



Site Planning
Civil Engineering
Landscape Architecture
Land Surveying
Transportation Engineering

Environmental Studies
Entitlements
Construction Services
3D Visualization
Laser Scanning

July 12, 2022

Mr. Joseph Cermele, P.E., CFM
Kellard Sessions Consulting, PC
500 Main Street
Armonk, New York 10504

RE: JMC Project 20044
4 Tripp Lane Gross Land Coverage Compliance Analysis
4 Tripp Lane
Town of North Castle, New York

Response to Town Consultant's Comments

Mr. Cermele:

This letter has been prepared to address comments in your October 9th, 2020, memorandum to the North Castle Planning Board and the Town's Planning Department staff report dated, October 7, 2020.

In response to the comments in the above noted correspondence, we are pleased to submit one (1) copy of the following documents for your review:

To assist in your review of the revised documents, we are pleased to provide the following, which restates the comments from the above referenced memorandums, followed by our responses:

Kellard Sessions Memorandum, dated October 9th, 2020:

Comment No. 1

The applicant has provided a Gross Land Coverage Plan to demonstrate compliance with the maximum permitted gross land coverage for the zoning district. The plan indicates the removal of an existing sport court and a portion of the existing drive, both completed without permits, to reduce the land coverage, as necessary, to comply. We note, however, that the plan appears to require the addition of two areas of existing coverage, currently not accounted for; (1) the northernmost portion of the Boulder wall along the eastern property line appears to exceed 4 feet in height, and (2) the plan makes reference to a concrete patio north of the shed building. Although not shown on the plan, based on review of available Westchester County aerial mapping, the patio appears to exist. The plan shall be revised to include these additional coverage areas and the calculations adjusted accordingly so a determination can be made as to whether the total allowable coverage has been exceeded.

Response No. 1

All portions (greater than 4' high) of the boulder wall have now been included in the coverage calculations. After a site visit by JMC on March 22, 2021, it was confirmed that the above referenced concrete patio area north of the shed building had previously been removed by the owner. A picture of this area has been included on the updated Gross Land Coverage drawing. In addition, the existing sport court and a portion of the existing driveway will be removed to comply with the Gross Land Coverage requirements.

Comment No. 2

The applicant will need to demonstrate to the Planning Board the levels of disturbances associated with the tree removal, filling and grading, construction of additional structures, walks, walls, patios, etc. This office will require an engineered site plan and comparative plan analysis using available historical Westchester County aerial mapping and GIS topography. This plan shall be used as the baseline to establish the various disturbances and the associated mitigation that will be required.

Response No. 2

An engineered site plan depicting the current conditions of the site has been prepared along with a pre-existing conditions plan depicting what the Site had looked like before the owner performed the improvements.

Comment No. 3

The applicant shall provide floor plans and elevations for the proposed additions to the existing residence, the pool cabana and the shed. The plans shall clarify whether any services or utilities including water, sewer and electric are provided at the cabana and 1 or the shed.

Response No. 3

Floor plans and elevations have been provided for the improvements to the residence along with the Cabana. The Shed was prefabricated therefore no specification sheets, floor plans, elevations were provided to the client. A picture of the shed is now included on the Gross Land Coverage Calculation drawing. No utilities serve the Cabana or the Shed.

Comment No. 4

The applicant will be required to provide confirmation from the Westchester County Health Department that the improvements and expansions to the residence and cabana do not require upgrades or modifications to the on-site wastewater treatment system.

Response No. 4

The applicant has begun discussions with the WCDOH and all approvals will be provided to the Town as soon as they are received by the applicant.

Comment No. 5

The plan shall illustrate and dimension all minimum required yard setbacks.

Response No. 5

JMC Drawing C-110 now illustrates and dimensions all yard setbacks and all conform to Town code.

Comment No. 6

As part of an ongoing application with the adjacent property to the east, it was discovered that a locally regulated wetland exists at the rear of the site. The applicant will be required to investigate this wetland system to identify the boundary and associated 100-foot wetland buffer. Based on review of available Westchester County aerial mapping, it appears that this system is potentially connected to or continues through the subject property (prior to placement of fill) to a system on the west side of the property. The wetland boundary shall be field located and established with sequentially number flags for confirmation by the Town Wetland Consultant. Prior disturbances are likely to have occurred within the regulated buffer. If so, a local Wetland Permit will be required, and the applicant will be required to prepare a wetland mitigation plan in accordance with Chapter 340, Wetlands and Watercourse Protection of the Town Code. The plan will require referral to the Conservation Board for recommendation of approval. Please notify this office once the wetland boundary has been established in the field.

Response No. 6

Survey information was obtained from the Town of North Castle's Planning Board website that included the extents of the town regulated wetland located on the adjacent property. This was the only information available as there is no historical information on this town regulated wetland. This wetland was delineated on April 18, 2022, by Ecological Solutions, LLC. The wetland buffer and the approximate amount of previous disturbance within this buffer are now shown on JMC Drawing C-110.

Comment No. 7

The Wetland Mitigation Plan, if necessary, shall illustrate and quantifying the previous disturbance areas to the wetland and/or wetland buffer. The plan shall include a summary table that quantifies the total wetland and wetland buffer area on site, total disturbance areas within each, and total pervious and impervious cover pre and post development. Mitigation shall be provided at a ratio of 2:1 minimum.

Response No. 7

The only new impervious surfaces within the 100' wetland buffer are the new retaining walls that total approximately 300 SF of impervious area. The approximate amount of disturbance within the wetland buffer is now labeled on JMC Drawing C-110. There was no disturbance to the wetland itself according to the wetland information delineated by Ecological Solutions on April 18, 2022. The applicant awaits determination by the Town on whether a mitigation plan will be necessary based on new information included with this submission.

Comment No. 8

The applicant has cleared a significant number of trees on the property. The quantity, size and species are not known. As required by Chapter 308, Trees of the Town Code, the applicant will be required to provide a tree restoration plan to mitigate the unapproved removal of existing vegetation. The Planning Board will need to determine whether the restoration plan is ultimately appropriate for the level of disturbance.

Response No. 8

JMC Drawing C-130 has been added to the Site Plan set that delineates the areas of tree removal and proposes a solution for the mitigation of these trees that were removed. The applicant awaits the Town's review and determination on whether the 255 trees that were planted are sufficient for the mitigation of the 171 trees removed.

Comment No. 9

The applicant imported an unknown quantity of fill to regrade the rear yard. The baseline plan noted in Comment #2 above will be used as the basis for determination of the approximate quantity of fill imported to the site. The applicant shall prepare a cut/fill calculation and will be required to demonstrate compliance with Chapter 161, Filling and Grading of the Town Code, specifically as it relates to the soil source, import quantity and compliance with 6 NYCRR part 360. At a minimum, the applicant will be required to provide certification that the soil meets the Unrestricted Soil Use Group for residential sites. The applicant will be required to complete soil sampling and testing in accordance with New York State Department of Environmental Conservation (NYSDEC) protocol and provide a soils analysis report certified by a NYS Certified Laboratory and Soils Scientist or Engineer to demonstrate that the material imported to the site is suitable.

Response No. 9

JMC Drawing C-410 has been added to the Site Plan set that delineates and identifies the cut and fill areas along with the total amounts of each. The client has begun conversations with a soil consultant, William Canavan of HESNY, about the soils testing on Site. All information from this testing will be provided to the Town upon receipt.

Comment No. 10

The property is served by an on-site wastewater treatment system. The plan shall illustrate the location of the existing septic field and tanks based on available Westchester County Department of Health (WCHD) as-builts and record data. It is assumed that the imported fill material and regrading activities that occurred at the rear of the property was also placed above the existing septic field, potentially compromising its function. The applicant will be required to provide a determination, confirmed by the WCHD, that the septic system continues to operate as intended. Any upgrades or modifications that may become necessary will need to be illustrated on the plan and approved by the Westchester County Health Department.

Response No. 10

The applicant has begun discussions with the WCDOH and all approvals will be provided to the Town as soon as they are received by the applicant. No bedrooms were added as part of the improvements to the residence.

Comment No. 11

The applicant has developed several improvements and altered the land cover characteristics for the site which has resulted in an increase in impervious surface and an associated increase in stormwater runoff. As required by Chapter 267, Stormwater Management of the Town Code, the applicant shall prepare a Stormwater Pollution Prevention Plan, inclusive of stormwater mitigation and attenuation measures, to mitigate stormwater runoff through the 100-year, 24-hour storm event. For the purpose of the analysis, the baseline map noted above shall be used to establish pre-developed conditions and a comparative analysis to the current site conditions shall be prepared.

Response No. 11

A stormwater report, prepared by JMC, has been prepared per town requirements and has been included with this submission.

Comment No. 12

The plan shall clearly illustrate the location of any existing drainage systems, conveyance systems and connections. Any connections that may exist, to this storm system located in Tripp Lane, will require approval by the Town Highway Department.

Response No. 12

All pertinent information is now depicted on the updated Site Plans. To the best of our knowledge, there has been no connection into the storm system located in Tripp Lane.

Comment No. 13

As part of the stormwater mitigation system design, the applicant will be required to perform deep and soil percolation testing in the vicinity of any proposed stormwater mitigation practices. The soil testing shall be witnessed by the Town Engineer. Please contact this office to schedule the required soil testing.

Response No. 13

The applicant will coordinate the soils testing with your office. The plans will be updated per information from this soils testing and all information will be included in the Stormwater Report.

Comment No. 14

The applicant will be required to provide certification for the proper construction and stability of all retaining walls greater than or equal to 4 feet in height. Details of their construction shall be provided on the plan.

Response No. 14

The applicant has hired a licensed professional engineer to analyze the installed walls. He has provided a retaining wall plan, a narrative and calculations verifying the stability of these walls and all information has been include with this submission.

Comment No. 15

The plan shall clearly illustrate and identify the various fences located throughout the site, indicating their height and material. Fence details shall be provided on the plan.

Response No. 15

JMC Drawing C-901 has been updated to include pictures and details of all fencing on Site.

Comment No. 16

Driveway piers and a gate has been installed at the front property line. The Town requires that gates be set back a minimum of 20 feet from the right of way to permit adequate area for a vehicle to pull off the road as well as to account for potential future road widening. The piers and gate shall be relocated accordingly, and appropriate details of their construction included on the plans.

Response No. 16

It is the applicant's intent to ask for a waiver for this requirement and the applicant is prepared to update the pier locations in the event of the proposed widening of Tripp Lane.

Comment No. 17

The driveway curb cut is greater than 18 feet in width which is the maximum permitted by the Town Highway Department. The plan shall be revised to demonstrate compliance and include all details necessary for work and restoration within the Town Right of Way.

Response No. 17

It is the applicant's intent to ask for a waiver for this requirement.

Town of North Castle Planning Department Staff Report, dated October 7, 2020:

Procedural Comments

Comment No. 1

The Proposed Action would be classified as a Type II Action pursuant to the State Environmental Quality Review Act (SEQRA).

Response No. 1

So noted.

Comment No. 2

A neighbor notification meeting regarding the proposed amendment will need to be scheduled.

Response No. 2

So noted.

Comment No. 3

Pursuant to Section 12-18.A of the Town Code, all site development plans submitted to the Planning Board are required to be referred to the Architectural Review Board (ARB) for review and comment.

Response No. 3

So noted.

General Comments

Comment No. 1

The Applicant has only addressed one aspect of the various violations on the site (gross land coverage) and has not substantively responded to the notices of violations.

Response No. 1

All violations with corresponding responses are outlined below:

Code Violation 127-4A – Building Permit

A building permit will be filed for all work performed and to be performed as soon as all items are addressed to the satisfaction of the Town's Engineer.

Code Violation 127-5A – Construction Inspections

It was understood by the applicant, per Comment #14 above that it was the applicant's responsibility to inspect the walls that were installed and information from these inspections has been include with this submission. If the remaining items need to be inspected by the Town, the applicant would like to schedule those inspections as soon as possible and all certifying documentation will be provided to the Town.

Code Violation 127-7A – Certificates of Occupancy/Certificates of Compliance

As soon as the inspections mentioned above have been completed to the satisfaction of the Town, the applicant will file for all Certificates of Occupancy and Certificates of Compliance.

Code Violation 355-74A – Building Permits

A building permit will be filed for all work performed and to be performed as soon as all items are addressed to the satisfaction of the Town's Engineer

Code Violation 355-75A – Certificates of Occupancy

As soon as the inspections mentioned above have been completed to the satisfaction of the Town, the applicant will file for all Certificates of Occupancy and Certificates of Compliance.

Code Violation 355-4B – Structure

It was understood by the applicant, per Comment #14 above that it was the applicant's responsibility to inspect the walls that were installed and information from these inspections has been include with this submission. If the remaining items need to be inspected by the Town, the applicant would like to schedule those inspections as soon as possible and all certifying documentation will be provided to the Town.

2017 NYS Uniform Code Supplement – 108.3 – Building Permit Violation

A building permit will be filed for all work performed and to be performed as soon as all items are addressed to the satisfaction of the Town's Engineer. A tree removal permit will be filed if deemed necessary by the Planning Board.

2017 NYS Uniform Code Supplement – 108.5 – Construction Inspection Violation

It was understood by the applicant, per Comment #14 above that it was the applicant's responsibility to inspect the walls that were installed and information from these inspections has been include with this submission. If the remaining items need to be inspected by the Town, the applicant would like to schedule those inspections as soon as possible and all certifying documentation will be provided to the Town. As soon as the inspections mentioned above have been completed to the satisfaction of the Town, the applicant will file for all Certificates of Occupancy and Certificates of Compliance.

Code Violation 157-16A – Tree Removal

A revised tree removal plan has been included in this submission set and if deemed necessary, a tree removal permit will be filed with the Town.

Code Violation 157-16B – Tree Removal

A revised tree removal plan has been included in this submission set and if deemed necessary, a tree removal permit will be filed with the Town.

Code Violation 161-1 – Fill and Grading

JMC Drawing C-410 has been added to the Site Plan set that delineates and identifies the cut and fill areas along with the total amounts of each. The client has begun conversations with the Town's soil consultant, William Canavan of HESNY, about the soils testing on Site. All information from this testing will be provided to the Town upon receipt.

Code Violation 161-1E – Filling and Grading

All required fees will be paid upon review and approval of the attached drawings.

Code Violation 161-B(4) – Filling and Grading (SWPPP)

A stormwater report, prepared by JMC has been include in this submission.

Code Violation 340-4 – Wetland Activities Subject to Regulation

Survey information was obtained from the Town of North Castle’s Planning Board website that included the extents of the town regulated wetland located on the adjacent property. This was the only information available as there is no historical information on this town regulated wetland. This wetland was delineated on April 18, 2022, by Ecological Solutions, LLC. The wetland buffer and the approximate amount of previous disturbance within this buffer are now shown on JMC Drawing C-110.

Code Violation 267-5A – Stormwater Pollution Prevention Plans

A stormwater report, prepared by JMC has been include in this submission.

Code Violation 340-5A – General Procedures (Permit Required)

Survey information was obtained from the Town of North Castle’s Planning Board website that included the extents of the town regulated wetland located on the adjacent property. This was the only information available as there is no historical information on this town regulated wetland. This wetland was delineated on April 18, 2022, by Ecological Solutions, LLC. The wetland buffer and the approximate amount of previous disturbance within this buffer are now shown on JMC Drawing C-110.

Comment No. 2

The site plan should depict the location of the 3/4 acre of trees removed without a permit Pursuant to Section 308-15.A(11) of the Town Code, the Applicant should prepare an extensive tree replanting plan of the disturbed area. The plan should aim to revegetate the site to the maximum extent practicable.

See site prior to tree removal on the right.

Response No. 2

JMC Drawing C-130 has been added to the Site Plan set that delineates the areas of tree removal and proposes a solution for the mitigation of these trees that were removed. The applicant awaits the Town’s review and determination on whether the 255 trees that were planted are sufficient for the mitigation of the 171 trees removed.

Comment No. 3

The site plan should be revised to depict the location of the proposed (legalization) fence. In addition, a fence detail should be submitted for review.

Response No. 3

JMC Drawing C-110 has been updated to label all installed fencing.

Comment No. 4

The site plan should be revised to label the proposed (legalization) driveway entry piers. In addition, details of the driveway piers should be submitted for review.

Response No. 4

The piers are now labeled on JMC Drawing C-110 and Detail #14 has been added to the Site Plan set.

Comment No. 5

The proposed (legalization) driveway gates are located on the property line. Driveway gates should be located a minimum of 20 feet from the front property line to permit adequate vehicular pull off from the right-of-way should Tripp Lane ever be expanded to the edge of the right-of-way. A detail for the gates should be submitted to the Planning Board for review.

Response No. 5

It is the applicant's intent to ask for a waiver for this requirement and the applicant is prepared to update the pier locations in the event of the proposed widening of Tripp Lane.

Comment No. 6

The site plan should be revised to include a zoning conformance table.

Response No. 6

JMC Drawing C-000 now shows a Table of Land Use.

Comment No. 7

The Applicant should submit floor plans and elevations for the proposed (legalization) cabana.

Response No. 7

Floor plans and elevations have been provided for the improvements to the residence along with the Cabana.

Comment No. 8

The Applicant should submit floor plans and elevations for the proposed (legalization) shed.

Response No. 8

Floor plans and elevations have been provided for the improvements to the residence along with the Cabana. The Shed was prefabricated therefore no specification sheets, floor plans, elevations were provided to the client. A picture of the shed is now included on the Gross Land Coverage Calculation drawing.

Comment No. 9

The Applicant should submit floor plans and elevations for the proposed (legalization) rear house addition.

Response No. 9

Floor plans and elevations have been provided for the improvements to the residence along with the Cabana.

Comment No. 10

The site plan should depict the location and height of all proposed (legalization) retaining walls.

Response No. 10

JMC Drawing C-110 has been updated to include labels on all retaining walls.

Comment No. 11

The site should depict the location of where fill was placed on the site.

Response No. 11

JMC Drawing C-110 has been updated to show the approximate limit of fill area.

Comment No. 12

The Applicant should submit a gross floor area calculations worksheet and backup data for review.

Response No. 12

The applicant has provided a gross floor area calculation worksheet and backup data for the Town's review.

We trust that the above, along with the enclosed documents and drawings, address your comments. We look forward to your continued review throughout the approval process and discussing this matter with you further. Should you have any questions or require additional information regarding the information provided above, please do not hesitate to contact our office at 914-273-5225.

Sincerely,

JMC Planning Engineering Landscape Architecture & Land Surveying, PLLC



Rick Bohlander, PE
Project Manager

CC: Mr. Adam Kaufman
Ms. Valerie Desimone

p:\2020\20044\admin\ltcomment response 07-12-2022 (cermele).docx



TOWN OF NORTH CASTLE
WESTCHESTER COUNTY
17 Bedford Road
Armonk, New York 10804-1898

PLANNING DEPARTMENT
Adam R. Kaufman, AICP
Director of Planning

Telephone: 914.273.3542
Fax: 914.273.3554
www.northcastle.com

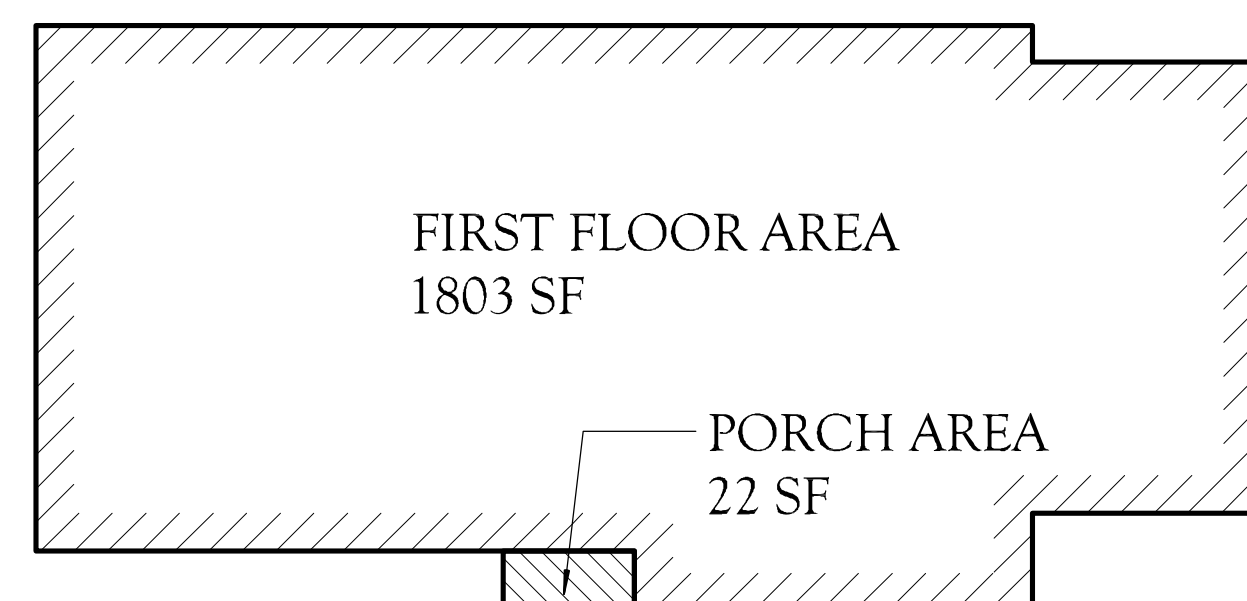
FLOOR AREA CALCULATIONS WORKSHEET

Application Name or Identifying Title: **Pereira residence** Date: **9-16-20**
Tax Map Designation or Proposed Lot No.: **108.02-1-10**

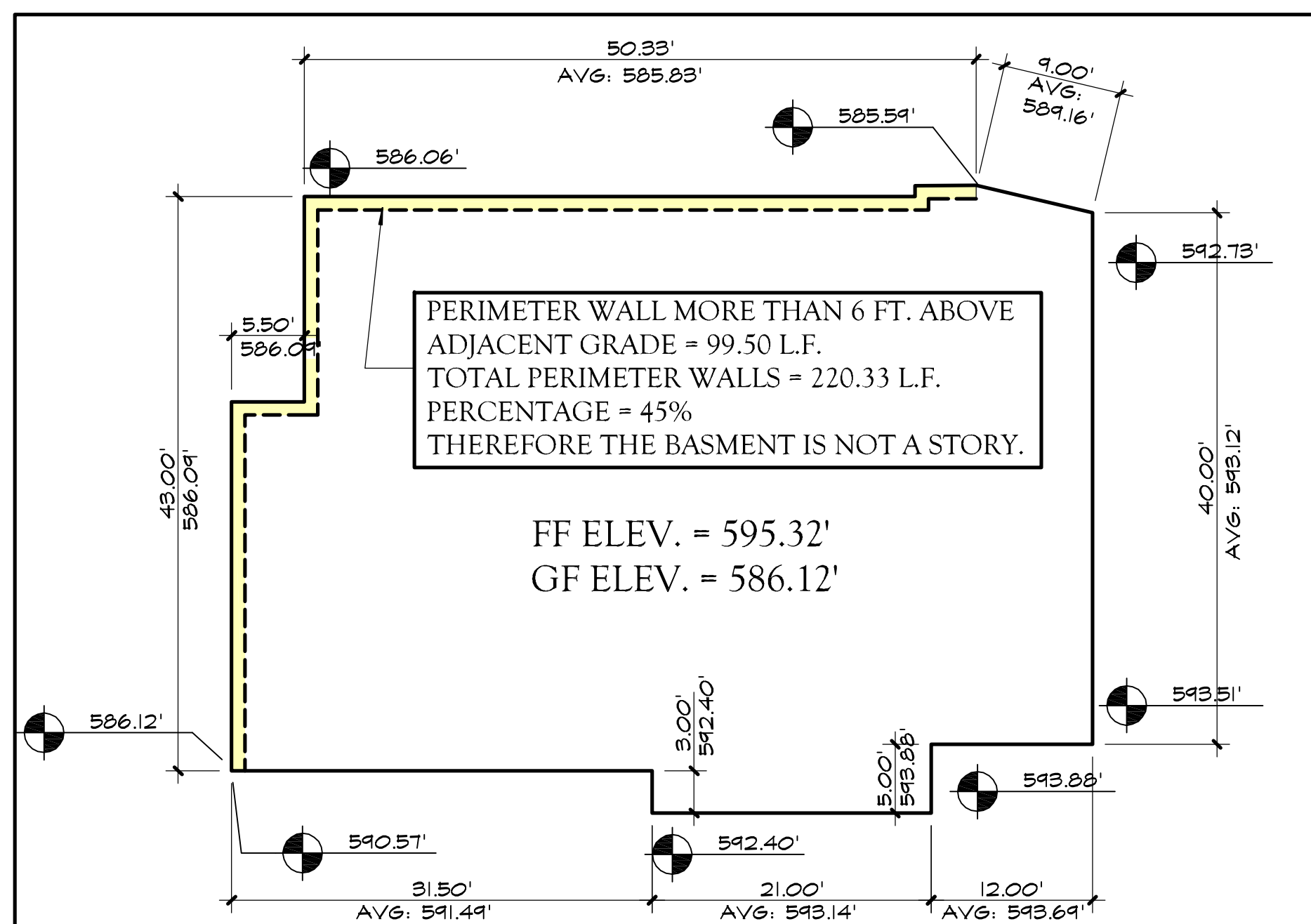
Floor Area	
1. Total Lot Area (Net Lot Area for Lots Created After 12/13/96):	89820
2. Maximum permitted floor area per Section 213-22.2(f):	10230
3. Amount of floor area contained within first floor: 1803 existing + 0 proposed =	1803
4. Amount of floor area contained within second floor: 0 existing + 0 proposed =	0
5. Amount of floor area contained within garage: 0 existing + 0 proposed = NOT A STORY	0
6. Amount of floor area contained within porches capable of being enclosed: 22 existing + 0 proposed =	22
7. Amount of floor area contained within basement (if applicable - see definition): 0 existing + 0 proposed = NOT A STORY	0
8. Amount of floor area contained within attic (if applicable - see definition): 0 existing + 0 proposed =	0
9. Amount of floor area contained within all accessory buildings: 0 existing + 0 proposed =	0
10. Proposed floor area: Total of Lines 3 - 9 =	1825 OK

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: Date: 9-16-20
Title: Director of Planning



GROSS FLOOR AREA DIAGRAM



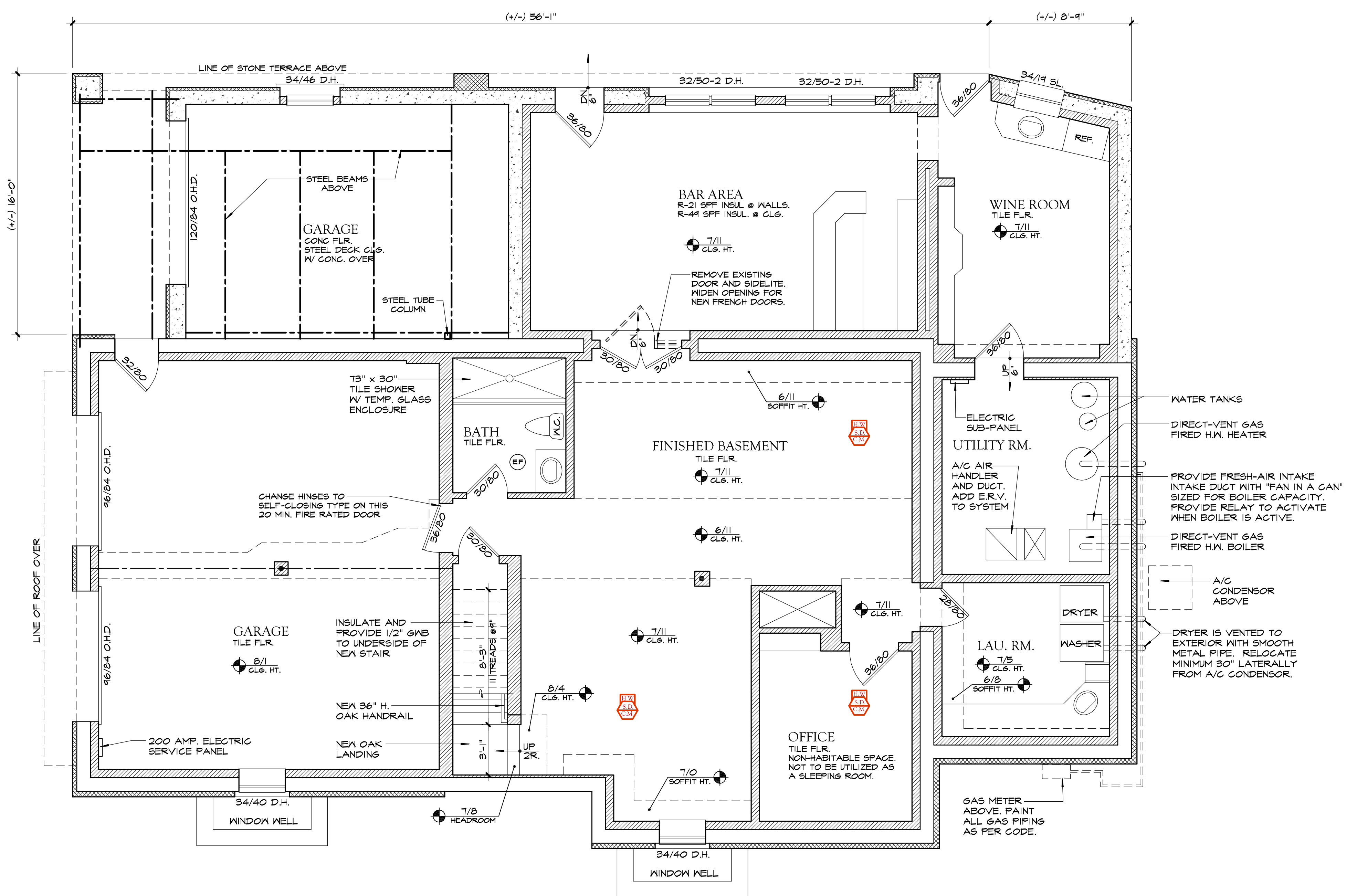
AVERAGE GRADE CALCULATION

LENGTH	ELEVATION	TOTAL
31.50'	591.49'	18631
3.00'	592.40'	1777
21.00'	593.14'	12455
5.00'	593.88'	2969
12.00'	593.69'	7124
40.00'	593.12'	23724
9.00'	589.16'	5302
50.33'	585.83'	29484
5.50'	586.09'	3223
43.00'	586.09'	25201
220.33'		129890

AVERAGE GRADE: $\frac{129890}{220.33} = 589.52'$
FIRST FLOOR ELEV. = 595.32'
AVERAGE GRADE = 589.52'
 $5.80' < 6.00'$

THEREFORE THIS BASMENT IS NOT A STORY
AVERAGE GRADE DIAGRAM

SCALE: 1"=10'-0"



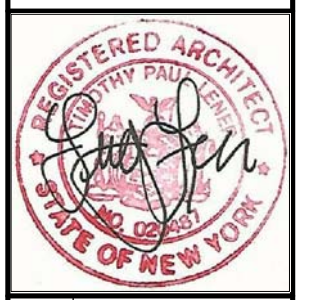
AS-BUILT BASEMENT FLOOR PLAN

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

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GET MY C.O.
The Certificate of Occupancy Pros
57 Wheeler Avenue, Suite 203, Pleasantville, New York 10570
Phone: 914-727-0980 E-Mail: copro.getmyco@gmail.com

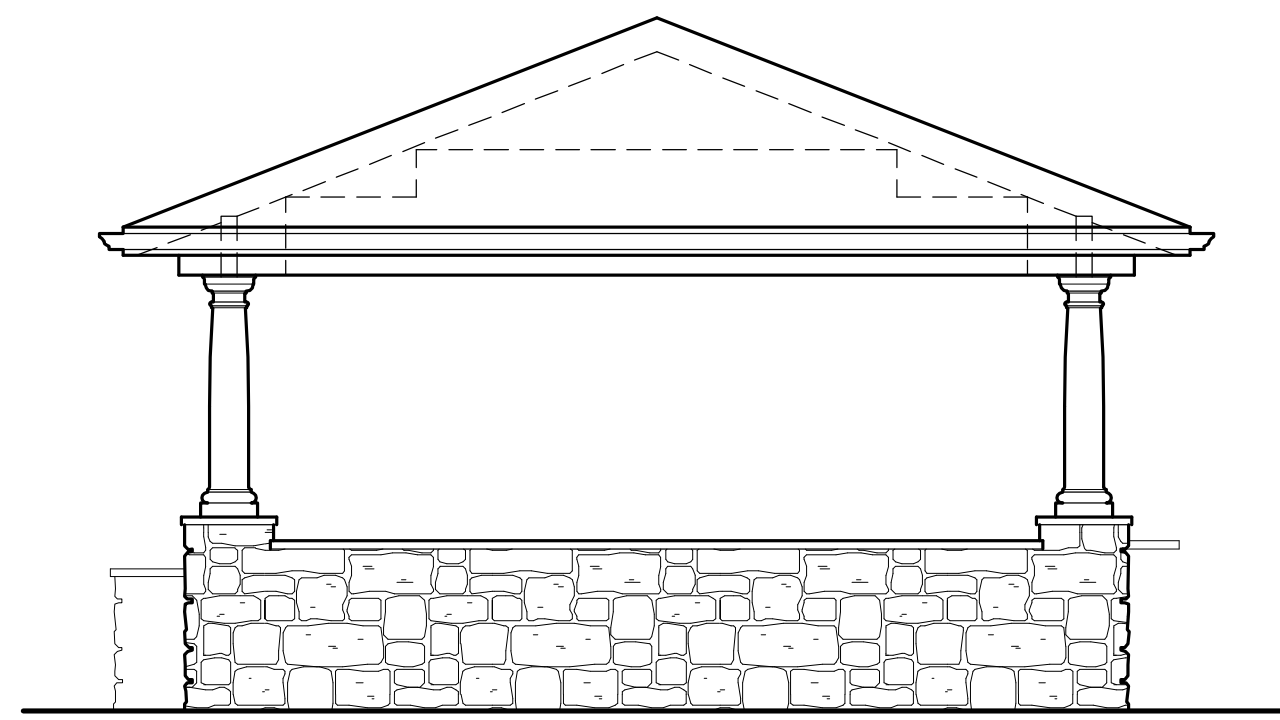
Legalizations to the
Pereira Residence
4 Tripp Lane, Armonk, New York
Section: 108.2 Block: 1 Lot: 10



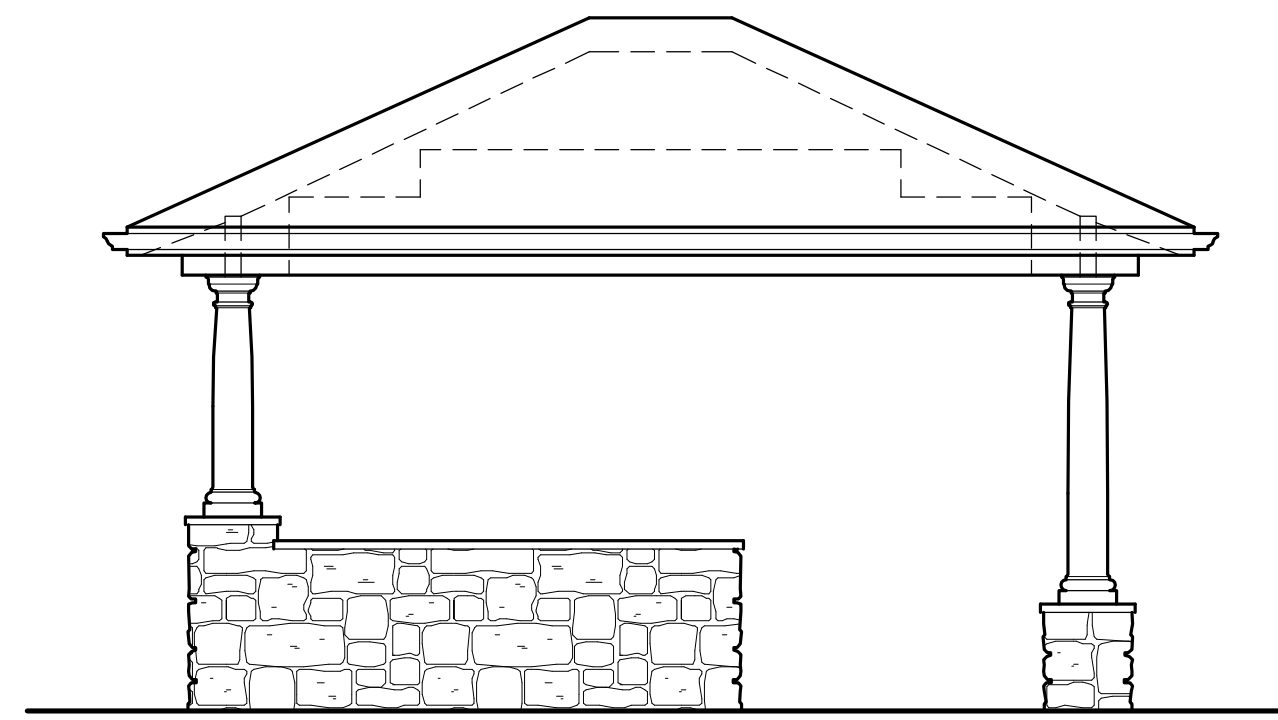
Revisions
Date: 09/16/20
Do Not Scale Prints
Sheet No.

A1

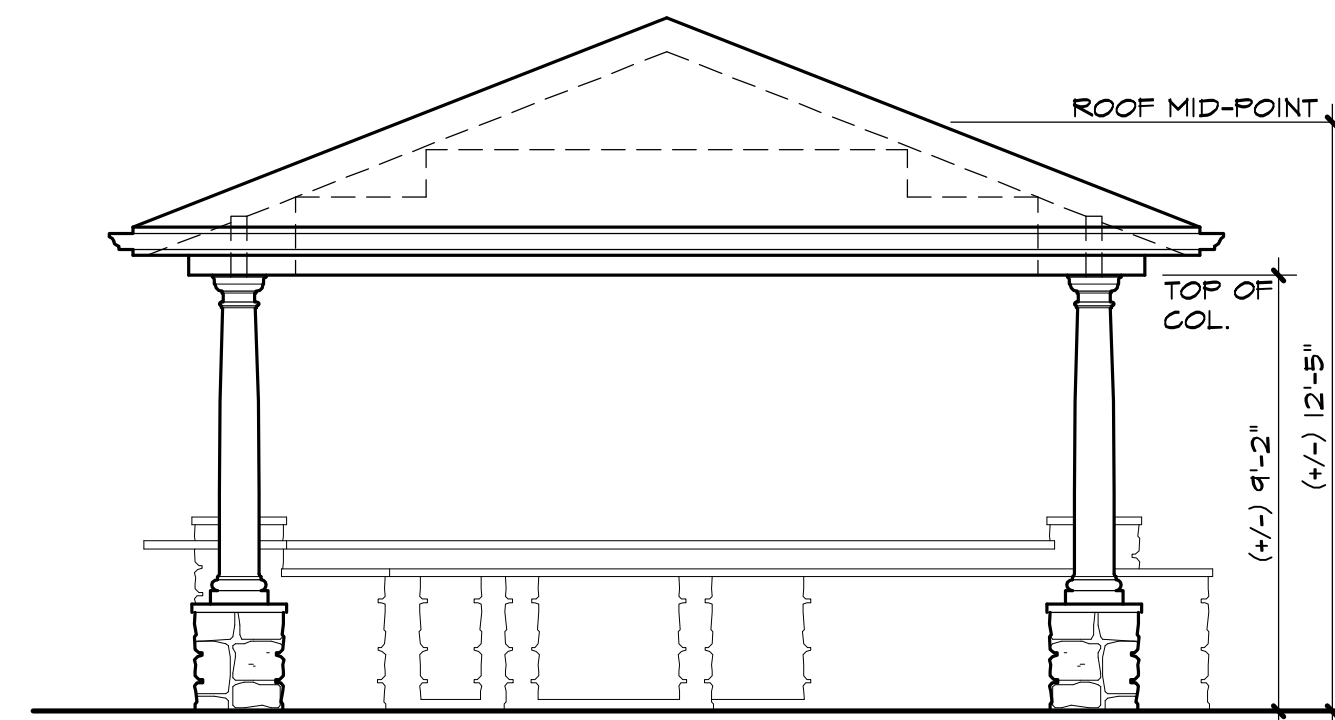
Pereira



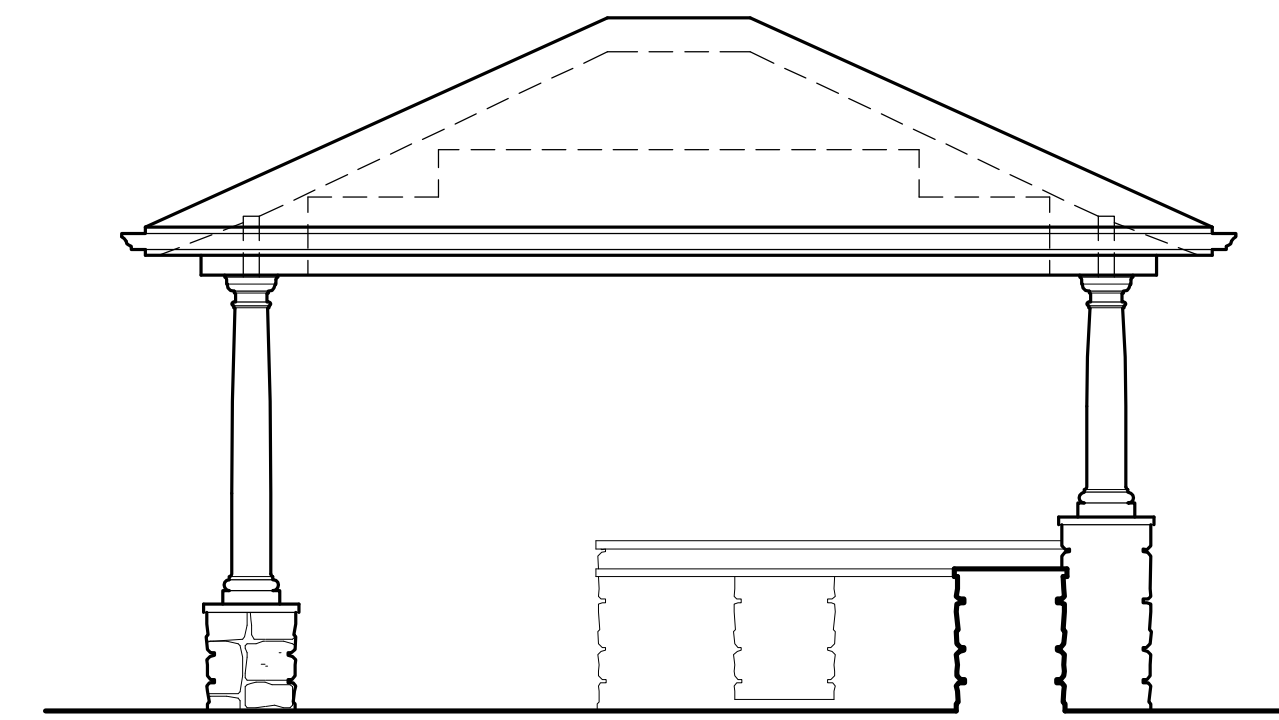
NORTH ELEVATION
SCALE: 1/4" = 1'-0" REAR



WEST ELEVATION
SCALE: 1/4" = 1'-0" SIDE

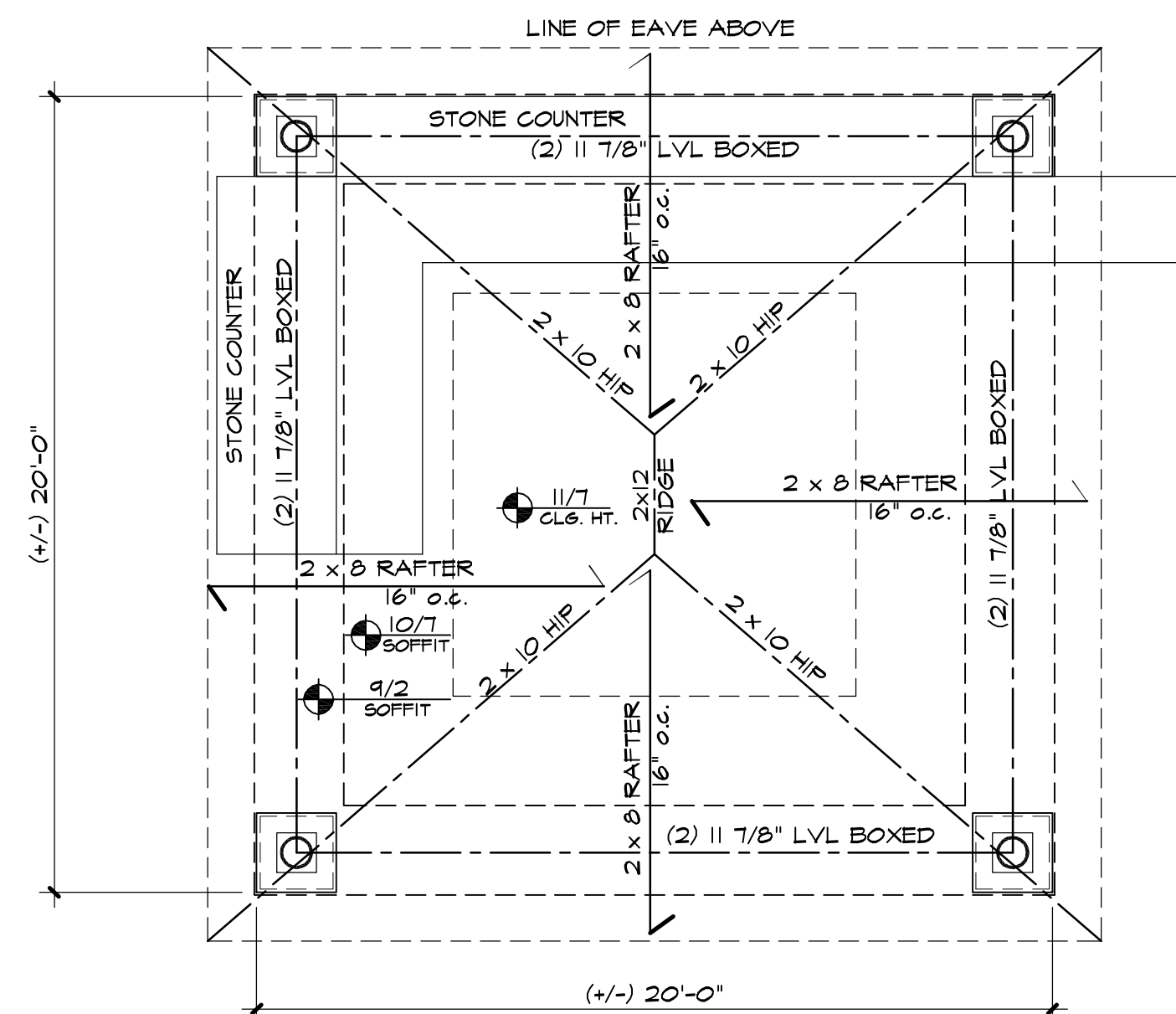


SOUTH ELEVATION
SCALE: 1/4" = 1'-0" FRONT

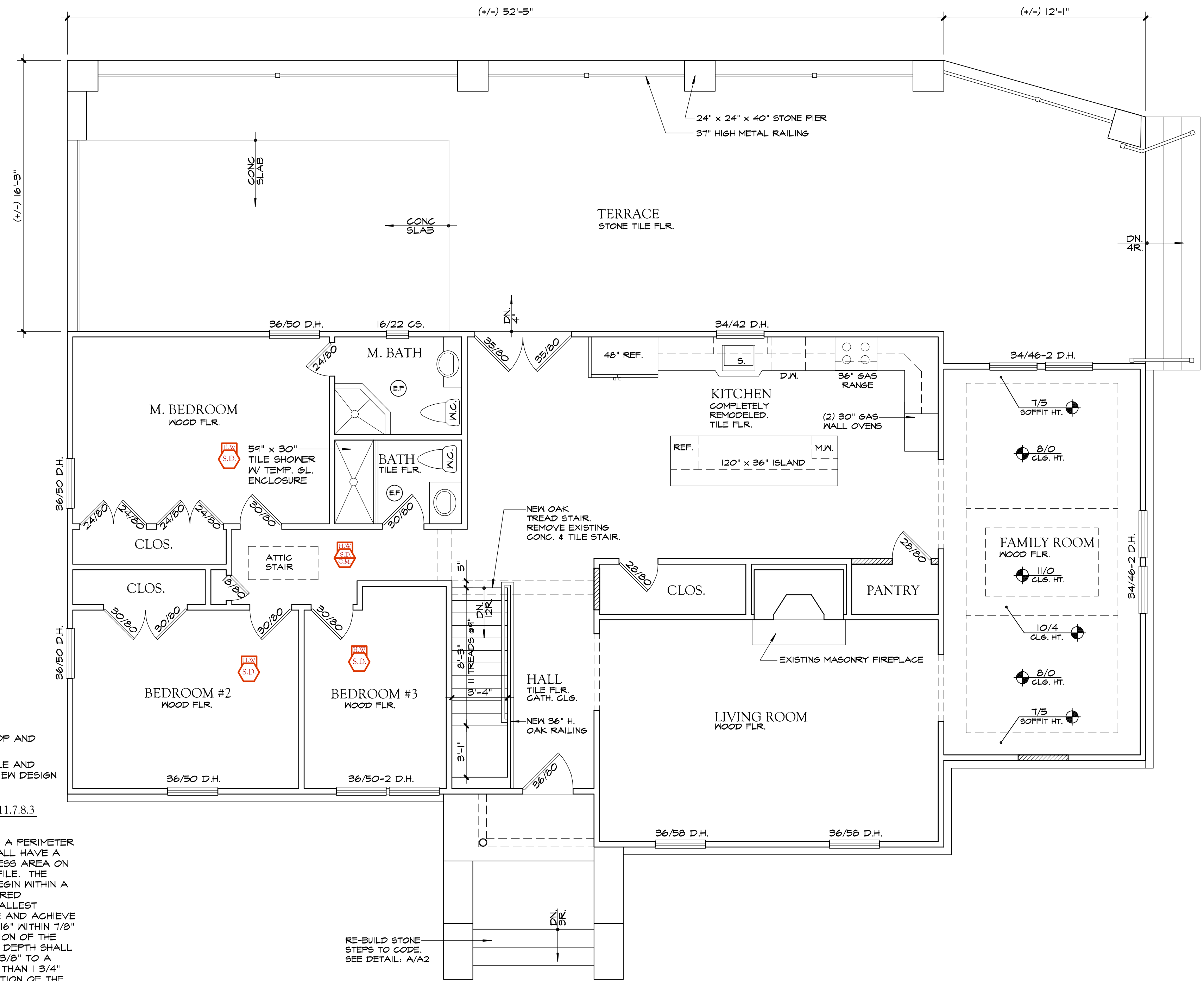


EAST ELEVATION
SCALE: 1/4" = 1'-0" SIDE

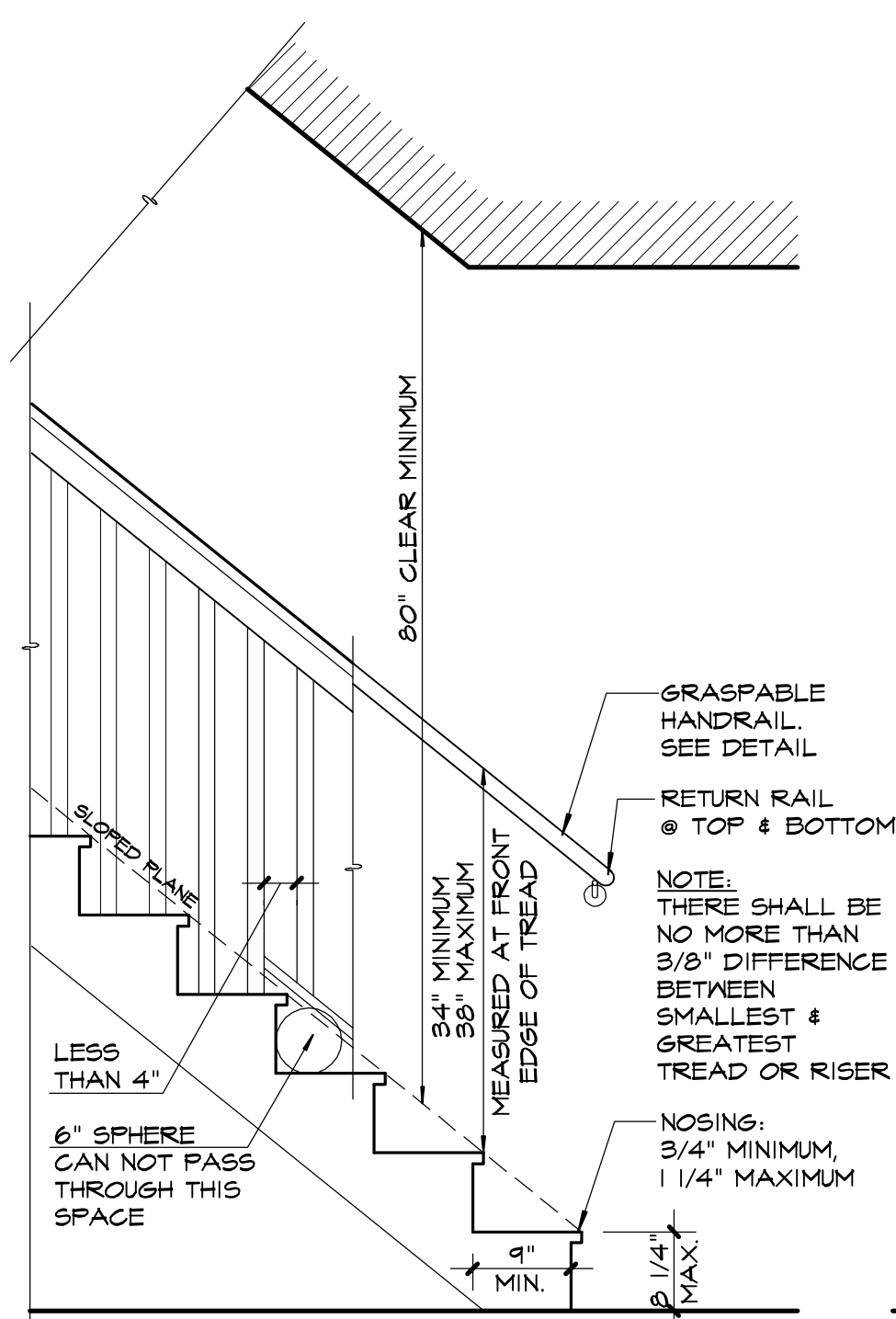
POOL PAVILLION ELEVATIONS



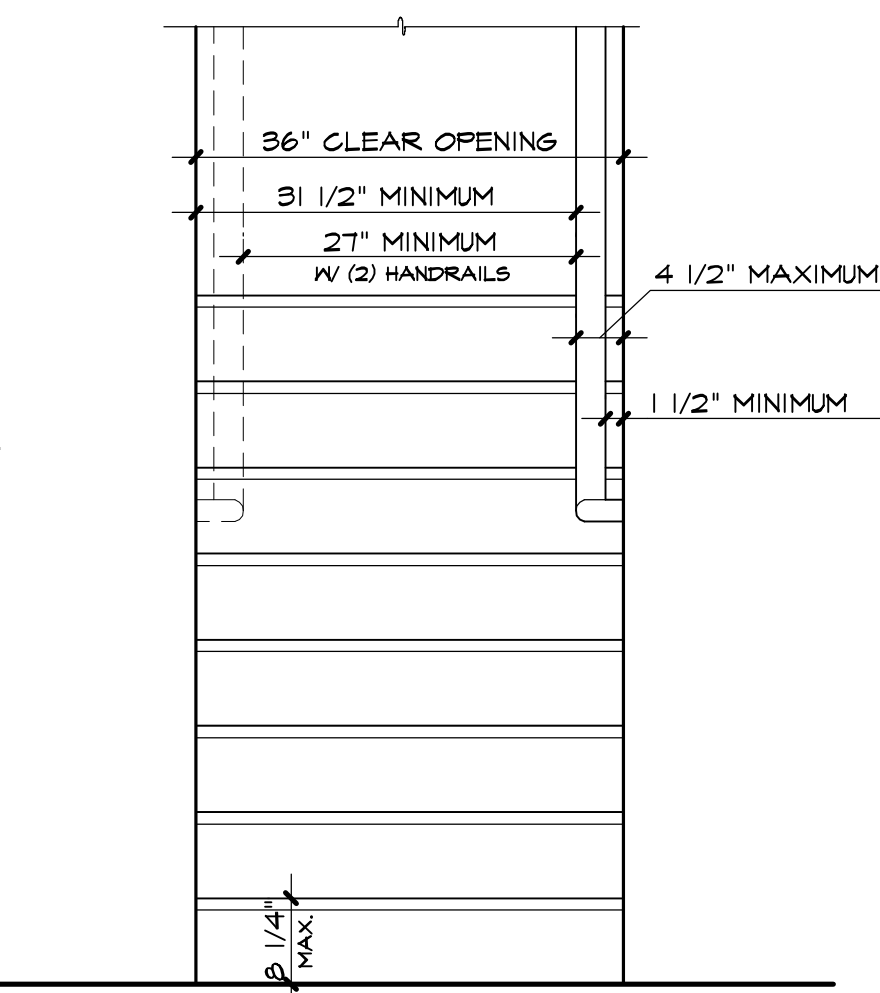
POOL PAVILLION FLOOR PLAN
SCALE: 1/4" = 1'-0"



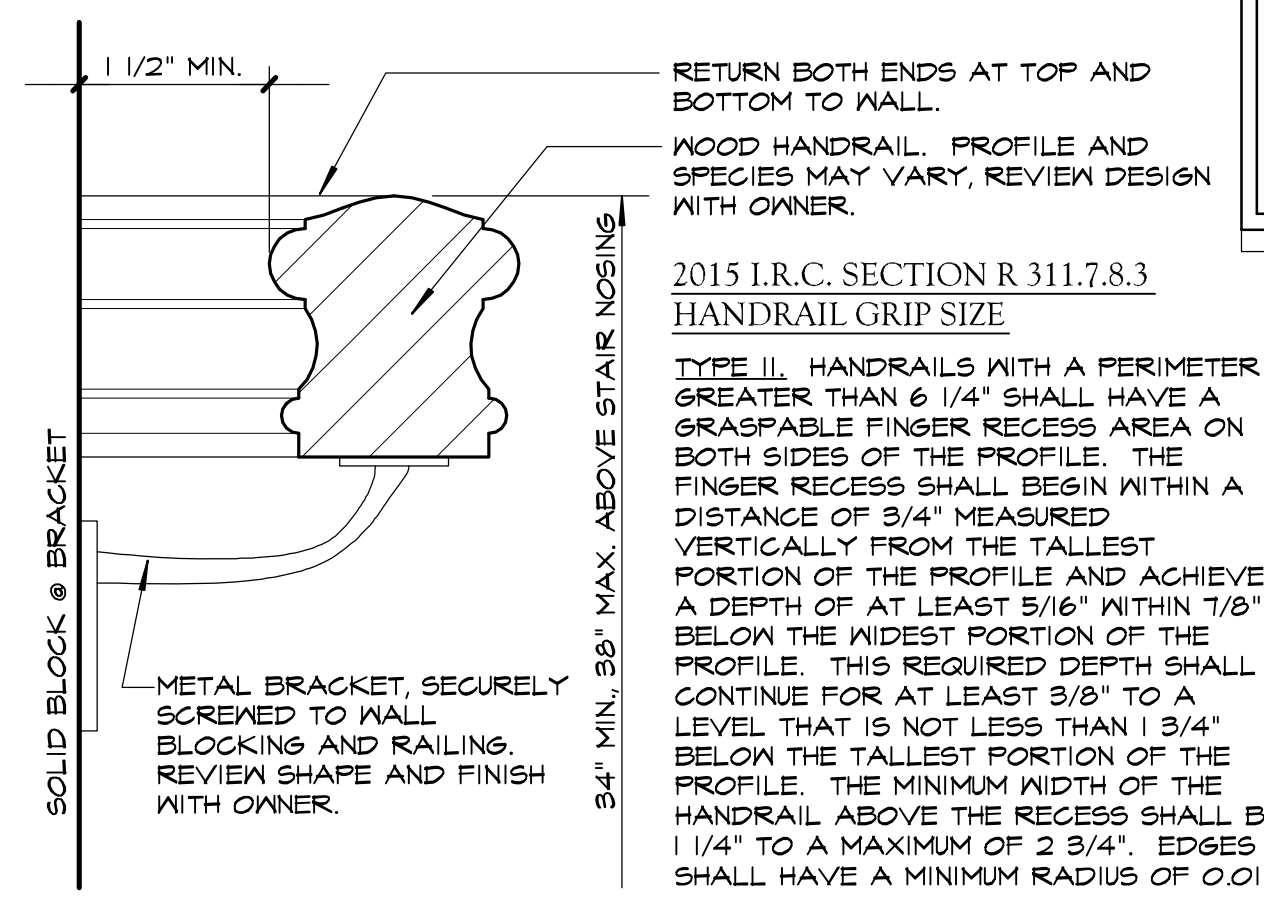
AS-BUILT FIRST FLOOR PLAN
SCALE: 1/4" = 1'-0"



A STAIR SECTION
SCALE: 3/4" = 1'-0" GENERIC STAIR PER CODE SEE PLANS FOR SPECIFIC DIMENSIONS



B STAIR ELEVATION
SCALE: 3/4" = 1'-0" GENERIC STAIR PER CODE SEE PLANS FOR SPECIFIC DIMENSIONS

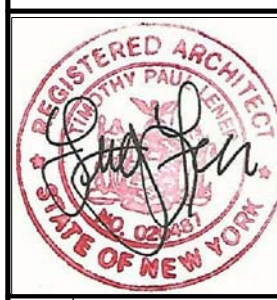


C HANDRAIL DETAIL
SCALE: 6" = 1'-0"

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Legalizations to the
Pereira Residence
4 Tripp Lane, Armonk, New York
Section: 108.2 Block: 1 Lot: 10



Revisions
Date: 09/16/20
Do Not Scale Prints
Sheet No.
A2
Pereira



REAR VIEW FROM POOL



FRONT VIEW



POOL PAVILLION



SHED



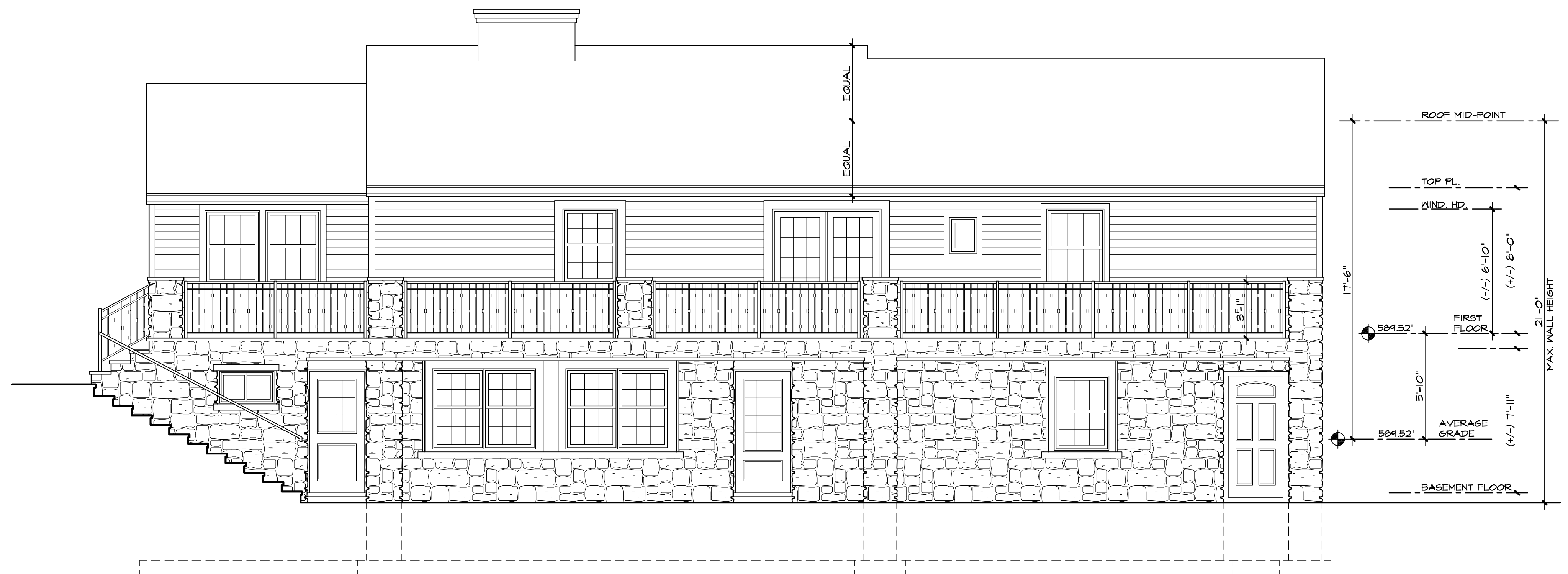
SOUTH ELEVATION
SCALE: 1/4" = 1'-0"
FRONT



WEST ELEVATION
SCALE: 1/4" = 1'-0"
SIDE



EAST ELEVATION
SCALE: 1/4" = 1'-0"
SIDE



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



REAR VIEW FROM YARD



REAR VIEW FROM DRIVEWAY

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The Certificate of Occupancy Pros

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Phone: 914-727-0980 E-Mail: copro.getmyco@gmail.com

Legalizations to the
Pereira Residence

4 Tripp Lane, Armonk, New York

Section: 108.2 Block: 1 Lot: 10



Revisions

Date: 09/16/20

Do Not Scale Prints

Sheet No.

A3

Pereira

SITE DEVELOPMENT PLAN APPROVAL DRAWINGS

PEREIRA RESIDENCE

4 TRIPP LANE

TAX MAP SECTION 108.02 | BLOCK 1 | LOT 10

WESTCHESTER COUNTY

NORTH CASTLE, NY

Applicant / Owner:

MR. & MRS. PEREIRA
4 TRIPP LANE
TOWN OF NORTH CASTLE, NY
APPLICANT PHONE: (914) 391-6979

Architect:

GET MY C.O.
57 WHEELER AVENUE, SUITE 203
PLEASANTVILLE, NY 10570
(914) 727-0980

Surveyor:

SUMMIT LAND SURVEYING P.C.
21 DRAKE LANE
WHITE PLAINS, NY 10607
(914) 629-7758

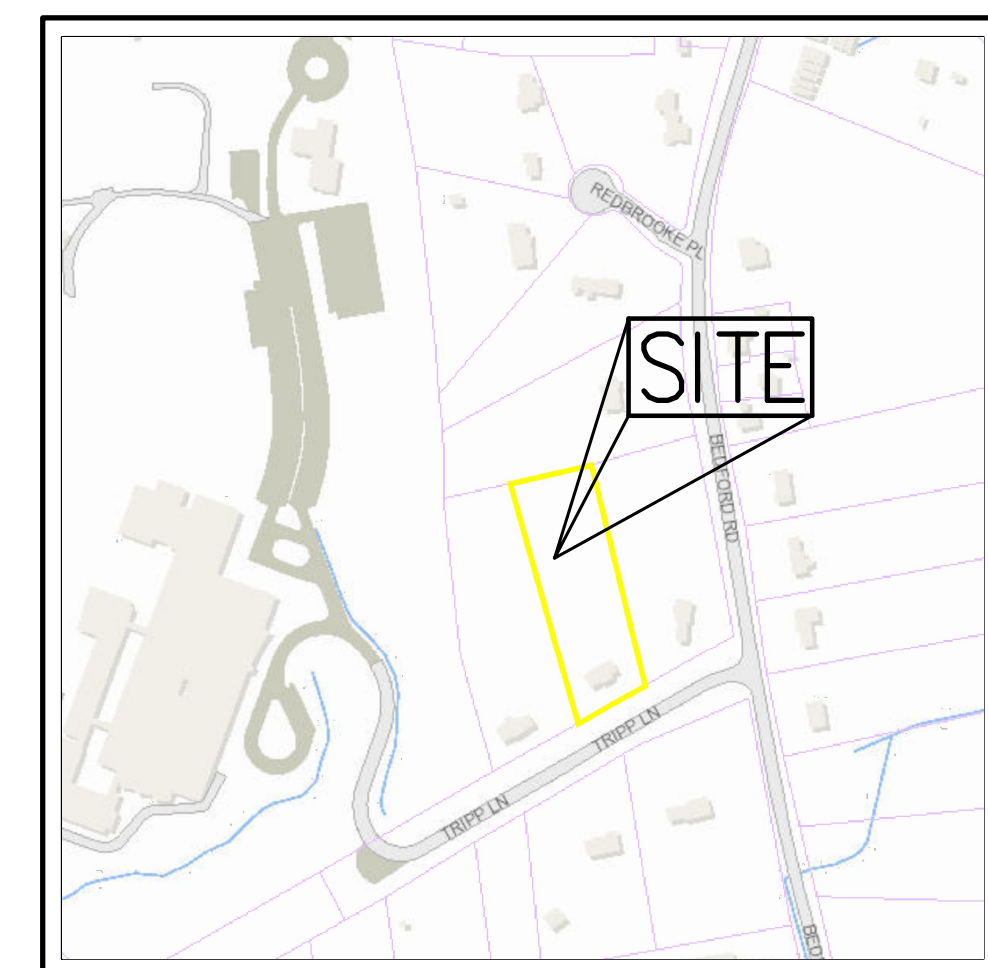
JMC Site Planner, Civil Engineer
and Landscape Architect:
120 BEDFORD ROAD
ARMONK, NY 10504
(914) 273-5225



JMC Drawing List:

- C-000 COVER SHEET
- C-100 PRE-EXISTING CONDITIONS MAP
- C-110 EXISTING CONDITIONS MAP AND DEMOLITION PLAN
- C-130 TREE MITIGATION PLAN
- C-200 SITE PLAN
- C-310 GROSS LAND COVERAGE PLAN
- C-410 CUT AND FILL PLAN
- C-900 CONSTRUCTION DETAILS
- C-901 CONSTRUCTION DETAILS

TABLE OF LAND USE			
TOWN OF NORTH CASTLE, N.Y. SECTION 108.02, BLOCK 1, LOT 10 ZONE "R-2A." - "ONE FAMILY RESIDENTIAL DISTRICT" (2 ACRES)			
DESCRIPTION	REQUIRED	PROVIDED	
MINIMUM LOT AREA (ACRES / S.F.)	2	±2.06 / ±89,820	
MINIMUM LOT FRONTAGE (FEET)	150	±183.6	
MINIMUM LOT WIDTH (FEET)	150	±175	
MINIMUM LOT DEPTH (FEET)	150	±513.3	
MINIMUM YARDS			
FRONT (FEET)	50	±55.1	
SIDE (FEET)	30	±35.2	
REAR (FEET)	50	±402.2	
MAXIMUM BUILDING HEIGHT (FEET)	30	<30	
MAXIMUM BUILDING COVERAGE (PERCENT)	8	3.92	
MINIMUM DWELLING UNIT SIZE (§355-70) (S.F.)	1,400	2,786	



ZONING / VICINITY MAP
SCALE: 1" = 400'

GENERAL CONSTRUCTION NOTES APPLY TO ALL WORK HEREIN:

- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CALL 811 "DIG SAFELY" (1-800-962-7962) TO HAVE UNDERGROUND UTILITIES LOCATED. EXPLORATORY EXCAVATIONS SHALL COMPLY WITH CODE 753 REQUIREMENTS. NO WORK SHALL COMMENCE UNTIL ALL THE OPERATORS HAVE NOTIFIED THE CONTRACTOR THAT THEIR UTILITIES HAVE BEEN LOCATED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PRESERVATION OF ALL PUBLIC AND PRIVATE UNDERGROUND AND SURFACE UTILITIES AND STRUCTURES AT OR ADJACENT TO THE SITE OF CONSTRUCTION, INsofar AS THEY MAY BE ENDANGERED BY THE CONTRACTOR'S OPERATIONS. THIS SHALL HOLD TRUE WHETHER OR NOT THEY ARE SHOWN ON THE CONTRACT DRAWINGS. IF THEY ARE SHOWN ON THE DRAWINGS, THEIR LOCATIONS ARE NOT GUARANTEED EVEN THOUGH THE INFORMATION WAS OBTAINED FROM THE BEST AVAILABLE SOURCES, AND IN ANY EVENT, OTHER UTILITIES ON THESE PLANS MAY BE ENCOUNTERED IN THE FIELD. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, IMMEDIATELY REPAIR OR REPLACE ANY STRUCTURES OR UTILITIES THAT HE DAMAGES, AND SHALL CONSTANTLY PROCEED WITH CAUTION TO PREVENT UNDUE INTERRUPTION OF UTILITY SERVICE.
- CONTRACTOR SHALL HAND DIG TEST PITS TO VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL VERIFY EXISTING UTILITIES DEPTHS AND ADVISE OF ANY CONFLICTS WITH PROPOSED UTILITIES. IF CONFLICTS ARE PRESENT, THE OWNER'S FIELD REPRESENTATIVE, JMC, PLLC AND THE APPLICABLE MUNICIPALITY OR AGENCY SHALL BE NOTIFIED IN WRITING. THE EXISTING/PROPOSED UTILITIES RELOCATION SHALL BE DESIGNED BY JMC, PLLC.
- CONTRACTOR IS RESPONSIBLE FOR OBTAINING ANY AND ALL LOCAL PERMITS REQUIRED.
- ALL WORK SHALL BE DONE IN STRICT COMPLIANCE WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES, STANDARDS, ORDINANCES, RULES, AND REGULATIONS. ALL CONSTRUCTION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL SAFETY CODES. APPLICABLE SAFETY CODES MEAN THE LATEST EDITION INCLUDING ANY AND ALL AMENDMENTS, REVISIONS, AND ADDITIONS THERETO, TO THE FEDERAL DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION'S OCCUPATIONAL SAFETY AND HEALTH STANDARDS (OSHA), AND APPLICABLE SAFETY, HEALTH REGULATIONS AND BUILDING CODES FOR CONSTRUCTION IN THE STATE OF NEW YORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR GUARDING AND PROTECTING ALL OPEN EXCAVATIONS IN ACCORDANCE WITH THE PROVISION OF SECTION 107-05 (SAFETY AND HEALTH REQUIREMENTS) OF THE NYS DOT STANDARD SPECIFICATIONS. IF THE CONTRACTOR PERFORMS ANY HAZARDOUS CONSTRUCTION PRACTICES, ALL OPERATIONS IN THE AFFECTED AREA SHALL BE DISCONTINUED AND IMMEDIATE ACTION SHALL BE TAKEN TO CORRECT THE SITUATION TO THE SATISFACTION OF THE APPROVAL AUTHORITY HAVING JURISDICTION.
- CONTRACTOR SHALL MAINTAIN ACCESS TO ALL PROPERTIES AFFECTED BY THE SCOPE OF WORK SHOWN HEREON AT ALL TIMES TO THE SATISFACTION OF THE OWNERS REPRESENTATIVE. RAMPING CONSTRUCTION TO PROVIDE ACCESS MAY BE CONSTRUCTED WITH SUBBASE MATERIAL EXCEPT THAT TEMPORARY ASPHALT CONCRETE SHALL BE PLACED AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SAFE PEDESTRIAN ACCESS AT ALL TIMES.
- CONTRACTOR SHALL MAINTAIN THE INTEGRITY OF EXISTING PAVEMENT TO REMAIN.

AREA MAP
SCALE: N.T.S.

SUBSURFACE UTILITY LOCATIONS ARE BASED ON A COMPILATION OF FIELD EVIDENCE, AVAILABLE RECORD PLANS AND/OR UTILITY MARK-OUTS. THE LOCATION OR COMPLETENESS OF UNDERGROUND INFORMATION CANNOT BE GUARANTEED. VERIFY THE ACTUAL LOCATION OF ALL UTILITIES PRIOR TO EXCAVATION OR CONSTRUCTION.



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

CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:

JOSEPH M. CERMELE, P.E.
KELLARD SESSIONS CONSULTING
CONSULTING TOWN ENGINEERS

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No.	Revision	Date	By
1.	REVISED PER TOWN ENGINEER'S COMMENTS	07/12/2022	RB

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
www.jmcp1lc.com

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Scale: NOT TO SCALE
Date: 03/01/2021
Project No: 20044
2004-SE-03 COVER COVER.sxd
Drawing No: C-000

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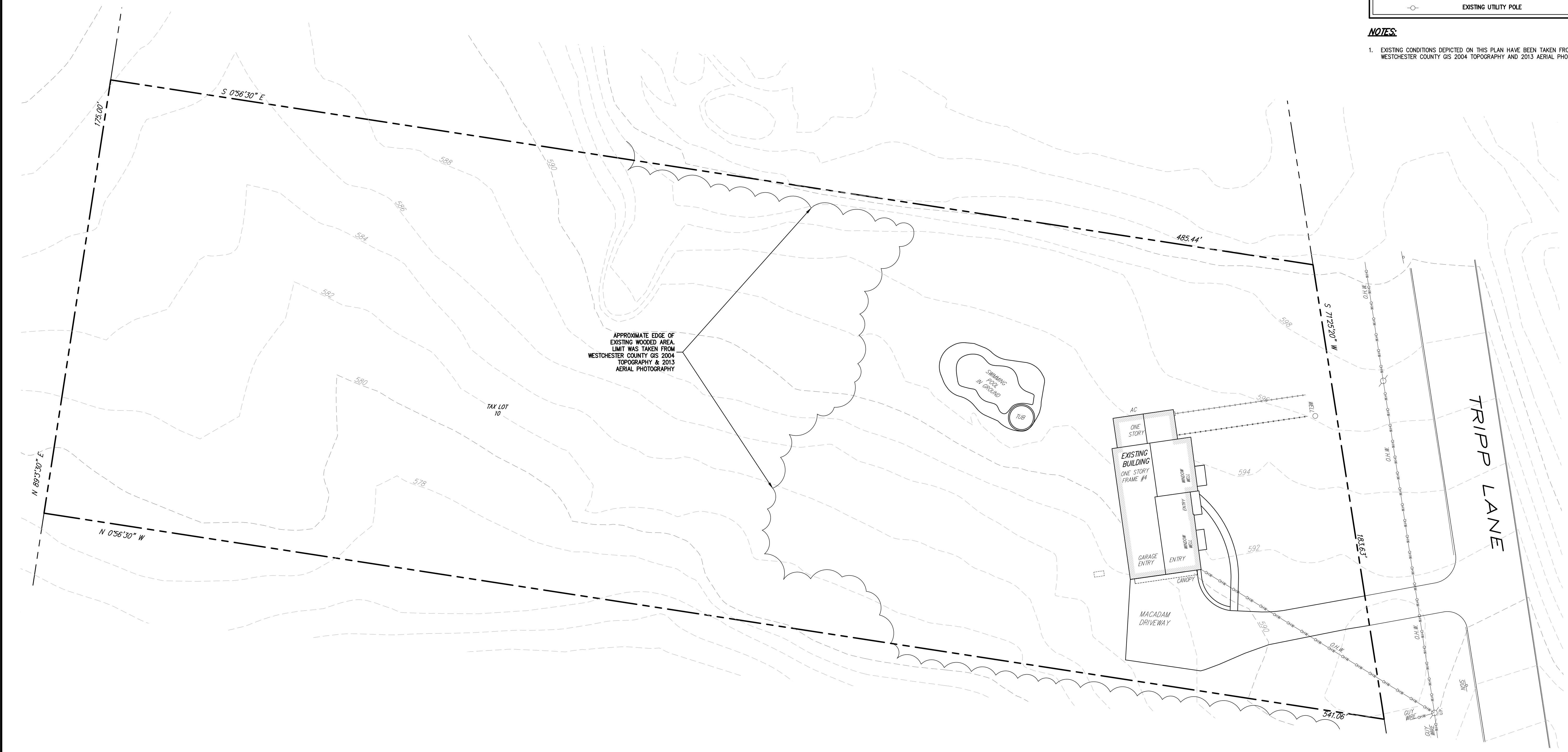
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THE 2-FOOT CONTOURS DEPICTED ON THIS PLAN ARE INTENDED TO BE USED FOR PLANNING & PRELIMINARY ENGINEERING APPLICATIONS. THEY ARE NOT INTENDED TO BE USED IN ENGINEERING DESIGN AND DO NOT NEGATE THE NEED FOR A FIELD SURVEY. THE WESTCHESTER COUNTY GIS DATASET CONTAINS CONTOUR LINES MODELED AT A TWO FOOT INTERVAL. THE SOURCE INFORMATION USED IN THE COLLECTION OF THE DATASET WAS PART OF THE NEW YORK STATE DIGITAL ORTHOMAGERY PROGRAM; PHOTOS TAKEN IN APRIL 2004. VERTICAL DATUM IS NAVD83. THE COUNTY OF WESTCHESTER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE COMPLETENESS OR ACCURACY OF THE DATA AND ASSUMES NO LIABILITY WHATSOEVER FOR ANY PRODUCT OR ANALYSIS DERIVED FROM OR BASED ON THE DATA.



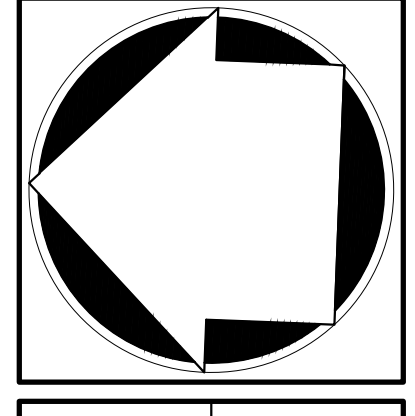
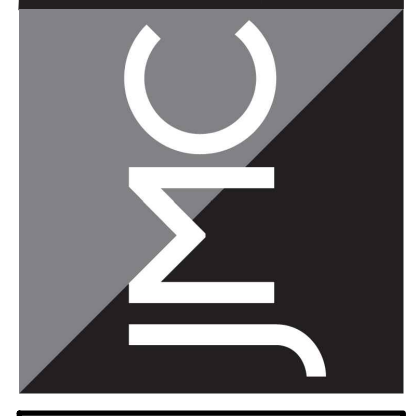
LEGEND	
	EXISTING PROPERTY LINE
	ADJACENT PROPERTY LINE
	EXISTING BUILDING OVERHANG
	EXISTING BUILDING LINE
	EXISTING PAVEMENT EDGE
	EXISTING CURB LINE
	EXISTING GIS CONTOUR
	EXISTING GIS INDEX CONTOUR
	EXISTING FENCE
	EXISTING TREE LINE
	EXISTING UTILITY POLE

NOTES:
 1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM WESTCHESTER COUNTY GIS 2004 TOPOGRAPHY AND 2013 AERIAL PHOTOGRAPHY.

APPLICANT/OWNER:
Mr. & Mrs. PEREIRA
 4 TRIPP LANE
 TOWN OF NORTH CASTLE, NY

ARCHITECT:
GET MY CO
 57 WHEELER AVENUE, SUITE 203
 PLEASANTVILLE, NY

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 JMC Site Development Consultants, LLC
 John Meyer Consulting, Inc.
 120 BEDFORD ROAD - ARMONK, NY 10504
 voice 914.273.5225 • fax 914.273.2102
 www.jmcpllc.com



PRE-EXISTING CONDITIONS MAP
PEREIRA RESIDENCE
 4 TRIPP LANE
 NORTH CASTLE, NY

APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD:
 RESOLUTION, DATED: _____ DATE: _____
 CHRISTOPHER CARTHY, CHAIRMAN
 TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:
 _____ DATE: _____
 JOSEPH M. CERMELE, P.E.
 KELLARD SESSIONS CONSULTING
 CONSULTING TOWN ENGINEERS

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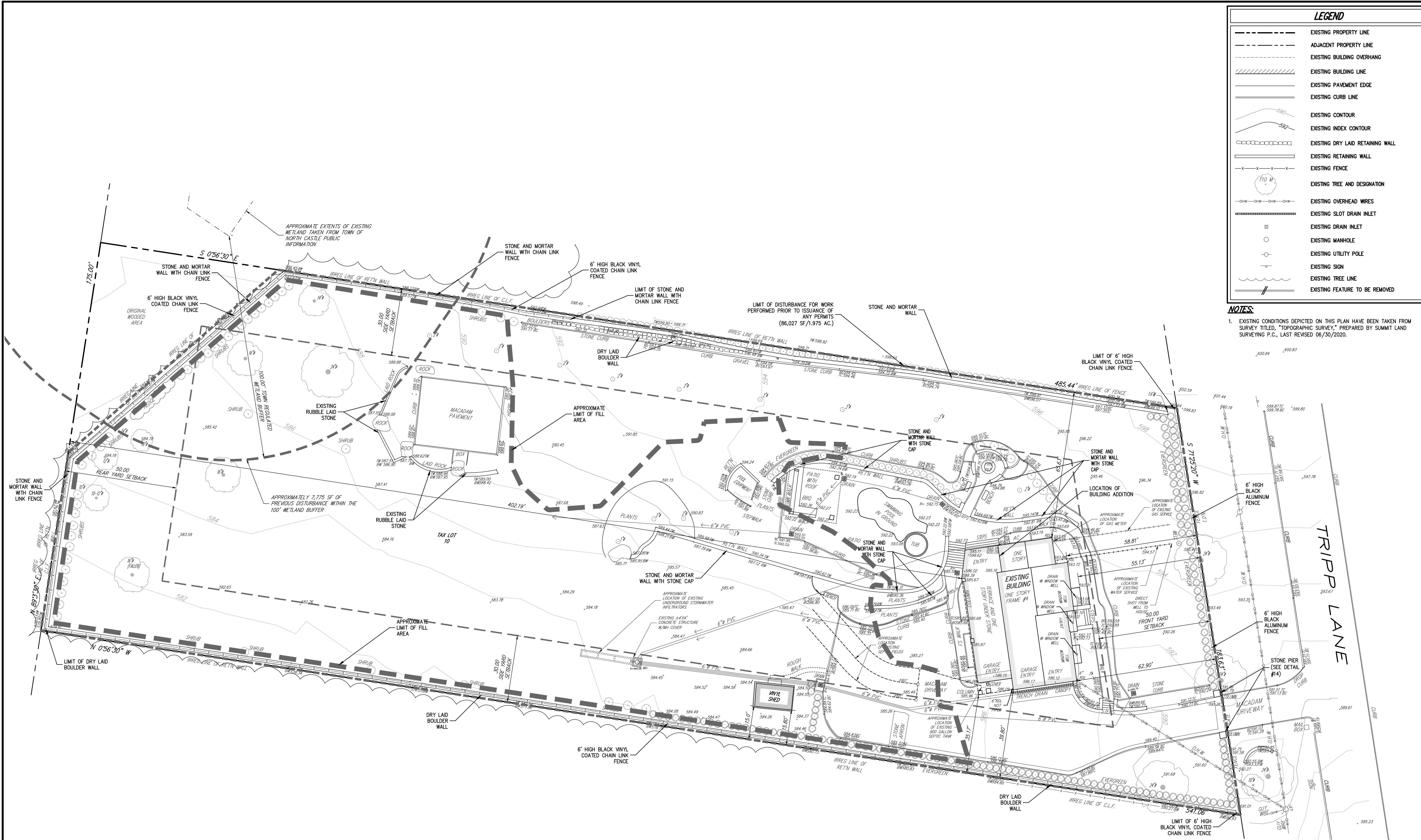
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 Date: 03/01/2021
 Project No: 20044
 2004-SIE-IX PRE-EXIST PRE-EX COND LS
 Drawing No: **C-100**

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LEGEND

	EXISTING PROPERTY LINE
	ADJACENT PROPERTY LINE
	EXISTING BUILDING OVERHANG
	EXISTING BUILDING LINE
	EXISTING PAVEMENT EDGE
	EXISTING CURB LINE
	EXISTING INDEX CONTOUR
	EXISTING INDEX CONTOUR
	EXISTING DRY LAID RETAINING WALL
	EXISTING RETAINING WALL
	EXISTING FENCE
	EXISTING TREE AND DESIGNATION
	EXISTING OVERHEAD WIRES
	EXISTING SLOT DRAIN INLET
	EXISTING DRAIN INLET
	EXISTING MANHOLE
	EXISTING UTILITY POLE
	EXISTING SIGN
	EXISTING TREE LINE
	EXISTING FEATURE TO BE REMOVED

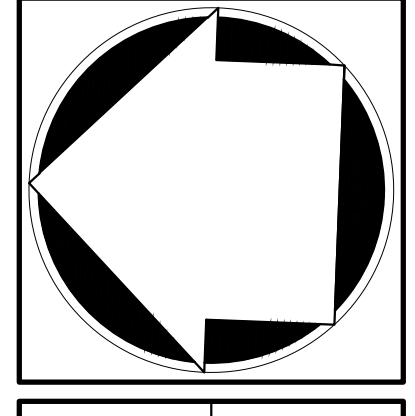
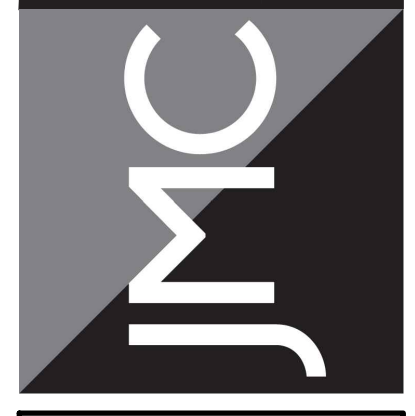
NOTES:

- EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC SURVEY," PREPARED BY SUMMIT LAND SURVEYING P.C., LAST REVISED 06/30/2020.

APPLICANT/OWNER:
Mr. & Mrs. PEREIRA
 4 TRIPP LANE
 TOWN OF NORTH CASTLE, NY

ARCHITECT:
GET MY CO
 57 WHEELER AVENUE, SUITE 203
 PLEASANTVILLE, NY

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
 JMC Site Development Consultants, LLC
 John Meyer Consulting, Inc.
 120 BEDFORD ROAD - ARMONK, NY 10504
 voice 914.273.5225 - fax 914.273.2102
 www.jmcplic.com



EXISTING CONDITIONS MAP AND DEMOLITION PLAN
 PEREIRA RESIDENCE
 4 TRIPP LANE
 NORTH CASTLE, NY

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

CHRISTOPHER CARTH, CHAIRMAN
 TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:
 _____ DATE: _____

JOSEPH M. CERMELE, P.E.
 KELLARD SESSIONS CONSULTING
 CONSULTING TOWN ENGINEERS

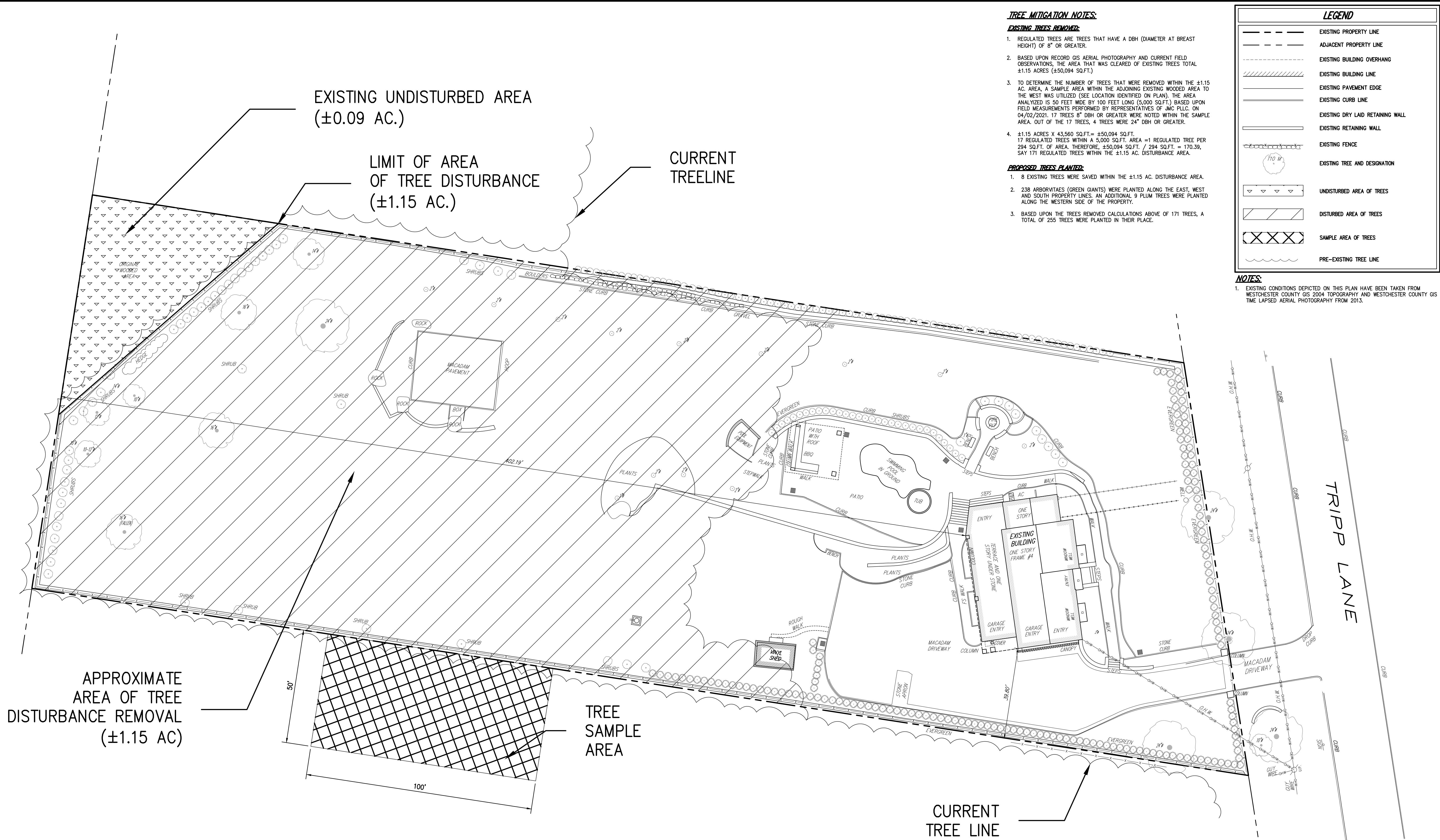
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TREE MITIGATION NOTES:

EXISTING TREES REMOVED:

1. REGULATED TREES ARE TREES THAT HAVE A DBH (DIAMETER AT BREAST HEIGHT) OF 8" OR GREATER.
2. BASED UPON RECORD GIS AERIAL PHOTOGRAPHY AND CURRENT FIELD OBSERVATIONS, THE AREA THAT WAS CLEARED OF EXISTING TREES TOTAL ±1.15 ACRES (±50,094 SQ.FT.)
3. TO DETERMINE THE NUMBER OF TREES THAT WERE REMOVED WITHIN THE ±1.15 AC. AREA, A SAMPLE AREA WITHIN THE ADJOINING EXISTING WOODED AREA TO THE WEST WAS UTILIZED (SEE LOCATION IDENTIFIED ON PLAN). THE AREA ANALYZED IS 50 FEET WIDE BY 100 FEET LONG (5,000 SQ.FT.) BASED UPON FIELD MEASUREMENTS PERFORMED BY REPRESENTATIVES OF JMC PLLC. ON 04/02/2021, 17 TREES 8" DBH OR GREATER WERE NOTED WITHIN THE SAMPLE AREA. OUT OF THE 17 TREES, 4 TREES WERE 24" DBH OR GREATER.
4. ±1.15 ACRES X 43,560 SQ.FT. = ±50,094 SQ.FT.
17 REGULATED TREES WITHIN A 5,000 SQ.FT. AREA = 1 REGULATED TREE PER 294 SQ.FT. OF AREA. THEREFORE, ±50,094 SQ.FT. / 294 SQ.FT. = 170.39, SAY 171 REGULATED TREES WITHIN THE ±1.15 AC. DISTURBANCE AREA.

PROPOSED TREES PLANTED:

1. 8 EXISTING TREES WERE SAVED WITHIN THE ±1.15 AC. DISTURBANCE AREA.
2. 238 ARBORVITAE (GREEN GIANTS) WERE PLANTED ALONG THE EAST, WEST AND SOUTH PROPERTY LINES. AN ADDITIONAL 9 PLUM TREES WERE PLANTED ALONG THE WESTERN SIDE OF THE PROPERTY.
3. BASED UPON THE TREES REMOVED CALCULATIONS ABOVE OF 171 TREES, A TOTAL OF 255 TREES WERE PLANTED IN THEIR PLACE.

LEGEND

	EXISTING PROPERTY LINE
	ADJACENT PROPERTY LINE
	EXISTING BUILDING OVERHANG
	EXISTING BUILDING LINE
	EXISTING PAVEMENT EDGE
	EXISTING CURB LINE
	EXISTING DRY LAID RETAINING WALL
	EXISTING RETAINING WALL
	EXISTING FENCE
	EXISTING TREE AND DESIGNATION
	UNDISTURBED AREA OF TREES
	DISTURBED AREA OF TREES
	SAMPLE AREA OF TREES
	PRE-EXISTING TREE LINE

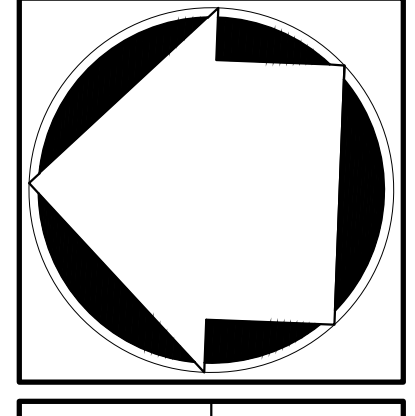
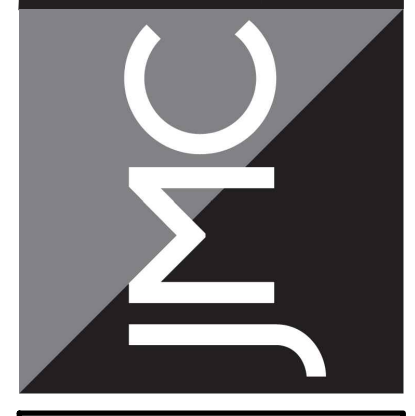
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APPLICANT/TOWNER: **Mr. & Mrs. PEREIRA**
4 TRIPP LANE
TOWN OF NORTH CASTLE, NY

ARCHITECT: **GET MY CO**
57 WHEELER AVENUE, SUITE 203
PLEASANTVILLE, NY

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120 BEDFORD ROAD - ARMONK, NY 10504
voice 914.273.5225 - fax 914.273.2102
www.jmcplc.com



TREE MITIGATION PLAN

PEREIRA RESIDENCE
4 TRIPP LANE
NORTH CASTLE, NY

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

CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:
DATE: _____

JOSEPH M. CERMELE, P.E.
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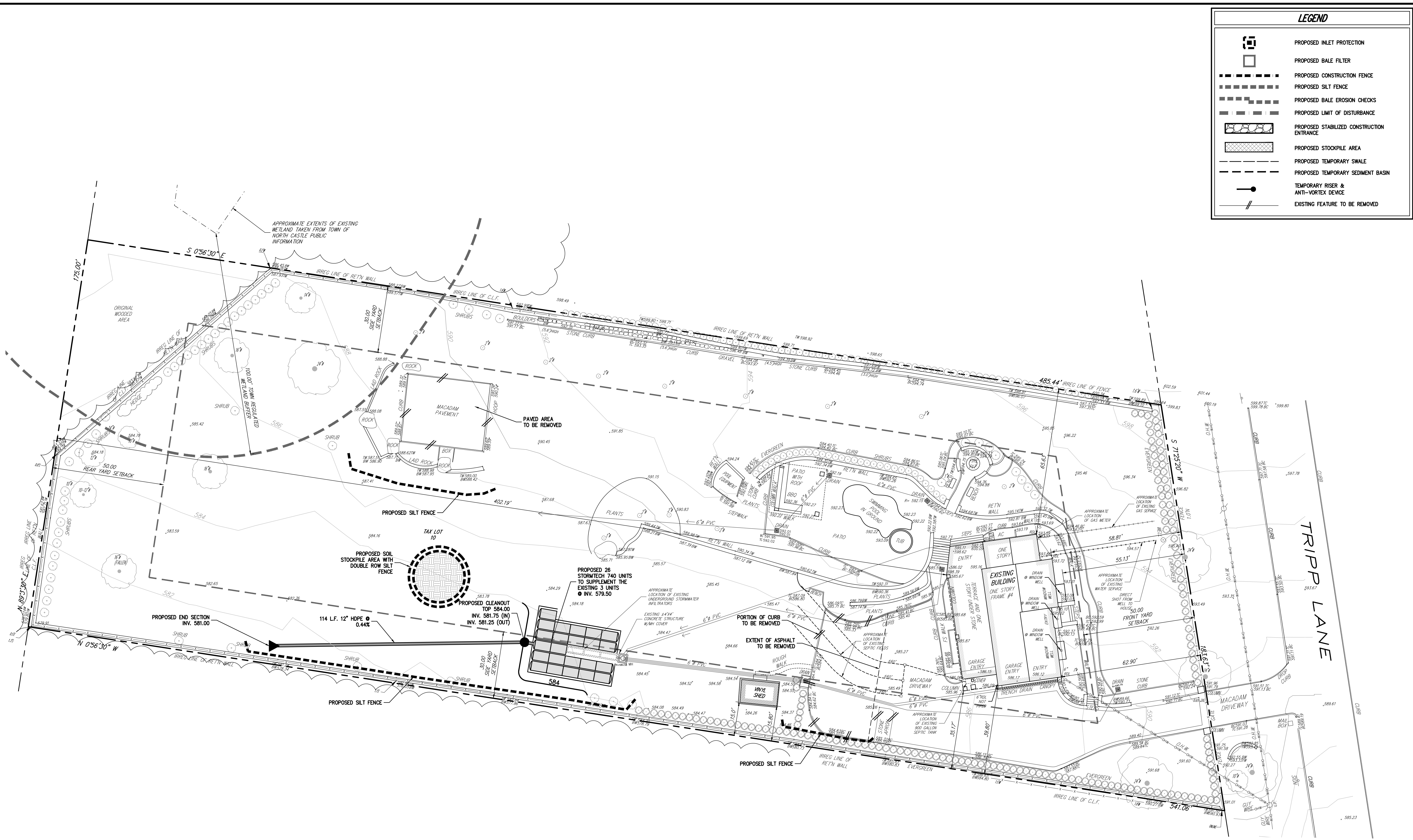
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2004-SIE-03 TREE TREELS
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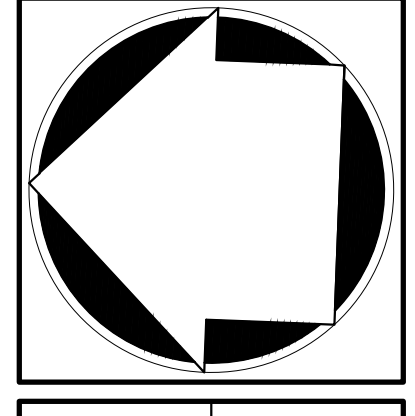
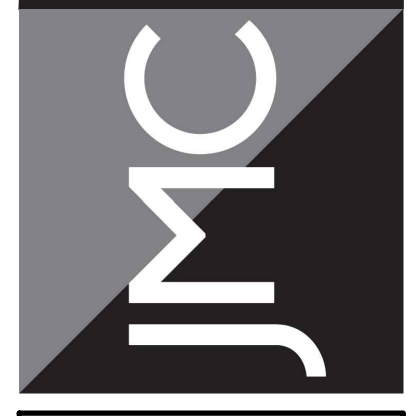
LEGEND

- PROPOSED INLET PROTECTION
- PROPOSED BALE FILTER
- PROPOSED CONSTRUCTION FENCE
- PROPOSED SILT FENCE
- PROPOSED BALE EROSION CHECKS
- PROPOSED LIMIT OF DISTURBANCE
- PROPOSED STABILIZED CONSTRUCTION ENTRANCE
- PROPOSED STOCKPILE AREA
- PROPOSED TEMPORARY SWALE
- PROPOSED TEMPORARY SEDIMENT BASIN
- TEMPORARY RISER & ANTI-VORTEX DEVICE
- EXISTING FEATURE TO BE REMOVED

APPLICANT/OWNER:
Mr. & Mrs. PEREIRA
 4 TRIPP LANE
 TOWN OF NORTH CASTLE, NY

ARCHITECT:
GET MY CO
 57 WHEELER AVENUE, SUITE 203
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 120 BEDFORD ROAD - ARMONK, NY 10504
 voice 914.273.5225 • fax 914.273.2102
 www.jmcplic.com



SITE PLAN
 PEREIRA RESIDENCE
 4 TRIPP LANE
 NORTH CASTLE, NY

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

CHRISTOPHER CARTH, CHAIRMAN
 TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:
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JOSEPH M. CERMELE, P.E.
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 2004-SIE-01 SITE SE-ser
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C-200



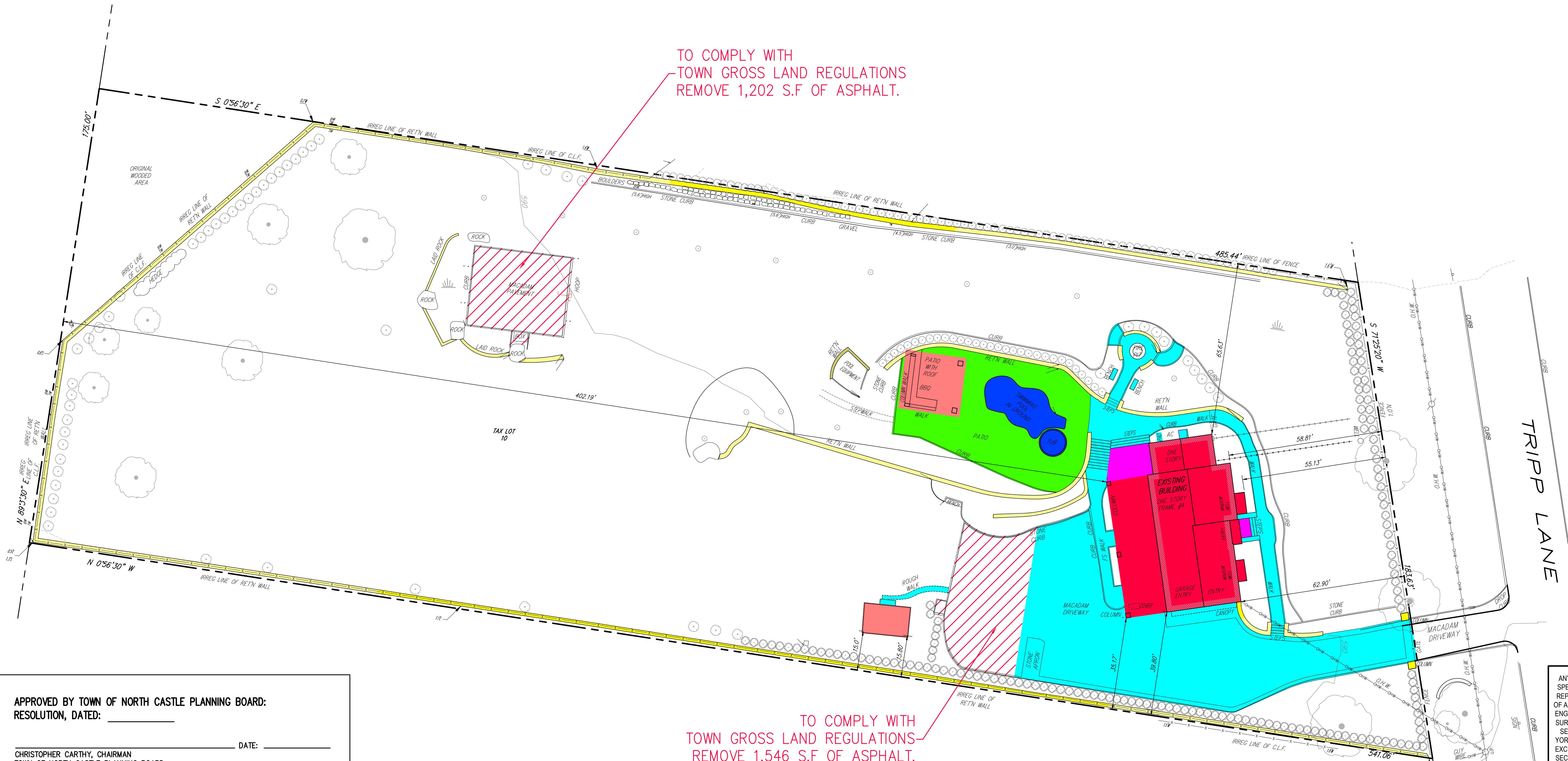
AREA SHOWING CONCRETE PATIO NORTH OF SHED THAT HAD PREVIOUSLY BEEN REMOVED BY HOMEOWNER

LEGEND	
	PRINCIPAL BUILDING = 2,786 S.F.
	ACCESSORY BUILDINGS = 739 S.F.
	PORCHES = 228 S.F.
	DRIVEWAY, PARKING AREAS AND WALKWAYS = 6,686 S.F.
	TERRACES = 1,964 S.F.
	POOL = 485 S.F.
	STRUCTURES, WALLS (ABOVE 4') = 584 S.F.
	WALLS (BELOW 4') NOT TO BE INCLUDED = 1,914 S.F.

*PER TOWN OF NORTH CASTLE CODE, SECTION 355-26(C):
 LOT SIZE OF 2.0 ACRES OR MORE
 MAXIMUM PERMITTED GROSS FLOOR AREA FOR ONE-FAMILY DWELLINGS =
 13,270 SF PLUS 7.5% OF THE LOT AREA IN EXCESS OF 2.0 ACRES
 LOT AREA = 2,062 AC., THEREFORE 0.062 AC. OR 2,700 SF GREATER THAN 2 ACRES
 7.5% OF 2,700 SF = 202 SF + 13,270 SF = 13,472 SF ALLOWABLE GROSS LAND COVERAGE

TO COMPLY WITH TOWN GROSS LAND REGULATIONS REMOVE 1,202 S.F. OF ASPHALT.

TO COMPLY WITH TOWN GROSS LAND REGULATIONS REMOVE 1,546 S.F. OF ASPHALT.



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

CHRISTOPHER CARTHY, CHAIRMAN
 TOWN OF NORTH CASTLE PLANNING BOARD
 DATE: _____

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:

JOSEPH M. CERMELE, P.E.
 KELLARD SESSIONS CONSULTING
 CONSULTING TOWN ENGINEERS
 DATE: _____

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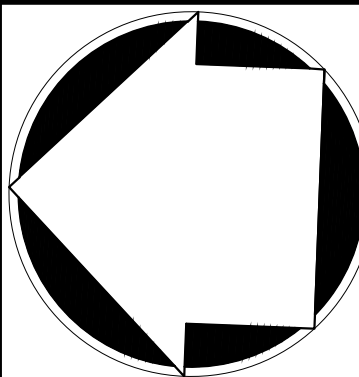
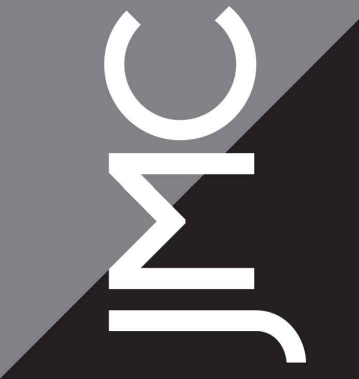
No.	Revision	Date	By
1.	REVISED PER TOWN COMMENTS	08/31/2021	RB
2.	REVISED PER TOWN ENGINEER'S COMMENTS	07/12/2022	RB

Drawn: DK	Approved: AN
Scale: 1" = 20'	
Date: 03/01/2021	
Project No: 20044	
2004-SIE-TR-GROSSLAND COV	02-04-15
Drawing No:	

C-310

NOT FOR CONSTRUCTION

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
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GROSS LAND COVERAGE PLAN
 PEREIRA RESIDENCE
 4 TRIPP LANE
 NORTH CASTLE, NY

APPLICANT/OWNER:
 Mr. & Mrs. PEREIRA
 4 TRIPP LANE
 TOWN OF NORTH CASTLE, NY
 ARCHITECT:
 GET MY CO
 57 WHEELER AVENUE, SUITE 203
 PLEASANTVILLE, NY

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EARTHWORK ANALYSIS

TOTAL AMOUNT OF CUT (EXPORT) = 1,570 CY
 TOTAL AMOUNT OF FILL (IMPORT) = 4,210 CY

NET AMOUNT OF EARTHWORK = 2,640 CY OF FILL (IMPORT)

LEGEND

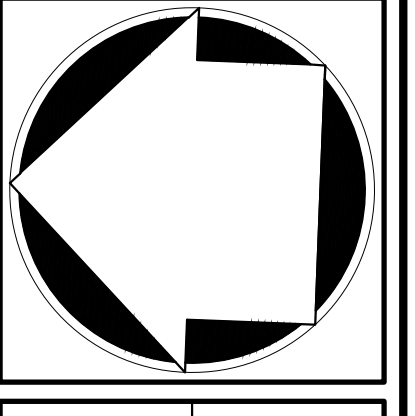
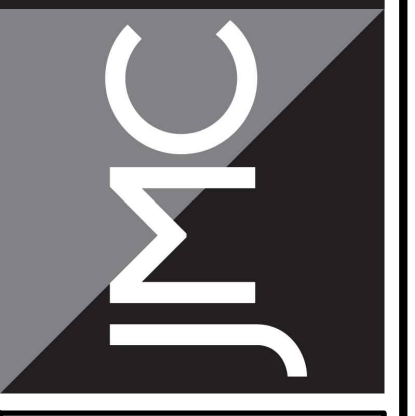
- EXISTING PROPERTY LINE
- ADJACENT PROPERTY LINE
- EXISTING BUILDING OVERHANG
- EXISTING BUILDING LINE
- EXISTING PAVEMENT EDGE
- EXISTING CURB LINE
- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- EXISTING DRY LAID RETAINING WALL
- EXISTING RETAINING WALL
- EXISTING FENCE
- EXISTING TREE AND DESIGNATION
- EXISTING OVERHEAD WIRES
- EXISTING SLOT DRAIN INLET
- EXISTING DRAIN INLET
- EXISTING MANHOLE
- EXISTING UTILITY POLE
- EXISTING SIGN
- EXISTING TREE LINE
- ↑ DEPTH OF EARTHWORK FILL
- ↓ DEPTH OF EARTHWORK CUT

NOTES:
 1. EXISTING CONDITIONS DEPICTED ON THIS PLAN HAVE BEEN TAKEN FROM SURVEY TITLED, "TOPOGRAPHIC SURVEY" PREPARED BY SUMMIT LAND SURVEYING P.C., LAST REVISED 06/30/2020.

APPLICANT/TOWNER:
Mr. & Mrs. PEREIRA
 4 TRIPP LANE
 TOWN OF NORTH CASTLE, NY

ARCHITECT:
GET MY CO
 57 WHEELER AVENUE, SUITE 203
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CUT AND FILL PLAN

PEREIRA RESIDENCE
 4 TRIPP LANE
 NORTH CASTLE, NY

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

CHRISTOPHER CARTHY, CHAIRMAN
 TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:
 _____ DATE: _____

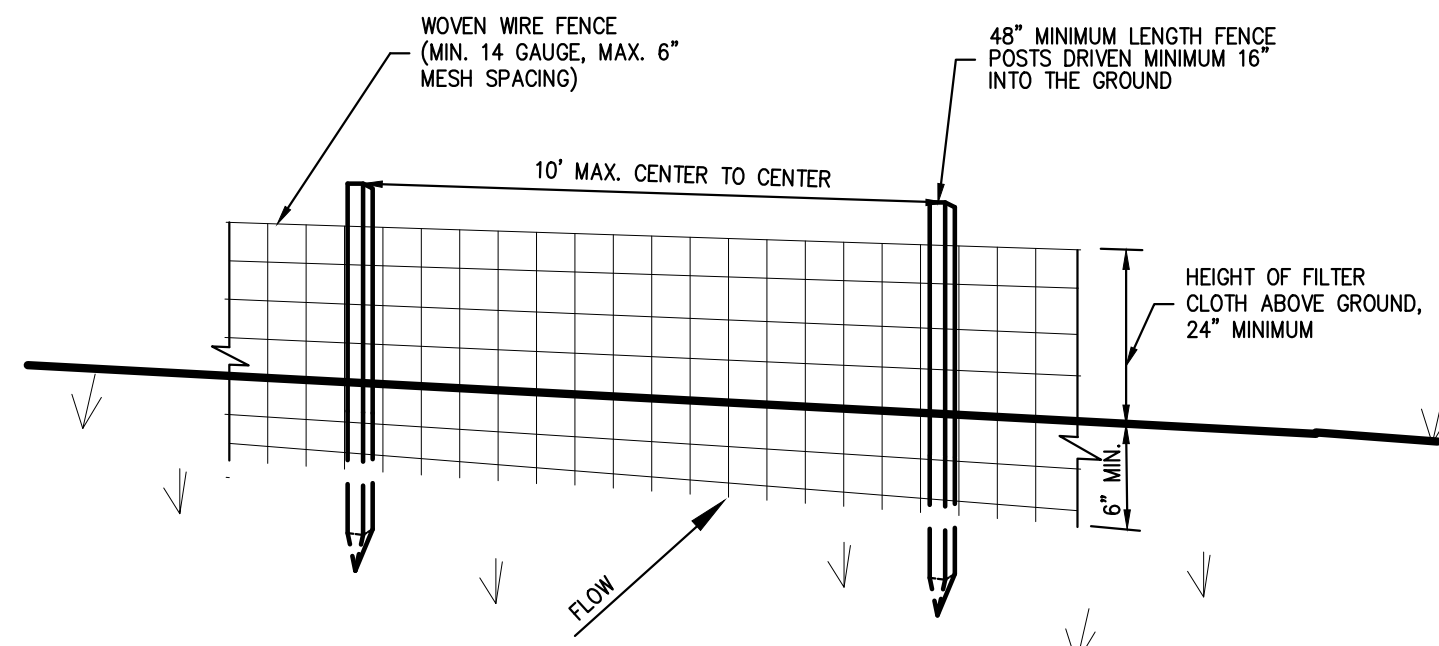
JOSEPH M. CERMELE, P.E.
 KELLARD SESSIONS CONSULTING
 CONSULTING TOWN ENGINEERS

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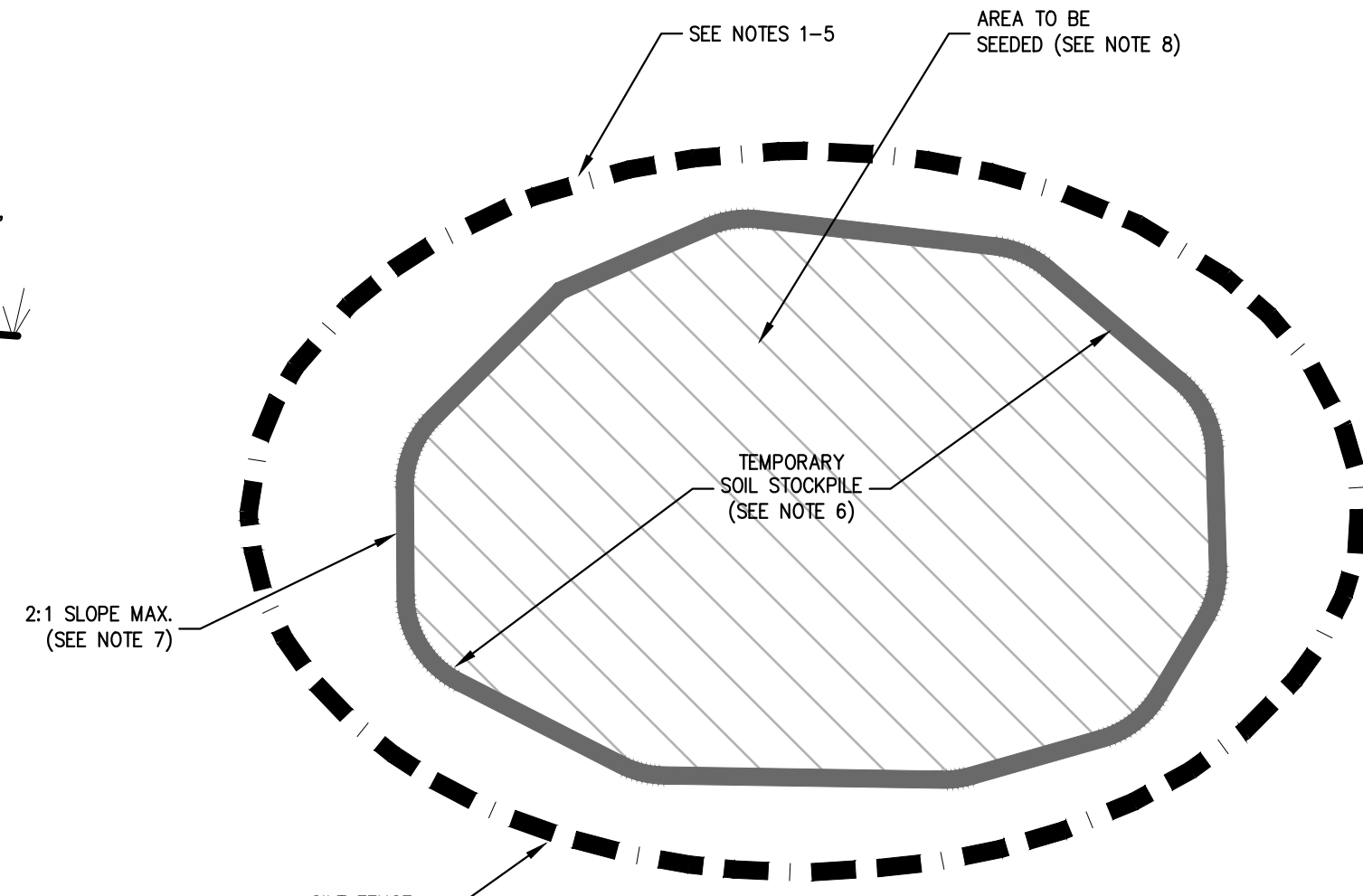
No.	Revision	Date	By
1.	REVISED PER TOWN ENGINEER'S COMMENTS	07/12/2022	RB

Drawn:	DK	Approved:	AN
Scale:	1" = 20'	Date:	03/01/2021
Project No:	20044	Project Name:	2004-STE 04 CUT AND FILL GRAD.ssr
Drawing No:	C-410		

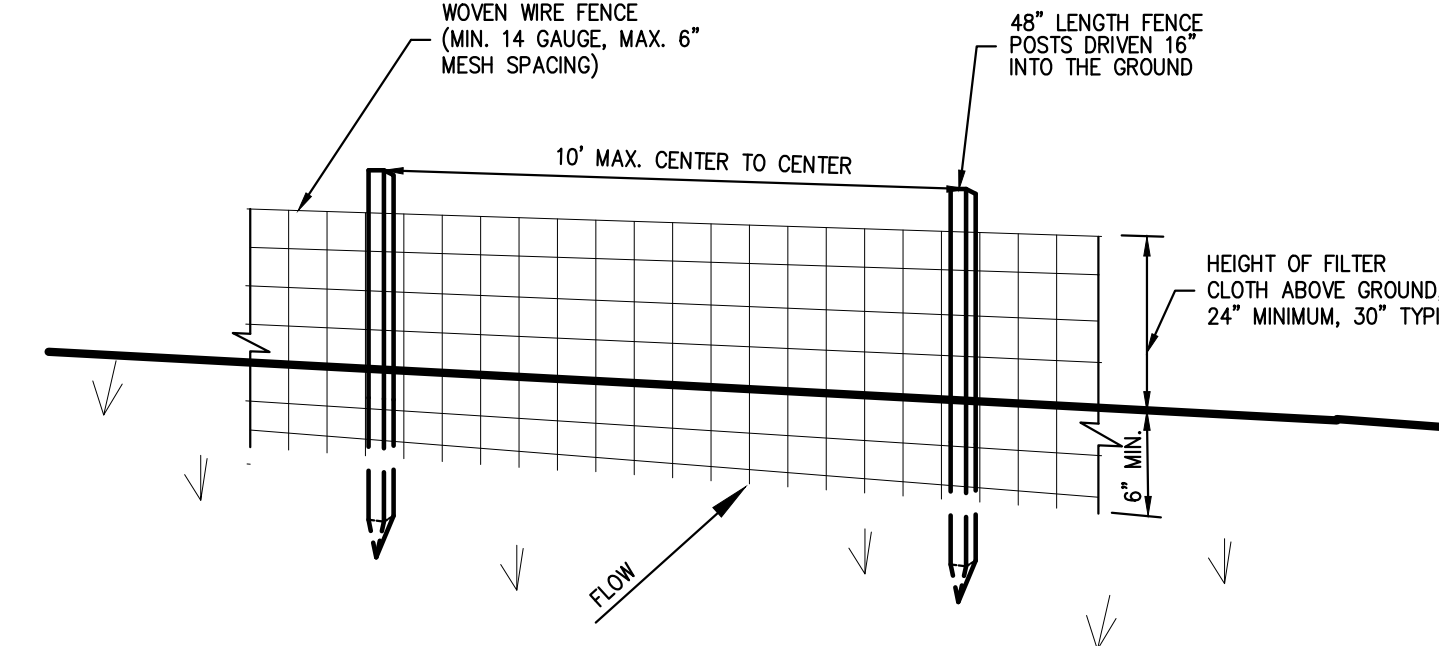
Previous Editions Obsolete



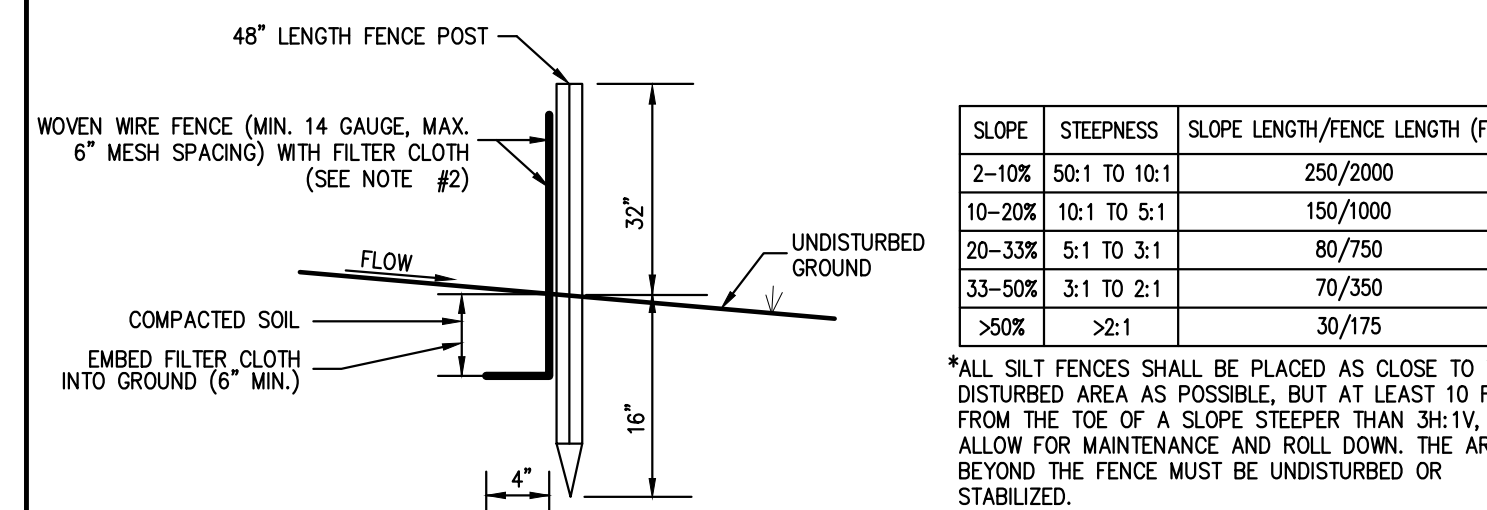
PERSPECTIVE VIEW



PLAN VIEW



PERSPECTIVE VIEW

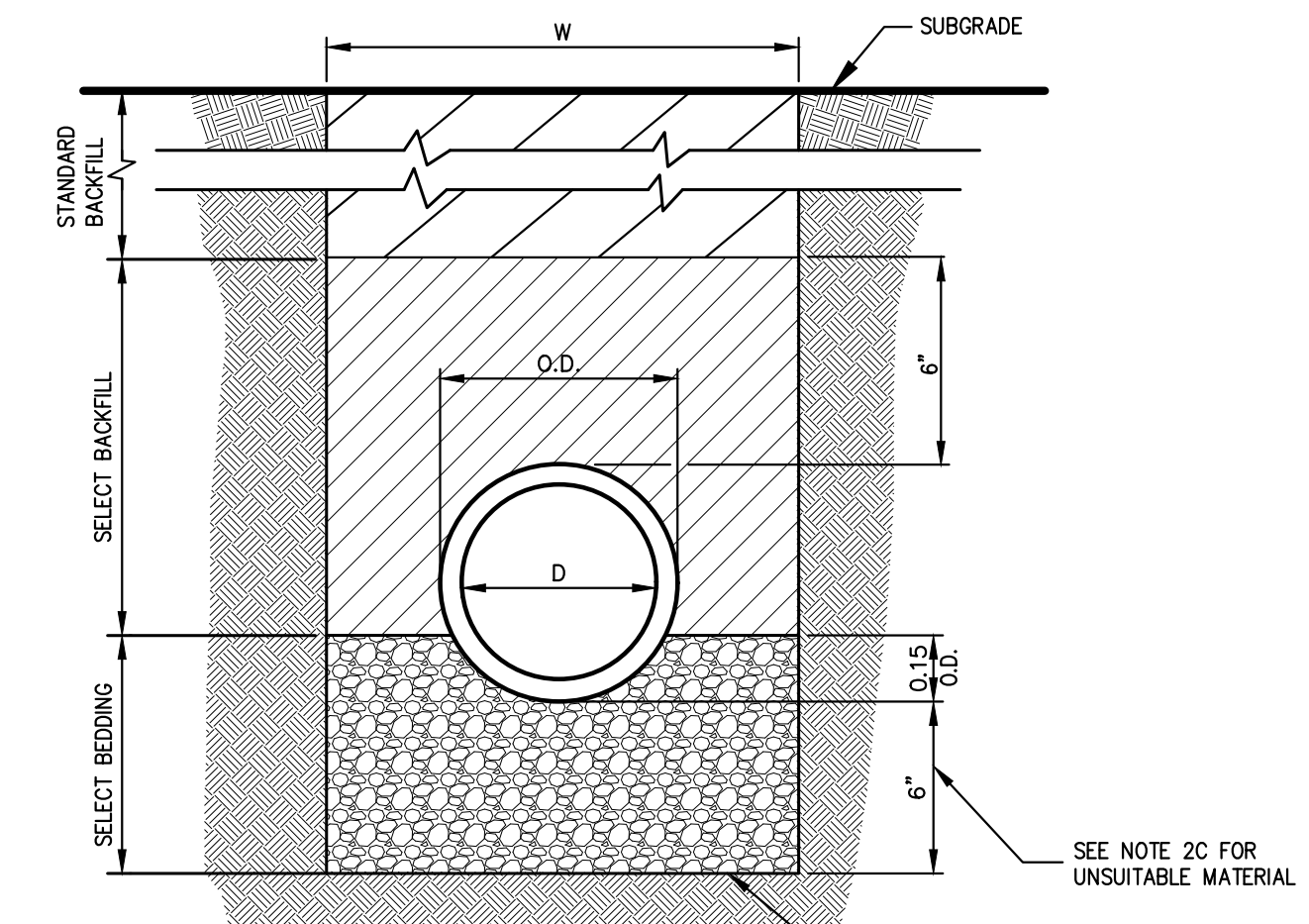


SECTION

SLOPE	STEEPNESS	SLOPE LENGTH/FENCE LENGTH (FT.)
2-10%	50:1 TO 10:1	250/2000
10-20%	10:1 TO 5:1	150/1000
20-33%	5:1 TO 3:1	80/750
33-50%	3:1 TO 2:1	70/350
>50%	>2:1	30/175

*ALL SILT FENCES SHALL BE PLACED AS CLOSE TO THE DISTURBED AREA AS POSSIBLE, BUT AT LEAST 10 FEET FROM THE TOE OF A SLOPE STEEPER THAN 3H:1V TO ALLOW FOR MAINTENANCE AND ROLL DOWN. THE AREA BEYOND THE FENCE MUST BE UNDISTURBED OR STABILIZED.

- NOTES:
- WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL, EITHER T OR U TYPE OR HARDWOOD.
 - FILTER CLOTH SHALL BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
 - WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUAL.
 - PREFABRICATED UNITS SHALL BE GEOFAB, ENVROFENCE, OR APPROVED EQUAL.
 - MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED AND REPLACED WHEN "BULGES" DEVELOP IN THE SILT FENCE.



NOTES:

- FOR TYPE II TRENCH, MATERIAL FOR SELECT BEDDING AND SELECT BACKFILL SHALL BE:
 - EITHER SAND OR CRUSHED STONE IF NO WATER IS ENCOUNTERED IN TRENCH.
 - 3/4" CRUSHED STONE IF WATER IS ENCOUNTERED IN TRENCH.
- TYPE II TRENCH SHALL BE USED IN ALL OF THE FOLLOWING CASES:
 - FOR ALL CORRUGATED POLYETHYLENE DRAIN PIPE (CPDP) AND PVC PIPE AND CONDUIT INSTALLATION.
 - WHEN ROCK OR HARDPAN IS ENCOUNTERED IN BOTTOM OF TRENCH. IN SUCH CASE DEPTH OF UNDERCUTTING SHALL BE AS DIRECTED BY THE ENGINEER WITH 6" MINIMUM.
- FOR ALL TRENCH EXCAVATION IN FILL AREAS, ALL EMBANKMENTS SHALL BE CONSTRUCTED TO A MINIMUM OF 2 FEET ABOVE THE OUTSIDE TOP (AT THE BELL) OF THE PIPE PRIOR TO BEGINNING ANY TRENCH EXCAVATION.
- BACKFILL FOR PIPE AND CONDUIT SHALL BE PLACED EVENLY AND CAREFULLY AROUND AND OVER THE PIPE OR CONDUIT IN SIX (6) INCH MAXIMUM LAYERS. EACH LAYER SHALL BE THOROUGHLY AND CAREFULLY COMPACTED UNTIL TWELVE (12) INCHES OF COVER EXISTS OVER THE PIPE OR CONDUIT. THE REMAINDER OF THE BACKFILL MAY THEN BE PLACED AND COMPACTED IN A MAXIMUM OF TWELVE (12) INCH LAYERS. EACH LAYER SHALL BE COMPACTED BY APPROVED MECHANICAL TAMPING MACHINES, UNLESS OTHERWISE SPECIFIED BACKFILL SHALL BE COMPACTED TO NOT LESS THAN 92% MAXIMUM MODIFIED DENSITY IN ACCORDANCE WITH ASTM DESIGNATION D-1557 IN THE MANNER HEREIN DESCRIBED. BACKFILL SHALL PROCEED UP TO THE LINES AND GRADES AS SHOWN ON THE DRAWINGS.

- NOTES:
- WOVEN WIRE FENCE SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES. POSTS SHALL BE STEEL, EITHER T OR U TYPE OR HARDWOOD.
 - FILTER CLOTH SHALL BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID SECTION. FENCE SHALL BE WOVEN WIRE, 6" MAXIMUM MESH OPENING.
 - WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED. FILTER CLOTH SHALL BE EITHER FILTER X, MIRAFI 100X, STABILINKA T140N, OR APPROVED EQUAL.
 - PREFABRICATED UNITS SHALL BE GEOFAB, ENVROFENCE, OR APPROVED EQUAL.
 - MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED AND REPLACED WHEN "BULGES" DEVELOP IN THE SILT FENCE.
 - THE AREA CHOSEN FOR ALL TEMPORARY SOIL STOCKPILES SHALL BE DRY AND STABLE.
 - ALL STOCKPILED SOIL SHALL NOT CONTAIN SLOPES GREATER THAN 2:1.
 - UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SEEDED WITHIN 24 HOURS. PERENNIAL OR ANNUAL RYEGRASS SHALL BE PLANTED DURING SPRING, SUMMER OR EARLY FALL. WINTER RYE (CEREAL RYE) SHALL BE PLANTED DURING LATE FALL OR EARLY WINTER.
 - ALL STOCKPILES SHALL BE PROTECTED WITH SILT FENCING INSTALLED AROUND THE PERIMETER.

TEMPORARY SOIL STOCKPILE WITH SILT FENCE

1

SILT FENCE

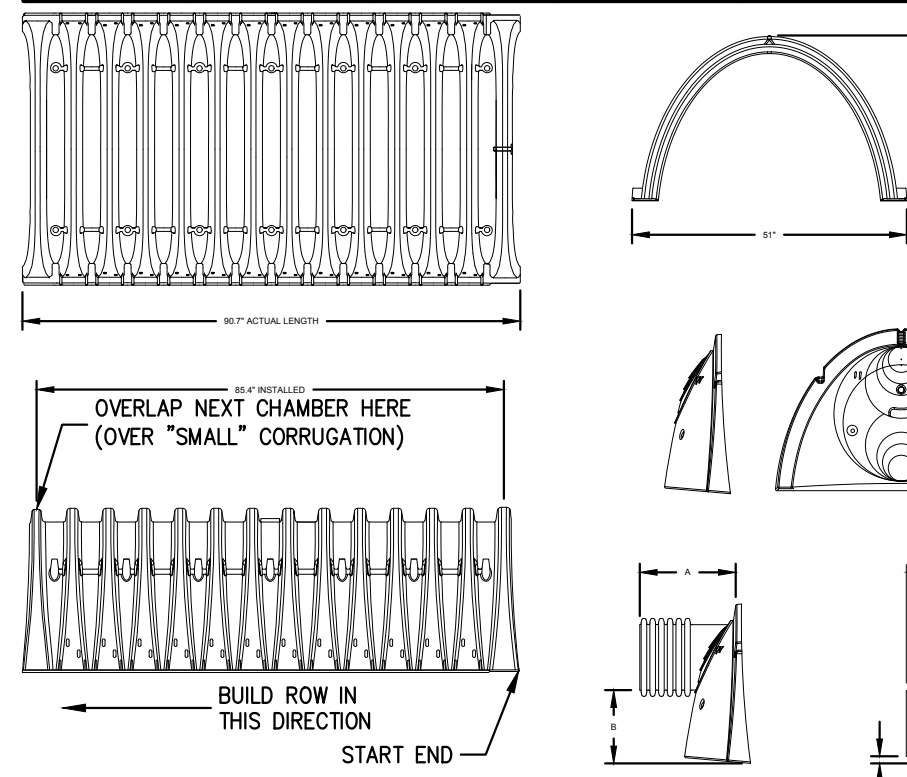
2

TYPE II TRENCH

3

SCHEDULE OF INVERTS

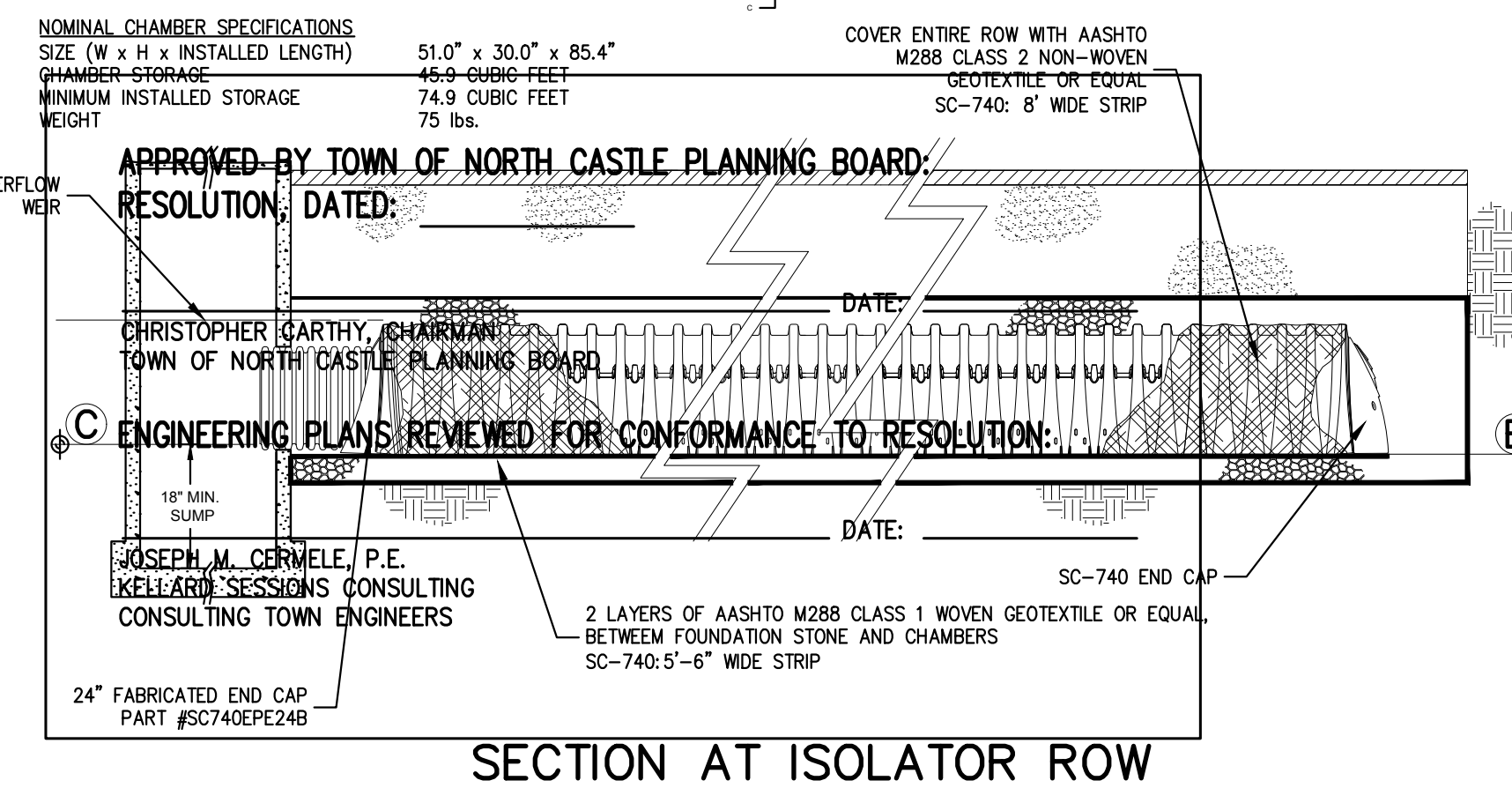
DESIGNATION	A	B	C	D
FOUNDATION BOTTOM				
CHAMBER BOTTOM				
MANIFOLD & INLET STUB INVERT				
GRADE				
SYSTEM	578.50	579.50	579.50	584.00



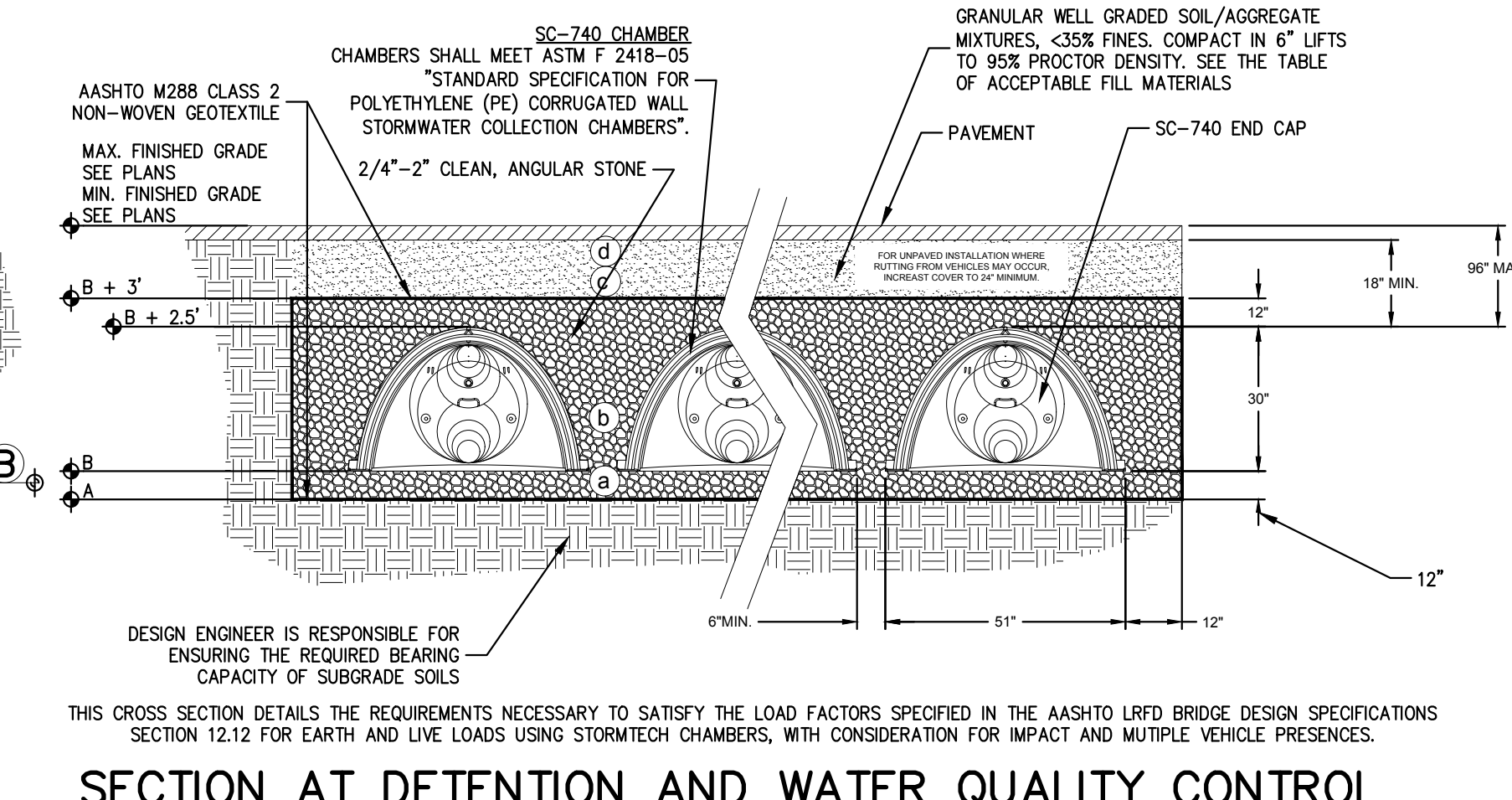
ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO M43 DESIGNATION ¹	COMPACTION/DENSITY REQUIREMENT
① FILL MATERIAL FOR LAYER "D" STARTS FROM THE TOP OF THE "C" LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISH GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THIS LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER ENGINEER'S PLANS. FINISHED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
② FILL MATERIAL FOR LAYER "C" STARTS FROM THE TOP OF THE EMBEDMENT STONE ("B" LAYER) TO 18" ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THIS LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, < 35% FINES. MOST PAVEMENT SUB-BASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTION AFTER 12" OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" LIFTS TO A MIN. 95% STANDARD PROCTOR DENSITY. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs. NO COMPACTOR REQUIRED.
③ EMBEDMENT STONE SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ("A" LAYER) TO THE "C" LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4 - 2 INCH	3, 357, 4, 467, 5, 56, 57	NO COMPACTOR REQUIRED.
④ FOUNDATION STONE BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4 - 2 INCH	3, 35, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A 95% STANDARD PROCTOR DENSITY ² .

- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
 - AS AN ALTERNATE TO PROCTOR TESTING AND FIELD DENSITY MEASUREMENTS ON OPEN GRADED STONE, STORMTECH COMPACTION REQUIREMENTS ARE MET FOR "A" LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (229 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH AN APPROPRIATE COMPACTOR.



SECTION AT ISOLATOR ROW



SECTION AT DETENTION AND WATER QUALITY CONTROL

STORMTECH CHAMBERS SC-740

4

No.	Revision	Date
1.	REVISED PER TOWN ENGINEER'S COMMENTS	07/12/2022

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CONSTRUCTION DETAILS
 PEREIRA RESIDENCE
 4 TRIPP LANE
 NORTH CASTLE, NY

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Drawn: DK	Approved: AN
Scale: NOT TO SCALE	
Date: 03/01/2021	
Project No: 20044	
2004-REIMS	
Drawing No:	

C-900

NOT FOR CONSTRUCTION

NOTES PERTAINING TO DRAIN INLETS

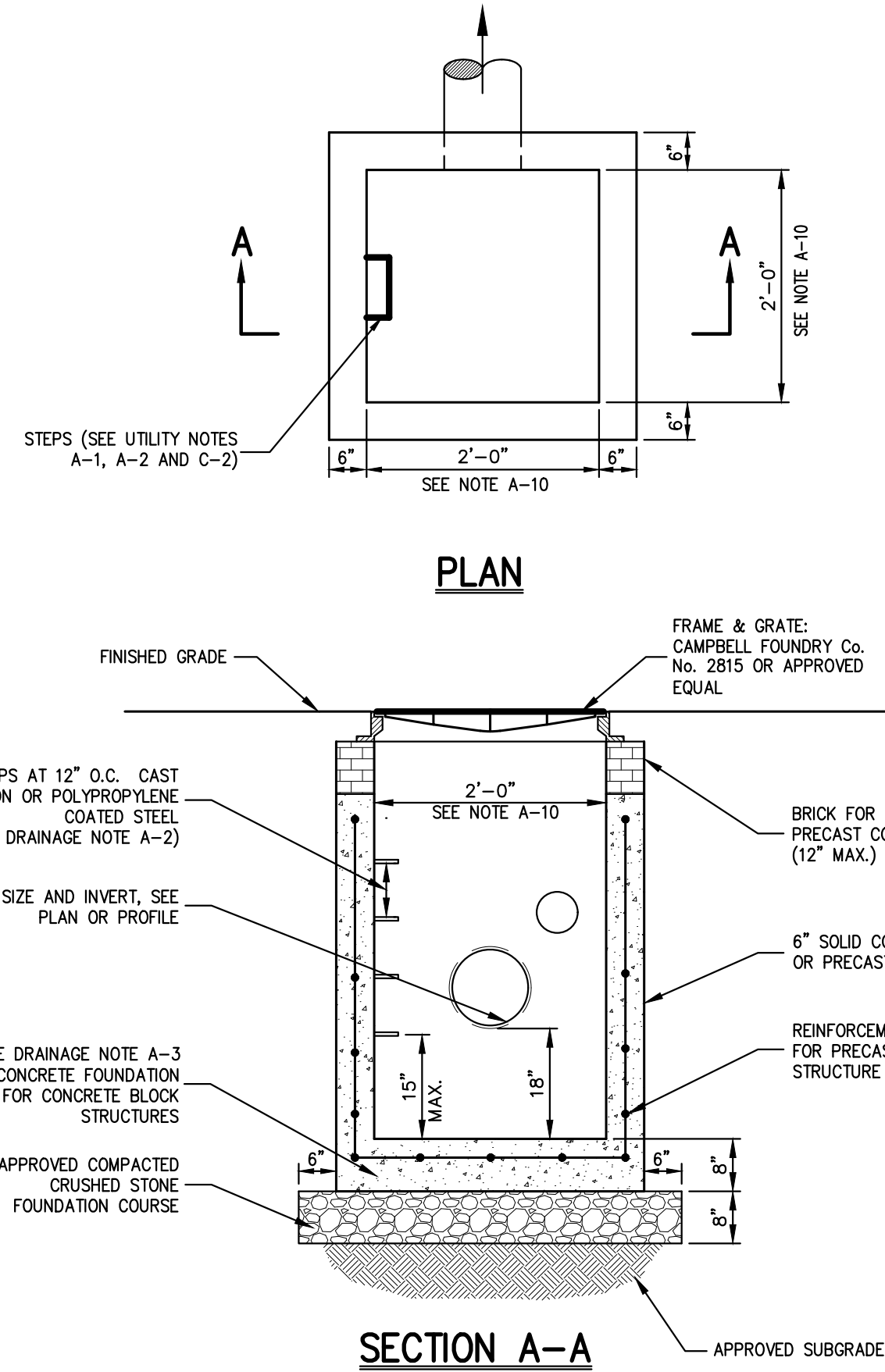
- A-1 STEPS WILL NOT BE REQUIRED IN INLETS LESS THAN FOUR (4) FEET IN DEPTH. STEPS WILL BE REQUIRED IN INLETS FOUR (4) FEET OR GREATER IN DEPTH. DEPTHS FOR DRAIN INLETS SHALL BE MEASURED FROM FINISHED GRADE TO INSIDE BOTTOM OF STRUCTURE (INCLUDING SUMP AS APPLICABLE).
- A-2 WHEN STEPS ARE REQUIRED, STEPS SHALL COMPLY WITH THE SAME REQUIREMENTS OF ASTM STANDARD C-478, ARTICLE 13 ENTITLED "MANHOLE STEPS & LADDERS".
- A-3 FOR MASONRY STRUCTURES, THE FIRST COURSE OF MASONRY SHALL BE SET IN THE CONCRETE FOUNDATION BEFORE THE CONCRETE HAS SET. CONCRETE FOUNDATION SHALL BE CLASS "A"(4000 PSI) CONCRETE, TWELVE (12) INCHES THICK AND SHALL EXTEND SIX (6) INCHES BEYOND THE OUTSIDE FACE OF THE STRUCTURE.
- A-4 IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FURNISH AND CONSTRUCT THE PROPER SIZE STRUCTURE INCLUDING THE NECESSARY OPENINGS TO ACCOMMODATE THE WORK AS SHOWN ON THE PLANS OR ORDERED BY THE ENGINEER, AT NO ADDITIONAL COST TO THE OWNER.
- A-5 ALL NECESSARY PATCHING FOR DRAIN STRUCTURES SHALL BE ACCOMPLISHED WITH NON-SHRINKING CEMENT MORTAR GROUT, APPROVED EQUAL TO SIK-A-SET AS MANUFACTURED BY THE SIK-A CHEMICAL CORP.
- A-6 FOUNDATIONS FOR PRECAST CONCRETE STRUCTURES SHALL BE SET ON A COMPACTED LAYER OF APPROVED CRUSHED STONE HAVING A MINIMUM COMPACTED THICKNESS OF EIGHT (8) INCHES.
- A-7 ALL PIPES SHALL BE CUT FLUSH WITH THE INSIDE WALL OF THE STRUCTURE.
- A-8 PROVIDE REINFORCED CONCRETE TOP SLAB FOR OVERSIZED DRAIN INLETS WITH PROPER SIZE OPENING TO ACCOMMODATE INSTALLATION OF FRAME & GRATE.
- A-9 FOR MASONRY STRUCTURES GREATER THAN TEN (10) FEET IN DEPTH, THICKNESS OF MASONRY WALLS SHALL BE INCREASED TO TWELVE (12) INCHES.
- A-10 FOR ALL STRUCTURES GREATER THAN 10 FEET IN DEPTH, STRUCTURES SHALL PROVIDE MINIMUM INSIDE DIMENSIONS OF 4 FEET X 4 FEET.

NOTES PERTAINING TO MANHOLES

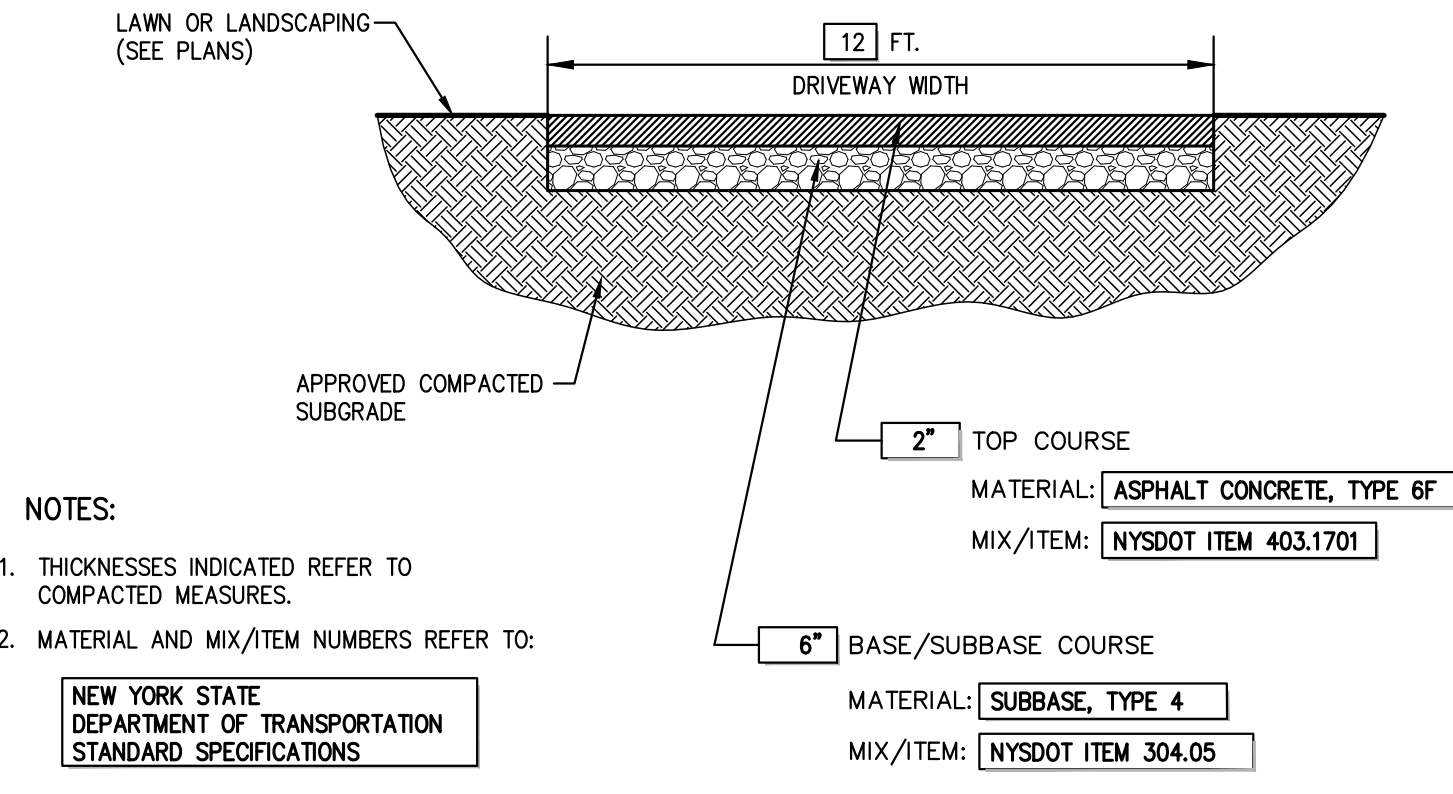
- B-1 PRECAST CONCRETE MANHOLES SHALL COMPLY WITH ASTM STANDARD C-478. MANHOLE JOINTS SHALL COMPLY WITH ASTM STANDARD C-443.
- B-2 FOR PRECAST CONCRETE MANHOLES FIVE (5) FEET OR LESS IN HEIGHT, TOP CONE SECTION SHALL BE REPLACED WITH PRECAST REINFORCED CONCRETE SLAB (6" MIN. THICKNESS) WITH OPENING OF SUFFICIENT SIZE TO ACCOMMODATE MANHOLE CASTING.
- B-3 FOR MANHOLES 10 FEET OR MORE IN DEPTH, MANHOLE DIAMETER SHALL BE FIVE (5) FEET.
- B-4 TERMINAL MANHOLE FLOORS SHALL BE SLOPED TOWARD OUTFALL PIPE.
- B-5 INVERT CHANNELS FOR PRECAST CONCRETE MANHOLES SHALL BE CONSTRUCTED OF CONCRETE.
- B-6 NOTES A-1, A-2, A-4, A-5, A-6 & A-7 UNDER "NOTES PERTAINING TO DRAIN INLETS" ABOVE SHALL APPLY TO MANHOLES.

NOTES PERTAINING TO PRECAST CONCRETE STRUCTURES FOR STORM DRAINS, SANITARY SEWERS AND WATER LINES

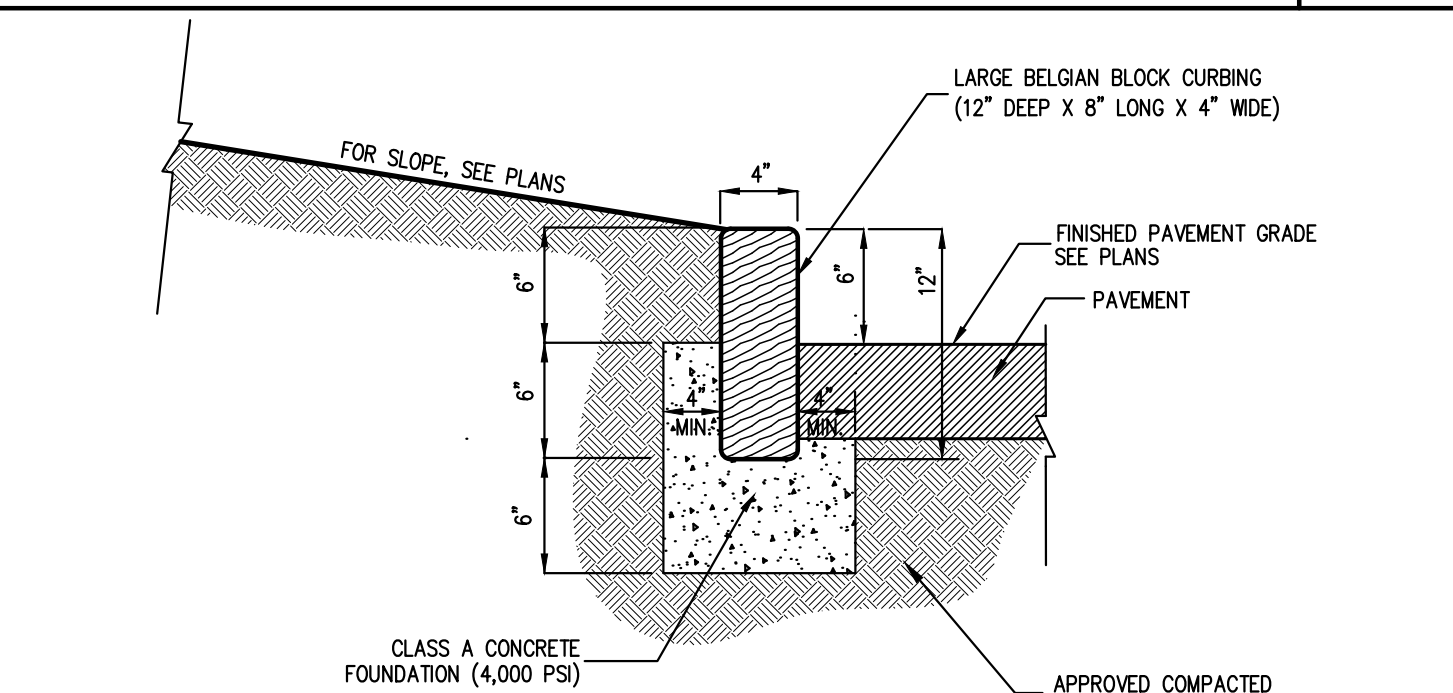
- C-1 ALL PRECAST CONCRETE STRUCTURES SHALL BE DESIGNED TO ACCOMMODATE AN H-20 DESIGN LOAD.
- C-2 STEPS SHALL BE LOCATED WITHIN STRUCTURE TO AVOID PLACEMENT OVER PIPES WHEN PRACTICABLE.



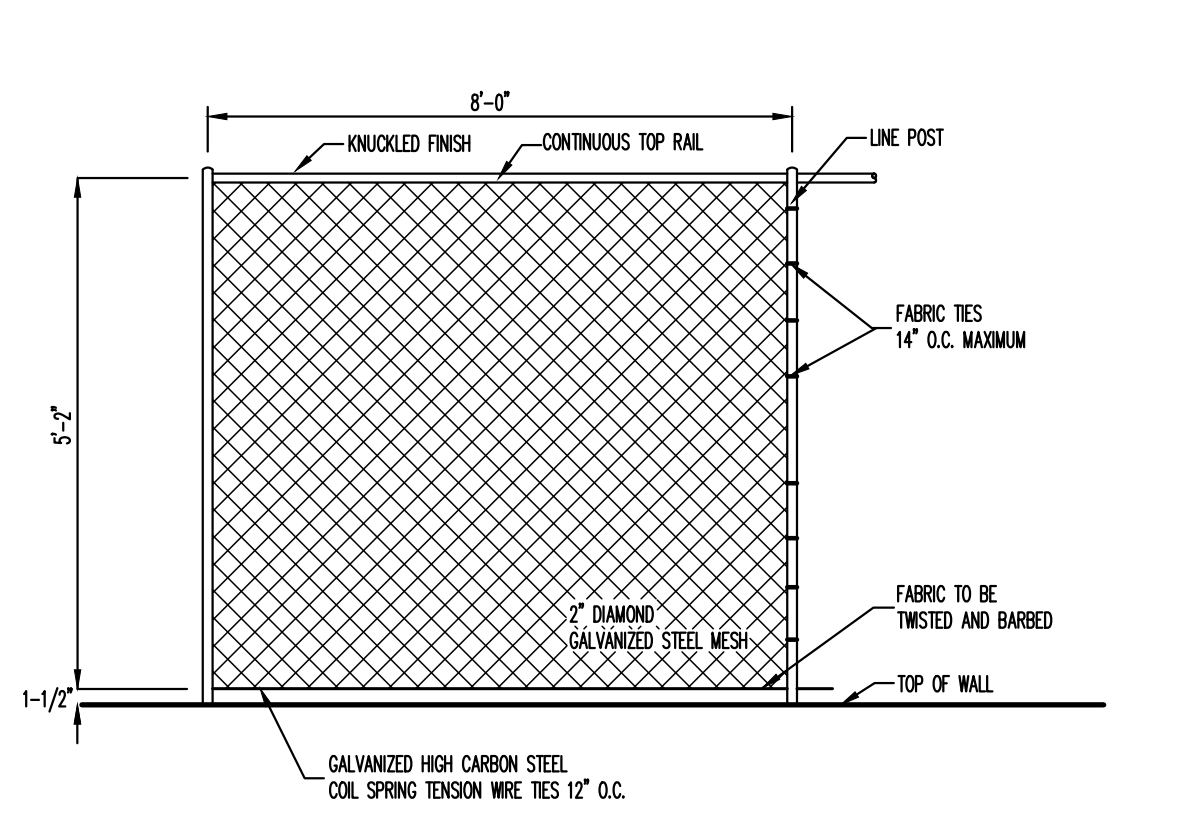
NOTE
1. SEE NOTES PERTAINING TO DRAIN INLETS UNDER UTILITY NOTES ON THIS DRAWING.



SITE DRIVEWAY 7

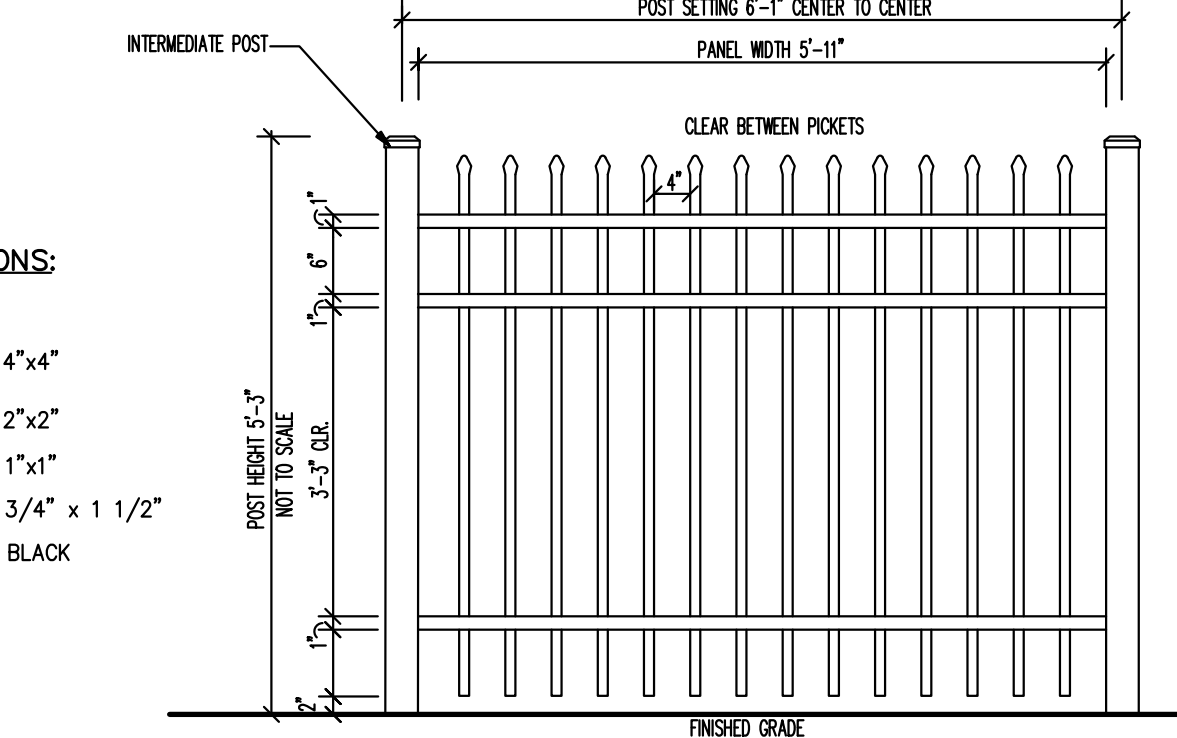


NOTES
1. JOINTS SHALL BE NO WIDER THAN 3/4" AND SHALL BE MORTARED. JOINTS SHALL BE FULLY FILLED WITH 1:2 CEMENT MORTAR, NEATLY POINTED AND CLEANED OF EXCESS MORTAR.



CHAIN LINK FENCE (GALVANIZED) 9

SPECIFICATIONS:
POSTS, RAILS & PICKETS:
END POSTS: 4"x4"
INTERMEDIATE POSTS: 2"x2"
RAILS: 1"x1"
PICKETS: 3/4" x 1 1/2"
COLOR: BLACK



BLACK ALUMINUM FENCE 10

UTILITY NOTES 5

LAWN INLET (TYPE LI) (with sump) 6

STONE CURB (BELGIAN BLOCK) 8

BLACK ALUMINUM FENCE 10



SPECIFICATIONS:
PIER HT. 5'-9"
CAP: 2'-10" X 3'-1" 4 1/2" HT.
GATE: 8'-0" W 6'-0" HT. @ CENTER 5'-0" HT. @ CONNECTION TO PIER

GATE AND STONE PIER 11



DRY LAID BOULDER WALL 12



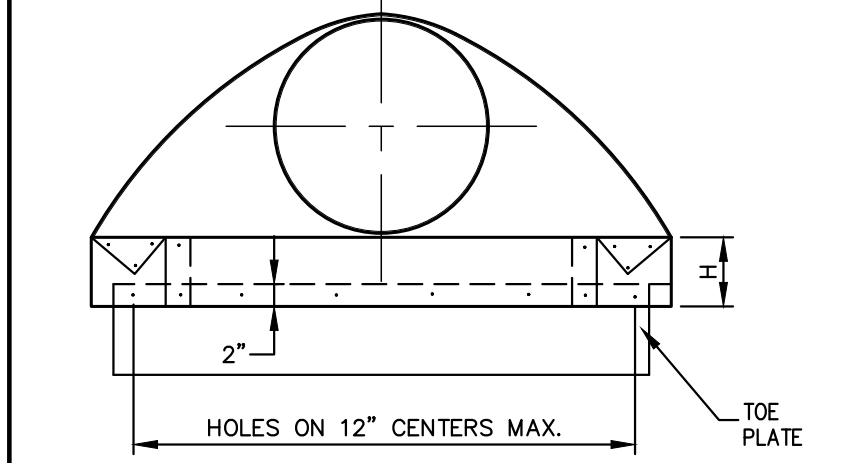
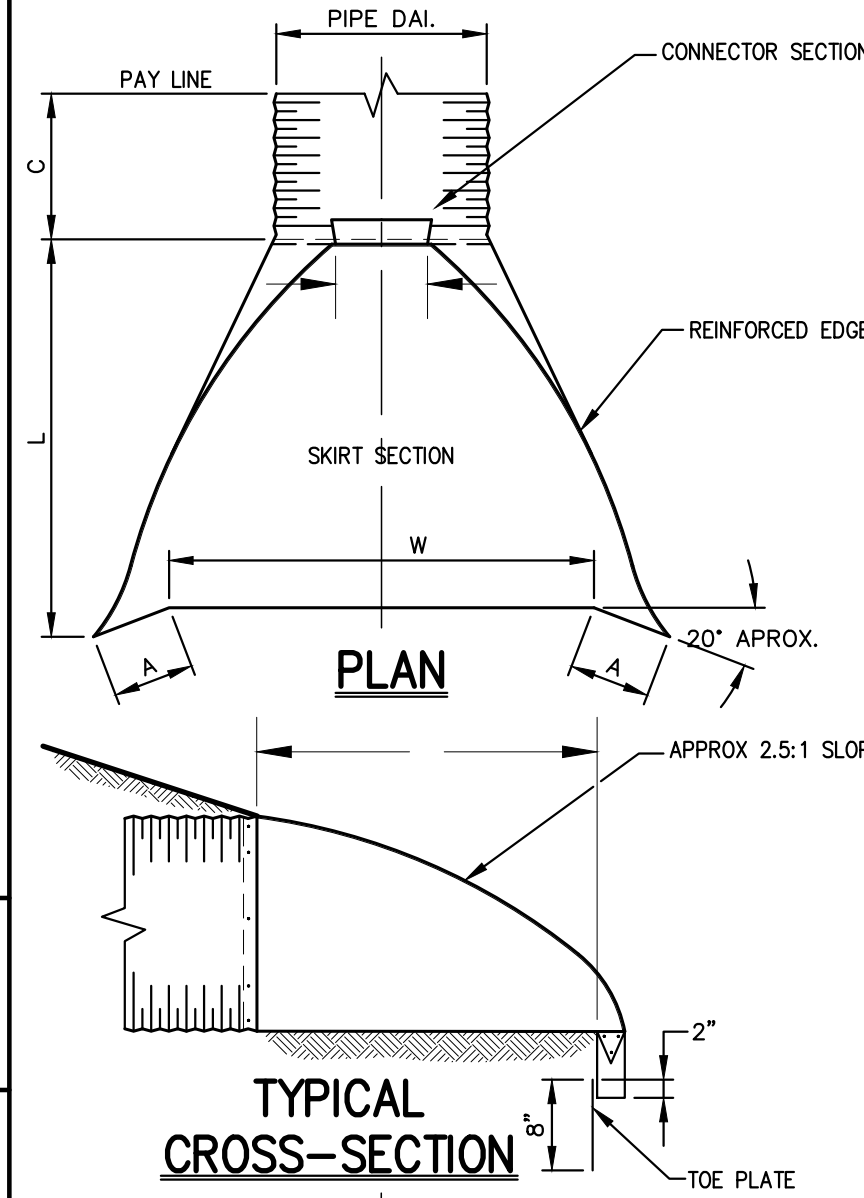
STONE AND MORTAR WALL (WITH STONE CAP) 13



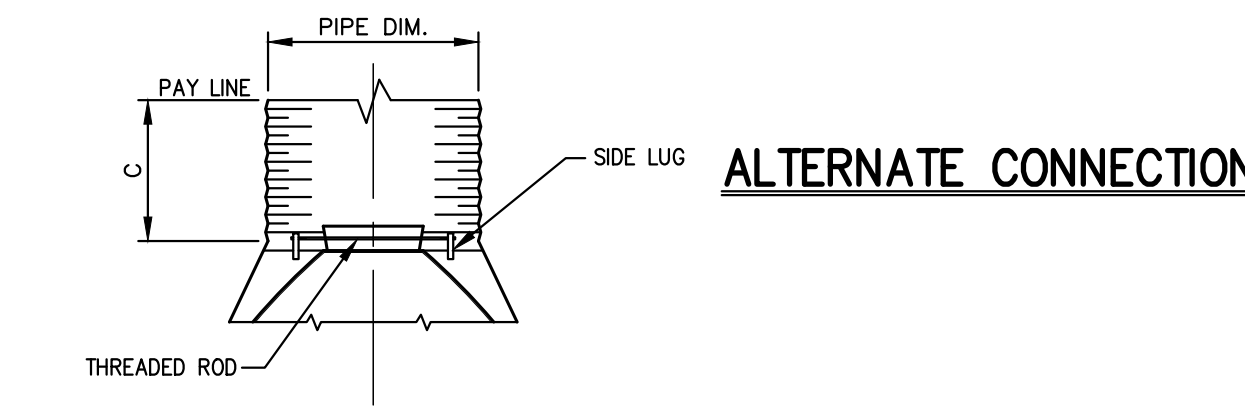
STONE AND MORTAR WALL (WITH CHAIN LINK FENCE ON TOP) 14



SHED (WITH PATIO REMOVED) 15



NOTES:
1. TOE PLATE TO BE PUNCHED TO MATCH HOLES IN SKIRT UP. 3/8" GALV BOLTS TO BE FURNISHED. LENGTH OF TOE PLATE IS 1/4" FOR 12" TO 30" DIA. PIPE AND 1/2" FOR 36" TO 60" DIA. PIPE.
2. SKIRT SECTION FOR 12" TO 30" DIA. PIPE TO BE MADE IN ONE PIECE.
3. SKIRT SECTION FOR 36" TO 54" DIA. PIPE MAY BE MADE FROM TWO SHEETS JOINED BY RIVETING OR BOLTING ON CENTER LINE. 60" MAY BE CONSTRUCTED IN 3 PIECES.
4. CONNECTOR SECTION, CORNER PLATE AND TOE PLATE TO BE SAME SHEET THICKNESS AS SKIRT.
5. END-SECTIONS AND FITTINGS ARE TO BE GALVANIZED STEEL OR ALUMINUM ALLOY FOR USE WITH LINE PIPE.
6. WIDE FLARED END-SECTIONS ARE TO BE USED WITH BRITANNIUM COATED AND PAVED METAL PIPE. THEY ARE TO BE GALVANIZED ONLY.



PIPE DIA.	SHEET THICKNESS		DIMENSIONS					
	STEEL	ALUMINUM	A 1" TOL	B MAX	H 1.5" TOL	L 1.5" TOL	W 2" TOL	C
12"	0.064"	0.060"	6"	6"	6"	21"	24"	24"
15"	0.064"	0.060"	7"	8"	6"	26"	30"	24"
18"	0.064"	0.060"	8"	10"	6"	31"	36"	24"
21"	0.064"	0.060"	10"	12"	6"	36"	42"	24"
24"	0.064"	0.060"	10"	13"	6"	41"	48"	24"
27/30"	0.064"	0.075"	12"	16"	8"	51"	60"	24"
36"	0.064"	0.105"	14"	19"	9"	60"	72"	36"
42"	0.064"	0.105"	16"	22"	11"	69"	84"	36"
48"	0.064"	0.105"	18"	27"	12"	78"	90"	24"
54"	0.064/0.079"	0.105"	18"	30"	12"	84"	102"	36"
60"	0.064/0.109"	0.105/0.135"	18"	33"	12"	87"	114"	36"

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

CHRISTOPHER CARTHY, CHAIRMAN
TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION: _____ DATE: _____

JOSEPH M. CERMELE, P.E.
KELLARD SESSIONS CONSULTING
CONSULTING TOWN ENGINEERS

END SECTION (METAL - FLARED END) 16

NOT FOR CONSTRUCTION

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Date	07/12/2022
Revision	REVISED PER TOWN ENGINEER'S COMMENTS
No.	1.

JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
John Meyer Consulting, Inc.
120 BEDFORD ROAD - ARMONK, NY 10504
voice 914.273.3225 • fax 914.273.2102
www.jmcpllc.com



CONSTRUCTION DETAILS
PEREIRA RESIDENCE
4 TRIPP LANE
NORTH CASTLE, NY

ANY ALTERATION OF PLANS, SPECIFICATIONS, PLATS AND REPORTS BEARING THE SEAL OF A LICENSED PROFESSIONAL ENGINEER OR LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209 OF THE NEW YORK STATE EDUCATION LAW, EXCEPT AS PROVIDED FOR BY SECTION 7209, SUBSECTION 2.

Drawn: DK Approved: AN
Scale: NOT TO SCALE
Date: 03/01/2021
Project No: 20044
2004-BETALS
Drawing No: C-901



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

PLANNING DEPARTMENT
Adam R. Kaufman, AICP
Director of Planning

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

FLOOR AREA CALCULATIONS WORKSHEET

Application Name or Identifying Title: Pereira residence Date: 9-16-20
Tax Map Designation or Proposed Lot No.: 108.02-1-10

Floor Area

- | | | |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| 1. | Total Lot Area (Net Lot Area for Lots Created After 12/13/06): | <u>89820</u> |
| 2. | Maximum permitted floor area (per Section 213-22.2B): | <u>10230</u> |
| 3. | Amount of floor area contained within first floor:
<u>1803</u> existing + <u>0</u> proposed = | <u>1803</u> |
| 4. | Amount of floor area contained within second floor:
<u>0</u> existing + <u>0</u> proposed = | <u> </u> |
| 5. | Amount of floor area contained within garage:
<u>0</u> existing + <u>0</u> proposed = NOT A STORY | <u>0</u> |
| 6. | Amount of floor area contained within porches capable of being enclosed:
<u>22</u> existing + <u>0</u> proposed = | <u>22</u> |
| 7. | Amount of floor area contained within basement (if applicable – see definition):
<u>0</u> existing + <u>0</u> proposed = NOT A STORY | <u>0</u> |
| 8. | Amount of floor area contained within attic (if applicable – see definition):
<u>0</u> existing + <u>0</u> proposed = | <u>0</u> |
| 9. | Amount of floor area contained within all accessory buildings:
<u>0</u> existing + <u>0</u> proposed = | <u>0</u> |
| 10. | Proposed floor area : Total of Lines 3 – 9 = | <u>1825: OK</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



ing Worksheet

9-16-20

Date

Site Design Consultants

Civil Engineers • Land Planners

April 18, 2022

Robert Melillo, Building Inspector
Town of North Castle
17 Bedford Road
Armonk, NY 10504

Re: Pereira – 4 Trip Lane, Armonk

Dear Mr. Melillo:

We have been retained by the Pereira Family regarding retaining walls which have been constructed on their property without filing for the required permits to your department, specifically, the stone and mortar walls along the east and west property lines. The walls along the east property line are only partially being considered as part of the existing walls to remain. An additional length of dry stacked stone wall along the east property line is to be removed and reconstructed as per the enclosed plan.

As stated, the existing walls to remain were constructed by the homeowner without filing the proper construction plans and permits. Hence, the construction of the walls were not supervised or inspected by a town official or licensed design professional. We, therefore, cannot attest to the construction. However, we did inspect the walls in their current state. We specifically were looking for any signs of movement such as collapse, settlement, bowing out, or leaning of the wall. We found none of these conditions. The wall appears to be sound and stable. We, therefore, believe the walls at this point in time appear to be structurally sound.

The dry stacked portion of the east wall is to be disassembled and rebuilt. This portion is about 190 lf. We have prepared a design and plan with the necessary detail to reconstruct this wall as a continuation of the stone and mortar wall. The wall has a maximum height of 5 feet. The plan and supporting calculations are enclosed for your review as follows:

- Two copies of the Plan titled "Retaining Wall Plan prepared for Ana Pereira" dated 4/7/22, Sheet 1 of 1; and
- Two copies of the Structural Wall Calculations.

If you have any question or comments, please contact us. Thank you.



cc: A. Pereira
J. Cermele, P.E., Consulting TE
A. Nestor, P.E.

251-F Underhill Avenue • Yorktown Heights, New York 10598

60 Walnut Grove Road • Ridgefield, Connecticut 06877

(914) 962-4488

(203) 431-9504

Fax (914) 962-7386

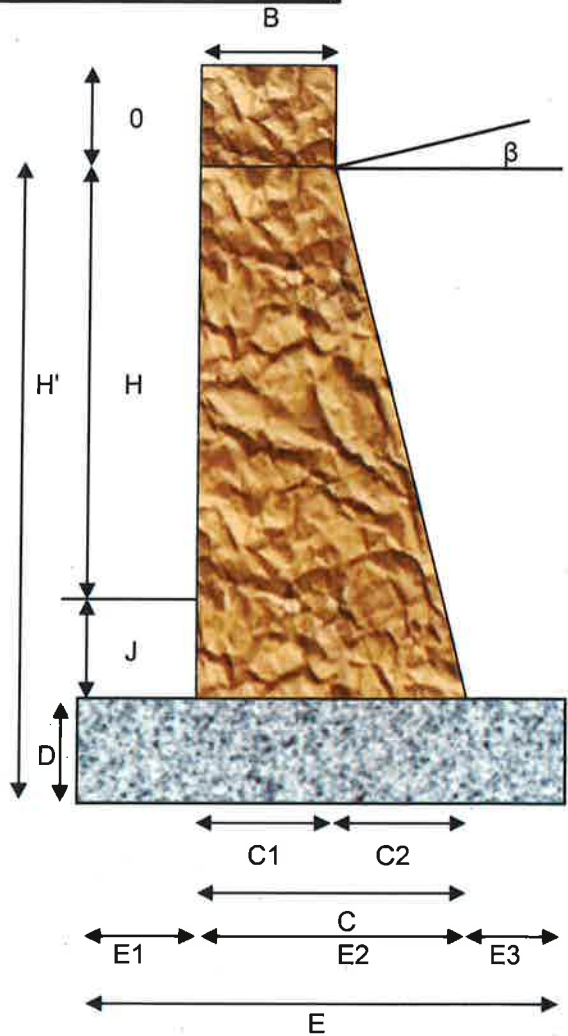


**Proposed Retaining Wall Design Prepared for Pereira Residence
4 Tripp Lane Armonk, NY**

Prepared By **Site Design Consultants**
251 F Underhill Avenue Yorktown Heights, NY 10598
April 18, 2022

Design Parameters		
Top width, B	2.00	ft
Bottom width, C1	2.00	ft
Bottom width, C2	1.00	ft
Total Bottom width, C	3.00	ft
Footing depth, D	1.00	ft
Footing width, E1	0.75	ft
Footing width, E2	3.00	ft
Footing width, E3	0.50	ft
Total Footing width, E	4.25	ft
Exposed wall height, H	5.00	ft
Burried height, J	2.00	ft
Wall height (design), H'	8.00	ft
Gamma (H'/3)	2.67	ft
Unit weight of wall	170	pcf
Footing Material	Gravel	
Unit weight of footing	125	pcf
Back Angle, β	27	degrees
Unit weight of soil	110	pcf
Friction angle of soil, ϕ	32	degrees
Surcharge load	0	psf

Exposed Wall Height 5'



Pressure Calculations

$K_a = 0.472681$

$P_a = 1663.836$

$P_{ah} = 1482.489$

$P_{av} = 755.366$

$P_a \text{ surcharge} = 0.000$

$P_{ah} \text{ surcharge} = 0.000$

$P_{av} \text{ surcharge} = 0.000$

Resisting Moment

		Weight	Arm	Moment
Wall	Part 1	2380.00	1.75	4165.00
	Part 2	595.00	3.08	1834.58
Footing		531.25	2.13	1128.91
Pav		755.37	4.25	3210.30
Sum		4261.62		10338.79



**Proposed Retaining Wall Design Prepared for Pereira Residence
4 Tripp Lane Armonk, NY**

Prepared By **Site Design Consultants**
251 F Underhill Avenue Yorktown Heights, NY 10598
April 18, 2022

Overturning Moment

		Arm	Moment
Pah	1482.49	2.67	3953.30
Pah surcharge	0.00	4.00	0.00
Total overturning Moment		3953.30	

FS overturning

$M_{resisting}/M_{overturning} = 2.615229 > 1.50$ **OK**

Resisting Forces

$f = \tan(\phi) = 0.62$

$F_{resisting} = \text{Sum Weight} * f = 2662.953$

FS Sliding

$F_{resisting} / Pah = 1.796272 > 1.50$ **OK**

Eccentricity

$\bar{x} = \Sigma M_{toe} / \Sigma W$

$\bar{x} = 1.50$ CW moment is +

$e = B/2 - \bar{x}$

$e = 0.63 \leq L/6$ **OK**

Bowles pg 455

N.A.

Allowable Bearing Forces

$q_{allow} = 6000$ psf

$q_{actual} = P/A * (1 + 6e/L)$

$q_{actual} = 115.6656$ MIN

$q_{actual} = 1889.801$ MAX

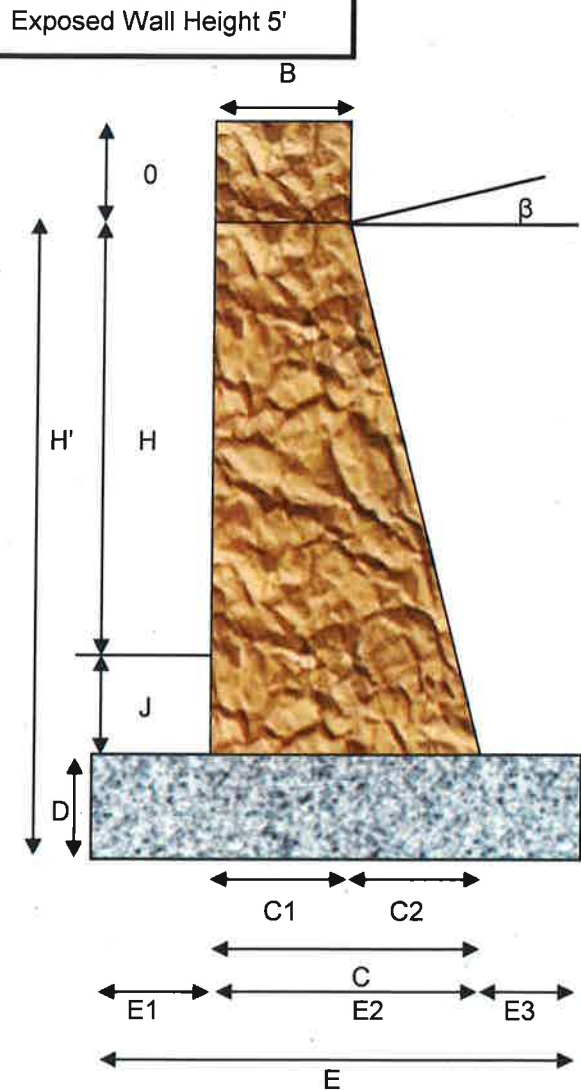
FS Bearing

$q_{allow} / q_{actual} = 3.174938 > 2.0$ **OK**

**Proposed Retaining Wall Design Prepared for Pereira Residence
4 Tripp Lane Armonk, NY**

Prepared By **Site Design Consultants**
251 F Underhill Avenue Yorktown Heights, NY 10598
April 18, 2022

Design Parameters		
Top width, B	2.00	ft
Bottom width, C1	2.00	ft
Bottom width, C2	1.00	ft
Total Bottom width, C	3.00	ft
Footing depth, D	1.00	ft
Footing width, E1	0.75	ft
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Footing width, E3	0.50	ft
Total Footing width, E	4.25	ft
Exposed wall height, H	5.00	ft
Burried height, J	2.00	ft
Wall height (design), H'	8.00	ft
Gamma (H'/3)	2.67	ft
Unit weight of wall	170	pcf
Footing Material	Gravel	
Unit weight of footing	125	pcf
Back Angle, β	27	degrees
Unit weight of soil	110	pcf
Friction angle of soil, ϕ	32	degrees
Surcharge load	0	psf



Pressure Calculations

$K_a = 0.472681$

$P_a = 1663.836$

$P_{ah} = 1482.489$

$P_{av} = 755.366$

$P_a \text{ surcharge} = 0.000$

$P_{ah} \text{ surcharge} = 0.000$

$P_{av} \text{ surcharge} = 0.000$

Resisting Moment

		Weight	Arm	Moment
Wall	Part 1	2380.00	1.75	4165.00
	Part 2	595.00	3.08	1834.58
Footing		531.25	2.13	1128.91
Pav		755.37	4.25	3210.30
Sum		4261.62		10338.79

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April 18, 2022

Overturning Moment

		Arm	Moment
Pah	1482.49	2.67	3953.30
Pah surcharge	0.00	4.00	0.00
Total overturning Moment		3953.30	

FS overturning

$M_{resisting}/M_{overturning} = 2.615229 > 1.50$ **OK**

Resisting Forces

$f = \tan(\phi) = 0.62$

$F_{resisting} = \text{Sum Weight} * f = 2662.953$

FS Sliding

$F_{resisting} / Pah = 1.796272 > 1.50$ **OK**

Eccentricity

$\bar{x} = \Sigma M_{toe} / \Sigma W$

$\bar{x} = 1.50$ CW moment is +

$e = B/2 - \bar{x}$

$e = 0.63 \leq L/6$ **OK**

Bowles pg 455

N.A.

Allowable Bearing Forces

$q_{allow} = 6000$ psf

$q_{actual} = P/A * (1 + 6e/L)$

$q_{actual} = 115.6656$ MIN

$q_{actual} = 1889.801$ MAX

FS Bearing

$q_{allow} / q_{actual} = 3.174938 > 2.0$ **OK**



- Site Planning
- Civil Engineering
- Landscape Architecture
- Land Surveying
- Transportation Engineering
- Environmental Studies
- Entitlements
- Construction Services
- 3D Visualization
- Laser Scanning

STORMWATER POLLUTION PREVENTION PLAN

JMC Project 20044
 Residential Zoning Compliance Analysis
 4 Tripp Lane
 Town of North Castle, New York
 July 12, 2022

I. INTRODUCTION

This report has been prepared to study the stormwater management aspects of the previous improvements performed by the client prior to the Town’s approval and subsequent proposed drainage improvements located at the above address.

The previous improvements included the expansion of the residence, the installation of a pool patio, the installation of a separate patio area located in the backyard, the installation of a basketball court in the backyard and driveway improvements. These previous improvements have increased the square footage of impervious surfaces which will now require stormwater runoff mitigation. These improvements also increased the coverage numbers of the Site over the permitted limit. The applicant is proposing to remove approximately 2,750 square feet of impervious area (the basketball court and a large portion of the driveway) to comply with this requirement.

A hydrologic analysis of the overall site and its sub-drainage areas studied herein was prepared using the USDA Soil Conservation Service TR-55 “Urban Hydrology for Small Watersheds” methodology for the following rainfall event shown in Table 1:

Table 1
TR-55 24 Hour Rainfall Depths

Design Storm Recurrence Interval	Inches of Rainfall
100 Year Storm Event	9.1

Rainfall depths shown in the table above for the Town of North Castle in Westchester County are taken from the Extreme Precipitation Tables from the Northeast Regional Climate Center 24-hour rainfall frequency data from Cornell University’s precip.net.

As detailed below, the previous improvements have caused a net increase in the overall impervious surfaces which will be mitigated by the installation of an additional 23-Stormtech 740 units to supplement the previously installed 3 units. This system will reduce the peak rate of runoff and runoff volume associated with the previous improvements when compared to the pre-existing conditions for the 100-year storm event.

II. EXISTING CONDITIONS

Under pre-existing conditions, the Site, in general drains from north to south towards the adjacent lot and eventually towards Byram Hills High School. Three areas were identified as areas where stormwater runoff exits the project site, all located along the southern property line. To simplify the stormwater study, one single design line was used instead of three separate design points, and peak rates of runoff and runoff volumes were reduced at this design line, which incorporates all runoff from the project site.

Existing Drainage Area I (EDA-1) is approximately 2.062 acres and includes the entire project site. Stormwater from this drainage area drains from north to south towards the adjacent lot and eventually towards Byram Hills High School. All runoff leaves the project site along the southern property line which will be designated as Design Line #1, as shown on drawing DA-1. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 73 and 9.66 minutes, respectively. Refer to Drawing DA-1 in Appendix C.

III. PROPOSED CONDITIONS

As mentioned above, the previous improvements included the expansion of the residence, the installation of a pool patio, the installation of a separate patio area located in the backyard, the installation of a basketball court in the backyard and driveway improvements. These previous improvements have increased the square footage of impervious surfaces which will now require stormwater runoff mitigation. These improvements also increased the coverage numbers of the Site over the permitted limit. The applicant is proposing to remove approximately 2,750 square feet of impervious area (the basketball court and a large portion of the driveway) to comply with this requirement. The previous improvements have caused a net increase in the overall impervious surfaces which will be mitigated by the installation of an additional 23-Stormtech 740 units to supplement the previously installed 3 units. This system will reduce the peak rate of runoff and runoff volume associated with the previous improvements when compared to the pre-existing conditions for the 100-year storm event.

Proposed Drainage Area I (PDA-1) is approximately 1.399 acres, is in the western portion of the site and includes much of the project site. Stormwater from this drainage area drains from north to south towards the adjacent lot and eventually towards Byram Hills High School. All runoff leaves the project site along the southern property line which is designated as Design Line #1, as shown on drawing DA-2. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 74 and 9.18 minutes, respectively. Refer to Drawing DA-2 in Appendix C.

Proposed Drainage Area 1A (PDA-1A) is approximately 0.136 acres and is located in the central portion of the project site. This area includes the pool and improved pool patio area. Stormwater from this drainage area is collected in several inlets dispersed throughout the patio area and under current conditions is being daylighted in the backyard but under proposed conditions will be conveyed to the improved underground infiltration system that will consist of 26-Stormtech 740 units. This system will outlet in the backyard near where the previous outlet had been located. Runoff then drains towards the adjacent lot and eventually towards Byram Hills High School. All runoff leaves the project site along the southern property line which will be designated as Design Line #1, as shown on drawing DA-2. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 88 and 5.00 minutes, respectively. Refer to Drawing DA-2 in Appendix C.

Proposed Drainage Area 1B (PDA-1B) is approximately 0.527 acres and is located in the eastern portion of the project site. This area includes the residence, driveway, shed, walkways and landscaped areas. Stormwater from this drainage area is collected in several inlets dispersed throughout this drainage area and under current conditions is being conveyed to the existing underground infiltration system in the backyard. Under proposed conditions runoff from this area will continue to be conveyed to this underground infiltration system that will now consist of 26-Stormtech 740 units. This system will outlet in the backyard near where the previous outlet had been located. Runoff then drains towards the adjacent lot and eventually towards Byram Hills High School. All runoff leaves the project site along the southern property line which will be designated as Design Line #1, as shown on drawing DA-2. The Curve Number (CN) and Time of Concentration (Tc) for this drainage area are 84 and 8.94 minutes, respectively. Refer to Drawing DA-2 in Appendix C.

The numbers included in the tables below were obtained from calculations included in Appendix A & B of this report.

Table 2
Percent Reduction in Peak Rate of Runoff (Existing vs. Proposed Conditions)
(Cubic Feet per Second)

Storm Recurrence Frequency (Years)	Existing Peak Runoff Rate (cfs) Design Line 1	Proposed Peak Runoff Rate (cfs) Design Line 1	Percent Reduction (%)
100-year	11.26	11.18	0.7

Table 3
Percent Reduction in Runoff Volume (Existing vs. Proposed Conditions)
(Cubic Feet)

Storm Recurrence Frequency (Years)	Existing Runoff Volume (cf) Design Line I	Proposed Runoff Volume (cf) Design Line I	Percent Reduction (%)
100-year	43,587	34,502	20.8

IV. CONCLUSION

Based on the foregoing, it is our professional opinion that the previous improvements will not have an adverse drainage impact to the site, adjacent properties, or downstream areas with the installation of an additional 23-Stormtech 740 units.

Respectfully Submitted,

JMC

Rick Bohlander, PE
 Senior Designer II

APPENDIX A

EXISTING HYDROLOGIC CALCULATIONS

Scenario: 4 Tripp Street - Synthetic Curve, 1 yrs

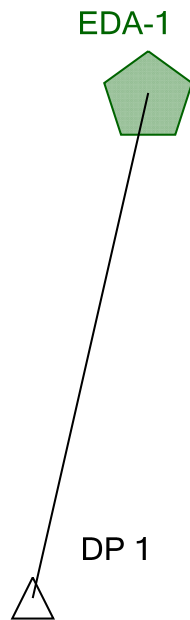


Table of Contents

	Master Network Summary	1
Armonk	Time-Depth Curve, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs)	2
EDA-1	Time of Concentration Calculations, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs)	4
EDA-1	Runoff CN-Area, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs)	6

Watershed

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)
EDA-1	4 Tripp Street - Synthetic Curve, 100 yrs	100	43,587.000	12.150	11.26

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)
DP 1	4 Tripp Street - Synthetic Curve, 100 yrs	100	43,587.000	12.150	11.26

Watershed

Subsection: Time-Depth Curve

Label: Armonk

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years

Storm Event: 100 Year

Time-Depth Curve: 100 Year

Label	100 Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.1	0.1	0.1	0.1
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.2	0.2	0.2
2.000	0.2	0.2	0.2	0.2	0.2
2.500	0.2	0.2	0.2	0.3	0.3
3.000	0.3	0.3	0.3	0.3	0.3
3.500	0.3	0.3	0.4	0.4	0.4
4.000	0.4	0.4	0.4	0.4	0.4
4.500	0.5	0.5	0.5	0.5	0.5
5.000	0.5	0.5	0.5	0.6	0.6
5.500	0.6	0.6	0.6	0.6	0.6
6.000	0.7	0.7	0.7	0.7	0.7
6.500	0.7	0.8	0.8	0.8	0.8
7.000	0.8	0.8	0.9	0.9	0.9
7.500	0.9	0.9	1.0	1.0	1.0
8.000	1.0	1.1	1.1	1.1	1.1
8.500	1.2	1.2	1.2	1.3	1.3
9.000	1.3	1.4	1.4	1.4	1.5
9.500	1.5	1.6	1.6	1.6	1.7
10.000	1.7	1.8	1.8	1.9	1.9
10.500	2.0	2.0	2.1	2.2	2.2
11.000	2.3	2.4	2.4	2.5	2.6
11.500	2.7	2.9	3.1	3.4	3.8
12.000	4.6	5.3	5.7	6.0	6.3
12.500	6.4	6.5	6.6	6.7	6.8
13.000	6.8	6.9	7.0	7.0	7.1
13.500	7.2	7.2	7.3	7.3	7.4
14.000	7.4	7.4	7.5	7.5	7.6
14.500	7.6	7.7	7.7	7.7	7.8
15.000	7.8	7.8	7.9	7.9	7.9
15.500	8.0	8.0	8.0	8.0	8.1
16.000	8.1	8.1	8.1	8.2	8.2
16.500	8.2	8.2	8.2	8.3	8.3

Watershed

Subsection: Time-Depth Curve

Return Event: 100 years

Label: Armonk

Storm Event: 100 Year

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	8.3	8.3	8.3	8.4	8.4
17.500	8.4	8.4	8.4	8.4	8.5
18.000	8.5	8.5	8.5	8.5	8.5
18.500	8.5	8.6	8.6	8.6	8.6
19.000	8.6	8.6	8.6	8.7	8.7
19.500	8.7	8.7	8.7	8.7	8.7
20.000	8.7	8.7	8.8	8.8	8.8
20.500	8.8	8.8	8.8	8.8	8.8
21.000	8.9	8.9	8.9	8.9	8.9
21.500	8.9	8.9	8.9	8.9	8.9
22.000	9.0	9.0	9.0	9.0	9.0
22.500	9.0	9.0	9.0	9.0	9.0
23.000	9.0	9.1	9.1	9.1	9.1
23.500	9.1	9.1	9.1	9.1	9.1
24.000	9.1	(N/A)	(N/A)	(N/A)	(N/A)

Watershed

Subsection: Time of Concentration Calculations

Label: EDA-1

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years

Storm Event: 100 Year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow

Hydraulic Length	60.00 ft
Manning's n	0.400
Slope	0.067 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.12 ft/s
Segment Time of Concentration	0.142 hours

Segment #2: TR-55 Shallow Concentrated Flow

Hydraulic Length	200.00 ft
Is Paved?	False
Slope	0.035 ft/ft
Average Velocity	3.02 ft/s
Segment Time of Concentration	0.018 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.161 hours
-----------------------------------	-------------

Watershed

Subsection: Time of Concentration Calculations

Label: EDA-1

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years

Storm Event: 100 Year

==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where:

$$(L_f / V) / 3600$$

R= Hydraulic radius
A_q= Flow area, square feet
W_p= Wetted perimeter, feet
V= Velocity, ft/sec
S_f= Slope, ft/ft
n= Manning's n
T_c= Time of concentration, hours
L_f= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

$$T_c = \frac{\text{Unpaved surface:}}{V = 16.1345 * (S_f^{0.5})}$$

$$\text{Paved Surface:}$$
$$V = 20.3282 * (S_f^{0.5})$$

Where:

$$(L_f / V) / 3600$$

V= Velocity, ft/sec
S_f= Slope, ft/ft
T_c= Time of concentration, hours
L_f= Flow length, feet

Watershed

Subsection: Runoff CN-Area

Label: EDA-1

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years

Storm Event: 100 Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft ²)	C (%)	UC (%)	Adjusted CN
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	31,144.000	0.0	0.0	74.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil C	98.000	5,160.000	0.0	0.0	98.000
Woods - good - Soil C	70.000	53,516.000	0.0	0.0	70.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	89,820.000	(N/A)	(N/A)	72.996

Watershed

Index

A

Armonk (Time-Depth Curve, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs))...2, 3

E

EDA-1 (Runoff CN-Area, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs))...6

EDA-1 (Time of Concentration Calculations, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs))...4, 5

M

Master Network Summary...1

APPENDIX B

PROPOSED HYDROLOGIC CALCULATIONS

Scenario: 4 Tripp Street - Synthetic Curve, 1 yrs

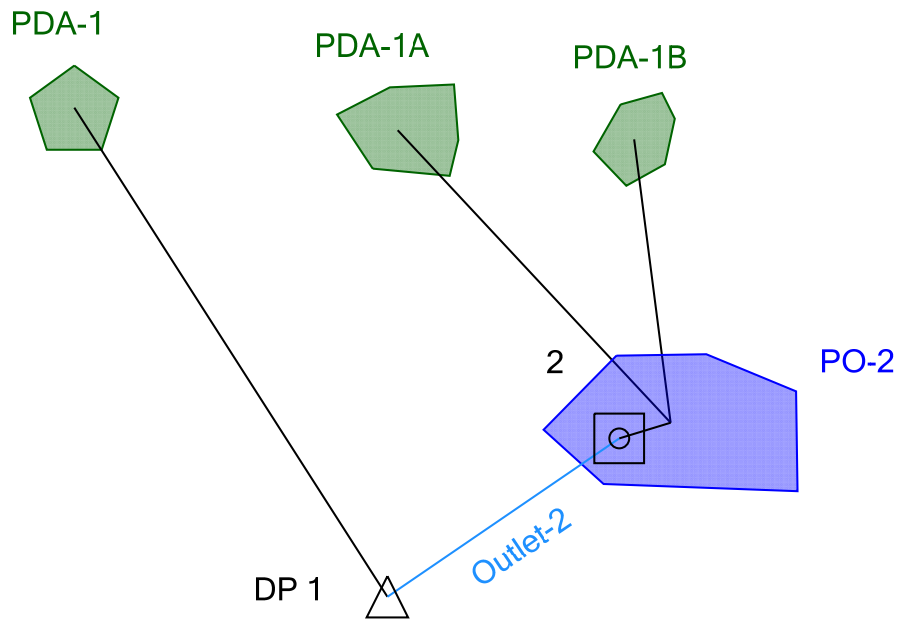


Table of Contents

	Master Network Summary	1
Armonk	Time-Depth Curve, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs)	2
PDA-1		
	Time of Concentration Calculations, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs)	4
PDA-1B		
	Time of Concentration Calculations, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs)	6
PDA-1		
	Runoff CN-Area, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs)	8
PDA-1A		
	Runoff CN-Area, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs)	9
PDA-1B		
	Runoff CN-Area, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs)	10
PDA-1		
	Unit Hydrograph Summary, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs)	11
PDA-1A		
	Unit Hydrograph Summary, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs)	13
PDA-1B		
	Unit Hydrograph Summary, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs)	15
PO-2 (IN)	Time vs. Elevation, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs)	17
PO-2	Time vs. Volume, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs)	21
PO-2	Storage Chamber System, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs)	25
OCS	Composite Rating Curve, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs)	26

Watershed

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)
PDA-1	4 Tripp Street - Synthetic Curve, 100 yrs	100	30,194.000	12.150	7.79
PDA-1A	4 Tripp Street - Synthetic Curve, 100 yrs	100	3,788.000	12.100	0.99
PDA-1B	4 Tripp Street - Synthetic Curve, 100 yrs	100	13,756.000	12.100	3.45

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)
DP 1	4 Tripp Street - Synthetic Curve, 100 yrs	100	34,502.000	12.150	11.18

Pond Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ft ³)	Time to Peak (hours)	Peak Flow (ft ³ /s)	Maximum Water Surface Elevation (ft)	Maximum Pond Storage (ft ³)
PO-2 (IN)	4 Tripp Street - Synthetic Curve, 100 yrs	100	17,544.000	12.100	4.44	(N/A)	(N/A)
PO-2 (OUT)	4 Tripp Street - Synthetic Curve, 100 yrs	100	4,308.000	12.150	3.39	583.83	2,495.000

Watershed

Subsection: Time-Depth Curve

Label: Armonk

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years

Storm Event: 100 Year

Time-Depth Curve: 100 Year

Label	100 Year
Start Time	0.000 hours
Increment	0.100 hours
End Time	24.000 hours
Return Event	100 years

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
0.000	0.0	0.0	0.0	0.0	0.0
0.500	0.0	0.1	0.1	0.1	0.1
1.000	0.1	0.1	0.1	0.1	0.1
1.500	0.1	0.1	0.2	0.2	0.2
2.000	0.2	0.2	0.2	0.2	0.2
2.500	0.2	0.2	0.2	0.3	0.3
3.000	0.3	0.3	0.3	0.3	0.3
3.500	0.3	0.3	0.4	0.4	0.4
4.000	0.4	0.4	0.4	0.4	0.4
4.500	0.5	0.5	0.5	0.5	0.5
5.000	0.5	0.5	0.5	0.6	0.6
5.500	0.6	0.6	0.6	0.6	0.6
6.000	0.7	0.7	0.7	0.7	0.7
6.500	0.7	0.8	0.8	0.8	0.8
7.000	0.8	0.8	0.9	0.9	0.9
7.500	0.9	0.9	1.0	1.0	1.0
8.000	1.0	1.1	1.1	1.1	1.1
8.500	1.2	1.2	1.2	1.3	1.3
9.000	1.3	1.4	1.4	1.4	1.5
9.500	1.5	1.6	1.6	1.6	1.7
10.000	1.7	1.8	1.8	1.9	1.9
10.500	2.0	2.0	2.1	2.2	2.2
11.000	2.3	2.4	2.4	2.5	2.6
11.500	2.7	2.9	3.1	3.4	3.8
12.000	4.6	5.3	5.7	6.0	6.3
12.500	6.4	6.5	6.6	6.7	6.8
13.000	6.8	6.9	7.0	7.0	7.1
13.500	7.2	7.2	7.3	7.3	7.4
14.000	7.4	7.4	7.5	7.5	7.6
14.500	7.6	7.7	7.7	7.7	7.8
15.000	7.8	7.8	7.9	7.9	7.9
15.500	8.0	8.0	8.0	8.0	8.1
16.000	8.1	8.1	8.1	8.2	8.2
16.500	8.2	8.2	8.2	8.3	8.3

Watershed

Subsection: Time-Depth Curve

Return Event: 100 years

Label: Armonk

Storm Event: 100 Year

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

CUMULATIVE RAINFALL (in)

Output Time Increment = 0.100 hours

Time on left represents time for first value in each row.

Time (hours)	Depth (in)	Depth (in)	Depth (in)	Depth (in)	Depth (in)
17.000	8.3	8.3	8.3	8.4	8.4
17.500	8.4	8.4	8.4	8.4	8.5
18.000	8.5	8.5	8.5	8.5	8.5
18.500	8.5	8.6	8.6	8.6	8.6
19.000	8.6	8.6	8.6	8.7	8.7
19.500	8.7	8.7	8.7	8.7	8.7
20.000	8.7	8.7	8.8	8.8	8.8
20.500	8.8	8.8	8.8	8.8	8.8
21.000	8.9	8.9	8.9	8.9	8.9
21.500	8.9	8.9	8.9	8.9	8.9
22.000	9.0	9.0	9.0	9.0	9.0
22.500	9.0	9.0	9.0	9.0	9.0
23.000	9.0	9.1	9.1	9.1	9.1
23.500	9.1	9.1	9.1	9.1	9.1
24.000	9.1	(N/A)	(N/A)	(N/A)	(N/A)

Watershed

Subsection: Time of Concentration Calculations

Label: PDA-1

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years

Storm Event: 100 Year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow

Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.060 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.19 ft/s
Segment Time of Concentration	0.149 hours

Segment #2: TR-55 Shallow Concentrated Flow

Hydraulic Length	82.00 ft
Is Paved?	False
Slope	0.110 ft/ft
Average Velocity	5.35 ft/s
Segment Time of Concentration	0.004 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.153 hours
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Watershed

Subsection: Time of Concentration Calculations

Label: PDA-1

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years

Storm Event: 100 Year

==== SCS Channel Flow

$$T_c = \frac{R = Q_a / W_p}{V = (1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where: $(L_f / V) / 3600$
R= Hydraulic radius
Aq= Flow area, square feet
Wp= Wetted perimeter, feet
V= Velocity, ft/sec
Sf= Slope, ft/ft
n= Manning's n
Tc= Time of concentration, hours
Lf= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

$$T_c = \frac{\text{Unpaved surface:}}{V = 16.1345 * (S_f^{0.5})}$$

$$\text{Paved Surface:}$$
$$V = 20.3282 * (S_f^{0.5})$$

Where: $(L_f / V) / 3600$
V= Velocity, ft/sec
Sf= Slope, ft/ft
Tc= Time of concentration, hours
Lf= Flow length, feet

Watershed

Subsection: Time of Concentration Calculations
Label: PDA-1B
Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years
Storm Event: 100 Year

Time of Concentration Results

Segment #1: TR-55 Sheet Flow

Hydraulic Length	100.00 ft
Manning's n	0.240
Slope	0.070 ft/ft
2 Year 24 Hour Depth	3.4 in
Average Velocity	0.20 ft/s
Segment Time of Concentration	0.140 hours

Segment #2: TR-55 Shallow Concentrated Flow

Hydraulic Length	24.00 ft
Is Paved?	False
Slope	0.042 ft/ft
Average Velocity	3.31 ft/s
Segment Time of Concentration	0.002 hours

Segment #3: TR-55 Channel Flow

Flow Area	0.2 ft ²
Hydraulic Length	233.00 ft
Manning's n	0.012
Slope	0.030 ft/ft
Wetted Perimeter	0.79 ft
Average Velocity	8.53 ft/s
Segment Time of Concentration	0.008 hours

Time of Concentration (Composite)

Time of Concentration (Composite)	0.149 hours
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Watershed

Subsection: Time of Concentration Calculations

Label: PDA-1B

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years

Storm Event: 100 Year

==== SCS Channel Flow

$$T_c = \frac{L_f / V}{3600}$$
$$V = \frac{Q_a / W_p}{(1.49 * (R^{2/3}) * (S_f^{-0.5})) / n}$$

Where:

- R= Hydraulic radius
- A_q= Flow area, square feet
- W_p= Wetted perimeter, feet
- V= Velocity, ft/sec
- S_f= Slope, ft/ft
- n= Manning's n
- T_c= Time of concentration, hours
- L_f= Flow length, feet

==== SCS TR-55 Shallow Concentration Flow

$$T_c = \frac{L_f / V}{3600}$$
$$V = 16.1345 * (S_f^{0.5})$$

Where:

- Unpaved surface:
- Paved Surface:
- V = 20.3282 * (S_f^{0.5})
- V= Velocity, ft/sec
- S_f= Slope, ft/ft
- T_c= Time of concentration, hours
- L_f= Flow length, feet

==== SCS TR-55 Sheet Flow

$$T_c = \frac{L_f / V}{3600}$$
$$V = \frac{0.007 * ((n * L_f)^{0.8})}{((P^{0.5}) * (S_f^{0.4}))}$$

Where:

- T_c= Time of concentration, hours
- n= Manning's n
- L_f= Flow length, feet
- P= 2yr, 24hr Rain depth, inches
- S_f= Slope, %

Watershed

Subsection: Runoff CN-Area

Label: PDA-1

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years

Storm Event: 100 Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft ²)	C (%)	UC (%)	Adjusted CN
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	54,360.000	0.0	0.0	74.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil C	98.000	1,529.000	0.0	0.0	98.000
Woods - good - Soil C	70.000	5,034.000	0.0	0.0	70.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	60,923.000	(N/A)	(N/A)	74.272

Watershed

Subsection: Runoff CN-Area

Label: PDA-1A

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years

Storm Event: 100 Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft ²)	C (%)	UC (%)	Adjusted CN
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	2,401.000	0.0	0.0	74.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil C	98.000	3,521.000	0.0	0.0	98.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	5,922.000	(N/A)	(N/A)	88.270

Watershed

Subsection: Runoff CN-Area

Label: PDA-1B

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years

Storm Event: 100 Year

Runoff Curve Number Data

Soil/Surface Description	CN	Area (ft ²)	C (%)	UC (%)	Adjusted CN
Open space (Lawns,parks etc.) - Good condition; grass cover > 75% - Soil C	74.000	10,987.000	0.0	0.0	74.000
Impervious Areas - Paved parking lots, roofs, driveways, Streets and roads - Soil C	98.000	9,908.000	0.0	0.0	98.000
Woods - good - Soil C	70.000	2,080.000	0.0	0.0	70.000
COMPOSITE AREA & WEIGHTED CN --->	(N/A)	22,975.000	(N/A)	(N/A)	83.988

Watershed

Subsection: Unit Hydrograph Summary

Label: PDA-1

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years

Storm Event: 100 Year

Storm Event	100 Year
Return Event	100 years
Duration	35.000 hours
Depth	9.1 in
Time of Concentration (Composite)	0.153 hours
Area (User Defined)	60,923.000 ft ²
<hr/>	
Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.133 hours
Flow (Peak, Computed)	7.94 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.150 hours
Flow (Peak Interpolated Output)	7.79 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	74.000
Area (User Defined)	60,923.000 ft ²
Maximum Retention (Pervious)	3.5 in
Maximum Retention (Pervious, 20 percent)	0.7 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	5.9 in
Runoff Volume (Pervious)	30,195.545 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	30,194.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.153 hours
Computational Time Increment	0.020 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Watershed

Subsection: Unit Hydrograph Summary

Label: PDA-1

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years

Storm Event: 100 Year

SCS Unit Hydrograph Parameters

Unit peak, q_p	10.36 ft ³ /s
Unit peak time, T_p	0.102 hours
Unit receding limb, T_r	0.408 hours
Total unit time, T_b	0.510 hours

Watershed

Subsection: Unit Hydrograph Summary

Label: PDA-1A

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years

Storm Event: 100 Year

Storm Event	100 Year
Return Event	100 years
Duration	35.000 hours
Depth	9.1 in
Time of Concentration (Composite)	0.083 hours
Area (User Defined)	5,922.000 ft ²
Computational Time Increment	0.011 hours
Time to Peak (Computed)	12.095 hours
Flow (Peak, Computed)	0.99 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	0.99 ft ³ /s
Drainage Area	
SCS CN (Composite)	88.000
Area (User Defined)	5,922.000 ft ²
Maximum Retention (Pervious)	1.4 in
Maximum Retention (Pervious, 20 percent)	0.3 in
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.7 in
Runoff Volume (Pervious)	3,787.893 ft ³
Hydrograph Volume (Area under Hydrograph curve)	
Volume	3,788.000 ft ³
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.083 hours
Computational Time Increment	0.011 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Watershed

Subsection: Unit Hydrograph Summary

Label: PDA-1A

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years

Storm Event: 100 Year

SCS Unit Hydrograph Parameters

Unit peak, qp	1.85 ft ³ /s
Unit peak time, Tp	0.056 hours
Unit receding limb, Tr	0.222 hours
Total unit time, Tb	0.278 hours

Watershed

Subsection: Unit Hydrograph Summary

Label: PDA-1B

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years

Storm Event: 100 Year

Storm Event	100 Year
Return Event	100 years
Duration	35.000 hours
Depth	9.1 in
Time of Concentration (Composite)	0.149 hours
Area (User Defined)	22,975.000 ft ²
<hr/>	
Computational Time Increment	0.020 hours
Time to Peak (Computed)	12.131 hours
Flow (Peak, Computed)	3.49 ft ³ /s
Output Increment	0.050 hours
Time to Flow (Peak Interpolated Output)	12.100 hours
Flow (Peak Interpolated Output)	3.45 ft ³ /s
<hr/>	
Drainage Area	
SCS CN (Composite)	84.000
Area (User Defined)	22,975.000 ft ²
Maximum Retention (Pervious)	1.9 in
Maximum Retention (Pervious, 20 percent)	0.4 in
<hr/>	
Cumulative Runoff	
Cumulative Runoff Depth (Pervious)	7.2 in
Runoff Volume (Pervious)	13,755.961 ft ³
<hr/>	
Hydrograph Volume (Area under Hydrograph curve)	
Volume	13,756.000 ft ³
<hr/>	
SCS Unit Hydrograph Parameters	
Time of Concentration (Composite)	0.149 hours
Computational Time Increment	0.020 hours
Unit Hydrograph Shape Factor	483.432
K Factor	0.749
Receding/Rising, Tr/Tp	1.670

Watershed

Subsection: Unit Hydrograph Summary

Label: PDA-1B

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Return Event: 100 years

Storm Event: 100 Year

SCS Unit Hydrograph Parameters

Unit peak, q_p	4.00 ft ³ /s
Unit peak time, T_p	0.100 hours
Unit receding limb, T_r	0.398 hours
Total unit time, T_b	0.498 hours

Watershed

Subsection: Time vs. Elevation

Return Event: 100 years

Label: PO-2 (IN)

Storm Event: 100 Year

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Time vs. Elevation (ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
0.000	579.50	579.50	579.50	579.50	579.50
0.250	579.50	579.50	579.50	579.50	579.50
0.500	579.50	579.50	579.50	579.50	579.50
0.750	579.50	579.50	579.50	579.50	579.50
1.000	579.50	579.50	579.50	579.50	579.50
1.250	579.50	579.50	579.50	579.50	579.50
1.500	579.50	579.50	579.50	579.50	579.50
1.750	579.50	579.50	579.50	579.50	579.50
2.000	579.50	579.50	579.50	579.50	579.50
2.250	579.50	579.50	579.50	579.50	579.50
2.500	579.50	579.50	579.50	579.50	579.50
2.750	579.50	579.50	579.50	579.50	579.50
3.000	579.50	579.50	579.50	579.50	579.50
3.250	579.50	579.50	579.50	579.50	579.50
3.500	579.50	579.50	579.50	579.50	579.50
3.750	579.50	579.50	579.50	579.50	579.50
4.000	579.50	579.50	579.50	579.50	579.50
4.250	579.50	579.50	579.50	579.50	579.50
4.500	579.51	579.51	579.51	579.51	579.51
4.750	579.51	579.51	579.51	579.51	579.51
5.000	579.51	579.51	579.51	579.51	579.51
5.250	579.51	579.51	579.51	579.51	579.51
5.500	579.51	579.52	579.52	579.52	579.52
5.750	579.52	579.52	579.52	579.52	579.52
6.000	579.52	579.52	579.52	579.52	579.52
6.250	579.52	579.52	579.52	579.53	579.53
6.500	579.53	579.53	579.53	579.53	579.53
6.750	579.53	579.53	579.53	579.53	579.54
7.000	579.54	579.54	579.54	579.54	579.54
7.250	579.54	579.54	579.54	579.54	579.55
7.500	579.55	579.55	579.55	579.55	579.55
7.750	579.55	579.55	579.56	579.56	579.56
8.000	579.56	579.56	579.56	579.56	579.56
8.250	579.57	579.57	579.57	579.57	579.57
8.500	579.58	579.58	579.58	579.58	579.59
8.750	579.59	579.59	579.59	579.60	579.60
9.000	579.60	579.60	579.61	579.61	579.61
9.250	579.61	579.62	579.62	579.62	579.63
9.500	579.63	579.63	579.63	579.64	579.64
9.750	579.64	579.65	579.65	579.65	579.66

Watershed

Subsection: Time vs. Elevation

Return Event: 100 years

Label: PO-2 (IN)

Storm Event: 100 Year

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Time vs. Elevation (ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
10.000	579.66	579.66	579.66	579.67	579.67
10.250	579.68	579.68	579.69	579.69	579.70
10.500	579.70	579.71	579.72	579.72	579.73
10.750	579.73	579.74	579.74	579.75	579.76
11.000	579.76	579.77	579.78	579.79	579.80
11.250	579.81	579.83	579.85	579.87	579.89
11.500	579.91	579.94	579.98	580.06	580.21
11.750	580.46	580.65	580.88	581.16	581.55
12.000	582.16	582.93	583.56	583.83	583.78
12.250	583.54	583.28	583.07	582.92	582.81
12.500	582.71	582.63	582.55	582.49	582.45
12.750	582.40	582.36	582.32	582.28	582.24
13.000	582.21	582.17	582.13	582.09	582.04
13.250	581.99	581.94	581.90	581.84	581.79
13.500	581.74	581.68	581.63	581.57	581.51
13.750	581.45	581.39	581.33	581.26	581.20
14.000	581.13	581.06	580.99	580.93	580.86
14.250	580.79	580.72	580.65	580.57	580.50
14.500	580.36	580.21	580.06	579.93	579.84
14.750	579.78	579.75	579.73	579.72	579.71
15.000	579.70	579.70	579.69	579.69	579.69
15.250	579.68	579.68	579.68	579.67	579.67
15.500	579.67	579.67	579.66	579.66	579.66
15.750	579.65	579.65	579.65	579.65	579.64
16.000	579.64	579.64	579.64	579.63	579.63
16.250	579.63	579.63	579.63	579.62	579.62
16.500	579.62	579.62	579.62	579.62	579.62
16.750	579.62	579.61	579.61	579.61	579.61
17.000	579.61	579.61	579.61	579.61	579.60
17.250	579.60	579.60	579.60	579.60	579.60
17.500	579.60	579.60	579.59	579.59	579.59
17.750	579.59	579.59	579.59	579.59	579.59
18.000	579.58	579.58	579.58	579.58	579.58
18.250	579.58	579.58	579.58	579.58	579.58
18.500	579.58	579.58	579.58	579.58	579.58
18.750	579.58	579.58	579.57	579.57	579.57
19.000	579.57	579.57	579.57	579.57	579.57
19.250	579.57	579.57	579.57	579.57	579.57
19.500	579.57	579.57	579.57	579.57	579.57
19.750	579.57	579.57	579.57	579.57	579.57
20.000	579.57	579.57	579.57	579.57	579.56

Watershed

Subsection: Time vs. Elevation

Return Event: 100 years

Label: PO-2 (IN)

Storm Event: 100 Year

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Time vs. Elevation (ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
20.250	579.56	579.56	579.56	579.56	579.56
20.500	579.56	579.56	579.56	579.56	579.56
20.750	579.56	579.56	579.56	579.56	579.56
21.000	579.56	579.56	579.56	579.56	579.56
21.250	579.56	579.56	579.56	579.56	579.56
21.500	579.56	579.56	579.56	579.56	579.56
21.750	579.56	579.56	579.56	579.56	579.56
22.000	579.55	579.55	579.55	579.55	579.55
22.250	579.55	579.55	579.55	579.55	579.55
22.500	579.55	579.55	579.55	579.55	579.55
22.750	579.55	579.55	579.55	579.55	579.55
23.000	579.55	579.55	579.55	579.55	579.55
23.250	579.55	579.55	579.55	579.55	579.55
23.500	579.55	579.55	579.55	579.55	579.55
23.750	579.54	579.54	579.54	579.54	579.54
24.000	579.54	579.54	579.54	579.53	579.52
24.250	579.51	579.51	579.50	579.50	579.50
24.500	579.50	579.50	579.50	579.50	579.50
24.750	579.50	579.50	579.50	579.50	579.50
25.000	579.50	579.50	579.50	579.50	579.50
25.250	579.50	579.50	579.50	579.50	579.50
25.500	579.50	579.50	579.50	579.50	579.50
25.750	579.50	579.50	579.50	579.50	579.50
26.000	579.50	579.50	579.50	579.50	579.50
26.250	579.50	579.50	579.50	579.50	579.50
26.500	579.50	579.50	579.50	579.50	579.50
26.750	579.50	579.50	579.50	579.50	579.50
27.000	579.50	579.50	579.50	579.50	579.50
27.250	579.50	579.50	579.50	579.50	579.50
27.500	579.50	579.50	579.50	579.50	579.50
27.750	579.50	579.50	579.50	579.50	579.50
28.000	579.50	579.50	579.50	579.50	579.50
28.250	579.50	579.50	579.50	579.50	579.50
28.500	579.50	579.50	579.50	579.50	579.50
28.750	579.50	579.50	579.50	579.50	579.50
29.000	579.50	579.50	579.50	579.50	579.50
29.250	579.50	579.50	579.50	579.50	579.50
29.500	579.50	579.50	579.50	579.50	579.50
29.750	579.50	579.50	579.50	579.50	579.50
30.000	579.50	579.50	579.50	579.50	579.50
30.250	579.50	579.50	579.50	579.50	579.50

Watershed

Subsection: Time vs. Elevation

Return Event: 100 years

Label: PO-2 (IN)

Storm Event: 100 Year

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Time vs. Elevation (ft)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)	Elevation (ft)
30.500	579.50	579.50	579.50	579.50	579.50
30.750	579.50	579.50	579.50	579.50	579.50
31.000	579.50	579.50	579.50	579.50	579.50
31.250	579.50	579.50	579.50	579.50	579.50
31.500	579.50	579.50	579.50	579.50	579.50
31.750	579.50	579.50	579.50	579.50	579.50
32.000	579.50	579.50	579.50	579.50	579.50
32.250	579.50	579.50	579.50	579.50	579.50
32.500	579.50	579.50	579.50	579.50	579.50
32.750	579.50	579.50	579.50	579.50	579.50
33.000	579.50	579.50	579.50	579.50	579.50
33.250	579.50	579.50	579.50	579.50	579.50
33.500	579.50	579.50	579.50	579.50	579.50
33.750	579.50	579.50	579.50	579.50	579.50
34.000	579.50	579.50	579.50	579.50	579.50
34.250	579.50	579.50	579.50	579.50	579.50
34.500	579.50	579.50	579.50	579.50	579.50
34.750	579.50	579.50	579.50	579.50	579.50
35.000	579.50	(N/A)	(N/A)	(N/A)	(N/A)

Watershed

Subsection: Time vs. Volume

Return Event: 100 years

Label: PO-2

Storm Event: 100 Year

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Time vs. Volume (ft³)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
0.000	0.000	0.000	0.000	0.000	0.000
0.250	0.000	0.000	0.000	0.000	0.000
0.500	0.000	0.000	0.000	0.000	0.000
0.750	0.000	0.000	0.000	0.000	0.000
1.000	0.000	0.000	0.000	0.000	0.000
1.250	0.000	0.000	0.000	0.000	0.000
1.500	0.000	0.000	0.000	0.000	0.000
1.750	0.000	0.000	0.000	0.000	0.000
2.000	0.000	0.000	0.000	0.000	0.000
2.250	0.000	0.000	0.000	0.000	0.000
2.500	0.000	0.000	0.000	0.000	0.000
2.750	0.000	0.000	0.000	0.000	0.000
3.000	0.000	0.000	0.000	0.000	0.000
3.250	0.000	0.000	0.000	0.000	0.000
3.500	0.000	0.000	0.000	0.000	0.000
3.750	1.000	1.000	1.000	1.000	1.000
4.000	1.000	1.000	1.000	1.000	1.000
4.250	1.000	2.000	2.000	2.000	2.000
4.500	2.000	2.000	3.000	3.000	3.000
4.750	3.000	3.000	4.000	4.000	4.000
5.000	4.000	4.000	5.000	5.000	5.000
5.250	5.000	5.000	6.000	6.000	6.000
5.500	6.000	6.000	7.000	7.000	7.000
5.750	7.000	7.000	8.000	8.000	8.000
6.000	8.000	8.000	9.000	9.000	9.000
6.250	9.000	10.000	10.000	10.000	11.000
6.500	11.000	11.000	12.000	12.000	13.000
6.750	13.000	13.000	14.000	14.000	14.000
7.000	15.000	15.000	16.000	16.000	17.000
7.250	17.000	17.000	18.000	18.000	19.000
7.500	19.000	20.000	20.000	21.000	21.000
7.750	22.000	22.000	23.000	23.000	24.000
8.000	24.000	25.000	25.000	26.000	26.000
8.250	27.000	28.000	29.000	30.000	31.000
8.500	32.000	33.000	33.000	34.000	35.000
8.750	36.000	37.000	38.000	39.000	41.000
9.000	42.000	43.000	44.000	45.000	46.000
9.250	47.000	48.000	49.000	50.000	52.000
9.500	53.000	54.000	55.000	56.000	58.000
9.750	59.000	60.000	61.000	63.000	64.000

Watershed

Subsection: Time vs. Volume

Return Event: 100 years

Label: PO-2

Storm Event: 100 Year

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Time vs. Volume (ft³)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
10.000	65.000	66.000	68.000	69.000	71.000
10.250	73.000	75.000	77.000	79.000	81.000
10.500	84.000	86.000	88.000	91.000	93.000
10.750	96.000	98.000	100.000	103.000	105.000
11.000	108.000	111.000	114.000	118.000	123.000
11.250	129.000	136.000	144.000	152.000	160.000
11.500	169.000	180.000	198.000	231.000	293.000
11.750	393.000	534.000	718.000	946.000	1,247.000
12.000	1,680.000	2,119.000	2,386.000	2,495.000	2,477.000
12.250	2,379.000	2,272.000	2,185.000	2,117.000	2,061.000
12.500	2,012.000	1,968.000	1,931.000	1,901.000	1,872.000
12.750	1,842.000	1,813.000	1,786.000	1,760.000	1,736.000
13.000	1,714.000	1,691.000	1,665.000	1,636.000	1,604.000
13.250	1,571.000	1,537.000	1,501.000	1,464.000	1,425.000
13.500	1,386.000	1,345.000	1,303.000	1,259.000	1,215.000
13.750	1,169.000	1,122.000	1,074.000	1,024.000	973.000
14.000	921.000	868.000	814.000	758.000	702.000
14.250	646.000	588.000	530.000	472.000	413.000
14.500	353.000	293.000	232.000	177.000	140.000
14.750	117.000	103.000	95.000	89.000	86.000
15.000	83.000	81.000	79.000	78.000	76.000
15.250	75.000	74.000	73.000	72.000	70.000
15.500	69.000	68.000	67.000	66.000	65.000
15.750	63.000	62.000	61.000	60.000	59.000
16.000	58.000	57.000	55.000	54.000	54.000
16.250	53.000	52.000	52.000	51.000	50.000
16.500	50.000	49.000	49.000	48.000	48.000
16.750	47.000	47.000	46.000	46.000	45.000
17.000	45.000	44.000	44.000	43.000	43.000
17.250	42.000	42.000	41.000	41.000	40.000
17.500	40.000	39.000	39.000	38.000	38.000
17.750	37.000	37.000	36.000	36.000	35.000
18.000	35.000	34.000	34.000	33.000	33.000
18.250	33.000	32.000	32.000	32.000	32.000
18.500	32.000	32.000	31.000	31.000	31.000
18.750	31.000	31.000	31.000	31.000	30.000
19.000	30.000	30.000	30.000	30.000	30.000
19.250	29.000	29.000	29.000	29.000	29.000
19.500	29.000	29.000	28.000	28.000	28.000
19.750	28.000	28.000	28.000	28.000	27.000
20.000	27.000	27.000	27.000	27.000	27.000

Watershed

Subsection: Time vs. Volume

Return Event: 100 years

Label: PO-2

Storm Event: 100 Year

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Time vs. Volume (ft³)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
20.250	27.000	26.000	26.000	26.000	26.000
20.500	26.000	26.000	26.000	26.000	25.000
20.750	25.000	25.000	25.000	25.000	25.000
21.000	25.000	25.000	25.000	24.000	24.000
21.250	24.000	24.000	24.000	24.000	24.000
21.500	24.000	23.000	23.000	23.000	23.000
21.750	23.000	23.000	23.000	23.000	23.000
22.000	22.000	22.000	22.000	22.000	22.000
22.250	22.000	22.000	22.000	22.000	21.000
22.500	21.000	21.000	21.000	21.000	21.000
22.750	21.000	21.000	21.000	20.000	20.000
23.000	20.000	20.000	20.000	20.000	20.000
23.250	20.000	19.000	19.000	19.000	19.000
23.500	19.000	19.000	19.000	19.000	19.000
23.750	18.000	18.000	18.000	18.000	18.000
24.000	18.000	17.000	15.000	11.000	8.000
24.250	5.000	3.000	2.000	1.000	1.000
24.500	0.000	0.000	0.000	0.000	0.000
24.750	0.000	0.000	0.000	0.000	0.000
25.000	0.000	0.000	0.000	0.000	0.000
25.250	0.000	0.000	0.000	0.000	0.000
25.500	0.000	0.000	0.000	0.000	0.000
25.750	0.000	0.000	0.000	0.000	0.000
26.000	0.000	0.000	0.000	0.000	0.000
26.250	0.000	0.000	0.000	0.000	0.000
26.500	0.000	0.000	0.000	0.000	0.000
26.750	0.000	0.000	0.000	0.000	0.000
27.000	0.000	0.000	0.000	0.000	0.000
27.250	0.000	0.000	0.000	0.000	0.000
27.500	0.000	0.000	0.000	0.000	0.000
27.750	0.000	0.000	0.000	0.000	0.000
28.000	0.000	0.000	0.000	0.000	0.000
28.250	0.000	0.000	0.000	0.000	0.000
28.500	0.000	0.000	0.000	0.000	0.000
28.750	0.000	0.000	0.000	0.000	0.000
29.000	0.000	0.000	0.000	0.000	0.000
29.250	0.000	0.000	0.000	0.000	0.000
29.500	0.000	0.000	0.000	0.000	0.000
29.750	0.000	0.000	0.000	0.000	0.000
30.000	0.000	0.000	0.000	0.000	0.000
30.250	0.000	0.000	0.000	0.000	0.000

Watershed

Subsection: Time vs. Volume

Return Event: 100 years

Label: PO-2

Storm Event: 100 Year

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Time vs. Volume (ft³)

Output Time increment = 0.050 hours

Time on left represents time for first value in each row.

Time (hours)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)	Volume (ft ³)
30.500	0.000	0.000	0.000	0.000	0.000
30.750	0.000	0.000	0.000	0.000	0.000
31.000	0.000	0.000	0.000	0.000	0.000
31.250	0.000	0.000	0.000	0.000	0.000
31.500	0.000	0.000	0.000	0.000	0.000
31.750	0.000	0.000	0.000	0.000	0.000
32.000	0.000	0.000	0.000	0.000	0.000
32.250	0.000	0.000	0.000	0.000	0.000
32.500	0.000	0.000	0.000	0.000	0.000
32.750	0.000	0.000	0.000	0.000	0.000
33.000	0.000	0.000	0.000	0.000	0.000
33.250	0.000	0.000	0.000	0.000	0.000
33.500	0.000	0.000	0.000	0.000	0.000
33.750	0.000	0.000	0.000	0.000	0.000
34.000	0.000	0.000	0.000	0.000	0.000
34.250	0.000	0.000	0.000	0.000	0.000
34.500	0.000	0.000	0.000	0.000	0.000
34.750	0.000	0.000	0.000	0.000	0.000
35.000	0.000	(N/A)	(N/A)	(N/A)	(N/A)

Watershed

Subsection: Storage Chamber System

Return Event: 100 years

Label: PO-2

Storm Event: 100 Year

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Storage Chamber

ID 130

Created on
02/10/2010.
Please check
with the
manufacturer
for the latest
data.

Notes

Label SC-740
Chamber

Storage Chamber

Effective Length	7.12 ft	Manufacturer	StormTech
Section Length Varies?	False	Default Spacing	0.50 ft

Depth-Incremental Volume Per Unit Length Curve

Depth (ft)	Incremental Volume Per Unit Length (ft ³ /ft)
0.08	0.31
0.17	0.31
0.25	0.31
0.33	0.30
0.42	0.30
0.50	0.30
0.58	0.29
0.67	0.29
0.75	0.28
0.83	0.28
0.92	0.27
1.00	0.27
1.08	0.26
1.17	0.25
1.25	0.25
1.33	0.24
1.42	0.23
1.50	0.22
1.58	0.21
1.67	0.20
1.75	0.19
1.83	0.18
1.92	0.17
2.00	0.15
2.08	0.13
2.17	0.11
2.25	0.09

Watershed

Subsection: Storage Chamber System

Return Event: 100 years

Label: PO-2

Storm Event: 100 Year

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Depth-Incremental Volume Per Unit Length Curve

Depth (ft)	Incremental Volume Per Unit Length (ft ³ /ft)
2.33	0.04
2.42	0.02
2.50	0.01

Storage Chamber

Storage Chamber Type	Incremental Volume Per Unit Length	Maximum Width
		4.25 ft

Storage Chamber (Pond)

Chamber System Invert	579.50 ft
Chamber System Rows	13
Chambers per Row	2
Chamber System Fill Void Space	40.0 %
Chamber System Row Spacing	6.0 in
Chamber System Side Fill	12.0 in
Chamber System Fill Cover Depth	12.0 in
Chamber System Fill Base Depth	12.0 in
Chamber System Fill Side Slope	0.000 H:V
Chamber System End Fill	12.0 in
Chamber System Includes Header?	False

Subsection: Composite Rating Curve

Return Event: 100 years

Label: OCS

Storm Event: 100 Year

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
579.50	0.00	(N/A)	0.00
580.00	0.00	(N/A)	0.00
580.50	0.00	(N/A)	0.00
581.00	0.00	(N/A)	0.00

Watershed

Subsection: Composite Rating Curve

Return Event: 100 years

Label: OCS

Storm Event: 100 Year

Scenario: 4 Tripp Street - Synthetic Curve, 100 yrs

Composite Outflow Summary

Water Surface Elevation (ft)	Flow (ft ³ /s)	Tailwater Elevation (ft)	Convergence Error (ft)
581.50	0.00	(N/A)	0.00
581.75	0.00	(N/A)	0.00
582.00	0.00	(N/A)	0.00
582.20	0.00	(N/A)	0.00
582.50	0.29	(N/A)	0.00
583.00	1.73	(N/A)	0.00
583.50	2.76	(N/A)	0.00
584.00	3.72	(N/A)	0.00

Contributing Structures

(no Q: Orifice - 1,Weir - 1,C0)
(no Q: Orifice - 1,Weir - 1,C0)
(no Q: Orifice - 1,Weir - 1,C0)
(no Q: Orifice - 1,Weir - 1,C0)
(no Q: Orifice - 1,Weir - 1,C0)
(no Q: Orifice - 1,Weir - 1,C0)
(no Q: Orifice - 1,Weir - 1,C0)
(no Q: Orifice - 1,Weir - 1,C0)
(no Q: Orifice - 1,Weir - 1,C0)
Orifice - 1,C0 (no Q: Weir - 1)
Orifice - 1,C0 (no Q: Weir - 1)
Orifice - 1,C0 (no Q: Weir - 1)
Orifice - 1,Weir - 1,C0

Watershed

Index

A

Armonk (Time-Depth Curve, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs))...2, 3

M

Master Network Summary...1

O

OCS (Composite Rating Curve, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs))...26, 27

P

PDA-1 (Runoff CN-Area, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs))...8

PDA-1 (Time of Concentration Calculations, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs))...4, 5

PDA-1 (Unit Hydrograph Summary, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs))...11, 12

PDA-1A (Runoff CN-Area, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs))...9

PDA-1A (Unit Hydrograph Summary, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs))...13, 14

PDA-1B (Runoff CN-Area, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs))...10

PDA-1B (Time of Concentration Calculations, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs))...6, 7

PDA-1B (Unit Hydrograph Summary, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs))...15, 16

PO-2 (IN) (Time vs. Elevation, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs))...17, 18, 19, 20

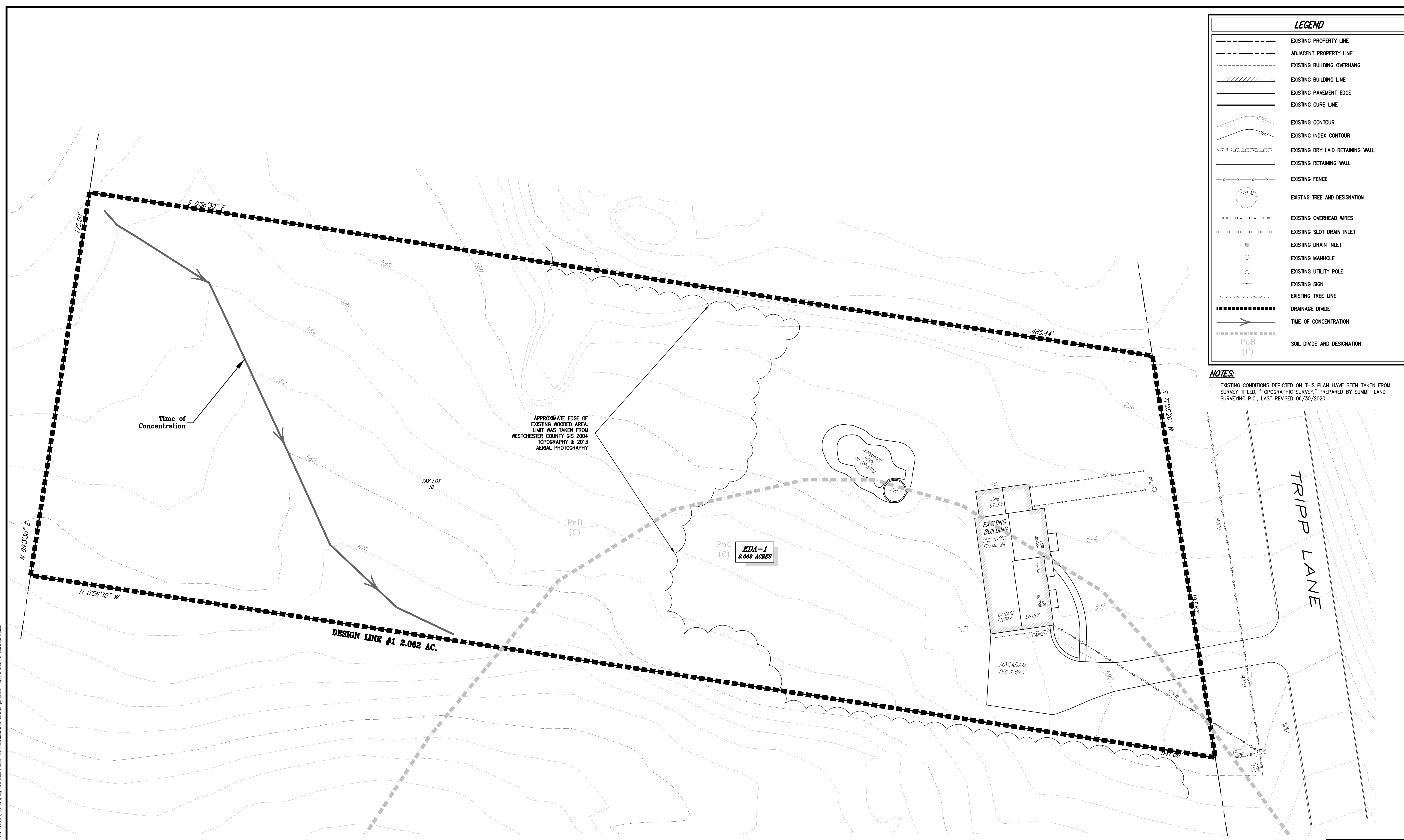
PO-2 (Storage Chamber System, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs))...25, 26

PO-2 (Time vs. Volume, 100 years (4 Tripp Street - Synthetic Curve, 100 yrs))...21, 22, 23, 24

APPENDIX C

DRAWINGS

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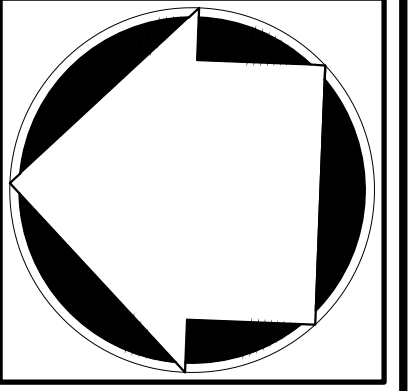
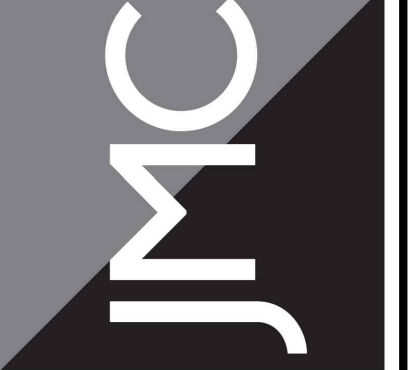
LEGEND	
	EXISTING PROPERTY LINE
	ADJACENT PROPERTY LINE
	EXISTING BUILDING OVERHANG
	EXISTING BUILDING LINE
	EXISTING PAVEMENT EDGE
	EXISTING CURB LINE
	EXISTING CONTOUR
	EXISTING INDEX CONTOUR
	EXISTING DRY LAID RETAINING WALL
	EXISTING RETAINING WALL
	EXISTING FENCE
	EXISTING TREE AND DESIGNATION
	EXISTING OVERHEAD WIRES
	EXISTING SLOT DRAIN INLET
	EXISTING DRAIN INLET
	EXISTING MANHOLE
	EXISTING UTILITY POLE
	EXISTING SIGN
	EXISTING TREE LINE
	DRAINAGE DIVIDE
	TIME OF CONCENTRATION
	SOIL DIVIDE AND DESIGNATION

NOTES:
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APPLICANT/OWNER:
Mr. & Mrs. PEREIRA
 4 TRIPP LANE
 TOWN OF NORTH CASTLE, NY

ARCHITECT:
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 PLEASANTVILLE, NY

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 voice 914.273.9225 • fax 914.273.2102
 www.jmcpllc.com



**PRE-EXISTING DRAINAGE
 AREA MAP**
PEREIRA RESIDENCE
 4 TRIPP LANE
 NORTH CASTLE, NY

APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD:
 RESOLUTION, DATED: _____ DATE: _____
 CHRISTOPHER CARTHY, CHAIRMAN
 TOWN OF NORTH CASTLE PLANNING BOARD

ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:
 _____ DATE: _____
 JOSEPH M. CERMELE, P.E.
 KELLARD SESSIONS CONSULTING
 CONSULTING TOWN ENGINEERS

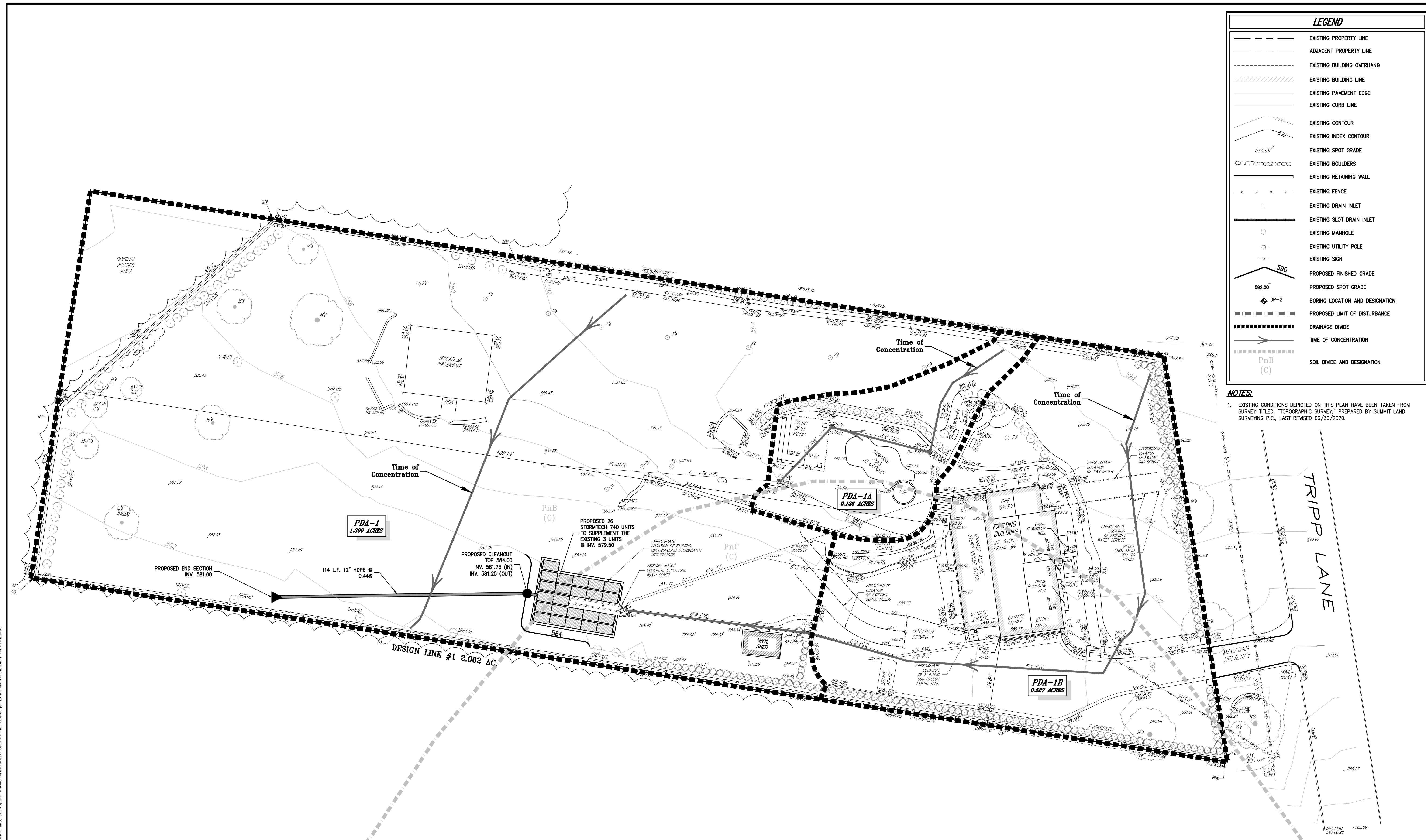
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Previous Editions Obsolete

Drawn: DK	Approved: AN
Scale: 1" = 20'	
Date: 07/12/2021	
Project No: 20044	
2004-STE DK	EDA
EDA	EDA
Drawing No:	DA-1

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LEGEND

- EXISTING PROPERTY LINE
- - - ADJACENT PROPERTY LINE
- ▨ EXISTING BUILDING OVERHANG
- ▨ EXISTING BUILDING LINE
- ▨ EXISTING PAVEMENT EDGE
- ▨ EXISTING CURB LINE
- ~ EXISTING CONTOUR
- ~ EXISTING INDEX CONTOUR
- EXISTING SPOT GRADE
- EXISTING BOULDERS
- ▭ EXISTING RETAINING WALL
- x - x - EXISTING FENCE
- EXISTING DRAIN INLET
- ▭ EXISTING SLOT DRAIN INLET
- EXISTING MANHOLE
- EXISTING UTILITY POLE
- EXISTING SIGN
- ▭ 590' PROPOSED FINISHED GRADE
- ▭ 592.00' PROPOSED SPOT GRADE
- ▭ DP-2 BORING LOCATION AND DESIGNATION
- ▭ PROPOSED LIMIT OF DISTURBANCE
- ▭ DRAINAGE DIVIDE
- ▭ TIME OF CONCENTRATION
- ▭ SOIL DIVIDE AND DESIGNATION

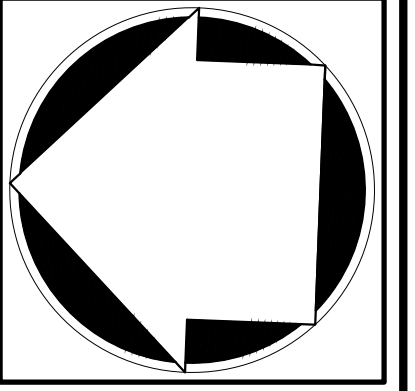
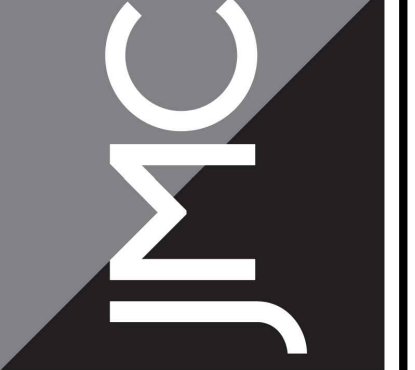
NOTES:

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**PROPOSED DRAINAGE
 AREA MAP**
PEREIRA RESIDENCE
 4 TRIPP LANE
 NORTH CASTLE, NY

APPROVED BY TOWN OF NORTH CASTLE PLANNING BOARD:
 RESOLUTION, DATED: _____ DATE: _____
 CHRISTOPHER CARTHY, CHAIRMAN
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ENGINEERING PLANS REVIEWED FOR CONFORMANCE TO RESOLUTION:
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 JOSEPH M. CERMELE, P.E.
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1.	REVISED PER TOWN ENGINEER'S COMMENTS	07/12/2022	RB

Previous Editions Obsolete

Drawn: DK Approved: AN
 Scale: 1" = 20'
 Date: 07/12/2021
 Project No: 20044
 2004-STE-01 PDA PDAs
 Drawing No: **DA-2**

APPENDIX D

***STORMTECH MODEL SC-740 DETENTION
SYSTEM DESIGN SHEETS***

STORM TECH RECHARGER SC 740

THE VOLUMES ACCOUNT FOR VOID SPACE IN THE 6" STONE BASE AND SURROUNDING STONE
ADDITIONAL STONE IS CALCULATED AT 40% VOID SPACE

	HEIGHT		STORAGE		STORAGE
	STAGE	PLAIN	PLAIN	W/STONE	
	f.t.	f.t.	cf/ft	cf/unit	cf/unit
STONE COVER	3.00	3.50			74.90
STONE COVER	2.75	3.25			71.52
StormTech Crown	2.50	3.00			68.14
StormTech	2.25	2.75			64.46
StormTech	2.00	2.50			59.66
StormTech	1.75	2.25			54.17
StormTech	1.50	2.00			48.19
StormTech	1.25	1.75			41.85
StormTech	1.00	1.50			35.23
StormTech	0.75	1.25			28.36
StormTech	0.50	1.00			21.31
StormTech Invert	0	0.50			6.76
BOTTOM BROKEN STONE	GRAVEL	0			0.00

AREA/UNIT	s.f.	DIM.	LAY-UP
HEIGHT		f.t.	f.t.
		2.50	3.50

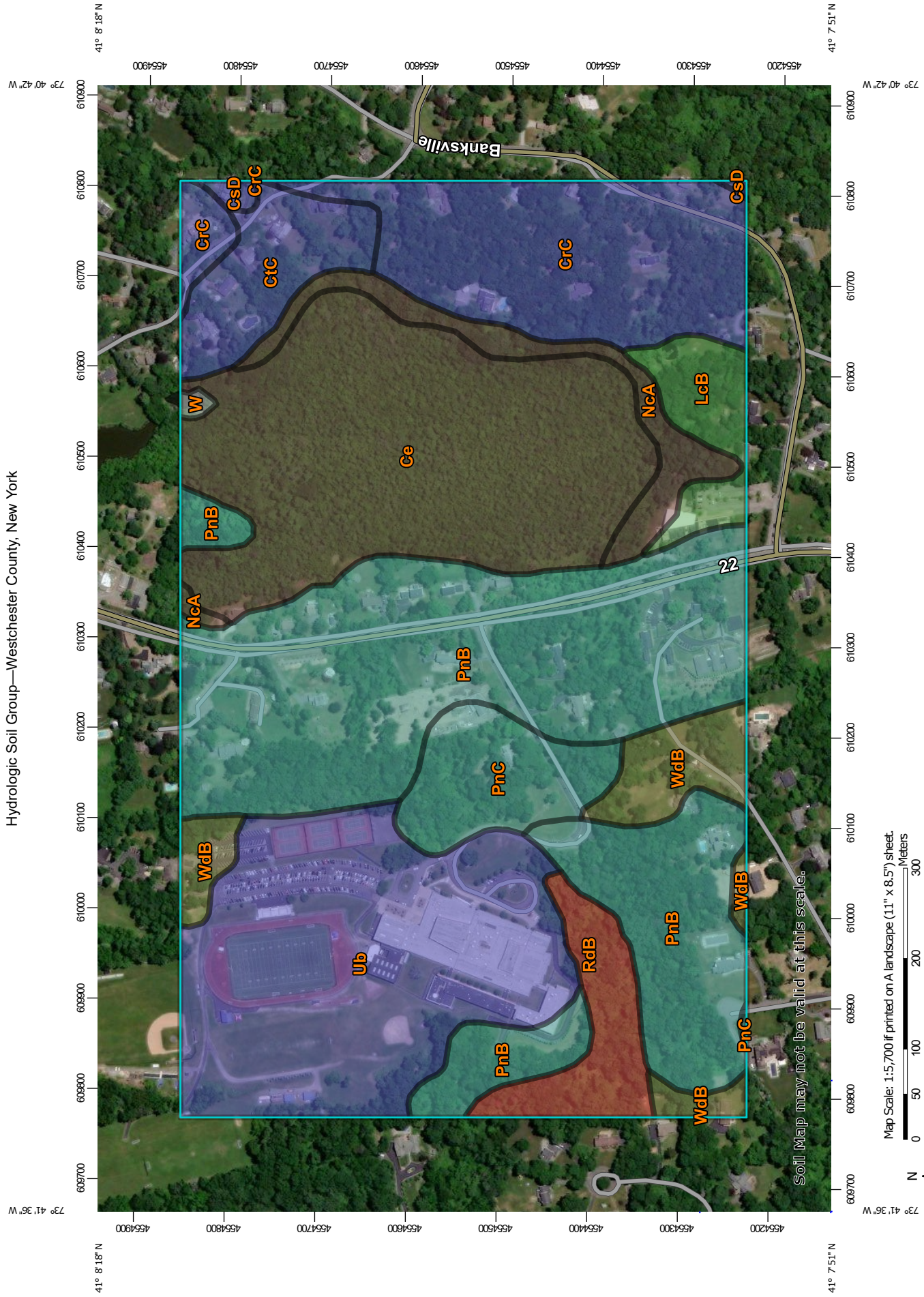
INFILTRATION	25.00	in/hr	0.0195718	cfs/unit		LENGTH	7.56	7.12
ELEVATION BOTTOM STONE	579.50			CUMULATIVE		WIDE	4.25	4.75

No UNIT	VOLUME OF STORAGE IN EACH STAGE (cf.)												GUIDANCE	W-quantity	Volume		
	STORM-TECH RECHARGER SC 740															Storage +	
	GRAVEL	GRAVEL	GRAVEL	GRAVEL	GRAVEL	GRAVEL	GRAVEL	GRAVEL	GRAVEL	GRAVEL	GRAVEL	GRAVEL					in 12 hrs
2	STAGE	STAGE	STAGE	STAGE	STAGE	STAGE	STAGE	STAGE	STAGE	STAGE	STAGE	STAGE	STAGE	CONSTANT	AREA/UNIT	cf	Infiltration
inch	6	12	15	18	21	24	27	30	33	36	39	42	42				
	0.00	0.50	1.00	1.25	1.50	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50	FLOW RATE			
ELEV.	579.50	580.00	580.75	581.00	581.25	581.50	581.75	582.00	582.25	582.50	582.75	583.00	583.00	cfs			
1	0.00	6.76	21.31	28.36	35.23	41.85	48.19	54.17	59.66	64.5	68.14	71.52	74.90	0.020		33.82	
4	0.00	27	85	113	141	167	193	217	239	258	273	286	300	0.078		135.28	3.682
6	0.00	41	128	170	211	251	289	325	358	387	409	429	449	0.117		202.92	5.522
8	0.00	54	170	227	282	335	386	433	477	516	545	572	599	0.157		270.56	7.363
10	0.00	68	213	284	352	419	482	542	597	645	681	715	749	0.196		338.20	9.204
12	0.00	81	256	340	423	502	578	650	716	774	818	858	899	0.235		405.84	11.045
14	0.00	95	298	397	493	586	675	758	835	902	954	1,001	1,049	0.274		473.48	12.886
16	0.00	108	341	454	564	670	771	867	955	1,031	1,090	1,144	1,198	0.313		541.12	14.726
18	0.00	122	384	510	634	753	867	975	1,074	1,160	1,227	1,287	1,348	0.352		608.76	16.567
20	0.00	135	426	567	705	837	964	1,083	1,193	1,289	1,363	1,430	1,498	0.391		676.40	18.408
22	0.00	149	469	624	775	921	1,060	1,192	1,313	1,418	1,489	1,573	1,648	0.431		744.04	20.249
24	0.00	162	511	681	846	1,004	1,157	1,300	1,432	1,547	1,635	1,716	1,798	0.470		811.68	22.090
26	0.00	176	554	737	916	1,088	1,253	1,408	1,551	1,676	1,772	1,860	1,947	0.509		879.32	23.930
28	0.00	189	597	794	986	1,172	1,349	1,517	1,670	1,805	1,908	2,003	2,097	0.548		946.96	25.771
30	0.00	203	639	851	1,057	1,256	1,446	1,625	1,790	1,934	2,044	2,146	2,247	0.587		1,014.60	27.612
32	0.00	216	682	908	1,127	1,339	1,542	1,733	1,909	2,063	2,180	2,289	2,397	0.626		1,082.24	29.453
34	0.00	230	725	964	1,198	1,423	1,638	1,842	2,028	2,192	2,317	2,432	2,547	0.665		1,149.88	31.294

APPENDIX E

WEB SOIL SURVEY INFORMATION

Hydrologic Soil Group—Westchester County, New York



































Soil Map may not be valid at this scale.

Map Scale: 1:5,700 if printed on A landscape (11" x 8.5") sheet.

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

MAP LEGEND

Area of Interest (AOI)	 C
 Area of Interest (AOI)	 C/D
Soils	 D
Soil Rating Polygons	 Not rated or not available
 A	Water Features
 A/D	 Streams and Canals
 B	Transportation
 B/D	 Rails
 C	 Interstate Highways
 C/D	 US Routes
 D	 Major Roads
 Not rated or not available	 Local Roads
Soil Rating Lines	Background
 A	 Aerial Photography
 A/D	
 B	
 B/D	
 C	
 C/D	
 D	
 Not rated or not available	
Soil Rating Points	
 A	
 A/D	
 B	
 B/D	

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Westchester County, New York
 Survey Area Data: Version 16, Jun 11, 2020

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

Date(s) aerial images were photographed: Dec 31, 2009—Oct 16, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ce	Catden muck, 0 to 2 percent slopes	B/D	31.4	19.5%
CrC	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	B	18.4	11.5%
CsD	Chatfield-Charlton complex, 15 to 35 percent slopes, very rocky	B	0.5	0.3%
CtC	Chatfield-Hollis-Rock outcrop complex, 0 to 15 percent slopes	B	6.1	3.8%
LcB	Leicester loam, 3 to 8 percent slopes, stony	A/D	4.1	2.6%
NcA	Natchaug muck, 0 to 2 percent slopes	B/D	5.4	3.3%
PnB	Paxton fine sandy loam, 3 to 8 percent slopes	C	47.6	29.6%
PnC	Paxton fine sandy loam, 8 to 15 percent slopes	C	6.6	4.1%
RdB	Ridgebury complex, 3 to 8 percent slopes	D	5.3	3.3%
Ub	Udorthents, smoothed	B	28.8	17.9%
W	Water		0.2	0.1%
WdB	Woodbridge loam, 3 to 8 percent slopes	C/D	6.4	4.0%
Totals for Area of Interest			160.8	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Extreme Precipitation Tables

Northeast Regional Climate Center

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

Smoothing	Yes
State	New York
Location	
Longitude	73.687 degrees West
Latitude	41.135 degrees North
Elevation	0 feet
Date/Time	Mon, 12 Jul 2021 07:14:58 -0400

Extreme Precipitation Estimates

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.34	0.52	0.64	0.84	1.05	1.31	1yr	0.91	1.23	1.50	1.85	2.28	2.81	3.18	1yr	2.49	3.06	3.55	4.26	4.91	1yr
2yr	0.40	0.62	0.77	1.02	1.28	1.60	2yr	1.10	1.49	1.84	2.27	2.79	3.43	3.86	2yr	3.03	3.71	4.26	5.05	5.72	2yr
5yr	0.47	0.73	0.92	1.23	1.58	1.99	5yr	1.36	1.83	2.30	2.85	3.51	4.31	4.88	5yr	3.81	4.69	5.44	6.33	7.10	5yr
10yr	0.53	0.83	1.05	1.42	1.85	2.36	10yr	1.60	2.15	2.73	3.40	4.18	5.12	5.84	10yr	4.53	5.61	6.55	7.52	8.36	10yr
25yr	0.61	0.97	1.24	1.72	2.29	2.95	25yr	1.97	2.66	3.43	4.28	5.28	6.44	7.40	25yr	5.70	7.12	8.38	9.43	10.38	25yr
50yr	0.69	1.11	1.43	2.00	2.69	3.50	50yr	2.32	3.12	4.08	5.10	6.28	7.67	8.86	50yr	6.78	8.52	10.09	11.21	12.24	50yr
100yr	0.79	1.27	1.64	2.33	3.17	4.15	100yr	2.74	3.67	4.86	6.08	7.50	9.13	10.61	100yr	8.08	10.21	12.17	13.32	14.43	100yr
200yr	0.89	1.46	1.89	2.71	3.74	4.93	200yr	3.23	4.32	5.78	7.26	8.94	10.89	12.72	200yr	9.64	12.23	14.68	15.83	17.02	200yr
500yr	1.07	1.76	2.29	3.33	4.66	6.19	500yr	4.02	5.35	7.28	9.16	11.30	13.75	16.17	500yr	12.17	15.55	18.81	19.89	21.18	500yr

Lower Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.26	0.40	0.48	0.65	0.80	0.96	1yr	0.69	0.94	1.29	1.60	2.00	2.58	2.74	1yr	2.28	2.64	3.20	3.72	4.24	1yr
2yr	0.39	0.61	0.75	1.01	1.24	1.49	2yr	1.07	1.45	1.70	2.17	2.74	3.32	3.74	2yr	2.94	3.60	4.13	4.89	5.56	2yr
5yr	0.43	0.66	0.82	1.13	1.44	1.74	5yr	1.24	1.70	1.97	2.57	3.21	3.96	4.51	5yr	3.51	4.34	5.01	5.82	6.58	5yr
10yr	0.47	0.72	0.89	1.24	1.60	1.96	10yr	1.38	1.92	2.22	2.93	3.64	4.53	5.20	10yr	4.01	5.00	5.79	6.57	7.47	10yr
25yr	0.50	0.77	0.95	1.36	1.79	2.28	25yr	1.55	2.23	2.57	3.46	4.29	5.39	6.28	25yr	4.77	6.04	7.01	7.69	8.81	25yr
50yr	0.53	0.80	1.00	1.44	1.93	2.55	50yr	1.67	2.49	2.89	3.94	4.87	6.15	7.25	50yr	5.44	6.97	8.09	8.59	9.98	50yr
100yr	0.56	0.84	1.06	1.53	2.09	2.83	100yr	1.81	2.77	3.25	4.50	5.48	7.02	8.38	100yr	6.21	8.06	9.34	9.63	11.31	100yr
200yr	0.59	0.89	1.13	1.63	2.27	3.16	200yr	1.96	3.09	3.66	5.14	6.23	7.99	9.68	200yr	7.07	9.31	10.80	10.70	12.82	200yr
500yr	0.63	0.94	1.20	1.75	2.49	3.66	500yr	2.15	3.58	4.29	6.19	7.39	9.51	11.71	500yr	8.41	11.26	13.06	12.27	15.11	500yr

Upper Confidence Limits

	5min	10min	15min	30min	60min	120min		1hr	2hr	3hr	6hr	12hr	24hr	48hr		1day	2day	4day	7day	10day	
1yr	0.37	0.57	0.70	0.94	1.16	1.40	1yr	1.00	1.37	1.59	2.08	2.61	3.04	3.45	1yr	2.69	3.32	3.83	4.61	5.31	1yr
2yr	0.43	0.66	0.82	1.10	1.36	1.58	2yr	1.18	1.55	1.81	2.31	2.89	3.55	3.99	2yr	3.14	3.84	4.42	5.30	5.93	2yr
5yr	0.51	0.79	0.98	1.35	1.72	2.02	5yr	1.48	1.97	2.32	2.97	3.71	4.66	5.27	5yr	4.12	5.07	5.88	6.84	7.64	5yr
10yr	0.61	0.94	1.16	1.62	2.09	2.43	10yr	1.81	2.37	2.82	3.59	4.51	5.74	6.51	10yr	5.08	6.26	7.30	8.40	9.29	10yr
25yr	0.77	1.18	1.46	2.09	2.75	3.13	25yr	2.37	3.06	3.65	4.63	5.80	7.56	8.62	25yr	6.69	8.29	9.75	11.05	12.02	25yr
50yr	0.92	1.40	1.74	2.51	3.37	3.80	50yr	2.91	3.72	4.45	5.61	7.04	9.33	10.66	50yr	8.26	10.25	12.14	13.60	14.61	50yr
100yr	1.11	1.68	2.10	3.03	4.16	4.63	100yr	3.59	4.52	5.42	6.81	8.69	11.53	13.20	100yr	10.21	12.69	15.14	16.77	17.78	100yr
200yr	1.33	2.01	2.55	3.68	5.14	5.62	200yr	4.43	5.50	6.61	8.24	10.57	14.26	16.34	200yr	12.62	15.71	18.88	20.67	21.65	200yr
500yr	1.73	2.57	3.31	4.81	6.84	7.27	500yr	5.90	7.11	8.59	10.63	13.72	18.89	21.69	500yr	16.72	20.85	25.30	27.36	28.07	500yr

