



TOWN OF NORTH CASTLE

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

RESIDENTIAL PROJECT
REVIEW COMMITTEE
Adam R. Kaufman AICP, Chair

Telephone: (914) 273-3000 x43
Fax: (914) 273-3554
www.northcastleny.com

RESIDENTIAL PROJECT REVIEW COMMITTEE (RPRC) PROCEDURES

The RPRC was created to streamline the residential review process and quickly reviews all residential projects. Projects determined to have no impact are permitted to apply to the Building Department while more complicated projects are directed to the appropriate review board(s).

THE RPRC reviews all applications for residential permits (including, but not limited to, buildings permits, steep slope permits, wetlands permits and pool permits), but excluding permits only relating to interior alterations/renovations.

To get on an RPRC agenda you must submit a single PDF file containing the following to the Planning Department:

1. Complete all items on the RPRC checklist
2. RPRC Application fee. Check made payable to: Town of North Castle.
3. Floor Area and Gross Land Coverage work sheets (with backup information)
4. Plans for your project according the RPRC Checklist
5. Submit one single PDF file containing all information listed above to the Planning Department: planning@northcastleny.com.

Once your application has been submitted, you may follow your application on the RPRC webpage located at <http://www.northcastleny.com/residential-project-review-committee-rprc>

Determination Letters are posted on the website (click on determination letters, find the date of your meeting and click on the name of your project - Letters are posted the day after the meeting, typically by 1 :00 p.m.)

Town of North Castle Master Fee Schedule - Revised 11/18/2020

RPRC Fees

Town Code Chapter Title	Chapter Number	Code Section	Fee Type	Fee Description	Engineering Fee Amount	Planning Fee Amount	Total Amount	Additional Notes
RESIDENTIAL PROJECT REVIEW COMMITTEE	12, Art. IV	12-24	RPRC	One-Family Residence - New Construction	\$1,250	\$625	\$1,875	
RESIDENTIAL PROJECT REVIEW COMMITTEE	12, Art. IV	12-24	RPRC	One Family Residence - Teardown/Rebuild	\$1,250	\$625	\$1,875	
RESIDENTIAL PROJECT REVIEW COMMITTEE	12, Art. IV	12-24	RPRC	Addition to Primary Residence (less than 1,000 s.f.)	\$500	\$250	\$750	
RESIDENTIAL PROJECT REVIEW COMMITTEE	12, Art. IV	12-24	RPRC	Addition to Primary Residence (greater than or equal to 1,000 s.f.)	\$800	\$400	\$1,200	
RESIDENTIAL PROJECT REVIEW COMMITTEE	12, Art. IV	12-24	RPRC	Detached Accessory Building/Structure (less than 150 s.f.)	\$0	\$100	\$100	
RESIDENTIAL PROJECT REVIEW COMMITTEE	12, Art. IV	12-24	RPRC	Detached Accessory Building/Structure (greater than or equal to 150 s.f.)	\$500	\$250	\$750	
RESIDENTIAL PROJECT REVIEW COMMITTEE	12, Art. IV	12-24	RPRC	Pool/Hot Tub and associated Mechanical Equipment (includes associated deck, patio, walls, walkway, etc.)	\$800	\$400	\$1,200	

Town of North Castle Master Fee Schedule - Revised 11/18/2020

RPRC Fees

Town Code Chapter Title	Chapter Number	Code Section	Fee Type	Fee Description	Engineering Fee Amount	Planning Fee Amount	Total Amount	Additional Notes
RESIDENTIAL PROJECT REVIEW COMMITTEE	12, Art. IV	12-24	RPRC	Recreational Court (tennis, basketball, volleyball, etc.) and Associated Utilities	\$800	\$400	\$1,200	
RESIDENTIAL PROJECT REVIEW COMMITTEE	12, Art. IV	12-24	RPRC	Deck, porch, patio, pergola	\$200	\$100	\$300	
RESIDENTIAL PROJECT REVIEW COMMITTEE	12, Art. IV	12-24	RPRC	Walkway, piers, wall, gate	\$100	\$50	\$150	
RESIDENTIAL PROJECT REVIEW COMMITTEE	12, Art. IV	12-24	RPRC	Fence	\$0	\$50	\$50	
RESIDENTIAL PROJECT REVIEW COMMITTEE	12, Art. IV	12-24	RPRC	Mechanical Equipment (generator, fuel storage tank, etc.) and Associated Utilities	\$100	\$50	\$150	
RESIDENTIAL PROJECT REVIEW COMMITTEE	12, Art. IV	12-24	RPRC	Installation or Modification of Driveway/Driveway Surface - Under 250 square feet	\$0	\$0	\$0	See § 355-26C(3). RPRC EXEMPT
RESIDENTIAL PROJECT REVIEW COMMITTEE	12, Art. IV	12-24	RPRC	Installation or Modification of Driveway/Driveway Surface - Over 250 square feet	\$400	\$200	\$600	

Town of North Castle Master Fee Schedule - Revised 11/18/2020

RPRC Fees

Town Code Chapter Title	Chapter Number	Code Section	Fee Type	Fee Description	Engineering Fee Amount	Planning Fee Amount	Total Amount	Additional Notes
RESIDENTIAL PROJECT REVIEW COMMITTEE	12, Art. IV	12-24	RPRC	Solar Panels	\$0	\$50	\$50	
RESIDENTIAL PROJECT REVIEW COMMITTEE	12, Art. IV	12-24	RPRC	Installation or Modification of Stormwater Practice/Drainage Facilities	\$400	\$200	\$600	
RESIDENTIAL PROJECT REVIEW COMMITTEE	12, Art. IV	12-24	RPRC	For proposed actions not listed above	\$150	\$75	\$225	per 1,000 s.f. of disturbance or fraction thereof

1. In the event the RPRC determines that Planning Board approval is required, any RPRC Review Fees already paid by the applicant shall be applied towards the escrow review account to be established by the Planning Board.
2. In the event the RPRC determines that an Administrative Wetland Permit is required, an Administrative Wetland Permit application shall be filed with the appropriate fee, as indicated in the Administrative Wetland Permit Fee Schedule.



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RESIDENTIAL PROJECT REVIEW COMMITTEE (RPRC) APPLICATION

Section I- PROJECT

ADDRESS: 21 Cowdray Park Drive

Section III- DESCRIPTION OF WORK:

Modification of motor court and rear patios. Project was previously permitted and is currently under construction. This application is for modifications to the approved site plans. Reference is made to building permit #2020-3927 and wetlands permit #2020-3925.

Section III- CONTACT INFORMATION:

APPLICANT: Livingstone Builders, Inc.

ADDRESS: 485 Madison Avenue, Suite 200

PHONE: (212) 355-3261 MOBILE: (347)443-6988 EMAIL: jremez@livingstonbuilders.com /
cdechiaro@livingstonbuilders.com

PROPERTY OWNER: Fifth Avenue Properties, LLC

ADDRESS: 505 South Flagler Drive, Suite 900, West Palm Beach, Florida 33401

PHONE: 561-832-9292 MOBILE: EMAIL: TeamClark@eisneramper.com

PROFESSIONAL: Redniss & Mead

ADDRESS: 22 First Street, Stamford, CT 06905

PHONE: (203) 327-0500 MOBILE:

EMAIL: a.kuzmich@rednissmead.com

Section IV- PROPERTY INFORMATION:

Zone: R-2A Tax ID (lot designation) 102.03 - 2 - 27



**Town of North Castle
Residential Project Review Committee**

17 Bedford Road Armonk, New York 10504
(914) 273-3542 (914) 273-3554 (fax)

RPRC COMPLETENESS REVIEW FORM

This form represents the standard requirements for a completeness review for all Residential Project Review Committee submissions. Failure to provide all of the information requested will result in a determination that the application is incomplete.

Project Name on Plan: 21 Cowdray Park Drive

Initial Submittal Revised Preliminary (modification of previously approved application)

Street Location: 21 Cowdray Park Drive

Zoning District: R-2A Property Acreage: 10.565 Tax Map Parcel ID: 102.03-2-27

Date: June 21, 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. Plan prepared by a registered architect or professional engineer
- 2. Aerial photo (Google Earth) showing the applicant's entire property and adjacent properties and streets
- 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. Existing topography and proposed grade elevations
- 7. Location of drives
- 8. Location of all existing and proposed site improvements, including drains, culverts, retaining walls and fences

RPRC COMPLETENESS REVIEW FORM

Page 2

- 9. Description of method of water supply and sewage disposal and location of such facilities
- 10. 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
- 11. Submission of a Zoning Conformance Table depicting the plan's compliance with the minimum requirements of the Zoning District
- 12. 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.
- 13. 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/townhall.html>

_____ 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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PLANNING DEPARTMENT
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Director of Planning

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GROSS LAND COVERAGE CALCULATIONS WORKSHEET

Application Name or Identifying Title: 21 Cowdray Park Drive - Detached Garage Date: June 21, 2022

Tax Map Designation or Proposed Lot No.: 102.03-2-27

Gross Lot Coverage

1. Total lot Area (Net Lot Area for Lots Created After 12/13/06): 460,221 sq.ft.
2. **Maximum** permitted gross land coverage (per Section 355-26.C(1)(b)): 41,252 sq.ft.
3. **BONUS** maximum gross land cover (per Section 355-26.C(1)(b)):

Distance principal home is beyond minimum front yard setback
 $\frac{657 \text{ ft}}{10} = 6,570 \text{ sq.ft.}$
4. **TOTAL Maximum Permitted gross land coverage** = Sum of lines 2 and 3 47,822 sq.ft.
5. Amount of lot area covered by **principal building**:
 $\frac{15,682}{\text{existing}} + \frac{598 \text{ sq.ft.}}{\text{proposed}} = \underline{16,280 \text{ sq.ft.}}$
6. Amount of lot area covered by **accessory buildings**:
 $\frac{940 \text{ sq.ft.}}{\text{existing}} + \frac{0 \text{ sq.ft.}}{\text{proposed}} = \underline{940 \text{ sq.ft.}}$
7. Amount of lot area covered by **decks**:
 $\frac{0 \text{ sq.ft.}}{\text{existing}} + \frac{0 \text{ sq.ft.}}{\text{proposed}} = \underline{0 \text{ sq.ft.}}$
8. Amount of lot area covered by **porches**:
 $\frac{0 \text{ sq.ft.}}{\text{existing}} + \frac{0 \text{ sq.ft.}}{\text{proposed}} = \underline{0 \text{ sq.ft.}}$
9. Amount of lot area covered by **driveway, parking areas and walkways**:
 $\frac{8,737 \text{ sq.ft.}}{\text{existing}} + \frac{1,554 \text{ sq.ft.}}{\text{proposed}} = \underline{10,291 \text{ sq.ft.}}$
10. Amount of lot area covered by **terraces**:
 $\frac{2,367 \text{ sq.ft.}}{\text{existing}} + \frac{1,100 \text{ sq.ft.}}{\text{proposed}} = \underline{3,467 \text{ sq.ft.}}$
11. Amount of lot area covered by **tennis court, pool and mechanical equip**:
 $\frac{318 \text{ sq.ft.}}{\text{existing}} + \frac{82 \text{ sq.ft.}}{\text{proposed}} = \underline{400 \text{ sq.ft.}}$
12. Amount of lot area covered by **all other structures**:
 $\frac{380 \text{ sq.ft.}}{\text{existing}} + \frac{0 \text{ sq.ft.}}{\text{proposed}} = \underline{0 \text{ sq.ft.}}$
13. Proposed **gross land coverage**: Total of Lines 5 – 12 = 31,378 sq.ft.

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

June 21, 2022

Date



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PLANNING DEPARTMENT
 Adam R. Kaufman, AICP
 Director of Planning

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FLOOR AREA CALCULATIONS WORKSHEET

Application Name or Identifying Title: 21 Cowdray Park Drive Date: 08/28/2020

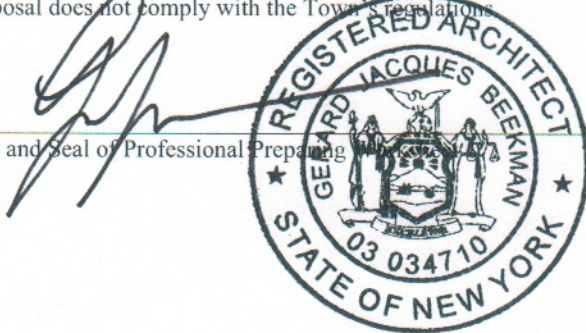
Tax Map Designation or Proposed Lot No.: 1/11/11.-20 (old) & 102.03-2-27 (new)

Floor Area

- | | | |
|-----|---|--|
| 1. | Total Lot Area (Net Lot Area for Lots Created After 12/13/06): | <u>460,221 SF (10.57 acres)</u> |
| 2. | Maximum permitted floor area (per Section 355-26.B(4)): | <u>22,186.5 SF</u>
13,607 SF + 0.03 x (460,221 SF - 174,240 SF) |
| 3. | Amount of floor area contained within first floor:
<u>8,553.0 SF</u> existing + <u>275.1 SF</u> proposed = | <u>8,828.1 SF</u> |
| 4. | Amount of floor area contained within second floor:
<u>7,161.1 SF</u> existing + <u>0 SF</u> proposed = | <u>7,161.1 SF</u> |
| 5. | Amount of floor area contained within garage:
<u>1,114.4 SF</u> existing - <u>275.1 SF</u> proposed = | <u>839.3 SF</u> |
| 6. | Amount of floor area contained within porches capable of being enclosed:
<u>317.9 SF</u> existing + <u>0 SF</u> proposed = | <u>317.9 SF</u> |
| 7. | Amount of floor area contained within basement (if applicable – see definition):
_____ existing + _____ proposed = | NOT APPLICABLE
PER DEFINITION |
| 8. | Amount of floor area contained within attic (if applicable – see definition):
<small>3RD STORY ATTIC - 1,680.6</small>
<small>4TH STORY ATTIC - 153.8</small> existing + <u>0 SF</u> proposed = | <u>3RD STORY ATTIC - 1,680.6 SF</u>
<u>4TH STORY ATTIC - 153.8 SF</u> |
| 9. | Amount of floor area contained within all accessory buildings:
<u>940.0 SF</u> existing + <u>440.5 SF</u> proposed = | <u>1,380.5 SF</u> |
| 10. | Proposed floor area : Total of Lines 3 – 9 = | <u>20,361.3 SF</u> |

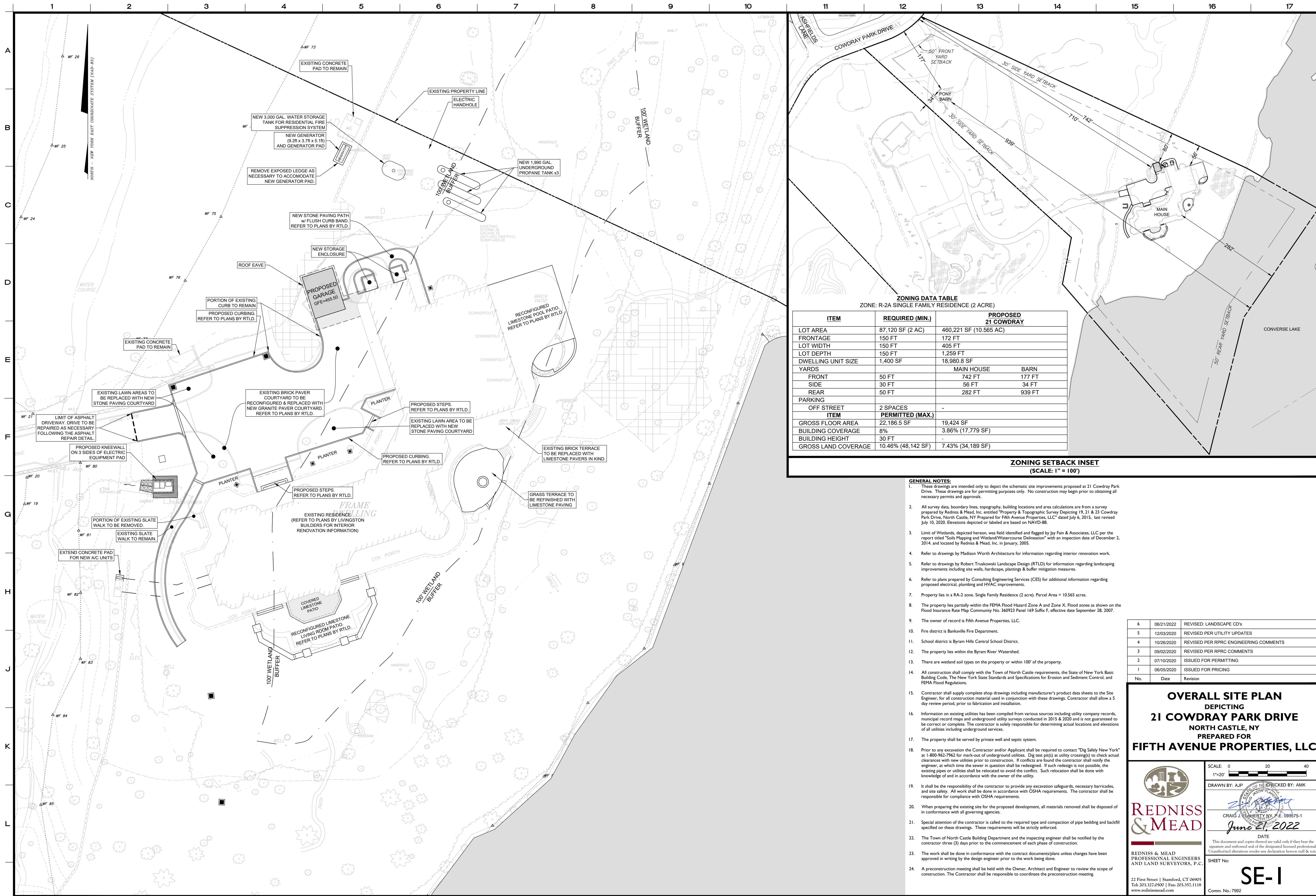
If Line 10 is less than or equal to Line 2, your proposal **complies** with the Town's maximum floor area regulations and the project may proceed to the Residential Project Review Committee for review. If Line 10 is greater than Line 2 your proposal does not comply with the Town's regulations.

Signature and Seal of Professional Preparing



08/28/2020

Date



ZONING DATA TABLE
ZONE: R-2A SINGLE FAMILY RESIDENCE (2 ACRE)

ITEM	REQUIRED (MIN.)	PROPOSED 21 COWDRAY
LOT AREA	87,120 SF (2 AC)	460,221 SF (10.565 AC)
FRONTAGE	150 FT	172 FT
LOT WIDTH	150 FT	405 FT
LOT DEPTH	150 FT	1,259 FT
DWELLING UNIT SIZE	1,400 SF	18,980.8 SF
YARDS		MAIN HOUSE BARN
FRONT	50 FT	742 FT 177 FT
SIDE	30 FT	56 FT 34 FT
REAR	50 FT	282 FT 939 FT
PARKING		
OFF STREET	2 SPACES	-
ITEM	PERMITTED (MAX.)	
GROSS FLOOR AREA	22,186.5 SF	19,424 SF
BUILDING COVERAGE	8%	3.86% (17,779 SF)
BUILDING HEIGHT	30 FT	-
GROSS LAND COVERAGE	10.46% (48,142 SF)	7.43% (34,189 SF)

ZONING SETBACK INSET
(SCALE: 1" = 100')

- GENERAL NOTES:**
- These drawings are intended only to depict the schematic site improvements proposed at 21 Cowdray Park Drive. These drawings are for permitting purposes only. No construction may begin prior to obtaining all necessary permits and approvals.
 - All survey data, boundary lines, topography, building locations and area calculations are from a survey prepared by Redniss & Mead, Inc. entitled "Property & Topographic Survey Depicting 19, 21 & 23 Cowdray Park Drive, North Castle, NY Prepared for Fifth Avenue Properties, LLC" dated July 6, 2015, last revised July 10, 2020. Elevations depicted or labeled are based on NAVD-88.
 - Limit of Wetlands, depicted hereon, was field identified and flagged by Jay Fain & Associates, LLC per the report titled "Soils Mapping and Wetland/Watercourse Delineation" with an inspection date of December 2, 2014, and located by Redniss & Mead, Inc. in January, 2005.
 - Refer to drawings by Madison Worth Architecture for information regarding interior renovation work.
 - Refer to drawings by Robert Truskowski Landscape Design (RTL) for information regarding landscaping improvements including site walls, hardscape, plantings & buffer mitigation measures.
 - Refer to plans prepared by Consulting Engineering Services (CES) for additional information regarding proposed electrical, plumbing and HVAC improvements.
 - Property lies in a RA-2 zone. Single Family Residence (2 acre). Parcel Area = 10.565 acres.
 - The property lies partially within the FEMA Flood Hazard Zone A and Zone X. Flood zones as shown on the Flood Insurance Rate Map Community No. 360923 Panel 169 Suffix F, effective date September 28, 2007.
 - The owner of record is Fifth Avenue Properties, LLC.
 - Fire district is Banksville Fire Department.
 - School district is Byram Hills Central School District.
 - The property lies within the Byram River Watershed.
 - There are wetland soil types on the property or within 100' of the property.
 - All construction shall comply with the Town of North Castle requirements, the State of New York Basic Building Code, The New York State Standards and Specifications for Erosion and Sediment Control, and FEMA Flood Regulations.
 - Contractor shall supply complete shop drawings including manufacturer's product data sheets to the Site Engineer, for all construction material used in conjunction with these drawings. Contractor shall allow a 5 day review period, prior to fabrication and installation.
 - Information on existing utilities has been compiled from various sources including utility company records, municipal record maps and underground utility surveys conducted in 2015 & 2020 and is not guaranteed to be correct or complete. The contractor is solely responsible for determining actual locations and elevations of all utilities including underground services.
 - The property shall be served by private well and septic system.
 - Prior to any excavation the Contractor and/or Applicant shall be required to contact "Dig Safely New York" at 1-800-963-7962 for mark-out of underground utilities. Dig test pits (at utility crossings) to check actual clearances with new utilities prior to construction. If conflicts are found the contractor shall notify the engineer, at which time the sewer in question shall be redesigned. If such redesign is not possible, the existing pipes or utilities shall be relocated to avoid the conflict. Such relocation shall be done with knowledge of and in accordance with the owner of the utility.
 - It shall be the responsibility of the contractor to provide any excavation safeguards, necessary barricades, and site safety. All work shall be done in accordance with OSHA requirements. The contractor shall be responsible for compliance with OSHA requirements.
 - When preparing the existing site for the proposed development, all materials removed shall be disposed of in conformance with all governing agencies.
 - Special attention of the contractor is called to the required type and compaction of pipe bedding and backfill specified on these drawings. These requirements will be strictly enforced.
 - The Town of North Castle Building Department and the inspecting engineer shall be notified by the contractor three (3) days prior to the commencement of each phase of construction.
 - The work shall be done in conformance with the contract documents/plans unless changes have been approved in writing by the design engineer prior to the work being done.
 - A preconstruction meeting shall be held with the Owner, Architect and Engineer to review the scope of construction. The Contractor shall be responsible to coordinate the preconstruction meeting.

6	06/21/2022	REVISED: LANDSCAPE CD'S
5	12/03/2020	REVISED PER UTILITY UPDATES
4	10/26/2020	REVISED PER RPRC ENGINEERING COMMENTS
3	09/02/2020	REVISED PER RPRC COMMENTS
2	07/10/2020	ISSUED FOR PERMITTING
1	06/05/2020	ISSUED FOR PRICING
No.	Date	Revision

OVERALL SITE PLAN
DEPICTING
21 COWDRAY PARK DRIVE
NORTH CASTLE, NY
PREPARED FOR
FIFTH AVENUE PROPERTIES, LLC

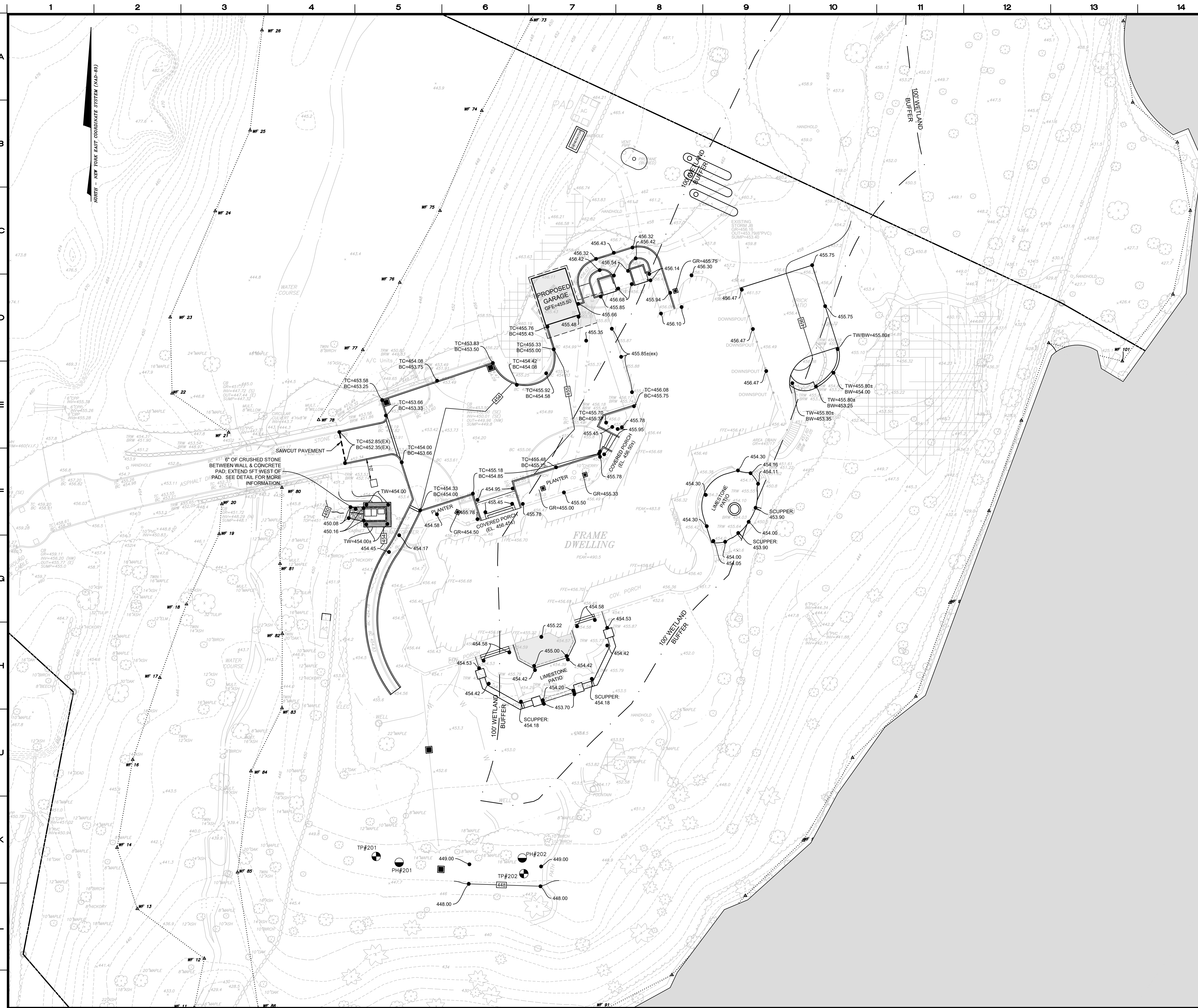
REDNISS & MEAD
PROFESSIONAL ENGINEERS
AND LAND SURVEYORS, P.C.

22 First Street | Stamford, CT 06905
Tel: 203.372.4500 | Fax: 203.357.1118
www.rednissandmead.com

SCALE: 0 20 40
1"=20'

DRAWN BY: AJP CHECKED BY: AMK

CRAIG J. O'SHAUGHNESSY, P.E. 093575-1
 DATE: **June 21, 2022**
 This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorised alterations render any declaration herein null & void.
 SHEET No: **SE-1**
 Comm. No.: 7992



- EARTHWORK & GRADING:**
- No work shall commence until erosion controls have been inspected and approved by the Town of North Castle Building Department or their designee(s).
 - General fill beyond paved areas shall be free of brush rubbish, stumps and stones larger than 8". Fill shall be placed in compacted layers not to exceed 8" in thickness. The dry density after compaction shall not be less than 95% of the Standard Proctor Test and done in accordance with the requirements of ASTM D698. After compacting, the fill shall be 4" below the required grade as shown on the plan.
 - General fill may be fill, loam, sand or gravel mixture classified as SP, SW, SM, GP, GM, ML per the United Soil Classification System. It shall have not more than 40% fines passing the #100 sieve, not more than 8% passing the #200 sieve, and no stones larger than 8".
 - Subgrade and fill shall be uniformly compacted by the use of equipment manufactured for that purpose. Rollers shall deliver a ground pressure of not less than 300 pounds per linear inch of contact width and weigh not less than 10 tons. Vibratory units shall have a static weight of not less than 4 tons. The amount of compactive effort shall be as directed by the Engineer, but in no case shall be less than 4 complete passes of the compacting equipment being used.
 - Disturbed areas shall be topsoiled, seeded with grass and mulched in a manner conforming to the recommendations of the "New York Standards and Specifications for Erosion and Sediment Control" prepared by The New York State Department of Environmental Conservation.
 - After the areas to be topsoiled have been brought to grade, the subgrade shall be loosened by scarifying to a depth of at least 2" to ensure bonding of the topsoil and subsoil.
 - Topsoil shall be friable and loamy with high organic content. It shall be free of debris, rocks larger than 2" and roots. Topsoil shall have at least 1.5 percent by weight of fine textured stable organic material and no greater than 6 percent. Topsoil shall not have less than 20% fine textured material (passing the No. 200 sieve) and not more than 15% clay. pH range shall be 6.0-7.5 and soluble salts shall not exceed 500ppm.
 - Fill or topsoil shall not be placed nor compacted while in a frozen or muddy condition or while subgrade is frozen.
 - Excavation for underground tanks may require either a braced excavation or open cut designed according to the requirements of OSHA, 29 CFR Part 1926. The lateral support systems and slopes should also be designed such that building footings, slabs on grade, adjacent pavement and existing utilities are protected and supported and not allowed to settle. The contractor shall be responsible for having a Professional Engineer, registered in the State of New York design the excavation support method. The designs shall be submitted to the owner or their geotechnical engineer for review. The contractor shall submit plans showing the type, limits, design and sequence of construction for the lateral support system.
 - During the excavation, it is anticipated that existing utilities and sewers may be exposed. The contractor shall provide protection and support of these facilities and repair any damage caused by the work in a manner satisfactory to the owner. The condition of the existing facilities shall be observed by the owner's representative who shall determine if the facilities shall be replaced. Replacement of the facilities shall be done in a manner satisfactory to the owner and in compliance with applicable Codes.

PAVEMENT AND PAVEMENT MARKINGS:

- Driveway pavers shall be installed in accordance with the details on Sheet SE-5.
- Existing features such as but not limited to walks, curbs, and pavement damaged by construction activities shall be repaired at no additional cost to the owner.
- Contractor shall engage a testing lab who shall verify the base course material by means of a sieve analysis and perform compaction testing of the base and each course of pavement. Site Engineer shall review with the contractor the required testing at the preconstruction meeting. Site Engineer shall approve base course prior to placement of each layer of pavement.
- Finished paver surface shall be free of "bird baths" and be at the slopes specified on the plans.
- Finished grade shall be within 1/2 inch of that noted on the drawings.
- Motor Court to be replaced with oil and stone in kind. Refer to plans prepared by Kathryn Herman Design for additional information on details and specifications for motor court surface and patio replacement.

6	06/21/2022	REVISED: LANDSCAPE CD'S
5	12/03/2020	REVISED PER UTILITY UPDATES
4	10/26/2020	REVISED PER RPRC ENGINEERING COMMENTS
3	09/02/2020	REVISED PER RPRC COMMENTS
2	07/10/2020	ISSUED FOR PERMITTING
1	10/29/2021	ORIGINAL ISSUE DATE
No.	Date	Revision

**SITE GRADING PLAN
DEPICTING
21 COWDRAY PARK DRIVE
NORTH CASTLE, NY
PREPARED FOR
FIFTH AVENUE PROPERTIES, LLC**

REDNISS & MEAD
PROFESSIONAL ENGINEERS
AND LAND SURVEYORS, P.C.

22 First Street | Stamford, CT 06905
Tel: 203.372.0500 | Fax: 203.357.1118
www.rednissmead.com

SCALE: 0 20 40
1"=20'

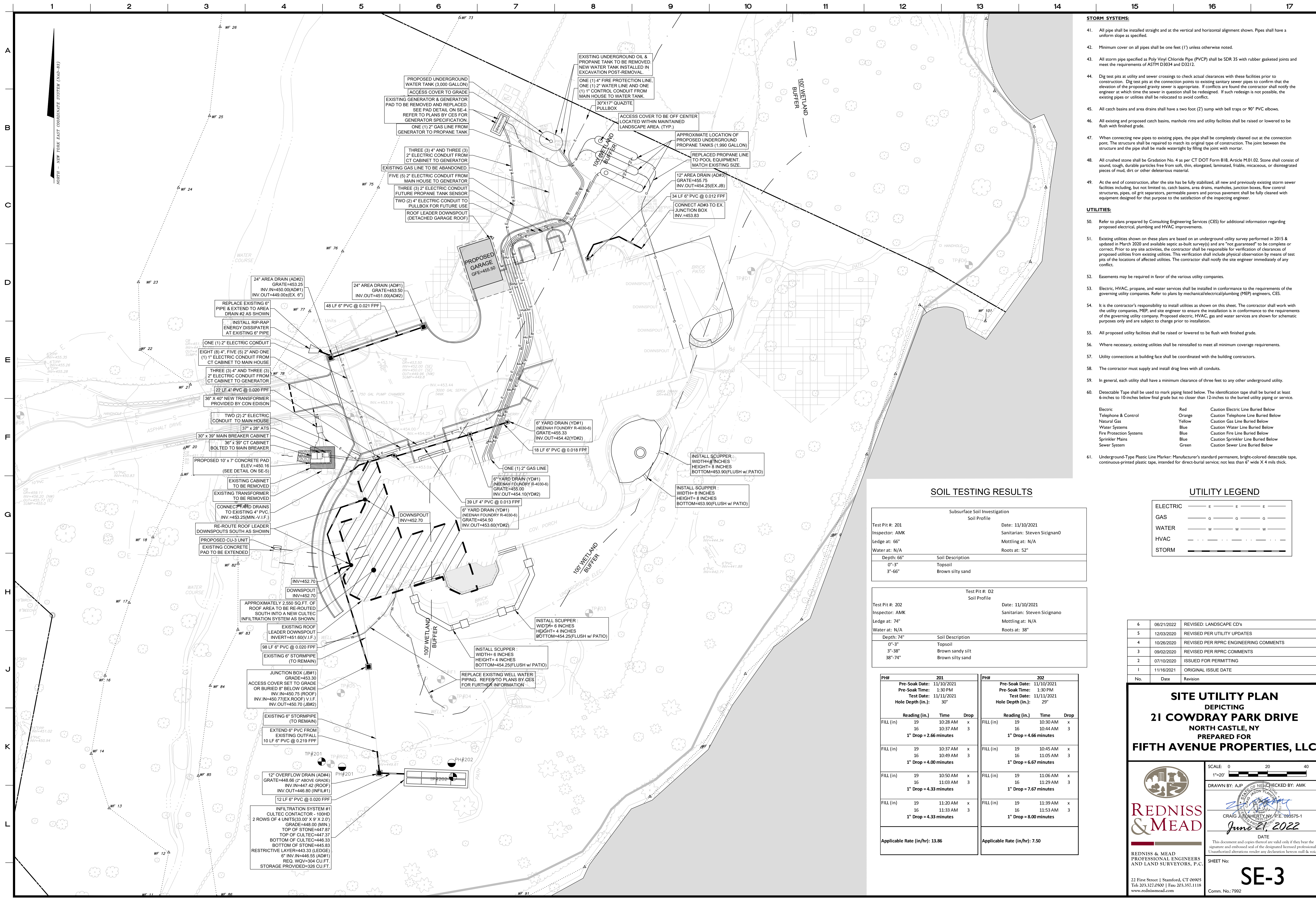
DRAWN BY: AJP CHECKED BY: AMK

CRAIG J. MEAGHER, P.E. 093575-1
 June 21, 2022
 DATE

This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorized alterations render any declaration herein null & void!

SHEET No: **SE-2**

Comm. No.: 7992



- STORM SYSTEMS:**
- All pipe shall be installed straight and at the vertical and horizontal alignment shown. Pipes shall have a uniform slope as specified.
 - Minimum cover on all pipes shall be one foot (1') unless otherwise noted.
 - All storm pipe specified as Poly Vinyl Chloride Pipe (PVC) shall be SDR 35 with rubber gasketed joints and meet the requirements of ASTM D3034 and D312.
 - Dig test pits at utility and sewer crossings to check actual clearances with these facilities prior to construction. Dig test pits at the connection points to existing sanitary sewer pipes to confirm that the elevation of the proposed sanitary sewer is appropriate. If conflicts are found the contractor shall notify the engineer at which time the sewer in question shall be redesigned. If such redesign is not possible, the existing pipes or utilities shall be relocated to avoid conflict.
 - All catch basins and area drains shall have a two foot (2') sump with bell traps or 90° PVC elbows.
 - All existing and proposed catch basins, manhole rims and utility facilities shall be raised or lowered to be flush with finished grade.
 - When connecting new pipes to existing pipes, the pipe shall be completely cleaned out at the connection point. The structure shall be repaired to match its original type of construction. The joint between the structure and the pipe shall be made watertight by filling the joint with mortar.
 - All crushed stone shall be Gradation No. 4 as per CT DOT Form 818, Article M.01.02. Stone shall consist of sound, tough, durable particles free from soft, thin, elongated, laminated, friable, micaceous, or disintegrated pieces of mud, dirt or other deleterious material.
 - At the end of construction, after the site has been fully stabilized, all new and previously existing storm sewer facilities including, but not limited to, catch basins, area drains, manholes, junction boxes, flow control structures, pipes, oil grit separators, permeable pavers and porous pavement shall be fully cleaned with equipment designed for that purpose to the satisfaction of the inspecting engineer.
- UTILITIES:**
- Refer to plans prepared by Consulting Engineering Services (CES) for additional information regarding proposed electrical, plumbing and HVAC improvements.
 - Existing utilities shown on these plans are based on an underground utility survey performed in 2015 & updated in March 2020 and available septic as-built survey(s) and are "not guaranteed" to be complete or correct. Prior to any site activities, the contractor shall be responsible for verification of clearances of proposed utilities from existing utilities. This verification shall include physical observation by means of test pits of the locations of affected utilities. The contractor shall notify the site engineer immediately of any conflict.
 - Easements may be required in favor of the various utility companies.
 - Electric, HVAC, propane, and water services shall be installed in conformance to the requirements of the governing utility companies. Refer to plans by mechanical/electrical/plumbing (MEP) engineers, CES.
 - It is the contractor's responsibility to install utilities as shown on this sheet. The contractor shall work with the utility companies, MEP, and site engineer to ensure the installation is in conformance to the requirements of the governing utility company. Proposed electric, HVAC, gas and water services are shown for schematic purposes only and are subject to change prior to installation.
 - All proposed utility facilities shall be raised or lowered to be flush with finished grade.
 - Where necessary, existing utilities shall be reinstated to meet all minimum coverage requirements.
 - Utility connections at building face shall be coordinated with the building contractors.
 - The contractor must supply and install drag lines with all conduits.
 - In general, each utility shall have a minimum clearance of three feet to any other underground utility.
 - Detectable Tape shall be used to mark piping listed below. The identification tape shall be buried at least 6-inches to 10-inches below final grade but no closer than 12-inches to the buried utility piping or service.

Electric	Red	Caution Electric Line Buried Below
Telephone & Control	Orange	Caution Telephone Line Buried Below
Natural Gas	Yellow	Caution Gas Line Buried Below
Water Systems	Blue	Caution Water Line Buried Below
Fire Protection Systems	Blue	Caution Fire Line Buried Below
Sprinkler Mains	Blue	Caution Sprinkler Line Buried Below
Sewer System	Green	Caution Sewer Line Buried Below

SOIL TESTING RESULTS

Subsurface Soil Investigation
Soil Profile

Test Pit #: 201
Inspector: AMK
Ledge at: 66"
Water at: N/A
Date: 11/10/2021
Sanitarian: Steven Scignano

Depth:	Soil Description
0'-3"	Topsoil
3'-66"	Brown silty sand

Test Pit #: D2
Soil Profile

Test Pit #: 202
Inspector: AMK
Ledge at: 74"
Water at: N/A
Date: 11/10/2021
Sanitarian: Steven Scignano

Depth:	Soil Description
0'-3"	Topsoil
3'-38"	Brown sandy silt
38'-74"	Brown silty sand

PH#	201	202
Pre-Soak Date:	11/10/2021	11/10/2021
Pre-Soak Time:	1:30 PM	1:30 PM
Test Date:	11/11/2021	11/11/2021
Hole Depth (in.):	30"	29"
Reading (in.)	Time	Drop
FILL (in)	19 10:28 AM	x
	16 10:37 AM	3
	1" Drop = 2.66 minutes	
FILL (in)	19 10:37 AM	x
	16 10:49 AM	3
	1" Drop = 4.00 minutes	
FILL (in)	19 10:50 AM	x
	16 11:03 AM	3
	1" Drop = 4.33 minutes	
FILL (in)	19 11:20 AM	x
	16 11:33 AM	3
	1" Drop = 4.33 minutes	
Applicable Rate (in/hr):	13.86	7.50

UTILITY LEGEND

ELECTRIC	— E — E — E
GAS	— G — G — G
WATER	— W — W — W
HVAC	—
STORM	— — — — —

6	06/21/2022	REVISED: LANDSCAPE CD'S
5	12/03/2020	REVISED PER UTILITY UPDATES
4	10/26/2020	REVISED PER RPRC ENGINEERING COMMENTS
3	09/02/2020	REVISED PER RPRC COMMENTS
2	07/10/2020	ISSUED FOR PERMITTING
1	11/16/2021	ORIGINAL ISSUE DATE
No.	Date	Revision

SITE UTILITY PLAN
DEPICTING
21 COWDRAY PARK DRIVE
NORTH CASTLE, NY
PREPARED FOR
FIFTH AVENUE PROPERTIES, LLC

SCALE: 0 20 40
1"=20'

DRAWN BY: AJP
CHECKED BY: AMK

DATE
June 21, 2022

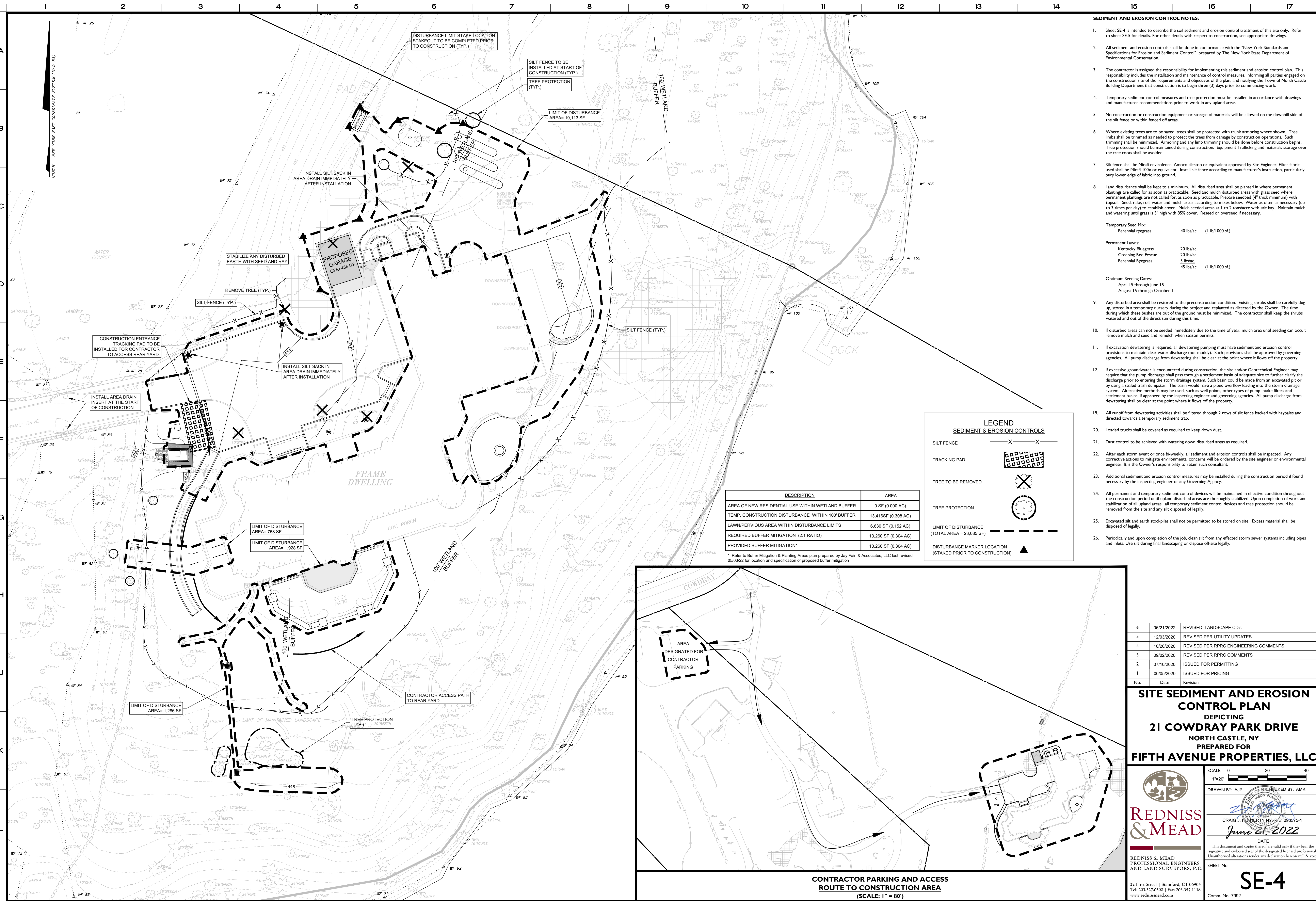
This document and copies thereof are valid only if they bear the signature and embossed seal of the designated licensed professional. Unauthorised alterations render any declaration herein null & void.

SHEET No: **SE-3**

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PROFESSIONAL ENGINEERS
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22 First Street | Stamford, CT 06905
Tel: 203.372.0500 | Fax: 203.357.1118
www.reddissmead.com

Comm. No.: 7992



SEDIMENT AND EROSION CONTROL NOTES:

- Sheet SE-4 is intended to describe the soil sediment and erosion control treatment of this site only. Refer to sheet SE-5 for details. For other details with respect to construction, see appropriate drawings.
 - All sediment and erosion controls shall be done in conformance with the "New York State Standards and Specifications for Erosion and Sediment Control" prepared by The New York State Department of Environmental Conservation.
 - The contractor is assigned the responsibility for implementing this sediment and erosion control plan. This responsibility includes the installation and maintenance of control measures, informing all parties engaged on the construction site of the requirements and objectives of the plan, and notifying the Town of North Castle Building Department that construction is to begin three (3) days prior to commencing work.
 - Temporary sediment control measures and tree protection must be installed in accordance with drawings and manufacturer recommendations prior to work in any upland areas.
 - No construction or construction equipment or storage of materials will be allowed on the downhill side of the silt fence or within fenced off areas.
 - Where existing trees are to be saved, trees shall be protected with trunk armoring where shown. Tree limbs shall be trimmed as needed to protect the trees from damage by construction operations. Such trimming shall be minimized. Armoring and any limb trimming should be done before construction begins. Tree protection should be maintained during construction. Equipment, Traffic and materials storage over the tree roots shall be avoided.
 - Silt fence shall be Mirafi 100x or equivalent. Amoco siltstop or equivalent approved by Site Engineer. Filter fabric used shall be Mirafi 100x or equivalent. Install silt fence according to manufacturer's instruction, particularly, bury lower edge of fabric into ground.
 - Land disturbance shall be kept to a minimum. All disturbed area shall be planted in where permanent plantings are called for as soon as practicable. Seed and mulch disturbed areas with grass seed where permanent plantings are not called for, as soon as practicable. Prepare seedbed (4" thick minimum) with topsoil. Seed, rake, roll, water and mulch areas according to items below. Water as often as necessary (up to 3 times per day) to establish cover. Mulch seeded areas at 1 to 2 tons/acre with salt hay. Maintain mulch and watering until grass is 3" high with 85% cover. Reseed or overseed if necessary.
- Temporary Seed Mix:
 Perennial ryegrass 40 lbs/ac. (1 lb/1000 sf.)
- Permanent Lawns:
 Kentucky Bluegrass 20 lbs/ac.
 Creeping Red Fescue 20 lbs/ac.
 Perennial Ryegrass 5 lbs/ac.
 45 lbs/ac. (1 lb/1000 sf.)
- Optimum Seeding Dates:
 April 15 through June 15
 August 15 through October 1
- Any disturbed area shall be restored to the preconstruction condition. Existing shrubs shall be carefully dug up, stored in a temporary nursery during the project and replanted as directed by the Owner. The same during which these bushes are out of the ground must be minimized. The contractor shall keep the shrubs watered and out of the direct sun during this time.
 - If disturbed areas can not be seeded immediately due to the time of year, mulch area until seeding can occur; remove mulch and seed and reseed when season permits.
 - If excavation dewatering is required, all dewatering pumping must have sediment and erosion control provisions to maintain clear water discharge (not muddy). Such provisions shall be approved by governing agencies. All pump discharge from dewatering shall be clear at the point where it flows off the property.
 - If excessive groundwater is encountered during construction, the site and/or Geotechnical Engineer may require that the pump discharge shall pass through a settlement basin of adequate size to further clarify the discharge prior to entering the storm drainage system. Such basin could be made from an excavated pit or by using a sealed trash dumpster. The basin would have a piped overflow leading into the storm drainage system. Alternative methods may be used, such as well points, other types of pump intake filters and settlement basins, if approved by the inspecting engineer and governing agencies. All pump discharge from dewatering shall be clear at the point where it flows off the property.
 - All runoff from dewatering activities shall be filtered through 2 rows of silt fence backed with haybales and directed towards a temporary sediment trap.
 - Loaded trucks shall be covered as required to keep down dust.
 - Dust control to be achieved with watering down disturbed areas as required.
 - After each storm event or once bi-weekly, all sediment and erosion controls shall be inspected. Any corrective actions to mitigate environmental concerns will be ordered by the site engineer or environmental engineer. It is the Owner's responsibility to retain such consultant.
 - Additional sediment and erosion control measures may be installed during the construction period if found necessary by the inspecting engineer or any Governing Agency.
 - All permanent and temporary sediment control devices will be maintained in effective condition throughout the construction period until upland disturbed areas are thoroughly stabilized. Upon completion of work and stabilization of all upland areas, all temporary sediment control devices and tree protection should be removed from the site and any silt disposed of legally.
 - Excavated silt and earth stockpiles shall not be permitted to be stored on site. Excess material shall be disposed of legally.
 - Periodically and upon completion of the job, clean silt from any affected storm sewer systems including pipes and inlets. Use silt during final landscaping or dispose off-site legally.

**LEGEND
SEDIMENT & EROSION CONTROLS**

SILT FENCE: X X

TRACKING PAD: [Grid Pattern]

TREE TO BE REMOVED: [Tree with X]

TREE PROTECTION: [Tree with Circle]

LIMIT OF DISTURBANCE (TOTAL AREA = 23,085 SF): [Dashed Line]

DISTURBANCE MARKER LOCATION (STAKED PRIOR TO CONSTRUCTION): [Triangle]



**CONTRACTOR PARKING AND ACCESS
ROUTE TO CONSTRUCTION AREA
(SCALE: 1" = 80')**

6	06/21/2022	REVISED: LANDSCAPE CD'S
5	12/03/2020	REVISED PER UTILITY UPDATES
4	10/26/2020	REVISED PER RPRC ENGINEERING COMMENTS
3	09/02/2020	REVISED PER RPRC COMMENTS
2	07/10/2020	ISSUED FOR PERMITTING
1	06/05/2020	ISSUED FOR PRICING
No.	Date	Revision

**SITE SEDIMENT AND EROSION
CONTROL PLAN
DEPICTING
21 COWDRAY PARK DRIVE
NORTH CASTLE, NY
PREPARED FOR
FIFTH AVENUE PROPERTIES, LLC**

SCALE: 0 20 40
1"=20'

DRAWN BY: AJP
CHECKED BY: AMK

REDNISS & MEAD

CRAIG J. REDNISS, N.Y. P.E. 093975-1
June 21, 2022
DATE

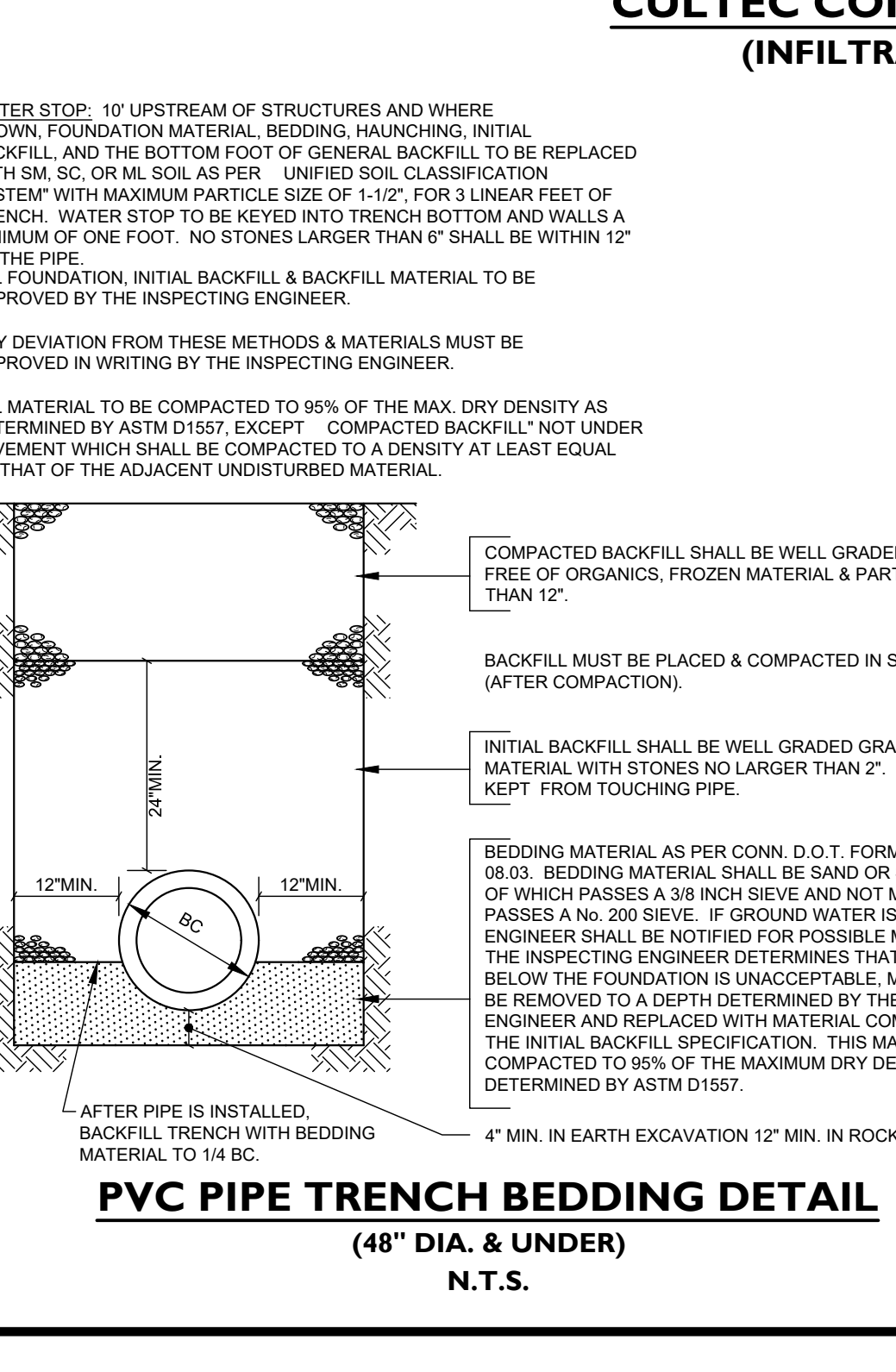
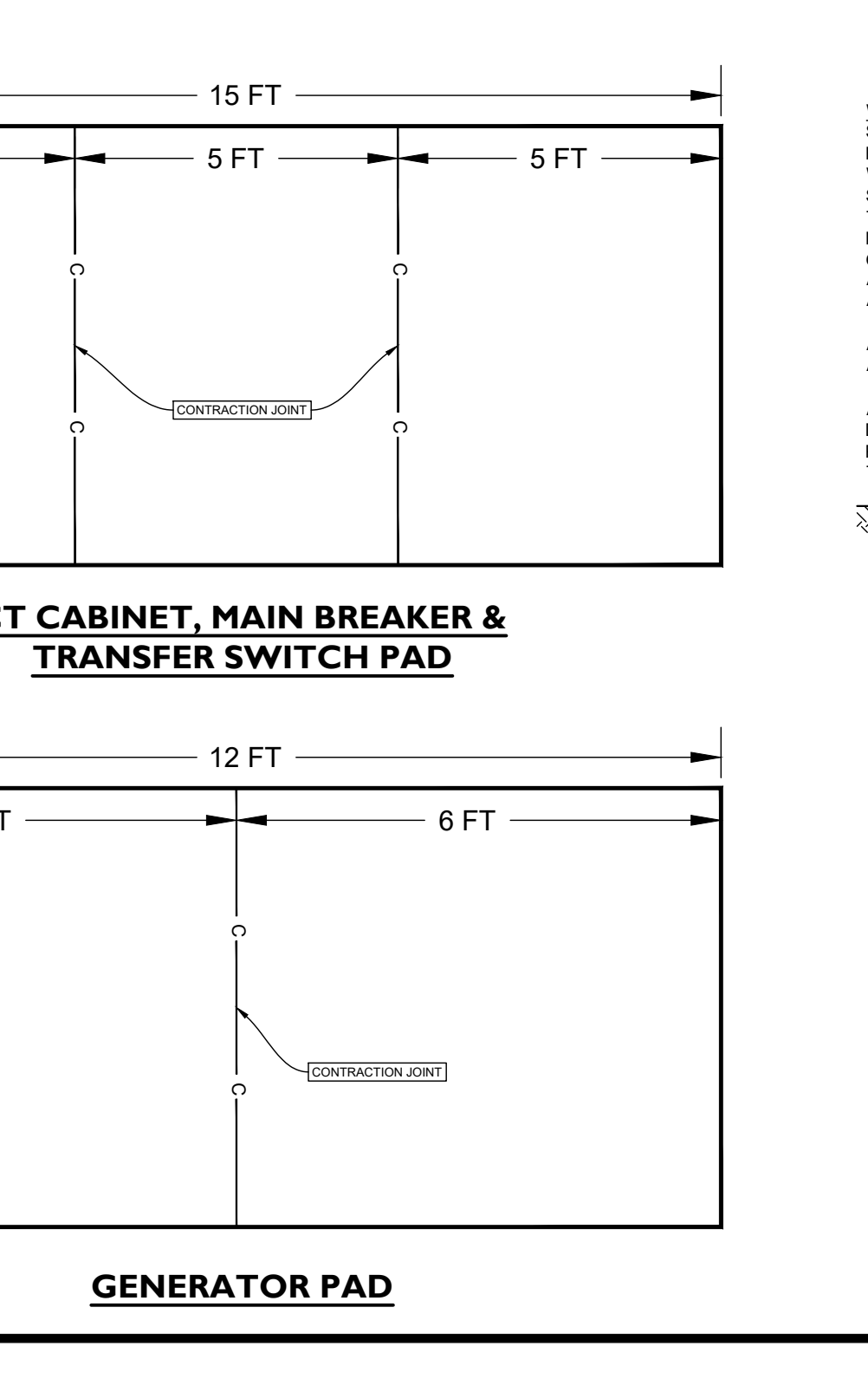
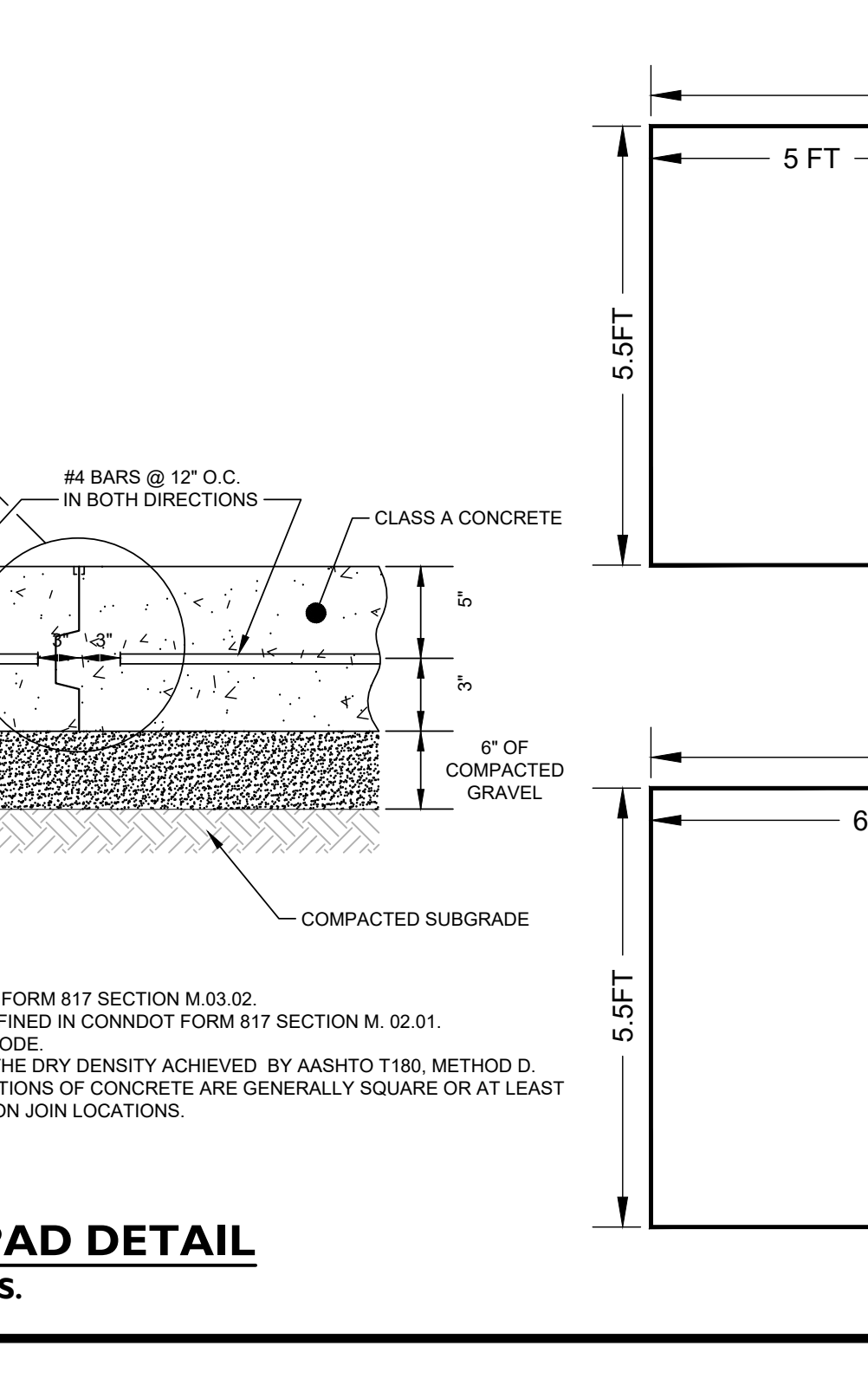
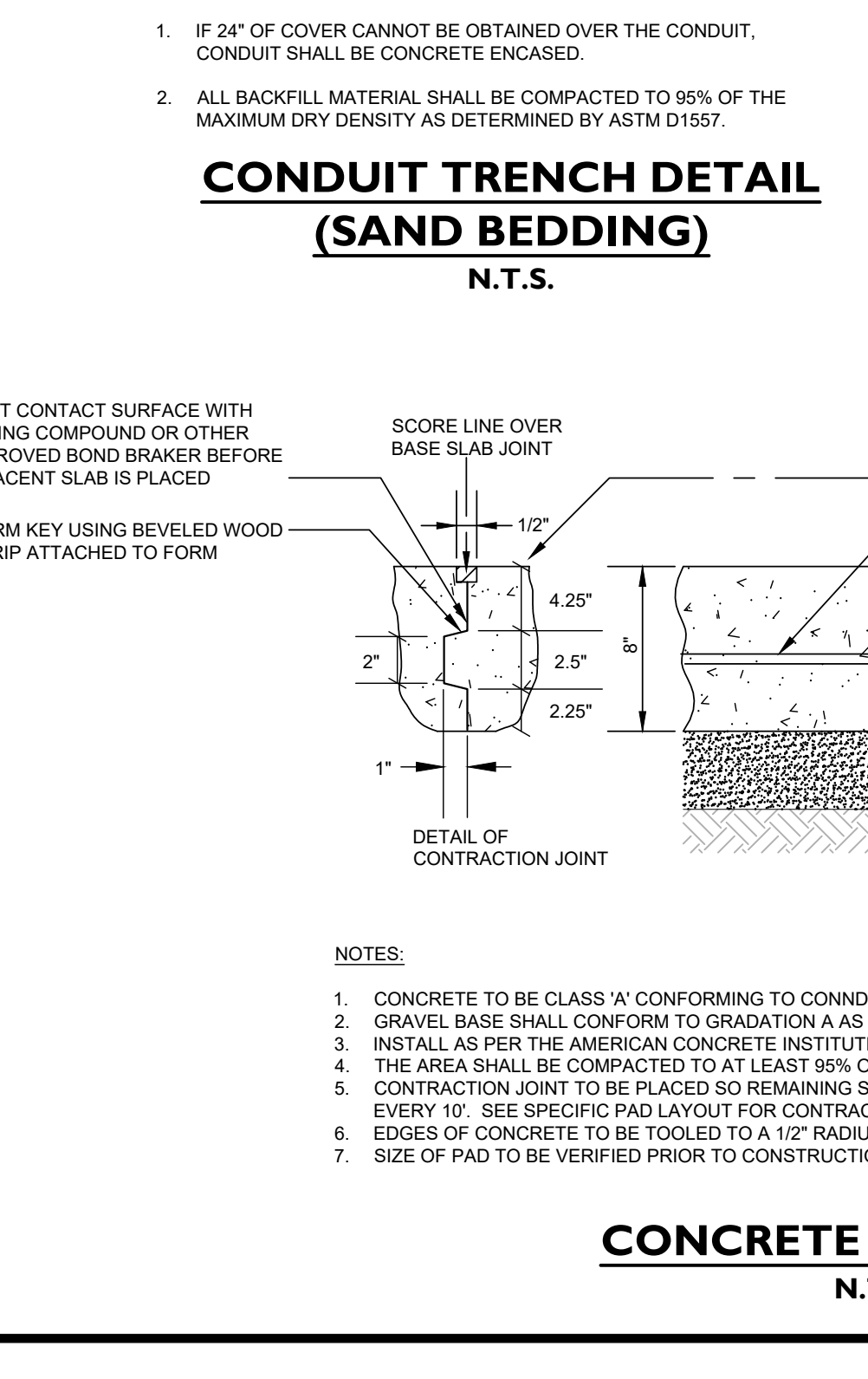
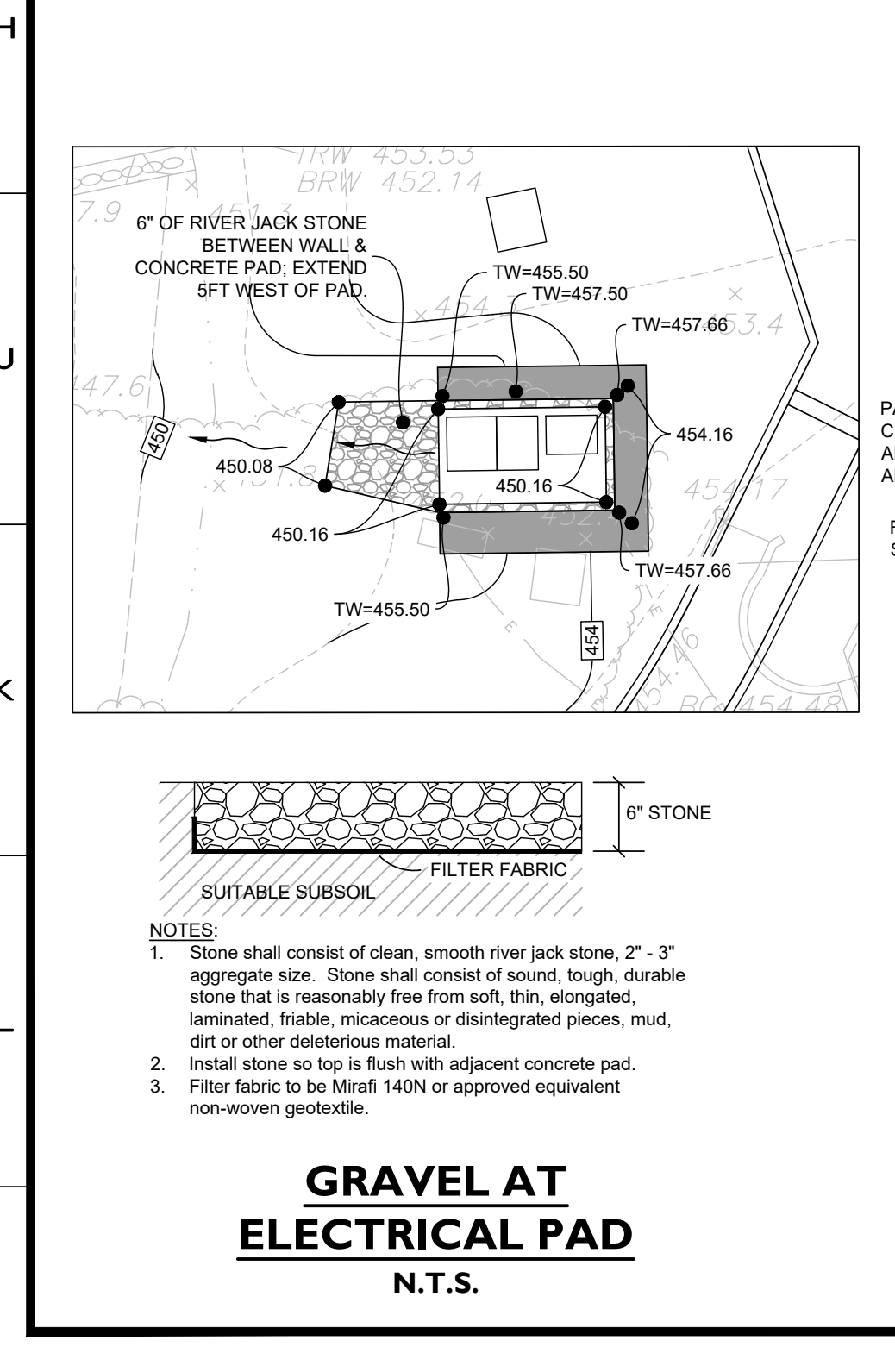
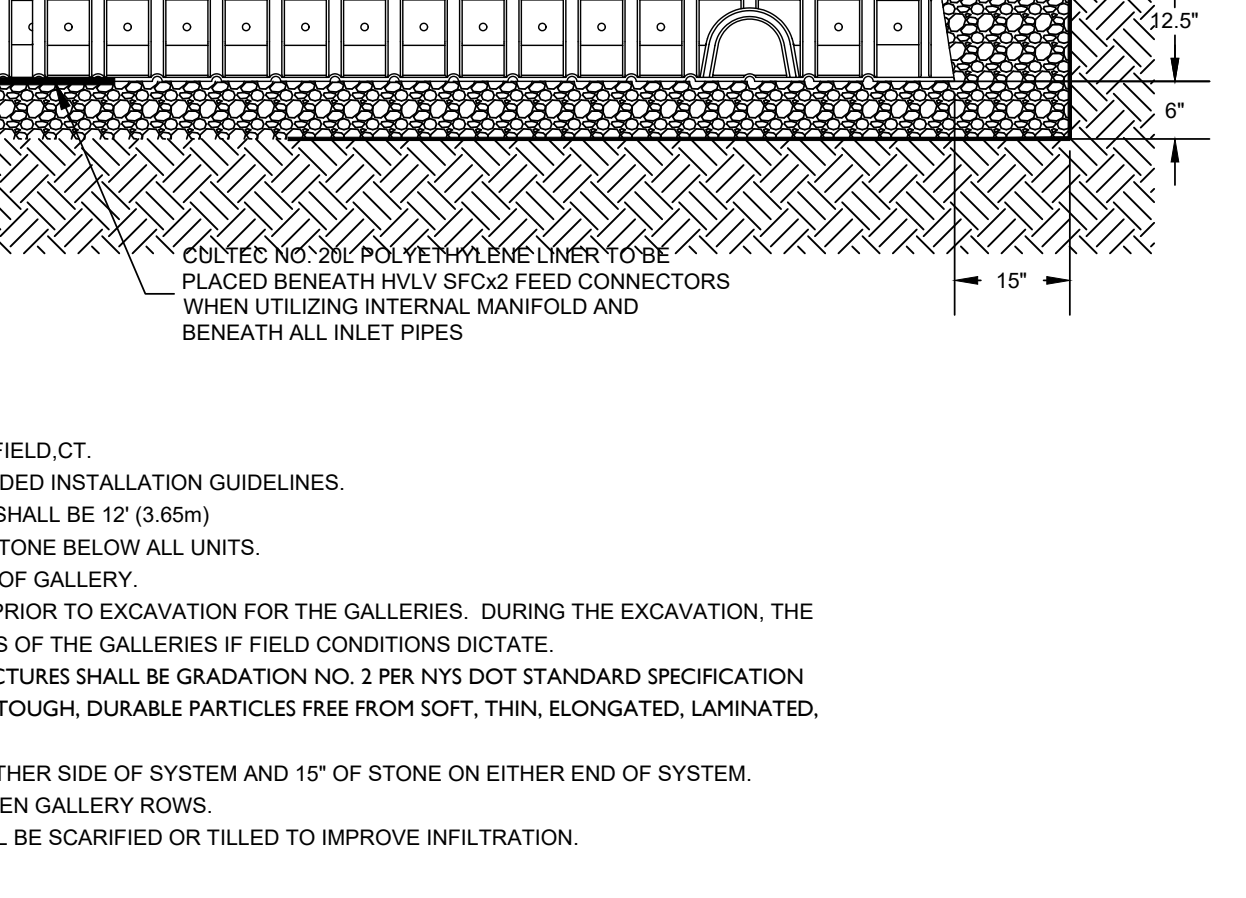
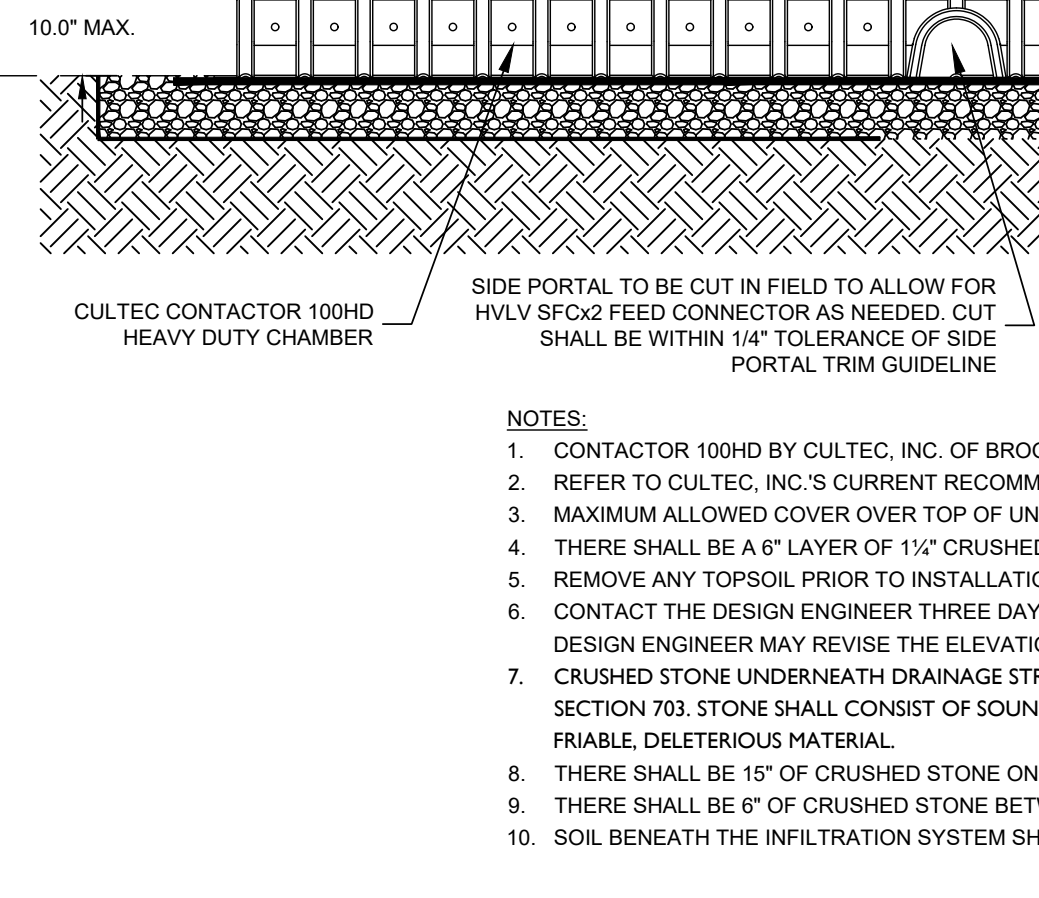
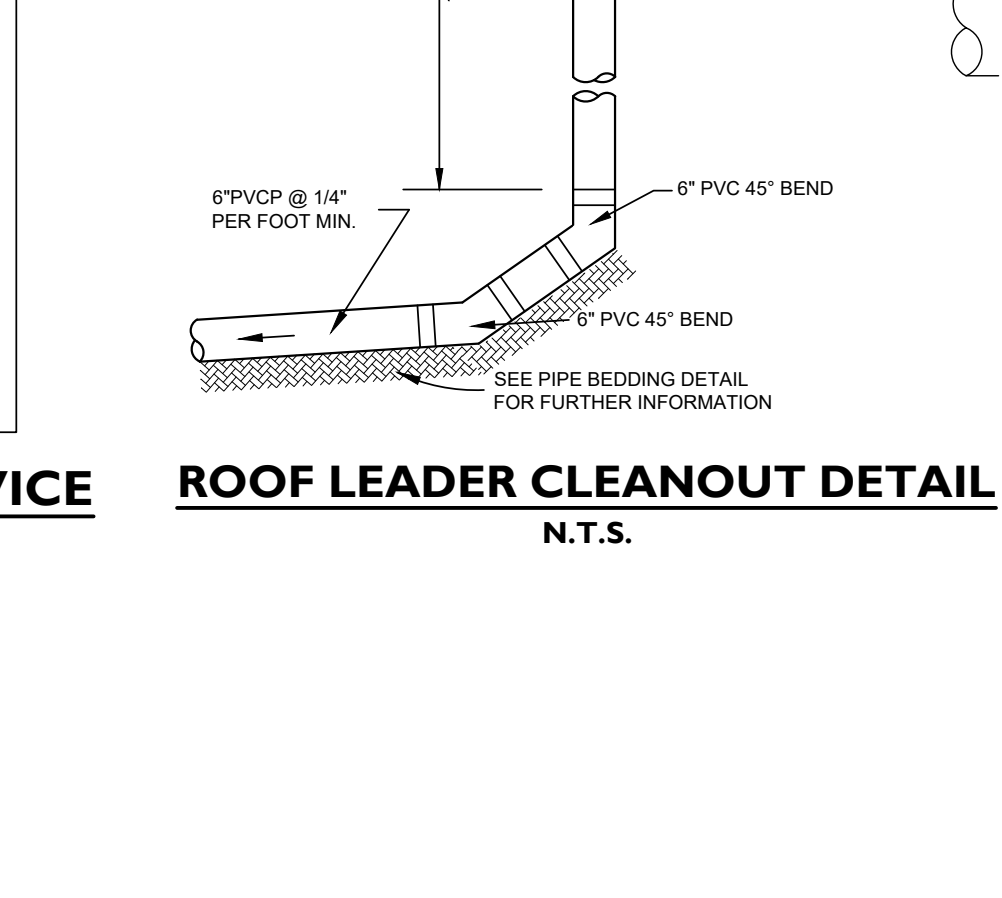
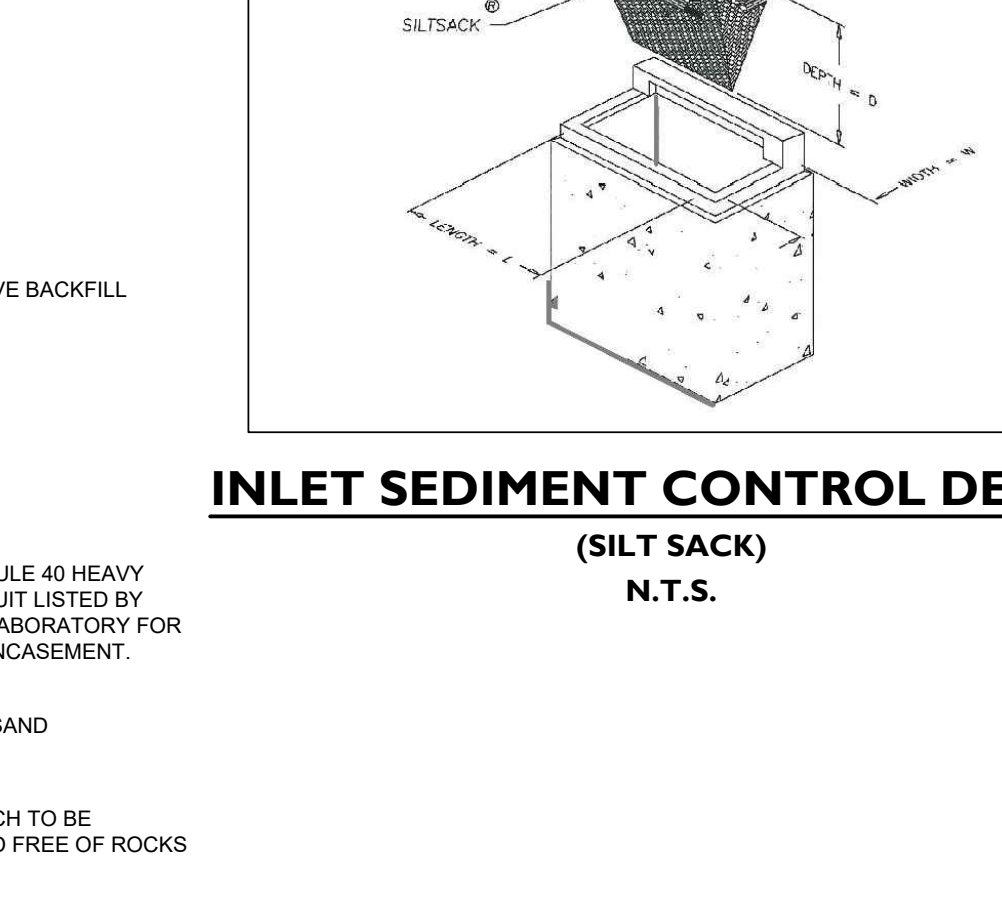
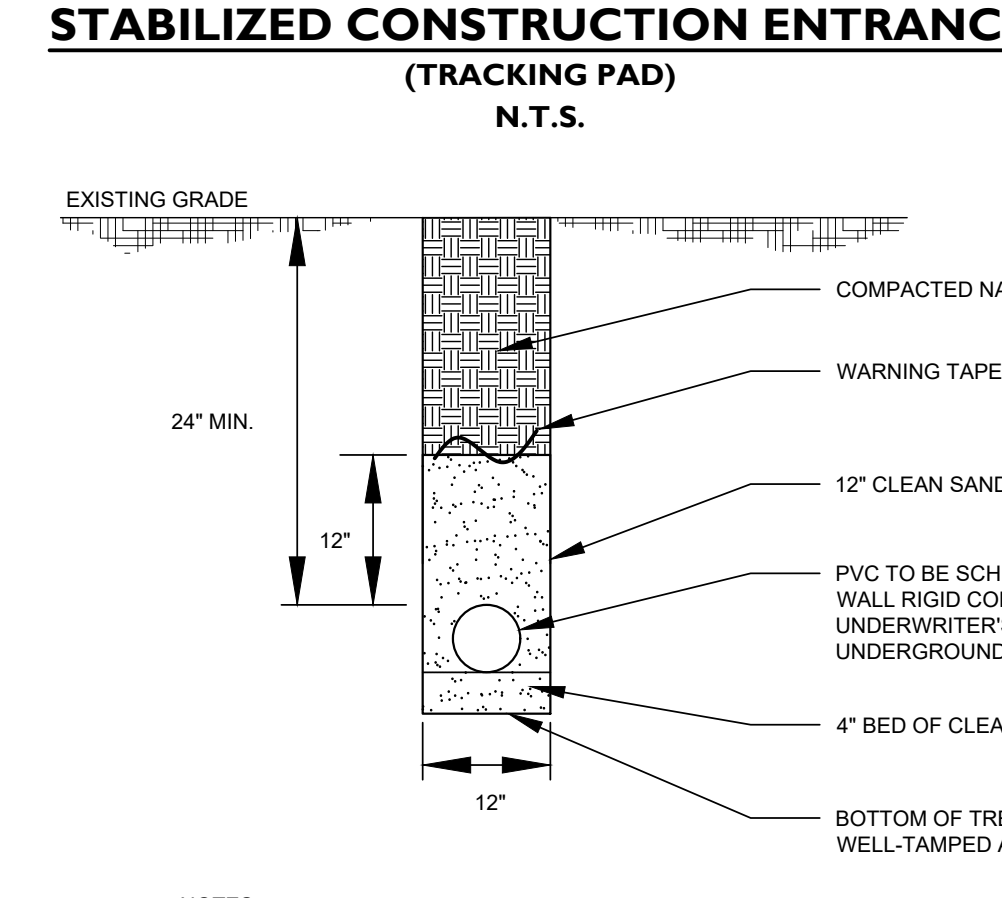
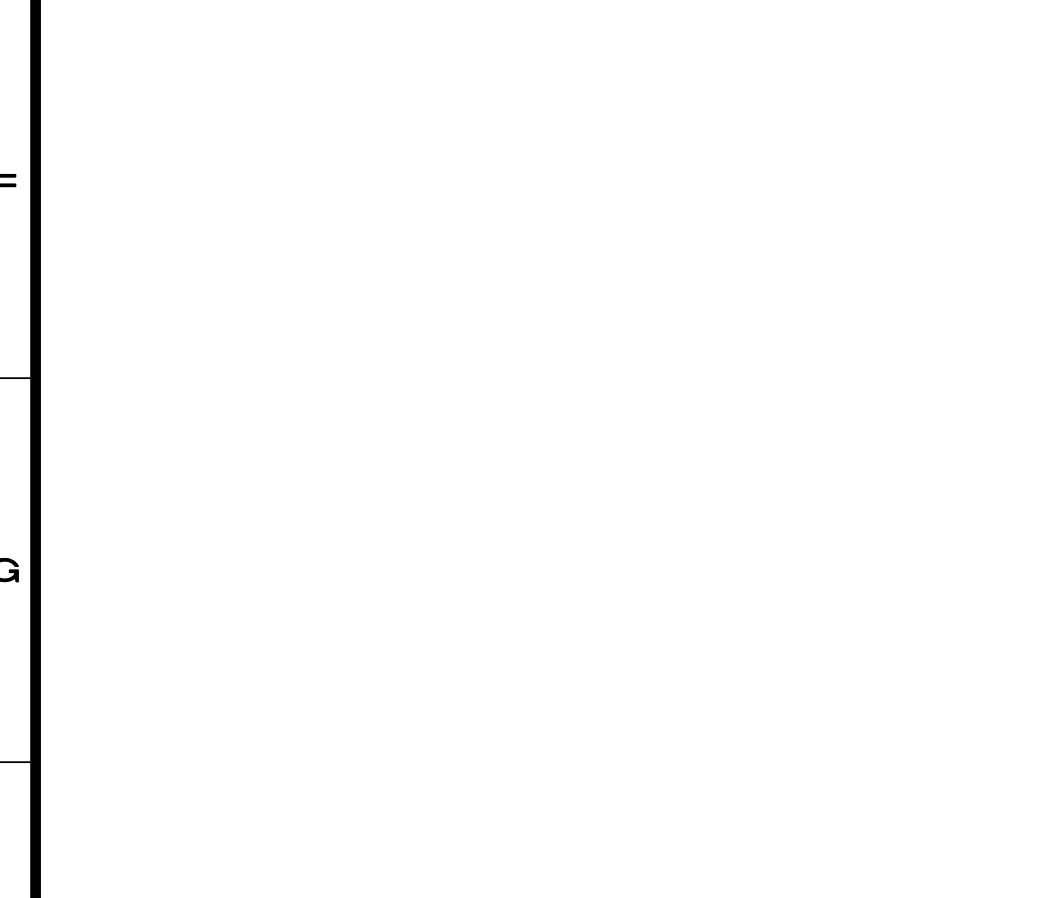
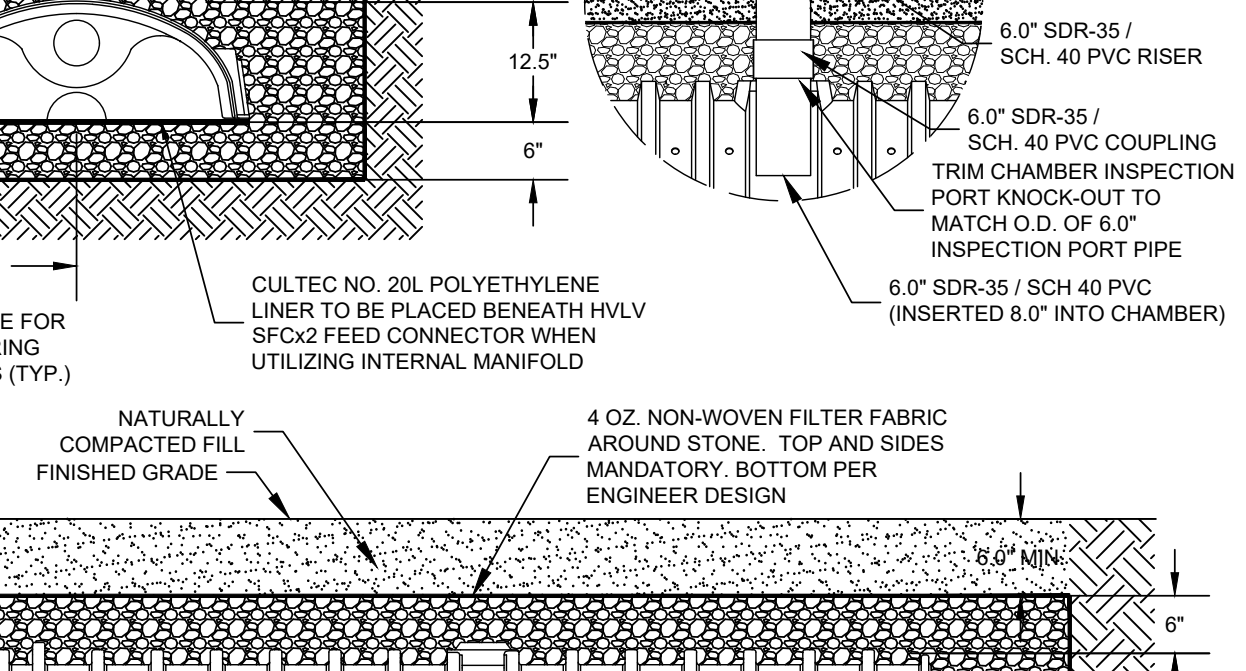
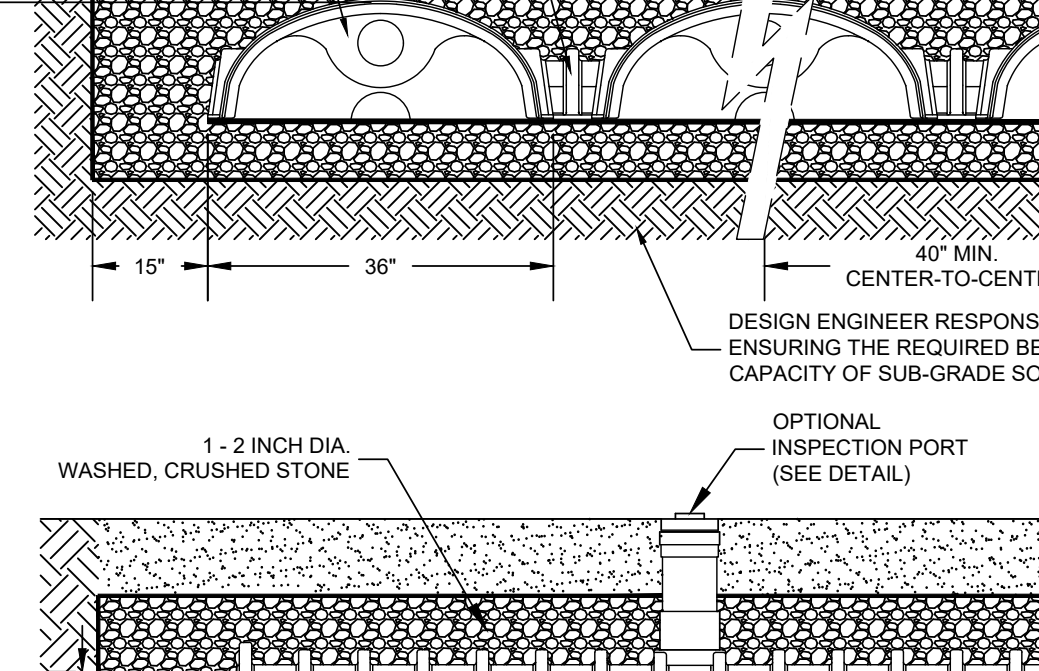
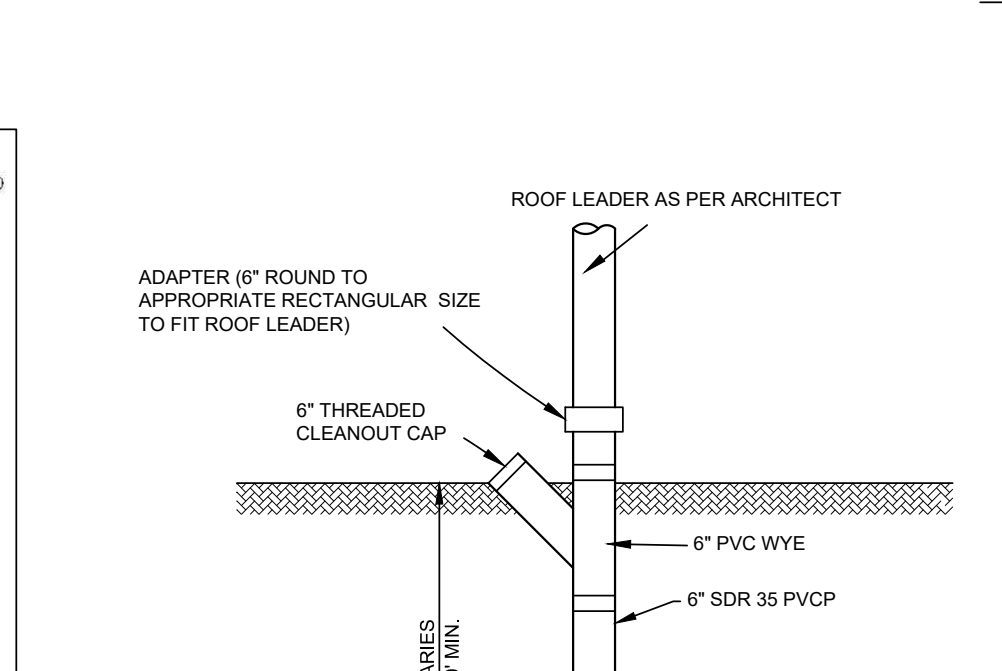
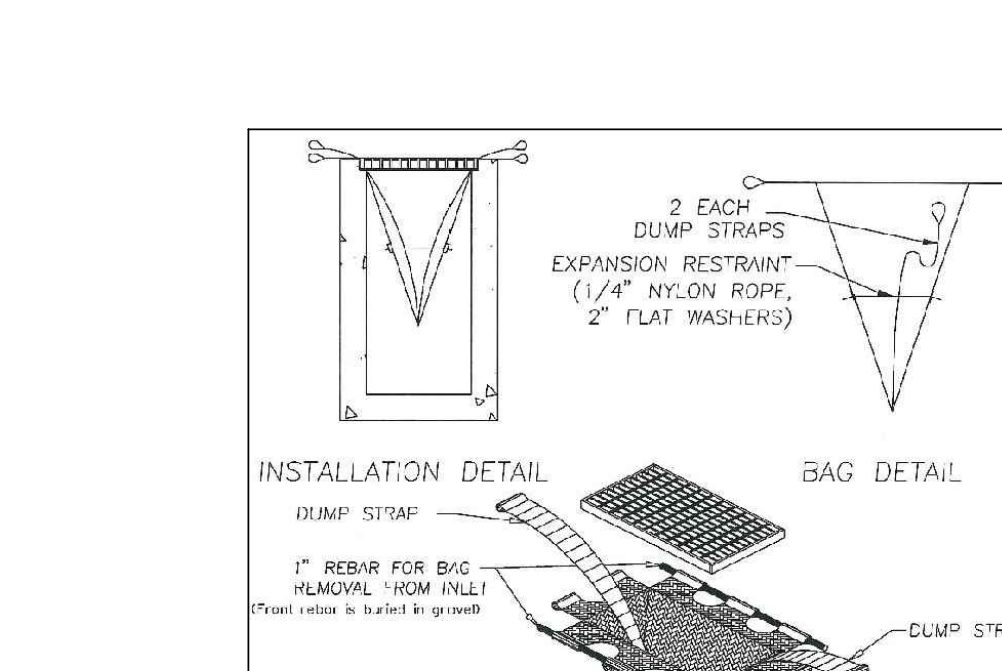
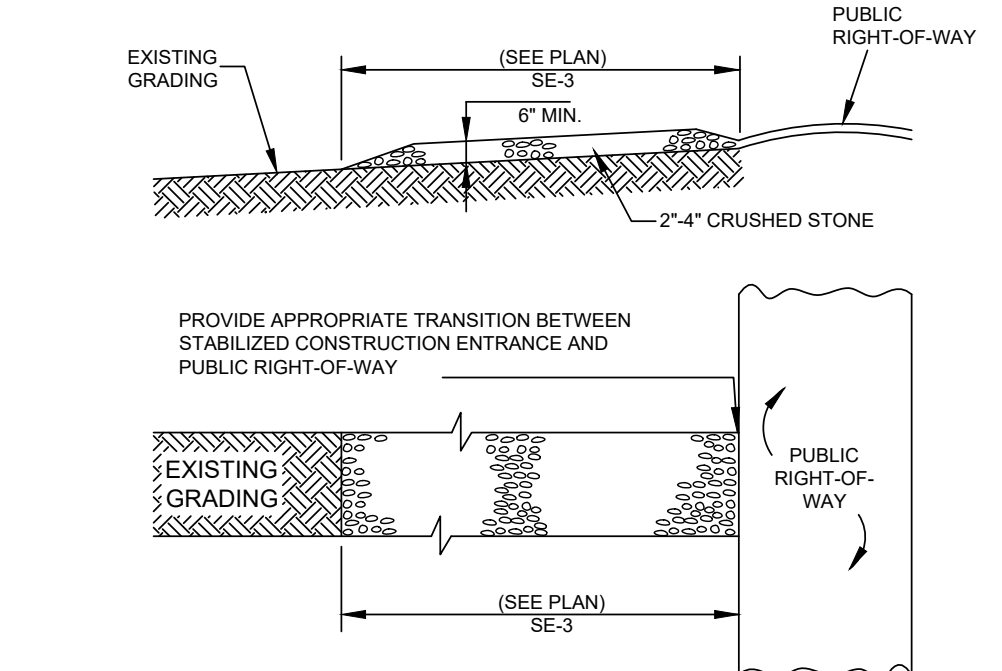
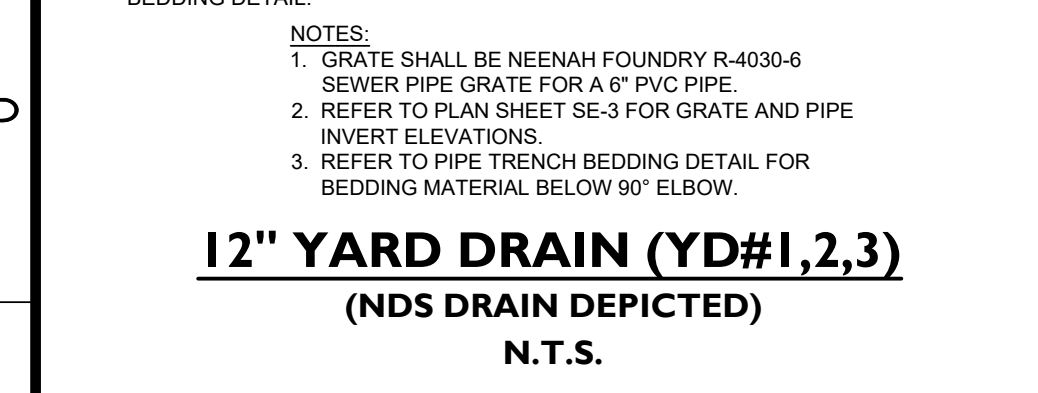
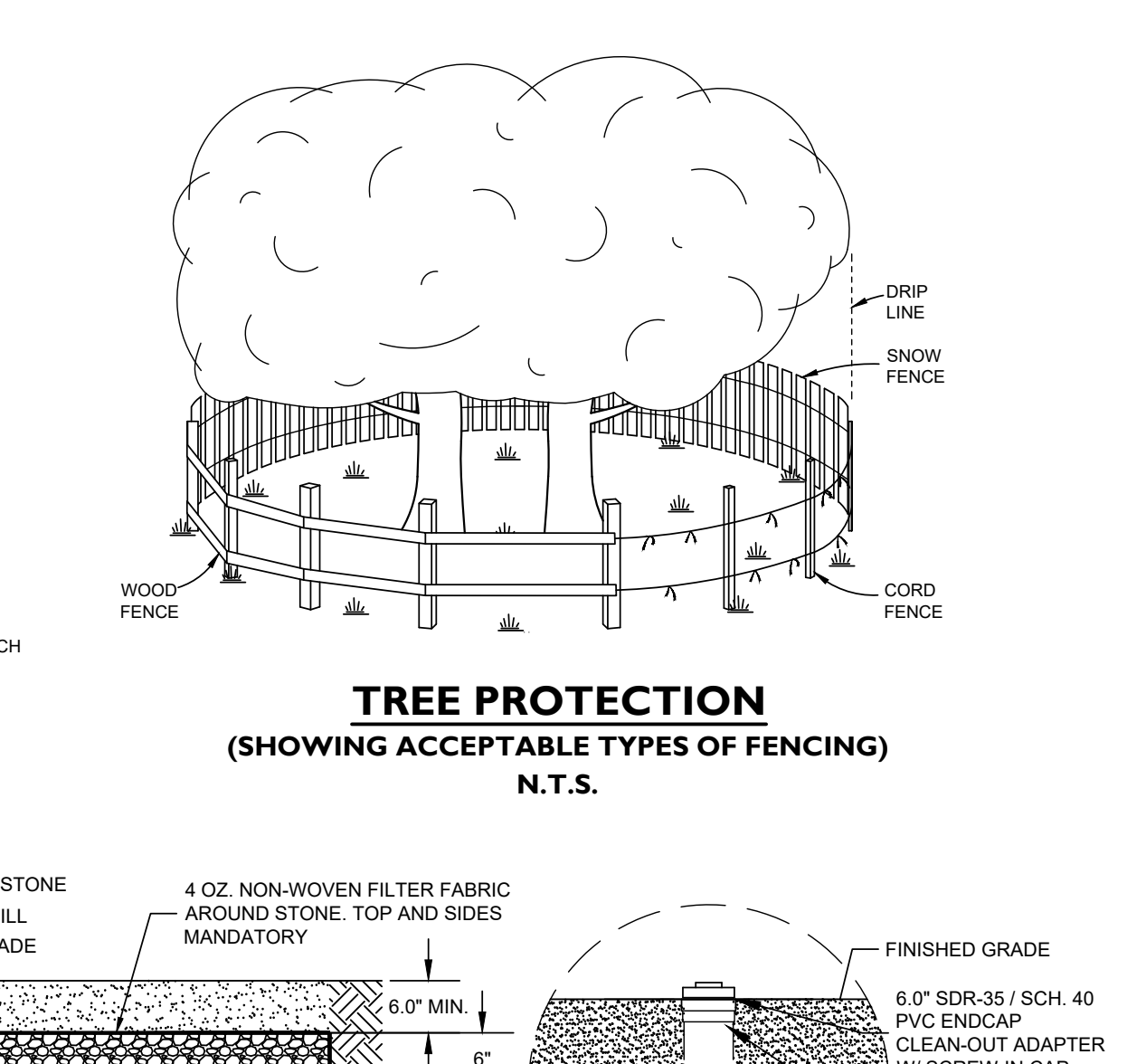
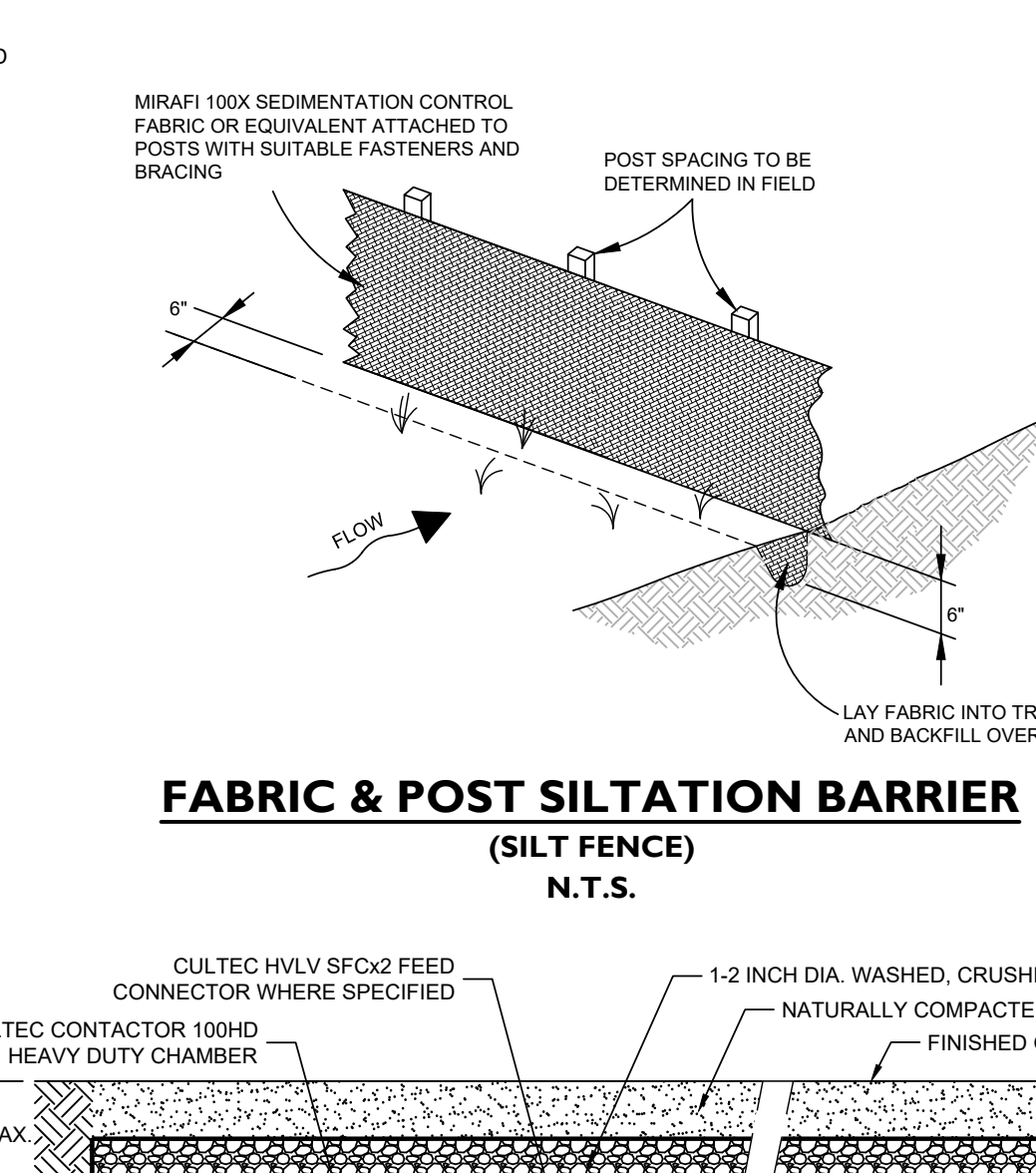
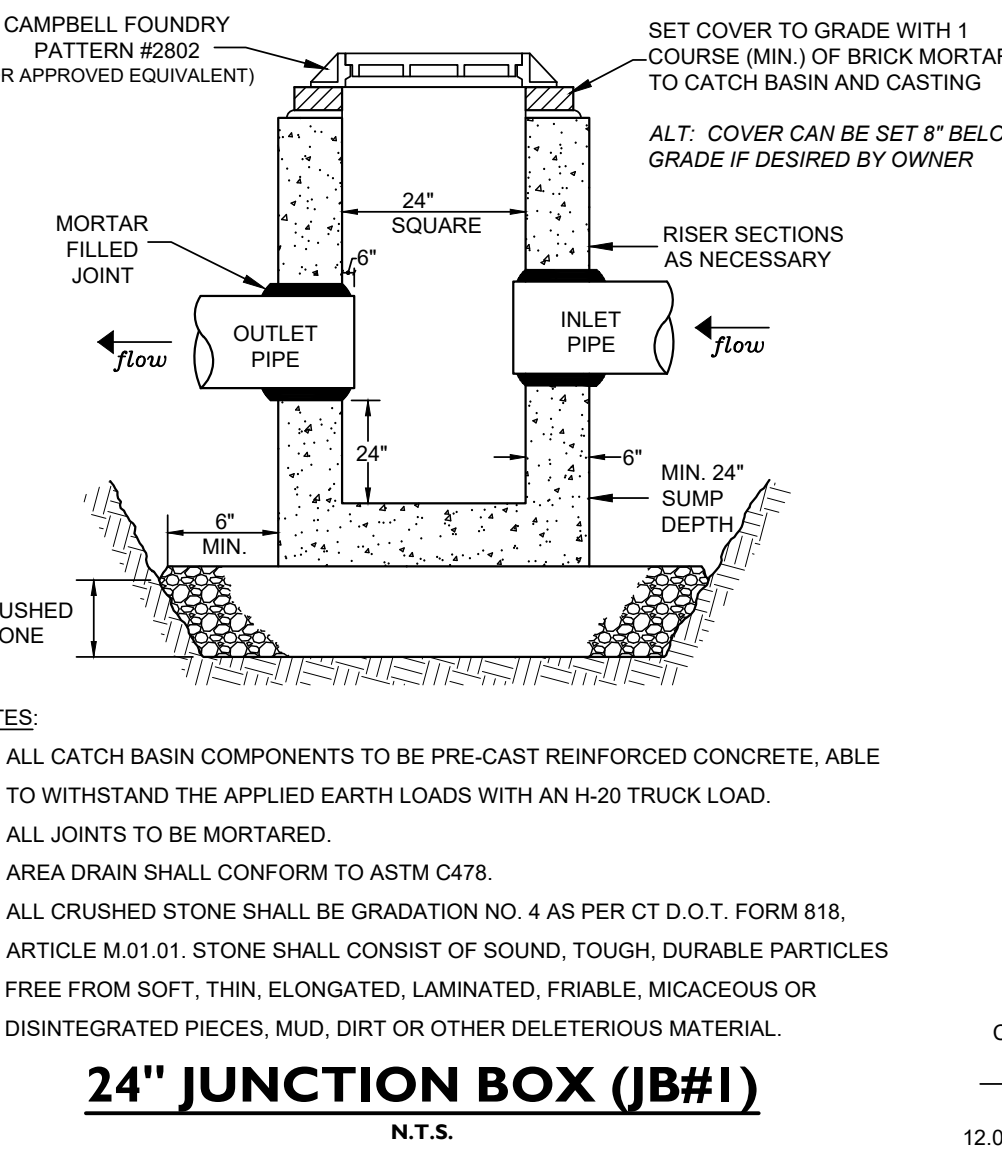
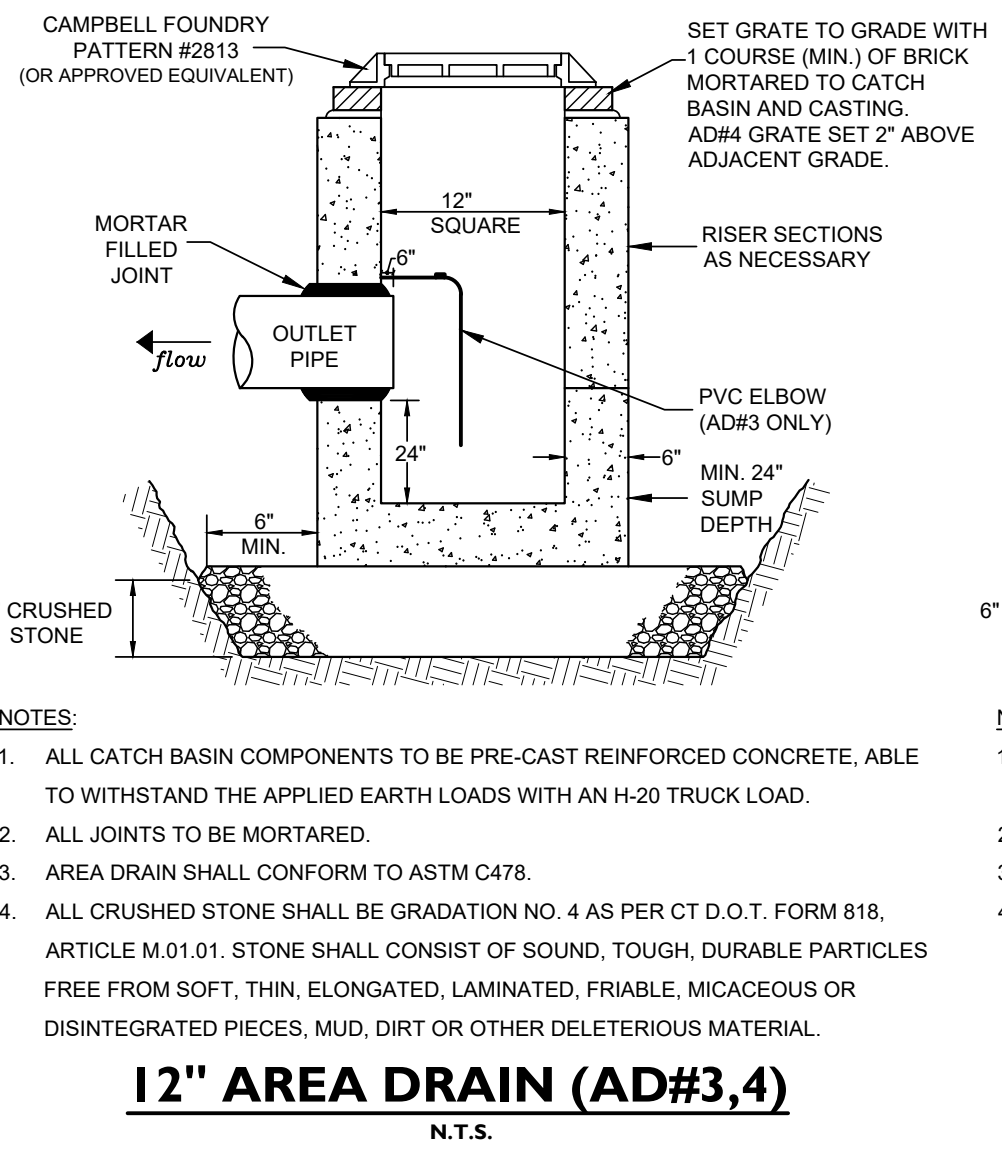
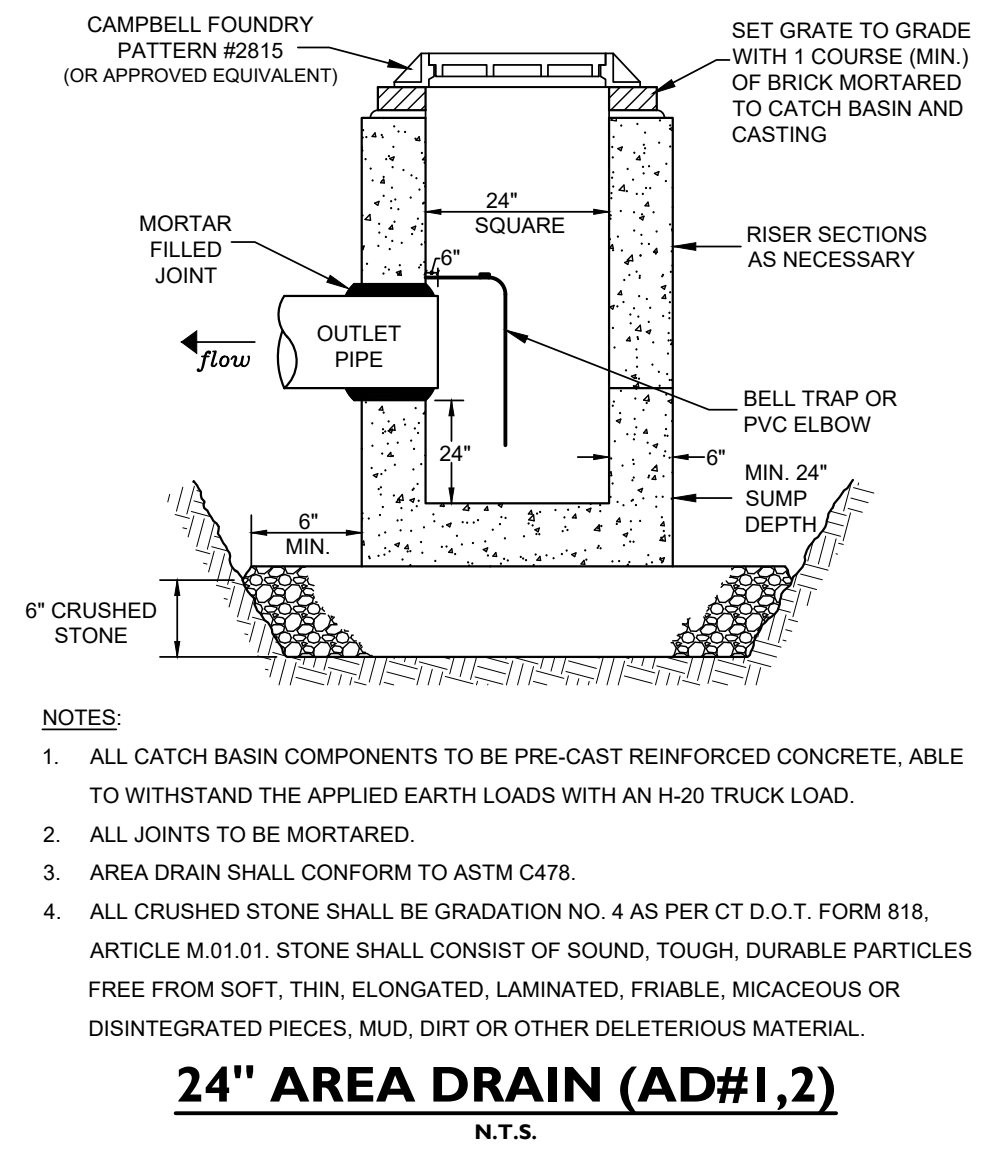
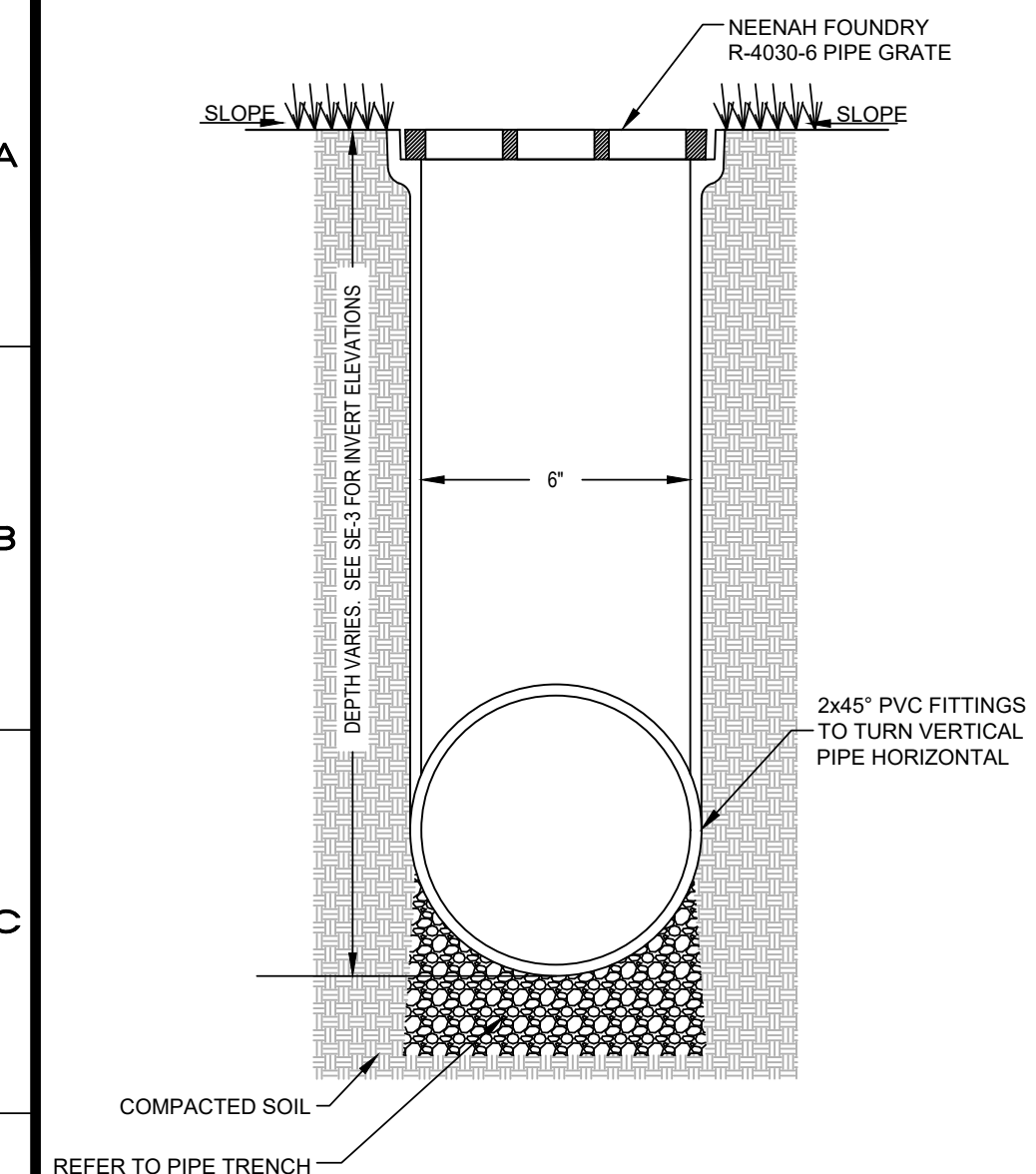
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REDNISS & MEAD
PROFESSIONAL ENGINEERS
AND LAND SURVEYORS, P.C.

SHEET No: **SE-4**

22 First Street | Stamford, CT 06905
Tel: 203.372.4500 | Fax: 203.357.1118
www.rednissmead.com

Comm. No.: 7992



DETAILS DEPICTING 21 COWDRAY PARK DRIVE NORTH CASTLE, NY PREPARED FOR FIFTH AVENUE PROPERTIES, LLC

SCALE: N.T.S.
DRAWN BY: AJP
CHECKED BY: AMK
DATE: June 21, 2022
CRAIG J. VEARNER, N.Y. P.E. 093875-1

REDNISS & MEAD
PROFESSIONAL ENGINEERS AND LAND SURVEYORS, P.C.
22 First Street | Stamford, CT 06905
Tel: 203.327.0500 | Fax: 203.357.1118
www.rednissandmead.com

REVISIONS:

No.	Date	Revision
6	06/21/2022	REVISED: LANDSCAPE CD'S
5	12/03/2020	REVISED PER UTILITY UPDATES
4	10/26/2020	REVISED PER RPRC ENGINEERING COMMENTS
3	09/02/2020	REVISED PER RPRC COMMENTS
2	07/10/2020	ISSUED FOR PERMITTING
1	06/05/2020	ISSUED FOR PRICING

SE-5
Comm. No. 7992

SITE ENGINEERING REPORT
21 Cowdray Park Drive

Prepared For
Fifth Avenue Properties, LLC
21 Cowdray Park Drive
North Castle, NY

Prepared by
Redniss & Mead, Inc.
22 First Street
Stamford, CT
(203) 327-0500

Issued on
06/21/2022



**REDNISS
& MEAD**

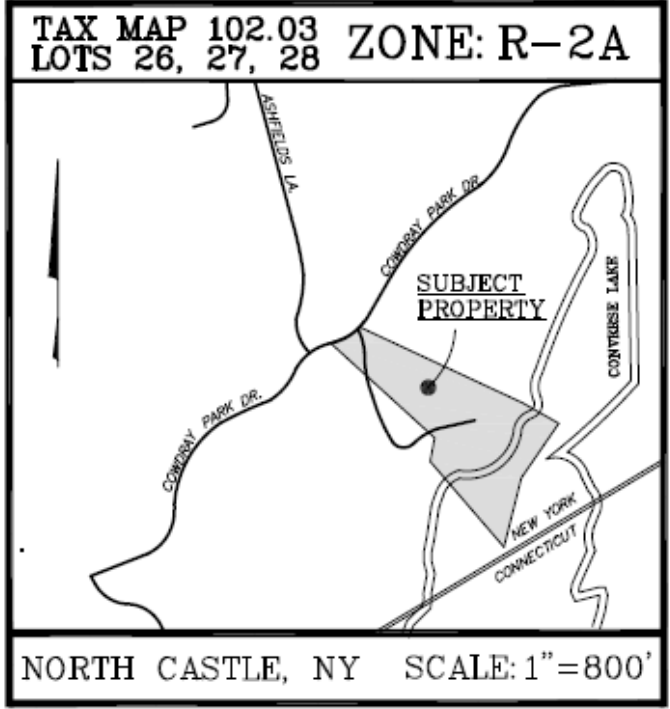
LAND SURVEYING
CIVIL ENGINEERING
PLANNING & ZONING CONSULTING
PERMITTING

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Stamford, CT 06905
203.327.0500
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Table of Contents

Existing & Proposed Drainage Basin Maps.....	Appendix 1
WQV & 72-Hour Drawdown Calculations.....	Appendix 2
HydroCAD Computer Model	Appendix 3
Wetland/Watercourse Investigation and Delineation Report	Appendix 4
Site Flood Insurance Rate Map (FIRM), by FEMA, revision dated 9/28/07	Appendix 5
USDA/NRCS soil map of watershed.....	Appendix 6



Narrative

Project Description

The applicant is seeking approval to build a detached garage and make modifications to various hardscape elements within the vicinity of the residence. Improvements consist of building a slab-on-grade one-story garage kitty corner to the existing garage; reconfiguring the front motor court; as well as various exterior hardscape (walkways, terraces) & landscape improvements. The property is on the south side of Cowdray Park Drive, and east of the intersection between Ashfields Lane and Cowdray Park Drive. Reference is made to site drawings dated March 15th, 2022.

Existing Conditions:

The property is located within the R-2A Zone and is currently developed with a single-family dwelling with attached garage, indoor pool, terraces, a drive court, driveway, stables and paddocks. Other ancillary improvements include an onsite septic system, and private potable water supply wells. The property includes the water body area of Converse Lake and two inland wetland pockets. The largest of the two wetland pockets and its associated watercourse divides the upland area of the site. The watercourse flows directly into Converse Lake to the west of the proposed improvements. The second wetland pocket is associated with a small pond located in the central area of 21 CPD. There is a total of approximately 0.82 acres of wetlands on the property. The wetland investigation and delineation was prepared by Jay Fain & Associates, LLC. Their findings are published in a report titled, "Soils Mapping & Wetland/Watercourse Delineation" with an inspection date of 12/02/2014. This report can be found in Appendix 4. The shoreline of the property is associated with Converse Lake & partially lies within the Federal Emergency Management Agency (FEMA) Flood Hazard Zone A. The Flood Insurance Rate Map number 36119C0169F dated 09/28/07 is located in Appendix 5. All proposed improvements are located outside the Special Flood Hazard Area on land at least 28 ft higher in elevation than the surface of the lake.

The portion of the site effected by this development drains in two directions. The east basin consists of 3.59± acres of land and drains via overland flow to the shoreline of the lake. The north basin consists of 23.41± acres of land and drains into the central watercourse. The north basin study point utilized in this report is at the watercourse outlet to Converse Lake. Both basins are tributary to the Byram River Watershed. Refer to the existing drainage basin map in Appendix 1 and the HydroCAD report in Appendix 3 for additional information on the existing drainage basins.

The site soils in the upland area consists of Charlton-Chatfield, rocky outcrop complex, rolling and very rocky. The site soils within the wetlands and buffer areas are classified as Chatfield-Hollis, rock outcrop complex and hilly. These classifications are identified by the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) soils map for Westchester County. The NRCS soil survey can be found in Appendix 6. The

hydrological soils classifications are primarily type B for the upland and type D for the wetland areas onsite. Refer to Appendix D for a depiction of the hydrological soil classifications.

Proposed Conditions:

The proposed improvements will increase onsite impervious coverage by 2,559 sq.ft. Under proposed conditions the site will continue to drain in the same directions as it does under existing conditions. The hydrologic characteristics of the property will remain largely unaffected by this project.

The improvements within the north basin will result in an increase of 166 sq.ft. in impervious coverage. The total basin area will decrease by 1,108 sq.ft. This is achieved by re-routing a portion of the existing roof area on the west side of the dwelling to the East Basin. Runoff volume & peak runoff rates are reduced in the North basin for all studied storm events up to and including the 100-year event. Refer to Tables 1 & 2 for a comparison of existing and proposed peak runoff rates and runoff volumes for this basin.

The improvements within the east basin will result in an increase of 2,393 sq.ft. in impervious coverage. The total basin area will increase by 1,108 sq.ft. A subsurface infiltration system is proposed in the east basin. The infiltration system consists of 8xCultec Contactor C100HD chambers surrounded within crushed stone. This system will accept runoff generated from a 2,561 sq.ft. portion of existing roof. The storage is designed to provide water quality treatment for a tributary area of 2,561 sq.ft., all of which is impervious coverage. The system outlets through an overflow area drain just west of the system. Overflow will bubble out of the drain grate and flow south into Converse Lake. 326 cu.ft. of storage volume is provided below the top of the drain grate, exceeding the water quality volume of 304 cu.ft. Peak runoff rates and runoff volumes in the East Basin will increase by a small margin 1%±. This slight increase will be imperceptible given the vast size and storage of the receiving water body, Converse Lake. Refer to Tables 3 & 4 for a comparison of existing and proposed peak runoff rates and runoff volumes for this basin.

An analysis of the pre and post construction runoff volume and peak runoff rates for the North and East Basin has been prepared using HydroCAD. The model uses rainfall intensities from Cornell's "Extreme Precipitation in New York & New England: An Interactive Web Tool for Extreme Precipitation Analysis". The following tables document the model results for both pre-construction and post-construction conditions through the 100 year storm event:

Table 1 – North Basin Peak Rates of Runoff

Storm Event	Peak Flow (cfs)			
	Ex	Pr	Change	% Change
1	14.03	14.02	-0.01	-0.1%
2	21.67	21.66	-0.01	-0.1%
5	33.60	33.57	-0.03	-0.1%
10	45.44	45.40	-0.04	-0.1%
25	65.48	65.41	-0.07	-0.1%
50	84.52	84.44	-0.08	-0.1%
100	107.68	107.57	-0.11	-0.1%

Table 2 – North Basin Runoff Volume Rates

Storm Event	Runoff Volume (acre-ft)			
	Ex	Pr	Change	% Change
1	1.648	1.647	-0.001	-0.1%
2	2.443	2.440	-0.003	-0.1%
5	3.696	3.692	-0.004	-0.1%
10	4.952	4.947	-0.005	-0.1%
25	7.106	7.099	-0.007	-0.1%
50	9.186	9.177	-0.009	-0.1%
100	11.755	11.743	-0.012	-0.1%

Table 3 – East Basin Peak Rates of Runoff

Storm Event	Peak Flow (cfs)			
	Ex	Pr	Change	% Change
1	2.80	2.78	-0.02	-0.7%
2	4.32	4.40	+0.08	+1.9%
5	6.69	6.80	+0.11	+1.6%
10	9.05	9.17	+0.12	+1.3%
25	13.02	13.17	+0.15	+1.2%
50	16.80	16.97	+0.17	+1.0%
100	21.38	21.57	+0.19	+0.9%

Table 4 – East Basin Runoff Volume Rates

Storm Event	Runoff Volume (acre-ft)			
	Ex	Pr	Change	% Change
1	0.252	0.256	+0.004	+1.6%
2	0.374	0.379	+0.005	+1.3%
5	0.566	0.574	+0.008	+1.4%
10	0.759	0.769	+0.010	+1.3%
25	1.089	1.102	+0.013	+1.2%
50	1.408	1.424	+0.016	+1.1%
100	1.802	1.822	+0.020	+1.1%

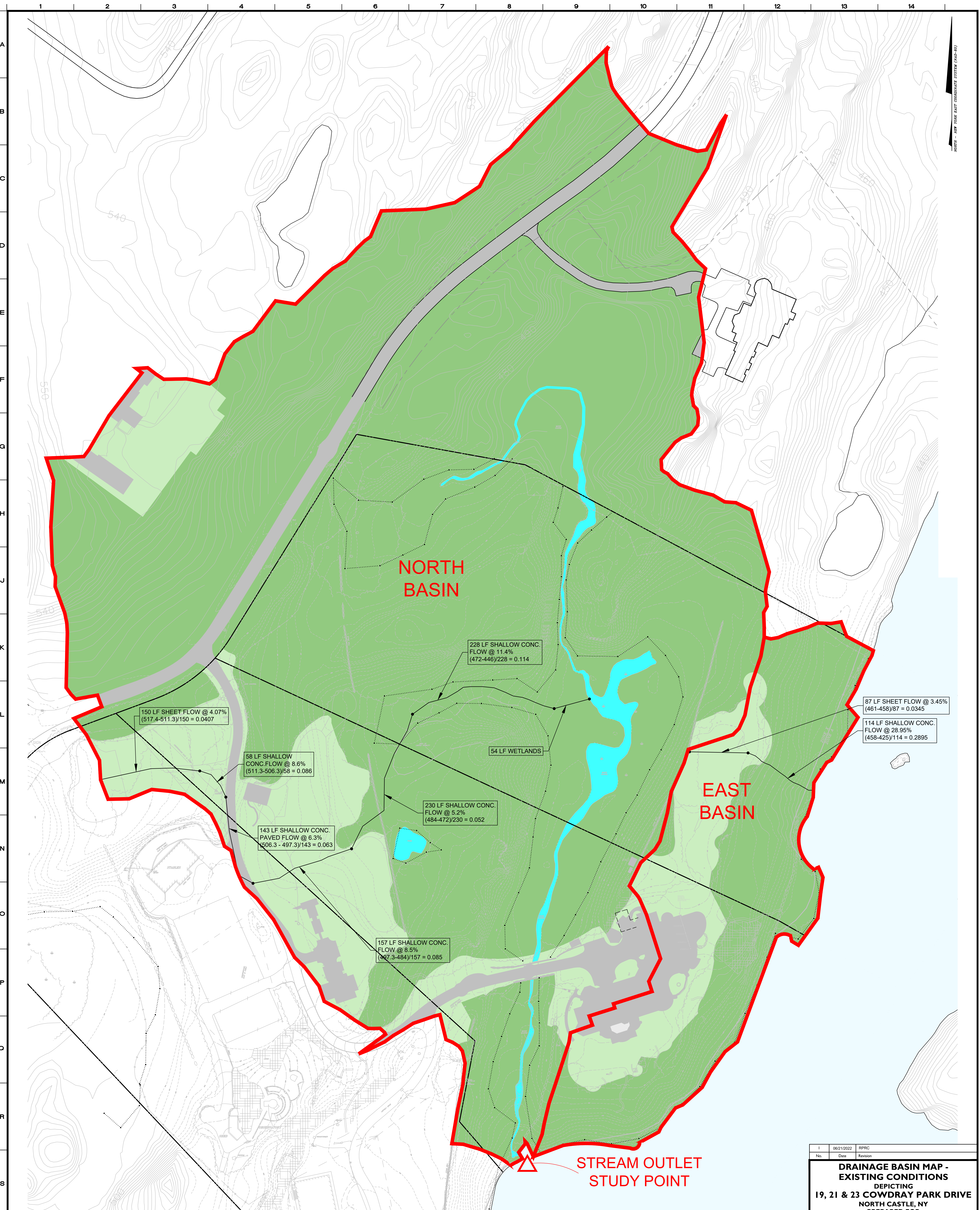
Sediment and Erosion Controls

A Sediment and Erosion Control Plan, including a system of controls both temporary and permanent, has been provided to minimize erosion and contain & properly dispose of any accumulation of sediment during construction. The proposed disturbance area associated with the proposed improvements is 23,085 sq.ft., including 6,630 sq.ft. of existing pervious area within the 100ft wetlands buffer. A buffer mitigation planting plan, prepared by Jay Fain & Associates, proposes 13,260 sq.ft. of new planted area (2x the disturbed pervious area). Surrounding areas not impacted by construction activities will be delineated with the use of silt fence and will remain undisturbed. No stockpiling will occur outside the limit of disturbance. An area for contractor and worker parking is designated adjacent to an existing horse paddock at the front of the site within the upland area. Temporary sediment and erosion controls include a crushed stone construction entrance tracking pad, inserts in drainage inlets to catch sediment, tree protection fence and silt fence. The erosion control measures proposed shall be installed and maintained in accordance with “The New York Standards and Specifications for Erosion and Sediment Control”.

Given the limited space for construction, the project will be phased working from the front yard to the rear yard. The improvements in the rear yard (patios/terraces and pavilion) will be built and stabilized last. The improvements in front of the house (garage, motor court reconfiguration) will be built first. Phasing the project in this way minimizes the area of the site will be disturbed at one time, which in turn reduces the risk of sedimentation & erosion. Representatives from Redniss & Mead will make periodic site visits after rain events to observe the condition and functionality of the erosion controls. Any necessary corrective or additional measures will be discussed with the contractor and documented in an erosion control report log.

Conclusion

The stormwater design employs effective strategies designed to maintain or reduce the peak rates of runoff where necessary and filter sediments and pollutants from the water through the use of an infiltration system. Based on the above information and with proper implementation of the design drawings, the proposed development will not adversely impact adjacent or downstream properties or Town or State-owned drainage facilities.



150 LF SHEET FLOW @ 4.07%
 $(517.4-511.3)/150 = 0.0407$

58 LF SHALLOW CONC. FLOW @ 8.6%
 $(511.3-506.3)/58 = 0.086$

143 LF SHALLOW CONC. PAVED FLOW @ 6.3%
 $(606.3 - 497.3)/143 = 0.063$

157 LF SHALLOW CONC. FLOW @ 8.5%
 $(547.3-484)/157 = 0.085$

230 LF SHALLOW CONC. FLOW @ 5.2%
 $(484-472)/230 = 0.052$

228 LF SHALLOW CONC. FLOW @ 11.4%
 $(472-446)/228 = 0.114$

54 LF WETLANDS

87 LF SHEET FLOW @ 3.45%
 $(461-458)/87 = 0.0345$

114 LF SHALLOW CONC. FLOW @ 28.95%
 $(458-425)/114 = 0.2895$

STREAM OUTLET STUDY POINT

No.	Date	Revision
I	06/21/2022	RPRC

DRAINAGE BASIN MAP - EXISTING CONDITIONS
 DEPICTING
19, 21 & 23 COWDRAY PARK DRIVE
 NORTH CASTLE, NY
 PREPARED FOR
FIFTH AVENUE PROPERTIES, LLC

SCALE: 0 50 100
 1"=50'

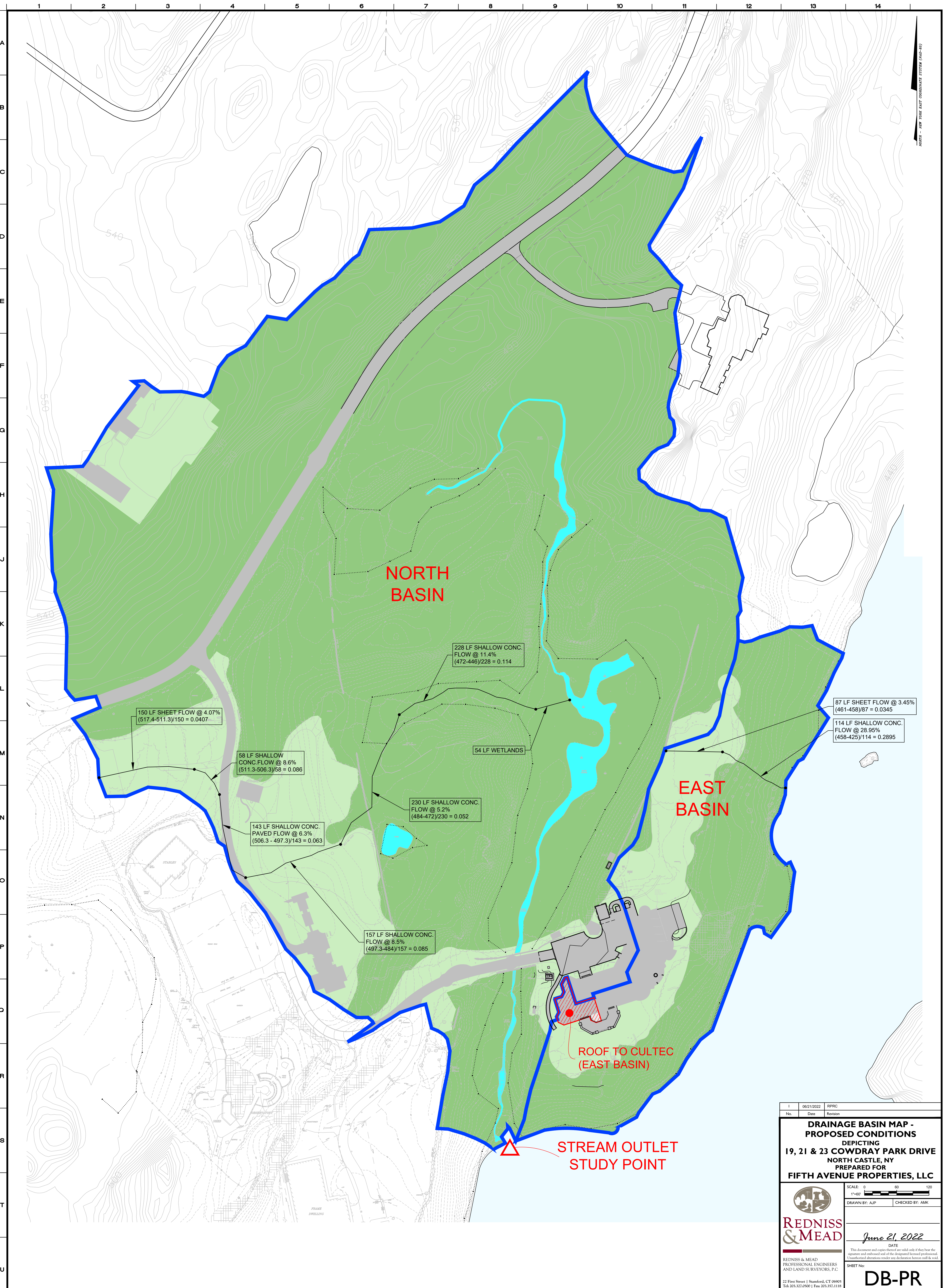
DRAWN BY: AJP CHECKED BY: AMK

DATE
June 21, 2022

REDNISS & MEAD
 PROFESSIONAL ENGINEERS AND LAND SURVEYORS, P.C.

22 First Street | Stamford, CT 06905
 Tel: 203.327.8801 Fax: 203.357.1118
 www.rednissandmead.com

SHEET No:
DB-EX
 Conn. No. 7992



150 LF SHEET FLOW @ 4.07%
 $(517.4-511.3)/150 = 0.0407$

58 LF SHALLOW CONC. FLOW @ 8.6%
 $(511.3-506.3)/58 = 0.086$

143 LF SHALLOW CONC. PAVED FLOW @ 6.3%
 $(506.3 - 497.3)/143 = 0.063$

157 LF SHALLOW CONC. FLOW @ 8.5%
 $(497.3-484)/157 = 0.085$

230 LF SHALLOW CONC. FLOW @ 5.2%
 $(484-472)/230 = 0.052$

228 LF SHALLOW CONC. FLOW @ 11.4%
 $(472-446)/228 = 0.114$

54 LF WETLANDS

87 LF SHEET FLOW @ 3.45%
 $(461-458)/87 = 0.0345$

114 LF SHALLOW CONC. FLOW @ 28.95%
 $(458-425)/114 = 0.2895$

ROOF TO CULTEC (EAST BASIN)

STREAM OUTLET STUDY POINT

No.	06/21/2022	RRPC
Date		
Revision		

DRAINAGE BASIN MAP - PROPOSED CONDITIONS
 DEPICTING
19, 21 & 23 COWDRAY PARK DRIVE
 NORTH CASTLE, NY
 PREPARED FOR
FIFTH AVENUE PROPERTIES, LLC

SCALE: 0 60 120
 1"=60'

DRAWN BY: AJP CHECKED BY: AMK

DATE
June 21, 2022

REDNISS & MEAD
 PROFESSIONAL ENGINEERS AND LAND SURVEYORS, P.C.

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SHEET No:
DB-PR

Comm. No. 7992

Water Quality Volume Calculations

Project: 21 CPD

Project #: 7992

Date: 3/15/2022

Location: North Castle, New York

By: AJP

Checked: AMK

Existing Roof to Cultec System

Area=	0.059	acres
Impervious Area=	0.059	acres
P=	1.5	inches ^a
I=	1.000	^b
R=	0.950	^c
WQV=	0.007	ac. ft. ^d

Required WQV=	304.12 ft.³
Provided WQV=	326.00 ft.³

^a P=90% Rainfall Event Number, See Figure 4.1 in Section 4.2 of the 2015 New York State Stormwater Management Design Manual

^b I=Percent Impervious Coverage

^c R=0.05+0.009(I); Volumetric runoff Coefficient, Equation taken from 2004 Connecticut Stormwater Quality Manual section 7.4.1

^d WQV=(P*Rv*A)/12; Water Quality Volume, Equation taken from 2015 New York State Stormwater Management Design Manual section 4.2

* Storage provided in entire cultec system

72-Hour Draw Down Calculations

Project: 21 Cowdray Park Drive, North Castle, NY **Project #:** 7992 **Date:** 3/15/2022

Location: 21 Cowdray Park Drive, North Castle, NY **By:** AJP **Checked:** AMK

East Basin - Cultec Infiltration System

<u>Infiltration BMP</u>		
Surface Area of Infiltration System (SA)	297	ft ²
Volume of Storage of Infiltration System (VS)	326	ft ³
Infiltration Rate (IR)	0.52	in/hr ^c
Theoretical Water Column Height	13.17	in ^a
Time of Draw Down	25.33	hr^b

^a Theoretical Water Column Height (WCH) = VS/SA*12

^b Time of Draw Down = WCH/IR

^c Infiltration Rate (IR) taken from Table 5-1: Loam in the Stamford Drainage Manual
Texture Class - Silty Loam (B) at bottom of infiltration system

72-Hour Draw Down Calculations

Project: 21 Cowdray Park Drive, North Castle, NY **Project #:** 7992 **Date:** 3/15/2022

Location: 21 Cowdray Park Drive, North Castle, NY **By:** AJP **Checked:** AMK

East Basin - Cultec Infiltration System

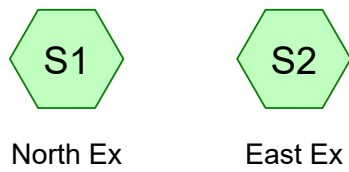
<u>Infiltration BMP</u>		
Surface Area of Infiltration System (SA)	297	ft ²
Volume of Storage of Infiltration System (VS)	326	ft ³
Infiltration Rate (IR)	7.50	in/hr ^c
Theoretical Water Column Height	13.17	in ^a
Time of Draw Down	1.76	hr^b

^a Theoretical Water Column Height (WCH) = VS/SA*12

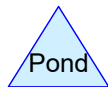
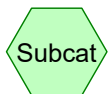
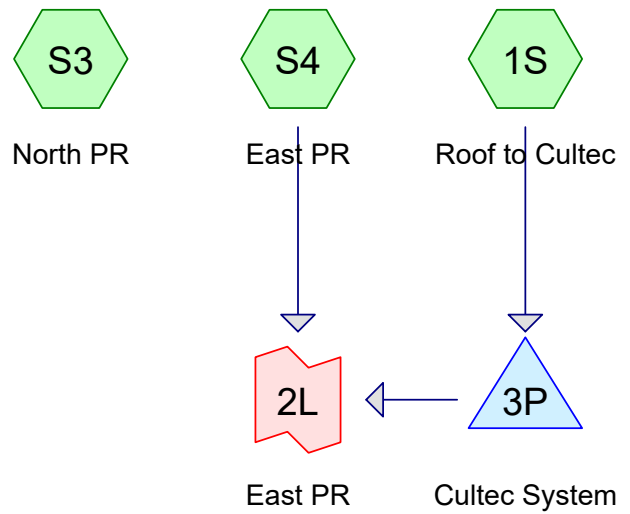
^b Time of Draw Down = WCH/IR

^c Infiltration Rate (IR) taken from Hydraulic Conductivity Test PH#202
Texture Class - Silty Loam (B) at bottom of infiltration system

Existing Conditions



Proposed Conditions



7992 Master -Motor Court Master2

Type III 24-hr 1 YR Rainfall=2.82"

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Page 2

Time span=0.00-26.00 hrs, dt=0.05 hrs, 521 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: Roof to Cultec	Runoff Area=2,561 sf 100.00% Impervious Runoff Depth=2.59" Tc=5.0 min CN=98 Runoff=0.16 cfs 0.013 af
Subcatchment S1: North Ex	Runoff Area=1,019,935 sf 7.97% Impervious Runoff Depth=0.84" Flow Length=966' Tc=21.3 min CN=75 Runoff=14.03 cfs 1.648 af
Subcatchment S2: East Ex	Runoff Area=156,365 sf 7.78% Impervious Runoff Depth=0.84" Flow Length=201' Tc=10.6 min CN=75 Runoff=2.80 cfs 0.252 af
Subcatchment S3: North PR	Runoff Area=1,018,827 sf 7.99% Impervious Runoff Depth=0.84" Flow Length=966' Tc=21.3 min CN=75 Runoff=14.02 cfs 1.647 af
Subcatchment S4: East PR	Runoff Area=154,912 sf 7.75% Impervious Runoff Depth=0.85" Flow Length=201' Tc=10.6 min CN=75 Runoff=2.78 cfs 0.250 af
Pond 3P: Cultec System	Peak Elev=448.66' Storage=326 cf Inflow=0.16 cfs 0.013 af Outflow=0.08 cfs 0.005 af
Link 2L: East PR	Inflow=2.78 cfs 0.256 af Primary=2.78 cfs 0.256 af

7992 Master -Motor Court Master2

Type III 24-hr 2 YR Rainfall=3.43"

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Page 15

Time span=0.00-26.00 hrs, dt=0.05 hrs, 521 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: Roof to Cultec	Runoff Area=2,561 sf 100.00% Impervious Runoff Depth=3.20" Tc=5.0 min CN=98 Runoff=0.20 cfs 0.016 af
Subcatchment S1: North Ex	Runoff Area=1,019,935 sf 7.97% Impervious Runoff Depth=1.25" Flow Length=966' Tc=21.3 min CN=75 Runoff=21.67 cfs 2.443 af
Subcatchment S2: East Ex	Runoff Area=156,365 sf 7.78% Impervious Runoff Depth=1.25" Flow Length=201' Tc=10.6 min CN=75 Runoff=4.32 cfs 0.374 af
Subcatchment S3: North PR	Runoff Area=1,018,827 sf 7.99% Impervious Runoff Depth=1.25" Flow Length=966' Tc=21.3 min CN=75 Runoff=21.66 cfs 2.440 af
Subcatchment S4: East PR	Runoff Area=154,912 sf 7.75% Impervious Runoff Depth=1.25" Flow Length=201' Tc=10.6 min CN=75 Runoff=4.28 cfs 0.371 af
Pond 3P: Cultec System	Peak Elev=448.67' Storage=327 cf Inflow=0.20 cfs 0.016 af Outflow=0.17 cfs 0.008 af
Link 2L: East PR	Inflow=4.40 cfs 0.379 af Primary=4.40 cfs 0.379 af

7992 Master -Motor Court Master2

Type III 24-hr 5 YR Rainfall=4.30"

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Page 28

Time span=0.00-26.00 hrs, dt=0.05 hrs, 521 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: Roof to Cultec	Runoff Area=2,561 sf 100.00% Impervious Runoff Depth=4.06" Tc=5.0 min CN=98 Runoff=0.25 cfs 0.020 af
Subcatchment S1: North Ex	Runoff Area=1,019,935 sf 7.97% Impervious Runoff Depth=1.89" Flow Length=966' Tc=21.3 min CN=75 Runoff=33.60 cfs 3.696 af
Subcatchment S2: East Ex	Runoff Area=156,365 sf 7.78% Impervious Runoff Depth=1.89" Flow Length=201' Tc=10.6 min CN=75 Runoff=6.69 cfs 0.566 af
Subcatchment S3: North PR	Runoff Area=1,018,827 sf 7.99% Impervious Runoff Depth=1.89" Flow Length=966' Tc=21.3 min CN=75 Runoff=33.57 cfs 3.692 af
Subcatchment S4: East PR	Runoff Area=154,912 sf 7.75% Impervious Runoff Depth=1.90" Flow Length=201' Tc=10.6 min CN=75 Runoff=6.64 cfs 0.562 af
Pond 3P: Cultec System	Peak Elev=448.67' Storage=328 cf Inflow=0.25 cfs 0.020 af Outflow=0.23 cfs 0.012 af
Link 2L: East PR	Inflow=6.80 cfs 0.574 af Primary=6.80 cfs 0.574 af

7992 Master -Motor Court Master2

Type III 24-hr 10 YR Rainfall=5.11"

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Page 41

Time span=0.00-26.00 hrs, dt=0.05 hrs, 521 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: Roof to Cultec	Runoff Area=2,561 sf 100.00% Impervious Runoff Depth=4.87" Tc=5.0 min CN=98 Runoff=0.30 cfs 0.024 af
Subcatchment S1: North Ex	Runoff Area=1,019,935 sf 7.97% Impervious Runoff Depth=2.54" Flow Length=966' Tc=21.3 min CN=75 Runoff=45.44 cfs 4.952 af
Subcatchment S2: East Ex	Runoff Area=156,365 sf 7.78% Impervious Runoff Depth=2.54" Flow Length=201' Tc=10.6 min CN=75 Runoff=9.05 cfs 0.759 af
Subcatchment S3: North PR	Runoff Area=1,018,827 sf 7.99% Impervious Runoff Depth=2.54" Flow Length=966' Tc=21.3 min CN=75 Runoff=45.40 cfs 4.947 af
Subcatchment S4: East PR	Runoff Area=154,912 sf 7.75% Impervious Runoff Depth=2.54" Flow Length=201' Tc=10.6 min CN=75 Runoff=8.97 cfs 0.752 af
Pond 3P: Cultec System	Peak Elev=448.67' Storage=329 cf Inflow=0.30 cfs 0.024 af Outflow=0.29 cfs 0.016 af
Link 2L: East PR	Inflow=9.17 cfs 0.769 af Primary=9.17 cfs 0.769 af

7992 Master -Motor Court Master2

Type III 24-hr 25 YR Rainfall=6.42"

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Page 54

Time span=0.00-26.00 hrs, dt=0.05 hrs, 521 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: Roof to Cultec	Runoff Area=2,561 sf 100.00% Impervious Runoff Depth=6.18" Tc=5.0 min CN=98 Runoff=0.37 cfs 0.030 af
Subcatchment S1: North Ex	Runoff Area=1,019,935 sf 7.97% Impervious Runoff Depth=3.64" Flow Length=966' Tc=21.3 min CN=75 Runoff=65.48 cfs 7.106 af
Subcatchment S2: East Ex	Runoff Area=156,365 sf 7.78% Impervious Runoff Depth=3.64" Flow Length=201' Tc=10.6 min CN=75 Runoff=13.02 cfs 1.089 af
Subcatchment S3: North PR	Runoff Area=1,018,827 sf 7.99% Impervious Runoff Depth=3.64" Flow Length=966' Tc=21.3 min CN=75 Runoff=65.41 cfs 7.099 af
Subcatchment S4: East PR	Runoff Area=154,912 sf 7.75% Impervious Runoff Depth=3.64" Flow Length=201' Tc=10.6 min CN=75 Runoff=12.91 cfs 1.080 af
Pond 3P: Cultec System	Peak Elev=448.67' Storage=330 cf Inflow=0.37 cfs 0.030 af Outflow=0.37 cfs 0.023 af
Link 2L: East PR	Inflow=13.17 cfs 1.102 af Primary=13.17 cfs 1.102 af

Summary for Subcatchment 1S: Roof to Cultec

[49] Hint: Tc<2dt may require smaller dt

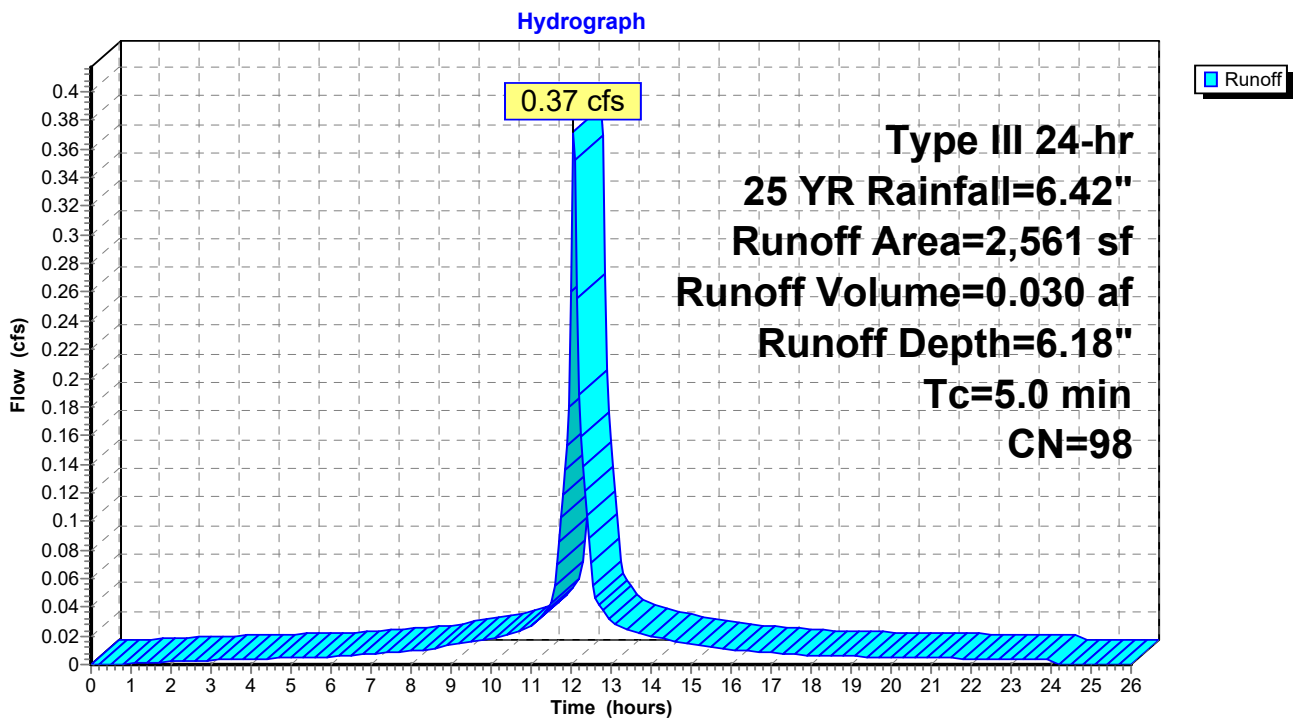
Runoff = 0.37 cfs @ 12.07 hrs, Volume= 0.030 af, Depth= 6.18"
 Routed to Pond 3P : Cultec System

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25 YR Rainfall=6.42"

Area (sf)	CN	Description
* 2,561	98	Existing Roof
2,561		100.00% Impervious Area

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

Subcatchment 1S: Roof to Cultec



Summary for Subcatchment S1: North Ex

Runoff = 65.48 cfs @ 12.30 hrs, Volume= 7.106 af, Depth= 3.64"
 Routed to nonexistent node L1

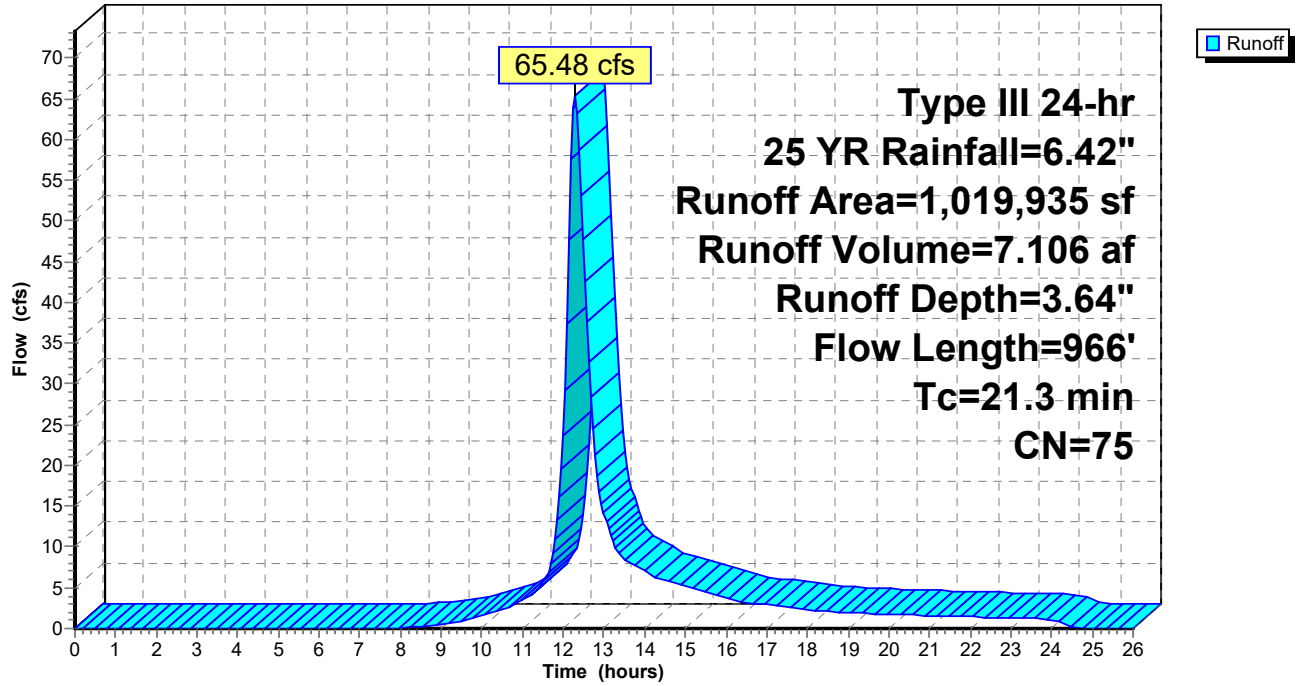
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25 YR Rainfall=6.42"

Area (sf)	CN	Description
95,590	61	>75% Grass cover, Good, HSG B
31,110	80	>75% Grass cover, Good, HSG D
156,601	58	Meadow, non-grazed, HSG B
655,389	78	Meadow, non-grazed, HSG D
63,790	98	Paved parking, HSG D
17,455	98	Water Surface, HSG D
1,019,935	75	Weighted Average
938,690		92.03% Pervious Area
81,245		7.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	150	0.0407	0.17		Sheet Flow, Grass: Dense n= 0.240 P2= 3.43"
0.2	58	0.0860	4.72		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.5	143	0.0630	5.10		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	157	0.0850	4.69		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
3.4	230	0.0520	1.14		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.3	228	0.1140	1.69		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.3	966	Total			

Subcatchment S1: North Ex

Hydrograph



7992 Master -Motor Court Master2

Type III 24-hr 25 YR Rainfall=6.42"

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Page 58

Summary for Subcatchment S2: East Ex

Runoff = 13.02 cfs @ 12.15 hrs, Volume= 1.089 af, Depth= 3.64"

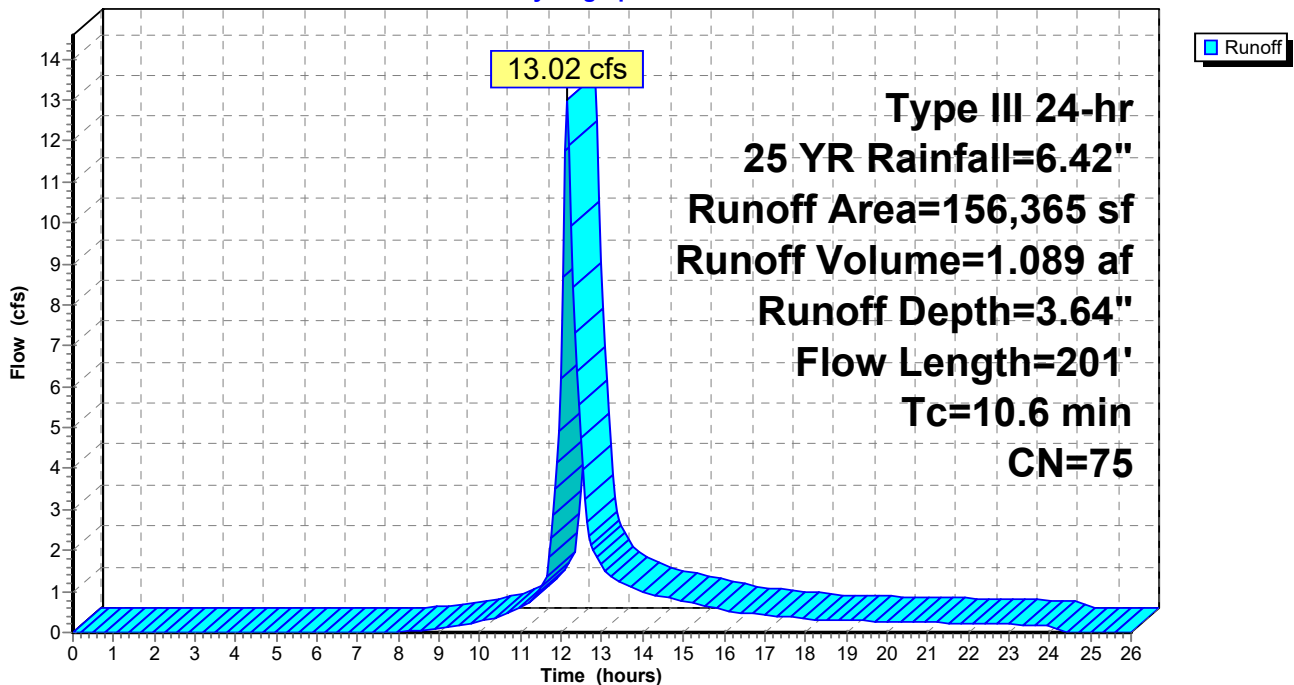
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
Type III 24-hr 25 YR Rainfall=6.42"

Area (sf)	CN	Description
26,580	61	>75% Grass cover, Good, HSG B
18,087	80	>75% Grass cover, Good, HSG D
15,058	58	Meadow, non-grazed, HSG B
84,467	78	Meadow, non-grazed, HSG D
12,173	98	Paved parking, HSG D
156,365	75	Weighted Average
144,192		92.22% Pervious Area
12,173		7.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	87	0.0345	0.15		Sheet Flow, Part 1 Grass: Dense n= 0.240 P2= 3.43"
0.7	114	0.2895	2.69		Shallow Concentrated Flow, Part 2 Woodland Kv= 5.0 fps
10.6	201	Total			

Subcatchment S2: East Ex

Hydrograph



Summary for Subcatchment S3: North PR

Runoff = 65.41 cfs @ 12.30 hrs, Volume= 7.099 af, Depth= 3.64"
 Routed to nonexistent node L1

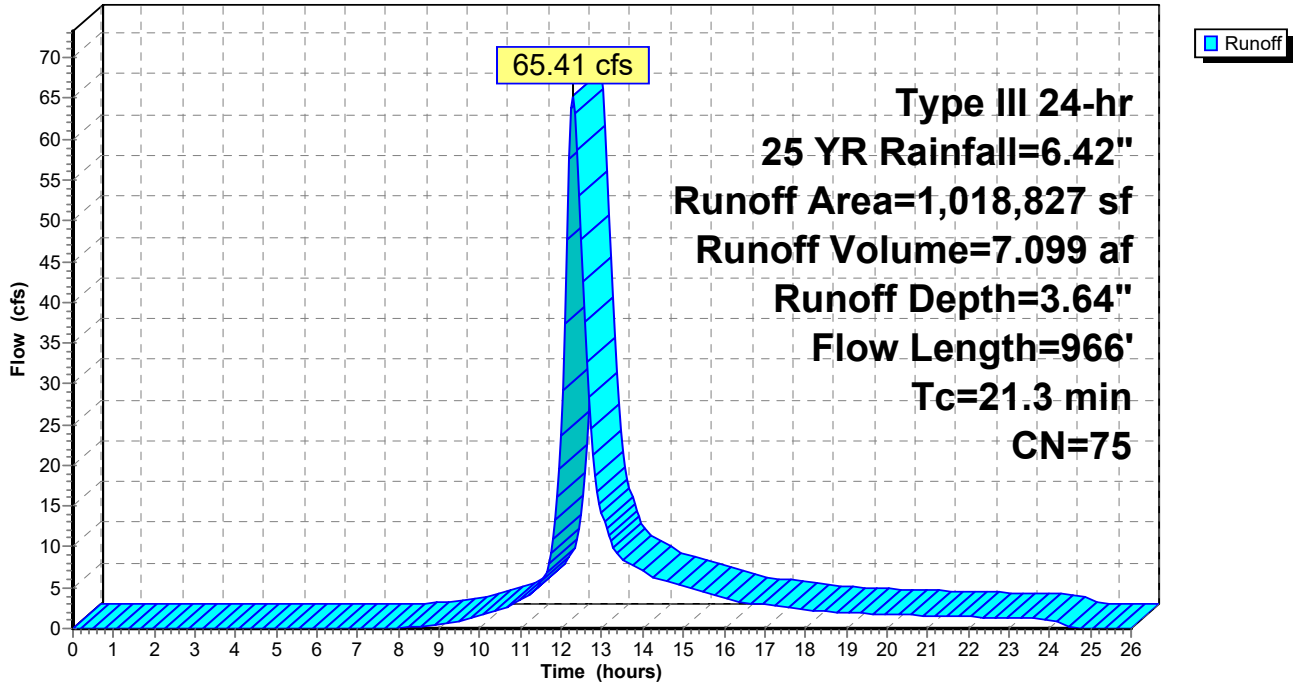
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25 YR Rainfall=6.42"

Area (sf)	CN	Description
95,263	61	>75% Grass cover, Good, HSG B
30,178	80	>75% Grass cover, Good, HSG D
156,601	58	Meadow, non-grazed, HSG B
655,374	78	Meadow, non-grazed, HSG D
63,956	98	Paved parking, HSG D
17,455	98	Water Surface, HSG D
1,018,827	75	Weighted Average
937,416		92.01% Pervious Area
81,411		7.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.3	150	0.0407	0.17		Sheet Flow, Grass: Dense n= 0.240 P2= 3.43"
0.2	58	0.0860	4.72		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
0.5	143	0.0630	5.10		Shallow Concentrated Flow, Paved Kv= 20.3 fps
0.6	157	0.0850	4.69		Shallow Concentrated Flow, Unpaved Kv= 16.1 fps
3.4	230	0.0520	1.14		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
2.3	228	0.1140	1.69		Shallow Concentrated Flow, Woodland Kv= 5.0 fps
21.3	966	Total			

Subcatchment S3: North PR

Hydrograph



7992 Master -Motor Court Master2

Type III 24-hr 25 YR Rainfall=6.42"

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Page 61

Summary for Subcatchment S4: East PR

Runoff = 12.91 cfs @ 12.15 hrs, Volume= 1.080 af, Depth= 3.64"
 Routed to Link 2L : East PR

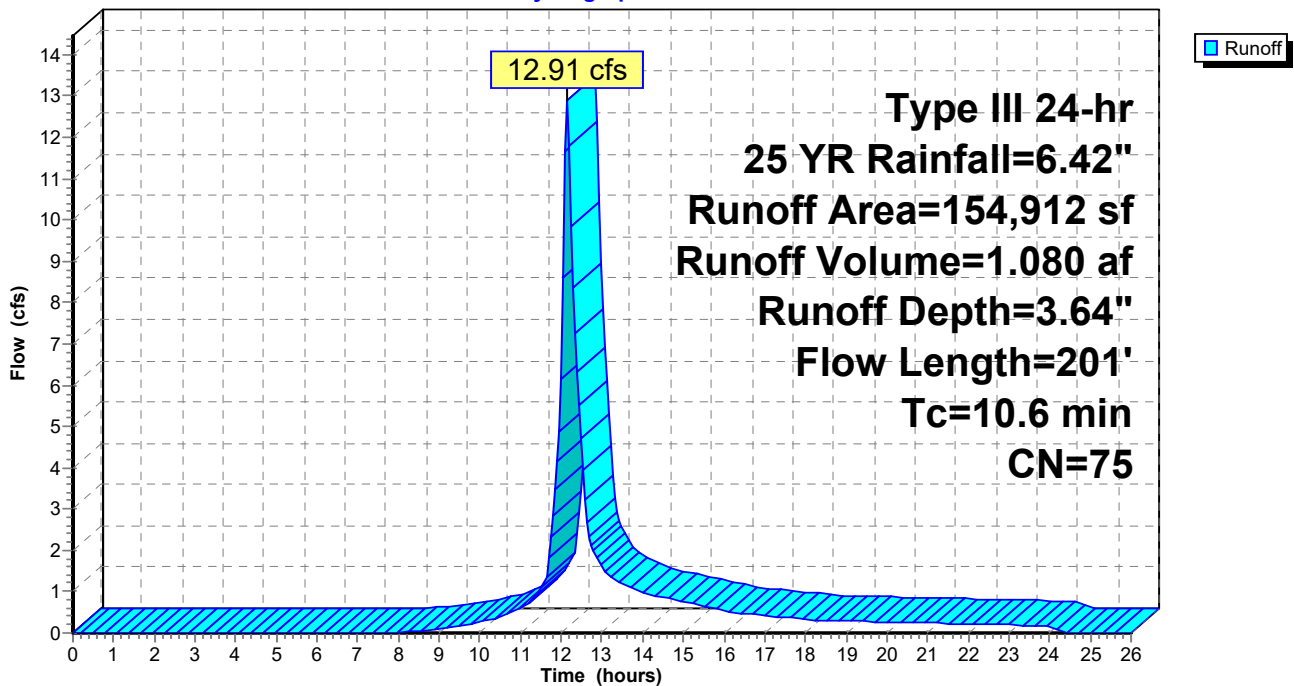
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs
 Type III 24-hr 25 YR Rainfall=6.42"

Area (sf)	CN	Description
25,791	61	>75% Grass cover, Good, HSG B
17,591	80	>75% Grass cover, Good, HSG D
15,058	58	Meadow, non-grazed, HSG B
84,467	78	Meadow, non-grazed, HSG D
12,005	98	Paved parking, HSG D
154,912	75	Weighted Average
142,907		92.25% Pervious Area
12,005		7.75% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.9	87	0.0345	0.15		Sheet Flow, Part 1 Grass: Dense n= 0.240 P2= 3.43"
0.7	114	0.2895	2.69		Shallow Concentrated Flow, Part 2 Woodland Kv= 5.0 fps
10.6	201	Total			

Subcatchment S4: East PR

Hydrograph



Summary for Pond 3P: Cultec System

Inflow Area = 0.059 ac, 100.00% Impervious, Inflow Depth = 6.18" for 25 YR event
 Inflow = 0.37 cfs @ 12.07 hrs, Volume= 0.030 af
 Outflow = 0.37 cfs @ 12.07 hrs, Volume= 0.023 af, Atten= 2%, Lag= 0.2 min
 Primary = 0.37 cfs @ 12.07 hrs, Volume= 0.023 af
 Routed to Link 2L : East PR

Routing by Stor-Ind method, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs / 2
 Peak Elev= 448.67' @ 12.07 hrs Surf.Area= 697 sf Storage= 330 cf

Plug-Flow detention time= 165.0 min calculated for 0.023 af (75% of inflow)
 Center-of-Mass det. time= 78.0 min (821.2 - 743.2)

Volume	Invert	Avail.Storage	Storage Description
#1A	445.83'	197 cf	9.00'W x 33.00'L x 2.04'H Field A 606 cf Overall - 114 cf Embedded = 493 cf x 40.0% Voids
#2A	446.33'	114 cf	Cultec C-100HD x 8 Inside #1 Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap Row Length Adjustment= +0.50' x 1.86 sf x 2 rows
#3	444.80'	213 cf	Custom Stage Data (Prismatic) Listed below (Recalc)
		524 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
444.80	4	0	0
448.66	4	15	15
448.67	400	2	17
449.16	400	196	213

Device	Routing	Invert	Outlet Devices
#1	Primary	448.66'	Special & User-Defined Head (feet) 0.00 0.08 0.16 0.25 0.33 0.42 0.50 Disch. (cfs) 0.000 2.000 2.750 3.330 3.920 4.330 4.660

Primary OutFlow Max=0.35 cfs @ 12.07 hrs HW=448.67' (Free Discharge)
 ↖1=Special & User-Defined (Custom Controls 0.35 cfs)

Pond 3P: Cultec System - Chamber Wizard Field A

Chamber Model = Cultec C-100HD (Cultec Contactor® 100HD)

Effective Size= 32.1"W x 12.0"H => 1.86 sf x 7.50'L = 14.0 cf

Overall Size= 36.0"W x 12.5"H x 8.00'L with 0.50' Overlap

Row Length Adjustment= +0.50' x 1.86 sf x 2 rows

36.0" Wide + 6.0" Spacing = 42.0" C-C Row Spacing

4 Chambers/Row x 7.50' Long +0.50' Row Adjustment = 30.50' Row Length +15.0" End Stone x 2 = 33.00' Base Length

2 Rows x 36.0" Wide + 6.0" Spacing x 1 + 15.0" Side Stone x 2 = 9.00' Base Width

6.0" Stone Base + 12.5" Chamber Height + 6.0" Stone Cover = 2.04' Field Height

8 Chambers x 14.0 cf +0.50' Row Adjustment x 1.86 sf x 2 Rows = 113.6 cf Chamber Storage

606.4 cf Field - 113.6 cf Chambers = 492.8 cf Stone x 40.0% Voids = 197.1 cf Stone Storage

Chamber Storage + Stone Storage = 310.7 cf = 0.007 af

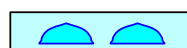
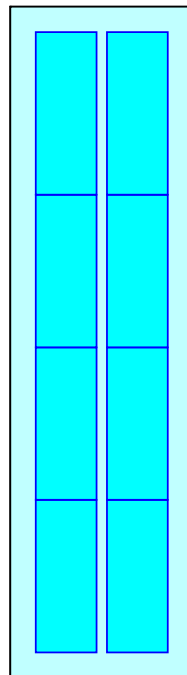
Overall Storage Efficiency = 51.2%

Overall System Size = 33.00' x 9.00' x 2.04'

8 Chambers

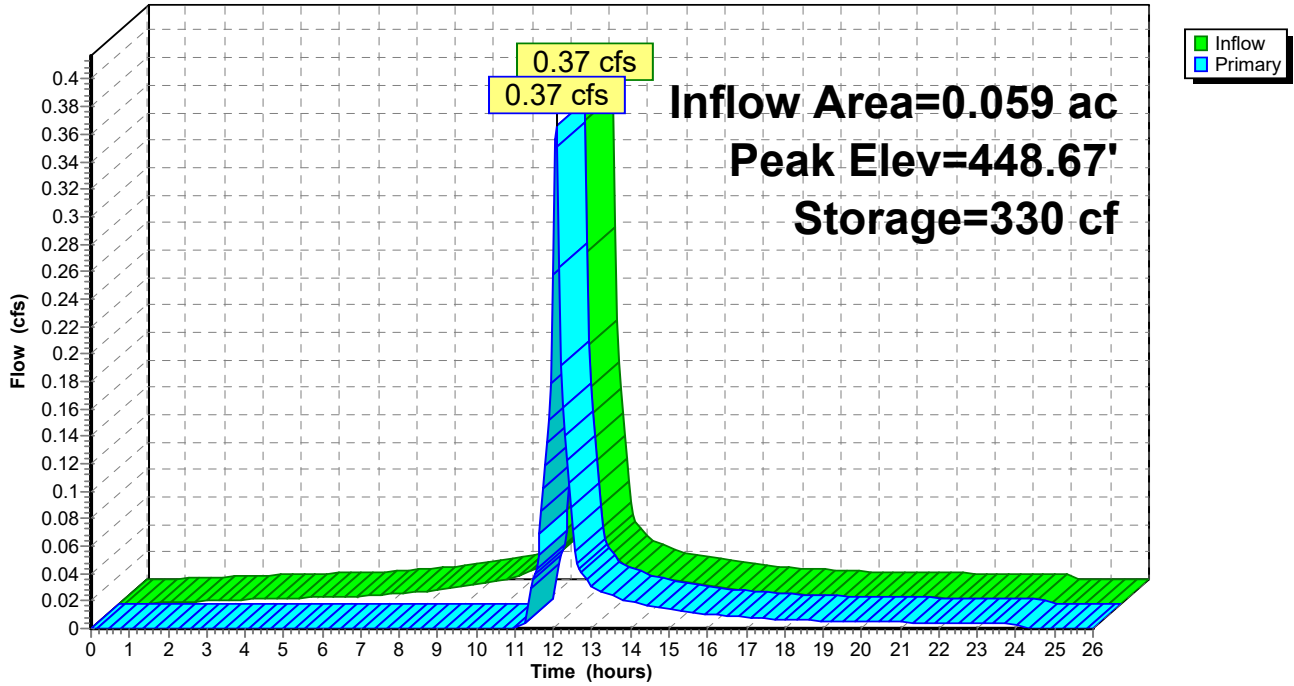
22.5 cy Field

18.3 cy Stone



Pond 3P: Cultec System

Hydrograph



7992 Master -Motor Court Master2

Type III 24-hr 25 YR Rainfall=6.42"

Prepared by HP Inc.

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Page 65

Stage-Area-Storage for Pond 3P: Cultec System

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
444.80	0	447.45	271
444.85	0	447.50	277
444.90	0	447.55	283
444.95	1	447.60	290
445.00	1	447.65	296
445.05	1	447.70	302
445.10	1	447.75	308
445.15	1	447.80	314
445.20	2	447.85	320
445.25	2	447.90	323
445.30	2	447.95	323
445.35	2	448.00	323
445.40	2	448.05	324
445.45	3	448.10	324
445.50	3	448.15	324
445.55	3	448.20	324
445.60	3	448.25	324
445.65	3	448.30	325
445.70	4	448.35	325
445.75	4	448.40	325
445.80	4	448.45	325
445.85	7	448.50	325
445.90	13	448.55	326
445.95	19	448.60	326
446.00	25	448.65	326
446.05	31	448.70	340
446.10	37	448.75	360
446.15	43	448.80	380
446.20	50	448.85	400
446.25	56	448.90	420
446.30	62	448.95	440
446.35	70	449.00	460
446.40	81	449.05	480
446.45	92	449.10	500
446.50	102	449.15	520
446.55	113		
446.60	123		
446.65	134		
446.70	144		
446.75	155		
446.80	165		
446.85	175		
446.90	185		
446.95	195		
447.00	204		
447.05	213		
447.10	222		
447.15	231		
447.20	239		
447.25	246		
447.30	253		
447.35	259		
447.40	265		

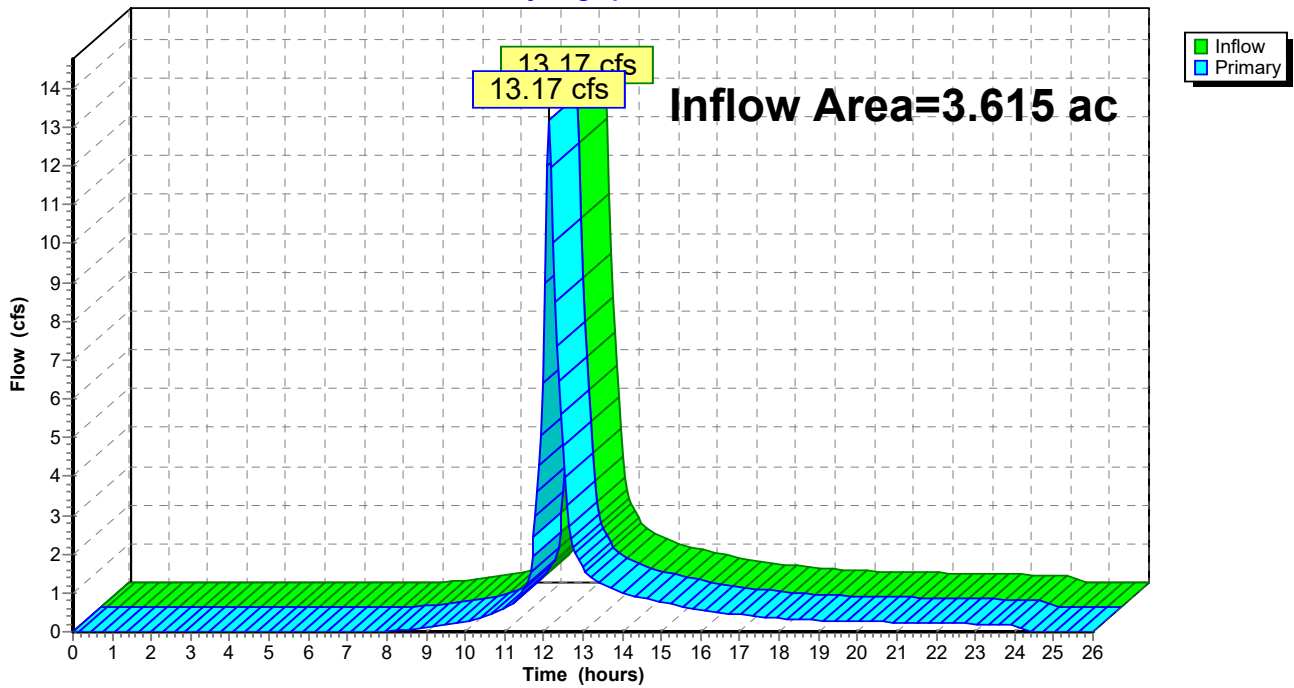
Summary for Link 2L: East PR

Inflow Area = 3.615 ac, 9.25% Impervious, Inflow Depth = 3.66" for 25 YR event
Inflow = 13.17 cfs @ 12.15 hrs, Volume= 1.102 af
Primary = 13.17 cfs @ 12.15 hrs, Volume= 1.102 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-26.00 hrs, dt= 0.05 hrs

Link 2L: East PR

Hydrograph



7992 Master -Motor Court Master2

Type III 24-hr 50 YR Rainfall=7.63"

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Page 67

Time span=0.00-26.00 hrs, dt=0.05 hrs, 521 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: Roof to Cultec Runoff Area=2,561 sf 100.00% Impervious Runoff Depth=7.39"
Tc=5.0 min CN=98 Runoff=0.44 cfs 0.036 af

Subcatchment S1: North Ex Runoff Area=1,019,935 sf 7.97% Impervious Runoff Depth=4.71"
Flow Length=966' Tc=21.3 min CN=75 Runoff=84.52 cfs 9.186 af

Subcatchment S2: East Ex Runoff Area=156,365 sf 7.78% Impervious Runoff Depth=4.71"
Flow Length=201' Tc=10.6 min CN=75 Runoff=16.80 cfs 1.408 af

Subcatchment S3: North PR Runoff Area=1,018,827 sf 7.99% Impervious Runoff Depth=4.71"
Flow Length=966' Tc=21.3 min CN=75 Runoff=84.44 cfs 9.177 af

Subcatchment S4: East PR Runoff Area=154,912 sf 7.75% Impervious Runoff Depth=4.71"
Flow Length=201' Tc=10.6 min CN=75 Runoff=16.65 cfs 1.396 af

Pond 3P: Cultec System Peak Elev=448.68' Storage=331 cf Inflow=0.44 cfs 0.036 af
Outflow=0.44 cfs 0.029 af

Link 2L: East PR Inflow=16.97 cfs 1.424 af
Primary=16.97 cfs 1.424 af

7992 Master -Motor Court Master2

Type III 24-hr 100 YR Rainfall=9.08"

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Page 80

Time span=0.00-26.00 hrs, dt=0.05 hrs, 521 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: Roof to Cultec	Runoff Area=2,561 sf 100.00% Impervious Runoff Depth=8.84" Tc=5.0 min CN=98 Runoff=0.53 cfs 0.043 af
Subcatchment S1: North Ex	Runoff Area=1,019,935 sf 7.97% Impervious Runoff Depth=6.02" Flow Length=966' Tc=21.3 min CN=75 Runoff=107.68 cfs 11.755 af
Subcatchment S2: East Ex	Runoff Area=156,365 sf 7.78% Impervious Runoff Depth=6.02" Flow Length=201' Tc=10.6 min CN=75 Runoff=21.38 cfs 1.802 af
Subcatchment S3: North PR	Runoff Area=1,018,827 sf 7.99% Impervious Runoff Depth=6.03" Flow Length=966' Tc=21.3 min CN=75 Runoff=107.57 cfs 11.743 af
Subcatchment S4: East PR	Runoff Area=154,912 sf 7.75% Impervious Runoff Depth=6.03" Flow Length=201' Tc=10.6 min CN=75 Runoff=21.19 cfs 1.786 af
Pond 3P: Cultec System	Peak Elev=448.68' Storage=332 cf Inflow=0.53 cfs 0.043 af Outflow=0.52 cfs 0.036 af
Link 2L: East PR	Inflow=21.57 cfs 1.822 af Primary=21.57 cfs 1.822 af

JAY FAIN & ASSOCIATES, LLC

Environmental Consulting Services

Jay Fain
Principal

Victoria Landau
Principal, ASLA

Jason Lepro
Associate, CAD

134 Round Hill Road
Fairfield, CT 06824
203-254-3156
1-800-JAY FAIN
Fax: 203-254-3167
e-mail: jfassociates@optonline.net

SOILS MAPPING & WETLAND/WATERCOURSE DELINEATION FOR 21 COWDRAY PARK DRIVE, NORTH CASTLE, NY 10504 Page 1

PROPERTY LOCATION AND DESCRIPTION:

LAND USE: **Single Family Residential - Estate** ACRES: **30±**

DELINEATION ADDRESS: **21 Cowdray Park Drive North Castle, NY 10504**

REPORT COMPLETED FOR:

NAME: **Wendy Grunseich**

MAILING ADDRESS: **Fifth Avenue Properties
c/o CDL Family Services
505 S. Flagler Drive, Suite 900
West Palm Beach, FL 33401
Attn: Louis M. Cohen, CPA**

MAPPING AND DELINEATION METHODOLOGY

Soils analysis, as described in this report, is intended as an inventory and evaluation of the existing soil characteristics on the subject property. A first order soil survey in accordance with the principles and practices noted in the USDA publication Soil Survey Manual (1993) was completed at the site. Soil units mapped in the field correspond with those in the USDA publication *Soil Survey of Putnam and Westchester Counties, New York* (1994).

Wetland identification was based on the presence of poorly and very poorly drained soils and/or a prevalence of hydrophytic vegetation. Soil types were identified by observation of soil morphology (soil texture, color, structure, etc.). To observe the morphology of the property's soils, numerous two-foot deep test pits and/or hand borings were completed throughout the site. Prevalence of hydrophytic vegetation was confirmed by visually determining the dominant plant species in each vegetation community in accordance with the Onsite Routine Determination method as described in the 1989 manual titled Corps of Engineers Wetland Delineation Manual (Manual) by the Environmental Laboratory. Transects were located perpendicular to and at representative points along the perceived boundaries of the wetland areas identified on the property. Soil morphologies and vegetation were observed at sampling points along the transects. Sampling began well outside the bounds of the wetland and continued towards it until hydric soils and/or a prevalence of hydrophytic vegetation were observed. This point on each transect was marked (flagged) with an orange surveyor's tape labeled "Wetland Boundary". The complete boundary of every wetland area is located along the lines that connect these sequentially numbered boundary points.

The wetland and watercourse boundaries are subject to change until adopted by the Town.

DATE AND CONDITIONS AT TIME OF INSPECTION

DATE: **December 02, 2014** INSPECTED BY: **Jay Fain**

WEATHER: **Cool, Sunny**

SOIL MOISTURE CONDITIONS: DRY MOIST WET FROST DEPTH: **N/A** SNOW DEPTH: **N/A**

CERTIFICATION



JAY FAIN, PRINCIPAL, SOIL SCIENTIST

**SOILS MAPPING & WETLAND/WATERCOURSE
DELINEATION FOR
21 COWDRAY PARK DRIVE, NORTH CASTLE, NY 10504**

Page 2

WETLAND/WATERCOURSE IDENTIFIED

FLAG NUMBERS	WETLAND TYPE	SOIL TYPE	COMMENTS
1 - 114	Watercourse/ Wetland / Lake	Rda	
150 - 159	Marsh	Rda / Pa	
200 - 217	Watercourse	Rda	

SOIL MAP UNITS

Each soil map unit that was identified on the property represents a specific area on the landscape and consists of one or more soils for which the unit is named. Other soils (inclusions that are generally too small to be delineated separately) may account for 10 to 15 percent of the map unit. The mapped units are identified in the following table by name and symbol and typical characteristics (parent material, drainage class, high water table, depth to bedrock, and slope) of each unit are provided. These are generally the primary characteristics to be considered in land use planning and management. A narrative that defines each characteristic and describes their land use implications follows the table. Complete descriptions of each soil map unit can be found in the *Soil Survey of Putnam and Westchester Counties, New York (1993)*.

UPLAND SOILS

SOIL		PARENT MATERIAL	SLOPE %	DRAINAGE CLASS	HIGH WATER TABLE			DEPTH TO BEDROCK (in)
SYM.	NAME				DEPTH (ft)	KIND	MOS.	
CrC	Charleton-Chatfield complex, rolling, very rocky	Loose Glacial Till	2-15	Well Drained	>6.0	--	--	>60
		Loose Glacial Till	2-15	Well Drained & Somewhat Excessively Drained	>6.0	--	--	20-40
ChB	Charleton loam	Loose Glacial Till	2-8 8-15 15-25 25-35	Well Drained	>6.0	--	--	>60
PnB	Paxton fine sandy loam	Compact Glacial Till	2-8 8-15 15-25	Well Drained	1.5 - 2.5	Perched	Feb. - Apr.	>60

WETLAND SOILS

SOIL		PARENT MATERIAL	SLOPE %	DRAINAGE CLASS	HIGH WATER TABLE			DEPTH TO BEDROCK (in)
SYM.	NAME				DEPTH (ft)	KIND	MOS.	
RdA	Ridgebury loam	Compact Glacial Till	0-3 3-8	Poorly Drained, Somewhat Poorly Drained	0.0 - 1.5	Perched	Nov. - May	>60
Pa	Palms Muck	Organic Material	0-2	Very Poorly Drained	+0.5 - 1.0	Apparent	Sep. - June	>60

**SOILS MAPPING & WETLAND/WATERCOURSE
DELINEATION FOR
21 COWDRAY PARK DRIVE, NORTH CASTLE, NY 10504**

Page 3

SOIL CHARACTERISTICS: DEFINITIONS AND LAND USE IMPLICATIONS

PARENT MATERIAL: Parent material is the unconsolidated organic and mineral material in which soil forms. Soil inherits characteristics, such as mineralogy and texture, from its parent material. Glacial till is unsorted, nonstratified glacial drift consisting of clay, silt, sand and boulders transported and deposited by glacial ice. Glacial outwash consists of gravel, sand and silt, which is commonly stratified, deposited by glacial melt water. Alluvium is material such as sand, silt or clay deposited on land by streams. Organic deposits consist of decomposed plant and animal parts.

A soil's texture affects the ease of digging, filling and compacting and the permeability of a soil. Generally sand and gravel soils, such as outwash soils, have higher permeability rates than most glacial till soils. Soil permeability effects the cost to design and construct subsurface sanitary disposal facilities and, if too slow or too fast, may preclude their use. Outwash soils are generally excellent sources of natural aggregates (sand and gravel) suitable for commercial use, such as construction subbase material. Organic layers in soils can cause movement of structural footings. Compacted glacial till layers make excavating more difficult and may preclude the use of subsurface sanitary disposal systems or increase their design and construction costs if fill material is required.

DRAINAGE CLASS: Drainage class refers to the frequency and duration of periods of soil saturation or partial saturation during soil formation. Seven classes of natural drainage classes exist. They range from excessively drained, where water is removed from the soil very rapidly, to very poorly drained, where water is removed so slowly that free water remains at or near the soil surface during most of the growing season. Soil drainage affects the type and growth of plants found in an area. When landscaping or gardening, drainage class information can be used to assure that proposed plants are adapted to existing drainage conditions or that necessary alterations to drainage conditions (irrigation or drainage systems) are provided to assure plant survival.

HIGH WATER TABLE: High water table is the highest level of a saturated zone in the soil in most years. The water table can effect when shallow excavations can be made; the ease of the excavations, construction, and grading; and the supporting capacity of the soil. Shallow water tables may preclude the use of subsurface sanitary disposal systems or increase design and construction costs if fill material is required.

DEPTH TO BEDROCK: The depth to bedrock refers to the depth to fixed rock. Bedrock depth affects the ease and cost of construction, such as digging, filling, compacting and planting. Shallow depth bedrock may preclude the use of subsurface sanitary disposal systems or increase design and construction costs if fill material is required.

SLOPE: Generally soils with steeper slopes increase construction costs, increase the potential for erosion and sedimentation impacts, and reduce the feasibility of locating subsurface sanitary disposal facilities.

JOINS PANEL 0168

COWDRAY PARK DR

ZONE X

ZONE A

CONVERSE LAKE

ZONE A

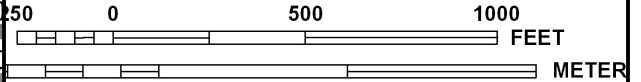
ZONE A

Converse Lake

840000 FT



MAP SCALE 1" = 500'



To
North
30

NFP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0169F

FIRM

FLOOD INSURANCE RATE MAP

for WESTCHESTER COUNTY, NEW YORK
(ALL JURISDICTIONS)

CONTAINS:

<u>COMMUNITY</u>	<u>NUMBER</u>
NORTH CASTLE, TOWN	360923
OF	

PANEL 169 OF 426

MAP SUFFIX: F

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

Notice to User: The Map Number shown below should be used when placing map orders: the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER

36119C0169F

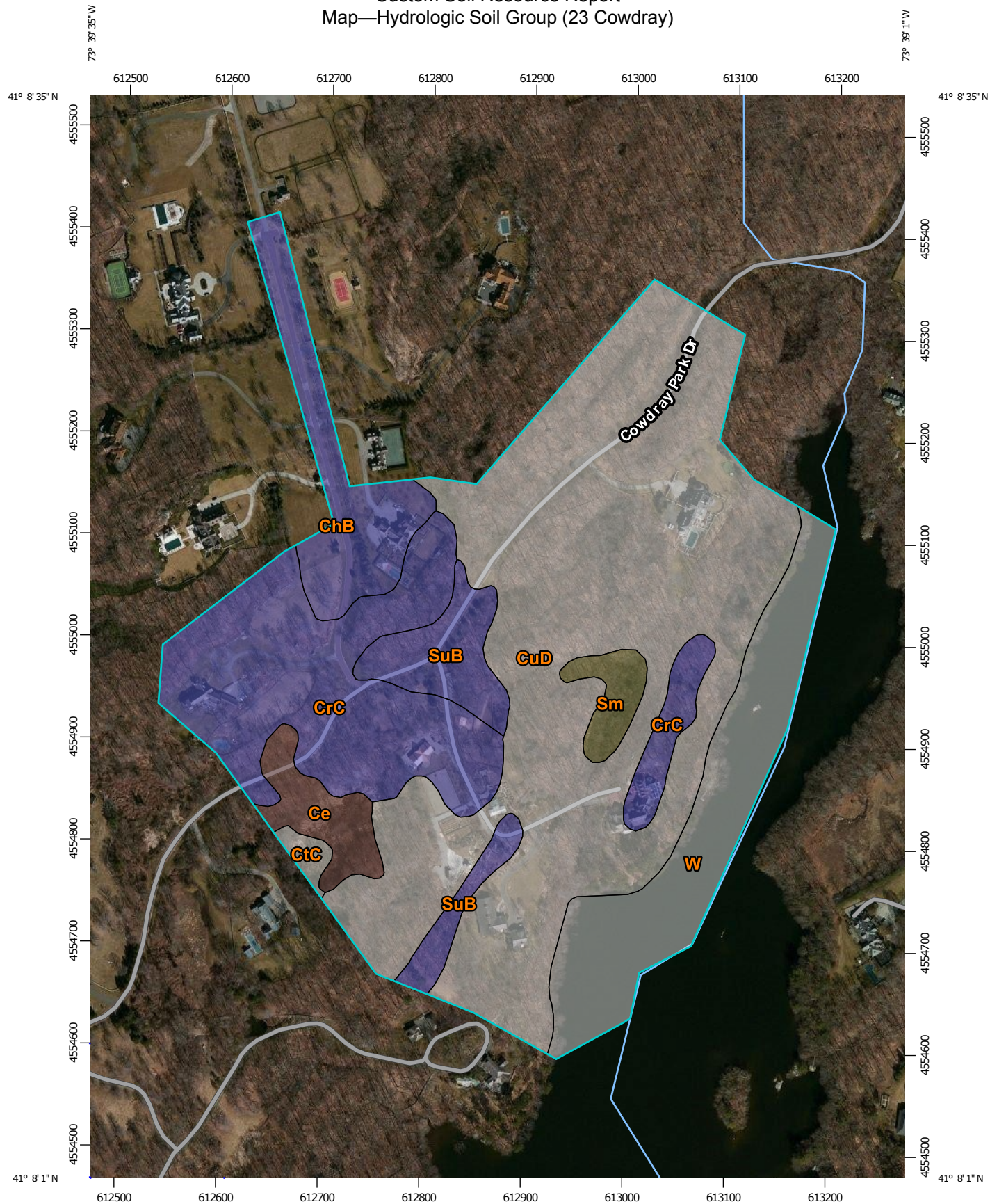
EFFECTIVE DATE

SEPTEMBER 28, 2007

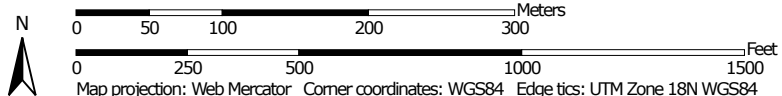
Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Custom Soil Resource Report
Map—Hydrologic Soil Group (23 Cowdray)



































Map Scale: 1:5,170 if printed on A portrait (8.5" x 11") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

- Area of Interest (AOI)**
 -  Area of Interest (AOI)
- Soils**
 - Soil Rating Polygons**
 -  A
 -  A/D
 -  B
 -  B/D
 -  C
 -  C/D
 -  D
 -  Not rated or not available
 - Soil Rating Lines**
 -  A
 -  A/D
 -  B
 -  B/D
 -  C
 -  C/D
 -  D
 -  Not rated or not available
 - Soil Rating Points**
 -  A
 -  A/D
 -  B
 -  B/D
- Water Features**
 -  Streams and Canals
- Transportation**
 -  Rails
 -  Interstate Highways
 -  US Routes
 -  Major Roads
 -  Local Roads
- Background**
 -  Aerial Photography
- Other**
 -  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: <http://websoilsurvey.nrcs.usda.gov>
 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 10, Sep 17, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 26, 2011—Apr 16, 2012

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.

Table—Hydrologic Soil Group (23 Cowdray)

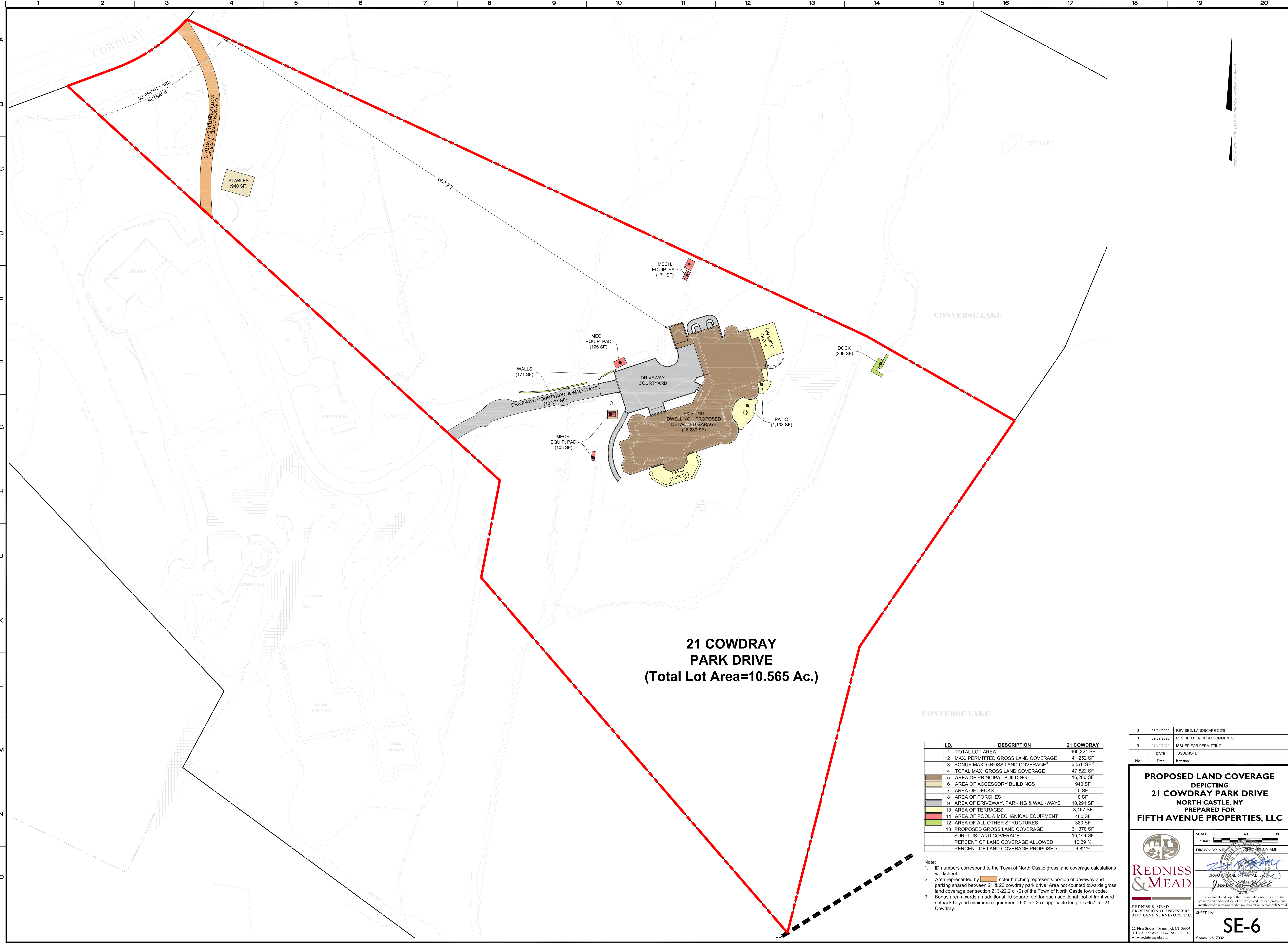
Hydrologic Soil Group— Summary by Map Unit — Westchester County, New York (NY119)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ce	Catden muck, 0 to 2 percent slopes	B/D	2.2	3.0%
ChB	Charlton loam, 2 to 8 percent slopes	B	4.9	6.7%
CrC	Charlton-Chatfield complex, rolling, very rocky	B	14.3	19.7%
CtC	Chatfield-Hollis-Rock outcrop complex, rolling		0.4	0.6%
CuD	Chatfield-Hollis-Rock outcrop complex, hilly		36.9	50.7%
Sm	Sun loam, extremely stony	C/D	1.2	1.7%
SuB	Sutton loam, 3 to 8 percent slopes	B	3.9	5.4%
W	Water		8.9	12.3%
Totals for Area of Interest			72.7	100.0%

Rating Options—Hydrologic Soil Group (23 Cowdray)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher



**21 COWDRAY
PARK DRIVE
(Total Lot Area=10.565 Ac.)**

I.D.	DESCRIPTION	21 COWDRAY
1	TOTAL LOT AREA	460,221 SF
2	MAX. PERMITTED GROSS LAND COVERAGE	41,252 SF
3	BONUS MAX. GROSS LAND COVERAGE ¹	6,570 SF ²
4	TOTAL MAX. GROSS LAND COVERAGE	47,822 SF
5	AREA OF PRINCIPAL BUILDING	16,280 SF
6	AREA OF ACCESSORY BUILDINGS	940 SF
7	AREA OF DECKS	0 SF
8	AREA OF PORCHES	0 SF
9	AREA OF DRIVEWAY, PARKING & WALKWAYS	10,291 SF
10	AREA OF TERRACES	3,467 SF
11	AREA OF POOL & MECHANICAL EQUIPMENT	400 SF
12	AREA OF ALL OTHER STRUCTURES	380 SF
13	PROPOSED GROSS LAND COVERAGE	31,378 SF
	SURPLUS LAND COVERAGE	16,444 SF
	PERCENT OF LAND COVERAGE ALLOWED	10.39 %
	PERCENT OF LAND COVERAGE PROPOSED	6.62 %

Note:
 1. ID numbers correspond to the Town of North Castle gross land coverage calculations worksheet.
 2. Area represented by color hatching represents portion of driveway and parking shared between 21 & 23 Cowdray Park Drive. Area not counted towards gross land coverage per section 213-22.2 c. (2) of the Town of North Castle town code.
 3. Bonus area awards an additional 10 square feet for each additional foot of front yard setback beyond minimum requirement (50' in r-2a), applicable length is 657' for 21 Cowdray.

No.	Date	Revision
3	06/21/2022	REVISED: LANDSCAPE CDs
3	09/02/2020	REVISED PER RPRC COMMENTS
2	07/10/2020	ISSUED FOR PERMITTING
1		DATE
1		ISSUE/NOTE

**PROPOSED LAND COVERAGE
DEPICTING
21 COWDRAY PARK DRIVE
NORTH CASTLE, NY
PREPARED FOR
FIFTH AVENUE PROPERTIES, LLC**

SCALE: 0 40 80
1"=40'

DRAWN BY: AMK
CHECKED BY: AMK

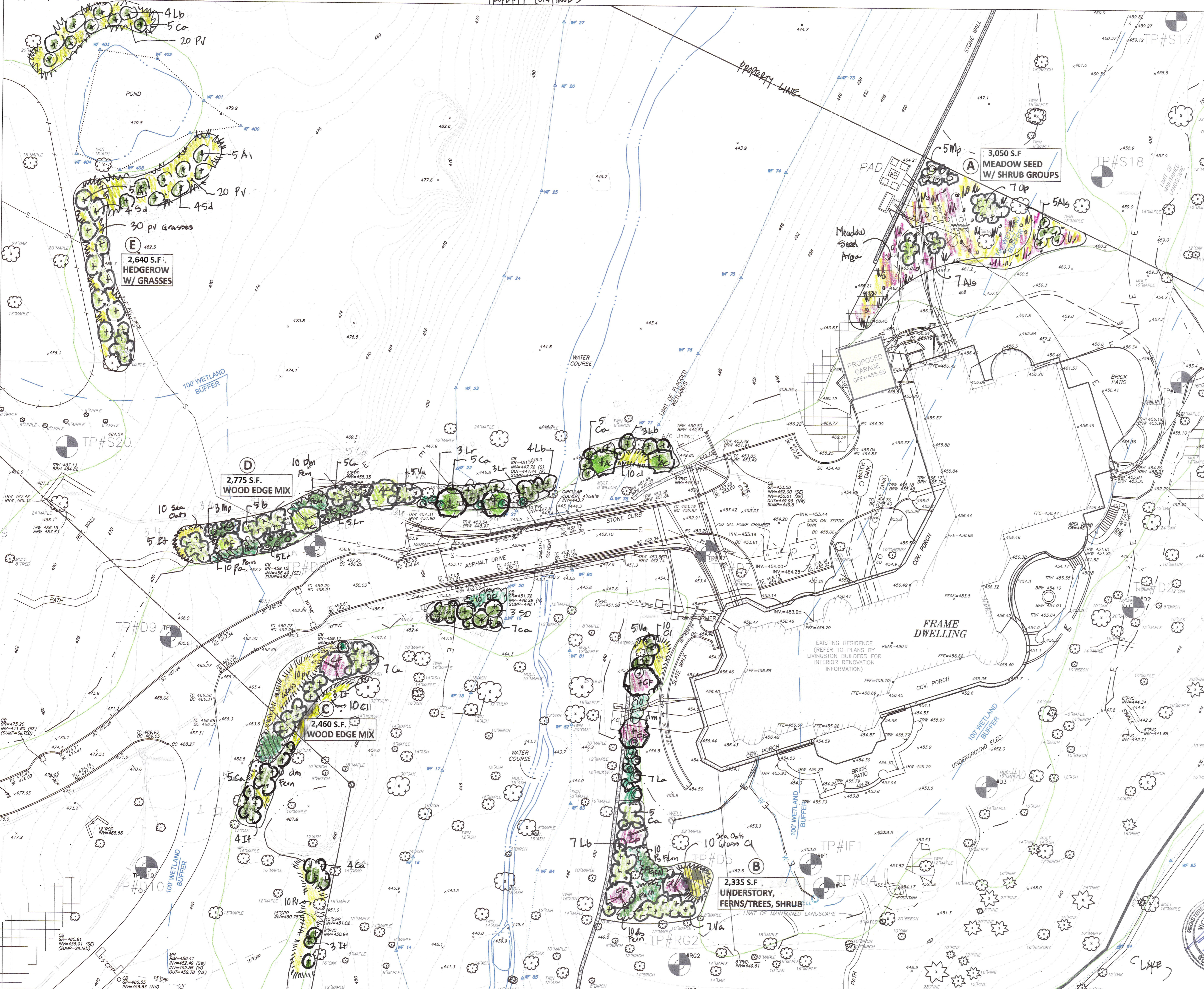
REDNISS & MEAD
PROFESSIONAL ENGINEERS
AND LAND SURVEYORS, P.C.

22 First Street | Stamford, CT 06905
Tel: 203.327.8588 | Fax: 203.357.1118
www.rednissandmead.com

SE-6
Comm. No. 7592

PARTIAL PLAN C, HOUSE AREA

PROPERTY CONTINUES



GENERAL NOTES

- Existing conditions and proposed improvements from plan by Redniss and Mead titled "Overall Site Plan" dated last revised 6.5.2020. See updated plans by Redniss and Mead in 2022 for proposed improvements, this plan is only to indicate proposed mitigation.
- Area of proposed mitigation calculated by Redniss and Mead based on their updated plans.
- This plan is for buffer mitigation planting only. See plans by Redniss and Mead for potential utilities and call 'Dig Safely New York' prior to any plant pit excavation.

PLANTING NOTES

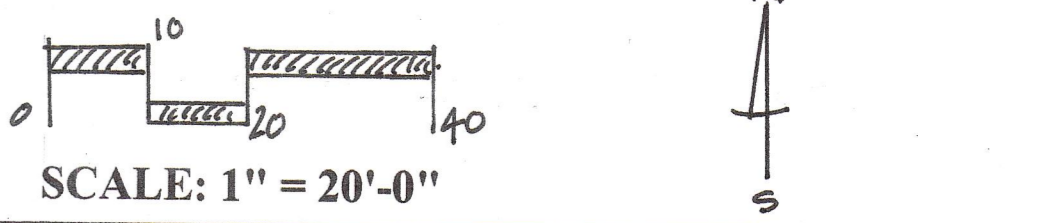
- Verify the location of all utility lines prior to any planting pit excavation. Contact 'Dig Safely New York' at 811 or 1-800-962-7962 at least 72-hours prior to the commencement of any digging operations. Coordinate with property manager regarding other underground systems.
- Notify the landscape architect at least five (5) days in advance of plant material delivery to the site.
- Lay out all plant material with the landscape architect prior to planting. Set up of all material in beds required for owners and landscape architect's approval prior to planting. See plan for bed and plant layout. If any discrepancy occurs between the quantities called for in the plan, notify the landscape architect prior to bid.
- All plant material is to conform to the requirements of the standards of the American Association of Nurserymen for extra heavy grade unless otherwise specified, true to name and size. Investigate sources of supply and be certain it will be possible to provide all plant materials specified in the quality and quantity required prior to bidding.
- Any plant required under this contract that is dead, dying not true to name of size as specified or not in satisfactory growth, or having branched or deformed structure due to loss of limbs or branches as determined by the landscape architect, that plant must be removed from the project site and replaced with an approved plant of equal size and species. Plant variety and size substitutions will not be permitted unless provided that the specified plant material is unattainable or cannot meet specification requirements, then the use of the nearest equivalent size or variety will be considered. Plant material larger than specified may be used at no increase in cost. Proposed substitutions must receive the landscape architect's authorization prior to bid and prior to purchase.
- Stake trees only as necessary to insure stability.
- All plant materials are to be guaranteed for a period of one year from the date of final acceptance as determined by the landscape architect or project manager.
- Restore all disturbed or damaged areas resulting from planting operations to original conditions.
- See plan for tree locations set up trees for approval from owner and landscape architect prior to installation. Replace any disturbed turf areas with approved mix and mulch new seed with chopped straw. Provide starter fertilizer in seed mix. Install meadow seeding according to supplier's recommendations.

PLANT LIST FOR MITIGATION with Estimated Cost for Bond

Quan.	Sym.	Botanical/ common Name	Size/ Root	Remark	Unit cost	Extended cost
TREES						
6	CF	Cornus florida/ Flowering Dogwood	5 to 6' ht	understory	120	720
7	AC	Amelanchier canadensis/ Shadblow	5-6' ht	edge	165	1155
SHRUBS						
10	AI	Alnus incana/ speckled Alder	3 gal	damp	26	260
12	ALS	Aronia a. 'Low Scape'	2 gal	medium	22	264
43	CA	Clethra alnifolia 'Chrystallina' / Sweetpepper Bush	3 gal	compact	22	946
7	CP	Comptonia peregrina/ Sweetfern	3 gal	dry	26	182
15	IT	Itea virginica 'Little Henry' Sweetspire	3 gal	medium	27	405
23	LR	Leucothoe racemosa / Fettersbush	3 gal	shade	26	598
30	LB	Lindera benzoin/ spicebush	2 gal	shade	20	600
8	MP	Myrica pensylvanica	3 gal	dry	26	208
8	SD	Salix discolor/ Pussy Willow	5 gal	damp	30	240
22	VA	Viburnum acerifolia / Maple leaf Viburnum	3 gal	shade	26	572
PERENNIALS						
20	OC	Osmunda cinnamomea / Cinnamon Fern	1 gal	damp	8.5	170
40	DM	Dryopteris marginalis/ Wood Fern	1 gal	shade	8.5	255
20	PA	Polystichum acrostichoides/ Christmas Fern	1 gal	shade	8.5	170
10	DP	Demstaedia punctilobula / Hayscented Fern	1 gal	Sun	8.5	85
50	CL	Chasmanthium latifolium/ Northern Sea Oats	1 gal	shade	8.5	425
90	PV	Panicum virgatum/ Switchgrass	1 gal	Part shade	8.5	765
Cost for plants x 3 for install and warranty = \$						
SEED MIX						
2.5 lbs		Ernst mix ERNMX-140- native mix for margins	1/2 lb per 1000 SF	Part shade	40 PER LB	100
Seeding labor per SF at 10 cents per SF = 3,050 x 1 = 305\$						
Cost of plants = \$ 8,120.00 x 3.0 for install and warranty = \$24,360						

MITIGATION AREAS TOTAL PLANTING COSTS = \$24,360.00
 TOTAL OF MITIGATION AREAS AND SEEDED MEADOW LABOR = \$24,665.00
 Plus 10% contingency of \$2,466.50 = \$27,101.00
 Maint./monitor bond 15% of \$3,699.75
TOTAL OF Planting costs, 10% cont., 15% maint./ monitor bond = \$30,800.75

DATE	SHEET	REVISION NOTES
5-3-22	MP	Added areas, update list + bond costs



BUFFER MITIGATION & PLANTING AREAS

21 COWDRAY PARK DRIVE
ARMONK, NY

Date: 10/23/2020
 Sheet No.: **MP**

JAY FAIN & ASSOCIATES
 Environmental Consulting Services, LLC
 134 Round Hill Road Fairfield, CT 06824
 203-254-3156 - fax: 203-254-3167

