

CHARLES P. MAY
AND ASSOCIATES P.C.

Community Planning
Landscape Architecture
Project Management
Environmental Studies
Environmental Engineering
Traffic Analysis

1073 Main Street, Suite 203
Fishkill, NY 12524
Voice
845-896-2747

367 Windsor Highway, Suite 168
New Windsor, NY 12553
Voice
845-567-3030

Email
charlespmayassoc@aol.com
Website
charlespmayassociates.com

Zoning
Land Use
Site Planning
CADD Services
Grading and
Drainage Plans
Site Details
Utility Plan
Graphics
Permits
Approvals

September 2, 2021

Mr. Gareth Hougham, Chairman
Town of Ossining Planning Board
John- Paul Rodrigues Operations Center
Route 9 a, Ossining, New York 10562

RECEIVED
OCT 01 2021
Town of Ossining
Building & Planning Department

RE: 540 North State Road
Briarcliff Manor
Town of Ossining
Westchester County, New York 10510
Parcel 90.15-2-11

Dear Mr. Hougham:

LETTER OF TRANSMITTAL

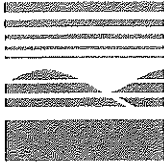
We are forwarding the following information:

1. Drawing CS-1, Cover Sheet, Sheet 1 of 10 Dated 08/24/21.
2. Drawing BS-1, Boundary and Topographic Survey, Sheet 2 of 10.
Dated 08/24/21.
3. Drawing SL-1, Site Layout and Materials Plan, Sheet 3 of 10 ,Dated
08/24/21.
4. Drawing PL-1, Planting Plan, Sheet 4 of 10, Dated 08/24/21.
5. Drawing EC-1, Erosion Control Plan, Sheet 5 of 10, Dated 08/24/21.
6. Drawing SG-1, Site Grading Plan, Sheet 6 of 10, Dated 08/24/21.
7. Drawing SD-1, Site Details, Sheet 8 of 10, Dated 08/24/21.
8. Drawing SD-2, Site Details, Sheet 8 of 10, Dated 08/24/21.
9. Drawing SD-3, Site Details, Sheet 9 of 10, Dated 08/24/21.
10. Drawing WM-1, Watershed Map, Sheet 10 of 10, Dated 08/24/21.
11. Stormwater Management Report by Charles P. May & Associates P.C.
Dated, September 2021 (Revised).
12. Letter of response Daniel Ciarcia P.E. letter of August 18, 2021.

Sincerely,

CHARLES P. MAY ASSOCIATES P. C.

Charles P. May R. L. A.
President/CEO



CHARLES P. MAY
AND ASSOCIATES P.C.

Community Planning
Landscape Architecture
Project Management
Environmental Studies
Environmental Engineering
Traffic Analysis

1073 Main Street, Suite 203
Fishkill, NY 12524
Voice
845-896-2747

367 Windsor Highway, Suite 168
New Windsor, NY 12553
Voice
845-567-3030

Email
charlespmayassoc@aol.com
Website
charlespmayassociates.com

Zoning
Land Use
Site Planning
CADD Services
Grading and
Drainage Plans
Site Details
Utility Plan
Graphics
Permits
Approvals

MEMORANDUM

TO: Daniel Ciarcia P. E.
FROM: Charles P. May R.L.A.
DATE: September 2, 2021
SUBJECT: 540 N. State Road, Briarcliff Manor
Town of Ossining
Westchester County, New York 10510
Parcel: 90.15-2-11

In regard to your letter of August 18, 2021 our response is in the identical order of your comments.

1. North arrows have been provided on all plans.
2. Refer to Drawing WM-1 Watershed Map Sheet 10 of 10.
3. Refer to the Stormwater Management Plan dated September 2021 (Revised), Section 5.0 Water Quality Calculations, and Section 6.0 Details for Wet Vault and Drawing WM-1 Watershed Map Sheet 10 of 10 for the outline of Drainage Area No.1 and Drainage Area No. 2.
4. Refer to the SMP dated September 2021 Section 5.0 Water Quality Calculations.
5. Refer to Drawing EC-1 Erosion Control Plan Sheet 5 of 10.
6. Reviewed at the Planning Board meeting.

STORMWATER MANAGEMENT PLAN

Prepared for:

KASINATHAN INTERNATIONAL GROUP
540 N. STATE ROAD, SUITE 7
BRIARCLIFF MANOR, NEW YORK 10510

Prepared by:

CHARLES P. MAY AND ASSOCIATES P. C.
1073 MAIN STREET, SUITE 203
FISHKILL, NEW YORK 12524

TEL: 845-896-2747

E-MAIL: charlespmayassoc@aol.com
WEBSITE: charlespmayassociates.com

AUGUST 2021
SEPTEMBER 2021 (REVISED)



TABLE OF CONTENTS

1.0 NARRATIVE REPORT

2.0 SITE LOCATION MAP

3.0 NEW YORK STATE STORMWATER DESIGN MANUAL
Chapter 9 Redevelopment Activity

4.0 SCOPE OF REPORT

5.0 WATER QUALITY CALCULATIONS

6.0 DETAILS FOR WET VAULT

7.0 CALCULATIONS FOR PRE AND POST DEVELOPMENT

8.0 CONCLUSIONS AND RECOMMENDATIONS

9.0 SOILS

10.0 WATERSHED MAP

1.0 NARRATIVE REPORT

1.0 NARRATIVE REPORT

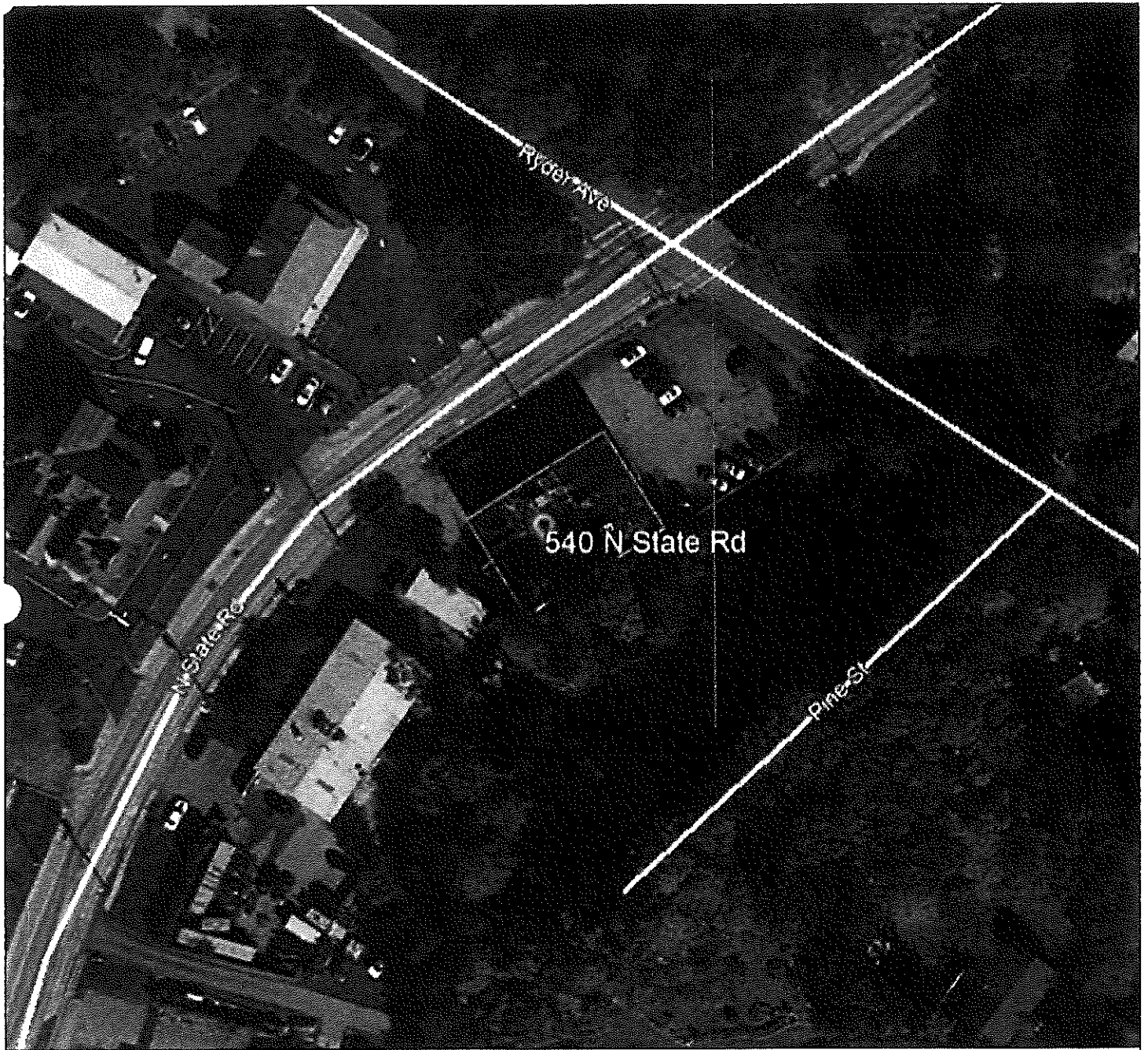
The site is located at 540 N. State Road in Briarcliff Manor, Westchester County, New York. The site is comprised of 0.47 Acres which is zoned C-20 Commercial, Use General Business.

The existing site is presently comprised of a 2 story office building and parking area for various business uses.

The proposed development consists of redesigning the parking area to accommodate more cars for parking, new landscaping, and providing updated storm water management practices to the latest NYSDEC Standards.

This Storm water Management Report is being prepared to evaluate the storm effects on the immediate areas of the site and to provide mitigation techniques that will control the storm water runoff as required by the redesign of the parking area as required by redevelopment activity. The total study area contains the immediate water shed comprised of approximately 0.47 Ac. which is intended to be redeveloped with revised parking facilities, landscaping, signage, and curbing.

2.0 SITE LOCATION MAP



SITE LOCATION MAP

N.T.S. 

3.0 NEW YORK STATE STORM WATER DESIGN MANUAL
Chapter 9 Redevelopment Activity

NEW YORK STATE STORMWATER DESIGN MANUAL

Chapter 9 Redevelopment Activity

The proposed project is subject to storm water practices during redevelopment activities as stated above Chapter 9 Section 9.1 through 9.4.

Section 9.2.1 I states that if the activities result in no change to hydrology that increases the discharge rate from the project site the ten and hundred -year criteria do not apply. Furthermore, if the hydrology and hydraulic analysis for the project site shows that the post construction activity 1-year 24 hour discharge rate and velocity are less than or equal to the pre-construction discharge rate, providing 24 hour detention of the 1 year storm to meet the channel protection criteria is not required. Refer to Section 7 of the Storm Water Management Report which indicates that the 1-year 24 hour discharge demonstrates that there is no net increase in the post development activities.

In order to comply with the Chapter 9 the plan proposes that a minimum of 25 % of the water quality (WV) from the disturbed, impervious area is captured and treated by the implementation of standard SMP or reduced by application of green structure techniques.

The performance criteria of selected SMPs for redevelopment activities fall under three categories. The applicant has selected to utilize wet vaults which are water tight "boxes" that include a permanent pool and promote settling of particulates through detention and use of internal baffles and other proprietary modifications.

Refer to Section 5 of the report for the calculations concerning the sizing and type of wet vault that will be utilized at the site.

4.0 SCOPE OF REPORT

4.0 SCOPE OF REPORT

The study contains the analysis of the 1-year 24 hour pre-developed and post-developed discharge rate to demonstrate that no net increase in the post-development scenario has occurred.

Furthermore, the study contains the analysis of the (WQv) Water Quality and proposes that a minimum of the 25% of the water quality volume (WQv) from the disturbed area is captured and treated by alternative storm water management practices as depicted in Chapter 9, Section 9.4 of the New York State Stormwater Management Design Manual.

5.0 WATER QUALITY CALCULATIONS

August 20, 2021

540 N. State Road
Briarcliff Manor, NY

Water Quality Volume (WQv)
Drainage Area No. 1

Impervious Area (Acre) ----- 0.232 Ac.
Total Area (Acres)-----0.28 Ac.
Impervious Coverage -----82.85%

Calculation Runoff Coefficient

$$R_v = 0.05 + (I) (0.009)$$

$$R_v = 0.05 + (82.85) (0.009) = 0.795$$

Water Quality Volume Calculation

$$WQ_v [(P) (R_v/12) (A)]$$

P= 1.50 (90%) Rainfall in NYS

$$WQ_v = (1.50) (0.795 / 12) \times 0.28 = 0.0278 \text{ Ac Ft.}$$

$$0.0278 \text{ Ac. Ft.} \quad 1210.968 \text{ Cu. Ft.}$$

$$\times .25$$

302.742 Cu. Ft. Treatment Required

$$302.742 \text{ Cu. Ft.}$$

$$\times 7.481 \text{ Gallon/Cu Ft.}$$

2,264.81 Gallon Wet Vault -----Use 3,000 Gallon Wet Vault

R-Rv min.

$$P=1.50$$

$$I = 100\%$$

$$R_v = 0.05 + 0.009 (I)$$

$$R_v = 0.95$$

$$A_{ic} = 0.232$$

$$S = 0.30$$

$$R = R_v - \min P \times R_v \times A_{ic} \times S/12$$

$$0.09918/12$$

$$0.008265 \text{ Ac. Ft.} = 360.00 \text{ Cu. Ft.}$$

$$360.00 \text{ Cu. Ft.}$$

$$\times .25$$

$$90 \text{ Cu. Ft.}$$

$$\times 7.481 \text{ Gallons / Cu. Ft.}$$

673.29 Gallon Wet Vault Minimum reduction volume.

Refer to Section 6.0 for Details of Wet Vaults

August 23, 2021

540 N. State Road
Briarcliff Manor, NY

Water Quality Volume (WQv)
Drainage Area No. 2

Impervious Area (Acre)-----0.075 Ac
Total Area (Acres)-----0.19 Ac.
Impervious Coverage -----39.74 %

Calculate Runoff Coefficient

$$R_v = 0.05 + (I) (0.009)$$

$$R_v = 0.05 + (39.74) (0.009) = 0.40523$$

Calculate the Water Quality Volume

$$WQ_v = (P) (R_v/12) A$$

P=1.50 (90%) Rainfall in NYS

$$WQ_v = (1.50) (0.40523/12) \times 0.19 = 0.0096 \text{ Ac. Ft.}$$

$$0.0096 \text{ Ac Ft.} = 418.17 \text{ Cu. Ft.}$$

$$418.17 \text{ Cu Ft.}$$

$$\times .25$$

$$104.54 \text{ Cu Ft. Treatment Required}$$

$$\times 7.481 \text{ Gallons/Cu. Ft.}$$

$$782.09 \text{ Gallon Wet Vault Required} \quad \text{Use 1,000 Gallon Wet Vault}$$

RRv min

$$P= 1.50$$

$$I=100\%$$

$$R_v=0.05 + 0.009 (I)$$

$$R_v=0.95$$

$$A_{ic}=0.075$$

$$S=0.30$$

$$RR_v\text{-min} = P \times R_v \times A_{ic} \times S / 12 = 0.0267 \text{ Ac Ft.}$$

$$0.0267 \text{ Ac. Ft.} = 116.38 \text{ Cu Ft.}$$

$$116.38 \text{ Cu. Ft}$$

$$\times .25$$

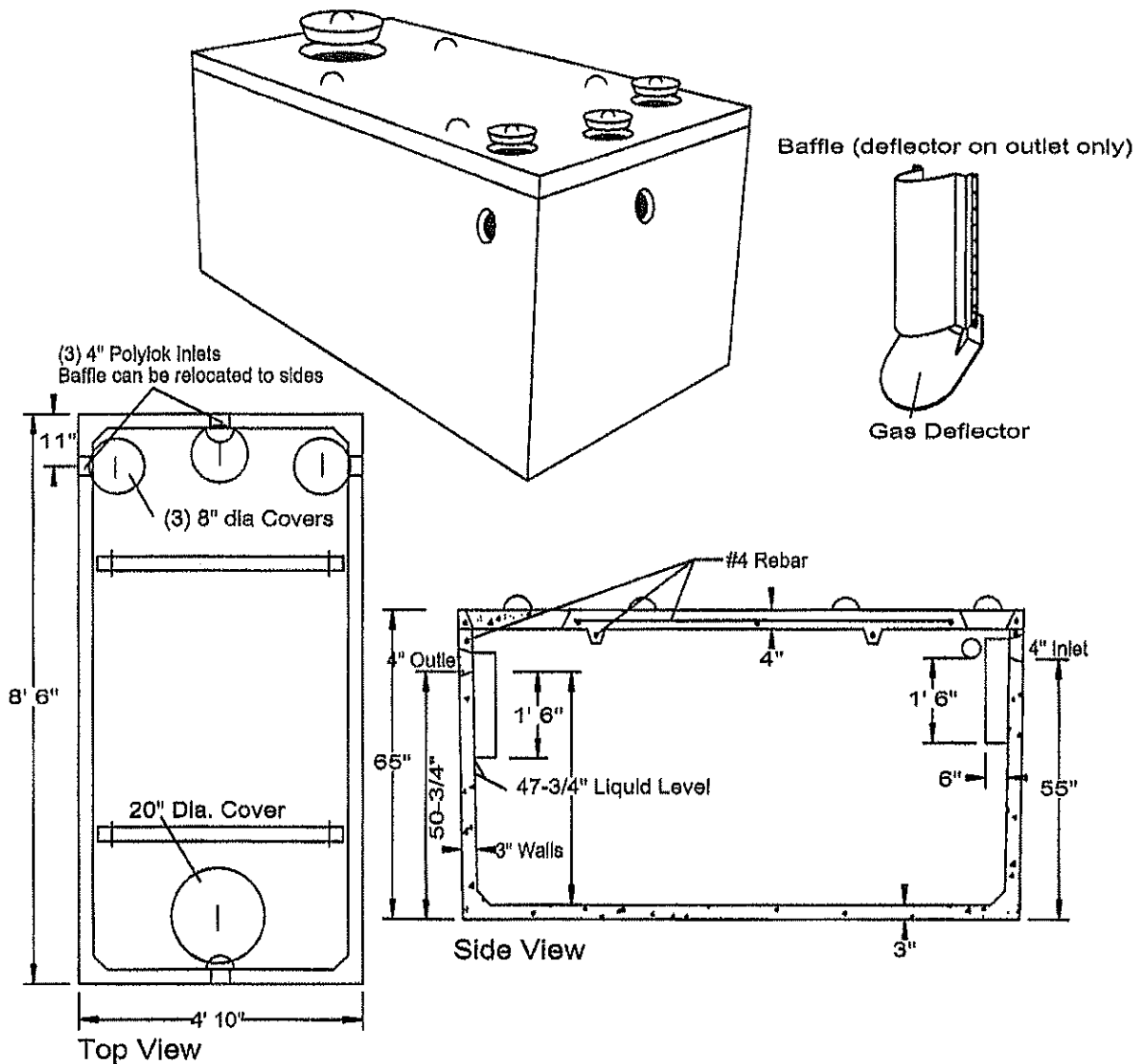
$$29.096 \text{ Cu. Ft}$$

$$\times 7.481 \text{ Gallons/Cu Ft.}$$

$$217.67 \text{ Gallons} \quad \text{Minimum reduction volume.}$$

Refer to Section 6.0 for Details of Wet Vault

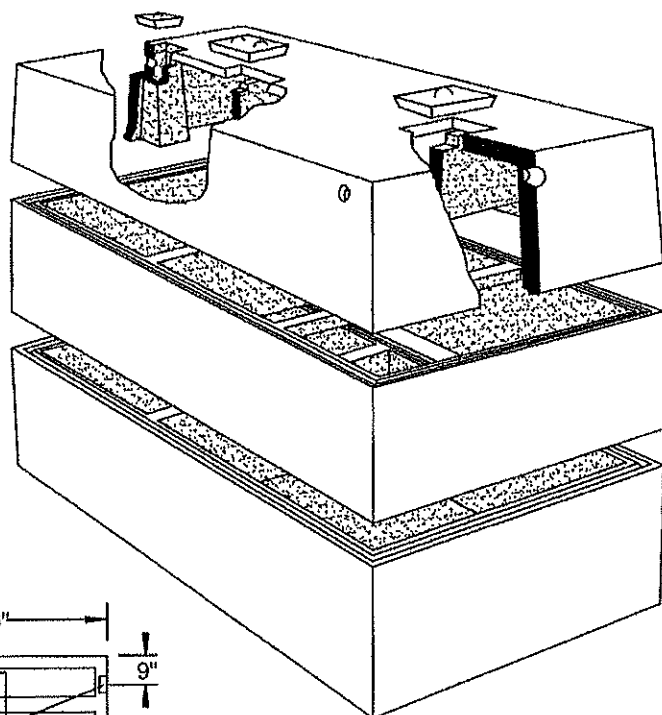
6.0 DETAILS FOR WET VAULT



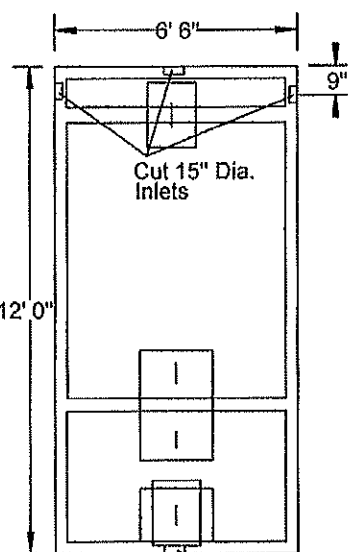
SPECIFICATIONS	PRECAST SEPTIC TANKS MODEL ST-1000 / 1000 GALLONS
Concrete Min. Strength: 4,000 psi at 28 days Reinforcement: #4 bar gr. 60, Forta Ferro 5 lb/cy Air Entrainment: 6% Construction Joint: Butyl Rubber Sealant Pipe Connection: Polylok Seal (patented) Weight = 8,700 lbs Load Rating: 300 psf	Woodard's Concrete Products, Inc. 629 Lybolt Road, Bullville, NY 10915 (845) 361-3471 / Fax 361-1050 Page 2A 7/17/14

www.woodardsconcrete.com

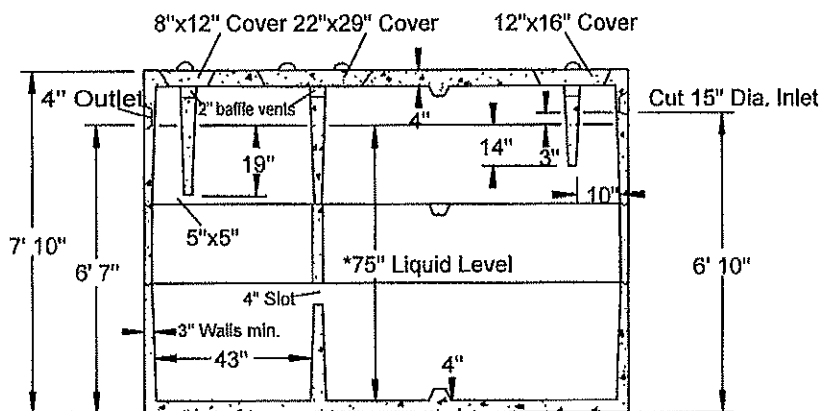




Inlet note: Use a sanitary tee with pipe extension to meet the NYSDOH requirement for baffle 16" below liquid level.



Top View 4" Dia. Outlet

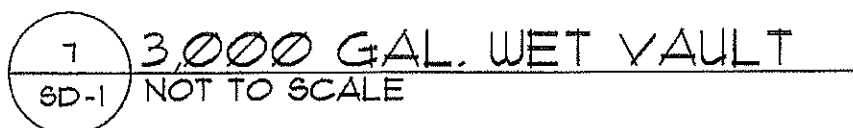


Side View

*Tank Capacity Note: NYS 60" maximum liquid level gives you 2,530 gallons in this tank. Additional depth does not add to the recognized capacity.

SPECIFICATIONS	WET VAULT PRECAST SEPTIC TANKS MODEL ST-3000 / 3000 GALLONS
Concrete Min. Strength: 4,000 psi at 28 days Reinforcement: #3 Rebar, 6x6x10ga. WWM Air Entrainment: 5% Construction Joint: Butyl Rubber Sealant Pipe Connection: Polylok Seal (patented) Weight = 18,000 lbs Load Rating: 300 psf	Woodard's Concrete Products, Inc. 629 Lybolt Road, Bullville, NY 10915 (845) 361-3471 / Fax 361-1050 Page 7A 7/19/12

www.woodardsconcrete.com



7.0 CALCULATIONS FOR PRE AND POST DEVELOPMENT

July 21/21

540 North State Road
Briarcliff, N.Y.

Re-development Activity

Option II

Page 3

1yr. Storm 2.90 inches

Pre-developed

			<u>Area S.f.</u>		<u>Coefficient</u>		<u>Adj. Area ft.²</u>	
(Bldg)	-	Roofs	-	4,977	x	0.95	=	4728.15
	-	Pavement	-	11,557	x	0.80	=	9245.60
	-	Lawn/Trees	-	3,939	x	0.35	=	1378.65
				<u>20,423 S.F =</u>		<u>2.10 = 0.70</u>		<u>15,352.40 ft²</u>
				43560		3		

$$\frac{15,352.40}{43,560} = 0.352 \text{ Ac. (Adjusted Ac.)}$$

Q = ACi

1 = 2.90

$$0.352 \times 0.70 \times 2.90 = 0.714 \text{ cfs}$$

Post-development

			<u>Area S.f.</u>		<u>Coefficient</u>		<u>Adj. Area ft.²</u>	
(Bldg)	-	Roofs	-	4,977	x	0.95	=	4728.15
	-	Pavement	-	9,685	x	0.80	=	7748
	-	Lawn/Trees	-	5,811	x	0.35	=	2033
				<u>20,473 S.F =0.469Ac.</u>		<u>0.70</u>		<u>14,509.15 ft²</u>
				43560				

$$\frac{14,509.15}{43,560} = 0.33 \text{ Ac. (Adjusted Ac.)}$$

Q = ACi

$$0.33 \times 0.70 \times 2.90 = 0.66 \text{ cfs}$$

July 21/21

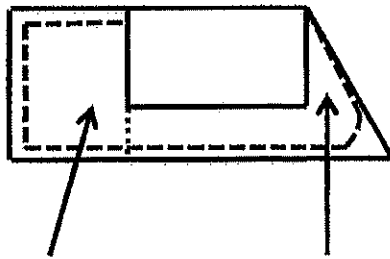
540 North State Road
Briarcliff, N.Y.

Re-development Activity

Option II

Page 4

25 yr. Storm 7.5 lph



drainage area A'
Ac. 0.13 Ac

drainage area B'
0.24 Ac.

Drainage Area A'

	<u>Area ft.²</u>		<u>C</u>	<u>Ft.²</u>
Parking area -	3,230	x	0.95	3,068.50
Lawns -	1,345	x	0.35	470.75
Roof -	2,400	x	<u>0.95</u>	2280
			0.75	<u>5,819.25</u>
				43,560 =
				0.13Ac.

Q = ACL

Q = 0.13 x 0.75 x 7.5 lph = 0.73 cfs

July 21/21

540 North State Road
Briarcliff, N.Y.

Re-development Activity

Option II

Page 5

Drainage Area B'

	<u>Area ft.²</u>		<u>C</u>	<u>Ft.²</u>
Parking area -	3,230	x	0.95	3,068.50
Lawns -	1,345	x	0.35	470.75
Roof -	2,400	x	<u>0.95</u>	2280
			0.75	<u>5,819.25</u>
				43,560 =
				0.24 Ac.

Q = ACi

Q = 0.24 x 0.75 x 7.5 lph = 1.35 cfs.

8.0 CONCLUSIONS AND RECOMMENDATIONS

8.0 CONCLUSION AND RECOMMENDATIONS

The redevelopment of the 540 North State Road project in the Town of Ossining will consist of redesign of the parking area, new plantings, installation of storm water systems such as the two wet vaults, and a level spreader. One wet vault will be located on the easterly side of the building and another will be located at the westerly end of the parking area to provide water quality treatment for both locations.

A level spreader will be located at the rear of the building to mitigate the potential flow of water from the pump which discharges the flow of water from the basement area along with the flow from the wet vaults.


































In conclusion the proposed Storm Water Management Plan should be sufficient at this time to mitigate rainfall events that would potentially impact the wetland area which is located behind the building and mitigate potential to downstream locations.

9.0 SOILS

Hydrologic Soil Group—Westchester County, New York



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
CrC	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	B	1.3	44.9%
LcB	Leicester loam, 3 to 8 percent slopes, stony	A/D	1.6	55.1%
Totals for Area of Interest			3.0	100.0%

Description

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

