that may become a hazard to people, personal property, or utilities should be removed. These include trees that are weak-wooded, disease-prone, subject to windthrow, or those that have severely damaged root systems.

      6) The vigor of remaining trees may be improved by a selective thinning. A forester should be consulted for implementing this practice.

2. Measures to Protect Vegetation

   A. Limit soil placement over existing tree and shrub roots to a maximum of 3 inches. Soils with loamy texture and good structure should be used.

   B. Use retaining walls and terraces to protect roots of trees and shrubs when grades are lowered. Lowered grades should start no closer than the dripline of the tree. For narrow-canopied trees and shrubs, the stem diameter in inches is converted to feet and doubled, such that a 10 inch tree should be protected to 20 feet.

   C. Trenching across tree root systems should be the same minimum distance from the trunk, as in "B". Tunnels under root systems for underground utilities should start 18 inches or deeper below the normal ground surface. Tree roots which must be severed should be cut clean. Backfill material that will be in contact with the roots should be topsoil or a prepared planting soil mixture.

   D. Construct sturdy fences, or barriers, of wood, steel, or other protective material around valuable

vegetation for protection from construction equipment. Place barriers far enough away from trees, but not less than the specifications in "B", so that tall equipment such as backhoes and dump trucks do not contact tree branches.

E. Construction limits should be identified and clearly marked to exclude equipment.

F. Avoid spills of oil/gas and other contaminants.

G. Obstructive and broken branches should be pruned properly. The branch collar on all branches whether living or dead should not be damaged. The 3 or 4 cut method should be used on all branches larger than two inches at the cut. First cut about one-third the way through the underside of the limb (about 6-12 inches from the tree trunk). Then (approximately an inch further out) make a second cut through the limb from the upper side. When the branch is removed, there is no splintering of the main tree trunk. Remove the stub. If the branch is larger than 5-6 inches in diameter, use the four cut system. Cuts 1 and 2 remain the same and cut 3 should be from the underside of the limb, on the outside of the branch collar. Cut 4 should be from the top and in alignment with the 3rd cut. Cut 3 should be 1/4 to 1/3 the way through the limb. This will prevent the bark from peeling down the trunk. Do not paint the cut surface.

H. Penalties for damage to valuable trees, shrubs, and herbaceous plants should be clearly spelled out in the contract.

PROTECTING TREES IN HEAVY USE AREAS

The compaction of soil over the roots of trees and shrubs by the trampling of recreationists, vehicular traffic, etc., reduces oxygen, water, and nutrient uptake by feeder roots. This weakens and may eventually kill the plants. Table 2.6 rates the “Susceptibility of Tree Species to Compaction.”

Where heavy compaction is anticipated, apply and maintain a 3 to 4 inch layer of undecayed wood chips or 2 inches of No. 2 washed, crushed gravel. In addition, use of a wooden or plastic mat may be used to lessen compaction, if applicable.

Table 2.6
Susceptibility of Tree Species to Compaction[1]

Resistant:

Box elder……	*Acer negundo*	Willows……	*Salix spp.*
Green ash……..	*Fraxinus pennsylvanica*	Honey locust……	*Gleditsia triacanthos*
Red elm……..	*Ulmus rubra*	Eastern cottonwood…….	*Populus deltoides*
Hawthornes……	*Crataegus spp.*	Swamp white oak…….	*Quercus bicolor*
Bur oak……..	*Quercus macrocarpa*	Hophornbeam……	*Ostrya virginiana*
Northern white cedar….	*Thuja occidentalis*		

Intermediate:

Red maple…….	*Acer rubrum*	Sweetgum…….	*Liquidambar styraciflua*
Silver maple……..	*Acer saccharinum*	Norway maple…….	*Acer platanoides*
Hackberry…….	*Celtis occidentalis*	Shagbark hickory…….	*Carya ovata*
Black gum……	*Nyssa sylvatica*	London plane……..	*Platanus x hybrida*
Red oak……	*Quercus rubra*	Pin oak…….	*Quercus palustris*
Basswood…….	*Tilia americana*		

Susceptible:

Sugar maple…….	*Acer saccharum*	Austrian Pine……	*Pinus nigra*
White pine……	*Pinus strobus*	White ash…….	*Fraxinus americana*
Blue spruce……..	*Picea pungens*	Paper birch……..	*Betula papyrifera*
White oak……	*Quercus alba*	Moutain ash…….	*Sorbus aucuparia*
Red pine……..	*Pinus resinosa*	Japanese maple……	*Acer palmatum*

[1] If a tree species does not appear on the list, insufficient information is available to rate it for this purpose.

STANDARD AND SPECIFICATIONS FOR SITE POLLUTION PREVENTION

Definition & Scope

A collection of management practices intended to control non-sediment pollutants associated with construction activities to prevent the generation of pollutants due to improper handling, storage, and spills and prevent the movement of toxic substances from the site into surface waters.

Conditions Where Practice Applies

On all construction sites where the earth disturbance exceeds 5,000 square feet, and involves the use of fertilizers, pesticides, petroleum based chemicals, fuels and lubricants, as well as sealers, paints, cleared woody vegetation, garbage, and sanitary wastes.

Design Criteria

The variety of pollutants on a particular site and the severity of their impacts depend on factors such as the nature of the construction activity, the physical characteristics of the construction site, and the proximity of water bodies and conveyances to the pollutant source.

1. All state and federal regulations shall be followed for the storage, handling, application, usage, and disposal of pesticides, fertilizers, and petroleum products.

2. Vehicle and construction equipment staging and maintenance areas will be located away from all drainage ways with their parking areas graded so the runoff from these areas is collected, contained and treated prior to discharge from the site.

3. Provide sanitary facilities for on-site personnel.

4. Store, cover, and isolate construction materials including topsoil, and chemicals, to prevent runoff of pollutants and contamination of groundwater and surface waters.

5. Develop and implement a spill prevention and control plan. The plan should include NYSDEC's spill reporting and initial notification requirements.

6. Provide adequate disposal for solid waste including woody debris, stumps, and other construction waste and include these methods and directions in the construction details on the site construction drawings. Fill, woody debris, stumps and construction waste shall not be placed in regulated wetlands, streams or other surface waters.

7. Distribute or post informational material regarding proper handling, spill response, spill kit location, and emergency actions to be taken, to all construction personnel.

8. Refueling equipment shall be located at least 100 feet from all wetlands, streams and other surface waters.

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[3]	Light Duty[1] Roads Grade Subgrade	Heavy Duty[2] 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	-

[1]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.

[2]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.

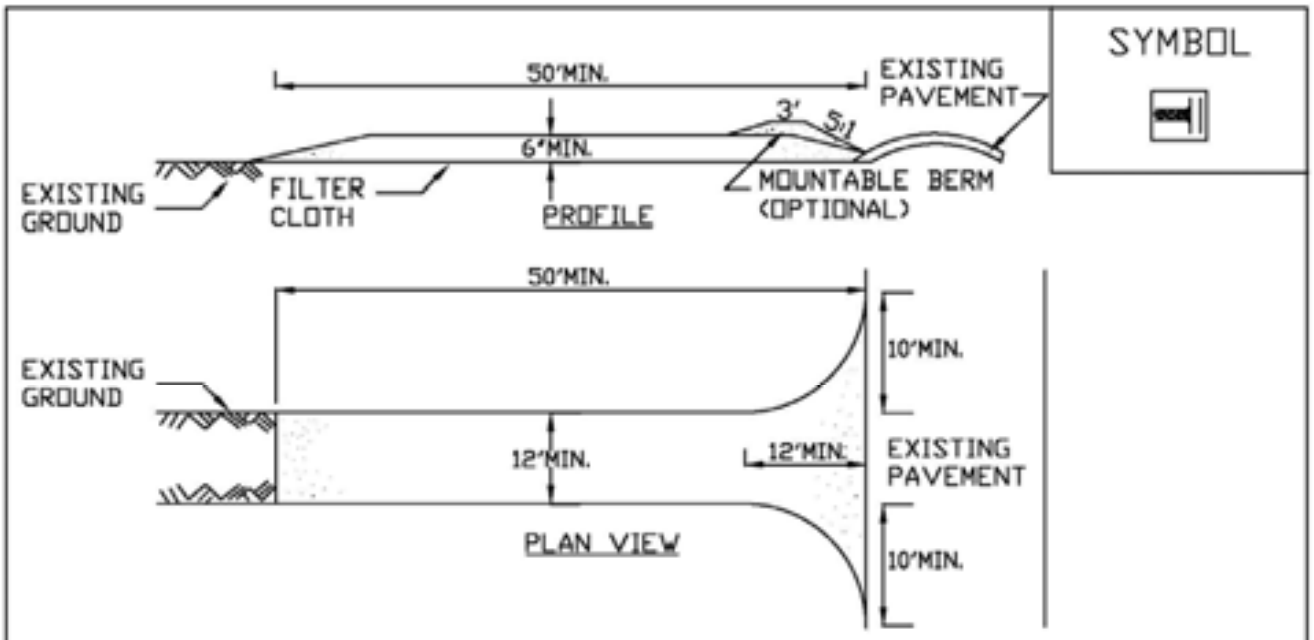
[3]Fabrics not meeting these specifications may be used only when design procedure and supporting documentation are supplied to determine aggregate depth and fabric strength.

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



CONSTRUCTION SPECIFICATIONS

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

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

STABILIZED CONSTRUCTION ACCESS

STANDARD AND SPECIFICATIONS FOR LANDGRADING

Definition & Scope

Permanent reshaping of the existing land surface by grading in accordance with an engineering topographic plan and specification to provide for erosion control and vegetative establishment on disturbed, reshaped areas.

Design Criteria

The grading plan should be based upon the incorporation of building designs and street layouts that fit and utilize existing topography and desirable natural surrounding to avoid extreme grade modifications. Information submitted must provide sufficient topographic surveys and soil investigations to determine limitations that must be imposed on the grading operation related to slope stability, effect on adjacent properties and drainage patterns, measures for drainage and water removal, and vegetative treatment, etc.

Many municipalities and counties have regulations and design procedures already established for land grading and cut and fill slopes. Where these requirements exist, they shall be followed.

The plan must show existing and proposed contours of the area(s) to be graded. The plan shall also include practices for erosion control, slope stabilization, safe disposal of runoff water and drainage, such as waterways, lined ditches, reverse slope benches (include grade and cross section), grade stabilization structures, retaining walls, and surface and subsurface drains. The plan shall also include phasing of these practices. The following shall be incorporated into the plan:

1. Provisions shall be made to safely convey surface runoff to storm drains, protected outlets, or to stable water courses to ensure that surface runoff will not damage slopes or other graded areas; see standards and specifications for Grassed Waterway, Diversion, or Grade Stabilization Structure.

2. Cut and fill slopes that are to be stabilized with grasses shall not be steeper than 2:1. When slopes exceed 2:1, special design and stabilization consideration are required and shall be adequately shown on the plans. (Note: Where the slope is to be mowed, the slope should be no steeper than 3:1, although 4:1 is preferred because of safety factors related to mowing steep slopes.)

3. Reverse slope benches or diversion shall be provided whenever the vertical interval (height) of any 2:1 slope exceeds 20 feet; for 3:1 slope it shall be increased to 30 feet and for 4:1 to 40 feet. Benches shall be located to divide the slope face as equally as possible and shall convey the water to a stable outlet. Soils, seeps, rock outcrops, etc., shall also be taken into consideration when designing benches.

   A. Benches shall be a minimum of six feet wide to provide for ease of maintenance.

   B. Benches shall be designed with a reverse slope of 6:1 or flatter to the toe of the upper slope and with a minimum of one foot in depth. Bench gradient to the outlet shall be between 2 percent and 3 percent, unless accompanied by appropriate design and computations.

   C. The flow length within a bench shall not exceed 800 feet unless accompanied by appropriate design and computations; see Standard and Specifications for Diversion on page 3.9

4. Surface water shall be diverted from the face of all cut and/or fill slopes by the use of diversions, ditches and swales or conveyed downslope by the use of a designed structure, except where:

   A. The face of the slope is or shall be stabilized and the face of all graded slopes shall be protected from surface runoff until they are stabilized.

   B. The face of the slope shall not be subject to any concentrated flows of surface water such as from natural drainage ways, graded ditches, downspouts, etc.

   C. The face of the slope will be protected by anchored stabilization matting, sod, gravel, riprap, or other stabilization method.

5. Cut slopes occurring in ripable rock shall be serrated as shown in Figure 4.9 on page 4.26. The serrations shall be made with conventional equipment as the excavation is made. Each step or serration shall be constructed on the contour and will have steps cut at nominal two-foot intervals with nominal three-foot horizontal shelves. These steps will vary depending on the slope ratio or the cut slope. The nominal slope line is 1 ½: 1. These steps will weather and act to hold moisture, lime, fertilizer, and seed thus producing a much quicker and longer-lived vegetative cover and better slope stabilization. Overland flow shall be diverted from the top of all serrated cut slopes and carried to a suitable outlet.

6. Subsurface drainage shall be provided where necessary to intercept seepage that would otherwise adversely affect slope stability or create excessively wet site conditions.

7. Slopes shall not be created so close to property lines as to endanger adjoining properties without adequately protecting such properties against sedimentation, erosion, slippage, settlement, subsidence, or other related damages.

8. Fill material shall be free of brush, rubbish, rocks, logs, stumps, building debris, and other objectionable material. It should be free of stones over two (2) inches in diameter where compacted by hand or mechanical tampers or over eight (8) inches in diameter where compacted by rollers or other equipment. Frozen material shall not be placed in the fill nor shall the fill material be placed on a frozen foundation.

9. Stockpiles, borrow areas, and spoil shall be shown on the plans and shall be subject to the provisions of this Standard and Specifications.

10. All disturbed areas shall be stabilized structurally or vegetatively in compliance with the Permanent Construction Area Planting Standard on page 4.42.

Construction Specifications

See Figures 4.9 and 4.10 for details.

1. All graded or disturbed areas, including slopes, shall be protected during clearing and construction in accordance with the erosion and sediment control plan until they are adequately stabilized.

2. All erosion and sediment control practices and measures shall be constructed, applied and maintained in accordance with the erosion and sediment control plan and these standards.

3. Topsoil required for the establishment of vegetation shall be stockpiled in amount necessary to complete finished grading of all exposed areas.

4. Areas to be filled shall be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots, or other objectionable material.

5. Areas that are to be topsoiled shall be scarified to a minimum depth of four inches prior to placement of topsoil.

6. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence, or other related problems. Fill intended to support buildings, structures, and conduits, etc., shall be compacted in accordance with local requirements or codes.

7. All fill shall be placed and compacted in layers not to exceed 9 inches in thickness.

8. Except for approved landfills or nonstructural fills, fill material shall be free of frozen particles, brush, roots, sod, or other foreign objectionable materials that would interfere with, or prevent, construction of satisfactory fills.

9. Frozen material or soft, mucky or highly compressible materials shall not be incorporated into fill slopes or structural fills.

10. Fill shall not be placed on saturated or frozen surfaces.

11. All benches shall be kept free of sediment during all phases of development.

12. Seeps or springs encountered during construction shall be handled in accordance with the Standard and Specification for Subsurface Drain on page 3.48 or other approved methods.

13. All graded areas shall be permanently stabilized immediately following finished grading.

14. Stockpiles, borrow areas, and spoil areas shall be shown on the plans and shall be subject to the provisions of this Standard and Specifications.

Figure 4.9
Typical Section of Serrated Cut Slope

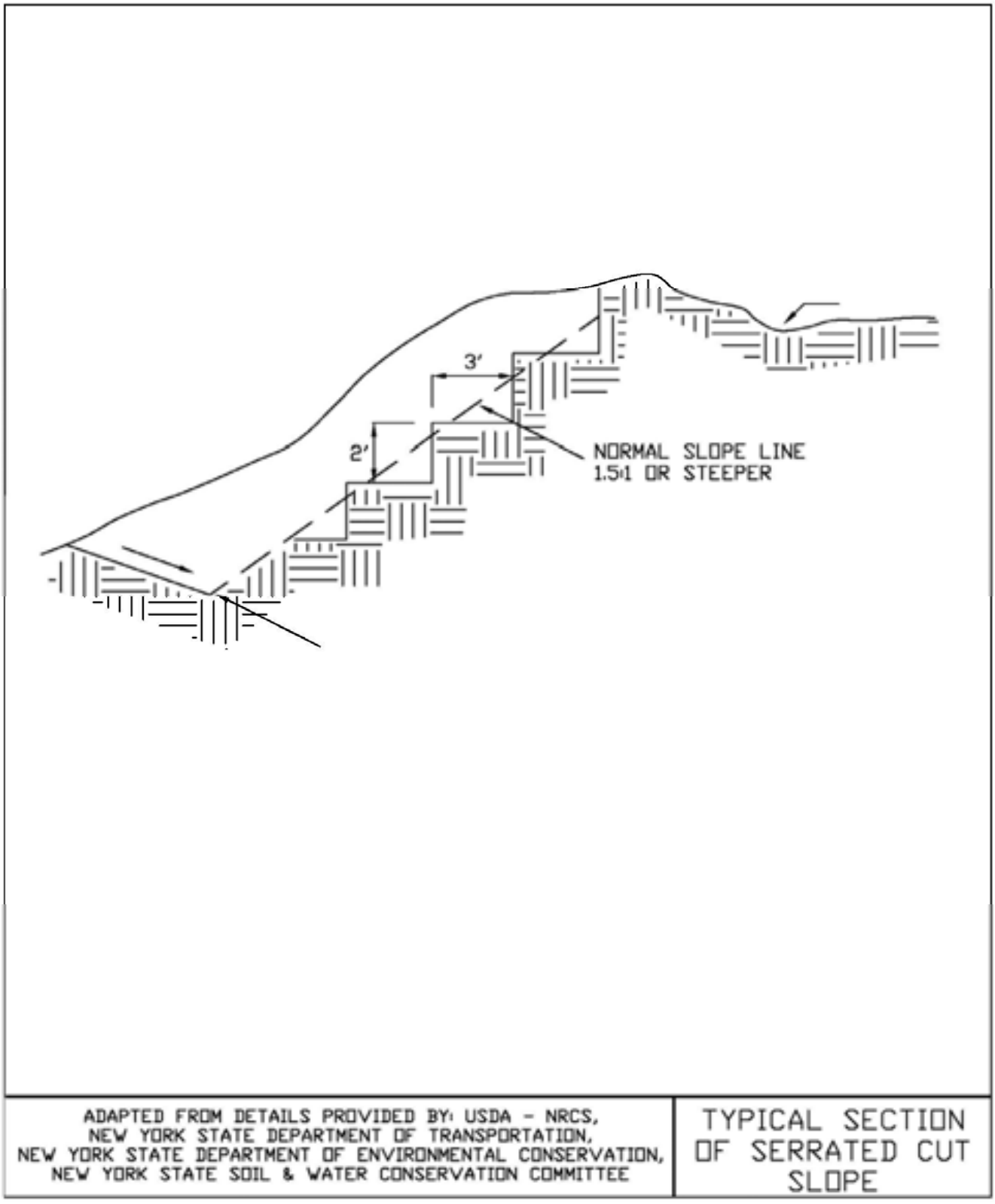


Figure 4.10
Landgrading

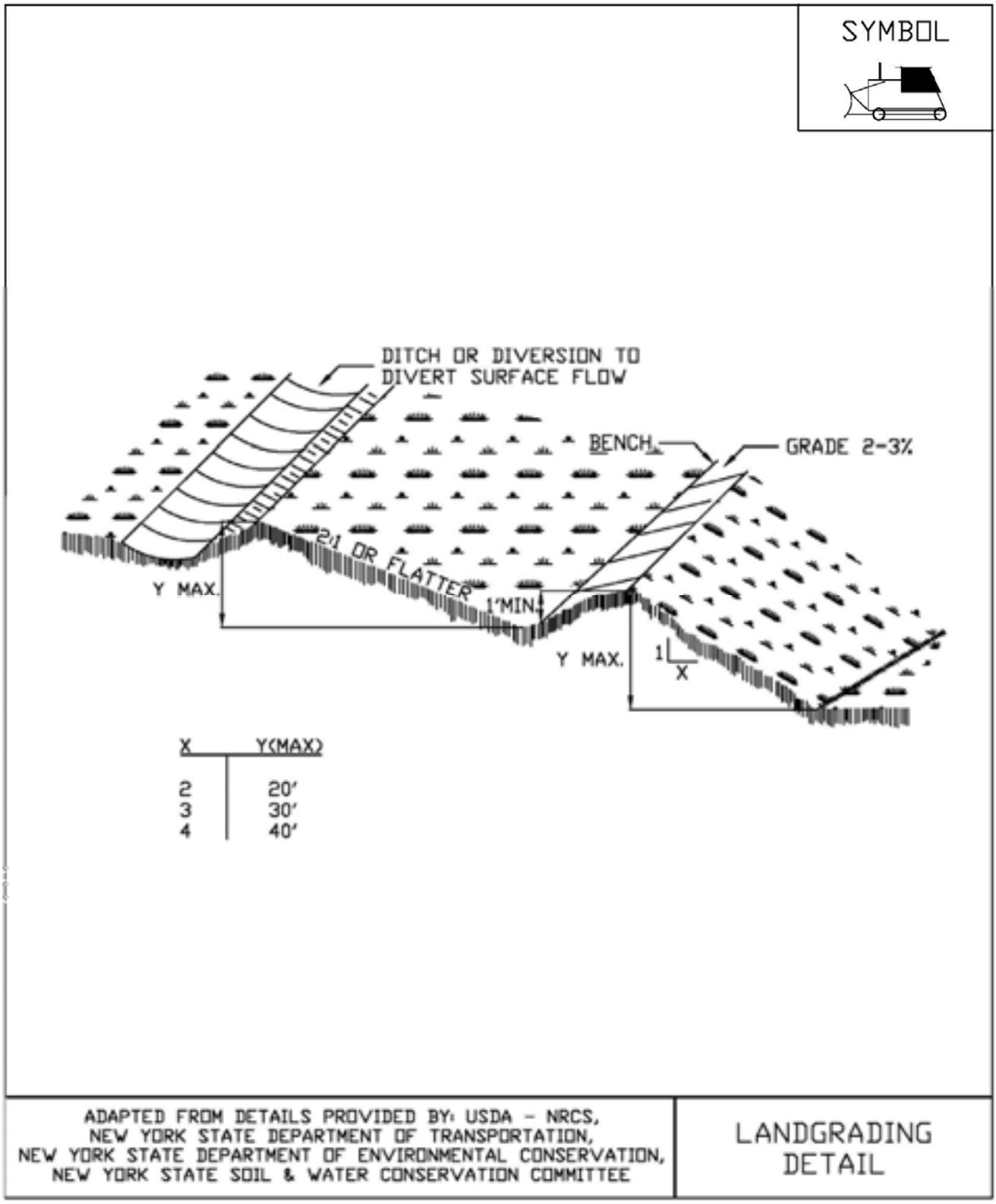
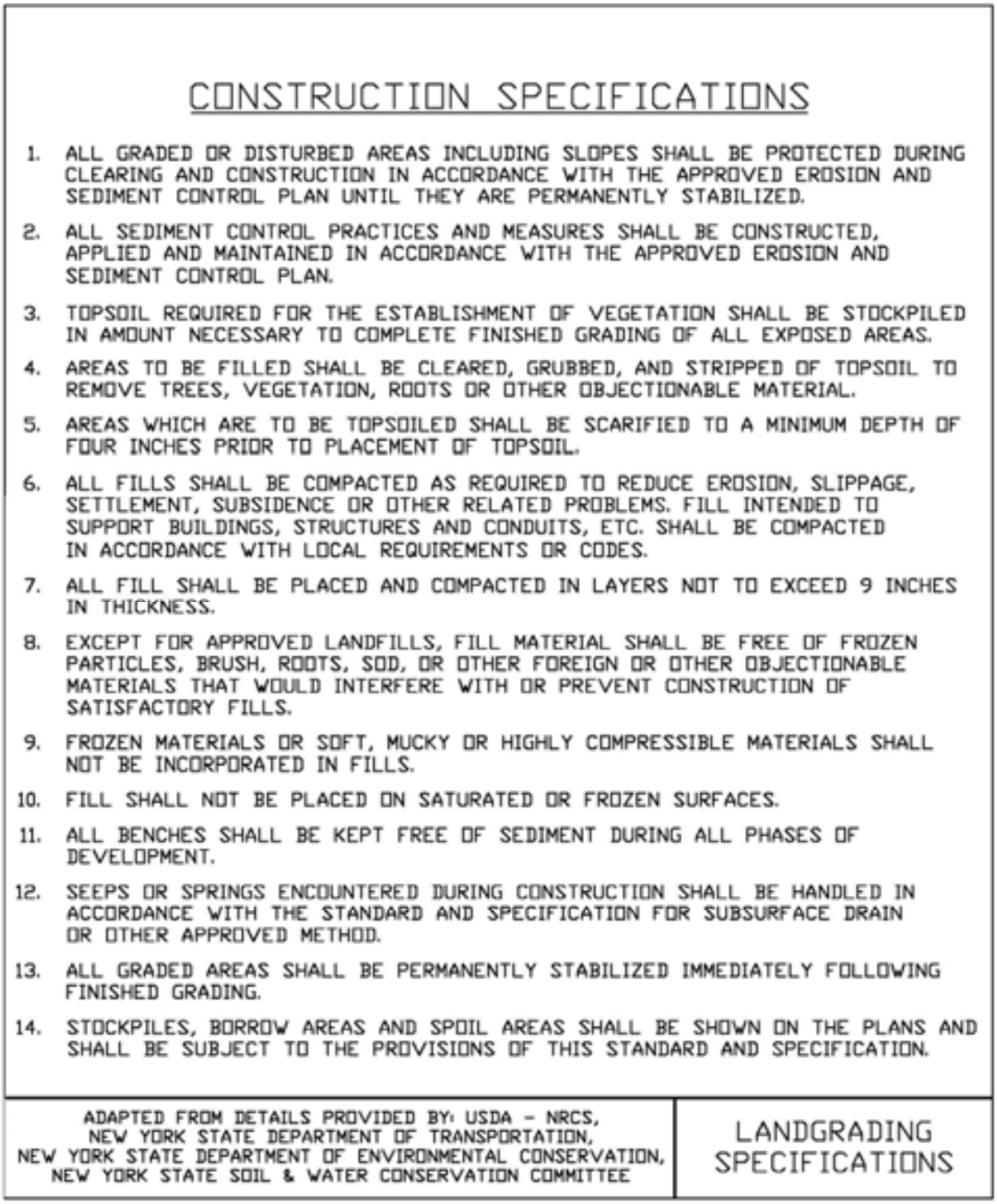


Figure 4.11
Landgrading - Construction Specifications



CONSTRUCTION SPECIFICATIONS

1. ALL GRADED OR DISTURBED AREAS INCLUDING SLOPES SHALL BE PROTECTED DURING CLEARING AND CONSTRUCTION IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN UNTIL THEY ARE PERMANENTLY STABILIZED.
2. ALL SEDIMENT CONTROL PRACTICES AND MEASURES SHALL BE CONSTRUCTED, APPLIED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.
3. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED IN AMOUNT NECESSARY TO COMPLETE FINISHED GRADING OF ALL EXPOSED AREAS.
4. AREAS TO BE FILLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS OR OTHER OBJECTIONABLE MATERIAL.
5. AREAS WHICH ARE TO BE TOPSOILED SHALL BE SCARIFIED TO A MINIMUM DEPTH OF FOUR INCHES PRIOR TO PLACEMENT OF TOPSOIL.
6. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
7. ALL FILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT TO EXCEED 9 INCHES IN THICKNESS.
8. EXCEPT FOR APPROVED LANDFILLS, FILL MATERIAL SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OTHER OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
9. FROZEN MATERIALS OR SOFT, MUCKY OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED IN FILLS.
10. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
11. ALL BENCHES SHALL BE KEPT FREE OF SEDIMENT DURING ALL PHASES OF DEVELOPMENT.
12. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
13. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY FOLLOWING FINISHED GRADING.
14. STOCKPILES, BORROW AREAS AND SPOIL AREAS SHALL BE SHOWN ON THE PLANS AND SHALL BE SUBJECT TO THE PROVISIONS OF THIS STANDARD AND SPECIFICATION.

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

LANDGRADING
SPECIFICATIONS

STANDARD AND SPECIFICATIONS FOR MULCHING

Definition and Scope

Applying coarse plant residue or chips, or other suitable materials, to cover the soil surface to provide initial erosion control while a seeding or shrub planting is establishing. Mulch will conserve moisture and modify the surface soil temperature and reduce fluctuation of both. Mulch will prevent soil surface crusting and aid in weed control. Mulch can also be used alone for temporary stabilization in non-growing months. Use of stone as a mulch could be more permanent and should not be limited to non-growing months.

Conditions Where Practice Applies

On soils subject to erosion and on new seedings and shrub plantings. Mulch is useful on soils with low infiltration rates by retarding runoff.

Criteria

Site preparation prior to mulching requires the installation of necessary erosion control or water management practices and drainage systems.

Slope, grade and smooth the site to fit needs of selected mulch products.

Remove all undesirable stones and other debris to meet the needs of the anticipated land use and maintenance required.

Apply mulch after soil amendments and planting is accomplished or simultaneously if hydroseeding is used.

Select appropriate mulch material and application rate or material needs. Hay mulch shall not be used in wetlands or in areas of permanent seeding. Clean straw mulch is preferred alternative in wetland application. Determine local availability.

Select appropriate mulch anchoring material.

NOTE: The best combination for grass/legume establishment is straw (cereal grain) mulch applied at 2 ton/ acre (90 lbs./1000sq.ft.) and anchored with wood fiber mulch (hydromulch) at 500 – 750 lbs./acre (11 – 17 lbs./1000 sq. ft.). The wood fiber mulch must be applied through a hydroseeder immediately after mulching.

Table 4.2
Guide to Mulch Materials, Rates, and Uses

Mulch Material	Quality Standards	per 1000 Sq. Ft.	per Acre	Depth of Application	Remarks
Wood chips or shavings	Air-dried. Free of objectionable coarse material	500-900 lbs.	10-20 tons	2-7”	Used primarily around shrub and tree plantings and recreation trails to inhibit weed competition. Resistant to wind blowing. Decomposes slowly.
Wood fiber cellulose (partly digested wood fibers)	Made from natural wood usually with green dye and dispersing agent	50 lbs.	2,000 lbs.	—	Apply with hydromulcher. No tie down required. Less erosion control provided than 2 tons of hay or straw.
Gravel, Crushed Stone or Slag	Washed; Size 2B or 3A—1 1/2”	9 cu. yds.	405 cu. yds.	3”	Excellent mulch for short slopes and around plants and ornamentals. Use 2B where subject to traffic. (Approximately 2,000 lbs./cu. yd.). Frequently used over filter fabric for better weed control.
Hay or Straw	Air-dried; free of undesirable seeds & coarse materials	90-100 lbs. 2-3 bales	2 tons (100-120 bales)	cover about 90% surface	Use small grain straw where mulch is maintained for more than three months. Subject to wind blowing unless anchored. Most commonly used mulching material. Provides the best micro-environment for germinating seeds.
Jute twisted yarn	Undyed, unbleached plain weave. Warp 78 ends/yd., Weft 41 ends/ yd. 60-90 lbs./roll	48” x 50 yds. or 48” x 75 yds.	—	—	Use without additional mulch. Tie down as per manufacturers specifications. Good for center line of concentrated water flow.
Excelsior wood fiber mats	Interlocking web of excelsior fibers with photodegradable plastic netting	4’ x 112.5’ or 8’ x 112.5’.	—	—	Use without additional mulch. Excellent for seeding establishment. Anchor as per manufacturers specifications. Approximately 72 lbs./roll for excelsior with plastic on both sides. Use two sided plastic for centerline of waterways.
Straw or coconut fiber, or combination	Photodegradable plastic net on one or two sides	Most are 6.5 ft. x 3.5 ft.	81 rolls	—	Designed to tolerate higher velocity water flow, centerlines of waterways, 60 sq. yds. per roll.

Table 4.3
Mulch Anchoring Guide

Anchoring Method or Material	Kind of Mulch to be Anchored	How to Apply
1. Peg and Twine	Hay or straw	After mulching, divide areas into blocks approximately 1 sq. yd. in size. Drive 4-6 pegs per block to within 2" to 3" of soil surface. Secure mulch to surface by stretching twine between pegs in criss-cross pattern on each block. Secure twine around each peg with 2 or more tight turns. Drive pegs flush with soil. Driving stakes into ground tightens the twine.
2. Mulch netting	Hay or straw	Staple the light-weight paper, jute, wood fiber, or plastic nettings to soil surface according to manufacturer's recommendations. Should be biodegradable. Most products are not suitable for foot traffic.
3. Wood cellulose fiber	Hay or straw	Apply with hydroseeder immediately after mulching. Use 500 lbs. wood fiber per acre. Some products contain an adhesive material ("tackifier"), possibly advantageous.
4. Mulch anchoring tool	Hay or straw	Apply mulch and pull a mulch anchoring tool (blunt, straight discs) over mulch as near to the contour as possible. Mulch material should be "tucked" into soil surface about 3".
5. Tackifier	Hay or straw	Mix and apply polymeric and gum tackifiers according to manufacturer's instructions. Avoid application during rain. A 24-hour curing period and a soil temperature higher than 45^0 Fahrenheit are required.

STANDARD AND SPECIFICATIONS FOR SOIL RESTORATION

Definition & Scope

The decompaction of areas of a development site or construction project where soils have been disturbed to recover the original properties and porosity of the soil; thus providing a sustainable growth medium for vegetation, reduction of runoff and filtering of pollutants from stormwater runoff.

Conditions Where Practice Applies

Soil restoration is to be applied to areas whose heavy construction traffic is done and final stabilization is to begin. This is generally applied in the cleanup, site restoration, and landscaping phase of construction followed by the permanent establishment of an appropriate ground cover to maintain the soil structure. Soil restoration measures should be applied over and adjacent to any runoff reduction practices to achieve design performance.

Design Criteria

1. Soil restoration areas will be designated on the plan views of areas to be disturbed.
2. Soil restoration will be completed in accordance with Table 4.6 on page 4.53.

Specification for Full Soil Restoration

During periods of relatively low to moderate subsoil moisture, the disturbed subsoils are returned to rough grade and the following Soil Restoration steps applied:

1. Apply 3 inches of compost over subsoil. The compost shall be well decomposed (matured at least 3 months), weed-free, organic matter. It shall be aerobically composted, possess no objectionable odors, and contain less than 1%, by dry weight, of man-made foreign matter. The physical parameters of the compost shall meet the standards listed in Table 5.2 - Compost Standards Table, except for "Particle Size" 100% will pass the 1/2" sieve. **Note: All biosolids compost produced in New York State (or approved for importation) must meet NYS DEC's 6 NYCRR Part 360 (Solid Waste Management Facilities) requirements. The Part 360 requirements are equal to or more stringent than 40 CFR Part 503 which ensure safe standards for pathogen reduction and heavy metals content.**

2. Till compost into subsoil to a depth of at least 12 inches using a cat-mounted ripper, tractor mounted disc, or tiller, to mix and circulate air and compost into the subsoil.
3. Rock-pick until uplifted stone/rock materials of four inches and larger size are cleaned off the site.
4. Apply topsoil to a depth of 6 inches.
5. Vegetate as required by the seeding plan. Use appropriate ground cover with deep roots to maintain the soil structure.
6. Topsoil may be manufactured as a mixture or a mineral component and organic material such as compost.

At the end of the project an inspector should be able to push a 3/8" metal bar 12 inches into the soil just with body weight. This should not be performed within the drip line of any existing trees or over utility installations that are within 24 inches of the surface.

Maintenance

Keep the site free of vehicular and foot traffic or other weight loads. Consider pedestrian footpaths.

Table 4.6
Soil Restoration Requirements

Type of Soil Disturbance	Soil Restoration Requirement		Comments/Examples
No soil disturbance	Restoration not permitted		Preservation of Natural Features
Minimal soil disturbance	Restoration not required		Clearing and grubbing
Areas where topsoil is stripped only - no change in grade	HSG A&B	HSG C&D	Protect area from any ongoing construction activities.
	Apply 6 inches of topsoil	Aerate* and apply 6 inches of topsoil	
Areas of cut or fill	HSG A&B	HSG C&D	
	Aerate* and apply 6 inches of topsoil	Apply full Soil Restoration**	
Heavy traffic areas on site (especially in a zone 5-25 feet around buildings but not within a 5 foot perimeter around foundation walls)	Apply full Soil Restoration (decompaction and compost enhancement)		
Areas where Runoff Reduction and/or Infiltration practices are applied	Restoration not required, but may be applied to enhance the reduction specified for appropriate practices.		Keep construction equipment from crossing these areas. To protect newly installed practice from any ongoing construction activities construct a single phase operation fence area
Redevelopment projects	Soil Restoration is required on redevelopment projects in areas where existing impervious area will be converted to pervious area.		

* Aeration includes the use of machines such as tractor-drawn implements with coulters making a narrow slit in the soil, a roller with many spikes making indentations in the soil, or prongs which function like a mini-subsoiler.
** Per "Deep Ripping and De-compaction, DEC 2008".

STANDARD AND SPECIFICATIONS FOR TOPSOILING

Definition & Scope

Spreading a specified quality and quantity of topsoil materials on graded or constructed subsoil areas to provide acceptable plant cover growing conditions, thereby reducing erosion; to reduce irrigation water needs; and to reduce the need for nitrogen fertilizer application.

Conditions Where Practice Applies

Topsoil is applied to subsoils that are droughty (low available moisture for plants), stony, slowly permeable, salty or extremely acid. It is also used to backfill around shrub and tree transplants. This standard does not apply to wetland soils.

Design Criteria

1. Preserve existing topsoil in place where possible, thereby reducing the need for added topsoil.

2. Conserve by stockpiling topsoil and friable fine textured subsoils that must be stripped from the excavated site and applied after final grading where vegetation will be established. Topsoil stockpiles must be stabilized. Stockpile surfaces can be stabilized by vegetation, geotextile or plastic covers. This can be aided by orientating the stockpile lengthwise into prevailing winds.

3. Refer to USDA Natural Resource Conservation Service soil surveys or soil interpretation record sheets for further soil texture information for selecting appropriate design topsoil depths.

Site Preparation

1. As needed, install erosion and sediment control practices such as diversions, channels, sediment traps, and stabilizing measures, or maintain if already installed.

2. Complete rough grading and final grade, allowing for depth of topsoil to be added.

3. Scarify all compact, slowly permeable, medium and fine textured subsoil areas. Scarify at approximately right angles to the slope direction in soil areas that are steeper than 5 percent. Areas that have been overly compacted shall be decompacted in accordance with the Soil Restoration Standard.

4. Remove refuse, woody plant parts, stones over 3 inches in diameter, and other litter.

Topsoil Materials

1. Topsoil shall have at least 6 percent by weight of fine textured stable organic material, and no greater than 20 percent. Muck soil shall not be considered topsoil.

2. Topsoil shall have not less than 20 percent fine textured material (passing the NO. 200 sieve) and not more than 15 percent clay.

3. Topsoil treated with soil sterilants or herbicides shall be so identified to the purchaser.

4. Topsoil shall be relatively free of stones over 1 1/2 inches in diameter, trash, noxious weeds such as nut sedge and quackgrass, and will have less than 10 percent gravel.

5. Topsoil containing soluble salts greater than 500 parts per million shall not be used.

6. Topsoil may be manufactured as a mixture of a mineral component and organic material such as compost.

Application and Grading

1. Topsoil shall be distributed to a uniform depth over the area. It shall not be placed when it is partly frozen, muddy, or on frozen slopes or over ice, snow, or standing water puddles.

2. Topsoil placed and graded on slopes steeper than 5 percent shall be promptly fertilized, seeded, mulched, and stabilized by “tracking” with suitable equipment.

3. Apply topsoil in the amounts shown in Table 4.7 below:

Table 4.7 - Topsoil Application Depth		
Site Conditions	**Intended Use**	**Minimum Topsoil Depth**
1. Deep sand or loamy sand	Mowed lawn	6 in.
	Tall legumes, unmowed	2 in.
	Tall grass, unmowed	1 in.
2. Deep sandy loam	Mowed lawn	5 in.
	Tall legumes, unmowed	2 in.
	Tall grass, unmowed	none
3. Six inches or more: silt loam, clay loam, loam, or silt	Mowed lawn	4 in.
	Tall legumes, unmowed	1 in.
	Tall grass, unmowed	1 in.

STANDARD AND SPECIFICATIONS FOR TREES, SHRUBS, AND VINES

Definition & Scope

Establishing trees, shrubs, and vines or selectively reducing stand density and trimming woody plants to protect the soil and plant resources, improve an area for recreation and increase the attractiveness and usefulness of areas.

Conditions Where Practice Applies

On any area planned for recreation or landscape use such as yard areas, leisure areas, picnic areas, and park lands providing outdoor recreational opportunities.

Criteria and Specifications

1. Planting nursery stock

   A. Select species to serve the intended purpose. See Appendix G, Table G.1**,** "Trees Suitable for Landscape and Conservation Plantings in New York." Where planting of trees is to be done in recreation areas, use those species resistant to compaction listed in Table G.2, "Susceptibility of Tree Species to Compaction" whenever possible.

   B. Plant Materials

      1) Plants shall conform to the species, variety, size, number, and conditions as stated in a conservation plan or on a plant list shown on landscape drawings. "American Standard for Nursery Stock," by American Association of Nurserymen, shall be used to develop the plant list for landscape drawings and to check quality of plant materials.

      2) Durable, legible labels with the scientific and common name and cultivar shall be securely attached to plants, bundles of seedlings, containers, and/or flats.

   C. Plant Protection

      Prior to delivery, the trunk, branches, and foliage of the plants shall be sprayed with non-toxic antidesiccant, applied according to the manufacturer's recommendations. This does not apply to state nursery seedlings.

   D. Planting Time

      Deciduous trees and shrubs: April 1 to June 1 and October 15 to December 15. Evergreen trees and shrubs: April 1 to June 1 and September 1 to November 15.

   E. Spacing

      Plant all trees and shrubs well back from buildings to allow for mature crown size. The following are guides for planning:

Large Trees	50-60 feet apart
Small Trees	20-30 feet apart
Columnar Species	6-8 feet apart
Hedges	1-4 feet apart
Shrubs	For clumps, plan spacing so mature shrubs will be touching or overlapping by only 1 or 2 feet

   F. Site Preparation

      1) Individual sites for planting seedlings can be prepared by scalping the sod away from a four foot square area where the seedling is to be planted.

      2) All planting beds shall be cultivated to a depth of 8 inches, or chemically treated for weed control. Remove objectionable objects that will interfere with maintenance of site.

   G. Planting

      1) Plants shall be located as shown on plans and/or drawings and, where necessary, located on the site by stakes, flags or other means.

      2) Prior to planting, remove galvanized wire basket securing root ball, untie and roll down burlap covering from around the stem.

3) The plants shall be set upright in holes as illustrated in Figure G.1 in Appendix G.

4) All plants shall be thoroughly watered on the same day of planting. Plants that have settled shall be reset to grade.

H. Wrapping

Immediately after planting, wrap deciduous tree trunks from the bottom to the first limb with a 4 inch wide bituminous impregnated, insect resistant tape or paper manufactured for that purpose. Tie with jute (bag strings) at top and bottom. The wrap should be removed per nursery recommendations.

I. Mulching

Mulch the disturbed area around individual trees and shrubs with a 2-3" layer of wood chips. Pull wood chips 1 inch away from the base of shrubs to avoid fungus development.

J. Pruning

After planting, prune to remove injured twigs and branches. The natural shape of the plant should not be changed.

K. Cleanup and Maintenance

1) After all work is complete, all excess soil, peat moss, debris, etc., shall be removed from the site.

2) Water plants two weeks after planting. For two years, water plants every two weeks during dry periods, which exceed three weeks without a good soaking rain, or water as needed in accordance with local conditions. Shrubs may require 5 to 10 gallons and trees, 20 to 30 gallons for each watering.

3) Remove trunk wrap per nursery recommendation.

2. Transplanting "Wild" Stock

Successful transplanting of wild stock will require heavy equipment and considerable labor as a large weight of soil must be moved with the roots.

A. Select trees and shrubs with good form and full crowns.

B. Transplant only when plants are dormant and soil is moist. Wrap soil ball with burlap to prevent soil from separating from roots.

C. Table 4.8 shows minimum diameter and approximate weight of soil ball that must be moved with each size plant.

D. Plant and maintain as described above for nursery stock.

PRUNING AND THINNING

Use	Cleared Width Each Side of Trail Tread (ft.)	Cleared Height (ft.)
TRAILS		
Hiking	1	8
Bicycle	2	10
Motorbike	2	10
Horse	2	12
X-Country Ski	Total: 3-12	12[1]
Snowmobile	Total: 6-12	12[1]
PICNIC & CAMPING AREAS		
Campfire/Grill	10 ft. diam.	15

[1] Includes allowance for snow depth and snow load on branches

1. Pruning

A. Remove trees, limbs, and limb stubs to the above widths and heights specified for the intended use.

B. Remove dead, diseased, or dying limbs that may fall.

C. Do not remove more than one-third of the live crown of a tree in a year.

D. Cut limbs flush to the branch bark ridge.

E. Use the 3 or 4 cut pruning method on all branches over 2 inches in diameter: First cut about one-third the way through the underside of the limb (about 6-12 inches from the tree trunk). Then (approximately an inch further out) make a second cut through the limb from the upper side. When the branch is removed, there is no splintering of the main tree trunk. Remove the stub. If the branch is larger than 5-6 inches in diameter, use the four cut system. Cuts 1 and 2 remain the same and cut 3 should be from the underside of the limb, on the outside of the branch collar. Cut 4 should be from the top and in alignment with the 3rd cut. Cut 3 should be 1/4 to 1/3 the way through the limb. This will prevent the bark from peeling down the trunk. Do not paint the cut surface.

2. Thinning

   A. Remove dead, diseased, dying, poorly anchored, or ice damaged trees that pose a hazard to recreationists or that interfere with intended use.

   B. To maintain grass cover in a wooded area, thin according to formula Dx3 (average diameter of the trunk of overstory trees, in inches, times three—the answer is the spacing between trees to be left, in feet). For example, for trees with average diameter of 6 inches, spacing after thinning should leave trees 18 feet apart on average. Crown cover after thinning should be about 50 percent.

   C. Selectively thin as needed to favor those trees that are most "resistant" to compaction around their roots. See Table G.2**,** "Susceptibility of Tree Species to Compaction" in Appendix G. If the soil on the site is naturally well drained, those species in the "intermediate" group may also be favored.

Table 4.8
Size and Weight of Earth Ball Required to Transplant Wild Stock

Shade Trees (Maple, Ash, Oak, Birch, etc.)			Small Trees & Shrubs (Crabapple, Thornapple, Viburnum, Dogwood, etc.)		
Caliper[1] (Inches)	Minimum Diameter Ball (Inches)	Weight of Ball (lbs.)	Up to 6 ft. Height — 6 ft. and Caliper[1]	Minimum Diameter Ball (Inches)	Weight of Ball (lbs.)
1/2	14	88	2	12	55
3/4	16	130	3	14	88
1	18	186	4	16	130
1-1/4	20	227	5	18	186
1-1/2	22	302	3/4	18	186
1-3/4	24	390	1	20	227
2	28	621	1-1/2	22	302
3	32	836	1-3/4	24	390
3-1/2	38	1,400	2	28	621
4	42	1,887	2-1/2	32	836
			3	38	1,400

[1]Caliper is a diameter measurement of trees at a height of 6 inches above the ground.

STANDARD AND SPECIFICATIONS FOR SILT FENCE

Definition & Scope

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 by temporarily ponding the sediment laden runoff allowing settling to occur. The maximum period of use is limited by the ultraviolet stability of the fabric (approximately one year).

Conditions Where Practice Applies

A silt fence may be used subject to the following conditions:

1. Maximum allowable slope length and fence length will not exceed the limits shown in the Design Criteria for the specific type of silt fence used ; and
2. 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; and
5. Soil conditions allow for proper keying of fabric, or other anchorage, to prevent blowouts.

Design Criteria

1. Design computations are not required for installations of 1 month or less. Longer installation periods should be designed for expected runoff.
2. All silt fences shall be placed as close to the disturbed area as possible, but at least 10 feet from the toe of a slope steeper than 3H:1V, to allow for maintenance and roll down. The area beyond the fence must be undisturbed or stabilized.
3. The type of silt fence specified for each location on the plan shall not exceed the maximum slope length and maximum fence length requirements shown in the following table:

		Slope Length/Fence Length (ft.)		
Slope	Steepness	Standard	Reinforced	Super
<2%	< 50:1	300/1500	N/A	N/A
2-10%	50:1 to 10:1	125/1000	250/2000	300/2500
10-20%	10:1 to 5:1	100/750	150/1000	200/1000
20-33%	5:1 to 3:1	60/500	80/750	100/1000
33-50%	3:1 to 2:1	40/250	70/350	100/500
>50%	> 2:1	20/125	30/175	50/250

Standard Silt Fence (SF) is fabric rolls stapled to wooden stakes driven 16 inches in the ground.
Reinforced Silt Fence (RSF) is fabric placed against welded wire fabric with anchored steel posts driven 16 inches in the ground.
Super Silt Fence (SSF) is fabric placed against chain link fence as support backing with posts driven 3 feet in the ground.

4. Silt fence shall be removed as soon as the disturbed area has achieved final stabilization.

The silt fence shall be installed in accordance with the appropriate details. Where ends of filter cloth come together, they shall be overlapped, folded and stapled to prevent sediment bypass. Butt joints are not acceptable. A detail of the silt fence shall be shown on the plan. See Figure 5.30 on page 5.56 for Reinforced Silt Fence as an example of details to be provided.

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.

Fabric Properties	Minimum Acceptable Value	Test Method
Grab Tensile Strength (lbs)	110	ASTM D 4632
Elongation at Failure (%)	20	ASTM D 4632
Mullen Burst Strength (PSI)	300	ASTM D 3786
Puncture Strength (lbs)	60	ASTM D 4833
Minimum Trapezoidal Tear Strength (lbs)	50	ASTM D 4533
Flow Through Rate (gal/ min/sf)	25	ASTM D 4491
Equivalent Opening Size	40-80	US Std Sieve ASTM D 4751
Minimum UV Residual (%)	70	ASTM D 4355

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 3.5 square inches. Steel posts will be standard T and U section weighing not less than 1.00 pound per linear foot. Posts for super silt fence shall be standard chain link fence posts.

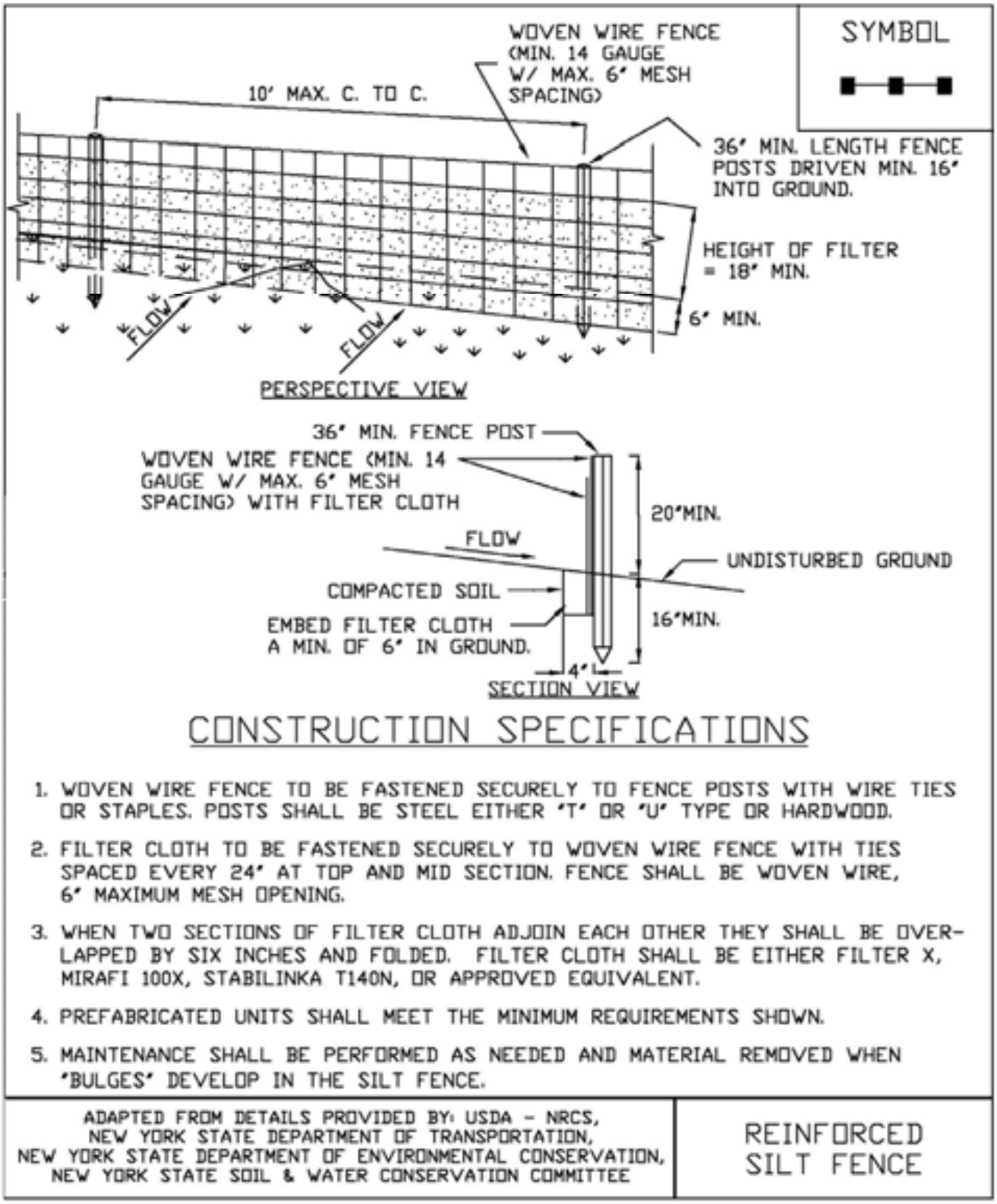
3. Wire Fence for reinforced silt fence: Wire fencing shall be a minimum 14 gage with a maximum 6 in. mesh opening, or as approved.

4. Prefabricated silt fence is acceptable as long as all material specifications are met.

Super Silt Fence

Reinforced Silt Fence

Figure 5.30
Reinforced Silt Fence



STANDARD AND SPECIFICATIONS FOR STORM DRAIN INLET PROTECTION

Definition & Scope

A **temporary** barrier with low permeability, installed around inlets in the form of a fence, berm or excavation around an opening, detaining water and thereby reducing the sediment content of sediment laden water by settling thus preventing heavily sediment laden water from entering a storm drain system.

Conditions Where Practice Applies

This practice shall be used where the drainage area to an inlet is disturbed, it is not possible to temporarily divert the storm drain outfall into a trapping device, and watertight blocking of inlets is not advisable. **It is not to be used in place of sediment trapping devices.** This practice shall be used with an upstream buffer strip if placed at a storm drain inlet on a paved surface. It may be used in conjunction with storm drain diversion to help prevent siltation of pipes installed with low slope angle.

Types of Storm Drain Inlet Practices

There are five (5) specific types of storm drain inlet protection practices that vary according to their function, location, drainage area, and availability of materials:

I. Excavated Drop Inlet Protection
II. Fabric Drop Inlet Protection
III. Stone & Block Drop Inlet Protection
IV. Paved Surface Inlet Protection
V. Manufactured Insert Inlet Protection

Design Criteria

Drainage Area – The drainage area for storm drain inlets shall not exceed one acre. Erosion control/temporary stabilization measures must be implemented on the disturbed drainage area tributary to the inlet. The crest elevations of these practices shall provide storage and minimize bypass flow.

Type I – Excavated Drop Inlet Protection

This practice is generally used during initial overlot grading after the storm drain trunk line is installed.

Limit the drainage area to the inlet device to 1 acre. Excavated side slopes shall be no steeper than 2:1. The minimum depth shall be 1 foot and the maximum depth 2 feet as measured from the crest of the inlet structure. Shape the excavated basin to fit conditions with the longest dimension oriented toward the longest inflow area to provide maximum trap efficiency. The capacity of the excavated basin should be established to contain 900 cubic feet per acre of disturbed area. Weep holes, protected by fabric and stone, should be provided for draining the temporary pool.

Inspect and clean the excavated basin after every storm. Sediment should be removed when 50 percent of the storage volume is achieved This material should be incorporated into the site in a stabilized manner.

Type II – Fabric Drop Inlet Protection

This practice is generally used during final elevation grading phases after the storm drain system is completed.

Limit the drainage area to 1 acre per inlet device. Land area slope immediately surrounding this device should not exceed 1 percent. The maximum height of the fabric above the inlet crest shall not exceed 1.5 feet unless reinforced.

The top of the barrier should be maintained to allow overflow to drop into the drop inlet and not bypass the inlet to

unprotected lower areas. Support stakes for fabric shall be a minimum of 3 feet long, spaced a maximum 3 feet apart. They should be driven close to the inlet so any overflow drops into the inlet and not on the unprotected soil. Improved performance and sediment storage volume can be obtained by excavating the area.

Inspect the fabric barrier after each rain event and make repairs as needed. Remove sediment from the pool area as necessary with care not to undercut or damage the filter fabric. Upon stabilization of the drainage area, remove all materials and unstable sediment and dispose of properly. Bring the adjacent area of the drop inlet to grade, smooth and compact and stabilize in the appropriate manner to the site.

Type III – Stone and Block Drop Inlet Protection

This practice is generally used during the initial and intermediate overlot grading of a construction site.

Limit the drainage area to 1 acre at the drop inlet. The stone barrier should have a minimum height of 1 foot and a maximum height of 2 feet. Do not use mortar. The height should be limited to prevent excess ponding and bypass flow.

Recess the first course of blocks at least 2 inches below the crest opening of the storm drain for lateral support. Subsequent courses can be supported laterally if needed by placing a 2x4 inch wood stud through the block openings perpendicular to the course. The bottom row should have a few blocks oriented so flow can drain through the block to dewater the basin area.

The stone should be placed just below the top of the blocks on slopes of 2:1 or flatter. Place hardware cloth of wire mesh with ½ inch openings over all block openings to hold stone in place.

As an optional design, the concrete blocks may be omitted and the entire structure constructed of stone, ringing the outlet (“doughnut”). The stone should be kept at a 3:1 slope toward the inlet to keep it from being washed into the inlet. A level area 1 foot wide and four inches below the crest will further prevent wash. Stone on the slope toward the inlet should be at least 3 inches in size for stability and 1 inch or smaller away from the inlet to control flow rate. The elevation of the top of the stone crest must be maintained 6 inches lower than the ground elevation down slope from the inlet to ensure that all storm flows pass over the stone into the storm drain and not past the structure. Temporary diking should be used as necessary to prevent bypass flow.

The barrier should be inspected after each rain event and repairs made where needed. Remove sediment as necessary to provide for accurate storage volume for subsequent rains. Upon stabilization of contributing drainage area, remove all materials and any unstable soil and dispose of properly.

Bring the disturbed area to proper grade, smooth, compact and stabilize in a manner appropriate to the site.

Type IV – Paved Surface Inlet Protection

This practice is generally used after pavement construction has been done while final grading and soil stabilization is occurring. These practices should be used with upstream buffer strips in linear construction applications, and with temporary surface stabilization for overlot areas, to reduce the sediment load at the practice. This practice includes sand bags, compost filter socks, geo-tubes filled with ballast, and manufactured surface barriers. Pea gravel can also be used in conjunction with these practices to improve performance. When the inlet is not at a low point, and is offset from the pavement or gutter line, protection should be selected and installed so that flows are not diverted around the inlet.

The drainage area should be limited to 1 acre at the drain inlet. All practices will be placed at the inlet perimeter or beyond to maximize the flow capacity of the inlet. Practices shall be weighted, braced, tied, or otherwise anchored to prevent movement or shifting of location on paved surfaces. Traffic safety shall be integrated with the use of this practice. All practices should be marked with traffic safety cones as appropriate. Structure height shall not cause flooding or by-pass flow that would cause additional erosion.

The structure should be inspected after every storm event. Any sediment should be removed and disposed of on the site. Any broken or damaged components should be replaced. Check all materials for proper anchorage and secure as necessary.

Type V - Manufactured Insert Inlet Protection

The drainage area shall be limited to 1 acre at the drain inlet. All inserts will be installed and anchored in accordance with the manufacturers recommendations and design details. The fabric portion of the structure will equal or exceed the performance standard for the silt fence fabric. The inserts will be installed to preserve a minimum of 50 percent of the open, unobstructed design flow area of the storm drain inlet opening to maintain capacity for storm events.

Figure 5.31
Excavated Drop Inlet Protection

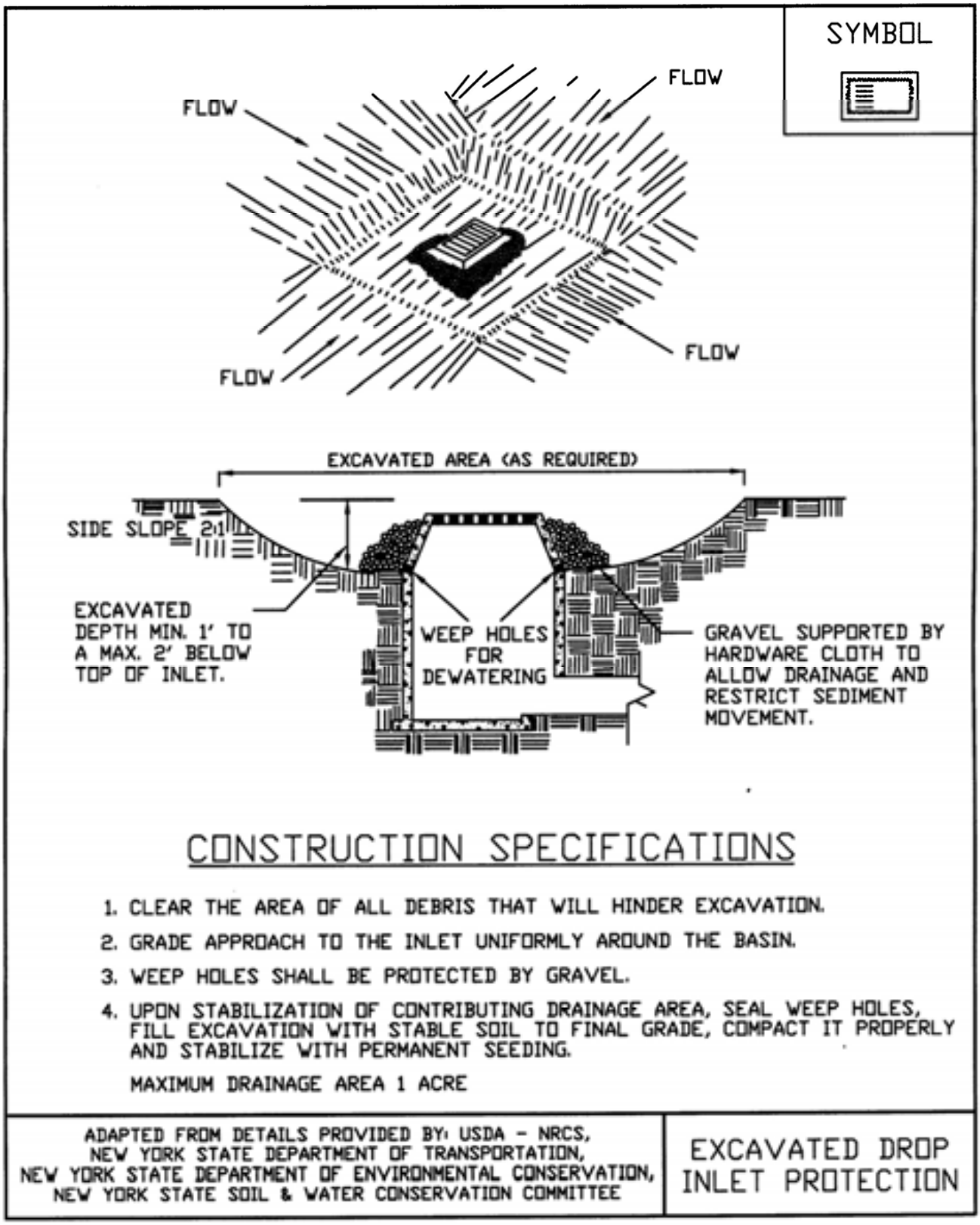


Figure 5.32
Fabric Drop Inlet Protection

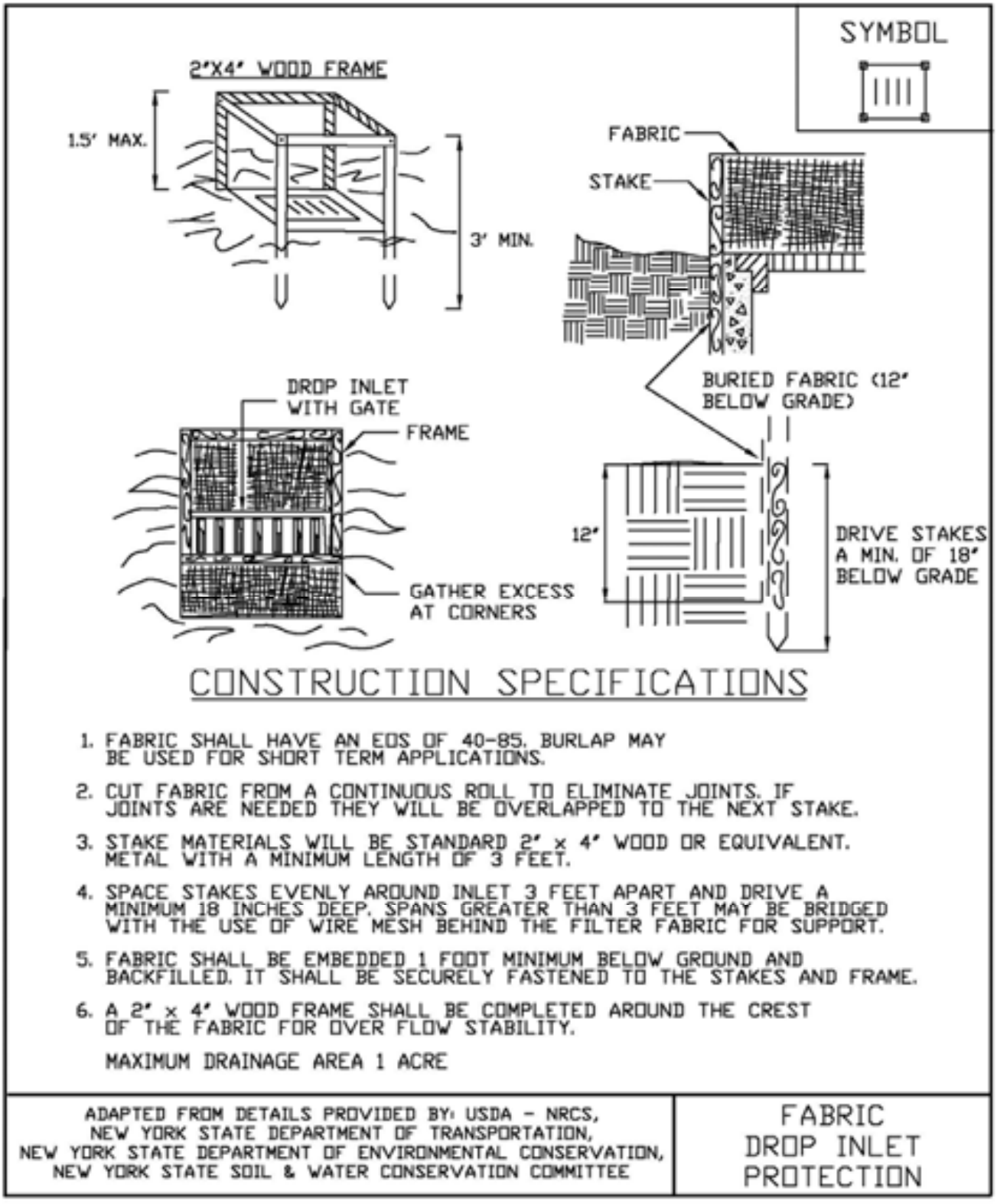
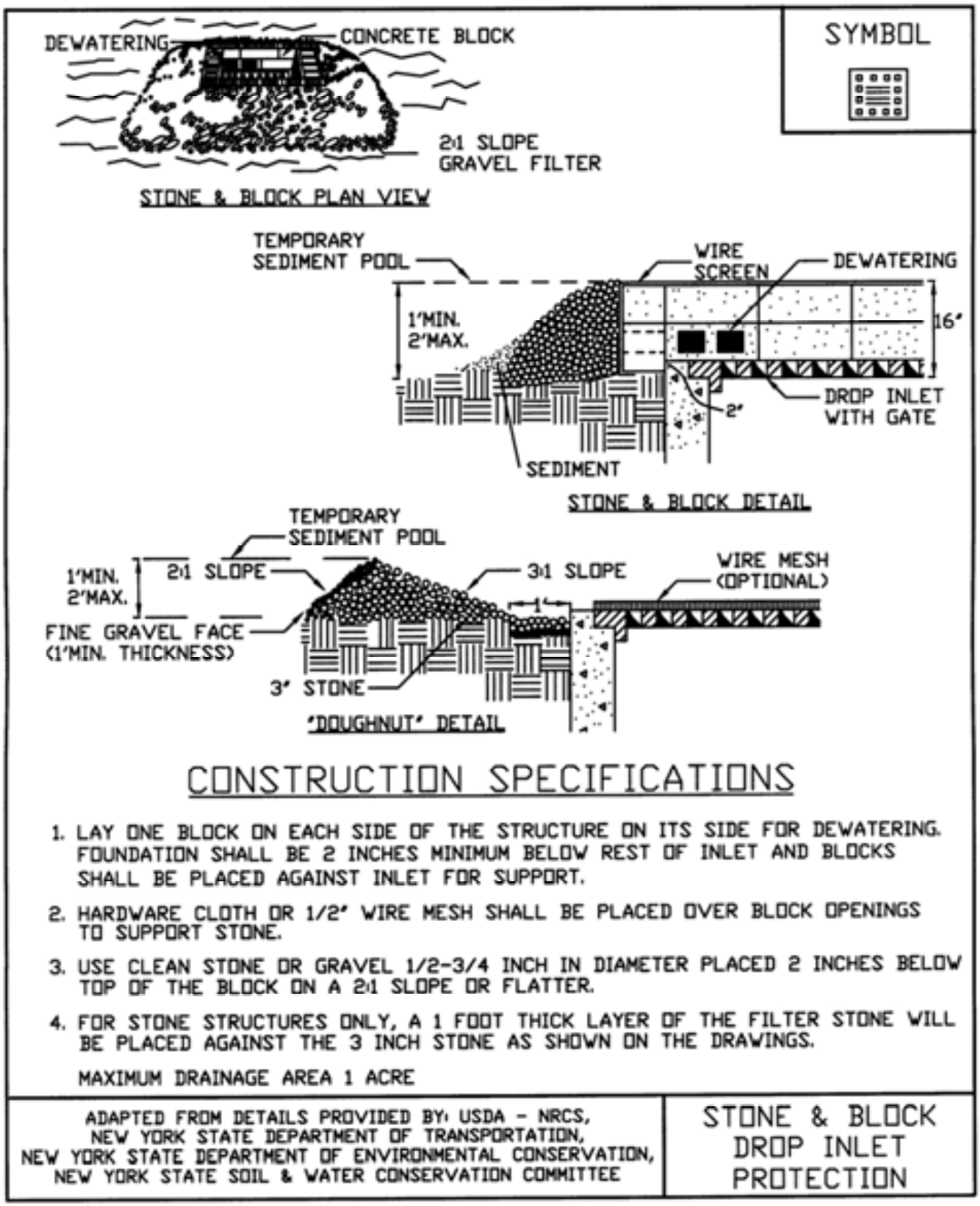


Figure 5.33
Stone & Block Drop Inlet Protection



CONSTRUCTION SPECIFICATIONS

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR 1/2" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL 1/2-3/4 INCH IN DIAMETER PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
4. FOR STONE STRUCTURES ONLY, A 1 FOOT THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3 INCH STONE AS SHOWN ON THE DRAWINGS.

MAXIMUM DRAINAGE AREA 1 ACRE

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

STONE & BLOCK DROP INLET PROTECTION

APPENDIX I

Project Plans