

CRAIG PAEPRER  
*Chairman*

ANTHONY GIANNICO  
*Vice Chairman*

**BOARD MEMBERS**  
KIM KUGLER  
RAYMOND COTE  
ROBERT FRENKEL  
VICTORIA CAUSA  
JOHN NUCULOVIC

**TOWN OF CARMEL**  
**PLANNING BOARD**



60 McAlpin Avenue  
Mahopac, New York 10541  
Tel. (845) 628-1500 – Ext.190  
[www.ci.carmel.ny.us](http://www.ci.carmel.ny.us)

MICHAEL CARNAZZA  
*Director of Code  
Enforcement*

RICHARD FRANZETTI, P.E.  
*Town Engineer*

PATRICK CLEARY,  
AICP, CEP, PP, LEED AP  
*Town Planner*

**PLANNING BOARD AGENDA**  
**MAY 25, 2022 – 7:00 P.M.**

**TAX MAP #   PUB. HEARING   MAP DATE   COMMENTS**

**PUBLIC HEARING**

1. Demag & Ademi – 552 Route 6	75.12-2-1 & 2	5/25/22	5/2/22	Amended Site Plan
--------------------------------	---------------	---------	--------	-------------------

**SITE PLAN**

2. Dynamite Properties Corp. – 70 Gleneida Ave	44.14-1-39		5/6/22	Residential Site Plan
3. Willow Wood Country Club, Inc. – 551 Union Valley Road	87.7-1-6, 7 & 11		5/12/22	Amended Site Plan
4. Suez Water New York Inc – London Bridge Wells - 39 Brook Street	64.7-1-10		5/3/22	Site Plan
5. Suez Water New York Inc – Geymer Wells - 70 Geymer Drive	75.13-1-6		5/11/22	Site Plan
6. Suez Water New York Inc – Chateau Wells - 59 McNair Drive	75.20-1-16		4/27/22	Site Plan

**MISCELLANEOUS**

7. De Almeida, Hernane – 26 Glenvue Drive	55.5-1-18		5/16/22	Regrading Application
---	-----------	--	---------	-----------------------



April 15, 2022

Craig Paeprer, Chairman and Members of the Carmel Planning Board  
60 McAlpin Ave  
Mahopac, NY 10541

RE: Site Plan for Demag & Ademi  
552 Route 6  
TM#: 75.12-2-1 & 2

Dear Mr. Paeprer and the Members of the Carmel Planning Board,

The following is my response to the Building Inspector's memo dated 5/12/22:

1. We will abide by 39 as the maximum number of seats.

The following is my response to the Town Engineer's memo dated 5/5/22:

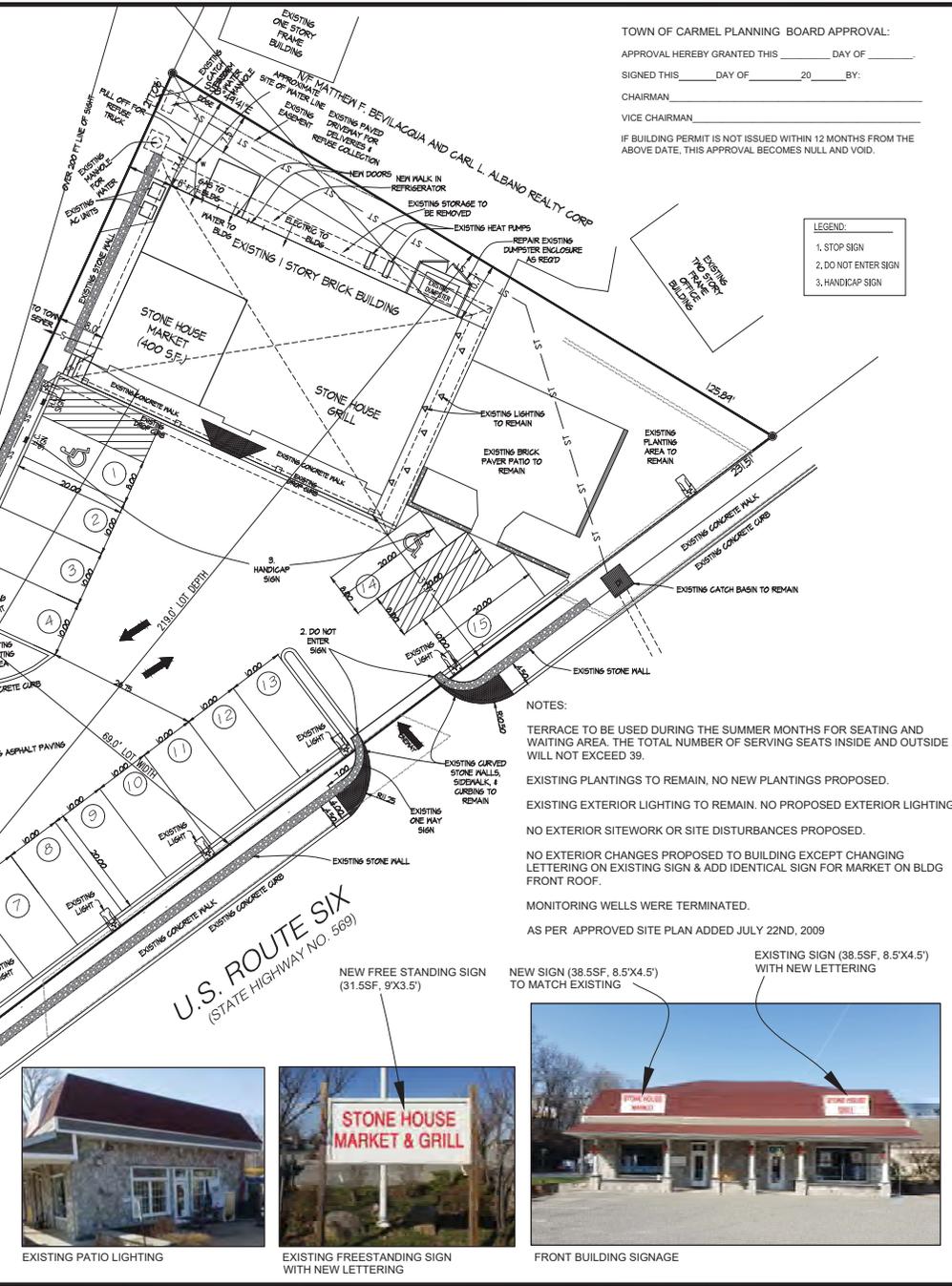
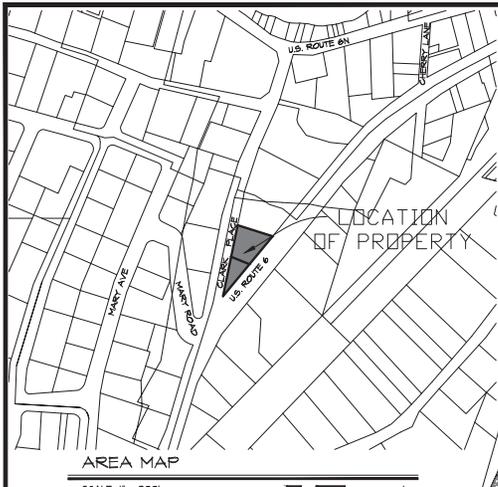
1. The Health Department has approved a maximum of 50 seats
2. We have not gotten any response from the fire department
3. The Health Department has approved the restaurant. See memo from Health Department which was submitted
4. The storm water easement, the easement with Mr. Albano, and the monitoring wells report will be submitted as soon as they are received. See attached memo
5. Signs and pavement markings are shown on the site plan
6. The water and waste water report are correct as submitted. The Putnam County Health Department has indicated that the design guidelines they use are the same as the 2014 NYSDEC Design Guidelines
7. The waterline has been relocated
8. The subsurface grease trap has been located
9. Except as noted above, there are no changes proposed for the site plan

Very truly yours,

A handwritten signature in black ink that reads "Joel Greenberg". The signature is fluid and cursive, with the first and last letters of the first and last names being capitalized and prominent.

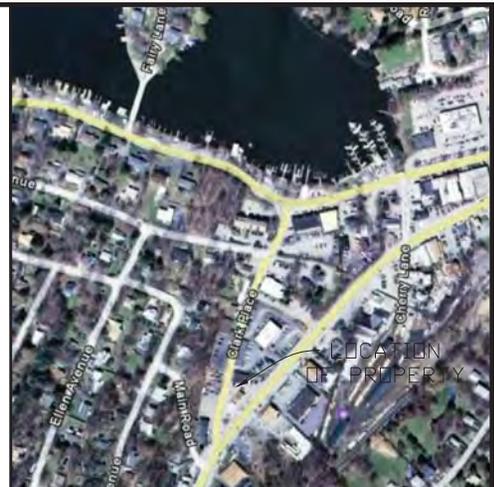
Joel Greenberg, AIA, NACRB





TOWN OF CARMEL PLANNING BOARD APPROVAL:  
 APPROVAL HEREBY GRANTED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_  
 SIGNED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_ 20\_\_\_\_ BY: \_\_\_\_\_  
 CHAIRMAN \_\_\_\_\_  
 VICE CHAIRMAN \_\_\_\_\_  
 IF BUILDING PERMIT IS NOT ISSUED WITHIN 12 MONTHS FROM THE ABOVE DATE, THIS APPROVAL BECOMES NULL AND VOID.

- LEGEND:
- 1. STOP SIGN
  - 2. DO NOT ENTER SIGN
  - 3. HANDICAP SIGN



SITE DATA NOTES:

- OWNER: LUPINACCI MAZZOLA HOLDING CORP  
552 ROUTE 6  
MAHOPAC, NY 10541
- OWNER ADDRESS: LUPINACCI MAZZOLA HOLDING CORP  
276 ROUTE 202  
SOMERS NY, 10589
- PROPOSED PROJECT USE: STONE HOUSE GRILL AND STONE HOUSE MARKET
- TAX MAP NO. SECTION 2, BLOCK 2, LOT 1 & 2
- WATER/SEWER: PUBLIC WATER/SEWER
- ZONING REQUIREMENTS

STRUCTURAL DESIGN LOADS:

- FLOOR LIVE LOAD: 40 pcf
- GROUND SNOW LOAD: 50 pcf
- BASIC WIND SPEED: 110 mph
- WIND EXPOSURE CATEGORY: C
- SEISMIC DESIGN CATEGORY: D1
- SEISMIC USE GROUP: I

ITEM	REQUIRED	PROVIDED OR EXISTING	VARIANCES GRANTED
GROSS SITE AREA (MIN)	40,000 SQFT	15,010 SQFT	24,990 SQFT VARIANCE
LOT DEPTH (MIN)	200 FT.	219.0 FT.	
LOT WIDTH (MIN)	200 FT.	69.0 FT.	131.0 FT VARIANCE
FRONT YARD EAST (MIN)	40 FT.	31.7 FT.	8.3 FT VARIANCE
FRONT YARD WEST (MIN)	40 FT.	8.0 FT.	32.0 FT VARIANCE
FRONT YARD SOUTH (MIN)	40 FT.	165.4 FT.	
REAR YARD NORTH (MIN)	30 FT.	10.7 FT.	19.3 FT VARIANCE
SIDE YARD (MIN)	25 FT.	NONE	
HEIGHT (MAX)	35 FT.	21.5 FT.	
FREE STANDING SIGN	8.0 FT.	12.0 FT	12.0 FT VARIANCE
FLOOR AREA OF BLDG	5,000 SQFT	1874.80 SQFT	3,125.20 FT VARIANCE
LOT COVERAGE	30%	12.75%	
PARKING	GRILLE 1 P.S. PER 3 SEATS MARKET 1 P.S. 1200 S.F.	39 SEATS / 3 13 2 HC PARKING SPACES PROVIDED	15 PARKING SPACES NEEDED 13 PARKING SPACES PROVIDED 2 TOTAL PARKING SPACES PROVIDED

ALL VARIANCES GRANTED BY THE ZBA ON 9/2/2008



2 MUSCOOT ROAD NORTH  
 MAHOPAC NY, 10541  
 P: 845-428-4613  
 F: 845-428-2807  
 WWW.AVLLC.COM

COMMERCIAL RENOVATION FOR:  
 DEMAG & ADEMI  
 PROJECT ADDRESS: 552 ROUTE 6  
 PROJECT NO: 1054  
 TAX MAP NO: 70305142

MIN. INC. ADDRESS:  
 JAMES COURT  
 BALDWIN PLACE, NY 10885

EXISTING SITE PLAN

DATE	DESCRIPTION
01/02/08	
01/02/08	
01/02/08	
01/02/08	
01/02/08	
01/02/08	
01/02/08	
01/02/08	
01/02/08	

SCALE: AS NOTED

DRAWN BY: [Signature]

PROJECT NO. 1054

IT IS A VIOLATION OF STATE LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED ARCHITECT, TO ALTER AN ITEM ON THESE PLANS AND DOCUMENTS IN ANY WAY. PER STATE LAW, IF AN ITEM BEARING THE SEAL OF AN ARCHITECT IS ALTERED, THE ALTERING ARCHITECT SHALL AFFIX TO HIS/HER ITEM THE SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS/HER SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION. THIS ARCHITECT DENIES ANY AND ALL RESPONSIBILITY FOR ALTERATIONS OF THESE PLANS AND DOCUMENTS BY OTHERS AND EXPRESSLY DENIES PERMISSION TO OTHERS TO ALTER THESE PLANS AND DOCUMENTS.

NOTES:

TERRACE TO BE USED DURING THE SUMMER MONTHS FOR SEATING AND WAITING AREA. THE TOTAL NUMBER OF SERVING SEATS INSIDE AND OUTSIDE WILL NOT EXCEED 39.

EXISTING PLANTINGS TO REMAIN. NO NEW PLANTINGS PROPOSED.

EXISTING EXTERIOR LIGHTING TO REMAIN. NO PROPOSED EXTERIOR LIGHTING.

NO EXTERIOR SITEWORK OR SITE DISTURBANCES PROPOSED.

NO EXTERIOR CHANGES PROPOSED TO BUILDING EXCEPT CHANGING LETTERING ON EXISTING SIGN & ADD IDENTICAL SIGN FOR MARKET ON BLDG FRONT ROOF.

MONITORING WELLS WERE TERMINATED.

AS PER APPROVED SITE PLAN ADDED JULY 22ND, 2009



BASED ON SURVEY BY:  
 DAVID ODELL P.L.S.  
 LAND SURVEYING COMPANY  
 12 COLLIER DRIVE EAST  
 CARMEL NY, 10512

DATED MARCH 13, 2008

NY STATE TAKINGS REFER TO 1200 P.S. 849

EXISTING SITE PLAN  
 (NO CHANGES PROPOSED)  
 SCALE: 1" = 10'

THE ARCHITECT OR ENGINEER HAS CONDUCTED A VISUAL ANALYSIS OF THE PROPOSED PROJECT AND HAS DETERMINED THAT THE PROJECT IS VISUALLY COMPATIBLE WITH THE SURROUNDING ENVIRONMENT AND DOES NOT CONFLICT WITH ANY HISTORIC OR ARCHITECTURAL RESOURCES. THE ARCHITECT OR ENGINEER HAS CONDUCTED A VISUAL ANALYSIS OF THE PROPOSED PROJECT AND HAS DETERMINED THAT THE PROJECT IS VISUALLY COMPATIBLE WITH THE SURROUNDING ENVIRONMENT AND DOES NOT CONFLICT WITH ANY HISTORIC OR ARCHITECTURAL RESOURCES.

S-1





May 10, 2022

Mr. Craig Paepfer, Chairman  
Town of Carmel Planning Board  
60 McAlpin Avenue  
Mahopac, NY 10541

Re: Dynamite Properties  
70 Gleneida Avenue  
T.M. 44.14-1-39

Dear Chairman Paepfer and Members of the Board,

In response to the Code Enforcement Officer comments we have prepared the following:

1. Existing floor plans for first, second and attic floors.
2. Noted on the plan that the 10' x 16' wooden shed will be removed. It presently contains the oil tank for the building and the owners will be switching to electric heat when they renovate the building.
3. The zoning chart has been revised to reflect the code requirements, existing conditions and proposed.
4. We have added a location in the rear yard for a garbage can to be kept. Existing commercial neighbors contract with private carters and bring cans out to the curb for pickup.
5. The applicants acknowledge the comment regarding sprinklers and will discuss this with the Building Department prior to submitting building plans.
6. The applicants acknowledge the off street parking and loading requirements as set forth in 156-42.7 (a, b and c).

Sincerely,

PUTNAM ENGINEERING, PLLC

A handwritten signature in black ink, appearing to read 'P. Lynch', is written over a horizontal line.

Paul M. Lynch  
PML/rmm

L2064



**WATER AND WASTEWATER**

**REPORT**

**PREPARED FOR**

**DYNAMITE PROPERTIES, INC.**

**70 GLENEIDA AVENUE**

**HAMLET OF CARMEL**

**T.M. 44.14-1-39**



**May 2022**

R1913

This is an existing two (2) story commercial building located in the Hamlet of Carmel. The property is in the commercial zone with office as its principal use. The building has 1,830 s.f. of total floor area with 957.34 s.f. on the first floor.

Water and Sewer Demand:

Existing

From N.Y.S.D.E.C. Design Standards for Intermediate Size Wastewater Treatment Systems  
Design Flow is 15 gallons per employee.

1,830 s.f. = 9.15 employees, say 9 total  
200 s.f./employee

Total Use =

$9 \times 15 \text{ gal/person} = 135 \text{ gal/day}$

Proposed

First Floor Office

957.34 s.f. = 4.78 employees, say 5 total  
200 s.f. employee

$5 \times 15 \text{ gal/employee} = 75 \text{ gal/day}$

Second Floor Apartment

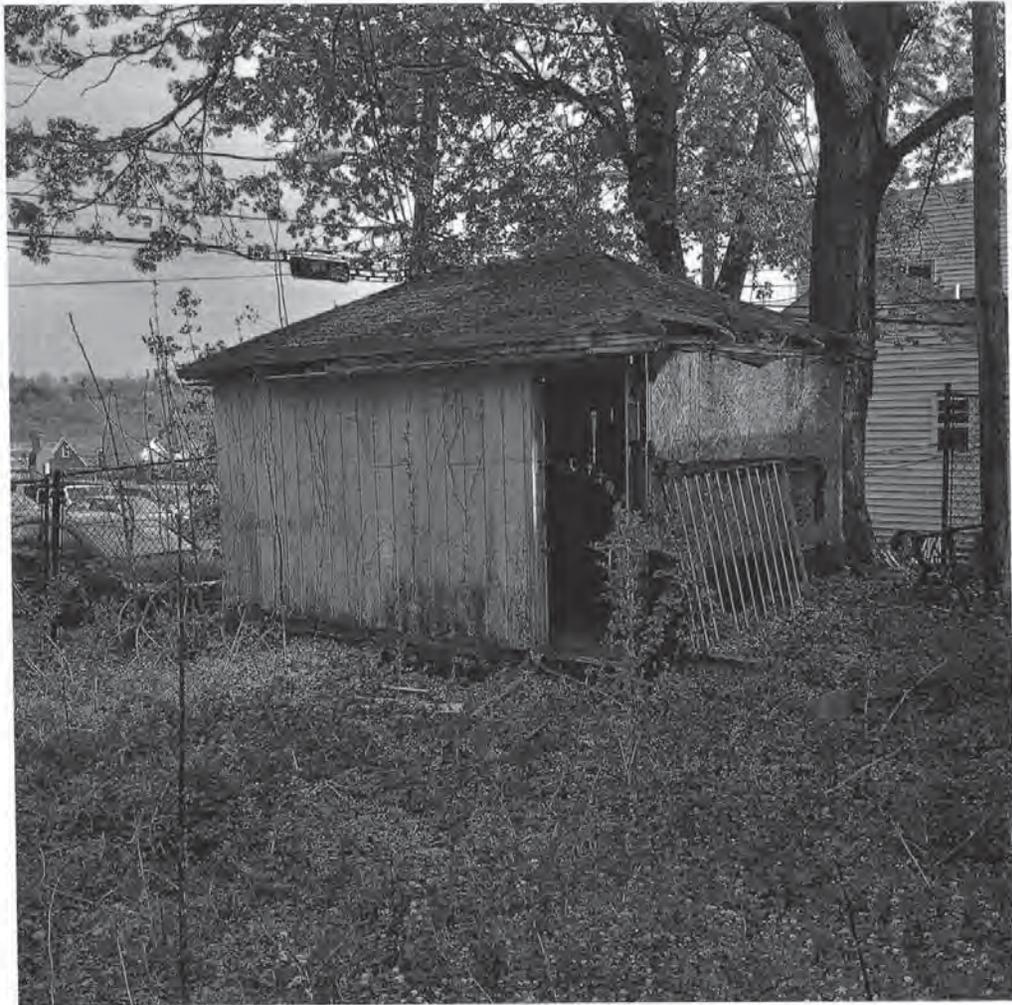
Two total bedrooms @ 110 gal/bedroom = 220 gal/day

Total Use =

$75 \text{ gallons} + 220 \text{ gallons} = 295 \text{ gal/day}$

Increase in daily flow is:

$295 \text{ gal} - 135 \text{ gal} = 160 \text{ gal/day}$







**© COPYRIGHT 2021** The drawing is the property of Steven Graphic Architects, PLLC. It is subject to copyright laws and shall not be used or copied without express written permission.

It is a violation of the New York State Education Law for any person, unless acting under the direction of a licensed Architect, to offer an item on the drawing in any way if any part of the drawing, or drawing, is not shown to the State Education Department. The drawing shall be used only as shown and shall not be used for any other purpose without the signature and the date of each preparation, and a qualified description of the alteration.

STEVEN A. GRAYBIC  
NYS LIC. NO. 082299

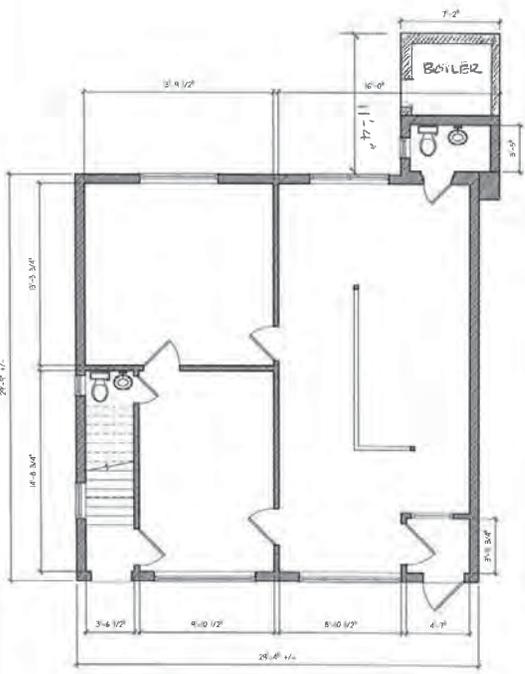
NO.	DATE	REVISION

PROJECT NAME:  
**RT. 52  
FLOOR PLAN**

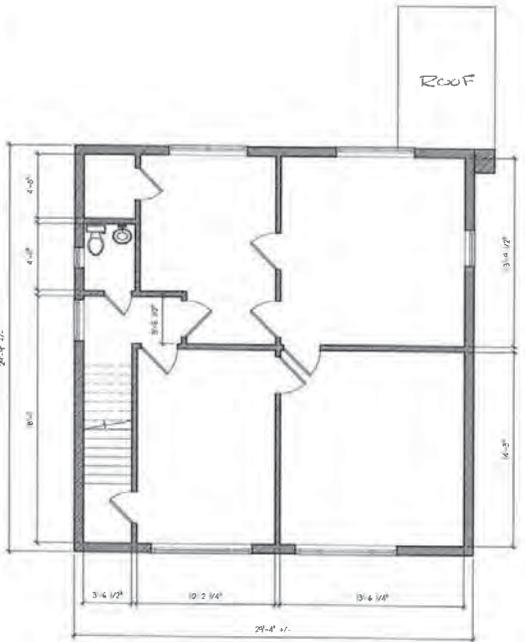
BUILDING ADDRESS:  
RT. 52  
CARMEL, NY 12512  
PROJECT NUMBER

DRAWING TITLE:  
**EXISTING  
FLOOR PLAN S**

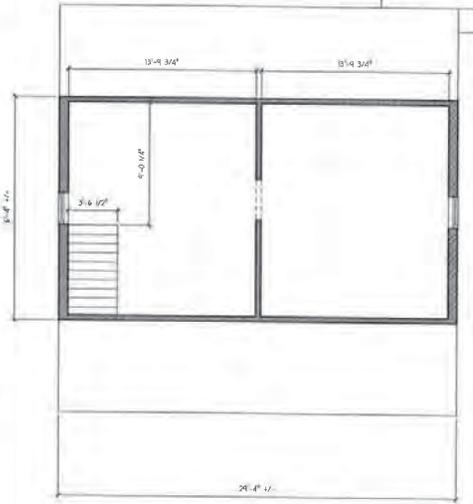
DRAWN BY: SG	<b>A-1</b>
SCALE: AS NOTED	
DATE: 4/16/21	



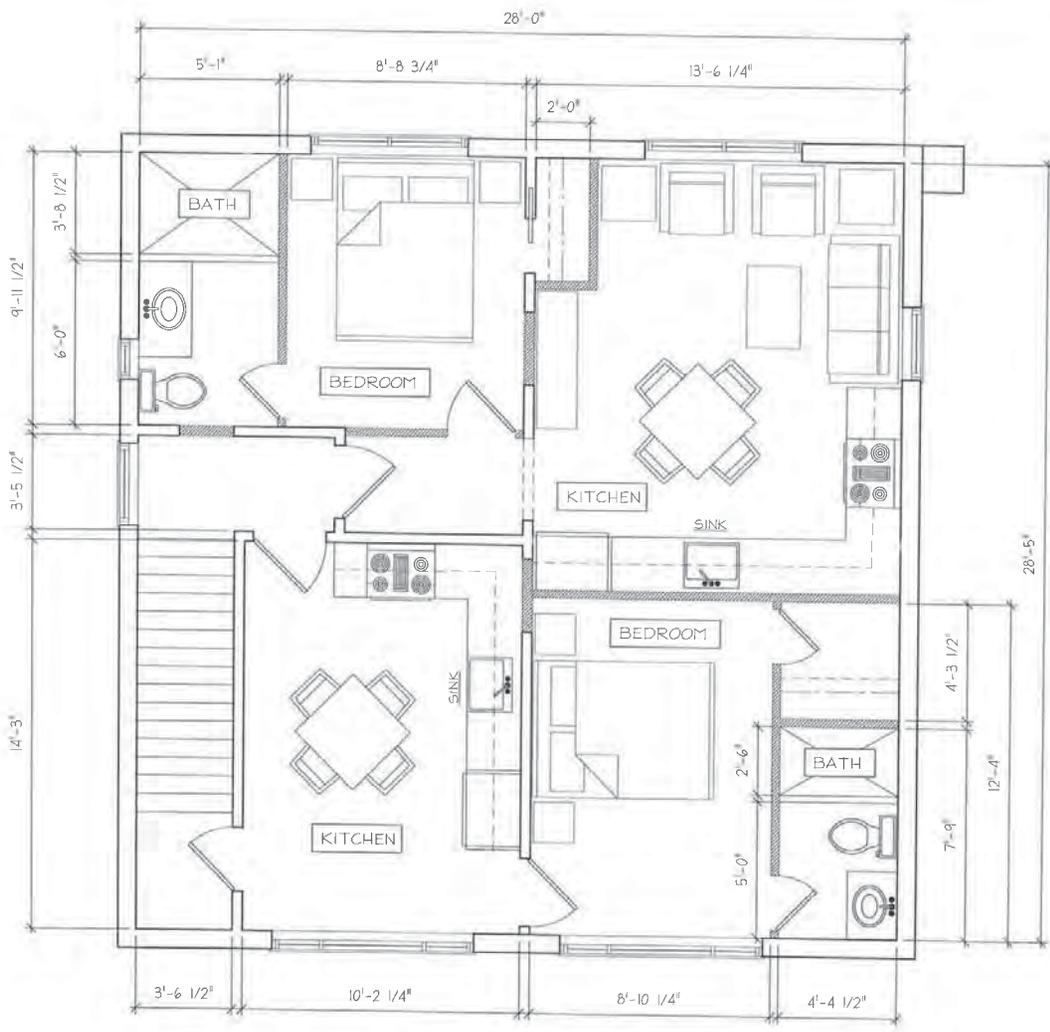
**1 FIRST FLOOR PLAN**  
1/4" = 1'-0"  
957.34 S.F.



**2 SECOND FLOOR PLAN**  
1/4" = 1'-0"  
872.66 S.F.



**3 ATTIC FLOOR PLAN**  
1/4" = 1'-0"



2 SECOND FLOOR PLAN  
1/2" = 1'-0"



© COPYRIGHT 2001. This drawing is the property of Steven Grgec Architect, P.C. It is to be used for the project only and may not be used or copied without written permission.

It is a violation of the New York State Education Law for any person, unless acting under the direction of a licensed architect, to alter or base on this drawing in any way. If any person does so, the architect, and not the architect, shall be held liable for any damages or losses resulting therefrom, and the architect shall not be held liable for any such damages or losses.

STEVEN A. GRGEC  
NYS E.C. NO. 085207

NO.	DATE	REVISION

PROJECT NAME:  
**RT. 52  
FLOOR PLAN**

BUILDING ADDRESS:  
RT. 52  
CARMEL, NY 12512  
PROJECT NUMBER

DRAWING TITLE:  
**EXISTING  
FLOOR PLAN S**

DRAWN BY: SG	<b>A-1</b>
SCALE: AS NOTED	
DATE: 5/4/21	

**PROPERTIES WITHIN 500':**

4413-2-1	ORSEY'S WLN. INC.	1280 PEEDSKILL HOLLOW RD	CARMEI, NY 10512
4413-2-2	19 FOWER AVENUE, LLC	c/o BRIAN SENNO, 28 WALNUT ST	CARMEI, NY 10564
4413-2-3	ME & RO PROPERTIES, LLC	c/o RICHARD T. CAPRA, 3007 FARMWALK RD	YORKTOWN HEIGHTS, NY 10598
4413-2-4	L. SHIKAT, ALIA MADKAY, LLOYD MADKAY, AND TAMAR MADKAY	808 WEST END AVE APT 1001	NEW YORK, NY 10025
4413-2-5	LIBA AND RODOLFO QUEDADA	25 FOWER AVE	CARMEI, NY 10512
4413-2-6	AUGUSTINE AND CRESCENT SACHETTI	10 BELLA RD	CARMEI, NY 10512
4413-2-7	MARLON RAMOSAN	1870 HAWOOD ST APT 2R	ROSEWOOD, NY 11855
4413-2-8	RICHARD CARRASCO	10 RIDGE RD	CARMEI, NY 10512
4413-2-9	HERNANDEZ & FERNANDEZ	FAMILY TRUST, 6 RIDGE RD	CARMEI, NY 10512
4414-1-1	INSPIRING INC.	67 GLENEDA AVE	CARMEI, NY 10512
4414-1-2	89 GLENEDA AVENUE LLC	12 COLONIAL RIDGE CT	BREWSTER, NY 10509
4414-1-3	ESSEXVILLE ENTERPRISES LLC	2401 S. CHRISTIAN HWY PMB 16	NASSI HEAD, NC 27959
4414-1-4	HANSEN OFFICE SOLUTIONS, INC.	393 NICHOLS RD	CARMEI, NY 10512
4414-1-5	WAYNE RIDER	P.O. BOX 10	CARMEI, NY 10512
4414-1-6	CARMEI BOARD OF FIRE COMMISSION	P.O. BOX 1238	CARMEI, NY 10512
4414-1-7	MT. CARMEI BAPTIST CHURCH	P.O. BOX 536	CARMEI, NY 10512
4414-1-9	JAMES WISE	38 FOWER AVE	CARMEI, NY 10512
4414-1-10	LOWMEYER REALTY CORP.	336 LOWMEYER TER	YONKER, NY 10710
4414-1-11	ROBERT HALL AND EDWARD BONDI	802 307	BEDFORD, NY 10506
4414-1-12	PETER AND MARY FELLBAUGH	99 CHERRY LN	STORVILLAGE, NY 12582
4414-1-13	ROBERT H. HALL AND EDWARD G. BONDI	P.O. BOX 307 HOOKERY LA	BEDFORD, NY 10506
4414-1-14	SAV CONSULTOR INC.	56 GLENEDA AVE	CARMEI, NY 10512
4414-1-15	DAVID AND CYNTHIA RADOGICH	56 GLENEDA AVE	CARMEI, NY 10512
4414-1-16	SUE ANN AND BRIAN SIMPSON	2 SUNSET RDG	CARMEI, NY 10512
4414-1-17	89 GLENEDA AVENUE LLC	12 COLONIAL RIDGE CT	BREWSTER, NY 10509
4414-1-34	KILLEY CEMETERY INC.	RTE 52	CARMEI, NY 10512
4414-1-35	MT. CARMEI BAPTIST CHURCH	P.O. BOX 536	CARMEI, NY 10512
4414-1-36	MT. CARMEI BAPTIST CHURCH	700-1102 P.O. BOX 536	CARMEI, NY 10512
4414-1-37	MT. CARMEI BAPTIST SOCIETY	70-1102 P.O. BOX 536	CARMEI, NY 10512
4414-1-38	IVANE AND LAURA COHEN	72 GLENEDA AVE	CARMEI, NY 10512
4414-1-40	RFB CORP.	P.O. BOX 59	CARMEI, NY 10512
4414-1-41	GIUSEPPE IUVENO JR.	60 CLEARVIEW CIR	HOPKELL CT, NY 12533
4414-1-42	LZU, LLC	14 GLENVA DR	CARMEI, NY 10512
4414-1-43	WENCO PROPERTIES CORP	P.O. BOX 540	MANHATTAN, NY 10541
4414-1-44	MT. CARMEI BAPTIST CHURCH	P.O. BOX 536	CARMEI, NY 10512
4414-1-45	WENCO PROPERTIES CORP	P.O. BOX 540	MANHATTAN, NY 10541
4414-1-46	17 FAIR ST, LLC	17 FAIR ST	CARMEI, NY 10512
4414-1-47	RANIC ENTERPRISES CORP	19 FAIR ST	CARMEI, NY 10512
4414-1-48	UNITED STATES POSTAL SERVICE	28 FAIR ST	CARMEI, NY 10512
4414-1-43	FRANKLIN G. AND EDITH E. WILES	4 RIDGE RD	CARMEI, NY 10512
4414-1-46	PETER JR. AND JANET E. INTERER	5 FOWER AVE	CARMEI, NY 10512
4414-1-47	SPEICHER D. SCHATZMAN AND SARANTOULA PAPPAK	7 HILLVIEW CT	CORTLAND MANOR, NY 10567
4414-1-48	JAMES A. WISE	11 FOWER AVE	CARMEI, NY 10512
4414-1-49	STEPHEN DILL	13 FOWER AVE	CARMEI, NY 10512
4418-1-1	FISHER THOMAS INC	10 FOWER AVE	CARMEI, NY 10512
4418-1-2	PUTNAM COUNTY NATIONAL BANK	43 GLENEDA AVE	CARMEI, NY 10512
4418-1-3	PUTNAM COUNTY NATIONAL BANK	43 GLENEDA AVE	CARMEI, NY 10512
4418-1-4	BANK OF CARMEI/PUTNAM CITY NATL	43 GLENEDA AVE	CARMEI, NY 10512
4418-1-5	PUTNAM COUNTY NATIONAL BANK	47 GLENEDA AVE	CARMEI, NY 10512
4418-1-6	GLENEDA 51, INC.	51 GLENEDA AVE	CARMEI, NY 10512
4418-1-7	HENRY P. JR. AND J.D. SIMPSON	2 SUNSET RDG	CARMEI, NY 10512
4418-1-8	57 MAIN STREET CORP	55 GLENEDA AVE	CARMEI, NY 10512
4418-1-9	57 MAIN STREET CORP	67 GLENEDA AVE	CARMEI, NY 10512
4418-1-11	83 GLENEDA, LLC	83 GLENEDA AVE	CARMEI, NY 10512
4418-1-14	NAC PROPERTIES, INC.	9 FAIR ST	CARMEI, NY 10512
4418-1-15	FAIR PROPERTY MGMT, LLC	16 FAIR ST	CARMEI, NY 10512
4418-1-16	NEW FAIR STREET LLC	16 CORNISH RD	CARMEI, NY 10512
4418-1-17	COUNTY OF PUTNAM	40 GLENEDA AVE	CARMEI, NY 10512
4418-1-18	FAIR STREET PROPERTIES	14 FAIR ST	CARMEI, NY 10512
4418-1-19	12 FAIR ST. CORP	827 FOX MEADOW RD	YORKTOWN HEIGHTS, NY 10598
4418-1-20	6314 ASSOCIATES INC.	10 FAIR ST	CARMEI, NY 10512
4418-1-21	PUTNAM PROPERTY GROUP LLC	105 ROUTE 6	MANHATTAN, NY 10541
4418-1-22	COUNTY OF PUTNAM	40 GLENEDA AVE	CARMEI, NY 10512
4418-1-23	PUTNAM COUNTY NATIONAL BANK	43 GLENEDA AVE	CARMEI, NY 10512
4418-1-24	COUNTY OF PUTNAM	40 GLENEDA AVE	CARMEI, NY 10512
4418-1-25	COUNTY OF PUTNAM	40 GLENEDA AVE	CARMEI, NY 10512
4418-1-26	CARMEI CENTRAL SCHOOL DISTRICT	P.O. BOX 296	PATTERSON, NY 12563

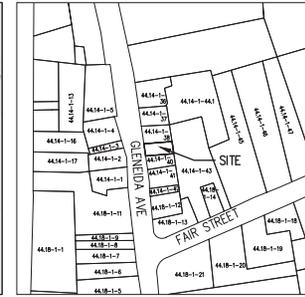


FRONT ELEVATION

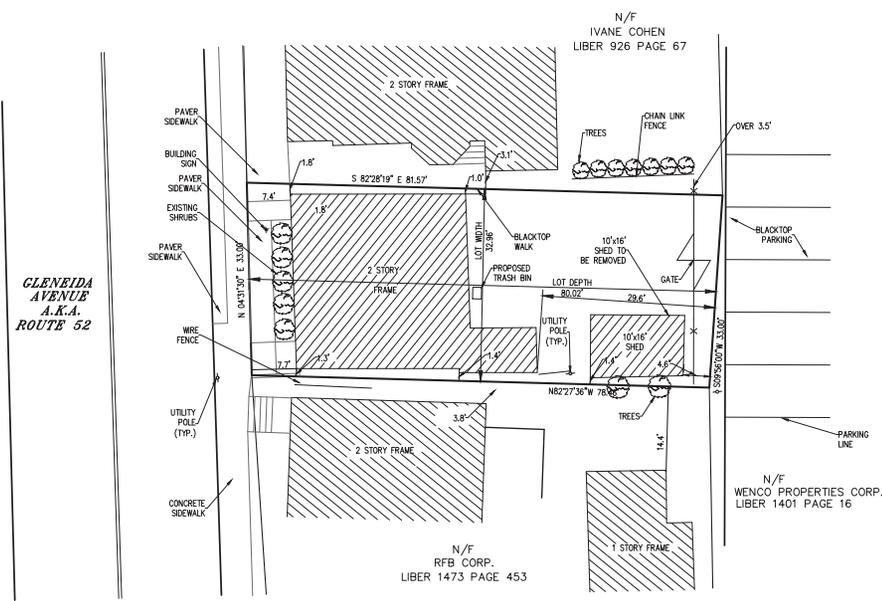
REAR ELEVATION



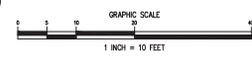
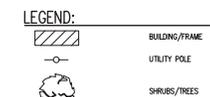
LOCATION MAP  
SCALE: 1" = 100'



AREA MAP  
SCALE: 1" = 300'



EXISTING CONDITIONS PLAN



**SCHEDULE of DISTRICT REGULATIONS:**

C-COMMERICAL	REQUIRED	EXISTING	PROPOSED
MIN. LOT AREA S.F.*	40,000 S.F.	2,640 S.F.	2,640 S.F.
MIN. LOT WIDTH FEET*	200 FEET	32.86 FEET	32.96 FEET
MIN. LOT DEPTH FEET	200 FEET	80.02	80.02
MINIMUM YARDS-PRINCIPAL FRONT FEET*	40'	7.4'	7.4'
SIDE FEET (NORTH)*	25'	1.0'	1.0'
SIDE FEET (SOUTH)*	25'	1.3'	1.3'
REAR FEET*	30'	4.6'	29.6'
MINIMUM YARDS-ACCESSORY BLD'G FRONT FEET	-	-	-
SIDE FEET	-	-	-
REAR FEET	-	-	-
MAXIMUM PERMITTED HEIGHT FEET	35'	<35'	<35'
MINIMUM REQUIRED FLOOR AREA OF BUILDING S.F.*	5,000 S.F.	1,990 S.F.	1,830 S.F.
MAXIMUM PERMITTED COVERAGE OF LOT-PERCENT*	30%	43.37%	37.68%

\*VARIANCE REQUIRED  
LOT COVERAGE AREA=1154.70 S.F. (W/ SHED)  
LOT COVERAGE AREA=994.70 S.F. (W/OUT SHED)

SEC 156-42  
**PARKING CALCULATION FOR:**

EXISTING OFFICE/RETAIL  
1ST FLOOR = 98734 S.F.  
2ND FLOOR APARTMENT = 2

RETAIL/OFFICE  
98234 S.F. = 4.78 OR 5 SPACES

2 APARTMENTS REQUIRE 2 SPACES EACH  
2 UNITS X 2 SPACE = 4 SPACES  
TOTAL PARKING REQUIRED = 9 SPACES  
TOTAL SPACES PROVIDED = 9 SPACES  
LOADING SPACES = 0 SPACES  
TOTAL LOADING REQUIRED = 1 SPACE  
TOTAL LOADING SPACE PROVIDED = 0 SPACE  
VARIANCE REQUIRED = 1 SPACE

**PLAN NOTES:**

- OWNER/APPLICANT: DYNAMITE PROPERTIES CORP. 56 PAPANIA DRIVE, MANHATTAN, NY 10541
- BOUNDARY AND SITE INFORMATION TAKEN FROM A SURVEY PREPARED BY ROBERT V. OSWALD P.L.S. LAND SURVEYING COMPANY DATED SEPTEMBER 30, 2019.
- PROPERTY IS LOCATED IN THE WEST BRANCH RESERVOIR BASIN.
- THE SUBJECT PROPERTY IS NOT LOCATED WITHIN A 100 YEAR FLOOD ZONE AS SHOWN ON FLOOD INSURANCE RATE MAP NUMBER 3607902014E, DATED 3/4/2013.
- DATE: 11 FEB 2022  
LOT AREA = 2640 S.F. (0.06 ac)  
TAX MAP 4414-1-39  
C-COMMERICAL ZONE
- ALL UTILITIES ARE ABOVE GRADE. TRASH WILL CONTINUE TO BE PICKED UP.
- SEWER SERVICE PROVIDED BY CARMEI SEWER DISTRICT #2
- WATER SERVICE PROVIDED BY CARMEI WATER DISTRICT #2
- DESCRIPTION OF USE:  
1ST FLOOR: OFFICE/RETAIL  
2ND FLOOR: 2 PROPOSED APARTMENTS\* WHICH REQUIRES A VARIANCE
- THERE IS ONE SIGN IN FRONT OF THE BUILDING.

**CARMEI PLANNING BOARD APPROVAL**

APPROVAL HEREBY GRANTED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_ 20\_\_\_\_ IF BUILDING PERMIT IS NOT ISSUED WITHIN 12 MONTHS FROM THE ABOVE DATE, THIS APPROVAL BECOMES NULL AND VOID.

TOWN OF CARMEI PLANNING BOARD  
SIGNED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_ BY \_\_\_\_\_  
CHAIRMAN \_\_\_\_\_

**PUTNAM ENGINEERING PLLC**  
ENGINEERS - ARCHITECTS

4 OLD ROUTE 6, BREWSTER, NEW YORK 10509  
(845) 279-6789 FAX (845) 279-6769  
PUTNAM ENGINEERING PLLC 2022

PURSUANT TO NEW YORK STATE EDUCATION LAW, ARTICLE 145, SECTION 7200 SUBDIVISION 2, "IT IS A VIOLATION OF THIS LAW FOR ANY PERSON UNLESS HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER AN ITEM IN ANY WAY, IF AN ITEM BEARING THE SEAL OF AN ENGINEER IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO THE ITEM HIS SEAL, AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION."

REVISIONS	NO.	DATE	DESCRIPTION
1	06 MAY 2022	PER TOWN COMMENTS	

APPLICANT: PLAN PREPARED FOR:  
DYNAMITE PROPERTIES CORP.

LOCATION: 70 GLENEDA AVE, CARMEI, N.Y. 10512  
TOWN OF CARMEI  
PUTNAM COUNTY, NEW YORK  
TAX MAP 4414, BLOCK 1, LOT 39

DATE: 11 FEB 2022  
PROJECT MANAGER: [Signature]  
DRAWN BY: [Signature]  
CHECKED BY: [Signature]  
SCALE: AS NOTED

**SITE PLAN EXISTING CONDITIONS**

SHEET 1 OF 1



May 13, 2022

Town of Carmel Planning Board  
60 McAlpin Avenue  
Mahopac, New York 10541

RE: Willow Wood Country Club, Inc.  
Amended Site Plan  
Union Valley Road  
Tax Map No. 87.7-1-6, 7 & 11

Dear Chairman Paepre and Members of the Board:

Please find enclosed five (5) copies of the following plans and documents in support of an application for Amended Site Plan Approval for the above referenced project:

- Site Plan Drawings (5 sheets total), last revised May 12, 2022.
- Stormwater Pollution Prevention Plan dated May 11, 2022.
- Draft Notice of Intern (NOI) and MS4 SWPPP Acceptance Form.
- Noise Study Report by Erich Thalheimer dated April 26, 2022.

With respect to the comments offered by the Building Inspector, Consulting Town Planner and Town Engineer, we offer the following:

**Memorandum from Michael G. Carnazza, Director of Code Enforcement, dated March 21, 2022:**

- Enclosed in this submission is a copy of the *Willow Wood Gun Club Community Noise Study* provided by Erich Thalheimer, INCE Board Certified Acoustical Engineer. The Noise Study demonstrates that with the addition of noise barriers throughout the site and rotation/relocation of Stations 6, 8, and 9, the Willow Wood Country Club will be in conformance with the Town of Carmel Noise Ordinance. In order to comply with the noise ordinance, sound barriers have been proposed at Stations 4, 12, 13, and 14. These changes are shown on the enclosed drawings.
- The existing sound barriers at the trap field are currently being reconstructed and will be constructed in accordance with the original approved site plan.

**Memorandum from Patrick Cleary, AICP, CEP, PP, LEEP AP, Town Planner dated March 23, 2022:**

- Each station is constructed of a 2' x 4' frame and cage. While it is possible for multiple people to pick up and move a station, that is not done as the direction of the field office associated with each station is established for safety and cannot be changed. As such, it is the intent of the Club to maintain the orientations and locations of the stations as shown on the approved site plan.
- As previously noted, sound barriers are provided at Stations 4, 12, 13, and 14. These sound barriers have been modeled in the enclosed Willow Wood Community Noise Study. This Noise Study demonstrates that the Club will conform with the Town of Carmel Noise Ordinance. A detail for the noise barrier will be provided in a subsequent submission.

---

3 Garrett Place, Carmel, New York 10512 (845) 225-9690 Fax (845) 225-9717  
[www.insite-eng.com](http://www.insite-eng.com)

- Based on the results of the Noise Study, additional sound barriers as well as other modifications have been made to the proposed sporting clay course. Noise barriers are provided on Stations 4, 12, 13, and 14. In addition, orientation of Stations 6 and 8 have been shifted to utilize the acoustics of the existing hillside. Last, Station 9 has been relocated based on the noise model to utilize the existing surrounding acoustics.
- As requested, the Club's Noise Consultant has prepared the Noise Study and a copy of the study is attached herewith.
- The Noise Study enclosed with this submission demonstrates compliance with the Town of Carmel's Noise Ordinance (Chapter 104) and an explanation of how the modeling and the standards used in the modeling are included in the Noise Study.

**Memorandum from Richard J. Franzetti P.E., Town Engineer dated March 18, 2022:**

I. General Comments:

1. Permits

With respect to the permits cited, we offer the following:

- a. It is not believed a permit is needed from the Town of Carmel Environmental Conservation Board (ECB) as there is no proposed activity associated with the sporting clay course within 100' of the onsite wetland. The only portion of the site associated with the sporting clay course within the 100' buffer area is the end of an existing trail.
  - b. It is acknowledged that coverage under NYSDEC General Permit for Stormwater Discharges from Construction Activities, GP-0-20-001 is required as the project is disturbing more than 5,000 square feet but less than 1 acre. As such, all that is required is an erosion control plan. However, based on Town's policy, a Stormwater Pollution Prevention Plan (SWPPP) has been provided which provides swale sizing calculations as well as the provision of several rain gardens throughout the property.
2. A Stormwater Maintenance Agreement has been included as Appendix D in the SWPPP for Town's review and comment.
  3. It is acknowledged that a Performance Bond and associated engineering fee must be provided prior to beginning construction. As the project proceeds through the process, we will provide the necessary Opinion of Probable Cost to establish the bond and fee amounts.

II. Preliminary Detailed Comments:

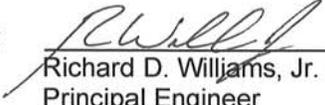
- i. As requested, notes have been added to the drawing requiring that all plantings are to be verified by the Town of Carmel Wetland Inspector. See Planting Notes on Drawing SP-1.
- ii. As requested, notes have been added to the drawings that all plantings shall be installed per Section 142 of the Town of Carmel Town Code. See Planting Notes on Drawing SP-1.
- iii. Rain Garden calculations have been provided in the project SWPPP enclosed herewith. See Appendix B of the SWPPP.
- iv. As acknowledged at the previous Planning Board meeting, the wetland limits are shown on the drawing as requested.

We trust you will find the enclosed information in order and respectfully request this item be placed on your May 25, 2022 Planning Board agenda.

Should you have any questions or comments regarding this information, please feel free to contact our office.

Very truly yours,

INSITE ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

By:   
Richard D. Williams, Jr. P.E.  
Principal Engineer

RDW/jwm/amk

Enclosure(s)

cc: George J. Calcagnini

Insite File No. 18173.100

**ERICH THALHEIMER**  
**INCE BOARD CERTIFIED ACOUSTICAL ENGINEER**  
**27 PETERSON ROAD, NATICK, MA 01760**  
**PHONE: (508) 651-9772, FAX: (508) 315-3510**  
**E-MAIL: [THALHEIMER@RCN.COM](mailto:THALHEIMER@RCN.COM)**  
**WEBSITE: [WWW.ERICHTHALHEIMER.COM](http://WWW.ERICHTHALHEIMER.COM)**

George J. Calcagnini  
Attorney at Law  
376 Route 202  
Somers, NY 10589

26 April 2022

**RE: *Willow Wood Gun Club Community Noise Study***

Dear Mr. Calcagnini,

We have completed our community noise assessment involving the Willow Wood Gun Club in Mahopac, New York, to evaluate the existing and proposed noise levels (with the 14 position sporting clays circuit) at the club as they relate to Chapter 104 of the Town of Carmel Town Code. The club's intent is to expand to include a 14 position sporting clays circuit in addition to their current four trap fields and one 5-stand field. The study's goals were to (1) quantify the existing shooting noise levels propagating from the club to the surrounding community, (2) use the existing noise level results to determine compliance with applicable noise codes, and (3) to describe reasonable and feasible mitigation options that could be implemented to mitigate noise from shooting activities, if needed, particularly with respect to the neighbors to the north of the club.

As the attorney for the Willow Wood Club, you have advised us that the applicable regulations governing this application are set forth in New York State General Business Law Section 150 (GBL §150) which specifically exempts existing gun ranges, such as the Willow Wood Club, from local noise control ordinances. The standard set by GBL §150 is that the A-weighted sound level of small arms fire at the shooting range shall not exceed 90 dBA for one hour out of a day or 85 dBA for eight hours out of a day, as measured at, or adjusted to, a distance of 100 feet outside the real property boundary of the shooting range – *to which the club will easily comply*. You have further advised that even though the state statute has preempted regulation by the Town of Carmel Noise Ordinance, you would like us to test for compliance with that noise ordinance and, if feasible, implement mitigation measures to comply with it to the extent reasonably feasible. As applied to the Willow Wood Club, the Carmel Noise Ordinance would limit noise to 60 dBA at community receptor locations; which is certainly more restrictive than GBL §150's noise limits.

The noise study involved our (1) reviewing the case history and previous acoustical studies performed for the club, (2) performing ambient noise measurements for several days in the surrounding community, (3) performing a series of controlled noise measurement tests involving the shooting of shotguns at seven test firing positions, (4) reducing the noise measurement data to identify trends and to calibrate our noise prediction model, (5) developing a computer model using Cadna-A to simulate shooting noise levels emanating from the club during various times of year, (6) evaluating the results against the club's voluntary noise limits taking into account the Carmel Noise Ordinance, and (7) describing options that could be considered to reduce the shooting noise levels in the community.

In brief summary, we found that shooting noise from the proposed sporting clays positions fully complies with the governing state statute GBL §150, but could exceed the Carmel Noise Ordinance limits at two nearby residential properties. Consequently, noise mitigation measures were developed in this report for your consideration for implementation. Noise mitigation measures include building or enhancing small noise barriers behind two clays stations, relocating two clays stations, and rotating four clays stations to direct their noise in a less offensive direction. With the noise mitigation measures in place, full compliance with your self-imposed community noise limit, and Chapter 104 of the Town of Carmel Town Code can be demonstrated at all receiving properties.

A complete description of our study's technical approach, noise measurement data, noise model simulation, findings and recommendations is attached. Feel free to contact me with any questions.

***Professional Certification:***

*I hereby certify that this plan, specification, or report was prepared or reviewed by me and that I am a duly certified acoustical professional as recognized by the Institute for Noise Control Engineering (INCE).*



**Erich Thalheimer**  
**INCE Board Certified No. 20104**

## ***Project Overview***

The Willow Wood Club, located in Mahopac, New York, is a private shooting club that has been in existence since 1955. The club, as shown in **Photos 1 and 2**, is currently comprised of four trap fields and one 5-stand field, however the intent is to expand the club to include a 14-station sporting clays circuit. Shotguns are the only firearms currently used at the club, with the majority being 12 gauge in caliber. Hours of year-round operation are currently Thursday, Friday, Saturday and Sunday, 10 AM – 5 PM (6 PM during DST). The club is currently closed on Mondays, Tuesdays and Wednesdays. Those days of operation have been in effect for many years.

**Photo 1. Trap Fields**



**Photo 2. 5-Stand Field**



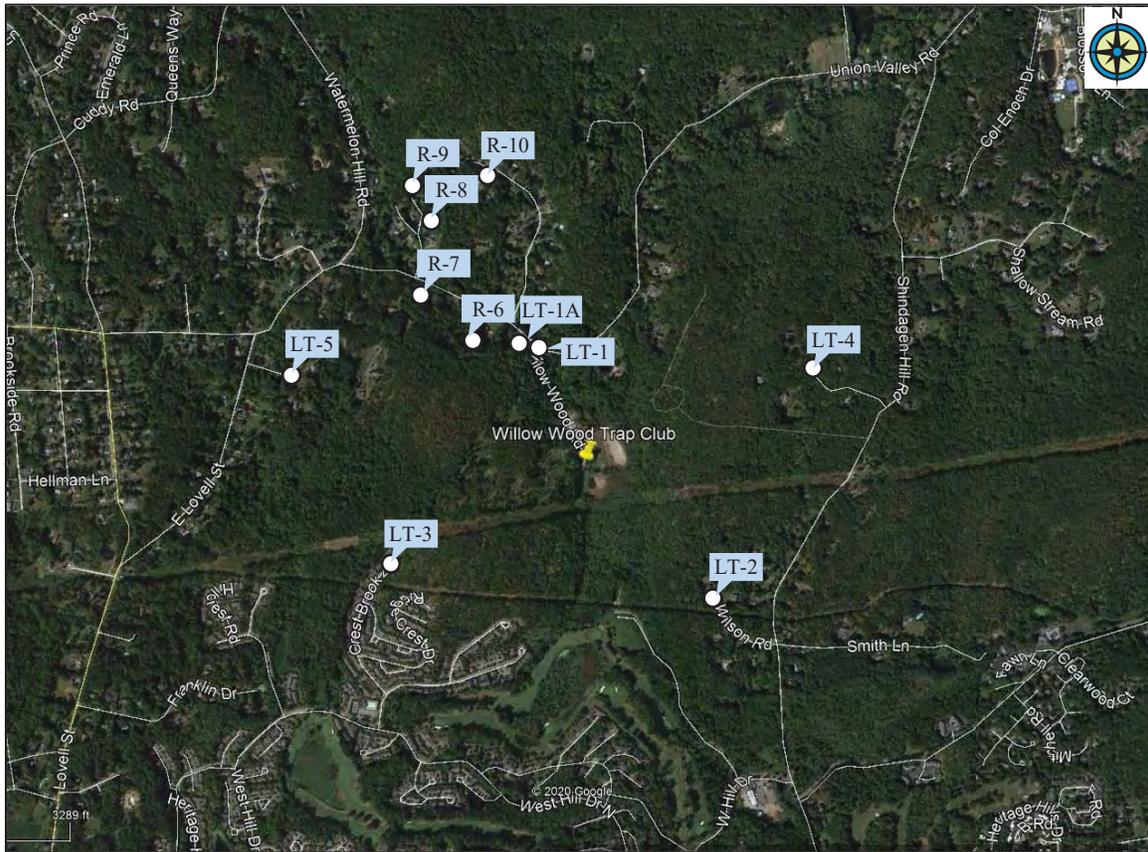
The downrange direction for the trap fields is oriented towards the east-northeast, and the 5-stand field is generally pointed towards the east-southeast. The topography in this area of New York is quite hilly, with the club's existing facilities situated in a valley between two hills. The relative elevation of the hilltops are about 250 to 300 feet above grade of the shooting fields. There is a clubhouse and a couple small garage structures on the property.

**Figure 1** shows an aerial view of the area around the club. The surrounding area is developed as lightly suburban to rural in population density. There are no major or arterial highways within miles of the club, and the undeveloped areas are wooded with primarily deciduous trees.

Also as shown in **Figure 1**, and summarized in **Table 1**, five long-term (LT) noise receptor locations were selected to measure ambient noise levels in the community surrounding the club. The receptors were selected to represent potential worst-case noise levels propagating from the range in various directions and to represent similarly affected properties in the respective neighborhoods. Existing ambient noise levels were measured at the five long-term receptors (LT-1 thru LT-5) over the two day period of 6/28/20 to 6/29/20. The long-term receptors were also used to measure gunfire noise during a series of controlled live fire tests performed on 6/28/20.

In addition, five more discrete receptors were selected to evaluate the propagation of gunfire noise throughout the community, primarily at locations of previously known complainants. Noise levels at these five receptors (R-6 thru R-10) were predicted using the Cadna-A noise model, described below. Receptor LT-1A was also added into the noise model to more accurately evaluate shooting noise affecting the nearest residence at 553 Union Valley Road.

**Figure 1. Willow Wood Club Surrounding Area**



**Table 1. Summary of Noise Receptor Locations**

Receptor No.	Street Address	Land-Use	Direction From Club	Est. Distance From Club
LT-1	551 Union Valley Road	Gun Club	North-Northwest	1,190 feet
LT-1A	553 Union Valley Road	Residential	North-Northwest	1,190 feet
LT-2	8 Wilson Road	Residential	Southwest	1,760 feet
LT-3	870 Crest Brook Drive	Residential	West-Southwest	1,980 feet
LT-4	39 Wilderness Trail	Residential	East-Northeast	2,320 feet
LT-5	7 Margaret Road	Residential	West-Northwest	3,300 feet
R-6	507 Union Valley Road	Residential	Northwest	1,760 feet
R-7	491 Union Valley Road	Residential	Northwest	2,190 feet
R-8	18 Fox Hill Road	Residential	North-Northwest	2,760 feet
R-9	20 Fox Hill Road	Residential	North-Northwest	2,950 feet
R-10	75 Englewood Terrace	Residential	North-Northwest	3,040 feet

## ***Acoustical Terminology***

As with any field of science, it is critical to understand and make proper use of technical terms and definitions that are used in the acoustical industry. Noise can be quantified in many different manners depending on its temporal/time, tonal/frequency, or magnitude/loudness properties.

Noise magnitude is expressed in units of ***decibels (dB)*** which is a logarithmic quantity comparing fluctuating air pressure to that of a standardized reference static air pressure of 20 micro-pascals (i.e. dB re: 20  $\mu$ Pa). For this reason the noise levels that humans hear are called ***sound pressure levels***. Noise is expressed as a logarithmic quantity because humans are sensitive to relative changes in noise levels. To illustrate, humans can barely perceive a change in noise level of +/- 1 decibel, can likely perceive a change of +/- 3 decibels, can easily perceive a change of +/- 5 decibels, and will generally describe a change of +/- 10 decibels as a doubling or halving in level.

With respect to tonal qualities (frequency), a frequency weighting adjustment has been standardized to account for the human auditory response over the audible frequency range of approximately 20 Hz to 20,000 Hz. Humans are less capable of hearing low frequency sounds, exhibit a maximum sensitivity to tones in mid-frequency ranges, and are slightly less sensitive to high frequency sound as well. This frequency weighted adjustment is referred to as "A-weighting", with results expressed as ***A-weighted decibels, or dBA***. Examples of A-weighted decibel levels for common outdoor and indoor noise sources are provided in **Figure 2**.

Another common practice is to separate a sample of noise into its spectral components by using frequency filters of known shape and bandwidth. This approach provides insights into the source and transmission characteristics of the noise and allows for identification of frequency ranges that contain the most acoustical energy. ***Octave band and third-octave band*** filters are typically used for this purpose because their bandwidths are a constant percentage of their center frequencies, and are better for mimicking how humans perceive discrete frequencies by providing finer resolution at lower frequencies.

Numerous metrics and indices have been developed to quantify the temporal characteristics (changes over time) of community noise include the following:

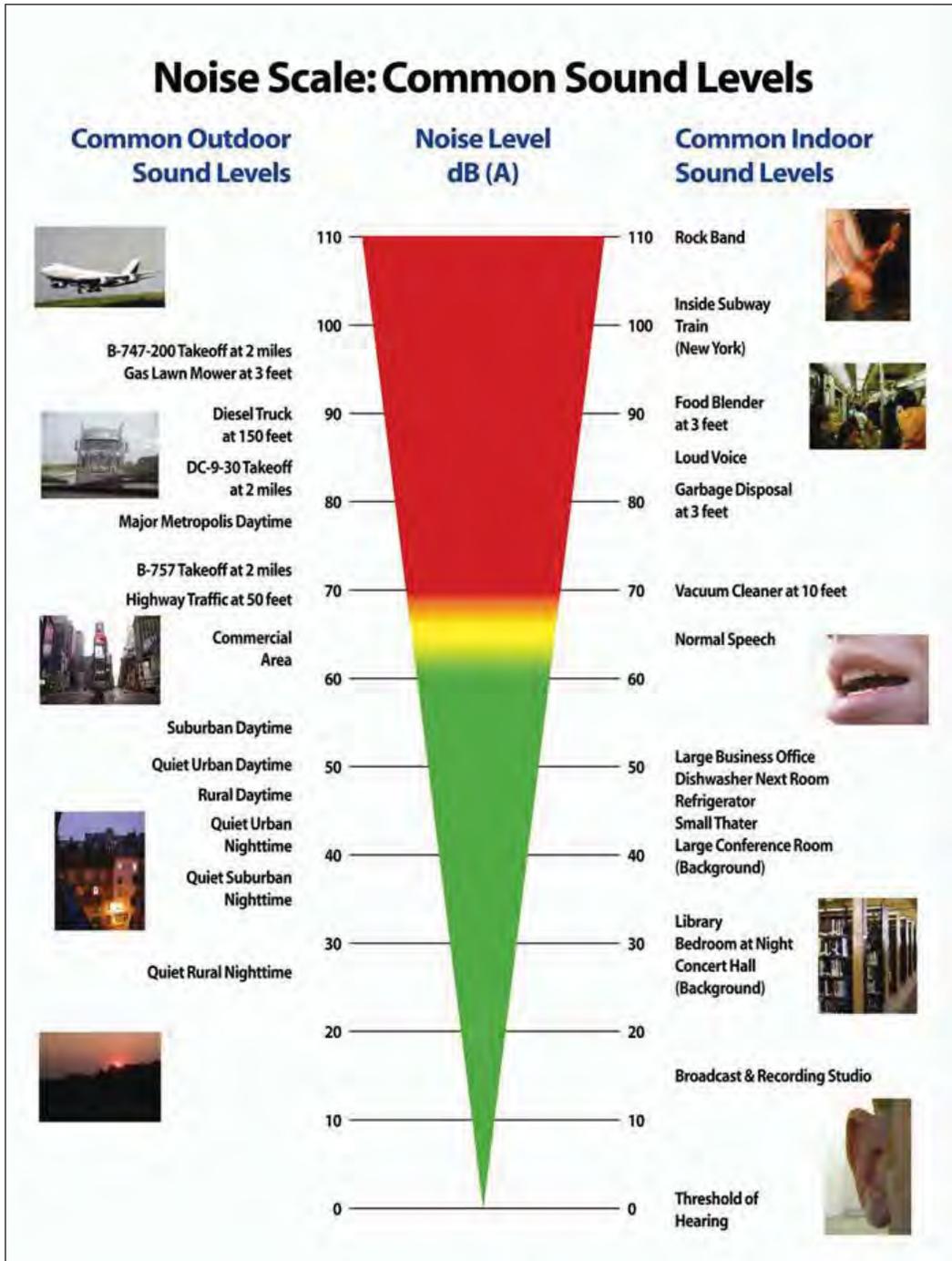
The ***Equivalent Sound Level, or Leq***, is the energy-averaged single noise level that represents the same acoustic energy that was contained in the fluctuating noise level over a defined period of time. The Leq is useful for describing the "average" sound level over a defined period of time, and is expressed in dBA.

The ***Maximum and Minimum Sound Levels, or Lmax and Lmin***, are the loudest and quietest instant sound levels occurring during a period of time. The Lmax is particularly useful for evaluating loud, impulsive noise events. Lmax and Lmin levels are expressed in dBA, however the root-mean-square (RMS) time constant of the sound level meter's detector has a significant effect on the measured levels. By International agreement, a sound level meter with an RMS response set to 'slow' (Lmaxs) has a rise time constant of 1 second, where a setting of 'fast' (Lmaxf) is about 8x faster with a rise time constant of only 0.125 seconds.

The ***Day Night Sound Level, or Ldn***, is a 24-hour community noise metric in which a 10 decibel adjustment has been added to the measured hourly Leq levels from 10 PM to 7 AM to account for people's greater sensitivity to noise intrusion at night. The Ldn metric is used in many federal noise guidelines to assess the long-term effects of transportation sources.

The ***Sound Percentile Level, or Ln***, expressed in dBA is a statistical representation of changing noise levels indicating that the fluctuating noise level was equal to, or greater than, the stated level for "n" percent of the time. For example, the L1, L10, L50, and L90 represent the noise levels exceeded 1%, 10%, 50%, and 90% of the time. The L10 is often used to identify impacts of transportation or construction noise sources, while the L90 is considered to represent steady background noise.

Figure 2. Common A-Weighted Decibel (dBA) Sound Levels



The **Sound Power Level (PWL)** of a noise source is the strength or intensity of noise that the source produces/emits regardless of the environment in which it is placed. Sound power is a property of the source, and therefore is independent of distance. The radiating sound power then produces a **Sound Pressure Level (SPL)** at any given point of interest which human beings perceive as audible sound. The sound pressure level is dependent on its environment (absorption, reflections, etc.) and its distance from the noise source. And even though both sound power and sound pressure are expressed in decibels (dB), they are not the same thing and should not be confused. Decibel levels of sound power are referenced to a power level of 1 pW, while decibel levels of sound pressure have a pressure reference level of 20  $\mu$ Pa.

## **Noise Regulatory Setting**

There are no federal community noise regulations that would apply in this case. The noise regulations governing the shooting range at the Willow Wood Club are set forth in New York State General Business Law Section 150 (GBL §150) which specifically exempts existing gun ranges, such as the Willow Wood Club, from local noise control ordinances. The standard set by GBL §150 is that the A-weighted sound level of small arms fire at the shooting range shall not exceed 90 dBA for one hour out of a day or 85 dBA for eight hours out of a day, as measured at, or adjusted to, a distance of 100 feet outside the real property boundary of the shooting range. These noise limits are primarily intended to protect the public from hearing damage but not from potential perceived annoyance.

The Carmel NY Noise Ordinance, Article II, Chapter 104, which is preempted by State statute GBL §150, contains noise limits at residential receptor property lines expressed as maximum A-weighted decibels (dBA L<sub>max</sub>). The daytime (8 AM to 6 PM) receptor noise limit is normally 65 dBA L<sub>max</sub>, however there is a 5-decibel penalty for impulsive noise sources such as gunfire. Thus, the daytime residential receptor noise limit would be 60 dBA L<sub>max</sub> in this case at community receptor locations.

However, GBL §150 specifically exempts gun ranges from local noise control ordinances if the gun range predates the local ordinance. In this case, the local Carmel Noise Ordinance was originally adapted in 1972. However, the Willow Wood Club has been in continuous operation as a gun range since 1955, and therefore predates the local noise control ordinance. Thus, under General Business Law §150(1), "*..... the applicable noise control laws or ordinances have no legal force and effect against such owner or user.*"

Also noteworthy is the fact that the Carmel Noise Ordinance does not specify the electronic time response of a sound level meter when trying to measure for compliance with the ordinance's limits. Thus, consistent with most other community noise studies performed in the United States, a sound meter response time of RMS 'slow' was selected for all noise measurements and modeling results in this case.

The Willow Wood Club is therefore exempt from any neighborhood noise annoyance regulations or restrictions. However, in an attempt to promote good neighbor relations, the club is willing to voluntarily adopt receptor noise limits consistent with the Carmel Noise Ordinance (i.e. 60 dBA L<sub>max</sub> 'slow') *to the extent reasonably feasible*.

## **Ambient Noise Measurements**

Long-term ambient noise measurements were performed at five community receptor locations (LT-1 thru LT-5) from 6/28/20 thru 6/29/20. The purpose of the long-term measurements was to document existing noise conditions affecting the various representative receptors as caused by non-shooting-related noise sources such as traffic, HVAC equipment, aircraft, human activity, birds and wind, etc. Meteorological conditions were acceptable throughout the noise monitor period with temperatures ranging from 60 to 90 deg. F, calm to mild winds, and no precipitation.

The ambient noise measurements were performed using Larson Davis Model 720 (LD 720) noise monitors in self-contained cases. The LD 720 noise monitors were programmed to measure and digitally store sound level data in hourly intervals including the Leq, L1, L10, L50, L90, Lmax and Lmin levels in A-weighted decibels (dBA) using a ‘slow’ time response. The monitors were calibrated beforehand using a Bruel & Kjaer Model 4231 acoustical calibrators, deployed out-of-reach on tree branches, and the microphones were covered with windscreens. The entire ambient noise monitoring system complied with ANSI Standard S1.4 for Type 2 accuracy.

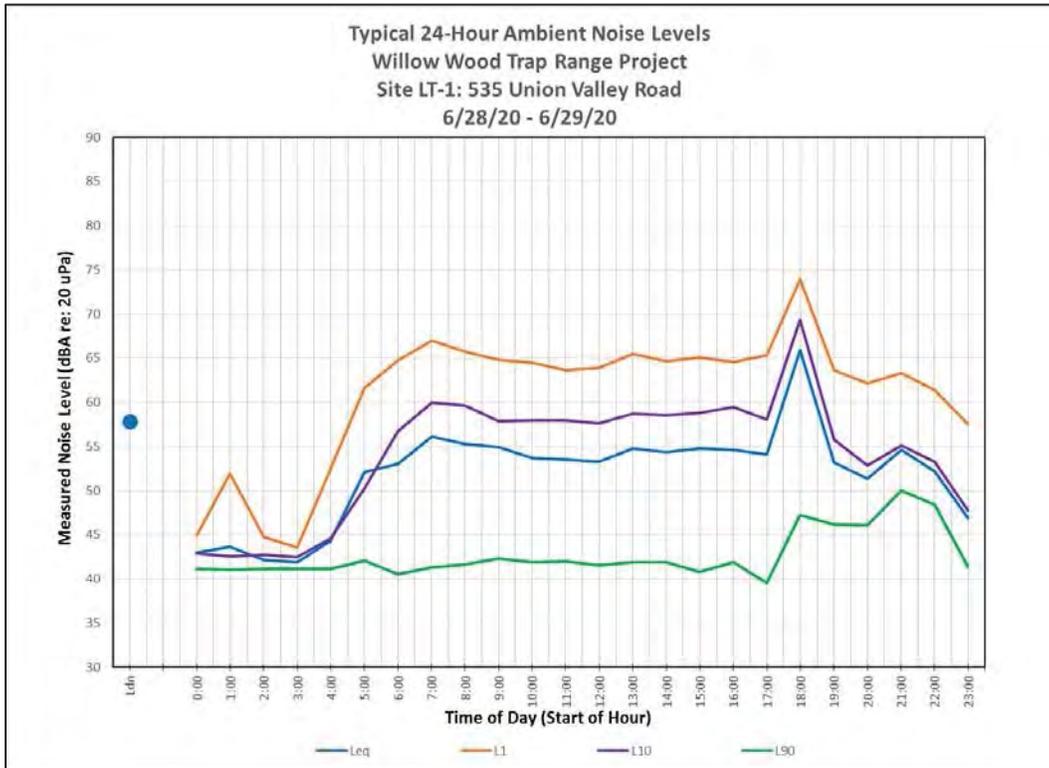
The results of the ambient noise monitoring exercise can be seen in **Table 2** and **Figures 3 thru 7**. Daytime was defined as 7 AM to 10 PM, and nighttime was defined as 10 PM to 7 AM, consistent with standard acoustical practices. Being a rural/light suburban area, there was relatively little fluctuation in ambient noise levels of only a couple decibels between daytime and nighttime periods, as illustrated by the steady background L90 sound levels. Typical noise “events” are indicated in the L1 results, which in this case are about 15 to 25 decibels louder than the steady L90 background levels. The evening “rush hour” appears to occur around 6 PM as illustrated in the figures.

**Table 2. Community Ambient Noise Monitoring Results**

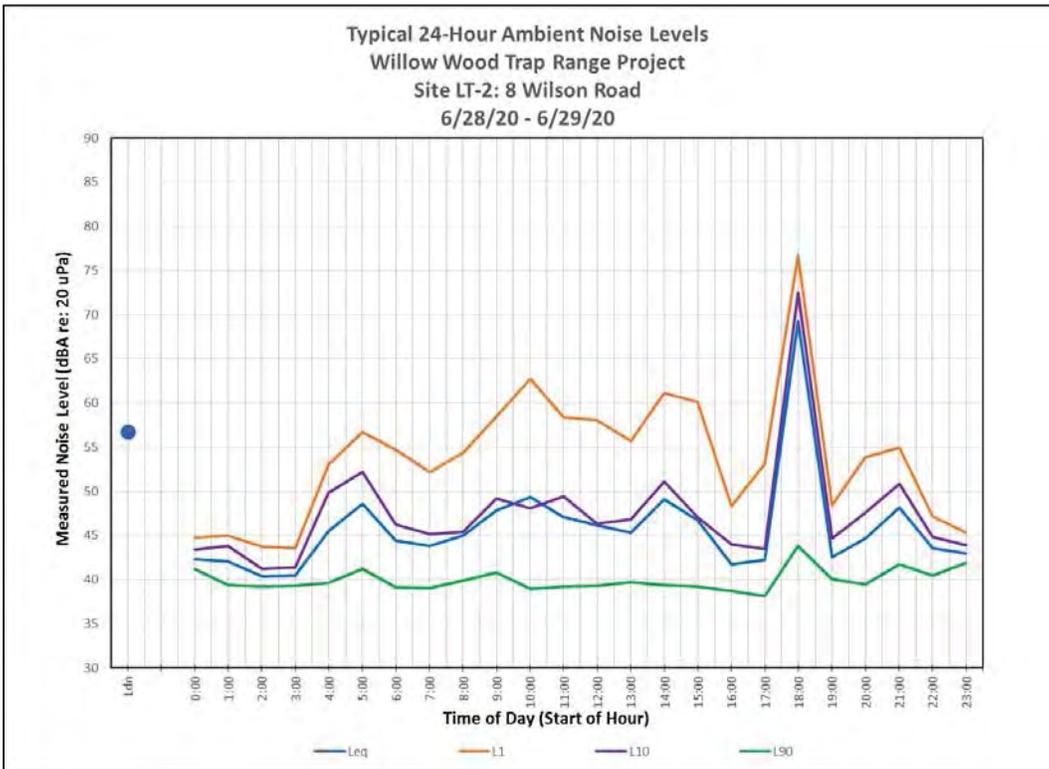
Receptor No.	Street Address	Average Ambient Sound Level Results, dBA ‘slow’				
		Ldn	Leq Day / Night	L1 Day / Night	L10 Day / Night	L90 Day / Night
LT-1	551 Union Valley Road	58	57 / 49	66 / 59	61 / 50	44 / 43
LT-2	8 Wilson Road	57	58 / 44	66 / 51	61 / 47	40 / 40
LT-3	870 Crest Brook Drive	53	54 / 42	65 / 52	58 / 43	40 / 37
LT-4	39 Wilderness Trail	59	60 / 48	65 / 58	61 / 52	42 / 41
LT-5	7 Margaret Road	55	56 / 45	67 / 58	59 / 45	41 / 36

It is interesting to note that louder moments of ambient noise experienced in the neighboring properties during the daytime are actually louder than the gunshots from the Willow Wood Club.

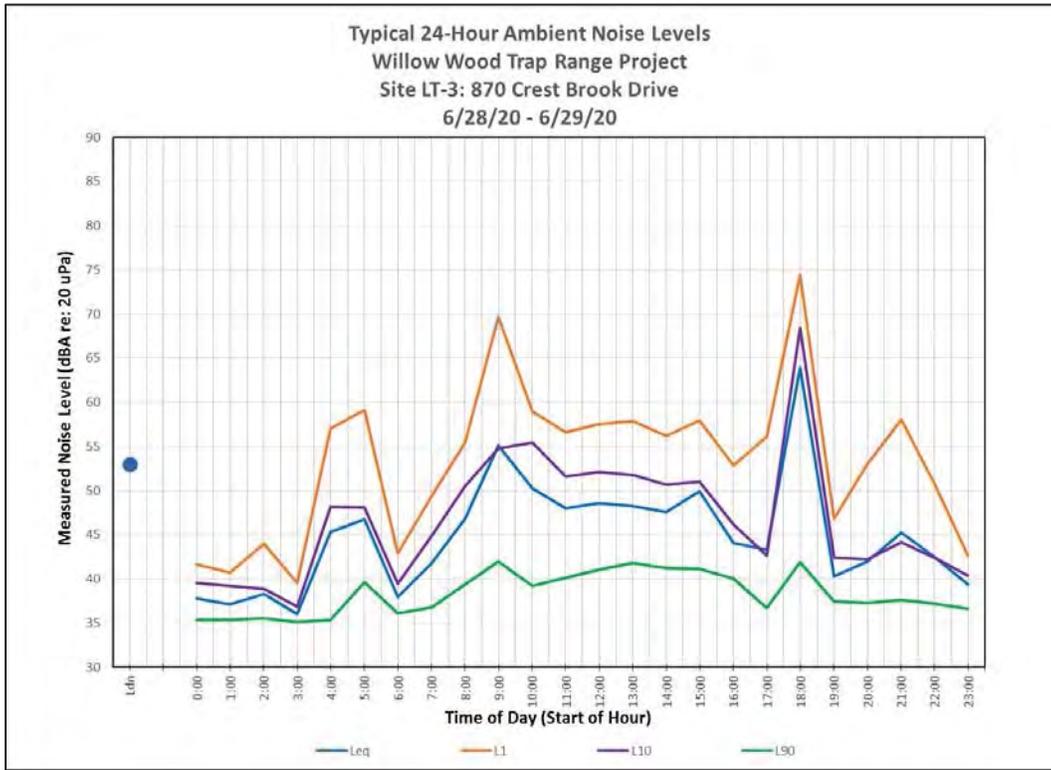
**Figure 3. Ambient Noise Monitoring Summary for Site LT-1**



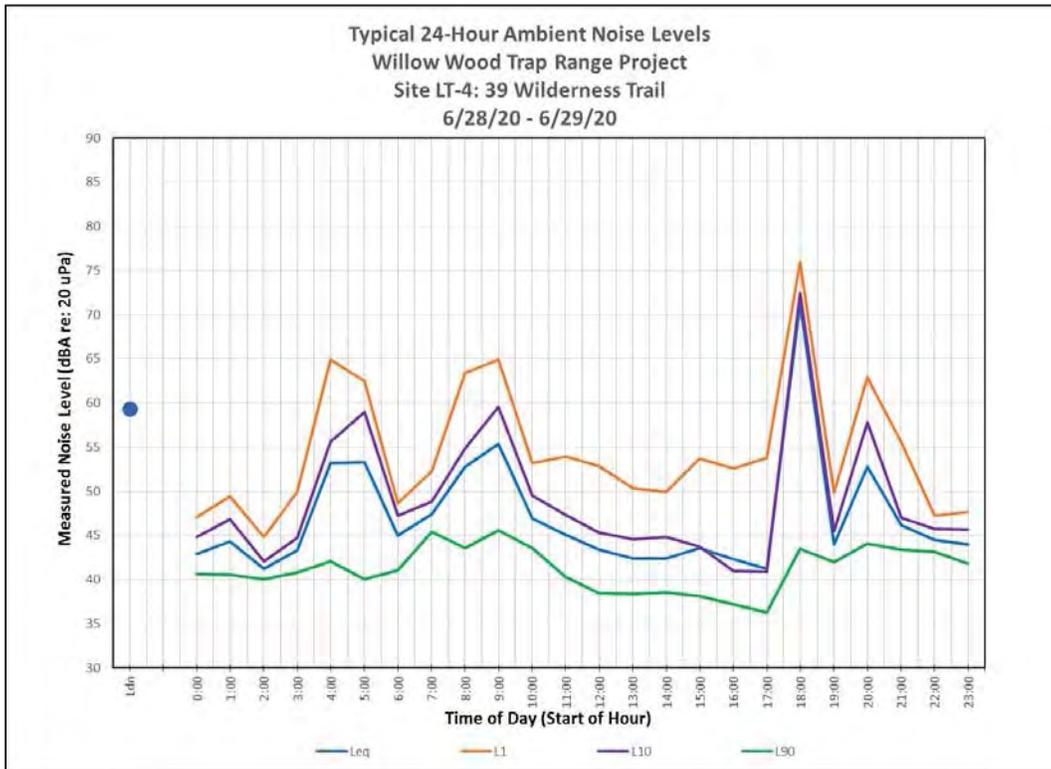
**Figure 4. Ambient Noise Monitoring Summary for Site LT-2**



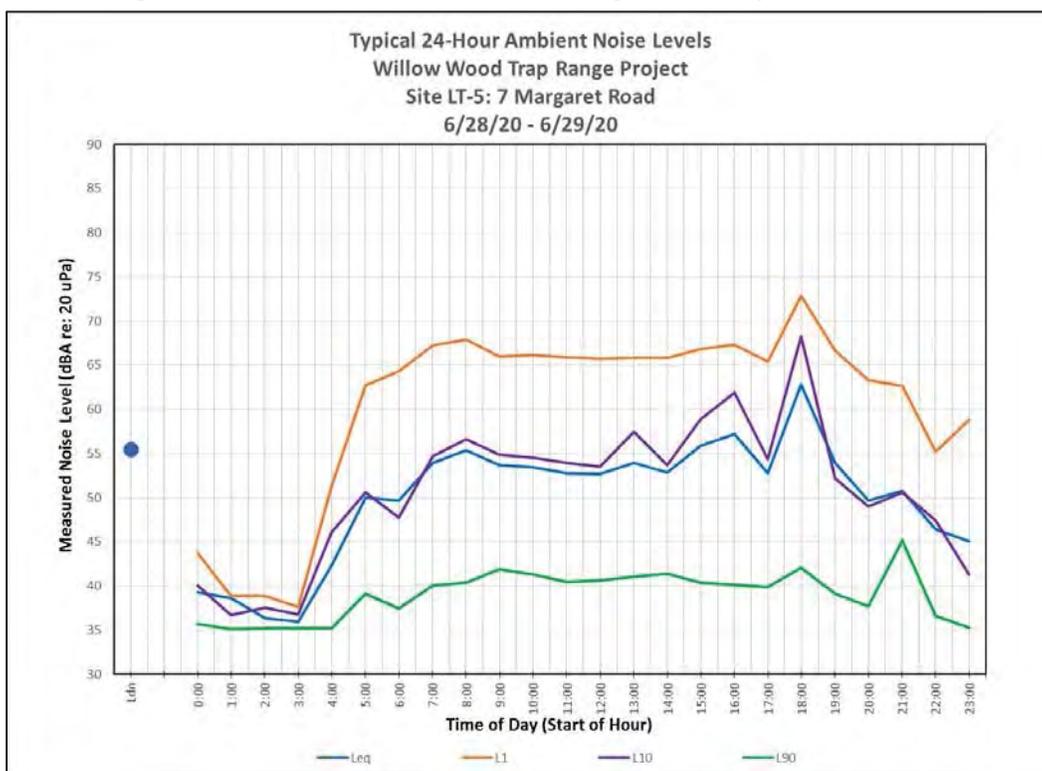
**Figure 5. Ambient Noise Monitoring Summary for Site LT-3**



**Figure 6. Ambient Noise Monitoring Summary for Site LT-4**



**Figure 7. Ambient Noise Monitoring Summary for Site LT-5**



### ***Controlled Gunshot Noise Tests***

A series of carefully controlled gunshot noise measurement tests were performed on 9/29/20 at the five long-term receptor locations (LT-1 thru LT-5) surrounding the club, as shown in **Figure 1**. The purpose of these tests was to quantitatively measure the loudness of representative shotguns that are typically used at the Willow Wood Club, and in doing so, create comparison levels against which the subsequently developed computer noise model could be calibrated.

The gunshot noise measurement equipment used in this study is shown in **Photo 3**. The sound instrumentation complied with ANSI Standard S1.4 for Type 1 (Engineering-Grade) requirements for accuracy and precision and consisted of a CEL Instruments Model 593 Acoustical Analyzer equipped with a Bruel & Kjaer Model 4189 Microphone. A three-inch foam windscreen was used to minimize errant wind noise from affecting the microphone. The acoustical signal was passed through the analyzer and recorded in the field with a Marantz Model PMD 670 Audio Wavefile Data Recorder. The CEL 593 Analyzer was configured to measure broadband (Linear and A-weighted) and third-octave band noise data using an RMS 'slow' time response. The entire measurement system was calibrated with a Bruel & Kjaer Model 4231 Acoustical Calibrator.

Six individual gunshots were fired from each of seven positions at the club, namely from the trap fields, the 5-stand field, and from proposed clays stations 2, 6, 8, 11 and 13. These stations provided good circular coverage of the proposed shooting circuit, with fields of fire pointed in all directions. Over-under 12 gauge shotguns were used for all test shots using the same ammunition consisting of Rio Target Loads, 2.75 inch, 1.125 ounce, No. 7½ lead shot size traveling at 1,250 feet/second. The gunshots were then measured and recorded at each of the five long-term receptors. Some of the gunshots were easily noticeable, some were barely audible, and a few were completely inaudible relative to the background sound level at the time.



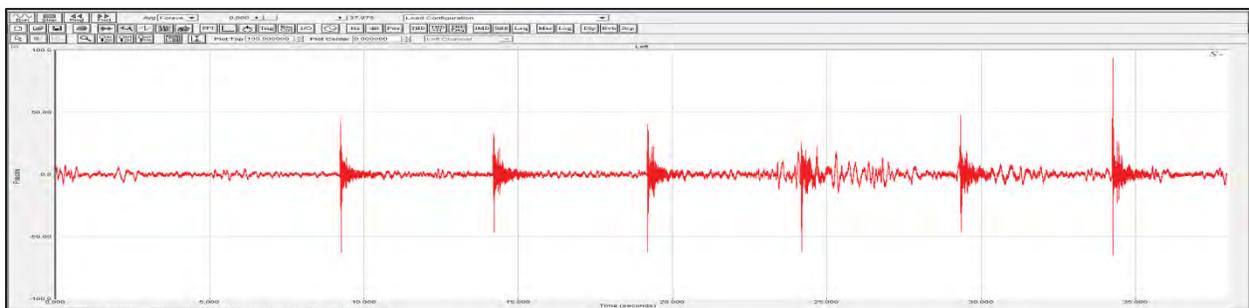
**Photo 3. Sound Meter and Data Recorder**

Upon return to the office, the recorded gunfire sound level signals were downloaded from the Marantz PMD 670 and transferred to a computer in the form of an uncompressed digital audio wave file (.wav). The wavefiles were then post-processed using SpectraPLUS sound analysis software which performs a Fast Fourier Transform (FFT) on the acoustical signal in order to determine its magnitude and frequency composition.

SpectraPLUS was configured to measure and hold the loudest noise level in each third-octave band over a time window interval of 1.0 seconds (i.e. RMS 'slow') for each gunshot. Thus, SpectraPLUS was able to zoom in and isolate *just the gunfire noise* from the background noise, yielding a conservative (i.e. worst-case) composite third-octave band spectrum. The third-octave band levels were then adjusted to apply each band's A-weighting factor and then logarithmically summed to yield the broadband A-weighted noise level (dBA).

Each gunshot in the recordings was visually and audible located in SpectraPLUS's time history module, as shown in **Figure 8**, and the signal from 0.3 seconds prior to and 0.7 seconds following the loudest moment of the gunshot was measured. This time window ensured that the rise in air pressure as the shot arrived and the drop in air pressure immediately following the shot were all included in the analyzed data sample. Also, by using a time interval of 1.0 seconds, SpectraPLUS was able to measure the maximum noise levels (Lmax) for each gunshot consistent with the results produced by a sound level meter configured with a response time of RMS 'slow', and the results were thus directly comparable to the voluntary noise limits adopted by the Willow Wood Club.

**Figure 8. SpectraPLUS Time History Plot Showing Gunshot Events**



*In this example time history plot, taken from receptor LT-2 while shooting at the 5-stand field, the six gunshot noise events can be seen at approximately 9.24 seconds, 14.14 seconds, 19.18 seconds, 24.17 seconds, 29.34 seconds and 34.25 seconds.*

## Gunshot Noise Directivity

A very important concept that factors into this case has to do with the acoustical directivity pattern of gunshot noise. Contrary to uninformed intuition, gunshot noise does not act as a perfect acoustical point source radiating sound equally in all directions. Rather, gunfire noise is loudest in a downrange direction in-line with the muzzle, and then radiates as a classic cardioid shape towards the sides and rear of the shooter.

This effect is illustrated in **Figure 9** which shows the directivity pattern of a 12 gauge shotgun which was measured under controlled conditions during a previous gun noise study. As can be seen, gunshots are approximately 16 decibels louder straight downrange (180°) than they are at wayside positions (90° and 270°). Moreover, gunshot noise is actually quieter by approximately 7 decibels in a direction behind the shooter (0°) relative to the wayside noise levels. Thus, shotgun noise levels are a total of 23 decibels quieter towards the rear of the shooter than they are downrange in front of the shooter.

This acoustical directivity pattern was included in the Cadna-A noise model for this project for all gunshot sound sources and adjusted to account for the direction of fire for each shooting position.

**Figure 9. Acoustical Directivity Pattern of a Shotgun**



## **Noise Model Development**

A predictive simulation model of shooting noise emissions from the Willow Wood Club and related noise levels in the surrounding community was developed using the sophisticated Cadna-A® noise model. The noise model allows for assessment of individual shooting positions, the specific types of firearms and ammunition used in this case, and benefits of potential noise mitigation measures to reduce shooting noise levels in the community. While the model specifically assesses noise levels at the ten representative receptor locations (LT-1A thru R-10), it can also be used to evaluate noise levels at any other location of interest as well.

Cadna-A is a powerful, three-dimensional, ray-tracing acoustical model that implements ISO Standard 9613 for the prediction and propagation of outdoor sound levels. Cadna-A and ISO 9613 are used and accepted by the acoustics industry on a worldwide basis. Noise sources are entered into the Cadna-A model in the form of point, line and/or area components, each emitting sound power levels (PWL) in octave bands or broadband A-weighted format. Distance attenuation, elevation differences, ground absorption, wind effects, foliage, building shielding, and attenuation from barrier/berm effects are computed in the Cadna-A model. The resulting sound pressure levels (SPL) are predicted at any receptor location of interest.

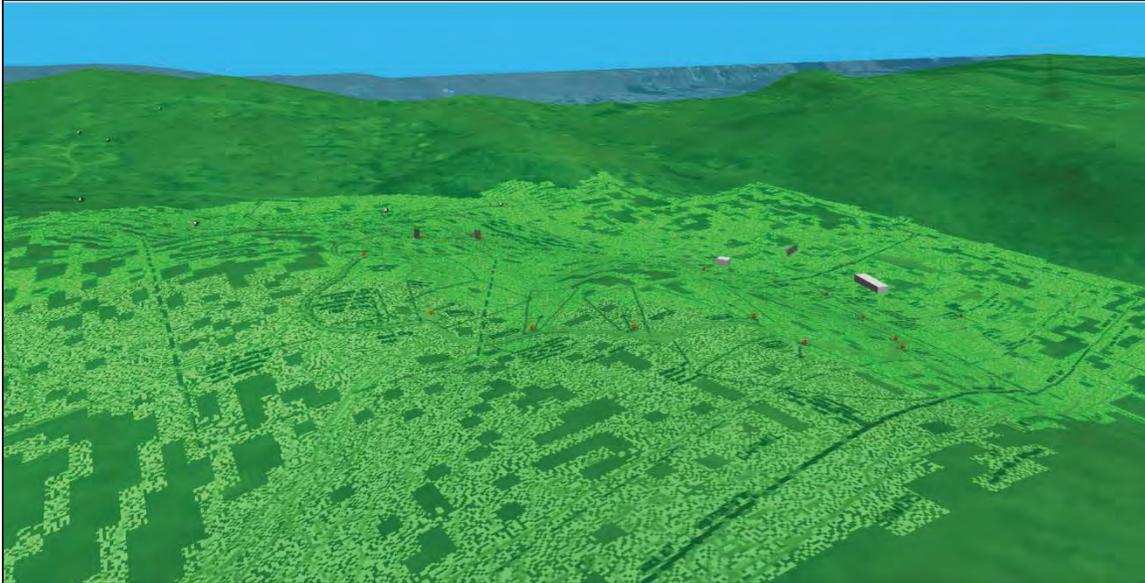
As shown in **Figure 10**, the Cadna-A model for this project was configured by first importing a GoogleEarth® base map of the area. Then a scale drawing of the club was overlaid in the correct location. In this manner, the positions of the existing range, structures, streets, foliage areas, receptor locations and distances could be modeled to a high degree of accuracy. Terrain elevation data taken from ESRI/USGS topographical maps were then brought into the Cadna-A model. This was a critical step because there are noteworthy hills in the area that can play a role in how sound propagates from the club.

The ground surface was modeled as being acoustically absorptive grass and dirt except where there were bodies of water which were modeled as being acoustically reflective. Deciduous foliage (trees that drop their leaves) were added to the model to simulate noise propagation conditions in the summertime, and no foliage attenuation was assumed in the model to account for wintertime conditions.

The model was then populated with sound power noise emission spectra data for 12 gauge over/under shotguns (obtained on a previous project) shooting in the direction of each particular shooting position. The acoustical directivity pattern shown in **Figure 9** was assigned to each firearm such that the downrange direction was pointed in the correct direction. The trap fields are generally pointing towards the east-northeast and the 5-stand field is oriented towards the east-southeast, however the proposed sporting clays stations shoot in a round circuit so their downrange directions vary considerably.

Once the Cadna-A model had been configured, it was tested for its prediction accuracy by comparing its results to those of actual shooting noise levels measured during the controlled tests. **Table 3** summarizes the results of this model calibration exercise which indicate an acceptable agreement between the measured and modeled gunshot sound levels. The close agreement meant the Cadna-A model was considered to be configured properly and reliable for predicting future noise levels as well.

**Figure 10. Cadna-A Noise Model Configuration  
(Looking Northeast Towards Club)**



**Table 3. Cadna-A Model Calibration Results**

Receptor No.	Street Address	Loudest Single Shot, dBA Lmax 'slow'		
		Measured 6/29/20	Modeled Summertime	Difference (Measure - Model)
LT-1	551 Union Valley Road	61	60	1
LT-2	8 Wilson Road	64	64	0
LT-3	870 Crest Brook Drive	54	48	6
LT-4	39 Wilderness Trail	49	50	-1
LT-5	7 Margaret Road	48	45	3

**Noise Model Results**

The calibrated Cadna-A model was first used to answer the fundamental question – *How loud is the existing shooting noise in the community?* As described above, sixteen different shooting positions were included in the model and their resulting noise levels were computed at ten representative community receptor locations. Both summertime and wintertime noise levels were modeled, with the latter being the louder condition due to deciduous trees losing their leaves. In general, the wintertime noise levels were louder than the summertime noise levels by 1 to 12 decibels depending on the distance and amount of foliage between the club and given receptor. Consequently, the *louder wintertime noise results predicted using the Cadna-A model* are presented in this report for the existing condition.

**Table 4** summarizes the noise model results for the club in its existing condition and the corresponding voluntary noise limits in the community. Neighbors who have raised noise concerns in the past include the receptors located at LT-2 and R-6 to R-10. The predicted loudest (i.e. wintertime) gunshots from a 12 gauge over/under shotgun are included in the table for each receptor location. The relatively steady daytime background noise level (L90) at each receptor is provided as well for comparative reference.

As can be seen, two of the receptors (LT-1A and LT-2) are expected to be exposed to gunshot noise levels potentially exceeding the club's voluntary noise limit goal. The single loudest shooting positions in these two cases are sporting clays stations 9 and 6, respectively. Other shooting positions, particularly for receptor LT-1A, could also exceed the club's noise limit, although to a lesser degree. Consequently, noise mitigation measures to noticeably reduce the shooting noise levels and to ensure compliance with the club's self-imposed noise limit goal have been developed for consideration in the next section.

**Table 4. Shooting Club Community Noise Results**

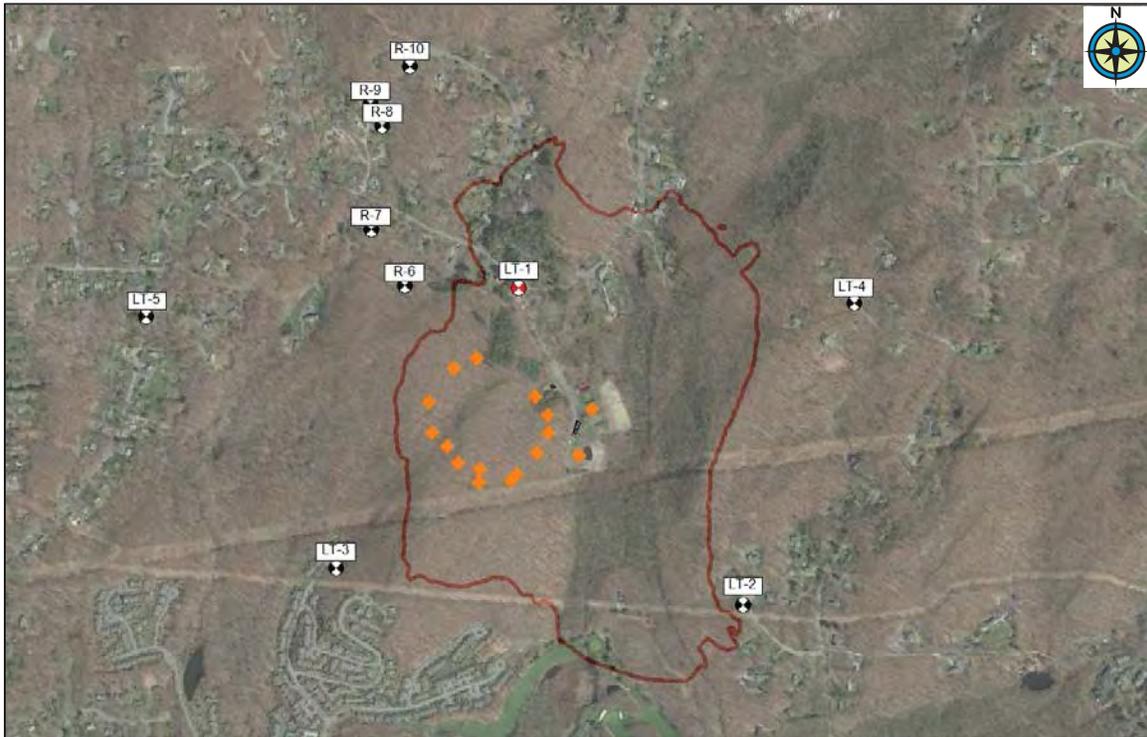
Receptor No.	Street Address	Daytime Background dBA L90 'slow'	Carmel Daytime Noise Limit dBA Lmax 'slow' <sup>(1)</sup>	Loudest Gunshot Noise Level dBA Lmax 'slow'		
				Winter Condition	Shooting Position	Complies or Exceeds
LT-1A	553 Union Valley Road	44	60	67	Clays 9	Exceeds by 7 dBA
LT-2	8 Wilson Road	40	60 <sup>(2)</sup>	65	Clays 6	Exceeds by 5 dBA
LT-3	870 Crest Brook Drive	40	60	51	Clays 12	Complies
LT-4	39 Wilderness Trail	42	60	56	Clays 12	Complies
LT-5	7 Margaret Road	41	60	46	Clays 9	Complies
R-6	507 Union Valley Road	Approx. 40	60	50	Clays 1	Complies
R-7	491 Union Valley Road	Approx. 40	60	54	Clays 2	Complies
R-8	18 Fox Hill Road	Approx. 40	60	58	Clays 9	Complies
R-9	20 Fox Hill Road	Approx. 40	60	58	Clays 5	Complies
R-10	75 Englewood Terrace	Approx. 40	60	57	Clays 4	Complies

Notes: (1) The actual noise limit is 90 dBA Leq(h) set forth in GBL §150. The Carmel Noise Ordinance regulations are referenced here for informational purposes only.

(2) LT-2 receives 64 dBA from the existing 5-stand, which predated the Carmel Noise Ordinance.

As mentioned above, the ten receptors (LT-1A thru R-10) discussed in this study represent similarly affected receptors in the community, but they are only discrete locations. More generalized results for the community-at-large can be seen in **Figure 11** which shows the existing worst-case wintertime gunshot *noise impact zone* for the Carmel Noise Ordinance noise limit of 60 dBA Lmax 'slow'. Any receptor located within the impact zone could be (but is not guaranteed to be) exposed to shooting noise levels that could exceed the noise limit goal.

**Figure 11. 60 dBA Lmax Slow Noise Impact Zone  
(Existing Worst-Case Winter Condition)**



### ***Noise Mitigation Options***

Whereas two of the community noise receptors in this study (LT-1A and LT-2) are expected to be exposed to gunshot noise levels in excess of the Willow Wood Club's voluntary noise limit goal, feasible and reasonable noise control options have been developed here for consideration. Within this context, the word "feasible" refers to the engineering and noise reduction performance aspects of the mitigation, while the word "reasonable" addresses the issue of cost-justification.

In general, noise levels can be reduced by applying sound abatement (mitigation) measures to the noise source itself, along the propagation pathway, or by directly affecting the receiver; the former of which typically being the most effective. In this case, there are possible mitigation options for consideration for the noise sources and along the pathways to the receptors.

The following noise control measures were developed in an exhaustive iterative process involving the Willow Wood Club's attorney, civil engineer and acoustical engineer. These measures were developed by balancing the environmental constraints, minimization of site disturbance, and maximizing noise mitigation to ensure the club voluntarily mitigates the noise levels beyond GBL §150's noise standards to those of the Carmel Noise Ordinance.

The loudest gunshot noise level affecting receptor LT-1A at 553 Union Valley Road is anticipated to be as loud as 67 dBA Lmax 'slow' during the wintertime, thus exceeding the club's voluntary noise limit goal of 60 dBA Lmax 'slow' by 7 decibels. The loudest shooting position affecting receptor LT-1A is expected to come from the existing clays Station 9, however shooting from ten other clays stations could also exceed the noise limit.

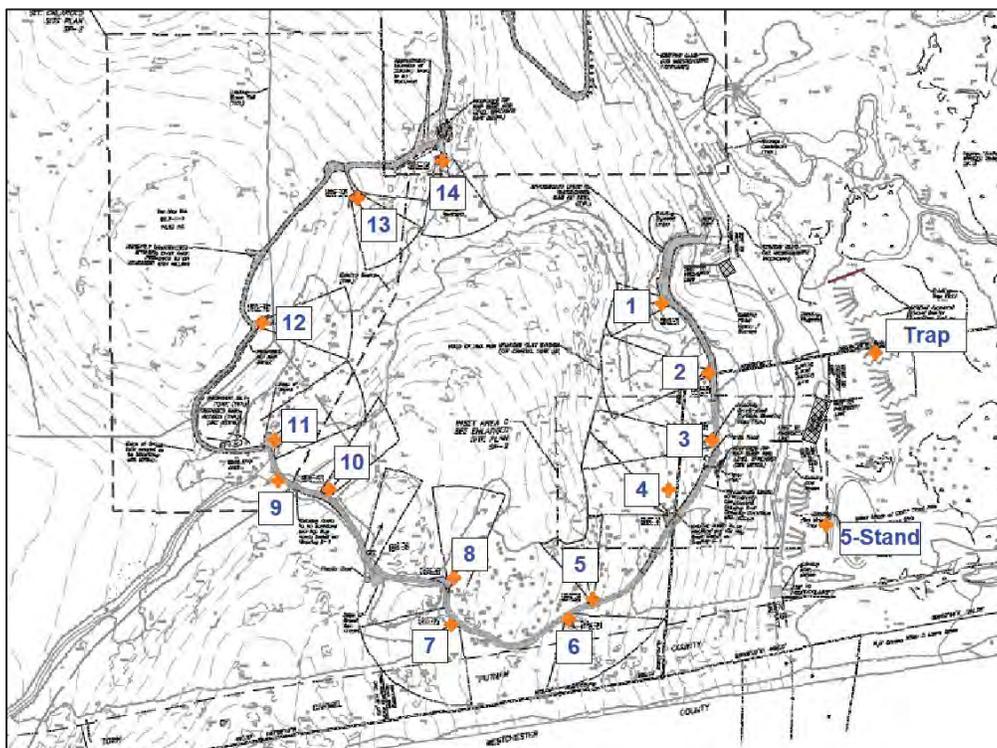
The loudest gunshot noise level affecting receptor LT-2 at 8 Wilson Road is anticipated to be as loud as 65 dBA Lmax 'slow' during the wintertime, thus exceeding the club's voluntary noise limit goal of 60 dBA Lmax 'slow' by 5 decibels. The loudest shooting position affecting receptor LT-2 is expected to come from clays Station 6.

Thus, the following noise mitigation measures are recommended to reduce gunshot noise levels affecting receptors LT-1A and LT-2 (as discussed via conference call on 4/1/22):

1. Enhance the existing noise barriers at Stations 13 and 14 by adding wings to each shooting station, and add noise absorptive material to the side of the barrier facing the noise source.
2. Construct a small (12-foot tall) absorptive noise barrier with side panels behind the shooting position at Station 12 to shield noise propagating towards Union Valley Road.
3. Slightly rotate in a clockwise direction the downrange direction for Station 8.
4. Rotate the downrange direction for Station 6 so that it points south.
5. Relocate Station 9 to between Stations 10 and 11, and rotate the downrange direction for Station 9 so that it points south.
6. Relocate Station 4 slightly to the north so that its downrange direction rotates counter-clockwise and points west-southwest instead.

The locations for all the clays stations after mitigation is applied can be seen in **Figure 12**.

**Figure 12. Locations of Clays Stations After Mitigation**



If the mitigation options described above are implemented, it can then be demonstrated in the Cadna-A noise model that full compliance with the Willow Woods Club's self-imposed community noise limit goal of 60 dBA Lmax 'slow' can be achieved at each of the receptor locations evaluated in this study. **Table 5** summarizes the noise model results if the additional forms of mitigation are included.

**Table 5. Predicted Gunshot Noise Levels With Mitigation Measures**

Receptor No.	Street Address	Noise Limit, dBA Lmax 'slow'	Predicted Loudest Shot, dBA Lmax 'slow'			With Mitigation, dBA Lmax 'slow'		
			Modeled Winter Condition	Loudest Station	Exceeds or Complies	Modeled With Mitigation	Loudest Station	Exceeds or Complies
LT-1A	553 Union Valley Road	60	67	Clays 9	7	59	Clays 5	Complies
LT-2	8 Wilson Road	60	65	Clays 6	5	59	Clays 13*	Complies
LT-3	870 Crest Brook Drive	60	51	Clays 12	Complies	55	Clays 9*	Complies
LT-4	39 Wilderness Trail	60	56	Clays 12	Complies	56	Clays 12*	Complies
LT-5	7 Margaret Road	60	46	Clays 9	Complies	46	Clays 7	Complies
R-6	507 Union Valley Road	60	50	Clays 1	Complies	50	Clays 1	Complies
R-7	491 Union Valley Road	60	54	Clays 2	Complies	54	Clays 2	Complies
R-8	18 Fox Hill Road	60	58	Clays 9	Complies	58	Clays 5	Complies
R-9	20 Fox Hill Road	60	58	Clays 5	Complies	58	Clays 5	Complies
R-10	75 Englewood Terrace	60	57	Clays 4	Complies	57	Clays 9*	Complies

Note: (\*) Indicates that the loudest shot comes from the station after it has been mitigated for other receptors.

### **Conclusions**

A comprehensive shooting noise assessment was performed for the community surrounding the Willow Wood Gun Club in Mahopac, New York. The acoustical study took into account the types of firearms used at the club, the existing orientation of the shooting positions, topographical, terrain and foliage conditions, time of year, the locations and background noise levels of noise-sensitive receptors, the relevant noise criteria limits in this case, and the Planning Board's concerns regarding the neighbors to the north of the club. The initial conclusion was that shooting noise levels could exceed the club's self-imposed noise limits goal at two community receptors. Consequently, noise mitigation measures were developed for the club to consider which would noticeably reduce the anticipated shooting noise levels at the affected neighbors' homes and bring the gunshot noise levels within compliance with the club's voluntary noise limits.

Noise mitigation measures included building or enhancing small noise barriers behind two clays stations, relocating two clays stations, and rotating four clays stations to direct their noise in a less offensive direction. With these noise mitigation measures in place, full compliance with the club's voluntary community noise limit of 60 dBA Lmax 'slow' can be demonstrated at all receptor locations.

*Disclaimer – The noise mitigation measures presented in this report are for conceptual and feasibility consideration purposes only. Any noise mitigation options selected by the Willow Wood Club for implementation would need to be further analyzed from a constructability, cost and safety perspective.*

**Appendix A**

**Professional Qualifications**



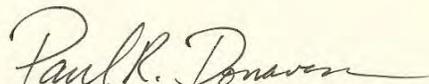
The Institute of Noise Control Engineering  
of the United States of America, Inc.

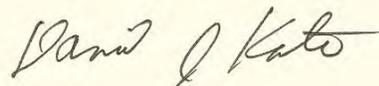
in recognition of  
professional standing and contributions  
attests that

**ERICH THALHEIMER**

a Member of the Institute  
is  
Board Certified  
in Noise Control Engineering

For the Board of Directors

  
President

  
Secretary



**2001 June**

**20104**



## **STORMWATER POLLUTION PREVENTION PLAN**

**Prepared For**  
**Willow Wood Country Club, Inc.**  
**Union Valley Road**  
**Mahopac, NY 10541**  
**May 11, 2022**

**Owner Information:**

Willow Wood Country Club, Inc  
Union Valley Road  
Mahopac, New York 10541

**Contractor Information:**

To Be Determined

**NOTE: This report in conjunction with the project plans make up the complete Stormwater Management Report.**

Prepared by:  
Insite Engineering, Surveying & Landscape Architecture, P.C.  
3 Garrett Place  
Carmel, New York 10512

## CONTENTS

	<b>PAGE</b>
<b>1.0 INTRODUCTION</b> .....	<b>1</b>
1.1 Project Description .....	1
1.2 Existing Site Conditions .....	1
1.3 Proposed Site Conditions.....	1
<b>2.0 STORMWATER MANAGEMENT</b> .....	<b>1</b>
<b>3.0 EROSION AND SEDIMENT CONTROL</b> .....	<b>2</b>
3.1 Temporary Erosion and Sediment Control Facilities.....	2
3.2 Permanent Erosion and Sediment Control Facilities .....	3
<b>4.0 IMPLEMENTATION, MAINTENANCE &amp; GENERAL HOUSEKEEPING</b> .....	<b>3</b>
4.1 Construction Phase .....	3
4.3 Long Term Maintenance Plan .....	4

### APPENDICES

- Appendix A Post-Development Computer Data / Swale Sizing Calculations
- Appendix B Rain Garden Sizing Calculation
- Appendix C Flow Spreader Sizing Calculations
- Appendix D Draft Town of Carmel Stormwater Maintenance Agreement

### FIGURES

- Figure 1: Post-development Drainage Map

## 1.0 INTRODUCTION

### 1.1 Project Description

The site is located at 551 Union Valley Road in the Town of Carmel. The site is approximately 86.0 acres and is designated as Tax Map 87.7-1-1/6/11. The property currently contains a household membership rifle and pistol club. The proposed development includes the addition of a sporting clay course.

The project site is located in the Muscoot Reservoir Watershed Basin. Since the project is a *land development activity* under Town Code but is disturbing between 5,000 s.f. and one acre this project is subject to *NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activities* General Permit (General Permit), and is required to provide erosion controls only.

Notwithstanding, at the request of the Planning Board and Town Engineer, post-construction stormwater management practices (SMP's) have been provided where possible that will provide Water Quality Volume (WQv) Treatment for the proposed improvements.

### 1.2 Existing Site Conditions

The existing property is primarily forested and undeveloped. The eastern portion of the site contains a NYSDEC Wetland (CF-8). The western portion of the property contains a high point in the center and slopes downward toward the property lines. The runoff that flows north, south and west from the above-mentioned high point sheet flows off the property. The runoff that flows east from the high point sheet flows towards the wetland. Currently there are swales along the entrance driveway and eastern portion of the trail. Soil types onsite are identified as ChD/ChC Charlton fine sandy loam, CrC/CsD Charlton-Chatfield complex, ChE Charlton Loam, LeB Leicester Loam and HrF Holis Rock Outcrop Complex.

### 1.3 Proposed Site Conditions

The subject project includes permitting the existing sporting clay course and proposes the stabilization of the existing trail, improvements to the collection and conveyance system and provisions of SMP. Improvements proposed consist of trail stabilization, removal and replacement of trees and installation of permanent stormwater collection, conveyance and treatment systems. This report will provide sizing calculations for post-construction collection and conveyance systems throughout the site including four (4) Rip Rap Swales, three (3) Flow Spreaders and one (1) Rain Garden.

## 2.0 STORMWATER MANAGEMENT

Since this project is disturbing more than 5,000 s.f. the project is subject to Town of Carmel *Chapter 267 Stormwater Management* and the General Permit. As noted above, this means the project is only required to provide erosion and sediment controls. However, at the request of the Town Engineer stormwater management practices have been provided where possible. Rip Rap Swales, Level Spreaders and a Rain Garden are being provided to collect, convey and treat stormwater runoff from the sporting clay course.

Contained in the Appendices are sizing calculations for the proposed stormwater collection, conveyance and treatment systems. Specifically, Appendix A contains the HydroCAD stormwater modeling for the Rip Rap Swales and Flow Spreaders. Both the Rip Rap Swales and Flow Spreaders have been sized for 25-year storm event. As can be seen in the routings the flow spreaders will be able to release the discharge from the 25-year storm event at a non-erosive velocity.

The Flow Spreaders have been sized to meet the requirements of the *New York State Standards and Specifications for Erosion and Sediment Control* (Blue Book). See Appendix C for the Flow Spreaders Calculations.

The Rain Garden has been sized in accordance with the *New York State Stormwater Management Design Manual* (Design Manual). See Appendix B for the Rain Garden Sizing Calculations.

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

Erosion and sediment control will be accomplished by three basic principles: containment of sediment, treatment of dirty water, and stabilization of disturbed areas. As the area to be redeveloped consists of the creation of trails, minimal erosion and sediment control is required through construction. Erosion and sediment control notes have been provided on the drawings and silt fence will be provided downhill of disturbed areas.

#### **3.1 Temporary Erosion and Sediment Control Facilities**

Temporary erosion and sediment control facilities should be installed and maintained as required to reduce the impacts to off-site properties. The owner will be required to provide maintenance for the temporary erosion and sediment control facilities. In general, the following temporary methods and materials should be used to control erosion and sedimentation from the project site:

- Stabilized Construction Entrance
- Dust Control
- Silt Fence Barriers
- Storm Drain Inlet Protection
- Temporary Soil Stabilization
- Flow Spreaders

All temporary erosion control measures shall be maintained as discussed below. Refer to Project Drawings SP-1 and D-1 for the project Erosion and Sediment Control Plan and additional maintenance items for temporary erosion control facilities. In accordance with GP-0-20-001 a NYSDEC trained contractor shall be onsite at all times soil disturbing activities are commencing. In addition, the owner shall retain a Qualified Profession to perform twice weekly inspections of the erosion control facilities.

A stabilized construction entrance should be installed at the entrance to the site as shown on the plan. The design drawings will include details to guide the contractor in the construction of this entrance. The intent of the stabilized construction entrance is to prevent the “tracking” of soil from the site.

Dust control should be accomplished with water sprinkling trucks if required. During dry periods, sprinkler trucks should wet all exposed earth surfaces as required to prevent the transport of air-borne particles to adjoining areas.

Siltation barriers constructed of geosynthetic filter cloth should be installed at the toe of all disturbed slopes. The intent of these barriers is to contain silt and sediment at the source and inhibit its transport by stormwater runoff. The siltation barriers will also help reduce the rate of runoff by creating filters through which the stormwater must pass. During construction the siltation barriers shall be inspected weekly and after a rainfall event and shall be cleaned/replaced when needed.

Storm drain inlet protection in the form of filter fabric inlet protection will be installed around all proposed inlets. The filter fabric inlet protection will serve to filter stormwater runoff before it enters the collection system. Throughout construction the concrete drainage structures, associated piping and inlet protections shall be inspected weekly and after a rainfall event. These items shall be cleaned, repaired and/or replaced when needed.

When land is exposed during development, the exposure shall be kept to the shortest practical period, but in no case more than 7 days. Temporary grass seed and mulch shall be applied to any construction area idle for seven days. The temporary seeding and mulching shall be performed in accordance with the seeding notes illustrated the Project Drawings. Disturbance shall be minimized in the areas required to perform construction. Upon completion of final grading, topsoil, permanent seeding and mulch shall be applied in accordance the Project Drawings.

### 3.2 Permanent Erosion and Sediment Control Facilities

Permanent erosion and sediment control will be accomplished by diverting stormwater runoff from steep slopes, controlling/reducing stormwater runoff velocities and volumes, and vegetative and structural surface stabilization. All of the permanent facilities are relatively maintenance free and only require periodic inspections. The owner will provide maintenance for all the permanent erosion and sediment control facilities. Refer to Project Drawings SP-1 and D-1 for the project Erosion and Sediment Control Plan and additional maintenance items for permanent erosion control facilities. A Stormwater Maintenance Agreement will be entered into with the Town of Carmel which shall require the maintenance of permanent erosion control facilities which can be found in Appendix D.

Flow spreaders have been provided to re-establishing sheet flow from discharge points. At a minimum the flow spreaders will meet the design requirements of the New York State Standards and Specifications for Erosion and Sediment Control (Blue Book). The flow spreader has been included in the routings contained in Appendix A. As can be seen in the routings the level spreader will be able to release the discharge from the 25-year storm event at a non-erosive velocity. The dimensions of the level spreader have been provided on the project drawings.

Rip rap swales have been provided as part of the project. Any erosion should be repaired immediately. In addition, any accumulated sediment or debris identified during inspections should be cleaned from swales.

## 4.0 IMPLEMENTATION, MAINTENANCE & GENERAL HOUSEKEEPING

### 4.1 Construction Phase

Details associated with the implementation and maintenance of the proposed stormwater facilities and erosion control measures during construction are shown on the Project Drawings. Soil disturbance shall not exceed one acre. The erosion control plan will include associated details and notes to aid the contractor in implementing the plan. Construction is anticipated to begin in the summer of 2022 and anticipated to be completed by the fall of 2022.

In addition to the proposed erosion and sediment control facilities, the following good housekeeping best management practices shall be implemented to mitigate potential pollution during the construction phase of the project. The general contractor overseeing the day-to-day site operation shall be responsible for the good housekeeping best management practices included in the following general categories:

- Material Handling and Waste Management
- Establishment of Building Material Staging Areas
- Establishment of Washout Areas
- Proper Equipment Fueling and Maintenance Practices
- Spill Prevention and Control Plan

All construction waste materials shall be collected and removed from the site regularly by the general contractor. The general contractor shall supply waste barrels for proper disposal of waste materials. All personnel working on the site shall be instructed of the proper procedures for construction waste disposal.

Although it is not anticipated any hazardous waste materials will be utilized during construction, any hazardous waste materials shall be disposed of in accordance with federal, state, and local regulations. No hazardous waste shall be disposed of on-site. Hazardous waste materials shall be stored in appropriate and clearly marked containers and segregated from the other non-waste materials. All hazardous waste shall be stored in a structurally sound and sealed shipping containers located in the staging areas. Material safety data sheets, material inventory, and emergency contact numbers will be maintained in the office trailer. All personnel working on the site shall be instructed of the proper procedures for hazardous waste disposal.

Temporary sanitary facilities (portable toilets) shall be provided on site during the entire length of construction. The sanitary facilities shall be located in the staging areas, or in an alternate area away from

the construction activities on the site. The portable toilets shall be inspected weekly for evidence of leaking holding tanks.

All recyclables, including wood pallets, cardboard boxes, and all other recyclable construction scraps shall be disposed of in a designated recycling barrel provided by the contractor and removed from the site regularly. All personnel working on the site shall be instructed of the proper procedures for construction waste recycling.

All construction equipment and maintenance materials shall be stored in a designated staging area. Silt fence shall be installed down gradient of the construction staging area. Shipping containers shall be utilized to store hand tools, small parts, and other construction materials, not taken off site daily. Construction waste barrels, recycling barrels and if necessary hazardous waste containers shall be located within the limits of the construction staging area.

Throughout the construction of the project several types of vehicles and equipment will be used on-site. Fueling of the equipment shall occur within the limits of the construction staging area. Fuel will be delivered to the site as needed, by the general contractor, or a party chosen by the general contractor. Only minor vehicle equipment maintenance shall occur on-site, all major maintenance shall be performed off-site. All equipment fluids generated from minor maintenance activities shall be disposed of into designated drums and stored in accordance with the hazardous waste storage as previously discussed.

Vehicles and equipment shall be inspected on each day of use. Any leak discovered shall be repaired immediately. All leaking equipment unable to be repaired shall be removed from the site. Ample supplies of absorbent, spill-cleanup materials, and spill kits shall be located in the construction staging area. All spills shall be cleaned up immediately upon discovery. Spent absorbent materials and rags shall be hauled off-site immediately after the spill is cleaned for disposal at a local landfill. All personnel working on the site shall be instructed of the proper procedures for spill prevention and control. Any spill large enough to discharge to surface water will be immediately reported to the local fire / police departments, NYCDEP, and the National Response Center 1-800-424-8802.

It is expected that not all of the species will survive within each basin due to variations within each basin such as water, nutrients, and light. During the initial year of planting, the plants may require watering to germinate and establish. Note that several seedings may be required during the first year to completely establish vegetation within the basin. After the initial year of establishment, the basin does not need to be fertilized or watered. A natural selection process will occur over the first few years, such that the species within the seed mixture most suitable to the conditions will survive.

#### 4.2 Long Term Maintenance

This section discusses the maintenance requirements to insure long term performance of the stormwater facilities. The owner will be responsible for the maintenance of all the stormwater facilities.

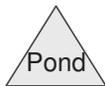
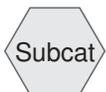
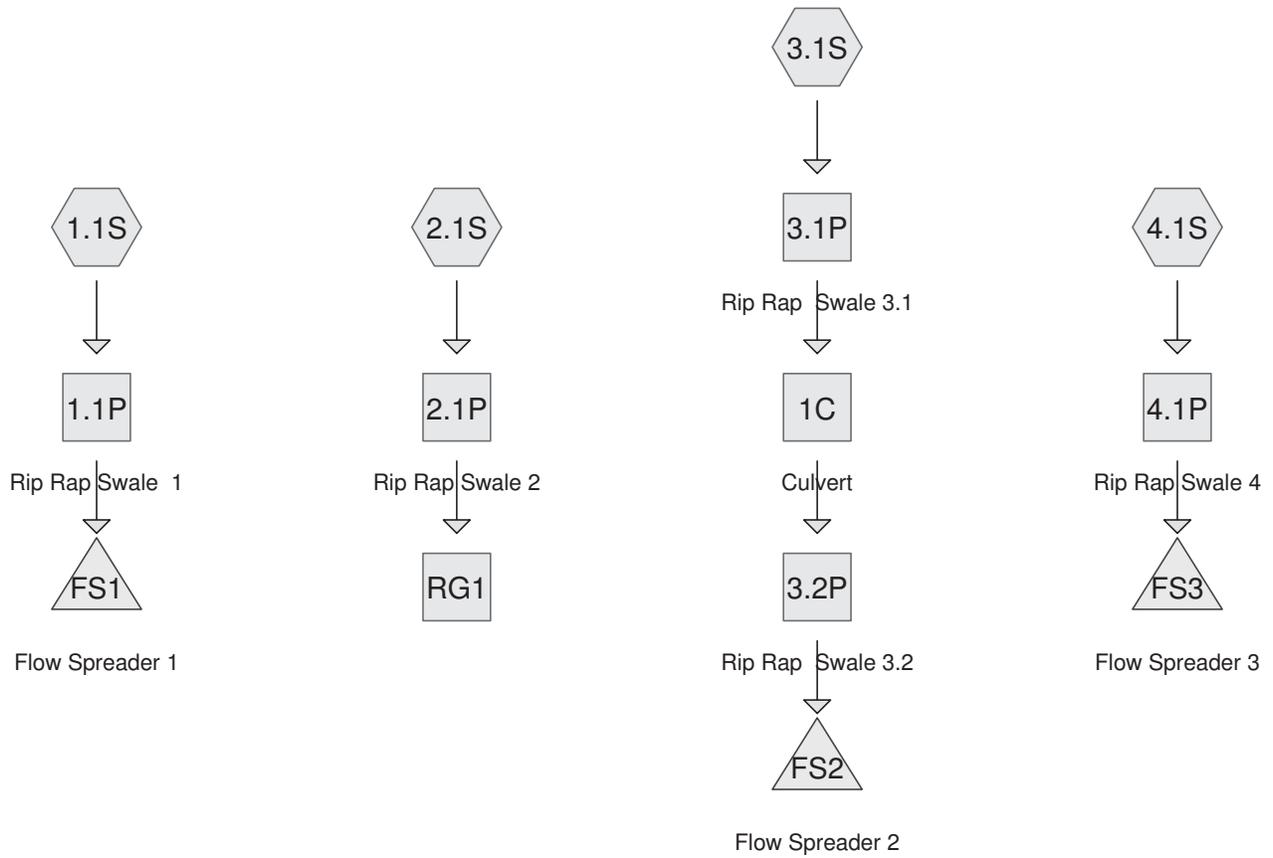
The rip rap swales, flow spreads and rain gardens should be inspected after major storm events and semi-annually. During the inspections, the following should be checked:

- Evidence of clogging of inlet and outlet pipes
- Draindown or rain garden after storm events is occurring
- Accumulation of sediment around the outlet pipes
- Dislodged stones in flow spreader or swale

In addition to guidelines discussed above all maintenance requirements outlined in the Design Manual shall be followed.

**APPENDIX A**  
**Post-Development Computer Data / Swale Sizing Calculations**





**Willow Wood Improvements**

NY-Willow Wood 24-hr S1 25-yr Rainfall=6.31"

Prepared by {enter your company name here}

Printed 3/27/2019

HydroCAD® 10.00-15 s/n 00891 © 2015 HydroCAD Software Solutions LLC

Page 2

**Summary for Subcatchment 1.1S:**

Runoff = 0.8 cfs @ 12.09 hrs, Volume= 0.081 af, Depth= 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs  
 NY-Willow Wood 24-hr S1 25-yr Rainfall=6.31"

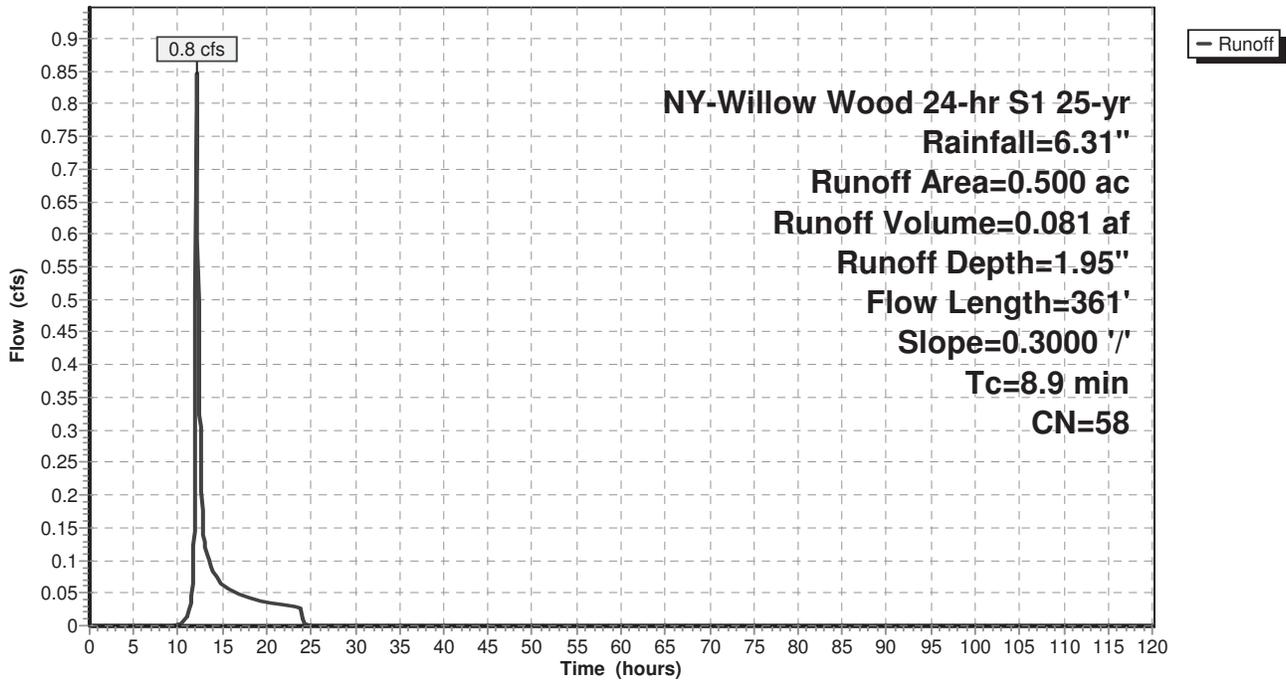
Area (ac)	CN	Description
0.400	55	Woods, Good, HSG B
0.100	70	Woods, Good, HSG C
0.500	58	Weighted Average
0.500		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.4	100	0.3000	0.20		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 2.42"
0.5	261	0.3000	8.22		<b>Shallow Concentrated Flow,</b> Grassed Waterway Kv= 15.0 fps
8.9	361	Total			

**Subcatchment 1.1S:**

Hydrograph



# Willow Wood Improvements

NY-Willow Wood 24-hr S1 25-yr Rainfall=6.31"

Prepared by {enter your company name here}

Printed 3/27/2019

HydroCAD® 10.00-15 s/n 00891 © 2015 HydroCAD Software Solutions LLC

Page 3

## Summary for Subcatchment 2.1S:

Runoff = 1.1 cfs @ 12.10 hrs, Volume= 0.104 af, Depth= 2.49"

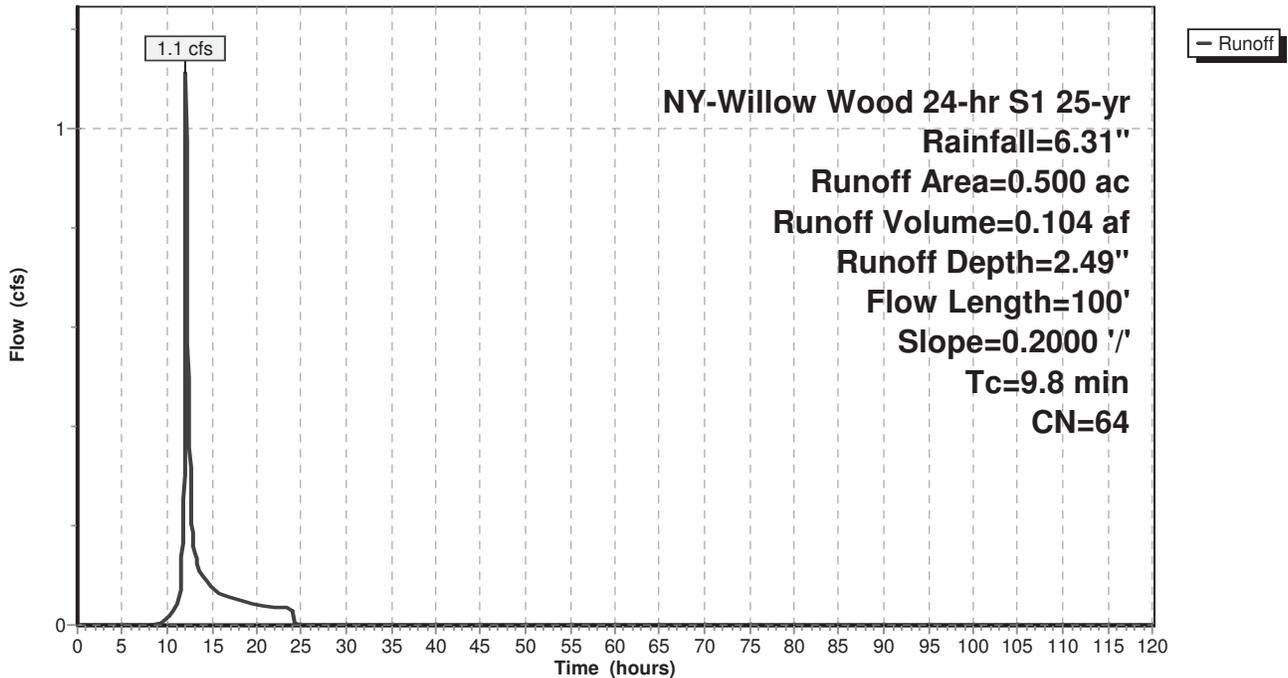
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs  
NY-Willow Wood 24-hr S1 25-yr Rainfall=6.31"

Area (ac)	CN	Description
0.100	98	Paved parking, HSG B
0.400	55	Woods, Good, HSG B
0.500	64	Weighted Average
0.400		80.00% Pervious Area
0.100		20.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	100	0.2000	0.17		Sheet Flow, Woods: Light underbrush n= 0.400 P2= 2.42"

## Subcatchment 2.1S:

Hydrograph



**Willow Wood Improvements**

NY-Willow Wood 24-hr S1 25-yr Rainfall=6.31"

Prepared by {enter your company name here}

Printed 3/27/2019

HydroCAD® 10.00-15 s/n 00891 © 2015 HydroCAD Software Solutions LLC

Page 4

**Summary for Subcatchment 3.1S:**

Runoff = 0.9 cfs @ 12.19 hrs, Volume= 0.104 af, Depth= 2.49"

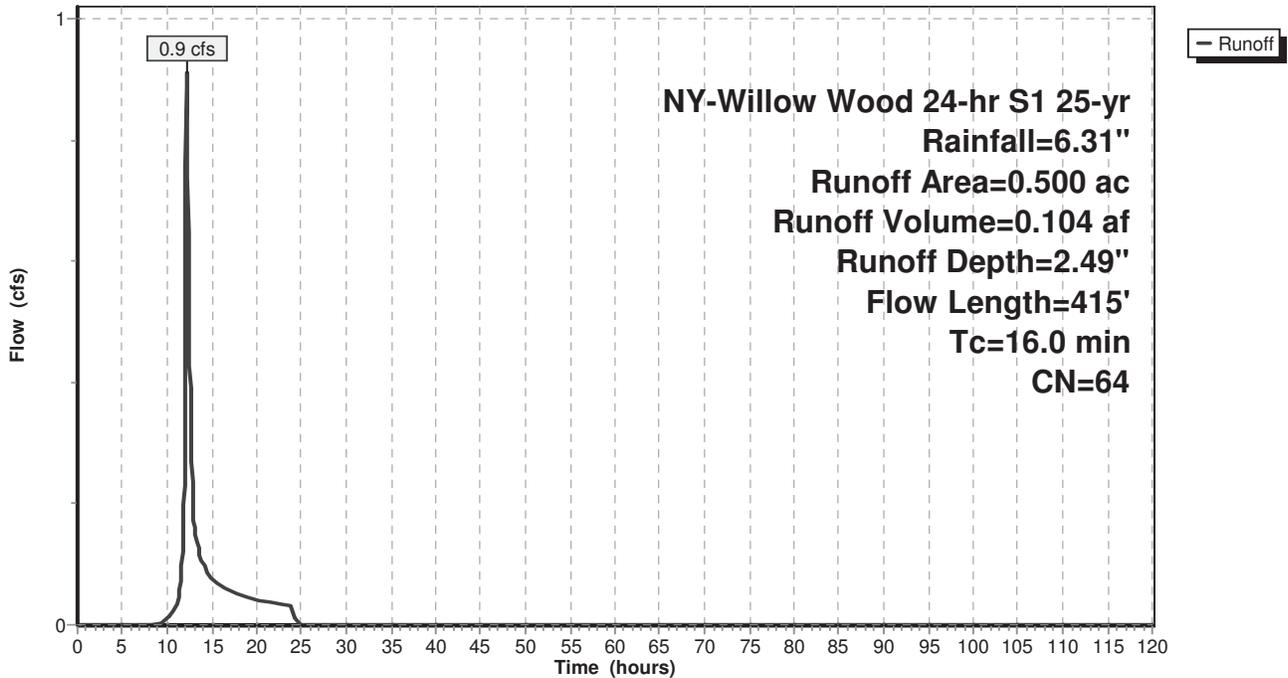
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs  
 NY-Willow Wood 24-hr S1 25-yr Rainfall=6.31"

Area (ac)	CN	Description
0.400	55	Woods, Good, HSG B
0.100	98	Paved parking, HSG B
0.500	64	Weighted Average
0.400		80.00% Pervious Area
0.100		20.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.5	100	0.0900	0.12		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 2.42"
2.5	315	0.1800	2.12		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
16.0	415	Total			

**Subcatchment 3.1S:**

Hydrograph



**Willow Wood Improvements**

NY-Willow Wood 24-hr S1 25-yr Rainfall=6.31"

Prepared by {enter your company name here}

Printed 3/27/2019

HydroCAD® 10.00-15 s/n 00891 © 2015 HydroCAD Software Solutions LLC

Page 5

**Summary for Subcatchment 4.1S:**

Runoff = 1.3 cfs @ 12.13 hrs, Volume= 0.142 af, Depth= 2.13"

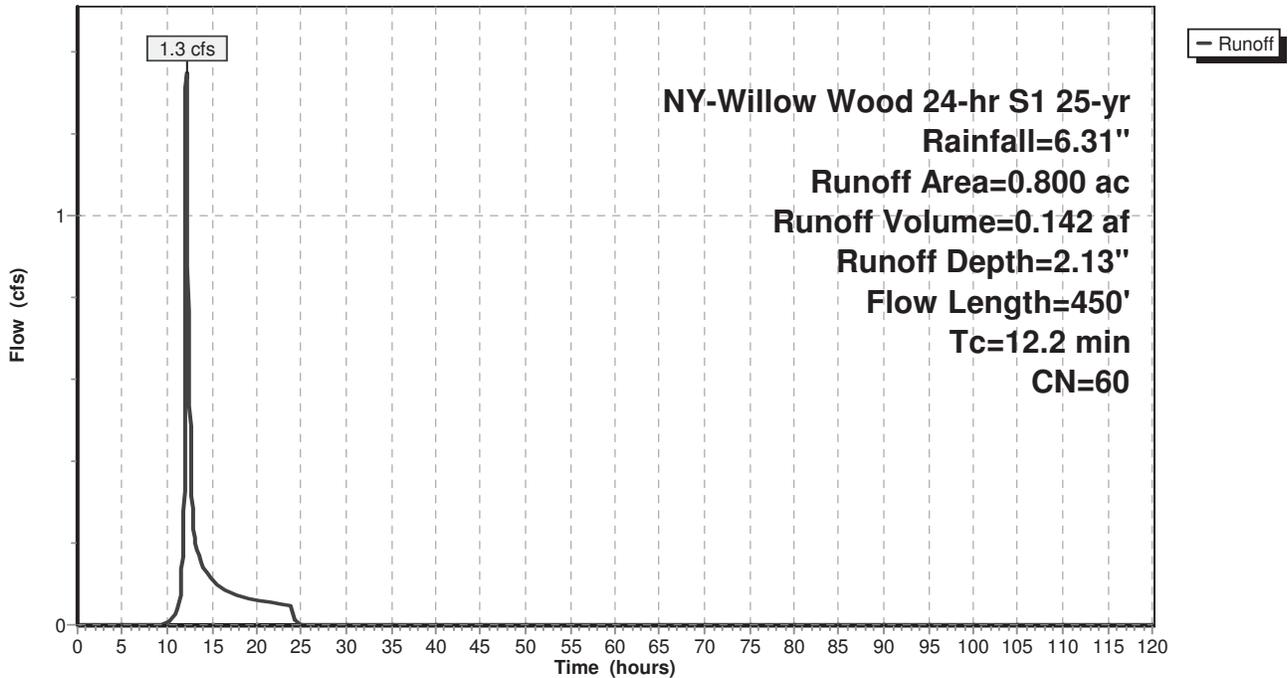
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs  
 NY-Willow Wood 24-hr S1 25-yr Rainfall=6.31"

Area (ac)	CN	Description
0.700	55	Woods, Good, HSG B
0.100	98	Paved parking, HSG B
0.800	60	Weighted Average
0.700		87.50% Pervious Area
0.100		12.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.8	100	0.2000	0.17		<b>Sheet Flow,</b> Woods: Light underbrush n= 0.400 P2= 2.42"
2.4	350	0.2400	2.45		<b>Shallow Concentrated Flow,</b> Woodland Kv= 5.0 fps
12.2	450	Total			

**Subcatchment 4.1S:**

Hydrograph



# Willow Wood Improvements

NY-Willow Wood 24-hr S1 25-yr Rainfall=6.31"

Prepared by {enter your company name here}

Printed 3/27/2019

HydroCAD® 10.00-15 s/n 00891 © 2015 HydroCAD Software Solutions LLC

Page 6

## Summary for Reach 1.1P: Rip Rap Swale 1

Inflow Area = 0.500 ac, 0.00% Impervious, Inflow Depth = 1.95" for 25-yr event  
Inflow = 0.8 cfs @ 12.09 hrs, Volume= 0.081 af  
Outflow = 0.8 cfs @ 12.10 hrs, Volume= 0.081 af, Atten= 1%, Lag= 0.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs  
Max. Velocity= 3.66 fps, Min. Travel Time= 0.5 min  
Avg. Velocity = 1.36 fps, Avg. Travel Time= 1.3 min

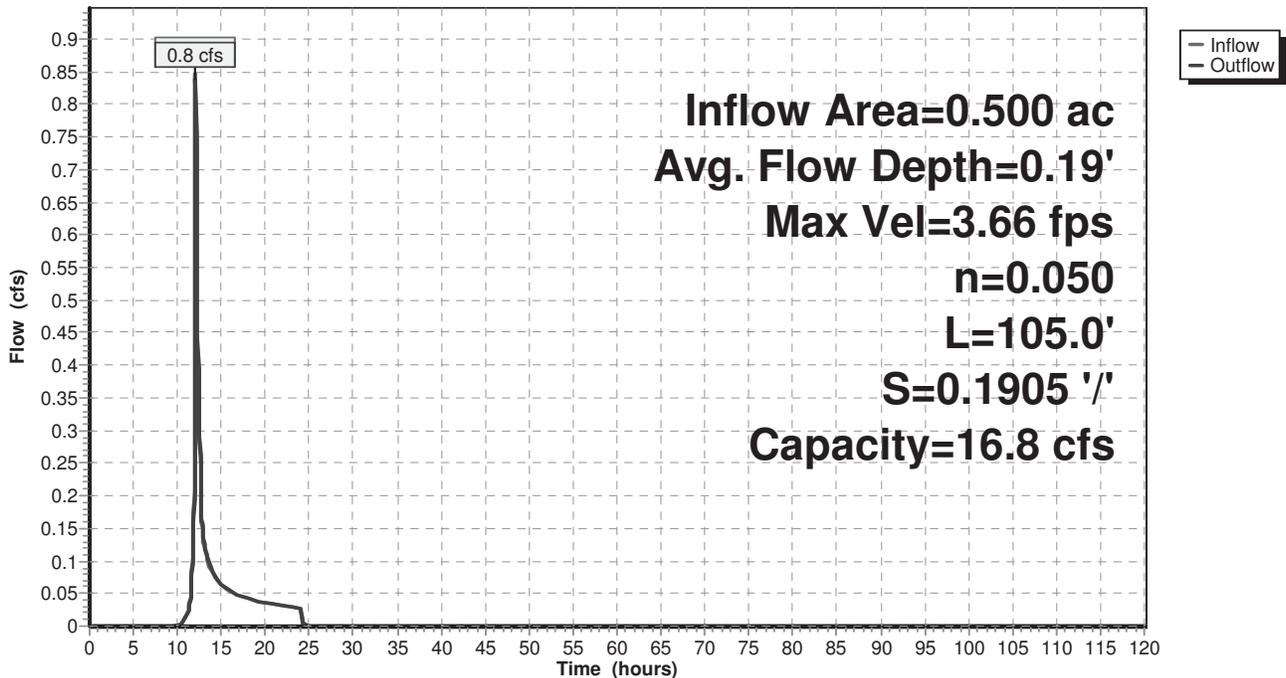
Peak Storage= 24 cf @ 12.10 hrs  
Average Depth at Peak Storage= 0.19'  
Bank-Full Depth= 1.00' Flow Area= 2.0 sf, Capacity= 16.8 cfs

1.00' x 1.00' deep channel, n= 0.050  
Side Slope Z-value= 1.0 '/' Top Width= 3.00'  
Length= 105.0' Slope= 0.1905 '/'  
Inlet Invert= 519.00', Outlet Invert= 499.00'



## Reach 1.1P: Rip Rap Swale 1

Hydrograph



# Willow Wood Improvements

NY-Willow Wood 24-hr S1 25-yr Rainfall=6.31"

Prepared by {enter your company name here}

Printed 3/27/2019

HydroCAD® 10.00-15 s/n 00891 © 2015 HydroCAD Software Solutions LLC

Page 7

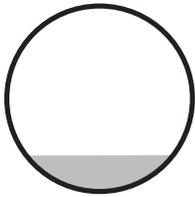
## Summary for Reach 1C: Culvert

Inflow Area = 0.500 ac, 20.00% Impervious, Inflow Depth = 2.49" for 25-yr event  
Inflow = 0.9 cfs @ 12.20 hrs, Volume= 0.104 af  
Outflow = 0.9 cfs @ 12.20 hrs, Volume= 0.104 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs  
Max. Velocity= 8.41 fps, Min. Travel Time= 0.0 min  
Avg. Velocity = 3.58 fps, Avg. Travel Time= 0.1 min

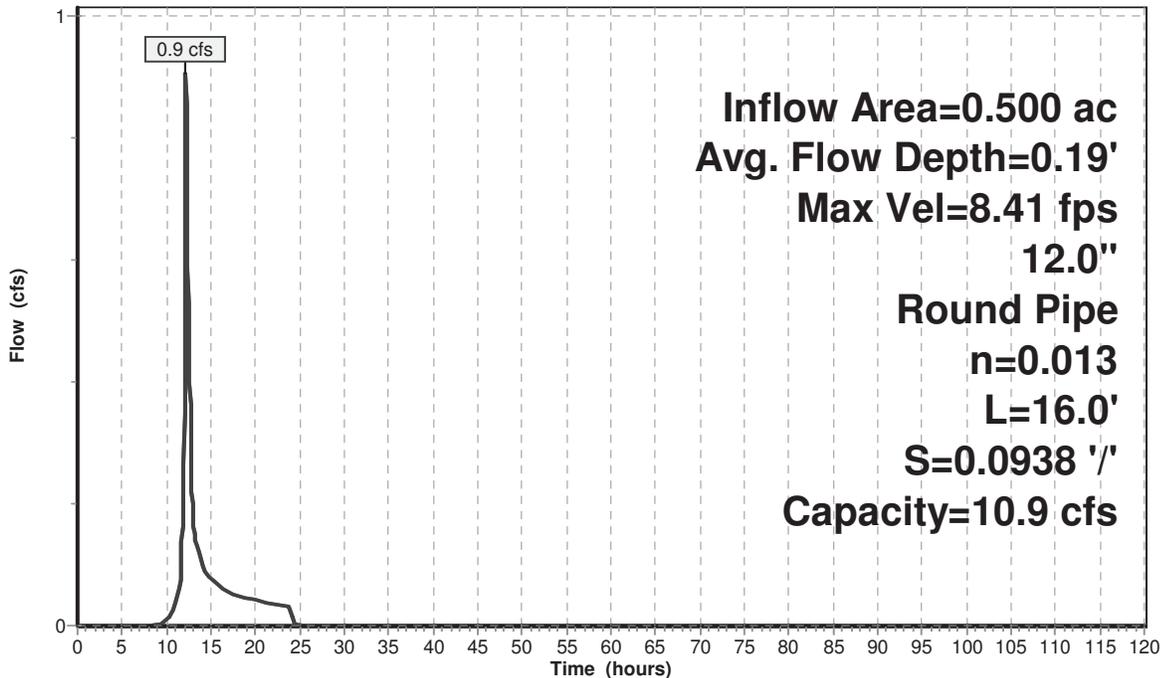
Peak Storage= 2 cf @ 12.20 hrs  
Average Depth at Peak Storage= 0.19'  
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 10.9 cfs

12.0" Round Pipe  
n= 0.013 Corrugated PE, smooth interior  
Length= 16.0' Slope= 0.0938 '/'  
Inlet Invert= 612.50', Outlet Invert= 611.00'



## Reach 1C: Culvert

Hydrograph



**Summary for Reach 2.1P: Rip Rap Swale 2**

Inflow Area = 0.500 ac, 20.00% Impervious, Inflow Depth = 2.49" for 25-yr event  
Inflow = 1.1 cfs @ 12.10 hrs, Volume= 0.104 af  
Outflow = 1.1 cfs @ 12.15 hrs, Volume= 0.104 af, Atten= 5%, Lag= 3.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs  
Max. Velocity= 2.95 fps, Min. Travel Time= 1.8 min  
Avg. Velocity = 1.05 fps, Avg. Travel Time= 5.0 min

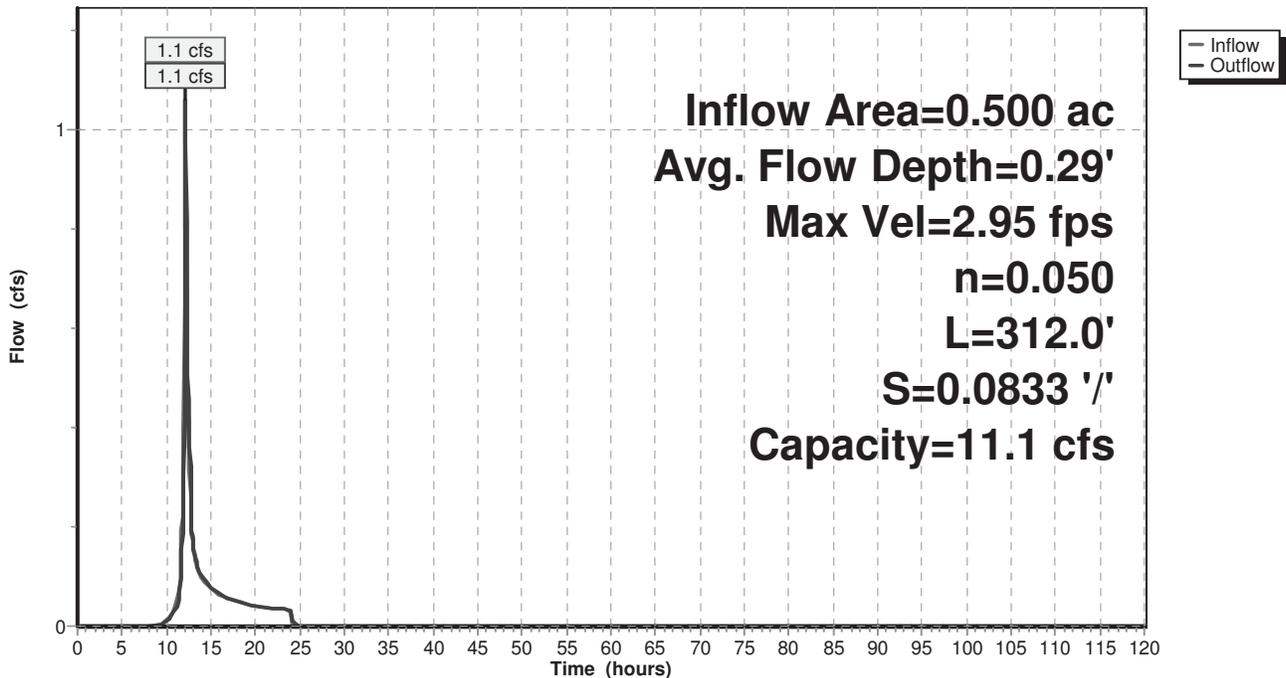
Peak Storage= 115 cf @ 12.12 hrs  
Average Depth at Peak Storage= 0.29'  
Bank-Full Depth= 1.00' Flow Area= 2.0 sf, Capacity= 11.1 cfs

1.00' x 1.00' deep channel, n= 0.050  
Side Slope Z-value= 1.0 '/' Top Width= 3.00'  
Length= 312.0' Slope= 0.0833 '/'  
Inlet Invert= 640.00', Outlet Invert= 614.00'



**Reach 2.1P: Rip Rap Swale 2**

Hydrograph



# Willow Wood Improvements

NY-Willow Wood 24-hr S1 25-yr Rainfall=6.31"

Prepared by {enter your company name here}

Printed 3/27/2019

HydroCAD® 10.00-15 s/n 00891 © 2015 HydroCAD Software Solutions LLC

Page 9

## Summary for Reach 3.1P: Rip Rap Swale 3.1

Inflow Area = 0.500 ac, 20.00% Impervious, Inflow Depth = 2.49" for 25-yr event  
Inflow = 0.9 cfs @ 12.19 hrs, Volume= 0.104 af  
Outflow = 0.9 cfs @ 12.20 hrs, Volume= 0.104 af, Atten= 1%, Lag= 0.8 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs  
Max. Velocity= 3.89 fps, Min. Travel Time= 0.4 min  
Avg. Velocity = 1.46 fps, Avg. Travel Time= 1.0 min

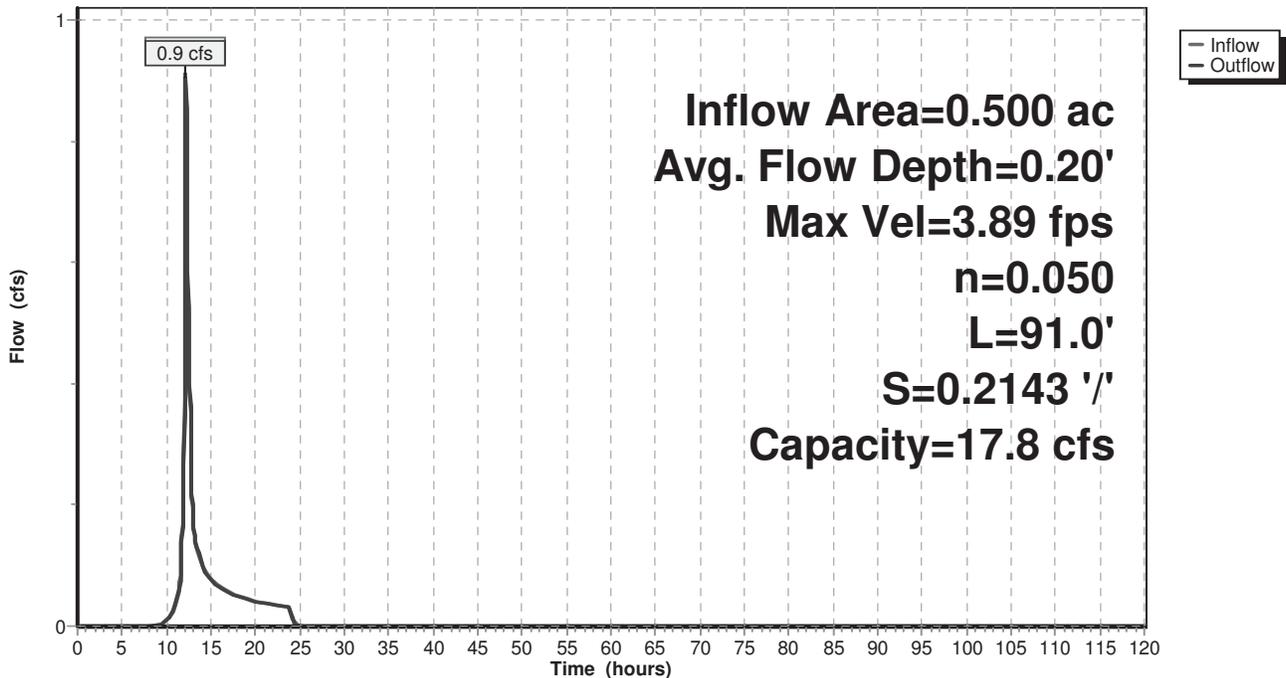
Peak Storage= 21 cf @ 12.19 hrs  
Average Depth at Peak Storage= 0.20'  
Bank-Full Depth= 1.00' Flow Area= 2.0 sf, Capacity= 17.8 cfs

1.00' x 1.00' deep channel, n= 0.050  
Side Slope Z-value= 1.0 '/' Top Width= 3.00'  
Length= 91.0' Slope= 0.2143 '/'  
Inlet Invert= 632.00', Outlet Invert= 612.50'



## Reach 3.1P: Rip Rap Swale 3.1

Hydrograph



# Willow Wood Improvements

NY-Willow Wood 24-hr S1 25-yr Rainfall=6.31"

Prepared by {enter your company name here}

Printed 3/27/2019

HydroCAD® 10.00-15 s/n 00891 © 2015 HydroCAD Software Solutions LLC

Page 10

## Summary for Reach 3.2P: Rip Rap Swale 3.2

Inflow Area = 0.500 ac, 20.00% Impervious, Inflow Depth = 2.49" for 25-yr event  
Inflow = 0.9 cfs @ 12.20 hrs, Volume= 0.104 af  
Outflow = 0.9 cfs @ 12.22 hrs, Volume= 0.104 af, Atten= 1%, Lag= 1.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs  
Max. Velocity= 4.06 fps, Min. Travel Time= 0.7 min  
Avg. Velocity = 1.52 fps, Avg. Travel Time= 2.0 min

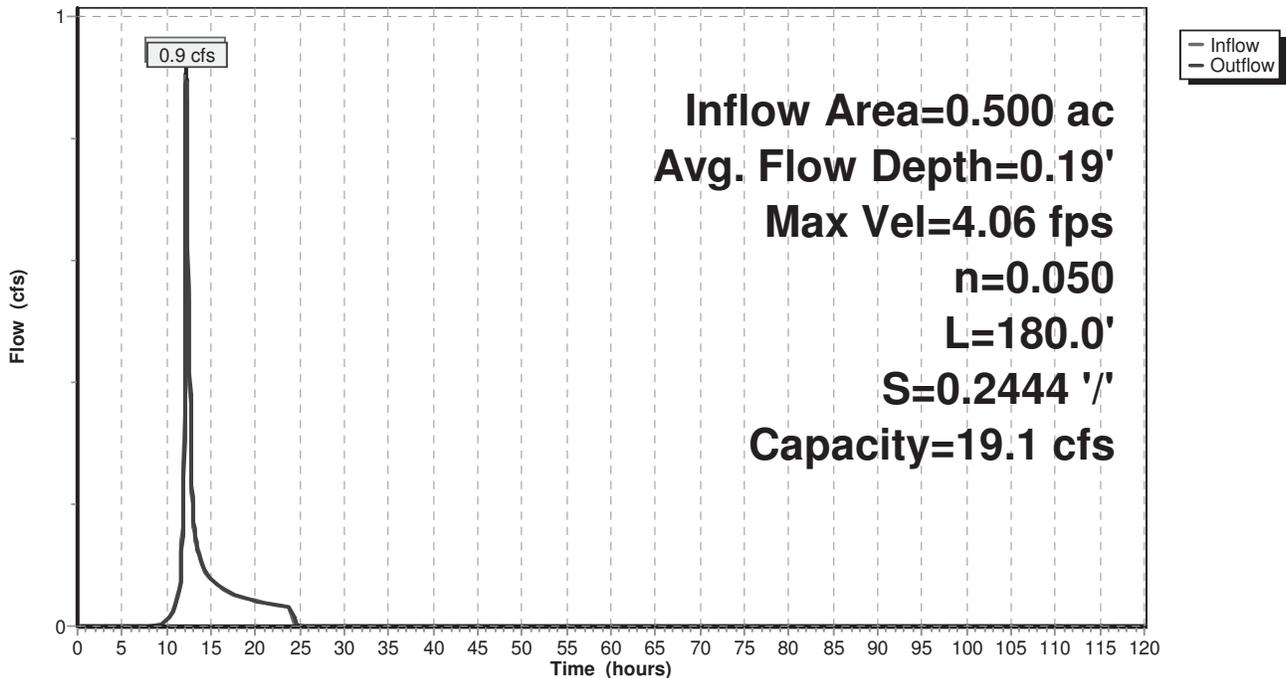
Peak Storage= 40 cf @ 12.21 hrs  
Average Depth at Peak Storage= 0.19'  
Bank-Full Depth= 1.00' Flow Area= 2.0 sf, Capacity= 19.1 cfs

1.00' x 1.00' deep channel, n= 0.050  
Side Slope Z-value= 1.0 '/' Top Width= 3.00'  
Length= 180.0' Slope= 0.2444 '/'  
Inlet Invert= 610.00', Outlet Invert= 566.00'



## Reach 3.2P: Rip Rap Swale 3.2

Hydrograph



# Willow Wood Improvements

NY-Willow Wood 24-hr S1 25-yr Rainfall=6.31"

Prepared by {enter your company name here}

Printed 3/27/2019

HydroCAD® 10.00-15 s/n 00891 © 2015 HydroCAD Software Solutions LLC

Page 11

## Summary for Reach 4.1P: Rip Rap Swale 4

Inflow Area = 0.800 ac, 12.50% Impervious, Inflow Depth = 2.13" for 25-yr event  
Inflow = 1.3 cfs @ 12.13 hrs, Volume= 0.142 af  
Outflow = 1.3 cfs @ 12.16 hrs, Volume= 0.142 af, Atten= 1%, Lag= 1.7 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs  
Max. Velocity= 3.84 fps, Min. Travel Time= 0.8 min  
Avg. Velocity = 1.47 fps, Avg. Travel Time= 2.2 min

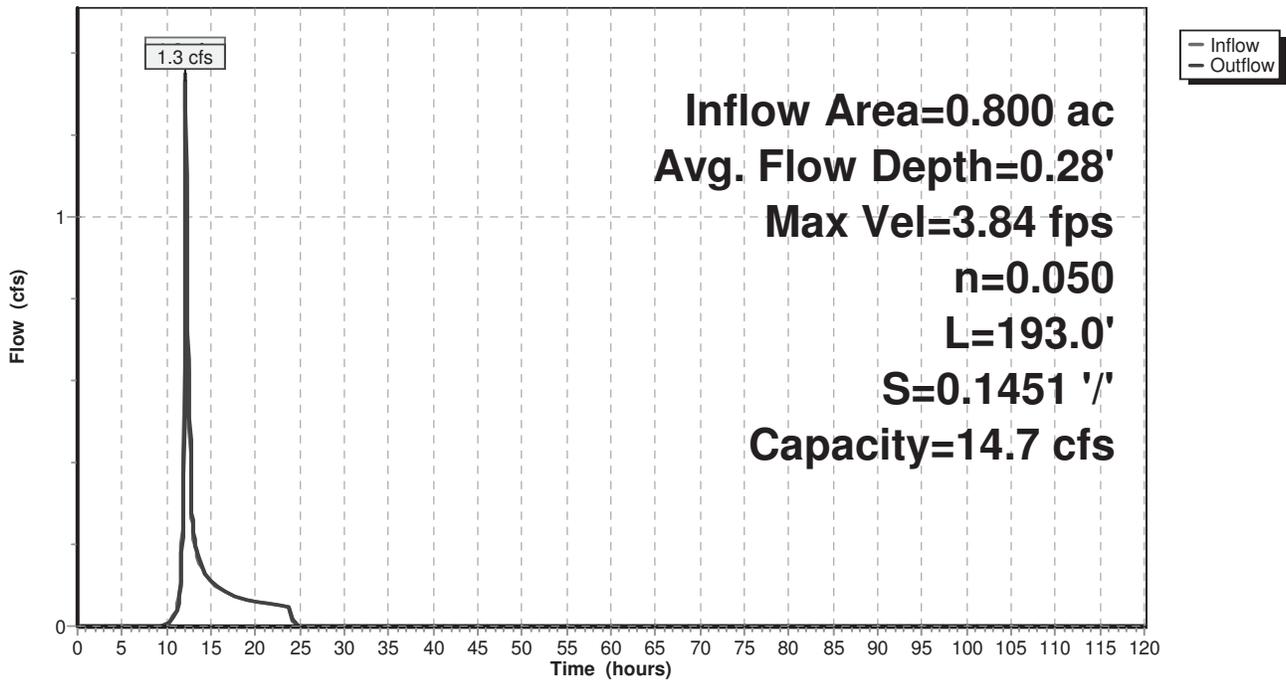
Peak Storage= 68 cf @ 12.15 hrs  
Average Depth at Peak Storage= 0.28'  
Bank-Full Depth= 1.00' Flow Area= 2.0 sf, Capacity= 14.7 cfs

1.00' x 1.00' deep channel, n= 0.050  
Side Slope Z-value= 1.0 '/' Top Width= 3.00'  
Length= 193.0' Slope= 0.1451 '/'  
Inlet Invert= 530.00', Outlet Invert= 502.00'



## Reach 4.1P: Rip Rap Swale 4

Hydrograph



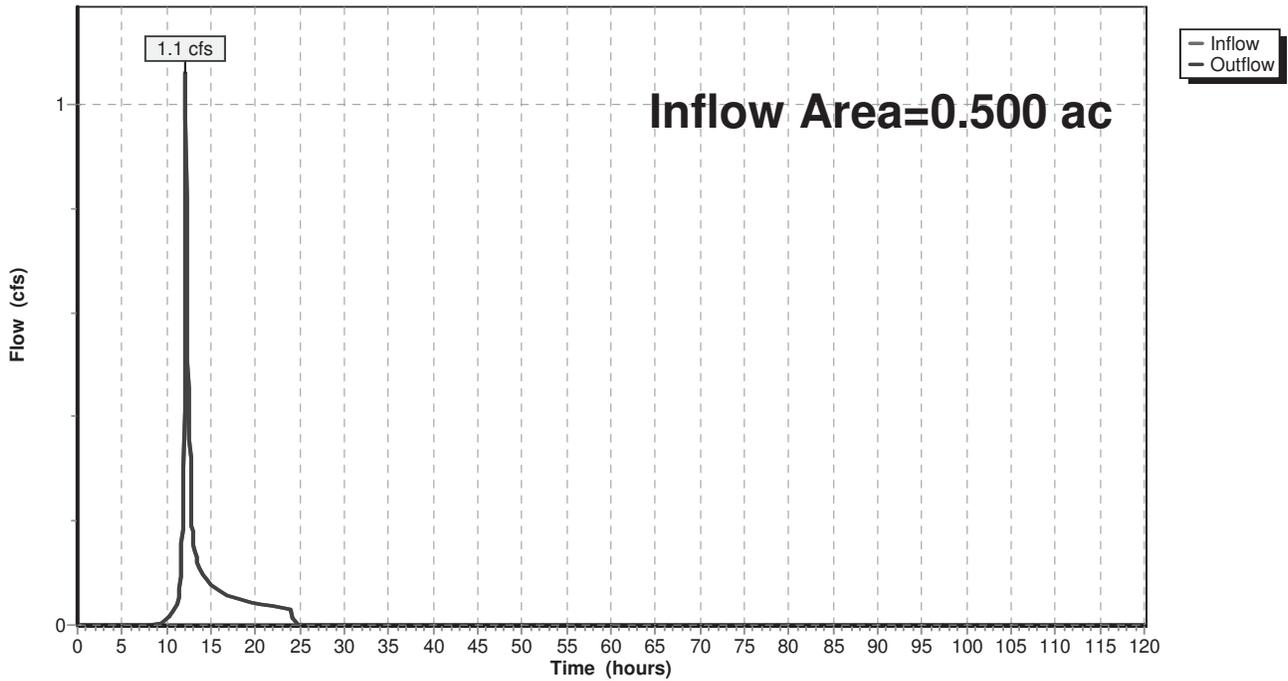
**Summary for Reach RG1:**

Inflow Area = 0.500 ac, 20.00% Impervious, Inflow Depth = 2.49" for 25-yr event  
Inflow = 1.1 cfs @ 12.15 hrs, Volume= 0.104 af  
Outflow = 1.1 cfs @ 12.15 hrs, Volume= 0.104 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

**Reach RG1:**

Hydrograph



**Willow Wood Improvements**

NY-Willow Wood 24-hr S1 25-yr Rainfall=6.31"

Prepared by {enter your company name here}

Printed 3/27/2019

HydroCAD® 10.00-15 s/n 00891 © 2015 HydroCAD Software Solutions LLC

Page 13

**Summary for Pond FS1: Flow Spreader 1**

Inflow Area = 0.500 ac, 0.00% Impervious, Inflow Depth = 1.95" for 25-yr event  
 Inflow = 0.8 cfs @ 12.10 hrs, Volume= 0.081 af  
 Outflow = 0.8 cfs @ 12.10 hrs, Volume= 0.081 af, Atten= 0%, Lag= 0.0 min  
 Primary = 0.8 cfs @ 12.10 hrs, Volume= 0.081 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs  
 Peak Elev= 489.60' @ 12.11 hrs Surf.Area= 12 sf Storage= 4 cf

Plug-Flow detention time= 0.6 min calculated for 0.081 af (100% of inflow)  
 Center-of-Mass det. time= 0.2 min ( 900.3 - 900.0 )

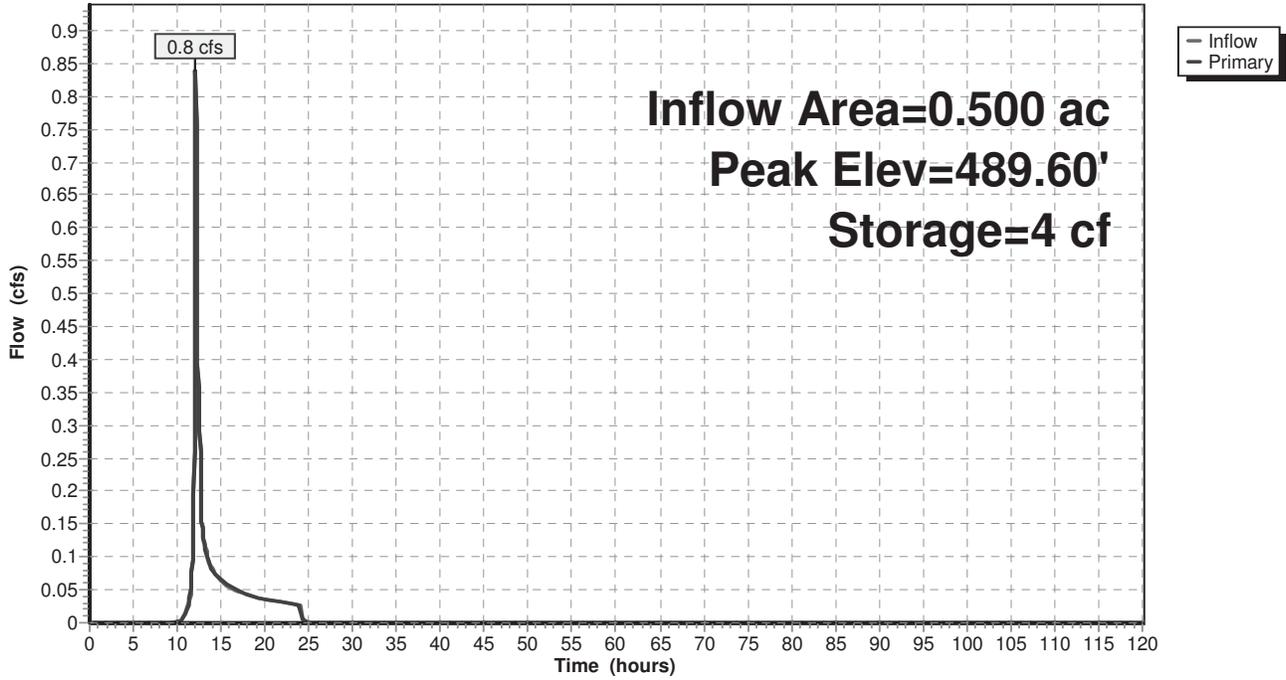
Volume	Invert	Avail.Storage	Storage Description
#1	489.00'	125 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
489.00	0	0	0
490.00	20	10	10
490.50	35	14	24
492.00	100	101	125

Device	Routing	Invert	Outlet Devices
#1	Primary	489.50'	<b>10.0' long x 2.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

**Primary OutFlow** Max=0.8 cfs @ 12.10 hrs HW=489.60' (Free Discharge)  
 ↑1=**Broad-Crested Rectangular Weir** (Weir Controls 0.8 cfs @ 0.81 fps)

### Pond FS1: Flow Spreader 1

Hydrograph



**Willow Wood Improvements**

NY-Willow Wood 24-hr S1 25-yr Rainfall=6.31"

Prepared by {enter your company name here}

Printed 3/27/2019

HydroCAD® 10.00-15 s/n 00891 © 2015 HydroCAD Software Solutions LLC

Page 15

**Summary for Pond FS2: Flow Spreader 2**

Inflow Area = 0.500 ac, 20.00% Impervious, Inflow Depth = 2.49" for 25-yr event  
 Inflow = 0.9 cfs @ 12.22 hrs, Volume= 0.104 af  
 Outflow = 0.9 cfs @ 12.22 hrs, Volume= 0.101 af, Atten= 0%, Lag= 0.2 min  
 Primary = 0.9 cfs @ 12.22 hrs, Volume= 0.101 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs  
 Peak Elev= 559.61' @ 12.22 hrs Surf.Area= 183 sf Storage= 146 cf

Plug-Flow detention time= 23.3 min calculated for 0.101 af (97% of inflow)  
 Center-of-Mass det. time= 7.7 min ( 897.6 - 889.8 )

Volume	Invert	Avail.Storage	Storage Description
#1	558.00'	228 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

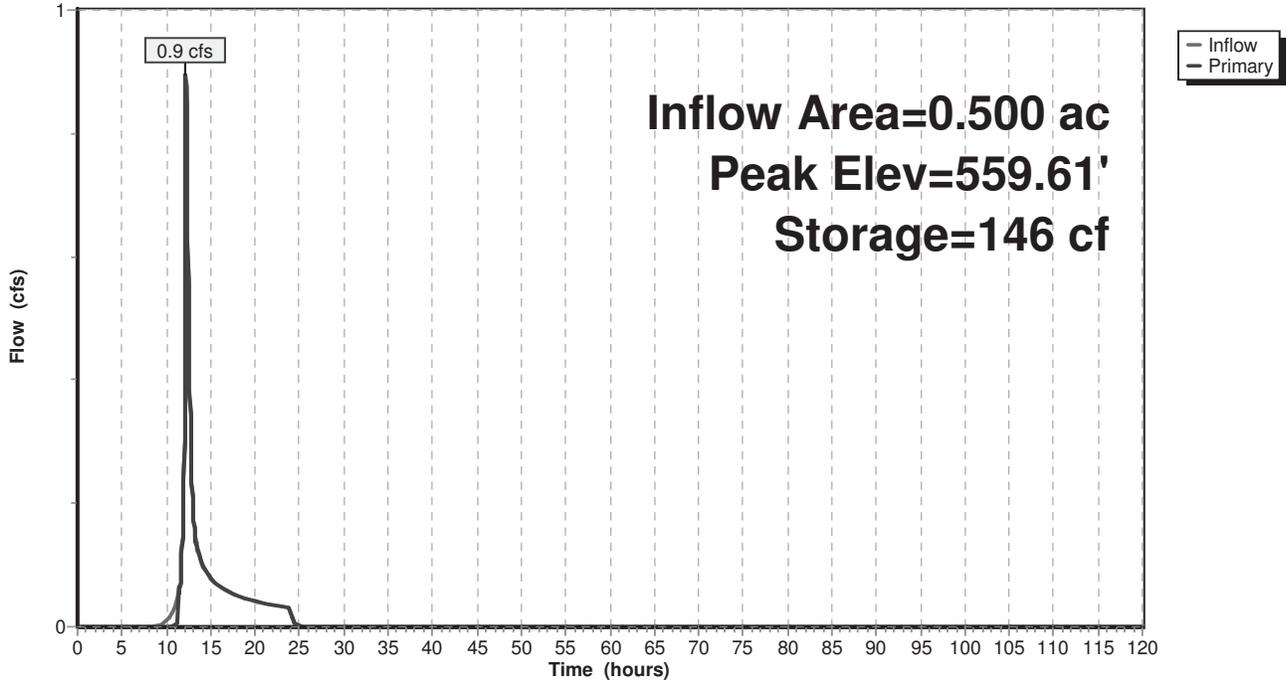
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
558.00	0	0	0
559.50	170	128	128
560.00	230	100	228

Device	Routing	Invert	Outlet Devices
#1	Primary	559.50'	<b>10.0' long x 2.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

**Primary OutFlow** Max=0.9 cfs @ 12.22 hrs HW=559.61' (Free Discharge)  
 ↑1=**Broad-Crested Rectangular Weir** (Weir Controls 0.9 cfs @ 0.83 fps)

**Pond FS2: Flow Spreader 2**

Hydrograph



**Willow Wood Improvements**

NY-Willow Wood 24-hr S1 25-yr Rainfall=6.31"

Prepared by {enter your company name here}

Printed 3/27/2019

HydroCAD® 10.00-15 s/n 00891 © 2015 HydroCAD Software Solutions LLC

Page 17

**Summary for Pond FS3: Flow Spreader 3**

Inflow Area = 0.800 ac, 12.50% Impervious, Inflow Depth = 2.13" for 25-yr event  
 Inflow = 1.3 cfs @ 12.16 hrs, Volume= 0.142 af  
 Outflow = 1.3 cfs @ 12.16 hrs, Volume= 0.141 af, Atten= 0%, Lag= 0.1 min  
 Primary = 1.3 cfs @ 12.16 hrs, Volume= 0.141 af

Routing by Stor-Ind method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs  
 Peak Elev= 496.64' @ 12.16 hrs Surf.Area= 58 sf Storage= 43 cf

Plug-Flow detention time= 4.8 min calculated for 0.141 af (99% of inflow)  
 Center-of-Mass det. time= 1.6 min ( 899.3 - 897.6 )

Volume	Invert	Avail.Storage	Storage Description
#1	495.00'	178 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)

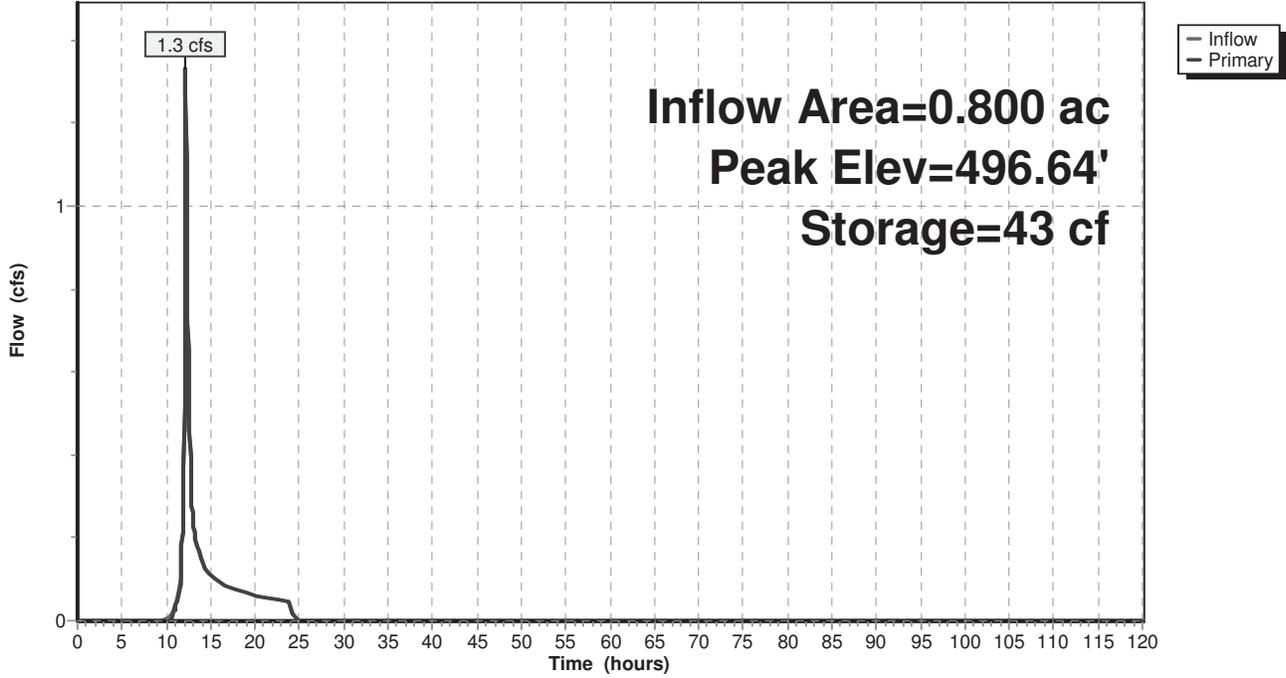
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
495.00	0	0	0
496.00	30	15	15
496.50	50	20	35
498.00	140	143	178

Device	Routing	Invert	Outlet Devices
#1	Primary	496.50'	<b>10.0' long x 2.0' breadth Broad-Crested Rectangular Weir</b> Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 Coef. (English) 2.54 2.61 2.61 2.60 2.66 2.70 2.77 2.89 2.88 2.85 3.07 3.20 3.32

**Primary OutFlow** Max=1.3 cfs @ 12.16 hrs HW=496.64' (Free Discharge)  
 ↑1=**Broad-Crested Rectangular Weir** (Weir Controls 1.3 cfs @ 0.94 fps)

**Pond FS3: Flow Spreader 3**

Hydrograph



## APPENDIX B Rain Garden Sizing Calculations

*(See HydroCAD output below for the WQ<sub>v</sub> used in the below equation)*

### **Rain Garden Volume Provided (Section 5.3.7 of NYSSWDM)**

$$WQ_v \text{ required} \leq V_{SM} + V_{DL} + (D_P \times A_{RG})$$

$$V_{SM} = A_{RG} \times D_{SM} \times n_{SM} = 700 \times 1.5 \times 0.2 = 210 \text{ FT}^3$$

$$V_{DL} = A_{RG} \times D_{DL} \times n_{DL} = 700 \times 0.5 \times 0.4 = 140 \text{ FT}^3$$

$V_{SM}$  = volume of the soil media (in cubic feet)

$V_{DL}$  = volume of the gravel drainage layer (in cubic feet)

$A_{RG}$  = rain garden surface area (in square feet)

$D_{SM}$  = depth of the soil media (1.5 foot)

$D_{DL}$  = depth of the drainage layer (0.5 feet)

$D_P$  = depth of ponding above surface (0.5 feet)

$n_{SM}$  = porosity of the soil media (0.2)

$n_{DL}$  = porosity of the drainage layer (0.4)

$$\text{Therefore, } 697 \leq 210 + 140 + (0.5 \times 700) = 700 \text{ FT}^3$$

**The required WQ<sub>v</sub> of 697 FT<sup>3</sup> ≤ rain garden volume provided of 700 FT<sup>3</sup>**

Therefore, the proposed rain garden design for treating a contributing area of 23,372 square feet exceeds the NYSDEC WQ<sub>v</sub> requirements.



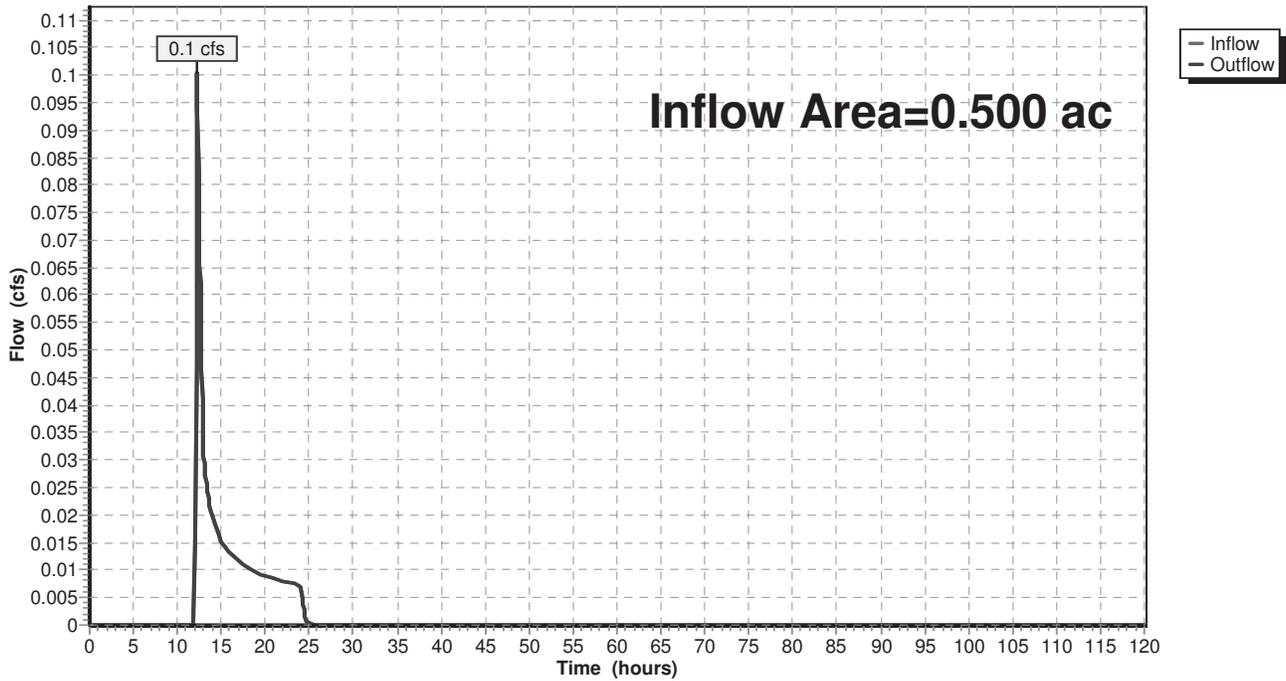
**Summary for Reach RG1:**

Inflow Area = 0.500 ac, 20.00% Impervious, Inflow Depth = 0.37" for 1-yr event  
Inflow = 0.1 cfs @ 12.27 hrs, Volume= 0.016 af  
Outflow = 0.1 cfs @ 12.27 hrs, Volume= 0.016 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-120.00 hrs, dt= 0.05 hrs

**Reach RG1:**

Hydrograph





**APPENDIX C**  
**Flow Spreader Sizing Calculations**

The proposed Flow Spreader for the Willow Wood Country Club project is sized to disperse flow uniformly from the 25-year design storm event and is sized in accordance with the *New York State Standards and Specifications for Erosion and Sediment Control* (Blue Book).

Utilizing the calculated flows from Appendix C and the design criteria stated on Figure 3.7 – *Flow Spreader Detail* of the Blue Book, the size of the Flow Spreader was calculated as follows:

Flow Spreader ID	25-Year Peak Flow (cfs)	Minimum Entrance Width (ft.)	Depth (ft.)	End Width (ft.)	Length (ft.)
FS1	0.8 <sup>(1)</sup>	10	0.10	10	10
FS2	0.9 <sup>(1)</sup>	10	0.11	10	10
FS3	1.3 <sup>(1)</sup>	10	0.14	10	10

<sup>1</sup> 25-year peak flow provided in Appendix A.



**APPENDIX D**  
**DRAFT Town of Carmel Stormwater Maintenance Agreement**



## ZONING

### *156 Attachment 2*

#### **Town of Carmel**

#### **Sample Stormwater Facility Maintenance Agreement [Amended 4-8-2015 by L.L. No. 1-2015]**

Whereas, the Town of Carmel, County of Putnam, State of New York and Willow Wood Country Club, Inc. want to enter into an agreement to provide for the long-term maintenance and continuation of stormwater control measures approved by the Municipality for the below named project, and

Whereas, the Municipality and the Willow Wood Country Club, Inc. desire that the stormwater control measures be built in accordance with the approved project plans and thereafter be maintained, cleaned, repaired, replaced and continued in perpetuity in order to ensure optimum performance of the components.

Therefore, the Municipality and the Willow Wood Country Club, Inc. agree as follows:

1. This agreement inures to the benefit of the Municipality and binds the Willow Wood Country Club, Inc., its successors and assigns, to the maintenance provisions depicted in the approved project plans which are attached as Schedule A of this agreement.
2. The Willow Wood Country Club, Inc. shall maintain, clean, repair, replace and continue the stormwater control measures depicted in Schedule A as necessary to ensure optimum performance of the measures to design specifications. The stormwater control measures shall include, but shall not be limited to, the following: drainage ditches, swales, rain gardens, flow spreaders, drop inlets, pipes, and culverts.
3. The Willow Wood Country Club, Inc. shall be responsible for all expenses related to the maintenance of the stormwater control measures and shall establish a means for the collection and distribution of expenses among parties for any commonly owned facilities.
4. The Willow Wood Country Club, Inc. shall provide for the periodic inspection of the stormwater control measures, not less than once in every five-year period, to determine the condition and integrity of the measures. Such inspection shall be performed by a professional engineer licensed by the State of New York. The inspecting engineer shall prepare and submit to the Municipality, within 30 days of the inspection, a written report of the findings, including recommendations for those actions necessary for the continuation of the stormwater control measures.
5. The Willow Wood Country Club, Inc. shall not authorize, undertake or permit alteration, abandonment, modification or discontinuation of the stormwater control measures except in accordance with written approval of the Municipality.
6. The Willow Wood Country Club, Inc. shall undertake necessary repairs and replacement of the stormwater control measures at the direction of the Municipality or in accordance with the recommendations of the inspecting engineer.

CARMEL CODE

7. The Willow Wood Country Club, Inc. shall provide to the Municipality, within 30 days of the date of this agreement, a security for the maintenance and continuation of the stormwater control measures in the form of a bond, letter of credit or escrow account.
  8. This agreement shall be recorded in the Office of the County Clerk, County of Putnam, together with the deed for the subject premises.
  9. In the event that the Municipality determines that the Willow Wood Country Club, Inc. has failed to construct or maintain the stormwater control measures in accordance with the project plan or has failed to undertake corrective action specified by the Municipality or by the inspecting engineer, the Municipality is authorized to undertake such steps as reasonably necessary for the preservation, continuation or maintenance of the stormwater control measures and to affix the expenses thereof as a lien against the property.
  10. Nothing within this agreement shall be construed to impose any affirmative obligation or covenant of performance on the Municipality.
  11. This agreement is effective \_\_\_\_\_.
- Owner's Representative: \_\_\_\_\_.
- Representative Signature: \_\_\_\_\_.



## **FIGURES**





**Project Site Information**

Project/Site Name

W i l l o w   W o o d   C o u n t r y   C l u b ,   I n c .

Street Address (NOT P.O. BOX)

5 5 1   U n i o n   V a l l e y   R o a d ,   M a h o p a c ,   N Y

Side of Street

North    South    East    West

City/Town/Village (THAT ISSUES BUILDING PERMIT)

C a r m e l

State

N Y

Zip

1 0 5 4 1 -

County

P u t n a m

DEC Region

3

Name of Nearest Cross Street

E n g l e w o o d   T e r r a c e

Distance to Nearest Cross Street (Feet)

3 7 0

Project In Relation to Cross Street

North    South    East    West

Tax Map Numbers

Section-Block-Parcel

8 7 . - 1 - 7

Tax Map Numbers

1. Provide the Geographic Coordinates for the project site in NYTM Units. To do this you **must** go to the NYSDEC Stormwater Interactive Map on the DEC website at:

[www.dec.ny.gov/imsmaps/stormwater/viewer.htm](http://www.dec.ny.gov/imsmaps/stormwater/viewer.htm)

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located your project site, go to the tool boxes on the top and choose "i"(identify). Then click on the center of your site and a new window containing the X, Y coordinates in UTM will pop up. Transcribe these coordinates into the boxes below. For problems with the interactive map use the help function.

**X Coordinates (Easting)**

4 1 3 5 1 5

**Y Coordinates (Northing)**

7 3 7 0 3 7 3

2. What is the nature of this construction project?

- New Construction
- Redevelopment with increase in impervious area
- Redevelopment with no increase in impervious area

3. Select the predominant land use for both pre and post development conditions.  
**SELECT ONLY ONE CHOICE FOR EACH**

**Pre-Development  
Existing Land Use**

- FOREST
- PASTURE/OPEN LAND
- CULTIVATED LAND
- SINGLE FAMILY HOME
- SINGLE FAMILY SUBDIVISION
- TOWN HOME RESIDENTIAL
- MULTIFAMILY RESIDENTIAL
- INSTITUTIONAL/SCHOOL
- INDUSTRIAL
- COMMERCIAL
- ROAD/HIGHWAY
- RECREATIONAL/SPORTS FIELD
- BIKE PATH/TRAIL
- LINEAR UTILITY
- PARKING LOT
- OTHER

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Post-Development  
Future Land Use**

- SINGLE FAMILY HOME
- SINGLE FAMILY SUBDIVISION
- TOWN HOME RESIDENTIAL
- MULTIFAMILY RESIDENTIAL
- INSTITUTIONAL/SCHOOL
- INDUSTRIAL
- COMMERCIAL
- MUNICIPAL
- ROAD/HIGHWAY
- RECREATIONAL/SPORTS FIELD
- BIKE PATH/TRAIL
- LINEAR UTILITY (water, sewer, gas, etc.)
- PARKING LOT
- CLEARING/GRADING ONLY
- DEMOLITION, NO REDEVELOPMENT
- WELL DRILLING ACTIVITY \*(Oil, Gas, etc.)
- OTHER

Number of Lots

--	--	--

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**\*Note:** for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area Within Disturbed Area																				
<table border="1" style="display: inline-table; width: 60px; height: 25px;"> <tr> <td style="width: 20px;"></td><td style="width: 20px;">8</td><td style="width: 20px;">6</td><td style="width: 20px;">.</td><td style="width: 20px;"></td> </tr> </table>		8	6	.		<table border="1" style="display: inline-table; width: 60px; height: 25px;"> <tr> <td style="width: 20px;"></td><td style="width: 20px;">0</td><td style="width: 20px;">9</td><td style="width: 20px;">.</td><td style="width: 20px;"></td> </tr> </table>		0	9	.		<table border="1" style="display: inline-table; width: 60px; height: 25px;"> <tr> <td style="width: 20px;"></td><td style="width: 20px;">0</td><td style="width: 20px;">.</td><td style="width: 20px;"></td><td style="width: 20px;"></td> </tr> </table>		0	.			<table border="1" style="display: inline-table; width: 60px; height: 25px;"> <tr> <td style="width: 20px;"></td><td style="width: 20px;"></td><td style="width: 20px;"></td><td style="width: 20px;">.</td><td style="width: 20px;"></td> </tr> </table>				.	
	8	6	.																				
	0	9	.																				
	0	.																					
			.																				

5. Do you plan to disturb more than 5 acres of soil at any one time?  Yes  No

6. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

A	B	C	D								
<table border="1" style="display: inline-table; width: 40px; height: 25px;"><tr><td></td><td>0</td></tr></table> %		0	<table border="1" style="display: inline-table; width: 40px; height: 25px;"><tr><td>9</td><td>6</td></tr></table> %	9	6	<table border="1" style="display: inline-table; width: 40px; height: 25px;"><tr><td></td><td>4</td></tr></table> %		4	<table border="1" style="display: inline-table; width: 40px; height: 25px;"><tr><td></td><td>0</td></tr></table> %		0
	0										
9	6										
	4										
	0										

7. Is this a phased project?  Yes  No

8. Enter the planned start and end dates of the disturbance activities.

<b>Start Date</b>	<b>-</b>	<b>End Date</b>																				
<table border="1" style="display: inline-table; width: 60px; height: 25px;"><tr><td>0</td><td>7</td><td>/</td><td>0</td><td>1</td><td>/</td><td>2</td><td>0</td><td>2</td><td>2</td></tr></table>	0	7	/	0	1	/	2	0	2	2		<table border="1" style="display: inline-table; width: 60px; height: 25px;"><tr><td>1</td><td>0</td><td>/</td><td>0</td><td>1</td><td>/</td><td>2</td><td>0</td><td>2</td><td>2</td></tr></table>	1	0	/	0	1	/	2	0	2	2
0	7	/	0	1	/	2	0	2	2													
1	0	/	0	1	/	2	0	2	2													



15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)?  Yes  No  Unknown

16. What is the name of the municipality/entity that owns the separate storm sewer system?

T o w n   o f   C a r m e l

17. Does any runoff from the site enter a sewer classified as a Combined Sewer?  Yes  No  Unknown

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law?  Yes  No

19. Is this property owned by a state authority, state agency, federal government or local government?  Yes  No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.)  Yes  No

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)?  Yes  No

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)?  Yes  No  
**If No, skip questions 23 and 27-39.**

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual?  Yes  No





**Post-construction Stormwater Management Practice (SMP) Requirements**

**Important:** Completion of Questions 27-39 is not required if response to Question 22 is No.

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

Preservation of Undisturbed Areas

Preservation of Buffers

Reduction of Clearing and Grading

Locating Development in Less Sensitive Areas

Roadway Reduction

Sidewalk Reduction

Driveway Reduction

Cul-de-sac Reduction

Building Footprint Reduction

Parking Reduction

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

**Total WQv Required**

.     acre-feet

29. Identify the RR techniques (Area Reduction), RR techniques (Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required (#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

**Note:** Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

RR Techniques (Area Reduction)	Total Contributing Area (acres)		Total Contributing Impervious Area(acres)	
Conservation of Natural Areas (RR-1) ...	<input type="text"/>	<input type="text"/>	and/or	<input type="text"/>
Sheetflow to Riparian Buffers/Filters Strips (RR-2) .....	<input type="text"/>	<input type="text"/>	and/or	<input type="text"/>
Tree Planting/Tree Pit (RR-3) .....	<input type="text"/>	<input type="text"/>	and/or	<input type="text"/>
Disconnection of Rooftop Runoff (RR-4) ..	<input type="text"/>	<input type="text"/>	and/or	<input type="text"/>
<u>RR Techniques (Volume Reduction)</u>				
Vegetated Swale (RR-5) .....				
Rain Garden (RR-6) .....				
Stormwater Planter (RR-7) .....				
Rain Barrel/Cistern (RR-8) .....				
Porous Pavement (RR-9) .....				
Green Roof (RR-10) .....				
<u>Standard SMPs with RRv Capacity</u>				
Infiltration Trench (I-1) .....				
Infiltration Basin (I-2) .....				
Dry Well (I-3) .....				
Underground Infiltration System (I-4) .....				
Bioretention (F-5) .....				
Dry Swale (O-1) .....				
<u>Standard SMPs</u>				
Micropool Extended Detention (P-1) .....				
Wet Pond (P-2) .....				
Wet Extended Detention (P-3) .....				
Multiple Pond System (P-4) .....				
Pocket Pond (P-5) .....				
Surface Sand Filter (F-1) .....				
Underground Sand Filter (F-2) .....				
Perimeter Sand Filter (F-3) .....				
Organic Filter (F-4) .....				
Shallow Wetland (W-1) .....				
Extended Detention Wetland (W-2) .....				
Pond/Wetland System (W-3) .....				
Pocket Wetland (W-4) .....				
Wet Swale (O-2) .....				



33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

**Note:** Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29.

**WQv Provided**

				.						.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.					.		
--	--	--	--	---	--	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--	--	--	---	--	--





**Owner/Operator Certification**

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

**Print First Name**

G	e	o	r	g	e															
---	---	---	---	---	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**MI**

--

**Print Last Name**

C	a	l	c	a	g	n	i	n	i											
---	---	---	---	---	---	---	---	---	---	--	--	--	--	--	--	--	--	--	--	--

**Owner/Operator Signature**

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**Date**

		/			/				
--	--	---	--	--	---	--	--	--	--



Department of  
Environmental  
Conservation

NYS Department of Environmental Conservation  
Division of Water  
625 Broadway, 4th Floor  
Albany, New York 12233-3505

## MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

**Construction Activities Seeking Authorization Under SPDES General Permit**

\*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

### I. Project Owner/Operator Information

1. Owner/Operator Name: Willow Wood Country Club Inc.

2. Contact Person: George Calcagnini

3. Street Address: 551 Union Valley Road

4. City/State/Zip: Mahopac, NY 10541

### II. Project Site Information

5. Project/Site Name: Willow Wood Country Club

6. Street Address: 551 Union Valley Road

7. City/State/Zip: Mahopac, NY 10541

### III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information

8. SWPPP Reviewed by:

9. Title/Position:

10. Date Final SWPPP Reviewed and Accepted:

### IV. Regulated MS4 Information

11. Name of MS4: Town of Carmel

12. MS4 SPDES Permit Identification Number: NYR20A

13. Contact Person:

14. Street Address:

15. City/State/Zip:

16. Telephone Number:

## MS4 SWPPP Acceptance Form - continued

### V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s).  
Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

### VI. Additional Information





PLANT LIST				
QTY	SYMBOL	BOTANICAL/Common NAME	SIZE	ROOT
9	WR	EVERGREEN TREES Ilexum mytillophyllum / Leather Leaf Viburnum	5' - 6' HT. B & B	

LEGEND	
[Symbol]	EXISTING PROPERTY LINE
[Symbol]	EXISTING BUILDING
[Symbol]	EXISTING CHAIN LINK FENCE
[Symbol]	EXISTING STONEWALL
[Symbol]	EXISTING DRAINAGE PIPE
[Symbol]	EXISTING TIE LINE
[Symbol]	EXISTING 10' CONTOUR
[Symbol]	EXISTING SPOT GRADE
[Symbol]	SPORTING CLAY STATION LABEL (SEE GENERAL NOTE)
[Symbol]	EXISTING TREE
[Symbol]	EXISTING STUMP
[Symbol]	PROPOSED 3/4" FENCE
[Symbol]	LIMITS OF DISTURBANCE ASSOCIATED WITH PREVIOUSLY CONSTRUCTED AND PROPOSED IMPROVEMENTS
[Symbol]	APPROXIMATE LIMITS OF NATURAL WOODS & LANDSCAPED AREA
[Symbol]	EXISTING TREE REMOVAL
[Symbol]	PROPOSED EVERGREEN TREE

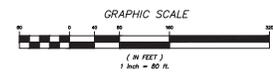
4	5-12-22	REVISED PER TOWN COMMENTS	J.M.
3	3-10-22	PLANNING BOARD SUBMISSION	P.M.
2	8-11-19	ZMA SUBMISSION	J.M.
1	5-9-19	REVISED PER TOWN COMMENTS	J.M.
NO.	DATE	REVISION	BY

**INSITE**  
ENGINEERING, SURVEYING &  
LANDSCAPE ARCHITECTURE, P.C.

3 Garrett Place  
Carmel, NY 12012  
(845) 225-8997  
(845) 225-8997 fax  
www.insite-arg.com

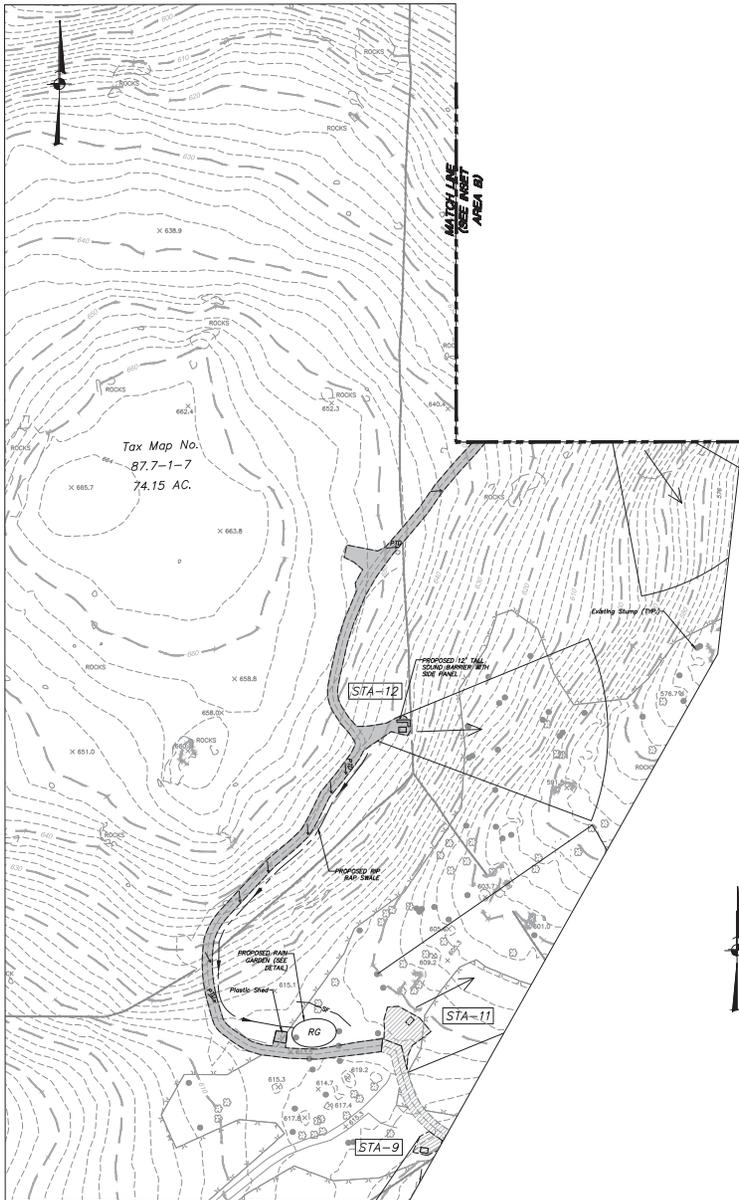
PROJECT:  
**WILLOW WOOD COUNTRY CLUB, INC.**  
1200 VALLEY ROAD, TOWN OF CARMEL, PUTNAM COUNTY, NY

DRAWING:  
**LANDSCAPE & LIMITS OF DISTURBANCE PLAN**

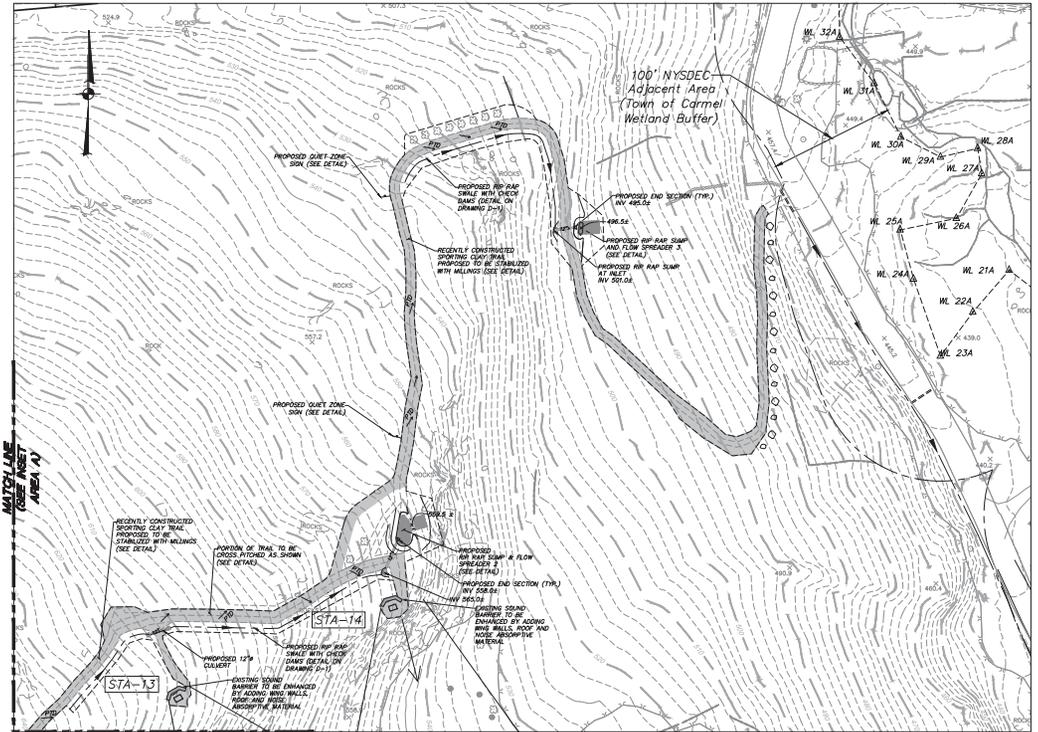


PROJECT NUMBER	18173.100	PROJECT MANAGER	R.D.W.	DRAWING NO.	SHEET
DATE	3-27-19	DRAWN BY	J.W.M.	SP-2	2
SCALE	AS SHOWN	CHECKED BY			5

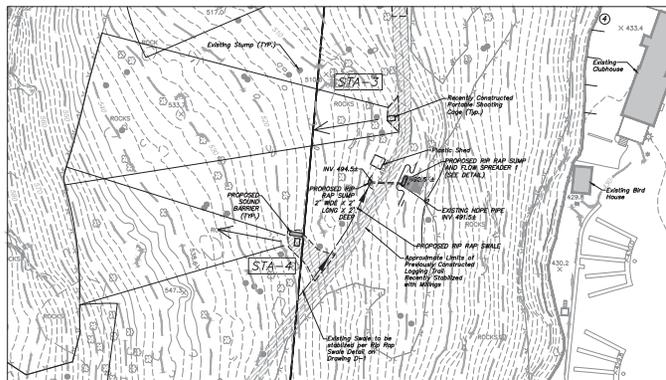
ALLOCATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 2009 OF ARTICLE 146 OF THE EDUCATION LAW.



ENLARGED SITE PLAN  
INSET AREA A  
SCALE: 1" = 40'



ENLARGED SITE PLAN  
INSET AREA B  
SCALE: 1" = 40'



ENLARGED SITE PLAN  
INSET AREA C  
SCALE: 1" = 40'

NO.	DATE	REVISION	BY
5	5-12-22	REVISED PER TOWN COMMENTS	JMM
4	3-10-22	PLANNING BOARD SUBMISSION	JMM
3	9-11-19	ZBA SUBMISSION	JMM
2	5-9-19	REVISED PER TOWN COMMENTS	JMM
1	3-17-19	REVISED PER TOWN COMMENTS	JMM

**INSITE**  
ENGINEERING, SURVEYING &  
LANDSCAPE ARCHITECTURE, P.C.

3 Corbett Place  
Carmel, NY 12012  
(518) 225-8997  
(518) 225-8997 fax  
www.insite-arg.com

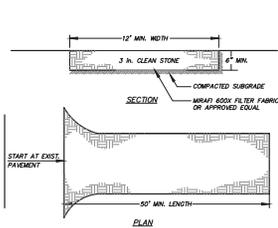
PROJECT:  
**WILLOW WOOD  
COUNTRY CLUB, INC.**

1200 VALLEY ROAD, TOWN OF CARMEI, PUTNAM COUNTY, NY  
DRAWING:  
**ENLARGED SITE  
PLANS**

PROJECT NUMBER	DATE	SCALE	PROJECT MANAGER	DRAWN BY	R.D.W.	CHECKED BY	DRAWING NO.	SHEET
18173.100	12-26-18	AS SHOWN	J.W.M.	J.W.M.			SP-3	3/5

**EROSION & SEDIMENTATION CONTROL NOTES:**

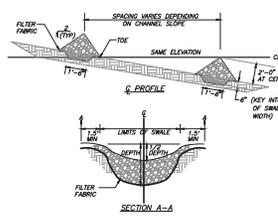
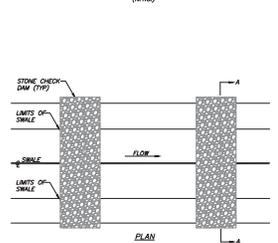
- The owner's field representative (O.F.R.) will be responsible for the implementation and maintenance of erosion and sediment control measures on the site prior to and during construction.
- All construction activities involving the removal or disturbance of soil are to be performed with appropriate erosion and sediment control measures. Erosion control measures shall be implemented as shown on the plans and shall be installed in accordance with New York State Standards and Specifications for Erosion and Sediment Control - latest edition.
- Whenever feasible, sedimentation should be retained and protected. Disturbance shall be minimized in the areas required to perform construction. No erosion control measures shall be installed in areas where they are not required.
- When land is exposed during development, the exposure shall be kept to the shortest practical period of time, but in no case more than 7 days after the construction activity in that portion of the site has ceased. Disturbance shall be minimized in the areas required to perform construction.
- All construction vehicles shall be kept clear of the watercourse and sediment control fence outside the areas of proposed development. Silt fence and drainage construction fence shall be installed in the areas where the grading is in close proximity of the watercourse or sediment control areas.
- The stabilized construction entrances, silt fence, and storage construction fence shall be installed as shown on the plans prior to beginning any clearing, grubbing or earthwork.
- All topsoil to be stripped from the area being developed shall be stockpiled and immediately seeded with Lolium perenne or Lolium perenne multiflorum or the temporary stabilization. Lolium perenne multiflorum shall be used for winter seeding and Lolium perenne multiflorum shall be used for spring and summer seeding.
- All graded areas not subject to further disturbance or construction traffic shall, within 7 days of final grading, receive permanent vegetation cover in combination with a suitable mulch. All seeded areas to receive a minimum 4" topsoil (from stockpile areas) to be applied between March 21 and May 20, or between August 15 and October 15 or as directed by written correspondence at a rate of 100 pounds per acre to the following properties:
  - County of Westchester: 20%
  - Orangeburg: 20%
  - Putnam: 20%
  - Rockland: 20%
  - Ulster: 20%
  - Warren: 20%
  - Yamont: 20%
- Grass seed may be applied by either mechanical or hydroseeding methods. Hydroseeding shall be performed in accordance with the current edition of the NYSDOT Standard Specifications, Construction and Materials, Section 810-1.02, Method No. 1.
- Cut or fill shall be greater than 3:1 shall be stabilized immediately after grading with Curlex / Single Net Erosion Control Blanket, or approved equivalent.
- Powered roadways shall be kept clean at all times.
- The site shall be graded and established such that all stormwater runoff is directed to silt erosion and sediment control facilities.
- All storm drainage outlets shall be stabilized, as required, before the discharge points become operational.
- Stormwater from disturbed areas must be passed through erosion control barriers before stormwater discharged areas or discharged into other drainage systems.
- Erosion and sediment control measures shall be inspected and maintained on a daily basis by the O.F.R. to ensure that channels, temporary and permanent ditches and plans are clear of debris, that embankments and berm areas are undisturbed and that all silt fence and silt fence are intact. Any failure of erosion and sediment control measures shall be immediately reported by the contractor and repaired by approved by the O.F.R. and/or site engineer.
- Dist shall be controlled by spraying or other approved methods as necessary, or as directed by the O.F.R.
- Cut and fill shall not endanger adjoining property, nor divert water into the property of others.
- All fill shall be placed and compacted in 6" lifts to provide stability of material and to prevent settlement.
- The O.F.R. shall inspect downstream conditions for evidence of sedimentation on a weekly basis and after rainstorms.
- As warranted by field conditions, special additional erosion and sediment control measures, as specified by the site engineer, the Wetlands Inspector, the Town Engineer and/or NYSDOT shall be installed by the contractor.
- Erosion and sediment control measures shall remain in place until all disturbed areas are fully stabilized.



**INSTALLATION NOTES**

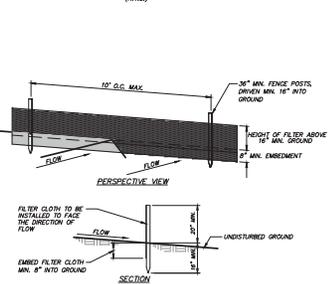
- STONE SIZE - USE 3" STONE
- LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY.)
- THICKNESS - NOT LESS THAN SIX (6) INCHES.
- WIDTH - 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE TURNS OR CORNERS OCCUR.
- FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE. FILTER CLOTH WILL NOT BE REQUIRED ON A SINGLE FAMILY RESIDENCE LOT.
- SURFACE WATER - ALL SURFACE WATER FLOWING ON IMPROVED DRAINAGE CONSTRUCTION ENTRANCES SHALL BE PAVED ACROSS THE ENTRANCE IF PAVING IS PRACTICAL, A MEASURABLE BERM WITH 4" OF STONE SHALL BE PROVIDED.
- MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT THE PASSAGE OF SEDIMENT BEYOND POINT OF ENTRY. THIS MAY REQUIRE PERIODIC TRIMMING WITH ADDITIONAL STONE AT CONDITIONS DEMAND AND REPAIR AND CLEANING OF ANY MEASURES USED TO STOP SEDIMENT. ALL SEDIMENT, GRASS, TWIGS, BRUSH OR TRUNKS ONTO PUBLIC RIGHT OF WAY MUST BE REMOVED IMMEDIATELY.
- WADING - WALKS SHALL BE PLACED TO AVOID SEDIMENT PRIOR TO ENTRANCE ON PUBLIC RIGHT OF WAY. WHEN WADING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINED INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
- PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

**STABILIZED CONSTRUCTION ENTRANCE DETAIL (N.T.S.)**



- NOTES:**
- AREA CHOSEN FOR STOCKPILE LOCATION SHALL BE DRY AND STABLE.
  - MAXIMUM SLOPE OF STOCKPILE SHALL BE 2:1.
  - UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE IMMEDIATELY SEEDED WITH FESCUE PERMANENT TALL FESCUE.
  - ALL STOCKPILES SHALL BE PROTECTED WITH SILT FENCE INSTALLED ON THE DOWNWIND SIDE.

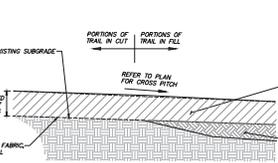
**TEMPORARY SOIL STOCKPILE DETAIL (N.T.S.)**



- CONSTRUCTION NOTES FOR FABRICATED SILT FENCE**
- FILTER CLOTH TO BE FASTENED SECURELY TO POSTS. STEEL EITHER 1 OR 2 TYPE POSTS AT 10' MAX. SPACING.
  - WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES AND FOLDED.
  - MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN TENDERS DEVELOP IN THE SILT FENCE.

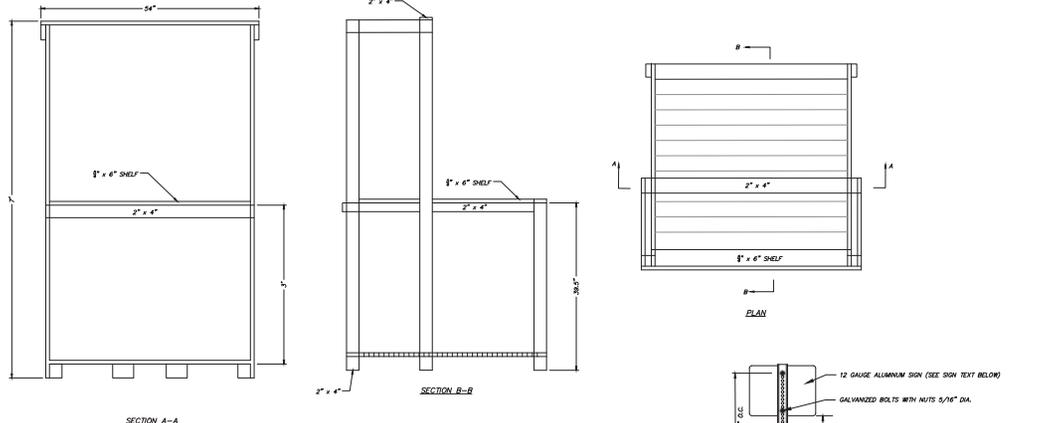
**SILT FENCE DETAIL (N.T.S.)**

**STONE CHECK DAM DETAIL (N.T.S.)**



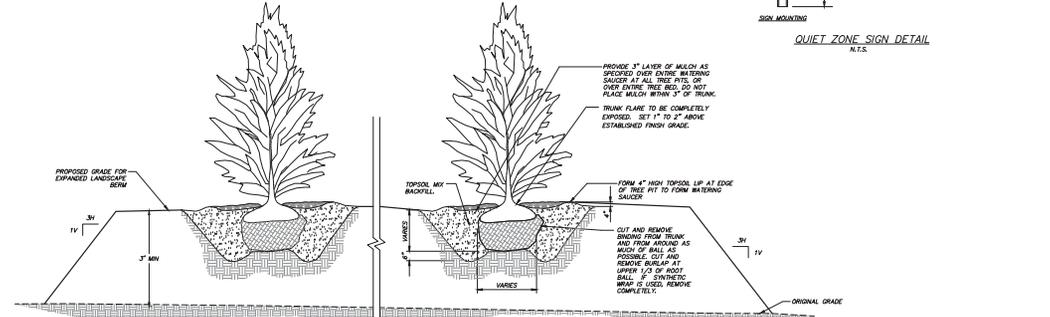
**SPORTING CLAY TRAIL DETAIL (N.T.S.)**

- NOTES:**
- THE ABOVE DETAIL APPLIES TO THE PREVIOUSLY CONSTRUCTED TRAIL AND PROPOSED IMPROVEMENTS TO THE TRAIL.

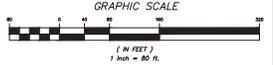


**QUIET ZONE**  
PLEASE BE COURTEOUS TO NEIGHBORS AND KEEP THE NOISE DOWN

**NOTE:** SIGN SHALL BE WHITE BACKGROUND WITH RED LETTERS/NUMBERS



**EVERGREEN TREE REPLACEMENT AND LANDSCAPE BERM DETAIL (N.T.S.)**



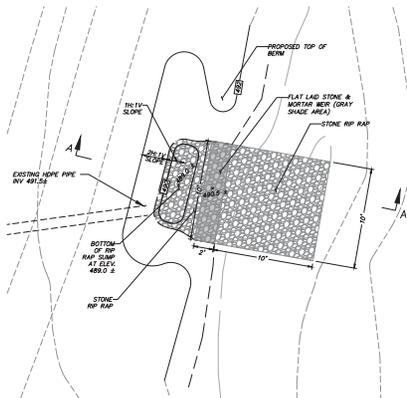
5	5-12-22	REVISED PER TOWN COMMENTS	J.M.
4	3-10-22	PLANNING BOARD SUBMISSION	P.M.
3	9-11-19	ZBA SUBMISSION	J.M.
2	5-9-19	REVISED PER TOWN COMMENTS	J.M.
1	3-17-19	REVISED PER TOWN COMMENTS	J.M.
NO. DATE	REVISION	BY	

**INSITE**  
ENGINEERING, SURVEYING & LANDSCAPE ARCHITECTURE, P.C.

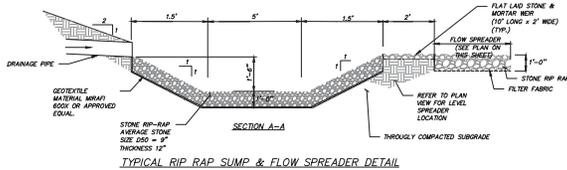
**WILLOW WOOD COUNTRY CLUB, INC.**  
1200 VALLEY ROAD, TOWN OF DANES, PUTNAM COUNTY, NY

PROJECT:	18173.100	PROJECT MANAGER:	R.D.W.	DRAWING NO.:	D-1	SHEET:	4
DRAWING:	DATE:	DRAWN BY:	J.W.M.	CHECKED BY:			5
SCALE:	AS SHOWN						

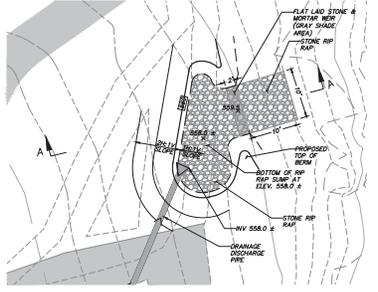
ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 2009 OF ARTICLE 146 OF THE EDUCATION LAW.



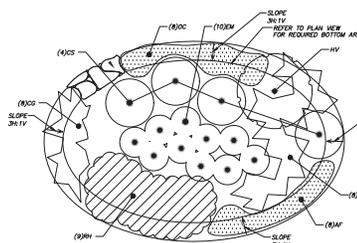
RIP RAP & FLOW SPREADER 1 DETAIL (N.T.S.)



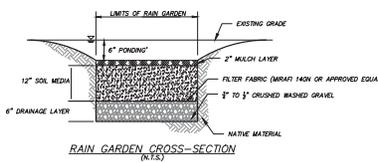
TYPICAL RIP RAP SUMP & FLOW SPREADER DETAIL (N.T.S.)



RIP RAP & FLOW SPREADER 2 DETAIL (N.T.S.)



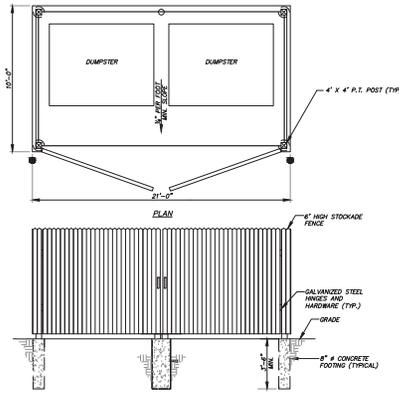
SCHEMATIC RAIN GARDEN LANDSCAPE PLAN (N.T.S.)



NOTES:  
 1. SOIL MEDIA TO CONSIST OF 50% SAND, 20-30% TOPSOIL WITH LESS THAN 1% CLAY CONTENT, AND 20-30% LEAF COMPOST.  
 2. DRAINAGE LAYER TO CONSIST OF 1.5-2.0\"/>

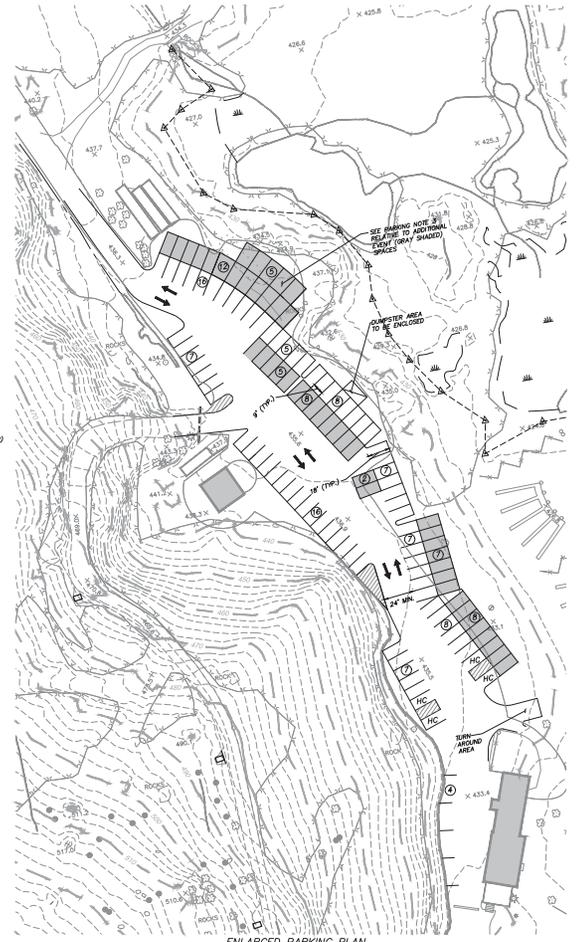
**SCHEMATIC RAINGARDEN PLANT LIST**

KEY	BOTANICAL/COMMON NAME	SIZE	ROOT/SPACING
CS	Cornus sericea / Red-Osier Dogwood	18-24\"/>	



NOTE: CHECK WITH REUSE HALLER PRIOR TO INSTALLATION OF REUSE ENCLOSURE FOR DIMENSIONS.

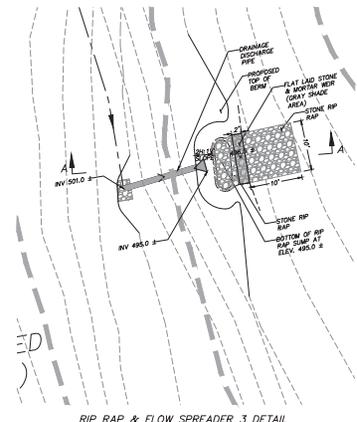
DUMPSTER ENCLOSURE DETAIL (N.T.S.)



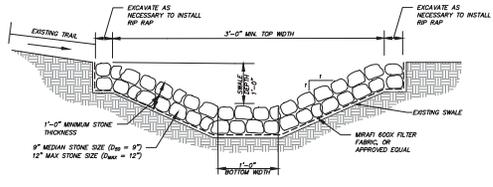
**PARKING SUMMARY**

DURING CONFORMING SPACES	80 SPACES
ADDITIONAL SPECIAL EVENT PARKING	47 SPACES
TOTAL (INCLUDING EVENT PARKING)	127 SPACES

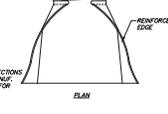
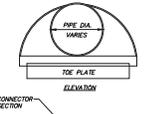
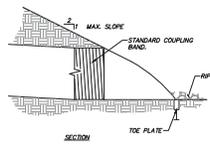
- PARKING NOTES:**
- SEE GENERAL NOTE 1 ON SP-1 FOR ZONING VARIANCES GRANTED WITH RESPECT TO THE EXISTING CONFORMING SPACES.
  - DURING DAILY OPERATION AND MEMBER ONLY SPECIAL EVENTS, 80 SPACES IS SUFFICIENT TO ACCOMMODATE THE PARKING DEMAND.
  - PERIODICALLY WILLOW WOOD COUNTY CLUB, INC. WILL HOLD SPECIAL EVENTS FOR MEMBERS & NON MEMBERS BASED ON COURSE CAPACITY. ONLY ITS MEMBERS CAN OCCUPY ALL COURSE FACILITIES. DURING THESE EVENTS VALET PARKING CAN BE PROVIDED TO ALLOW THE STAGING OF PARKING SPACES SHOWN IN GRAY. AN ADDITIONAL SPACES TO ACCOMMODATE PARKING DURING A MEMBERS' EVENT DRIVE ASSESS SHALL BE MAINTAINED AT ALL TIMES AND THE PARKING SPACE LAYOUT SHOWN HEREIN PROVIDES THE 24 FOOT REQUIRED ACCESS ASILE.



RIP RAP & FLOW SPREADER 3 DETAIL (N.T.S.)



RIP RAP SWALE DETAIL (N.T.S.)



NOTE: SEE SECTION CONNECTIONS TO BE DETERMINED TO MAKE RECOMMENDATIONS FOR VARIOUS PIPE SIZES.

ALTERATION OF THIS DOCUMENT, UNLESS UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, IS A VIOLATION OF SECTION 2009 OF ARTICLE 146 OF THE EDUCATION LAW.

4	5-12-22	REVISED PER TOWN COMMENTS	J.M.
3	3-10-22	PLANNING BOARD SUBMISSION	P.M.
2	8-11-19	ZMA SUBMISSION	J.M.
1	5-8-19	REVISED PER TOWN COMMENTS	J.M.
NO.	DATE	REVISION	BY

**INSITE**  
 ENGINEERING, SURVEYING &  
 LANDSCAPE ARCHITECTURE, P.C.

PROJECT:  
**WILLOW WOOD COUNTRY CLUB, INC.**

3 Corvett Place  
 Cortland, NY 13812  
 (607) 225-8997  
 (607) 225-8997  
 www.insite-arg.com

UNION VALLEY ROAD, TOWN OF DANIELS, PUTNAM COUNTY, NY

DRAWING: **DETAILS**

PROJECT NUMBER	18173.100	PROJECT MANAGER	R.D.W.	DRAWING NO.	SHEET
DATE	3-27-19	DRAWN BY	J.W.M.	<b>D-2</b>	<b>5</b>
SCALE	AS SHOWN	CHECKED BY			<b>5</b>



# ATZL, NASHER & ZIGLER P.C.

ENGINEERS - SURVEYORS - PLANNERS

Web: [www.anzny.com](http://www.anzny.com)

May 3, 2022

Planning Board  
Town of Carmel  
60 McAlpin Avenue  
Mahopac, NY 10541  
Attn: Craig Paeprer, Chairman

Re: Suez Water London Bridge Wells 1 & 2  
Tax Lot 64.7-1-10

Dear Chairman Paeprer and Honorable Board Members,

The following is our response to Richard J. Franzetti, P.E., of the Town of Carmel letter dated March 8, 2022:

## General Comments

1. Comment: The following referrals are required:
  - a. New York State Department of Environmental Conservation (NYSDEC).
  - b. Putnam County Department of Health (PCDOH).
  - c. New York City Department of Environmental Protection (NYCDEP)
  - d. The Town of Carmel Environmental Conservation Board (ECB).
  - e. Mahopac Fire Department.

The applicant has previously noted these referrals.

*Response: No response required.*

2. Comment: The following permits are required.
- a. NYSDEC - for stormwater and wetlands.
  - b. PCDOH for well and treatment system.
  - c. ECB for wetlands.

The applicant has previously noted these permit requirements.

*Response: No response required.*

3. Comment: The area of disturbance for the work as provided is 17,186 sf. The threshold criteria of disturbances for the NYSDEC stormwater regulation are between 5,000 square feet and one (1) acre and over one (1) acre. The project will require coverage under the NYSEC SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-20-001) and the development of Stormwater Pollution Prevention Plan (SWPPP) that has erosion and sediment controls.

The applicant has provided a SWPPP which is currently under review.

*Response: The area of disturbance as noted on the site plan is 0.549 acres. An updated SWPPP is being provided with this submission for review by the town engineer.*

4. Traffic and Vehicle Movement Plans should be provided which provide the following:

- a. Comment: The applicant provided sight distances at the driveway location. All calculations should be provided.

*Response: Sight distance calculations are referenced on drawing 8 – Truck Turning Plan.*

- b. Comment: Slopes at the entrance way need to be defined. It is suggested that slopes of less than 6% be used for the first 20 feet of entry and that slopes of no

greater than 8% be used entering the site. Please refer to AASHTO guidelines for commercial properties.

A driveway profile should be provided.

*Response: Driveway plan view and profile has been provided on sheet 3. Asphaltic concrete pavement detail has been updated to match Town's driveway specification (see sheet 3 – Grading Plan).*

5. Comment: Should any public improvements be deemed necessary as part of the development of the tract, a Performance Bond and associated Engineering Fee must eventually be established for the work. The applicant will need to develop a quantity take off for bonding purposes.

The applicant has noted this requirement. The applicant should note that a Performance Bond and associated Engineering fee is minimally required for the stormwater management practices, erosion and sediment control drainage features, landscaping etc. installed on the site. Please see §156-61 J and K of the Town Code for additional information.

*Response: No response required.*

#### Detailed Comments

1. Comment: A landscaping plan has been provided.

The applicant should add a note that all plantings shall be installed per §142 of the Town of Carmel Town Code. Applicant has previously indicated that Note 8 was added to the drawings. This note has not been provided.

*Response: Note 8 regarding the landscaping has been provided on sheet 1 of the site plan set.*

2. Comment: The stormwater management practice (i.e. Infiltration) have been provided. The applicant should note that then must meet the criteria as defined by the NYSDEC. This includes providing sufficient depth to groundwater.

Applicant has previously noted this comment.

*Response: The drainage plans have been updated to provide a proposed dry pond (see sheet 1). Depth to groundwater has been showcased in the dry pond detail provided on sheet 4.*

3. Comment: Adequate protection should be provided in the stormwater management practice (SMP) areas to minimize disturbance during construction. Details should be provided to show how the infiltration area will be protected during construction.

*Response: The drainage plans have been updated to provide a proposed dry pond. This should not require any specific protection during construction.*

The following comments are generic and are only applicable if being installed by the applicant, notes should be added to the drawing as needed:

4. Comment: Gate valves shall be AWWA non-rising stem type, as manufactured by Mueller Company, Model A-2360-23, or approved equal, conforming to the latest AWWA Standard for Gate Valves - 3" through 48" - for Water and Other Liquids, AWWA Designation C-509.

*Response: No response required.*

5. Comment: Sizes up to and including 12" shall be 250 psi working pressure. The valve body and bonnet shall be ductile iron. All interior and exterior metal surfaces shall be coated with a two-part thermosetting epoxy complying with AWWA C550.

*Response: No response required.*

6. Comment: Valves shall have dual "O" ring seals, inside screw, resilient wedge seats in accordance with AWWA Designation C-550 and shall be constructed so as to provide unobstructed full port clearance when fully open and immediate complete closure when closed. The ends of the valves shall be mechanical joint.

*Response: No response required.*

7. Comment: All valves shall be arranged to open in counterclockwise direction unless otherwise specifically indicated and operating nuts shall be 2" square.

*Response: SUEZ valves are arranged to open in a clockwise direction.*

8. Comment: Valves shall be tested to a pressure of not less than two times the working pressure.

*Response: No response required.*

9. Comment: All hydrants shall be six inches in size with six-inch mechanical joint inlet connection and shall be equal to the Mueller Centurion A-421, with one (1) 4 ½" pumper nozzle and two (2) 2½ " hose nozzles.

*Response: SUEZ's standard is the Sigelock Systems Spartan 300. Hydrants will be green in color to signify they are only for company use.*

10. Comment: Water Service Saddles shall be equal to those manufactured by Mueller, Model 7 ½" x 1" SS Series Stainless Steel Saddle, Double Stud.

*Response: No response required.*

11. Comment: Corporation stops shall be equal to those as manufactured by Mueller Company, Model B- 25000 Series, NRS and of the size required. Such corporation stops shall meet the requirements of AWWA Specification No. C800.

*Response: No response required.*

12. Comment: Curb valves (stops) shall be equal to those as manufactured by Mueller Company, Model H-15214 and shall conform to AWWA Specification No. C800.

*Response: No response required.*

13. Comment: Curb boxes shall be equal to those as manufactured by Mueller Company and similar to Mueller extension type with arch pattern base model H-10314 all extension rods shall be stainless steel.

*Response: No response required.*

14. Comment: All fire hydrants shall be the approved AWWA type fire hydrants in conformance with the American Water Works Association Standard for Fire Hydrants for Ordinary Water Works Service, AWWA Designation C502, and shall have a 5-1/4" valve opening, a 6" mechanical joint inlet complete with an auxiliary gate valve (close coupled), a 6" mechanical joint shoe, and all appurtenances.

*Response: No response required.*

15. Comment: Fire hydrants shall be rated for a working pressure of 250 Psi. Fire

hydrants shall be sized for a 4'-6" bury.

*Response: No response required.*

Comment: Applicant has noted these comments. The only exception is comment 10 where SUEZ standard is to open right.

*Response: Applicant takes exception to comment 7 and 9. Please see the responses to these comments above.*

The following is our response to Patrick Cleary, AICP, CEP, PP, LEED AP of Cleary Consulting letter dated January 13, 2022:

1. Comment: The ZBA ruled that the Applicant is a public water company, and as such, the proposed use is a permitted principal use.

*Response: No response required.*

2. Comment: The site boundary has been clarified, and the site is owned by SUEZ.

*Response: No response required.*

3. Comment: The Applicant will seek a variance from the ZBA for the non-compliant minimum lot area.

*Response: The ZBA granted the required variances on February 24<sup>th</sup>, 2022. These have been noted on the site plan.*

4. Comment: The Applicant will seek NYSDEC and USACOE permits for the wetland buffer encroachment.

*Response: No response required.*

5. Comment: The Applicant has clarified that the PFAS treatment facility will be a permanent and on-going operation.

*Response: No response required.*

6. Comment: The Applicant has clarified that they propose to maintain the existing fenced enclosure and access to the spring house and add a second fenced enclosure and access driveway for the PFAS building, and will not combine the driveways. The reason why a single combined driveway cannot be utilized was not provided.

*Response: There was an existing driveway which accessed a separate parcel and their existing garden. SUEZ is not looking to modify or utilize that driveway. This driveway can be blocked off if the Board prefers. The new driveway will be the only access used for the maintenance of the site.*

7. Comment: The height of the new chain link fence is 6'.

*Response: No response required.*

8. Comment: The Applicant is unwilling to add privacy slats to the new fence, indicating that new landscaping is being provided, which provides an adequate screen.

*Response: No response required.*

9. Comment: A new landscaping plan has been provided.

*Response: No response required.*

10. Comment: Retaining wall details have been provided. Heights vary from 1' to 5'.

*Response: No response required.*

11. Comment: The Applicant has clarified that the new pumps will be located within the wells and are between 140' and 300' below grade. No noise impacts are expected, and the project will comply with the sound level standards for residential districts established in Chapter 105 of the Town Code.

*Response: No response required.*

12. Comment: The Applicant has agreed to preserve the 3 large maple trees located on the south side of the driveway.

*Response: The plans submitted with the tree clearing permit noted the above referenced trees as 'to be removed.' Due to the time constraints to complete all tree clearing activities prior to March 31<sup>st</sup>, 2022, all trees noted for removal at the time, were removed prior to expiration of tree clearing window. This occurred while updates to the site plan per all comments received was still underway.*

*Due to the revised drainage plans, the area previously occupied by these three trees is being used to provide a proposed dry pond on site. It appears that removal of these trees would have been necessitated eventually as the site plan development progressed.*

*To compensate for these trees which have been removed, additional Maple trees have been proposed per the landscape plan provided with this submission.*

13. Comment: The Applicant has clarified that all chemical storage tanks will have secondary containment structures designed to accommodate the entire volume of chemical storage. Chemical levels are constantly monitored remotely.

*Response: No response required.*

14. Comment: The Applicant has clarified that site visits the site once per day. The carbon in the system will need to be replaced every one or two years.

*Response: No response required.*

15. Comment: A new site lighting plan has been provided.

*Response: No response required.*

16. Comment: The Applicant has located a vendor that can provide the prefabricated building to meet the project timeframe. The building will be a prefabricated metal building with steel framing, a standing seam roof system and a cast in place concrete foundation. The color of the building will be "hemlock green." The roof trim, gutters and downspouts will be "cool harvest." A 4' split face masonry wall is proposed around the building, to be "Tribeca tan." Revised project renderings have been provided.

A color sample of "hemlock green", "cool harvest" and Tribeca tan" should be provided.

*Response: Color samples were shown to the Planning Board members and consultants at the February 10<sup>th</sup>, 2022 meeting. Wall guard sample will also be shown to the Planning Board members at the next meeting.*

The following is our response to Michael G. Carnazza, Director of Code Enforcement, letter dated January 13, 2022:

1. Comment: The applicants propose to add a PFAS Treatment Building to the water treatment facility off Brook Ave. in Mahopac.

*Response: No response required.*

2. Comment: A Use Variance is not required for the Private Utility. The ZBA interpreted that Private and Public Utilities are permitted in the Town of Carmel.

*Response: No response required.*

3. Comment: Provide a detail of the buffer. Code § 156-37C requires "A landscaped buffer area at least 10 feet in width and six feet in height shall be provided and maintained along all property lines to satisfactorily screen public utility substations and any other buildings from surrounding uses of land". This project should be looked at closely. The building is extremely close to the road and Kirk Lake is to the rear of the building. An enhanced buffer should be provided toward Brook Ave. as this building is right off the road (approx. 33 ft.).

*Response: The Tree and Landscape Plan has been discussed with the Planning Board, Environmental Conservation Board (ECB) and the ZBA. It has been provided in the site plan set.*

4. Comment: Referral to the ECB, Fire Department and Putnam County Dept. of Health are required by code.

*Response: No response required.*

5. Comment: Provide lot depth- variance may be required.

The following Variance(s) are required from the ZBA.  
Lot area- 120,000 s.f. required, 60,886 provided, 59,114 s.f. variance needed  
Front yd- 40 ft. required, 33 ft. provided, 7 ft. variance needed

*Response: The ZBA granted the required variances on February 24<sup>th</sup>, 2022. These have been noted on the site plan.*

The following is our response to Richard J. Franzetti, P.E., of the Town of Carmel letter dated December 30, 2021:

#### General Comments

1. Comment: The following referrals are required:

f. New York State Department of Environmental Conservation

- (NYSDEC).
- g. Putnam County Department of Health (PCDOH).
- h. New York City Department of Environmental Protection (NYCDEP)
- i. The Town of Carmel Environmental Conservation Board (ECB).
- j. Mahopac Fire Department.

The applicant has noted these referrals.

*Response:* No response required.

2. Comment: The following permits are required.

- d. NYSDEC - for stormwater and wetlands.
- e. PCDOH for well and treatment system.
- f. ECB for wetlands.

The applicant has noted these permit requirements

*Response:* No response required.

3. Comment: The area of disturbance for the work as provided is 17,186 sf. The threshold criteria of disturbances for the NYSDEC stormwater regulation are between 5,000 square feet and one (1) acre and over one (1) acre. The project will require coverage under the NYSEC SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-20-001) and the development of Stormwater Pollution Prevention Plan (SWPPP) that has erosion and sediment controls.

The applicant has provided a SWPPP which is currently under review.

*Response:* The area of disturbance as noted on the site plan is 0.549 acres. An updated SWPPP is being provided with this submission for review by the town engineer.

4. Comment: All re-grading required to accomplish the intended development should be provided. It is unclear from the drawings provide the extent of cut and fill proposed for the site.

The applicant has provided a grading plan. The amount of fill, if any, being brought to the site should be provided.

All fill brought to the site must be certified per NYSDEC regulations and manifests/certification of the fill material being delivered should be provided. A note should be added to the drawing.

*Response: A note has been added to the site plan. Cut and fill analysis and amount has been provided on Sheet 3 - Grading Plan.*

5. Traffic and Vehicle Movement Plans should be provided which provide the following:

- a. Comment: The applicant provided sight distances at the driveway location. All calculations should be provided.

*Response: Sight distance calculations are provided on Sheet 8 – Truck Turning Plan.*

- b. Comment: Slopes at the entrance way need to be defined. It is suggested that slopes of less than 6% be used for the first 20 feet of entry and that slopes of no greater than 8% be used entering the site. Please refer to AASHTO guidelines for commercial properties.

A driveway profile should be provided.

*Response: Driveway plan view and profile has been provided on sheet 3. Asphaltic concrete pavement detail has been updated to match Town's driveway specification (see sheet 3 – Grading Plan).*

6. Comment: Should any public improvements be deemed necessary as part of the development of the tract, a Performance Bond and associated Engineering Fee must eventually be established for the work. The applicant will need to develop a quantity take off for bonding purposes.

The applicant has noted this requirement. The applicant should note that a Performance Bond and associated Engineering fee is minimally required for the stormwater management practices, erosion and sediment control drainage features, landscaping etc. installed on the site. Please see §156-61 J and K of the Town Code for additional information.

*Response: No response required.*

#### Detailed Comments

7. Comment: A landscaping plan has been provided. The applicant should add a note that all plantings shall be installed per §142 of the Town of Carmel Town Code.

Applicant indicated that Note 8 was added to the drawings. This note is not provided.

*Response: Note 8 regarding the landscaping has been provided on sheet 1 of the site plan set.*

8. Comment: The stormwater management practice (i.e. Infiltration) have been provided. The applicant should note that then must meet the criteria as defined by the NYSDEC. This includes providing sufficient depth to groundwater.

Applicant has noted this comment

*Response: The drainage plans have been updated to provide a proposed dry pond (see sheet 1). Depth to groundwater has been showcased in the dry pond detail provided on sheet 4.*

9. Comment: Adequate protection should be provided in the stormwater management practice (SMP) areas to minimize disturbance during construction. Details should be provided to show how the infiltration area will be protected during construction.

*Response: The drainage plans have been updated to provide a proposed dry pond. This should not require any specific protection during construction.*

10. Comment: It is unclear if additional electrical utilities are being installed.  
Applicant has noted that the electric utilities will be extended underground.

*Response: No response required.*

11. Comment: The drawing identifies retaining walls. Please provide top and bottom elevations. All walls great than 5' in height need to be designed by a structural engineer.

*Response: Please refer to sheet 3, 4 and 5. Retaining Wall Design Memo has been provided with this submission.*

The following comments are generic and are only applicable if being installed by the applicant, notes should be added to the drawing as needed:

12. Comment: Gate valves shall be AWWA non-rising stem type, as manufactured by Mueller Company, Model A-2360-23, or approved equal, conforming to the latest AWWA Standard for Gate Valves - 3" through 48" - for Water and Other Liquids, AWWA Designation C-509

*Response: No response required.*

13. Comment: Sizes up to and including 12" shall be 250 psi working pressure. The valve body and bonnet shall be ductile iron. All interior and exterior metal surfaces shall be coated with a two-part thermo setting epoxy complying with AWWA C550.

*Response: No response required.*

14. Comment: Valves shall have dual "O" ring seals, inside screw, resilient wedge seats in accordance with AWWA Designation C-550 and shall be constructed so as to provide unobstructed full port clearance when fully open and immediate complete closure when closed. The ends of the valves shall be mechanical joint.

*Response: No response required.*

15. Comment: All valves shall be arranged to open in counterclockwise direction unless otherwise specifically indicated and operating nuts shall be 2" square.

*Response: SUEZ valves are arranged to open in a clockwise direction.*

16. Comment: Valves shall be tested to a pressure of not less than two times the working pressure.

*Response: No response required.*

17. Comment: All hydrants shall be six inches in size with six-inch mechanical joint inlet connection and shall be equal to the Mueller Centurion A-421, with one (1) 4 ½" pumper nozzle and two (2) 2½ " hose nozzles.

*Response: SUEZ's standard is the Sigelock Systems Spartan 300. Hydrants will be green in color to signify they are only for company use.*

18. Comment: Water Service Saddles shall be equal to those manufactured by Mueller, Model 7 ½" x 1" SS Series Stainless Steel Saddle, Double Stud.

*Response: No response required.*

19. Comment: Corporation stops shall be equal to those as manufactured by Mueller Company, Model B- 25000 Series, NRS and of the size required. Such corporation stops shall meet the requirements of AWWA Specification No. C800.

*Response: No response required.*

20. Comment: Curb valves (stops) shall be equal to those as manufactured by Mueller Company, Model H- 15214 and shall conform to AWWA Specification No. C800.

*Response: No response required.*

21. Comment: Curb boxes shall be equal to those as manufactured by Mueller Company and similar to Mueller extension type with arch pattern base model H-10314 all extension rods shall be stainless steel.

*Response: No response required.*

22. Comment: All fire hydrants shall be the approved AWWA type fire hydrants in conformance with the American Water Works Association Standard for Fire Hydrants for Ordinary Water Works Service, AWWA Designation C502, and shall have a 5-1/4" valve opening, a 6" mechanical joint inlet complete with an auxiliary gate valve (close coupled), a 6" mechanical joint shoe, and all appurtenances.

*Response: No response required.*

23. Comment: Fire hydrants shall be rated for a working pressure of 250 Psi. Fire hydrants shall be sized for a 4'-6" bury.

*Response: No response required.*

Comment: Applicant has noted these comments. The only exception is comment 10 where SUEZ standard is to open right.

*Response: Applicant takes exception to comment 15 and 17. Please see the responses to these comments above.*



PFAS COMPLIANCE AT  
LONDON BRIDGE WELL



BROOKE STREET LOOKING NORTH- 8 FT TREES



BROOKE STREET LOOKING NORTH- 20 FT TREES



**PFAS COMPLIANCE AT  
LONDON BRIDGE WELL**



**WOODLAND ROAD & BROOKE STREET LOOKING SOUTHWEST- 8 FT TREES**



**WOODLAND ROAD & BROOKE STREET LOOKING SOUTHWEST- 20 FT TREES**



# ATZL, NASHER & ZIGLER P.C.

ENGINEERS - SURVEYORS - PLANNERS

Web: [www.anzny.com](http://www.anzny.com)

March 09, 2022

Re: Suez Water New York - London Bridge Well 1 &2 (Project No. 4872)  
Town of Carmel, Putnam County, New York

Sub: Retaining wall structural analysis and calculation

To whom it may concern:

As requested, we have provided structural analysis and stability calculations of the above referenced retaining walls. The walls' location is shown on the Drawings dated July 20,2021, Last Revised March 08, 2022 (Project No. 4872). The walls have been designed as gravity walls using segmental concrete blocks with a maximum exposed height of 5.0 ft. The analysis and design calculation results are provided at the critical section (Please see Appendix A).

The elements considered in the design are summarized as following:

**1) Design Parameters:**

A) Soil Parameters:

- Backfill soil mechanical parameters
- Retained zone soil mechanical parameters
- Foundation / Subsoil soil mechanical parameters

B) Minimum Design Factors of Safety:

- Siding (Slip):  $FS \geq 1.5$
- Overturning:  $FO \geq 1.5$
- Bearing Capacity:  $BC \geq 2.0$

**2) Design and Analysis:**

C) Internal Stability Static Analysis.

D) External Stability Static Analysis.

E) Results of analysis for the safety factors.

F) Construction data of height and water table

G) Soil data (reasonably assumed for design).



# ATZL, NASHER & ZIGLER P.C.

ENGINEERS - SURVEYORS - PLANNERS

Web: [www.anzny.com](http://www.anzny.com)

The analysis and design of the retaining wall has been conducted using the software provided by Redi-Rock (version 5.2018.29.0). The analysis and design sheets are attached for your quick reference (Please see Appendix A).

If you have further questions or concerns, feel free to contact our office.

Very Truly Yours,

A handwritten signature in black ink, 'Vahid Rostami', is written over a red circular professional seal. The seal contains the text 'STATE OF NEW YORK', 'VAHID ROSTAMI', 'LICENSED PROFESSIONAL ENGINEER', and the license number '101473'.

Vahid Rostami Ph.D., P.E.  
NYS PE LIC NO. 101473

P:\RETAINING WALL PROJECTS\4872\4872 Retaining Wall Design Memo.docx



**ATZL, NASHER & ZIGLER P.C.**

ENGINEERS - SURVEYORS - PLANNERS

Web: [www.anzny.com](http://www.anzny.com)

# Appendix A

## Retaining Wall Analysis

## Analysis of Redi Rock wall

### Input data

#### Project

Task : 4872 SUEZ WATER NEW YORK  
 Part : LONDON BRIDGE WELL 1 &2  
 Description : RETAINING WALL  
 Customer : SUEZ WATER NEW YORK  
 Author : Vahid Rostami, PE  
 Date : 3/9/2022  
 Project number : 4872

#### Settings

USA - Safety factor

#### Wall analysis

Active earth pressure calculation : Coulomb  
 Passive earth pressure calculation : Mazindrani (Rankine)  
 Earthquake analysis : Mononobe-Okabe  
 Shape of earth wedge : Calculate as skew  
 Allowable eccentricity : 0.333  
 Internal stability : Standard - straight slip surface  
 Reduction coeff. of contact first block - base : 1.00  
 Verification methodology : Safety factors (ASD)

Safety factors			
Permanent design situation			
Safety factor for overturning :	$SF_o =$	1.50	[-]
Safety factor for sliding resistance :	$SF_s =$	1.50	[-]
Safety factor for bearing capacity :	$SF_b =$	2.00	[-]
Safety factor for sliding along geo-reinforcement :	$SF_{sr} =$	1.50	[-]
Safety factor for geo-reinforcement strength :	$SF_{st} =$	1.50	[-]
Safety factor for pull out resistance of geo-reinf. :	$SF_{po} =$	1.50	[-]
Safety factor for connection strength :	$SF_{con} =$	1.50	[-]

#### Blocks

No.	Description	Height h [in]	Width w [in]	Unit weight $\gamma$ [pcf]
1	Block 28	18.00	28.00	120.00
2	Block 41	18.00	40.50	120.00
3	Block 60	18.00	60.00	130.00
4	Top block 24 straight	18.00	24.00	108.00
5	Planter 41	18.00	40.50	120.00
6	Planter 60	18.00	60.00	112.00
7	Top block 28	18.00	28.00	120.00
8	Top block 41	18.00	40.50	120.00
9	Top block 24 straight garden	18.00	24.00	80.00
10	Block R-5236 HC	36.00	52.00	110.00
11	Block R-7236 HC	36.00	72.00	110.00
12	Block R-9636 HC	36.00	96.00	110.00

No.	Description	Min. shear strength $F_{min}$ [lbf/ft]	Max. shear strength $F_{max}$ [lbf/ft]	Friction $f$ [°]
1	Block 28	6061.00	11276.00	44.00
2	Block 41	6061.00	11276.00	44.00
3	Block 60	6061.00	11276.00	44.00
4	Top block 24 straight	6061.00	11276.00	44.00
5	Planter 41	6061.00	11276.00	44.00
6	Planter 60	6061.00	11276.00	44.00
7	Top block 28	6061.00	11276.00	44.00
8	Top block 41	6061.00	11276.00	44.00
9	Top block 24 straight garden	6061.00	11276.00	44.00
10	Block R-5236 HC	4550.00	12000.00	44.00
11	Block R-7236 HC	4550.00	12000.00	44.00
12	Block R-9636 HC	4550.00	12000.00	44.00

**Setbacks**

No.	Setback s [in]
1	0.010
2	0.375
3	1.625
4	9.375
5	16.625

**Geometry**

No. group	Description	Count	Setback s [in]
1	Block 41	2	1.62
2	Block 28	1	1.62
3	Top block 28	1	-

**Base**

**Geometry**

Upper setback  $a_1 = 0.33$  ft  
 Lower setback  $a_2 = 0.33$  ft  
 Height  $h = 0.50$  ft  
 Width  $b = 4.00$  ft

**Material**

Soil creating foundation - Base

**Basic soil parameters**

No.	Name	Pattern	$\phi_{ef}$ [°]	$C_{ef}$ [psf]	$\gamma$ [pcf]	$\gamma_{su}$ [pcf]	$\delta$ [°]
1	Base		30.00	0.0	125.00	77.50	30.00
2	Backfill		28.00	0.0	125.00	77.50	28.00

All soils are considered as cohesionless for at rest pressure analysis.

**Soil parameters**

**Base**

Unit weight :  $\gamma = 125.0$  pcf  
 Stress-state : effective  
 Angle of internal friction :  $\phi_{ef} = 30.00^\circ$   
 Cohesion of soil :  $c_{ef} = 0.0$  psf  
 Angle of friction struc.-soil :  $\delta = 30.00^\circ$   
 Saturated unit weight :  $\gamma_{sat} = 140.0$  pcf

**Backfill**

Unit weight :  $\gamma = 125.0$  pcf  
 Stress-state : effective  
 Angle of internal friction :  $\phi_{ef} = 28.00^\circ$   
 Cohesion of soil :  $c_{ef} = 0.0$  psf  
 Angle of friction struc.-soil :  $\delta = 28.00^\circ$   
 Saturated unit weight :  $\gamma_{sat} = 140.0$  pcf

**Geological profile and assigned soils**

No.	Layer [ft]	Assigned soil	Pattern
1	-	Backfill	

**Terrain profile**

Terrain behind the structure is flat.

**Water influence**

Ground water table is located below the structure.

**Input surface surcharges**

No.	Surcharge		Action	Mag.1 [lbf/ft <sup>2</sup> ]	Mag.2 [lbf/ft <sup>2</sup> ]	Ord.x x [ft]	Length l [ft]	Depth z [ft]
	new	change						
1	Yes		permanent	250.00		2.00	15.00	on terrain
No.	Name							
1	Traffic							

**Resistance on front face of the structure**

Resistance on front face of the structure: at rest  
 Soil on front face of the structure - Backfill  
 Soil thickness in front of structure  $h = 1.50$  ft  
 Terrain in front of structure is flat.

**Settings of the stage of construction**

Design situation : permanent

**Verification No. 1****Forces acting on construction**

Name	F <sub>hor</sub> [lb/ft]	App.Pt. z [ft]	F <sub>vert</sub> [lb/ft]	App.Pt. x [ft]	Design coefficient
Weight - wall	0.0	-2.79	2213.1	1.99	1.000
FF resistance	-74.5	-0.50	0.2	0.16	1.000
Weight - earth wedge	0.0	-0.65	8.4	3.81	1.000
Weight - earth wedge	0.0	-3.94	74.3	3.28	1.000
Weight - earth wedge	0.0	-6.29	93.3	2.05	1.000
Active pressure	785.3	-2.20	692.0	3.69	1.000
Traffic	388.5	-3.09	285.5	3.54	1.000

**Verification of complete wall****Check for overturning stability**Resisting moment  $M_{res} = 8432.5$  lbfft/ftOverturning moment  $M_{ovr} = 2887.2$  lbfft/ft

Safety factor = 2.92 &gt; 1.50

**Wall for overturning is SATISFACTORY****Check for slip**Resisting horizontal force  $H_{res} = 1790.13$  lb/ftActive horizontal force  $H_{act} = 1099.19$  lb/ft

Safety factor = 1.63 &gt; 1.50

**Wall for slip is SATISFACTORY****Overall check - WALL is SATISFACTORY****Dimensioning No. 1****Forces acting on construction**

Name	F <sub>hor</sub> [lb/ft]	App.Pt. z [ft]	F <sub>vert</sub> [lb/ft]	App.Pt. x [ft]	Design coefficient
Weight - wall	0.0	-2.61	1963.1	1.66	1.000
FF resistance	-8.3	-0.17	0.0	0.00	1.000
Weight - earth wedge	0.0	-3.44	74.3	2.95	1.000
Weight - earth wedge	0.0	-5.79	93.3	1.72	1.000
Active pressure	645.5	-2.10	477.9	3.25	1.000
Traffic	368.0	-2.77	252.2	3.15	1.000

**Verification of block No. 1****Check for overturning stability**Resisting moment  $M_{res} = 5981.4$  lbfft/ftOverturning moment  $M_{ovr} = 2369.4$  lbfft/ft

Safety factor = 2.52 &gt; 1.50

**Joint for overturning stability is SATISFACTORY**

**Check for slip**Resisting horizontal force  $H_{res} = 1651.69$  lbf/ftActive horizontal force  $H_{act} = 1005.21$  lbf/ft

Safety factor = 1.64 &gt; 1.50

**Joint for verification is SATISFACTORY****Bearing capacity of foundation soil****Design load acting at the center of footing bottom**

No.	Moment [lbfft/ft]	Norm. force [lbf/ft]	Shear Force [lbf/ft]	Eccentricity [-]	Stress [psf]
1	1188.2	3366.74	1099.19	0.088	1022.0

**Service load acting at the center of footing bottom**

No.	Moment [lbfft/ft]	Norm. force [lbf/ft]	Shear Force [lbf/ft]
1	1188.2	3366.74	1099.19

**Verification of foundation soil**

Stress in the footing bottom : rectangle

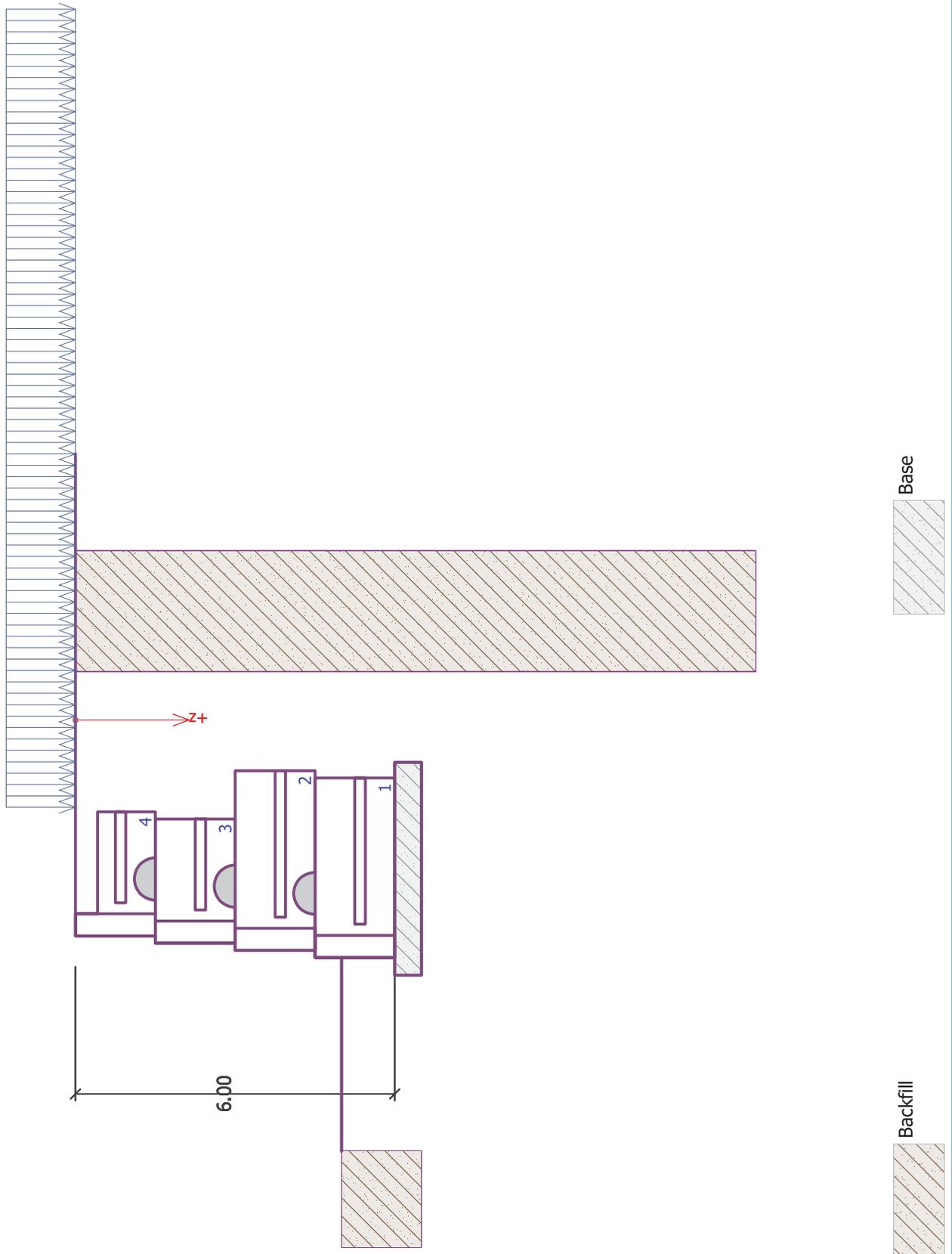
**Eccentricity verification**Max. eccentricity of normal force  $e = 0.088$ Maximum allowable eccentricity  $e_{alw} = 0.333$ **Eccentricity of the normal force is SATISFACTORY****Verification of bearing capacity**Max. stress at footing bottom  $\sigma = 1022.0$  psfBearing capacity of foundation soil  $R_d = 4000.0$  psf

Safety factor = 3.91 &gt; 2.00

**Bearing capacity of foundation soil is SATISFACTORY****Overall verification - bearing capacity of found. soil is SATISFACTORY**

Name :

Stage : 1



This SWPPP was prepared in accordance with SPDES Permit No. GP-0-20-001 and must be kept on the job site and available for use of contractors and sub-contractors. Certifications by applicant/developer and by the contractors/subcontractors are included. A copy of the Notice of Intent (NOI), which must be filed at least 5 days prior to the commencement of any work along with the MS4 SWPPP acceptance form, is included herein. Notice of Termination (NOT) must be filed when all stormwater management facilities are in place and the site has been stabilized with specified vegetation. Sample inspection forms are included. Operation and maintenance plan is attached and included both temporary and permanent facilities maintenance. This SWPPP, together with all required plans, completed inspection forms and log of activities including any mitigation of items noted on inspection forms must be kept on the job site and available for inspection by all regulatory authorities.

## FULL STORMWATER POLLUTION PREVENTION PLAN (SWPPP) REPORT

Prepared For:

**Suez Water New York, INC**  
**London Bridge Well 1 & 2**  
**Town of Carmel, Putnam County, New York**

Prepared By:



**ATZL, NASHER & ZIGLER P.C.**  
Engineers – Surveyors – Planners  
232 North Main Street  
New City, New York 10956  
Tel. (845) 634-4694 • Fax (845) 634-5543

This plan has been prepared to comply with the provisions of the SPDES general permit no. GP-0-20-001, issued by the New York State Department of Environmental Conservation for storm water discharges from construction site activities.

I certify under penalty of law that this document and all attachments were prepared and revised under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment of knowing violations.

Revision 1: May 03, 2022  
Date: October 01, 2021  
Job No. 4872

  
Ryan A. Nasher, P.E. License No.: 89066  
New York State Professional Engineer

Table of Contents

**TABLE OF CONTENTS**

**SECTION 1: Stormwater Pollution Prevention Plan Report Complying  
GP 0-20-001**

- 1.0 INTRODUCTION
  - 1.1 NOTICE OF INTENT
  - 1.2 SWPPP GOALS AND OBJECTIVES
- 2.0 SITE DESCRIPTION
  - 2.1 Project Name & Location:
  - 2.2 Owner/Operator Name & Address:
  - 2.3 General Contractor\*:
  - 2.4 Description:
  - 2.5 Impervious Cover:
  - 2.6 Site Area:
  - 2.7 Location Map
  - 2.8 Sequence of Major Activities:
- 3.0 CONTROLS
  - 3.1 EROSION AND SEDIMENT CONTROLS STABILIZATION PRACTICES
    - 3.1.1 Temporary Stabilization:
    - 3.1.2 Permanent Stabilization:
  - 3.2 STRUCTURAL PRACTICES
  - 3.3 STORMWATER MANAGEMENT WATER QUALITY
    - 3.3.1 Name of Receiving Waters:
  - 3.4 PEAK FLOW ATTENUATION
  - 3.5 RUNOFF CONVEYANCE SYSTEMS
  - 3.6 OTHER CONTROLS
    - 3.6.1 Waste Materials:
    - 3.6.2 Hazardous waste:
    - 3.6.3 Sanitary Waste:
    - 3.6.4 Offsite Vehicle Tracking:
  - 3.7 TIMING OF CONTROL MEASURES
  - 3.8 CERTIFICATION OF COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS
- 4.0 MAINTENANCE & INSPECTION PROCEDURES
  - 4.1 SEDIMENT & EROSION CONTROL INSPECTION AND MAINTENANCE PRACTICES
  - 4.2 SUMMARY OF SWPPP REQUIRED DOCUMENT FILINGS
- 5.0 NON-STORM WATER DISCHARGES

**SUEZ WATER NEW YORK, INC LONDON BRIDGE WELL 1 & 2  
Full Stormwater Pollution Prevention Plan Report**

5.1 NON-STORMWATER DISCHARGES

6.0 INVENTORY FOR POLLUTION PREVENTION PLAN

6.1 MATERIAL SUBSTANCES

7.0 SPILL CONTROL & PREVENTION

7.1 MATERIAL MANAGEMENT PRACTICES

7.1.1 Good Housekeeping:

7.1.2 Hazardous Products:

7.2 PRODUCT SPECIFIC PRACTICES

7.2.1 Petroleum Products:

7.2.2 Fertilizers:

7.2.3 Paints:

7.2.4 Concrete Trucks:

7.3 SPILL CONTROL PRACTICES

8.0 SUPPORTING PLANS & REPORTS

9.0 POLLUTION PREVENTION PLAN CERTIFICATION

9.1 OWNER/OPERATOR CERTIFICATION

10.0 CERTIFICATION BY CONTRACTORS

10.1 PRIME CONTRACTOR CERTIFICATION

10.2 SUB-CONTRACTOR CERTIFICATION

Figures

Figure 1: Site Location Map (source: maps.google.com)

Appendices

Appendix A – SWPPP CONSTRUCTION SITE LOG BOOK

Appendix B – STORMWATER POND CONSTRUCTION INSPECTION CHECKLIST FORM

Appendix C – SPILL CONTROL & PREVENTION LOG

Appendix D – STORMWATER MANAGEMENT FACILITIES MAINTENANCE AGREEMENT

Appendix E – CONSTRUCTION PLAN DRAWINGS IN (11" X 17")

**SECTION 2: Stormwater System Design Report Complying NYS  
Stormwater Management Design Manual, January 2015.**

**Hydraulic & Hydrological Study:**

• Revision Overview .....	2-1
• Introduction .....	2-1
• Site Location .....	2-1
• Hydrological Soil Group .....	2-2
• Existing Watershed .....	2-2
• Developed Watersheds .....	2-2
• Drainage Study .....	2-2
• Mitigation .....	2-2

**Summary Table:**

• Summary Flow Table at P.O.I.#1 .....	2-4
--	-----

**Location Maps:**

• Street Map .....	2-5
• Soil Map .....	2-6

**Drainage Calculation**

• Existing Condition .....	2-7
• Developed Condition .....	2-7

**Stormwater Management Practice Design Calculations**

• Water Quantity Calculation .....	2-8
• Stormwater Sizing Calculation .....	2-9

**HydroCAD Model for Existing and Proposed Conditions 1, 10, & 100 Year Storms**

• Drainage Schematic .....	2-11
• 1-Year Storm Model .....	2-12
• 10-Year Storm Model .....	2-19
• 100-Year Storm Model .....	2-26

**SECTION 3: SPDES General Permit Per GP 0-20-001**

- 3.1 SPDES ACKNOWLEDGEMENT LETTER ISSUED BY NYSDEC
- 3.2 FILED OUT NOTICE OF INTENT (N.O.I.)
- 3.3 MS4 SWPPP ACCEPTANCE FORM

**MAPS:**

• Drainage Map Existing Condition .....	E-1
• Drainage Map Proposed Condition .....	P-1

Section 1: O&M

# **SUEZ WATER NEW YORK, INC LONDON BRIDGE WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

## **SECTION 1:**

# **OPERATION INSPECTION AND MAINTENANCE PLAN REPORT**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**

## **1.0 INTRODUCTION**

---

### **1.1 Notice of Intent:**

Section 402 of the Clean Water Act requires permits for stormwater discharge from construction activities, which disturb one or more acres of land to obtain a permit. To implement this law, the New York State Department of Environmental Conservation (NYSDEC) issued the General Permit GP-0-20-001 for Stormwater Discharges from Construction Activities. The Notice of Intent (NOI) is the means to obtain coverage under this permit.

### **1.2 SWPPP Goals and Objective:**

The goal of the Stormwater Pollution Prevention Plan (SWPPP) is to control runoff of pollutants from the project site during and after construction activities by complying with the NY State Pollutant Discharge Elimination System (SPDES) Stormwater Permit for construction activities and local rules and regulations. The SWPPP will implement the following practices:

- Reduction or elimination of erosion and sediment loading to waterbodies during construction;
- Control of the impact of stormwater runoff on the water quality of the receiving waters;
- Control of the increased volume and peak rate of runoff during and after construction; and
- Maintenance of stormwater controls during and after completion of construction.

The SWPPP will incorporate the proper selection, sizing and siting of the Stormwater Management Practices (SMPs) to protect water resources from stormwater impacts. The design of the proposed SMPs were determined using current engineering methodologies to provide appropriate sizing criteria to avoid overburdening stormwater conveyance structures. Erosion and Sediment Control (ESC), Water Quantity Control, and Water Quality Controls are inter-related components of the SWPPP.

The SWPPP is intended to be a "living" document. The document should be revised and updated by a qualified professional whenever site conditions dictate. Any proposed revisions shall undergo review by the owner or his designated representative prior to incorporation in the SWPPP and implementation at the site. Any proposed modifications shall be in accordance with the New York State Department of Environmental Conservation's technical standards.

## **2.0 SITE DESCRIPTION**

---

### **2.1 Project Name & Location:**

Suez Water New York, INC London Bridge Well 1 & 2  
Town of Carmel  
Putnam County, New York  
Town of Ramapo Tax Map: Section 64.7, Block 1, Lot 10

### **2.2 Owner/Operator Name & Address:**

Suez Water New York, Inc.  
Attention: Steven Garabed  
162 Old Mill Road  
West Nyack, NY 10994  
Email: [steven.garabed@suez.com](mailto:steven.garabed@suez.com)

### **2.3 General Contractor\*:**

\_\_\_\_\_  
(Company Name)

\_\_\_\_\_  
(Street Address)

\_\_\_\_\_  
(City, State, Zip Code)

\_\_\_\_\_  
(Phone Number)

\*note – General Contractor shall be identified prior to commencement of work.

### **2.4 Description:**

The project is located at 39 Brook Street in the Town of Carmel, Putnam County, New York. The site has an area of about 1.61 acres. The existing site consists of woods, grass, and some impervious area. The developed site includes the construction of a building and a gravel driveway.

**SUEZ WATER NEW YORK, INC LONDON BRIDGE WELL 1 & 2  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

<b>Soil Name</b>	<b>Soil Map Symbol</b>	<b>Hydrological Soil Group</b>	<b>Reference Page No.*</b>
Charlton fine sandy loam, 8 to 15 percent slopes	ChC	B	22
Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	CrC	B	29
Chatfield-Charlton complex, 15 to 35 percent slopes, very rocky	CsD	B	30

\* Soil Survey of Putnam County, New York, United States Department of Agriculture Soil Conservation Service, October 1994.

Soil disturbing activities will include clearing and grubbing; installation of a stabilized construction entrance; grading (cuts & fills); excavation for the installation of drainage pipes, SMPs, sanitary sewer connections, water main connections, building foundations, stormwater management facilities and the preparation for final planting and seeding.

**2.5 Impervious Cover:**

Impervious cover within the planned disturbance will be increased from 0.002 acres in the existing condition to 0.146 acres in the proposed condition.

**2.6 Site Area:**

The site is approximately 1.61 acres and about 0.549 acres will be disturbed by the proposed construction activities.

**SUEZ WATER NEW YORK, INC LONDON BRIDGE WELL 1 & 2  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

**2.7 Location Map:**



**STREET MAP**  
Source: [maps.google.com](https://maps.google.com)

## 2.8 Sequence of Major Activities:

Phasing and schedule of construction is as follows (several phases will overlap):

Phase 1: Clearing and grubbing of designated areas

Phase 2: Land grading according to the approved site development plan

Phase 3: Building construction

Phase 4: Paving and utilities construction

Phase 5: Final Grading, landscaping

The general order of activities will be as follows:

1. Schedule a pre-construction meeting.
2. Locate natural resources and the limit of disturbance per approved plans.
3. Install perimeter erosion and sediment control practices (silt fences).
4. Install construction entrances and temporary staging.
5. Limit grading for installation of E&SC practices.
6. Dispose clearing and grading materials as construction progresses.
7. Stockpile top soil and stabilize.
8. Perform rough grading/cut & fill and stabilize inactive areas.
9. Install utilities and drainage structures.
10. Proceed with partial road construction where applicable.
11. Construct foundation and building structure as per plan.
12. Apply soil restoration practices as described in the plan.
13. Perform final stabilization, i.e. top soil and landscaping.
14. Remove sediment accumulations and complete permanent post construction SMPs per the approved plan.
15. Remove E&SC practices and apply for a Notice of Termination (N.O.T.).

### **3.0 CONTROLS**

---

#### **3.1 Erosion and Sediment Controls Stabilization Practices:**

##### **3.1.1 Temporary Stabilization:**

Topsoil, stockpiles, and soils that are exposed and left bare for a period of 14 days which are not being graded, not under active construction for 14 days or more, or not scheduled for permanent seeding within 14 days will be stabilized with temporary seed and mulch. All grass seed mixtures and application rates shall comply with Sediment and Erosion Control Plan.

Areas of the site, which are to be paved; will be temporarily stabilized by applying stone sub-base until bituminous pavement can be applied.

##### **3.1.2 Permanent Stabilization:**

Disturbed portions of the site where construction activities permanently cease shall be stabilized with permanent seed no later than 14 days after the last construction activity.

#### **3.2 Structural Practices:**

Proposed measures will include silt fences, storm inlet protection, and stabilized construction entrance.

#### **3.3 Stormwater Management Water Quality:**

Stormwater runoff generated by the rooftop and the gravel drive will be directed towards the proposed dry pond system through a combination of downspouts, trench drain, catch basin, and pipes.

The stormwater management system has been designed to comply with the most recent NYSDEC design manual requirements. The dry pond system is designed to treat the first flush water quality volume of required impervious area, according to NYSDEC redevelopment rules.

The property owner shall be responsible for the long-term operation, maintenance and inspection of the proposed stormwater management facilities and provide maintenance records to the Town of Carmel.

**SUEZ WATER NEW YORK, INC LONDON BRIDGE WELL 1 & 2**  
**Full Stormwater Pollution Prevention Plan (SWPPP) Report**

**3.3.1 Name of Receiving Waters:**

The site drains towards a NYSDEC wetland. The site is located in one of the watersheds identified in Appendix C of GP-0-20-001.

**3.4 Peak Flow Attenuation:**

In order to provide the zero net increase of peak runoff, a Dry Pond System has been proposed.

**3.5 Runoff Conveyance Systems:**

The stormwater pipes are design to convey the 10-year peak flow discharge.

**3.6 Other Controls:**

**3.6.1 Waste Materials:**

All waste materials will be collected and stored in securely lidded metal dumpsters rented from \_\_\_\_\_, a solid waste management company located in Putnam County (name of carting company to be identified 30 days prior to commencement of work). The dumpsters will meet Town of Carmel, Putnam County, and New York State solid waste management regulations. All trash and construction debris from the site will be deposited in the dumpsters. The dumpsters will be emptied as necessary, and the trash will be hauled off site to \_\_\_\_\_ (destination to be identified 30 days prior to commencement of work). No construction waste materials will be buried on site. All personnel will be instructed regarding the correct procedure for waste disposal. Notices stating these practices will be posted in the office trailer and \_\_\_\_\_, the Job Supervisor, individual who is responsible for managing the day to day site operations, will be responsible for seeing that these procedures are followed (Job Supervisor shall be identified 30 days prior to commencement of work).

**3.6.2 Hazardous waste:**

All hazardous waste materials will be disposed of in the manner specified by local or state regulation or by the manufacturer. Site personnel will be instructed in these practices and \_\_\_\_\_, Job Supervisor, individual who is responsible for managing the day to day site operations, will be responsible for seeing that these procedures are followed (Job Supervisor shall be identified 30 days prior to commencement of work).

**3.6.3 Sanitary Waste:**

A licensed sanitary waste management contractor (sanitary waste management contractor to be identified 30 days prior to commencement of work) will collect all sanitary waste from the portable units.

**3.6.4 Offsite Vehicle Tracking:**

A stabilized construction entrance and gravel pad will be provided to wash or spray-clean trucks over before leaving the site in order to prevent track-out of dirt, mud, debris and dust. In addition, trucks will be covered with a tarp and at least 6 inches of freeboard clearance will be maintained to keep excessive dust from escaping the truck during hauling operations.

**3.7 Timing of Control Measures:**

As indicated in the Sequence of Major Activities, the stabilized construction entrance and other sediment and erosion control activities will be constructed prior to earthwork activities on any part of the site. Any soil areas that are exposed and left bare for a period of 14 days which are not being graded, not under active construction for 14 days or more, or not scheduled for permanent seeding within 14 days will be treated with temporary seed and mulch. Once construction activity ceases permanently in an area, that area will be stabilized with permanent seed and mulch. After the entire site is stabilized, accumulated sediments will be removed from the sediment and erosion control structures and the controls will be removed.

**3.8 Certification of Compliance With Federal, State And Local Regulations:**

The stormwater pollution prevention plan reflects New York State Department of Environmental Conservation requirements for storm water management and erosion and sediment control, as established in Article 17, Titles 7, 8 and Article 70 of the Environmental Conservation Law. To ensure compliance, this plan was prepared in accordance with guidelines issued with the SPDES General Permit for Storm Water Discharges from Construction Activities that are Classified as "Associated with Construction Activity", published by the NYSDEC.

## **4.0 MAINTENANCE & INSPECTION PROCEDURES**

### **4.1 Sediment & Erosion Control Inspection And Maintenance Practices:**

The following are inspection and maintenance practices that will be used in coordination with the SWPPP Construction Log Book prepared for this project, the template which is included in Appendix A, to maintain sediment and erosion controls:

- The Operator shall have a qualified professional conduct an assessment of the site prior to the commencement of construction and certify in this inspection report that the appropriate erosion and sediment controls described in the SWPPP, as required by the SPDES General Permit for Stormwater Discharges, have been adequately installed or implemented to ensure overall preparedness of the site for commencement of construction. Qualified professional means a person knowledgeable in the principles and practice of erosion and sediment controls, such as a licensed professional engineer, Certified Professional in Erosion and Sediment Control (CPESC), soil scientist, or someone working under the direction and supervision of a licensed professional engineer, Certified Professional in Erosion and Sediment Control (CPESC), or soil scientist (person must have experience in the principles and practices of erosion and sediment control). The template for the initial inspection and assessment is included in Appendix A.
- All control measures will be inspected by a qualified professional at least once each week (7 days) and immediately following any storm event of 0.5 inches or greater.
- All measures will be maintained in good working order. If a repair is necessary, it will be initiated within 24 hours of discovery.
- Provide sprinkle water on the dirt road during hot summer or when appropriate to prevent particles to be air born.
- Built up sediment to be removed from the silt fence when it has reached 1/3 the height of the fence. Sediment traps will be cleaned when built up sediments reaches 25 percent of design capacity.
- Silt fence will be inspected for depth of sediment, tears, to see if the fabric is securely attached to the fence posts, and to see that the fence posts are firmly in the ground.
- Temporary and permanent seeding and planting will be inspected for bare spots, washouts, and healthy growth.
- A maintenance inspection report will be filled out after each inspection and will become part of the SWPPP.
- \_\_\_\_\_, Job Supervisor – Trained Individual per GP-0-20-001, will select individuals who will be responsible for coordinating efforts with the qualified professional for regular inspections, maintenance and repair activities, and filling out the inspection and maintenance report forms. Inspection reports will summarize:

**SUEZ WATER NEW YORK, INC LONDON BRIDGE WELL 1 & 2  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

1. Name of Inspector
2. Qualifications of Inspector
3. Date of Inspection
4. Weather Conditions
5. Areas inspected, including measurements
6. Areas that have undergone temporary and permanent stabilization
7. Indicate all disturbed areas that have not undergone active site work during the previous 14-day period
8. Observed condition of all erosion and sediment control practices
9. Inspect all sediment control practices and record approximate degree of sediment accumulation as a percentage of the sediment storage volume
10. Actions Taken to Correct Problems
11. Incorporate changes necessary to the SWPPP

The template for regular inspections is included in Appendix A.

- Personnel selected for inspection and maintenance responsibilities will receive training from the Job Supervisor and/or the qualified professional. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used on site in good working order.
- The Operator shall ensure that a record of all inspection reports is maintained in the SWPPP Construction Log Book. The site logbook shall be maintained on site and be made available to the permitting authorities upon request. Prior to the commencement of construction, the Operator shall certify in the site log book that the SWPPP was prepared in accordance with the State's standards and meets all Federal, State and local erosion and sediment control requirements. The Operator shall retain copies of SWPPPs and any reports submitted in conjunction with this permit, and records of all data used to complete the NOI to be covered by this permit, for a period of at least three years from the date that the site is finally stabilized. The Operator shall post at the site, in a publicly accessible location, a summary of the site inspection activities on a monthly basis. The template for SWPPP Construction Log Book is included in Appendix A.
- Prior to filing of the Notice of Termination (NOT) or the end of permit term, the Operator shall have the qualified professional perform a final site inspection. The qualified professional shall certify that the site has undergone final stabilization using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed. Final stabilization means that all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of 80% has been established, or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structure. The template for final inspections is included in Appendix A.

**SUEZ WATER NEW YORK, INC LONDON BRIDGE WELL 1 & 2  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

- Clean out all temporary structures and pipes upon completion of the project.
- When the site has been finally stabilized, the operator must submit a Notice of Termination form to terminate coverage under the SPDES General Permit GP 0-20-001. The permittee must identify all of the permanent stormwater management structures that have been constructed. In addition, an manual describing the operation and maintenance practices that will be necessary for the structures to function as designed after the site is stabilized must be finalized and in-place. The permittee must also certify that the permanent structure have been constructed as described in the SWPPP.

The inspection procedures that will be used for the construction of the proposed Stormwater management facilities are included in the CONSTRUCTION INSPECTION CHECKLIST FORM prepared for this project, the template of which is included in Appendix B, to be used to ensure proper construction.

**4.2 Summary of SWPPP Required Document Filings:**

The following table provides a summary of the required forms and inspections that need to be completed as part of the SWPPP requirements and which checklist or report document forms need to be used for each:

<u>Name of Document</u>	<u>Form to be Used</u>	<u>When to complete</u>
Pre-Construction Meeting Documents Form	Appendix A – SWPPP Construction Site Log Book	Prior to beginning of construction
Owner/Operator Certification	Appendix A, SWPPP Report	Prior to beginning of construction
Prime Contractor Certification	SWPPP Report	Prior to beginning of construction
Sub-Contractor Certification	SWPPP Report	Prior to beginning of construction
Pre-Construction Site Assessment Form	Appendix A	Prior to beginning of construction
Construction Duration Inspection Forms	Appendix A	Every seven days
Three-Month Status Reports	Appendix A	Every three months
SMPs Construction Inspection Checklist Form	Appendix B	During the construction of the proposed stormwater facilities
Final Stabilization and Retention of Records	Appendix B	At completion of project
Spill Control & Prevention Log	Appendix C	Before and after completion of Project
Stormwater Facilities Maintenance Plan and Inspection Checklists	Appendix D	After completion of Project

## **5.0 NON-STORM WATER DISCHARGES**

### **5.1 Non-Stormwater Discharges:**

It is expected that the following non-storm water discharges will occur from the site during the construction period:

- Water from water line flushing.
- Pavement wash waters (where no spills or leaks of toxic or hazardous materials have occurred).
- Uncontaminated groundwater (from natural springs)

## **6.0 INVENTORY FOR POLLUTION PREVENTION PLAN**

### **6.1 Material substances:**

The materials or substances listed below are expected to be present on the site during construction:

- Concrete
- Detergents
- Paints (enamels and latex)
- Metal Studs
- Roofing Materials
- Tar and Paving Materials
- Fertilizers
- Petroleum Based Products
- Cleaning Solvents
- Wood
- Masonry Block

## **7.0 SPILL CONTROL & PREVENTION**

### **7.1 Material Management Practices:**

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff.

**SUEZ WATER NEW YORK, INC LONDON BRIDGE WELL 1 & 2  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

**7.1.1 Good Housekeeping:**

The following good housekeeping practices will be followed on site during the construction project:

- An effort will be made to store only enough products required to do the job.
- All materials stored on site will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
- Product will be kept in their original containers with the original manufacturer's label.
- Substances will not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all of a product will be used up before disposing of the container.
- Manufacturer's recommendations for proper use and disposal will be followed.
- The Job Supervisor will inspect daily to ensure proper use and disposal of materials on site.

**7.1.2 Hazardous Products:**

The following practices will be used to reduce the risks associated with hazardous materials:

- Products will be kept in original containers unless they are not reseal able.
- Original labels and material safety data will be retained; they contain important product information.
- If surplus product must be disposed of, manufacturer's or local and State recommended methods for proper disposal will be followed.

**7.2 Product Specific Practices:**

The following product specific practices will be followed on site:

**7.2.1 Petroleum Products:**

All onsite vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers, which are clearly labeled. Any asphalt substances used on site will be applied according to the manufacturer's recommendations.

### 7.2.2 Fertilizers:

Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to stormwater. Storage will be in a covered shed. The content of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

### 7.2.3 Paints:

All containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm drainage system, but will be properly disposed of according to manufacturer's instructions or State and local regulations.

### 7.2.4 Concrete Trucks:

Concrete trucks will not be allowed to wash out or discharge surplus concrete or drum wash water on the site.

## 7.3 Spill Control Practices:

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanups:

- Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage areas on site. Equipment and materials will include, but not be limited to, brooms, dustpans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated, and personnel will wear appropriate protective clothing to prevent injury from contact with hazardous substances.
- Spills of toxic or hazardous material will be reported to the appropriate State or local government agency, regardless of the size of the spill. The Spill Control & Prevention Log form provided in Appendix C should be used for this purpose.
- The spill prevention plan will be adjusted to include measures to prevent a repetitive type of spill from re-occurring and how to clean up the spill if it does re-occur. A description of the spill, what caused it, and the cleanup measures will also be included.
- The Job Supervisor responsible for daily site operations, will be designated as the spill prevention and cleanup coordinator. He will designate at least

**SUEZ WATER NEW YORK, INC LONDON BRIDGE WELL 1 & 2  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

three other site personnel who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of the responsible spill personnel will be posted in the material storage area and in the office trailer on site.

## **8.0 SUPPORTING PLANS & REPORTS**

---

1. Site Plan Drawings prepared by Atzl, Nasher & Zigler P.C.
2. Soil & Erosion Control Plans prepared by Atzl, Nasher & Zigler P.C.
3. Stormwater Management Design Report by Atzl, Nasher & Zigler P.C.

## 9.0 POLLUTION PREVENTION PLAN CERTIFICATION

### 9.1 OWNER/OPERATOR CERTIFICATION

"I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I also certify under penalty of law that this document and all corresponding attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person(s) who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgement that I will receive as a result of submitting this NOI. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction and agree to comply with all the terms and conditions of the general permit for which this NOI is being submitted."

Signed: \_\_\_\_\_  
(Owner/Operator)

Date: \_\_\_\_\_

\_\_\_\_\_  
(Printed Name & Title)

\_\_\_\_\_  
(Company Name, Address & Telephone Number)

## 10.0 CERTIFICATION BY CONTRACTORS

Made pursuant to the State Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (Permit No. GP 0-20-001) for:

Suez Water New York, INC London Bridge Well 1 & 2, Town of Carmel, Putnam County, New York

### 10.1 Prime Contractor Certification:

"I certify under penalty of law that I understand and agree to comply with the terms and conditions of the stormwater pollution prevention plan for the construction site identified in this plan as a condition of authorization to discharge stormwater. I also understand that the operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards."

Prime Contractor:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Company)

\_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Street Address)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(City, State, Zip Code)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Phone Number)

**SUEZ WATER NEW YORK, INC LONDON BRIDGE WELL 1 & 2  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

**10.2 Sub-Contractor Certification:**

“I certify under penalty of law that I understand and agree to comply with the terms and conditions of the stormwater pollution prevention plan for the construction site identified in this plan as a condition of authorization to discharge stormwater. I also understand that the operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards.”

Sub-Contractor:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Company)

\_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Street Address)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(City, State, Zip Code)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Phone Number)

**SUEZ WATER NEW YORK, INC LONDON BRIDGE WELL 1 & 2  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

**CONTRACTOR and SUBCONTRACTOR CERTIFICATION STATEMENT**

*for the New York State Department of Environmental Conservation (DEC) State Pollutant Discharge Elimination System Permit for Stormwater Discharges from Construction Activity (GP-0-20-001)*

As per Part III.A.6 on page 13 of GP-0-20-001 (effective January 29, 2020):

*\*Prior to the commencement of construction activity, the owner or operator must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The owner or operator shall have each of the contractors and sub-contractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the trained contractor. The owner or operator shall ensure that at least one trained contractor is on site on a daily basis when soil disturbance activities are being performed.\**

**The owner or operator shall have each contractor and subcontractor involved in soil disturbance sign a copy of the following certification statement before they commence any construction activity:**

_____ Name of Construction Site	NYR _____ DEC Permit ID	_____ Municipality (MS4)
<p><i>"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.</i></p>		
_____ Responsible Corporate Officer/Partner Signature	_____ Date	
_____ Name of above Signatory	_____ Name of Company	
_____ Title of above Signatory	_____ Mailing Address	
_____ Telephone of Company	_____ City, State, and Zip	

<b>Identify the specific elements of the SWPPP the contractor or subcontractor is responsible for:</b>

<b>'TRAINED CONTRACTOR' FOR THE CERTIFIED CONTRACTOR OR SUBCONTRACTOR</b>		
_____ Name of Trained Employee	_____ Title of Trained Employee	_____ NYSDEC SWT #

*A copy of this signed contractor certification statement must be maintained at the SWPPP on site*

Appendix - A

**SUEZ WATER NEW YORK, INC  
LONDON BRIDGE WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**APPENDIX-A**

**CONSTRUCTION SITE LOGBOOK**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**

**SWPPP CONSTRUCTION SITE LOG BOOK FOR SUEZ WATER NEW YORK, INC LONDON BRIDGE  
WELL 1 & 2**

**NY STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM  
FOR CONSTRUCTION ACTIVITIES**

# **SWPPP CONSTRUCTION SITE LOG BOOK**

**For**

**Suez Water New York, INC London  
Bridge Well 1 & 2  
Town of Carmel  
Putnam County, New York**

## Table of Contents

---

- I. Pre-Construction Meeting Documents.
  - a. Preamble to Site Assessment and Inspections
  - b. Operator's Certification
  - c. Qualified Professional's Credentials & Certification
  - d. Pre-Construction Site Assessment Checklist
- II. Construction Duration Inspections
  - a. Directions
  - b. Modification to the SWPPP
- III. Monthly Summary Reports
- IV. Monitoring, Reporting, and Three-Month Status Reports
  - a. Operator's Compliance Response Format

Properly completing forms such as those contained in this document meet the inspection requirement of NYSDEC SPDES GP for Construction Activities. Completed forms shall be kept on site at all times and made available to authorities upon request.

**SWPPP CONSTRUCTION SITE LOG BOOK FOR SUEZ WATER NEW YORK, INC LONDON BRIDGE  
WELL 1 & 2**

**I. PRE-CONSTRUCTION MEETING DOCUMENTS**

**Project Name** SUEZ WATER NEW YORK, INC LONDON BRIDGE WELL 1 & 2  
**Permit No.** \_\_\_\_\_ **Date of Authorization** \_\_\_\_\_  
**Name of Operator** \_\_\_\_\_  
**Prime Contractor** \_\_\_\_\_

**a. Preamble to Site Assessment and Inspections** -the following information to be read by all person's involved in the construction of stormwater related activities:

The Operator agrees to have a qualified professional<sup>1</sup> conduct an assessment of the site prior to the commencement of construction<sup>2</sup> and certify in this inspection report that the appropriate erosion and sediment controls described in the SWPPP have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction.

Prior to the commencement of construction, the Operator shall certify in this site logbook that the SWPPP has been prepared in accordance with the State's standards and meets all Federal, State and local erosion and sediment control requirements.

When construction starts, site inspections shall be conducted by the qualified professional at least every 7 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater (Construction Duration Inspections). The Operator shall maintain a record of all inspection reports in this site log book. The site log book shall be maintained on site and be made available to the permitting authorities upon request. The Operator shall post at the site, in a publicly accessible location, a summary of the site inspection activities on a monthly basis (Monthly Summary Report).

The operator shall also prepare a written summary of compliance with this general permit at a minimum frequency of every three months (Operator's Compliance Response Form), while coverage exists. The summary should address the status of achieving each component of the SWPPP.

Prior to filing the Notice of Termination or the end of permit term, the Operator shall have a qualified professional perform a final site inspection. The qualified professional shall certify that the site has undergone final stabilization<sup>3</sup> using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed. In addition, the Operator must identify and certify that all permanent structures described in the SWPPP have been constructed and provide the owner(s) with an operation and maintenance plan that ensures the structure(s) continuously functions as designed.

1 "Qualified Professional" means a person knowledgeable in the principles and practice of erosion and sediment controls, such as a Certified Professional in Erosion and Sediment Control (CPESC), soil scientist, licensed engineer or someone working under the direction and supervision of a licensed engineer (person must have experience in the principles and practices of erosion and sediment control).

2 "Commencement of construction" means the initial removal of vegetation and disturbance of soils associated with clearing, grading or excavating activities or other construction activities.

3 "Final stabilization" means that all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of eighty (80) percent has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.

**b. Operators Certification**

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. Further, I hereby certify that the SWPPP meets all Federal, State, and local erosion and sediment control requirements. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law. "

Name (Please Print): \_\_\_\_\_

Title \_\_\_\_\_ Date: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

Signature: \_\_\_\_\_

**c. Qualified Professional's Credentials & Certification**

"I hereby certify that I meet the criteria set forth in the General Permit to conduct site inspections for this project and that the appropriate erosion and sediment controls described in the SWPPP and as described in the following Pre-construction Site Assessment Checklist have been adequately installed or implemented, ensuring the overall preparedness of this site for the commencement of construction."

Name (Please Print): \_\_\_\_\_

Title \_\_\_\_\_ Date: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

Signature: \_\_\_\_\_

**d. Pre-construction Site Assessment Checklist (NOTE: Provide comments below as necessary)**

1. Notice of Intent, SWPPP, and Contractors Certification:

Yes No NA

Has a Notice of Intent been filed with the NYS Department of Conservation?

Is the SWPPP on-site? Where? \_\_\_\_\_

Is the Plan current? What is the latest revision date? \_\_\_\_\_

Is a copy of the NOI (with brief description) onsite? Where? \_\_\_\_\_

Have all contractors involved with stormwater related activities signed a contractor's certification?

**Pre-construction Site Assessment Checklist (continued)**

**SWPPP CONSTRUCTION SITE LOG BOOK FOR SUEZ WATER NEW YORK, INC LONDON BRIDGE  
WELL 1 & 2**

**2. Resource Protection**

**Yes No NA**

- Are construction limits clearly flagged or fenced?
- Important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips, especially in perimeter areas, have been flagged for protection.
- Creek crossings installed prior to land-disturbing activity, including clearing and blasting.

**3. Surface Water Protection**

**Yes No NA**

- Clean stormwater runoff has been diverted from areas to be disturbed.
- Bodies of water located either on site or in the vicinity of the site have been identified and protected.
- Appropriate practices to protect on-site or downstream surface water are installed.
- Are clearing and grading operations divided into areas <5 acres?

**4. Stabilized Construction Entrance**

**Yes No NA**

- A temporary construction entrance to capture mud and debris from construction vehicles before they enter the public highway has been installed.
- Other access areas (entrances, construction routes, equipment parking areas) are stabilized immediately as work takes place with gravel or other cover.
- Sediment tracked onto public streets is removed or cleaned on a regular basis.

**5. Perimeter Sediment Controls**

**Yes No NA**

- Silt fence material and installation comply with the standard drawing and specifications.
- Silt fences are installed at appropriate spacing intervals
- Sediment/detention basin was installed as first land disturbing activity.
- Sediment traps and barriers are installed.

**6. Pollution Prevention for Waste and Hazardous Materials**

**Yes No NA**

- The Operator or designated representative has been assigned to implement the spill prevention avoidance and response plan.
- The plan is contained in the SWPPP on page \_\_\_\_\_
- Appropriate materials to control spills are onsite. Where? \_\_\_\_\_

## II. CONSTRUCTION DURATION INSPECTIONS

### a. Directions:

Inspection Forms will be filled out during the entire construction phase of the project.

Required Elements:

(1) On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period;

(2) Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization;

(3) Indicate all disturbed site areas that have not undergone active site work during the previous 14-day period;

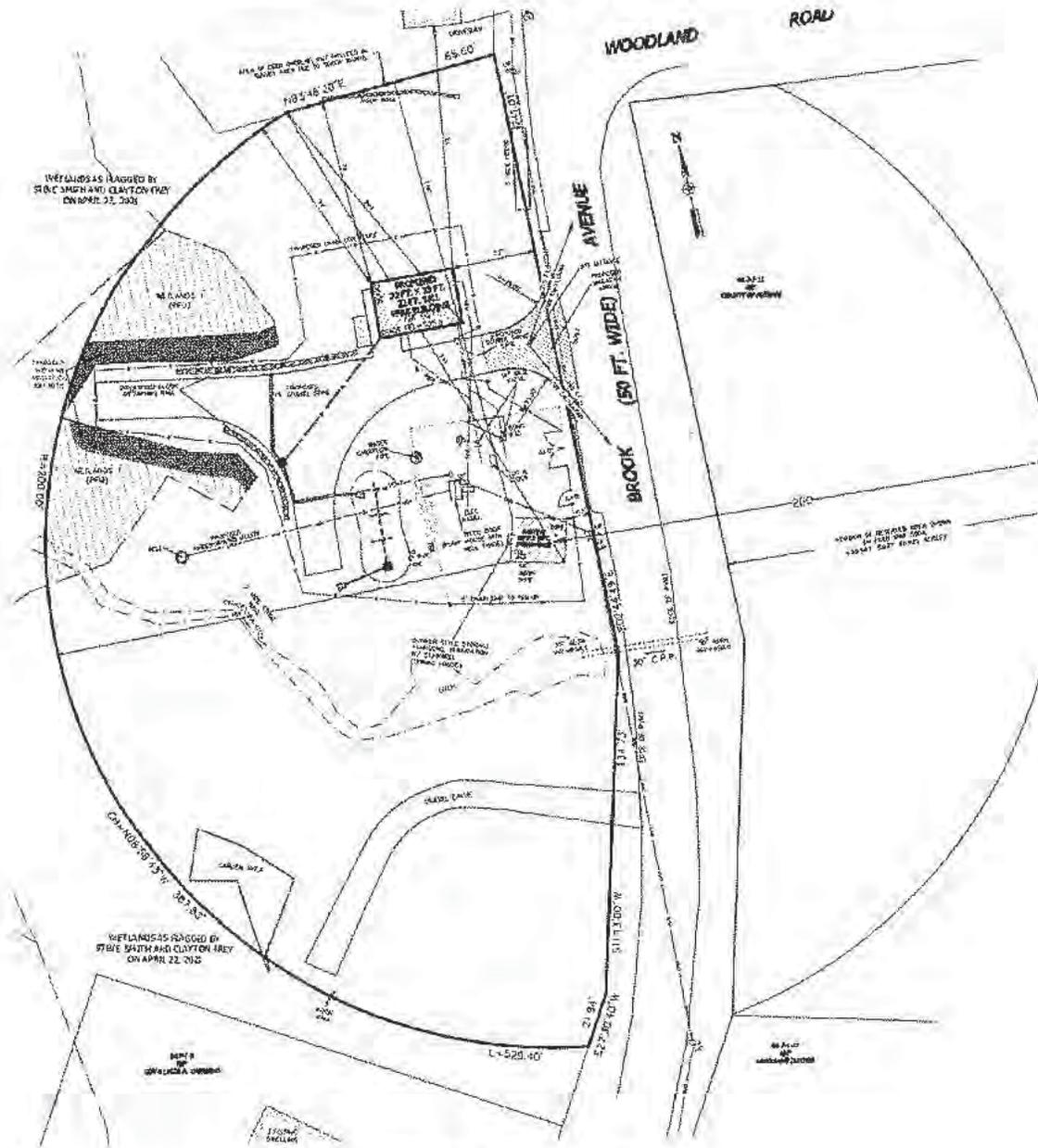
Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of sediment storage volume (for example, 10 percent, 20 percent, 50 percent);

(5) Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water; and

(6) Immediately report to the Operator any deficiencies that are identified with the implementation of the SWPPP.

**SWPPP CONSTRUCTION SITE LOG BOOK FOR SUEZ WATER NEW YORK, INC LONDON BRIDGE  
WELL 1 & 2**

**CONSTRUCTION DURATION INSPECTIONS**



**SITE PLAN/SKETCH**

\_\_\_\_\_  
**Inspector (Print Name)**

\_\_\_\_\_  
**Date of Inspection**

\_\_\_\_\_  
**Qualified Professional (Print Name)**

\_\_\_\_\_  
**Qualified Professional Signature**

The above signed acknowledges that, to the best of his/her knowledge, all information provided on the forms is accurate and complete.

## CONSTRUCTION DURATION INSPECTIONS

### Maintaining Water Quality

Yes No NA

- Is there an increase in turbidity causing a substantial visible contrast to natural conditions?
- Is there residue from oil and floating substances, visible oil film, or globules or grease?
- All disturbance is within the limits of the approved plans.
- Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

### Housekeeping

#### 1. General Site Conditions

Yes No NA

- Is construction site litter and debris appropriately managed?
- Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?
- Is construction impacting the adjacent property?
- Is dust adequately controlled?

#### 2. Temporary Stream Crossing

Yes No NA

- Maximum diameter pipes necessary to span creek without dredging are installed.
- Installed non-woven geotextile fabric beneath approaches.
- Is fill composed of aggregate (no earth or soil)?
- Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

### Runoff Control Practices

#### 1. Excavation Dewatering

Yes No NA

- Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
- Clean water from upstream pool is being pumped to the downstream pool.
- Sediment laden water from work area is being discharged to a silt-trapping device.
- Constructed upstream berm with one-foot minimum freeboard.

#### 2. Level Spreader

Yes No NA

- Installed per plan.
- Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.
- Flow sheets out of level spreader without erosion on downstream edge.

#### 3. Interceptor Dikes and Swales

Yes No NA

- Installed per plan with minimum side slopes 2H:1V or flatter.
- Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
- Sediment-laden runoff directed to sediment trapping structure

#### 4. Stone Check Dam

SWPPP CONSTRUCTION SITE LOG BOOK FOR SUEZ WATER NEW YORK, INC LONDON BRIDGE  
WELL 1 & 2

Yes No NA

- Is channel stable? (flow is not eroding soil underneath or around the structure).  
   Check is in good condition (rocks in place and no permanent pools behind the structure).  
   Has accumulated sediment been removed?.

5. Rock Outlet Protection

Yes No NA

- Installed per plan.  
   Installed concurrently with pipe installation.

Soil Stabilization

1. Topsoil and Spoil Stockpiles

Yes No NA

- Stockpiles are stabilized with vegetation and/or mulch.  
   Sediment control is installed at the toe of the slope.

2. Revegetation

Yes No NA

- Temporary seedings and mulch have been applied to idle areas.  
   4 inches minimum of topsoil has been applied under permanent seedings

Sediment Control

1. Stabilized Construction Entrance

Yes No NA

- Stone is clean enough to effectively remove mud from vehicles.  
   Installed per standards and specifications?  
   Does all traffic use the stabilized entrance to enter and leave site?  
   Is adequate drainage provided to prevent ponding at entrance?

2. Silt Fence

Yes No NA

- Installed on Contour, 10 feet from toe of slope (not across conveyance channels).  
   Joints constructed by wrapping the two ends together for continuous support.  
   Fabric buried 6 inches minimum.  
   Posts are stable, fabric is tight and without rips or frayed areas.  
   Sediment accumulation is \_\_\_\_% of design capacity.

3. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated practices)

Yes No NA

- Installed concrete blocks lengthwise so open ends face outward, not upward.  
   Placed wire screen between No. 3 crushed stone and concrete blocks.  
   Drainage area is 1 acre or less.  
   Excavated area is 900 cubic feet.  
   Excavated side slopes should be 2:1.

SWPPP CONSTRUCTION SITE LOG BOOK FOR SUEZ WATER NEW YORK, INC LONDON BRIDGE  
WELL 1 & 2

- 2" x 4" frame is constructed and structurally sound.
- Posts 3-foot maximum spacing between posts.
- Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at max 8-inch spacing.
- Posts are stable, fabric is tight and without rips or frayed areas.
- Sediment accumulation \_\_\_% of design capacity.

4. Temporary Sediment Trap

Yes No NA

- Outlet structure is constructed per the approved plan or drawing.
- Geotextile fabric has been placed beneath rock fill.
- Sediment accumulation is \_\_\_% of design capacity.

5. Temporary Sediment Basin

Yes No NA

- Basin and outlet structure constructed per the approved plan.
- Basin side slopes are stabilized with seed/mulch.
- Drainage structure flushed and basin surface restored upon removal of sediment basin facility.
- Sediment accumulation is \_\_\_% of design capacity.

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design.  
Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.





Appendix - B

**SUEZ WATER NEW YORK, INC  
LONDON BRIDGE WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**APPENDIX-B**

**CONSTRUCTION INSPECTION CHECKLISTS**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**

**SUEZ WATER NEW YORK, INC LONDON BRIDGE WELL 1 & 2**  
**Stormwater System Design**  
**Construction Inspection Checklist Form**

**STORMWATER MANAGEMENT**  
**CONSTRUCTION INSPECTION CHECKLIST FORM**

**Project:** Suez Water New York, INC London Bridge Well 1 & 2  
**Location:** Town of Carmel, Putnam County, NY

**Site Status:** \_\_\_\_\_

**Date of Inspection:** \_\_\_\_\_

**Time of Inspection:** \_\_\_\_\_

**Weather Conditions**  
**(including recent rainfall):** \_\_\_\_\_

**Inspector's Name:** \_\_\_\_\_

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
<b>1. Pre-Construction/Materials and Equipment</b>		
Pre-construction meeting		
Pipe and appurtenances on-site prior to construction and dimensions checked		
1. Material (including protective coating, if specified)		
2. Diameter		
3. Dimensions of metal riser or pre-cast concrete outlet structure		
4. Required dimensions between water control structures (orifices, weirs, etc.) are in accordance with approved plans		
5. Barrel stub for prefabricated pipe structures at proper angle for design barrel slope		
6. Number and dimensions of prefabricated anti-seep collars		
7. Watertight connectors and gaskets		
8. Outlet drain valve		
Project benchmark near pond site		
Equipment for temporary de-watering		
<b>2. Subgrade Preparation</b>		
Area beneath embankment stripped of all Vegetation, topsoil, and organic matter		
<b>3. Pipe Spillway Installation</b>		
Method of installation detailed on plans		
<b>A. Bed preparation</b>		
Installation trench excavated with specified side slopes		

**SUEZ WATER NEW YORK, INC LONDON BRIDGE WELL 1 & 2**  
**Stormwater System Design**  
**Construction Inspection Checklist Form**

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
Stable, uniform, dry subgrade of relatively impervious material (If subgrade is wet, contractor shall have defined steps before proceeding with installation)		
Invert at proper elevation and grade		
<b>B. Pipe placement</b>		
<b>Metal / plastic pipe</b>		
1. Watertight connectors and gaskets properly installed		
2. Anti-seep collars properly spaced and having watertight connections to pipe		
3. Backfill placed and tamped by hand under "haunches" of pipe		
4. Remaining backfill placed in max. 8 inch lifts using small power tamping equipment until 2 feet cover over pipe is reached		
<b>3. Pipe Spillway Installation</b>		
<b>Concrete pipe</b>		
1. Pipe set on blocks or concrete slab for pouring of low cradle		
2. Pipe installed with rubber gasket joints with no spalling in gasket interface area		
3. Excavation for lower half of anti-seep collar(s) with reinforcing steel set		
4. Entire area where anti-seep collar(s) will come in contact with pipe coated with mastic or other approved waterproof sealant		
5. Low cradle and bottom half of anti-seep collar installed as monolithic pour and of an approved mix		
6. Upper half of anti-seep collar(s) formed with reinforcing steel set		
7. Concrete for collar of an approved mix and vibrated into place (protected from freezing while curing, if necessary)		
8. Forms stripped and collar inspected for honeycomb prior to backfilling. Parge if necessary.		
<b>C. Backfilling</b>		
Fill placed in maximum 8 inch lifts		
Backfill taken minimum 2 feet above top of anti-seep collar elevation before traversing with heavy equipment		
<b>4. Riser / Outlet Structure Installation</b>		
<b>Riser located within embankment</b>		
<b>A. Metal riser</b>		
Riser base excavated or formed on stable subgrade to design dimensions		

**SUEZ WATER NEW YORK, INC LONDON BRIDGE WELL 1 & 2**  
**Stormwater System Design**  
**Construction Inspection Checklist Form**

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
Set on blocks to design elevations and plumbed		
Reinforcing bars placed at right angles and projecting into sides of riser		
Concrete poured so as to fill inside of riser to invert of barrel		
<b>B. Pre-cast concrete structure</b>		
Dry and stable subgrade		
Riser base set to design elevation		
If more than one section, no spalling in gasket interface area; gasket or approved caulking material placed securely		
Watertight and structurally sound collar or Gasket joint where structure connects to pipe spillway		
<b>C. Poured concrete structure</b>		
Footing excavated or formed on stable Subgrade, to design dimensions with reinforcing steel set		
Structure formed to design dimensions, with reinforcing steel set as per plan		
Concrete of an approved mix and vibrated into place (protected from freezing while curing, if necessary)		
Forms stripped & inspected for "honeycomb" prior to backfilling; parge if necessary		
<b>5. Embankment Construction</b>		
Fill material		
Compaction		
Embankment		
1. Fill placed in specified lifts and compacted with appropriate equipment		
2. Constructed to design cross-section, side slopes and top width		
3. Constructed to design elevation plus allowance for settlement		
<b>6. Impounded Area Construction</b>		
Excavated / graded to design contours and side slopes		
Inlet pipes have adequate outfall protection		
Forebay(s)		
Pond benches		
<b>7. Earth Emergency Spillway Construction</b>		
Spillway located in cut or structurally stabilized with riprap, gabions, concrete, etc.		
Excavated to proper cross-section, side slopes and bottom width		
Entrance channel, crest, and exit channel Constructed to design grades and elevations		

**SUEZ WATER NEW YORK, INC LONDON BRIDGE WELL 1 & 2**  
**Stormwater System Design**  
**Construction Inspection Checklist Form**

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
<b>8. Outlet Protection</b>		
<b>A. End section</b>		
Securely in place and properly backfilled		
<b>B. Endwall</b>		
Footing excavated or formed on stable Subgrade, to design dimensions and reinforcing steel set, if specified	SATISFACTORY/ UNSATISFACTORY	COMMENTS
Endwall formed to design dimensions with Reinforcing steel set as per plan		
Concrete of an approved mix and vibrated into place (protected from freezing, if necessary)		
Forms stripped and structure inspected for "honeycomb" prior to backfilling; parge if necessary		
<b>C. Riprap apron / channel</b>		
Apron / channel excavated to design cross-section with proper transition to existing ground		
Filter fabric in place		
Stone sized as per plan and uniformly place at the thickness specified		
<b>9. Vegetative Stabilization</b>		
Approved seed mixture or sod		
Proper surface preparation and required soil Amendments		
Excelsior mat or other stabilization, as per plan		
<b>10. Miscellaneous</b>		
Drain for ponds having a permanent pool		
Trash rack / anti-vortex device secured to outlet structure		
Trash protection for low flow pipes, orifices, etc.		
Fencing (when required)		
Access road		
Set aside for clean-out maintenance		
<b>11. Stormwater Wetlands</b>		
Adequate water balance		
Variety of depth zones present		
Approved pondscaping plan in place reinforcement budget for additional plantings		
Plants and materials ordered 6 months prior to construction		
Construction planned to allow for adequate planting and establishment of plant community (April-June planting window)		
Wetland buffer area preserved to maximum extent possible		



Appendix - C

**SUEZ WATER NEW YORK, INC  
LONDON BRIDGE WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**APPENDIX-C**

**SPILL CONTROL AND PREVENTION LOG**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**



Appendix - D

**SUEZ WATER NEW YORK, INC  
LONDON BRIDGE WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**APPENDIX-D  
MAINTENANCE AGREEMENT**

**BY**

**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
232 NORTH MAIN STREET  
NEW CITY, NY 10956  
TEL: (845) 634-4694  
FAX: (845) 634-5543  
E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)

**STORMWATER CONTROL FACILITY MAINTENANCE AGREEMENT**  
**RE: SUEZ WATER NEW YORK, INC LONDON BRIDGE WELL 1 & 2**  
**(Tax Map: Section 64.7, Block 1, Lot 10)**

Whereas, the Town of Carmel ("Town") and Suez Water New York, Inc ("Facility Owner") want to enter into an agreement to provide for the long term maintenance and continuation of stormwater control measures approved by the Town for the above named project, and

Whereas, the Town and the Facility Owner desire that the stormwater control measures be built in accordance with the approved project plans and thereafter be maintained, cleaned, repaired, replaced and continued in perpetuity in order to ensure optimum performance of the components. Therefore, the Town and the Facility Owner agree as follows:

1. This agreement binds the Facility Owner, its successors and assigns, to the maintenance provisions depicted in the approved project plans which are attached as Schedule A-1 of this agreement.
2. The Facility Owner shall maintain, clean, repair, replace and continue the Stormwater control measures as listed in Schedule A-2 as necessary to ensure optimum performance of the measures to design specifications. The stormwater control measures shall include, but shall not be limited to, the following: drop inlets, pipes, culverts, underground solid pipe storage system and underground infiltration system, but only to the extent that the same are shown on Schedule A-2.
3. The Facility Owner shall be responsible for all expenses related to the maintenance of the stormwater control measures and shall establish a means for the collection and distribution of expenses among parties for any commonly owned facilities.
4. The Facility Owner shall provide for the annual inspection of the stormwater control measures, in perpetuity, to determine the condition and integrity of the measures. A Professional Engineer licensed by the State of New York shall perform such inspection. The inspecting engineer shall prepare and submit to the Town within 30 days of the inspection, a written report of the findings including recommendations for those actions necessary for the continuation of the Stormwater control measures.
5. The Facility Owner shall not authorize, undertake or permit alteration, abandonment, modification or discontinuation of the Stormwater control measures except in accordance with written approval of the Town.
6. The Facility Owner shall undertake all necessary repairs and replacement of the stormwater control measures at the direction of the Town or in accordance with the recommendations of the inspecting engineer.
7. The Facility Owner shall provide to the Town, prior to Mayor's endorsement, a security for the maintenance and continuation of the stormwater control measures.
8. This agreement shall be recorded in the Office of the County Clerk, County of Putnam. In the event that the facility is a commercial or residential condominium, this agreement shall be included in any offering plan or prospectus.

9. If ever the Town determines that the Facility Owner has failed to construct or maintain the stormwater control measures in accordance with the project plan or has failed to undertake corrective action specified by the Town or by the inspecting engineer, the Town is authorized to undertake such steps as reasonably necessary for the preservation, continuation or maintenance of the stormwater control measures and to affix the expenses thereof as a tax lien against the property. By virtue of this agreement, the facility owner hereby grants on behalf of itself, its successors and/or assigns an irrevocable right of entry to the Town, its employees, contractors, vendees and/or officers to perform the corrective measures referred to in this paragraph and agrees to hold them harmless, defend and indemnify them for any damages, except gross negligence.
10. This agreement is effective as of the date of execution of the Stormwater Control Facility Maintenance Agreement.

Town of Carmel

Suez Water New York, INC  
London Bridge Well 1 & 2

By: \_\_\_\_\_  
Kenneth Schmitt, Town Supervisor

By: \_\_\_\_\_  
Steven Garabed, Manager of  
Engineering West Nyack Operations

State of New York, County of Rockland ss.:

On \_\_\_\_\_, before me, the undersigned, personally appeared Kenneth Schmitt personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

\_\_\_\_\_  
Notary Public

State of New York, County of \_\_\_\_\_ ss.:

On \_\_\_\_\_, before me, the undersigned, personally appeared Steven Garabed personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

\_\_\_\_\_  
Notary Public



## **SCHEDULE "A-2"**

### **STORMWATER MANAGEMENT SYSTEM INSPECTION AND MAINTENANCE SCHEDULE**

#### **Stormwater Management Structures:**

- Stormwater Piping
- Catch Basin
- Dry Pond System

#### **Inspections Schedule:**

- Stormwater Pipes, Catch Basins and Control Structures:
  - Monthly, and after major storms: Check for debris at inlets, outlets, and cleanouts.
- Dry Pond System
  - Monthly inspections during construction and on an annual basis thereafter.

#### **Maintenance Schedule:**

- Stormwater Piping: Must be cleaned as found necessary by inspection.
- Dry Pond System
  - Remove accumulated sediment and clean out and/or replace the filter gravel bed at the outfall pipe whenever accumulated sediment reaches a volume of 10% of the available basin capacity.
  - Restore any eroded embankments.
  - Remove accumulated debris within the basin and at outfall structures.

## Stormwater Piping Inspection and Maintenance Checklist

Project: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Site \_\_\_\_\_  
 Status: \_\_\_\_\_  
  
 Date: \_\_\_\_\_  
 Time: \_\_\_\_\_  
  
 Inspector: \_\_\_\_\_

Inspection/Maintenance Items	Satisfactory or Unsatisfactory	Comments/Corrective Action
<b>1. Inspection (Quarter-annually, After Major Storms)</b>		
1. Accumulated sediment exceeds 10% of the diameter of the pipe.		
2. Vegetation the reduces free movement of water through pipes.		
3. Pipe damage: Any dent that increases flow area by more than 10% or puncture that impacts performance		
4. Trash accumulated to reduce free movement of water through pipes.		

Inspector shall use one sheet for each individual pipe run.

(Provide sketch to show location of unsatisfactory items)

**ACTIONS TO BE TAKEN:**

---



---



---

**COMMENTS:**

---



---

## Catch Basins Inspection and Maintenance Checklist

Project: \_\_\_\_\_

Location: \_\_\_\_\_

Site \_\_\_\_\_

Status: \_\_\_\_\_

Date: \_\_\_\_\_

Time: \_\_\_\_\_

Inspector: \_\_\_\_\_

Inspection/Maintenance Items	Satisfactory or Unsatisfactory	Comments/Corrective Action
<b>1. Inspection (Quarter-annually, After Major Storms)</b>		
1. Accumulated debris or sediment depth exceed sump or impedes flow from inlet or outlet pipes		
2. Inlet or outlet pipe damaged		
3. Contaminants & pollutants visible		
4. Cover/grate functioning properly		
5. Structure: no cracks larger than 1/2"		
6. Ladder		
7. Mosquito breeding habitat		
<b>2. Sediment</b>		
1. Depth of sediment (inches)*		
2. Depth of oil (inches)**		
3. Sediment and oil have been removed		

\*If measured depth of sediment is greater than 3 inches, the system shall be cleaned as per the manufacturer recommendations.

\*\*Any presence of oil shall be removed immediately.

Inspector shall use one sheet for each catch basin/manhole.

(Provide sketch to show location of unsatisfactory items.)

**ACTIONS TO BE TAKEN:**

---

---

---

---

---

---

---

---

---

---

**COMMENTS:**

---

---

---

---

---

---

---

---

---

---

## Dry Pond System Inspection and Maintenance Checklist

Project: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Site \_\_\_\_\_  
 Status: \_\_\_\_\_  
  
 Date: \_\_\_\_\_  
 Time: \_\_\_\_\_  
  
 Inspector: \_\_\_\_\_

Inspection/Maintenance Items	Satisfactory or Unsatisfactory	Comments/Corrective Action
<b>I. Embankment and emergency spillway (Annual, After Major Storms)</b>		
1. Vegetation and ground cover adequate		
2. Embankment erosion		
3. Animal burrows		
4. Unauthorized planting		
5. Cracking, bulging, or sliding of dam		
a) Upstream face		
b) Downstream face		
c) At or beyond toe		
• Downstream		
• Upstream		
d) Emergency spillway		
6. Pond, toe & chimney drains clear and functioning		
7. Seeps/leaks on downstream face		
8. Slope protection or riprap failure		
9. Vertical/horizontal alignment of top of dam "As-Built"		
10. Emergency spillway clear of obstructions and debris		

11. Other (specify)		
<b>2. Riser and principal spillway</b>	<b>(Annual)</b>	
Type: Reinforced concrete		
- Corrugated pipe		
- Masonry		
1. Low flow orifice obstructed		
2. Low flow trash rack.		
a) Debris removal necessary		
b) Corrosion control		
3. Weir trash rack maintenance		
a) Debris removal necessary		
b) corrosion control		
4. Excessive sediment accumulation insides riser		
5. Concrete/masonry condition riser and barrels		
a) cracks or displacement		
b) Minor spalling (1")		
c) Major spalling (rebars exposed)		
d) Joint failures		
e) Water tightness		
6. Metal pipe condition		
7. Control valve		
a) Operational/exercised		
b) Chained and locked		
8. Pond drain valve		
a) Operational/exercised		
b) Chained and locked		
9. Outfall channels functioning		
10. Other (specify)		
<b>3. Dry Pond Areas</b>		
1. Vegetation adequate		

2. Undesirable vegetative growth		
3. Undesirable woody vegetation		
4. Low flow channels clear of obstructions		
5. Standing water or wet spots		
6. Sediment and / or trash accumulation		
7. Other (specify)		
<b>4. Condition of Outfalls</b>	<b>(Annual, After Major Storms)</b>	
1. Riprap failures		
2. Slope erosion		
3. Storm drain pipes		
4. Endwalls / Headwalls		
5. Other (specify)		
<b>5. Other</b>	<b>(Annual)</b>	
1. Encroachment on pond, wetland or easement area		
2. Complaints from residents		
3. Aesthetics		
a) Grass growing required		
b) Graffiti removal needed		
c) Other (specify)		
4. Conditions of maintenance access routes.		
5. Signs of hydrocarbon build-up		
6. Any public hazards (specify)		

**ACTIONS TO BE TAKEN:**

---



---



---

**COMMENTS:**

---



---



---

Appendix - E

**SUEZ WATER NEW YORK, INC  
LONDON BRIDGE WELL 1 & 2**

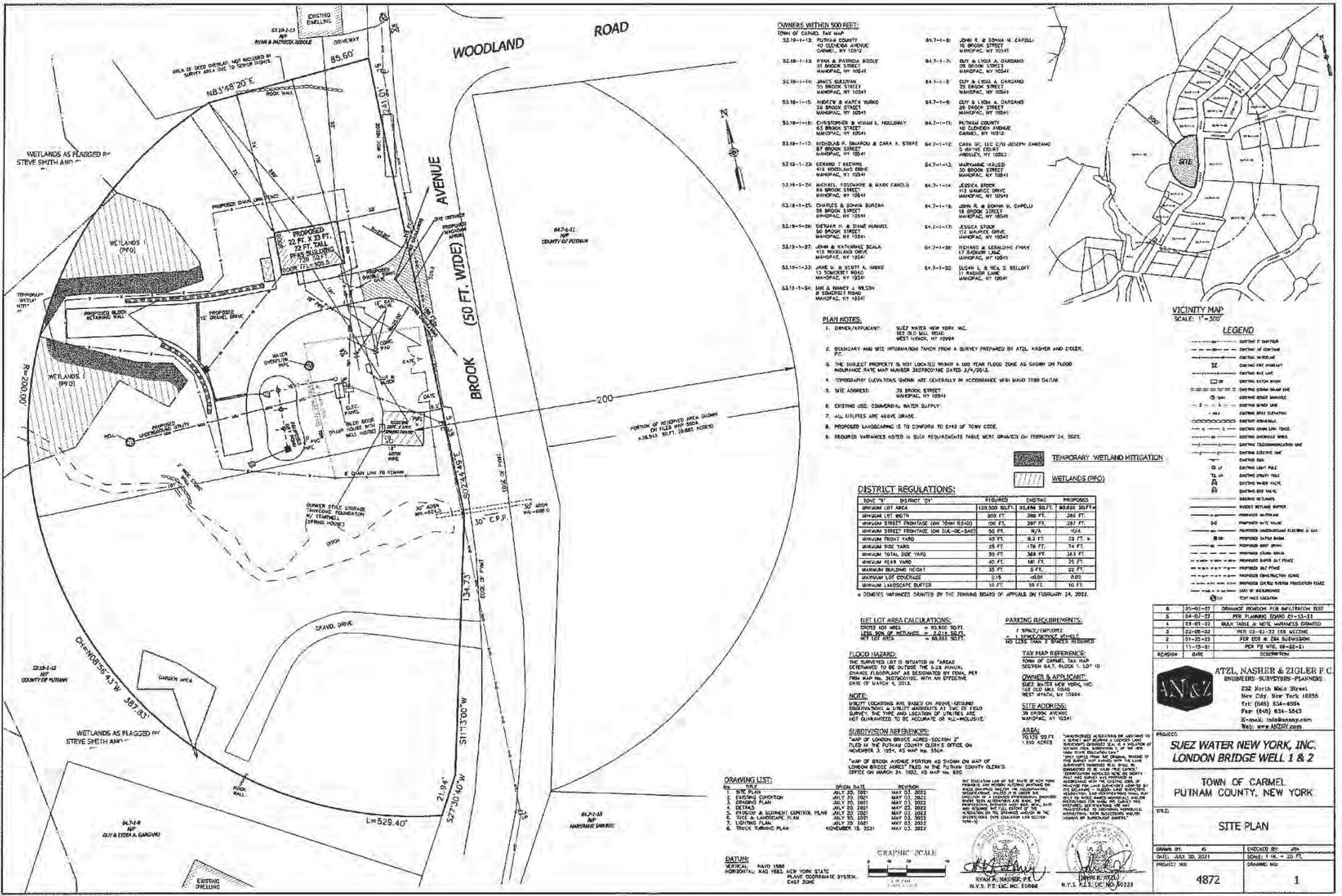
**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**APPENDIX-E**

**CONSTRUCTION PLANS  
IN  
(11"X17") FORMAT**

**BY**

**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
232 NORTH MAIN STREET  
NEW CITY, NY 10956  
**TEL: (845) 634-4694**  
**FAX: (845) 634-5543**  
**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**



- OWNERS WITHIN 500 FEET:**
- 52.19-1-12 TOWN OF CARMEL, TAX MAP PUTNAM COUNTY 15 CLONDA AVENUE CARMEL, NY 10512
  - 52.19-1-13 FRANK A. GARDANO & GARDANO 25 BROOK STREET MANDAC, NY 10541
  - 52.19-1-14 JAMES KEELER 25 BROOK STREET MANDAC, NY 10541
  - 52.19-1-15 ANDREW & KAREN TURRO 25 BROOK STREET MANDAC, NY 10541
  - 52.19-1-16 CHRISTOPHER & VIGAN L. HOLLOWAY 63 BROOK STREET MANDAC, NY 10541
  - 52.19-1-17 NICHOLAS R. PALARON & CARA A. STRPE 67 BROOK STREET MANDAC, NY 10541
  - 52.19-1-18 DEBORA T. KEENE 63 BROOK STREET MANDAC, NY 10541
  - 52.19-1-19 MICHAEL, ROSAMUND & MARK FANELLO 84 BROOK STREET MANDAC, NY 10541
  - 52.19-1-20 CHARLES & SOPHIA BURMAN 58 BROOK STREET MANDAC, NY 10541
  - 52.19-1-21 STEVEN H. & DIANE HANDEL 50 BROOK STREET MANDAC, NY 10541
  - 52.19-1-22 JOHN & KATHARINE SCALA 115 MADISON LANE MANDAC, NY 10541
  - 52.19-1-23 JANE M. & SCOTT A. HERR 11 MADISON LANE MANDAC, NY 10541
  - 52.19-1-24 SHI & RANCIY A. WELSH 8 SEASIDE MANDAC, NY 10541
  - 64.7-1-6 JOHN R. & DONNA H. CAPULLI 16 BROOK STREET MANDAC, NY 10541
  - 64.7-1-7 GUY & LYDIA A. GARDANO 25 BROOK STREET MANDAC, NY 10541
  - 64.7-1-8 GUY & LYDIA A. GARDANO 25 BROOK STREET MANDAC, NY 10541
  - 64.7-1-9 GUY & LYDIA A. GARDANO 25 BROOK STREET MANDAC, NY 10541
  - 64.7-1-10 PUTNAM COUNTY 10 CLONDA AVENUE CARMEL, NY 10512
  - 64.7-1-11 CARA SC. LLC C/O JOSEPH FANZANO 5 BAYVIEW DRIVE WADSWELL, NY 10593
  - 64.7-1-12 MARIONNE HARRIS 20 BROOK STREET MANDAC, NY 10541
  - 64.7-1-13 JESSICA STOK 112 MADISON DRIVE MANDAC, NY 10541
  - 64.7-1-14 JOHN R. & DONNA H. CAPULLI 16 BROOK STREET MANDAC, NY 10541
  - 64.7-1-15 JESSICA STOK 112 MADISON DRIVE MANDAC, NY 10541
  - 64.7-1-16 REYNOLD & GERARDINE FINKE 17 MADISON LANE MANDAC, NY 10541
  - 64.7-1-17 SUSAN L. & NEIL S. BELLOFF 8 SEASIDE MANDAC, NY 10541

- PLAN NOTES:**
- OWNER/APPLICANT: SUEZ WATER NEW YORK, INC. 822 OLD MILL ROAD WEST HAVEN, CT 06611
  - BOUNDARY AND SITE INFORMATION TAKEN FROM A SURVEY PREPARED BY ATZL, NASHER & ZIGLER, INC.
  - THE SUBJECT PROPERTY IS NOT LOCATED WITHIN A 100 YEAR FLOOD ZONE AS SHOWN ON FLOOD INSURANCE RATE MAP NUMBER 300700010E DATED 1/4/2013.
  - TOPOGRAPHY ELEVATIONS SHOWN ARE GENERALLY IN ACCORDANCE WITH NAVD 83 DATUM.
  - EXISTING USE: CONCRETE & WATER SUPPLY.
  - ALL UTILITIES ARE ABOVE GRADE.
  - PROPOSED LANDSCAPING IS TO CONFORM TO SUDS OF TOWN CODE.
  - REQUIRED VARIANCES NOTED IN BULK REQUIREMENTS TABLE WERE GRANTED ON FEBRUARY 24, 2022.

**DISTRICT REGULATIONS:**

ZONE	MINIMUM LOT AREA	MINIMUM LOT WIDTH	MINIMUM STREET FRONTAGE (FOR TOWN SCHOOLS)	MINIMUM STREET FRONTAGE (FOR GAS-OIL-GAS)	MINIMUM FRONT YARD	MINIMUM SIDE YARD	MINIMUM REAR YARD	MINIMUM TOTAL SIDE YARD	MINIMUM REAR YARD	MAXIMUM BUILDING HEIGHT	MINIMUM LOT COVERAGE	MINIMUM LANDSCAPE BUFFER
R-1	120,000 SQ. FT.	100 FT.	100 FT.	50 FT.	40 FT.	25 FT.	40 FT.	40 FT.	40 FT.	35 FT.	31%	10 FT.

**NET LOT AREA CALCULATIONS:**

GROSS NET AREA = 85,800 SQ. FT.  
 LESS AREA OF WETLANDS = 5,214 SQ. FT.  
 NET LOT AREA = 80,586 SQ. FT.

**PARKING REQUIREMENTS:**

1 SPACE/EMPLOYEE  
 1 SPACE/WORKSTATION  
 TO LOTS THAT REQUIRE PARKING

**FLOOD HAZARD:**

THE SURVEYED LOT IS SITUATED IN AN AREA DETERMINED TO BE OUTSIDE THE 1% ANNUAL CHANCE FLOODPLAIN AS DESIGNATED BY FEMA. PER THIS MAP, THE PROPERTIES WITH AN ELEVATION DATE OF JANUARY 4, 2013.

**NOTE:**

UTILITY LOCATIONS ARE BASED ON ABOVE-GROUND UTILITIES SHOWN AS UTILITY MARKINGS AT THE TIME OF FIELD SURVEY. THE LOCATION AND DEPTH OF UTILITIES NOT QUANTIFIED TO BE ACCURATE OR ALL-INCLUSIVE.

**SUBDIVISION REFERENCES:**

MAP OF LONDON BRIDGE ACROSS SECTION 27' FLOOD IN THE PUTNAM COUNTY CLERK'S OFFICE ON NOVEMBER 3, 1924, AS MAP NO. 530A.  
 MAP OF BROOK AVENUE PORTION AS SHOWN ON MAP OF LONDON BRIDGE ACROSS SECTION 27' FLOOD IN THE PUTNAM COUNTY CLERK'S OFFICE ON MARCH 24, 1903, AS MAP NO. 830.

**DRAWING LIST:**

NO.	DATE	DESCRIPTION
1	JULY 23, 2021	EXISTING CONDITION
2	JULY 23, 2021	CRUSING PLAN
3	JULY 23, 2021	DETAILED
4	JULY 23, 2021	PROPOSED & SURVEY CONTROL PLAN
5	JULY 23, 2021	TRUCK & LANDSCAPE PLAN
6	JULY 23, 2021	EXISTING DWELLING
7	NOVEMBER 15, 2021	TRUCK TURNING PLAN

**DATUM:**  
 VERTICAL: NAVD 1988  
 HORIZONTAL: NAD 1983 NEW YORK STATE PLANNING COORDINATE SYSTEM, EAST ZONE



**ATZL, NASHER & ZIGLER P.C.**  
 ENGINEERS-SURVEYORS-PLANNERS  
 232 North Main Street  
 New City, New York 10955  
 Tel: (845) 834-8894  
 Fax: (845) 834-8849  
 E-mail: info@atzlz.com  
 Web: www.atzllz.com

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



NO.	DATE	DESCRIPTION
1	11-15-21	PER PD WFO, 08-22-21
2	05-03-22	ORDINANCE REVISION FOR MITIGATION BASE
3	04-07-22	PER PLANNING BOARD 01-13-21
4	03-01-22	MAX. TABLE & SIGN VARIANCES GRANTED
5	02-08-22	PER 12-13-21 PER MITIGATION
6	01-25-22	PER 02-18-21 PER SUEZ/WATER

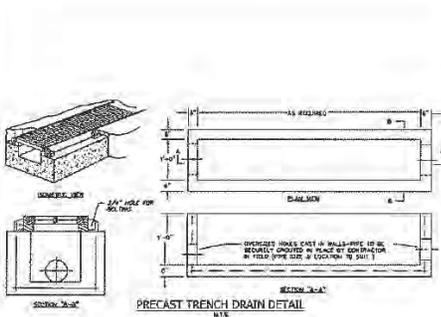
**ATZL, NASHER & ZIGLER P.C.**  
 ENGINEERS-SURVEYORS-PLANNERS  
 232 North Main Street  
 New City, New York 10955  
 Tel: (845) 834-8894  
 Fax: (845) 834-8849  
 E-mail: info@atzllz.com  
 Web: www.atzllz.com

**SUEZ WATER NEW YORK, INC.**  
**LONDON BRIDGE WELL 1 & 2**  
 TOWN OF CARMEL  
 PUTNAM COUNTY, NEW YORK  
**SITE PLAN**

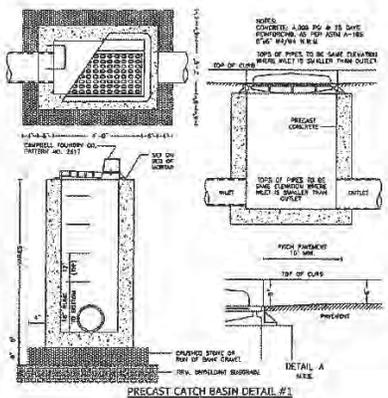
DRAWN BY	DATE	REVISION BY	DATE
...	...	...	...



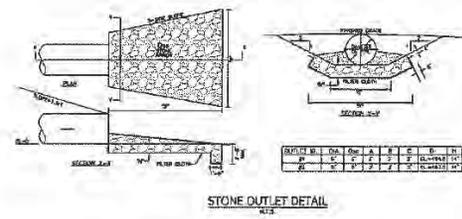




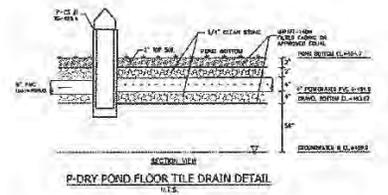
PRECAST TRENCH DRAIN DETAIL  
A15



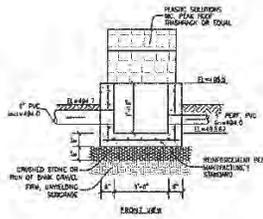
PRECAST CATCH BASIN DETAIL #1  
A15



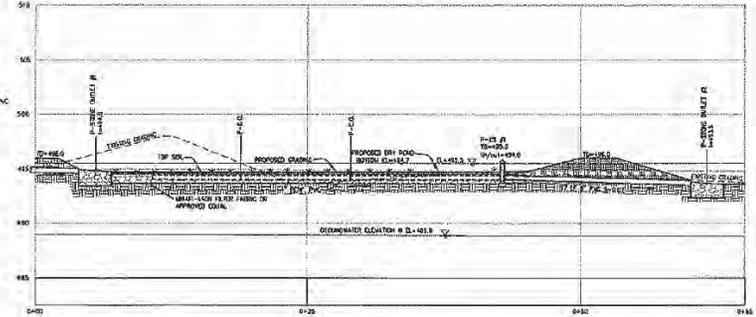
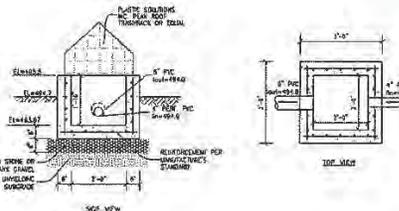
STONE OUTLET DETAIL  
A15



P-DRY POND FLOOR TILE DRAIN DETAIL  
A15

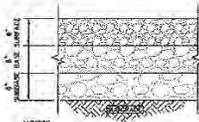


P-CB #1 DETAIL  
SCALE: 1/2\"/>

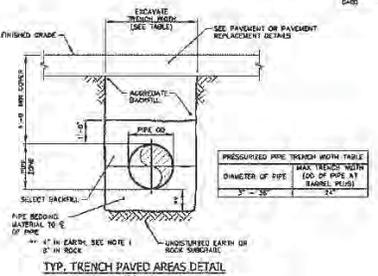


PROPOSED DRY POND PROFILE  
SCALE: 1\"/>

TABLE-1 PERCENT PASSING OR WEIGHT OF GRAVEL MATERIALS			
SIEVE (U.S. SIZES)	UPFLOW TYPE		
	SURFACE	BASE	SUBBASE
3"	100	100	100
2"	100	100	100
1 1/2"	85-100	70-100	100
1"	100	100	100
3/4"	85-100	100	100
1/2"	30-75	30-50	30-55
3/8"	15-50	15-25	15-25
20#	10-40	10-40	10-40

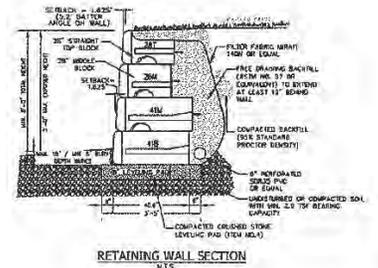


TYPICAL GRAVEL PAVING SECTION  
SCALE: 1\"/>



TYPICAL TRENCH PAVED AREAS DETAIL  
A15

- TRENCH NOTES:**
1. IF UNDESIRABLE WEEDS, IS ENCOUNTERED AT THE NORMAL TRENCH SUBGRADE, THE CONTRACTOR SHALL REGRADE IT TO THE DEPTH INDICATED BY THE ENGINEER AT THE FIELD, AND BACKFILL WITH PIPE BEDDING MATERIAL IN 4" LAYERS.
  2. BOTTOM OF TRENCH SHALL BE FREE OF WATER PRIOR TO PLACING BEDDING.
  3. PROVIDE 4" OF TOPSOIL WHERE SEEDING IS REQUIRED.
  4. CONTRACTOR SHALL SHORE THE TRENCH IN ACCORDANCE WITH SECTION 1005 OF THE SPECIFICATIONS.
  5. GRAVEL AND PAVED DRIVEWAYS TO BE RESTORED IN KIND WITH MINIMUM REQUIREMENTS AS INDICATED ON THIS SHEET.



RETAINING WALL SECTION  
A15



NO.	DATE	DESCRIPTION
6	05-01-22	ISSUANCE REVISION PER INTERVIEW TEST
5	04-07-22	PER PLANNING BOARD 01-13-22
4	03-01-22	DRINK TABLE & NOTE REVISIONS CHANGED
3	10-08-21	PER 22-05-22 EDR UPDATES
2	01-15-22	PER ECA & ZMA SUBMISSION
1	11-11-21	PER PD MFG. 08-22-21

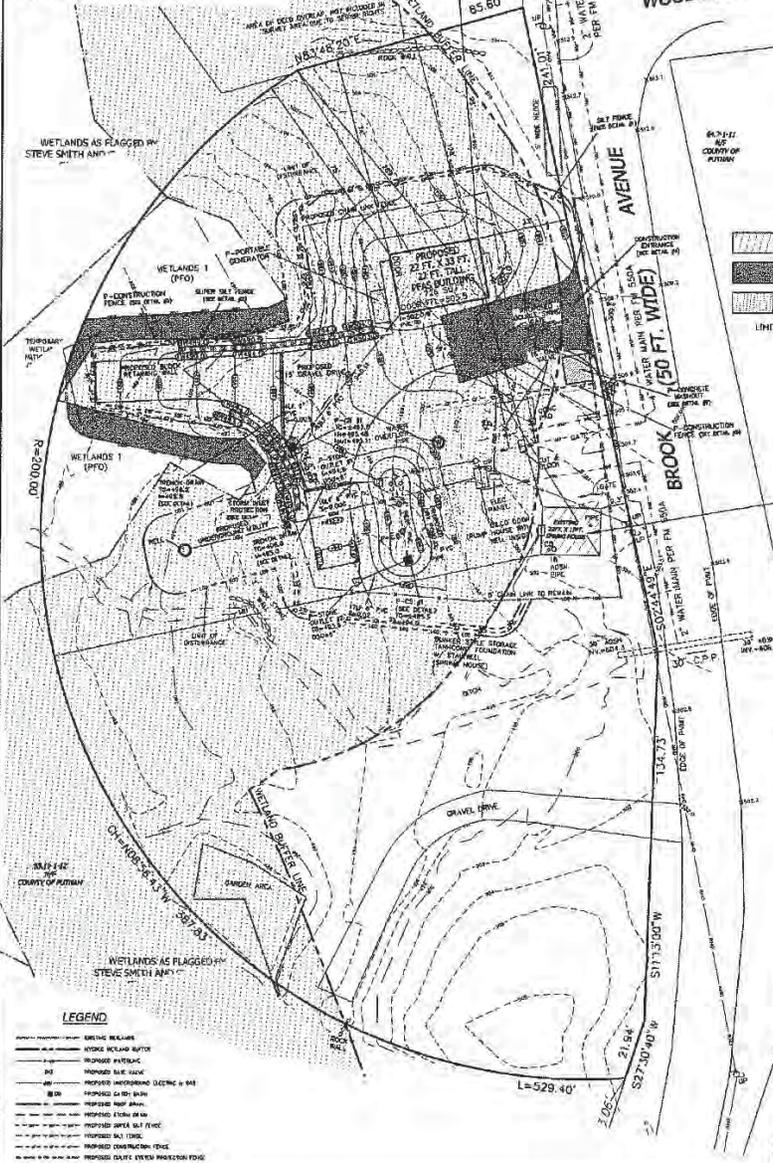
**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
330 North Main Street  
New City, New York 10958  
Tel: (845) 634-4884  
Fax: (845) 634-5243  
E-mail: info@atzy.com  
Web: www.atzy.com

**SUEZ WATER NEW YORK, INC.**  
**LONDON BRIDGE WELL 1 & 2**  
TOWN OF CARMEL  
PUTNAM COUNTY, NEW YORK

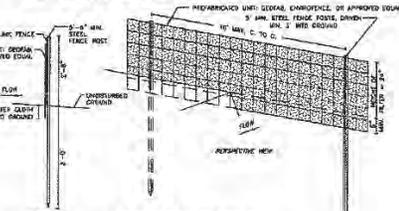
**DETAILS**

DRAWN BY: S	CHECKED BY: JM
DATE: 07/26/2021	SCALE: 1" = 20'
PROJECT NO:	DRAWING NO:
4872	4

**TEMPORARY WETLAND MITIGATION**  
 WHERE WETLAND AREAS ARE TEMPORARILY DISTURBED, STABLE WETLAND SHOULD BE IDENTIFIED AND RESTORED TO THE ORIGINAL STATE AFTER CONSTRUCTION IS COMPLETED. APPROXIMATE ESTIMATES FOR RESTORATION OF WETLAND AREAS SHALL BE PROVIDED AT THE RATE OF 1:1. RESTORATION OF TEMPORARY WETLAND DISTURBANCE.



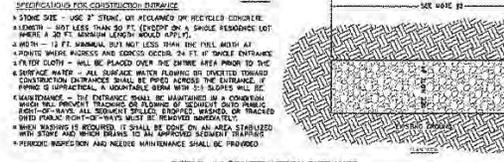
**CONSTRUCTION NOTES FOR THE FABRICATED SILT FENCE**  
 PRE-FABRICATED UNIT DESIGN, DIMENSIONS, OR APPROVED EQUAL.  
 1. WHEN TWO SECTIONS OF FILTER CLOTH ARE JOINED EACH OTHER THEY SHALL BE OVERLAPPED BY ONE INCHES AND FASTENED.  
 2. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED FROM "TRACES" DEVELOP IN THE SILT FENCE.  
 3. THE FENCING SHALL BE PLACED AGAINST DOWNLINE FENCE AS SUPPORT FENCING WITH POSTS DRIVEN 1 FEET IN THE GROUND.  
 4. POSTS FOR SUPER SILT FENCE SHALL BE STAGGERED CHAIN LINK FENCE POSTS.



**CONSTRUCTION NOTES FOR THE FABRICATED SILT FENCE**  
 PRE-FABRICATED UNIT DESIGN, DIMENSIONS, OR APPROVED EQUAL.  
 1. WHEN TWO SECTIONS OF FILTER CLOTH ARE JOINED EACH OTHER THEY SHALL BE OVERLAPPED BY ONE INCHES AND FASTENED.  
 2. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED FROM "TRACES" DEVELOP IN THE SILT FENCE.  
 3. THE FENCING SHALL BE PLACED AGAINST DOWNLINE FENCE AS SUPPORT FENCING WITH POSTS DRIVEN 1 FEET IN THE GROUND.  
 4. POSTS FOR SUPER SILT FENCE SHALL BE STAGGERED CHAIN LINK FENCE POSTS.



**CONSTRUCTION NOTES FOR THE FABRICATED SILT FENCE**  
 PRE-FABRICATED UNIT DESIGN, DIMENSIONS, OR APPROVED EQUAL.  
 1. WHEN TWO SECTIONS OF FILTER CLOTH ARE JOINED EACH OTHER THEY SHALL BE OVERLAPPED BY ONE INCHES AND FASTENED.  
 2. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED FROM "TRACES" DEVELOP IN THE SILT FENCE.  
 3. THE FENCING SHALL BE PLACED AGAINST DOWNLINE FENCE AS SUPPORT FENCING WITH POSTS DRIVEN 1 FEET IN THE GROUND.  
 4. POSTS FOR SUPER SILT FENCE SHALL BE STAGGERED CHAIN LINK FENCE POSTS.



**EROSION & SEDIMENT CONTROL PLAN NOTES:**  
 1. FORM OF CONSTRUCTION INSPECTION WILL BE NOTIFIED FOR INSPECTION OF THE FENCE PRE AND POST CONSTRUCTION.  
 2. ANY FILL REQUIRED WILL BE CERTIFIED PER NYSDC REGULATIONS.  
 3. NO FUELING CONSTRUCTION OR STORAGE OF CONSTRUCTION EQUIPMENT WILL OCCUR ON SITES.



**GENERAL CONSTRUCTION SEQUENCE**  
 1. SCHEDULE PRE-CONSTRUCTION MEETING.  
 2. LOCATE NATURAL RESOURCE AND LIMIT OF DISTURBANCE PER PLAN.  
 3. INSTALL PERMITTER CASE PRACTICE PER PLAN.  
 4. CREATE CONSTRUCTION ENTRANCE & TEMPORARY STORAGE.  
 5. LIMIT GRADING FOR EROSION PRACTICES.  
 6. INSTALL PERSONNEL BRUSH, CHECK DAMS, INTERNAL DRAIN FOR STABILIZATION WHERE APPLICABLE.  
 7. INSTALL SEDIMENT BASH & SEDIMENT TRAP PER PLAN.  
 8. DISPOSE CLEARING AND GRADING MATERIALS AS CONSTRUCTION IS IN PROGRESS.  
 9. STOCKPILE SOIL AND STABILIZE.  
 10. REMOVE BRUSH/STUMP & FILL AND STABILIZE.  
 11. INSTALL UTILITY AND DRAINAGE STRUCTURES.  
 12. PROCEED PARTIAL ROAD CONSTRUCTION WHERE APPLICABLE.  
 13. COMPLETE FOUNDATION & BUILDING STRUCTURES AS PER PLAN.  
 14. CONSTRUCT FINAL GRADING AND STABILIZE AS PER PLAN.  
 15. APPLY SLOPE RESTORATION AS SHOWN ON PLAN.  
 16. FINAL STABILIZATION TO APPLY, I.E. TOP SOIL, PERMANENT GREEN RESTORATION PRACTICES AND LANDSCAPING.  
 17. REMOVE SEDIMENT & COMPLETE PERMANENT POST CONSTRUCTION SOPS PER PLAN.  
 18. RESUME CASE PRACTICES AND APPLY FOR NOTICE OF TERMINATION (N.O.T.).

**SPECIFICATIONS FOR 5.000M SILT PROTECTION**  
 1. SLOTTED SHALL BE PROVIDED ON THE DOWN SIDE OF THE CURB.  
 2. CONCRETE WASHOUT AREA SHALL BE LOCATED OUTSIDE OF 10 FT. BUFFER AREA.  
 3. CONCRETE WASHOUT AREA SHALL BE LOCATED OUTSIDE OF 10 FT. BUFFER AREA.  
 4. ALL OUT SLOPES SHALL BE 1:1 OR FLATTER.



**DETAIL #7 CONCRETE WASHOUT**  
 1. FACE DOWN TOWARD HIGHEST STREET OR ACCESS POINT.  
 2. CONCRETE WASHOUT AREA SHALL BE LOCATED OUTSIDE OF 10 FT. BUFFER AREA.  
 3. CONCRETE WASHOUT AREA SHALL BE LOCATED OUTSIDE OF 10 FT. BUFFER AREA.



**DETAIL #6 EQUIPMENT STORAGE**  
 1. TO BE PLACED ALONG LIMIT OF DISTURBANCE.  
 2. TO BE PLACED ALONG LIMIT OF DISTURBANCE.



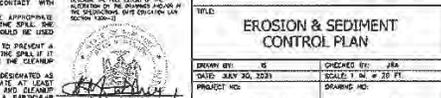
**CONSTRUCTION NOTES FOR THE FABRICATED SILT FENCE**  
 PRE-FABRICATED UNIT DESIGN, DIMENSIONS, OR APPROVED EQUAL.  
 1. WHEN TWO SECTIONS OF FILTER CLOTH ARE JOINED EACH OTHER THEY SHALL BE OVERLAPPED BY ONE INCHES AND FASTENED.  
 2. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED FROM "TRACES" DEVELOP IN THE SILT FENCE.  
 3. THE FENCING SHALL BE PLACED AGAINST DOWNLINE FENCE AS SUPPORT FENCING WITH POSTS DRIVEN 1 FEET IN THE GROUND.  
 4. POSTS FOR SUPER SILT FENCE SHALL BE STAGGERED CHAIN LINK FENCE POSTS.



**CONSTRUCTION NOTES FOR THE FABRICATED SILT FENCE**  
 PRE-FABRICATED UNIT DESIGN, DIMENSIONS, OR APPROVED EQUAL.  
 1. WHEN TWO SECTIONS OF FILTER CLOTH ARE JOINED EACH OTHER THEY SHALL BE OVERLAPPED BY ONE INCHES AND FASTENED.  
 2. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED FROM "TRACES" DEVELOP IN THE SILT FENCE.  
 3. THE FENCING SHALL BE PLACED AGAINST DOWNLINE FENCE AS SUPPORT FENCING WITH POSTS DRIVEN 1 FEET IN THE GROUND.  
 4. POSTS FOR SUPER SILT FENCE SHALL BE STAGGERED CHAIN LINK FENCE POSTS.



**CONSTRUCTION NOTES FOR THE FABRICATED SILT FENCE**  
 PRE-FABRICATED UNIT DESIGN, DIMENSIONS, OR APPROVED EQUAL.  
 1. WHEN TWO SECTIONS OF FILTER CLOTH ARE JOINED EACH OTHER THEY SHALL BE OVERLAPPED BY ONE INCHES AND FASTENED.  
 2. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED FROM "TRACES" DEVELOP IN THE SILT FENCE.  
 3. THE FENCING SHALL BE PLACED AGAINST DOWNLINE FENCE AS SUPPORT FENCING WITH POSTS DRIVEN 1 FEET IN THE GROUND.  
 4. POSTS FOR SUPER SILT FENCE SHALL BE STAGGERED CHAIN LINK FENCE POSTS.



**CONSTRUCTION NOTES FOR THE FABRICATED SILT FENCE**  
 PRE-FABRICATED UNIT DESIGN, DIMENSIONS, OR APPROVED EQUAL.  
 1. WHEN TWO SECTIONS OF FILTER CLOTH ARE JOINED EACH OTHER THEY SHALL BE OVERLAPPED BY ONE INCHES AND FASTENED.  
 2. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED FROM "TRACES" DEVELOP IN THE SILT FENCE.  
 3. THE FENCING SHALL BE PLACED AGAINST DOWNLINE FENCE AS SUPPORT FENCING WITH POSTS DRIVEN 1 FEET IN THE GROUND.  
 4. POSTS FOR SUPER SILT FENCE SHALL BE STAGGERED CHAIN LINK FENCE POSTS.



NO.	DATE	DESCRIPTION
1	05-03-21	DRAWING REVISION PER MULTISTEP TEST
2	06-07-22	SEE PLANNING BOARD #1-13-22
3	07-01-22	SUBMIT TALE & MORE WATERSHED GRANTED
4	07-01-22	PER 02-03-22 ECA MEETING
5	08-15-22	PER 02 & 30A SUBMISSION
6	11-15-22	PER PER MTD 08-25-21

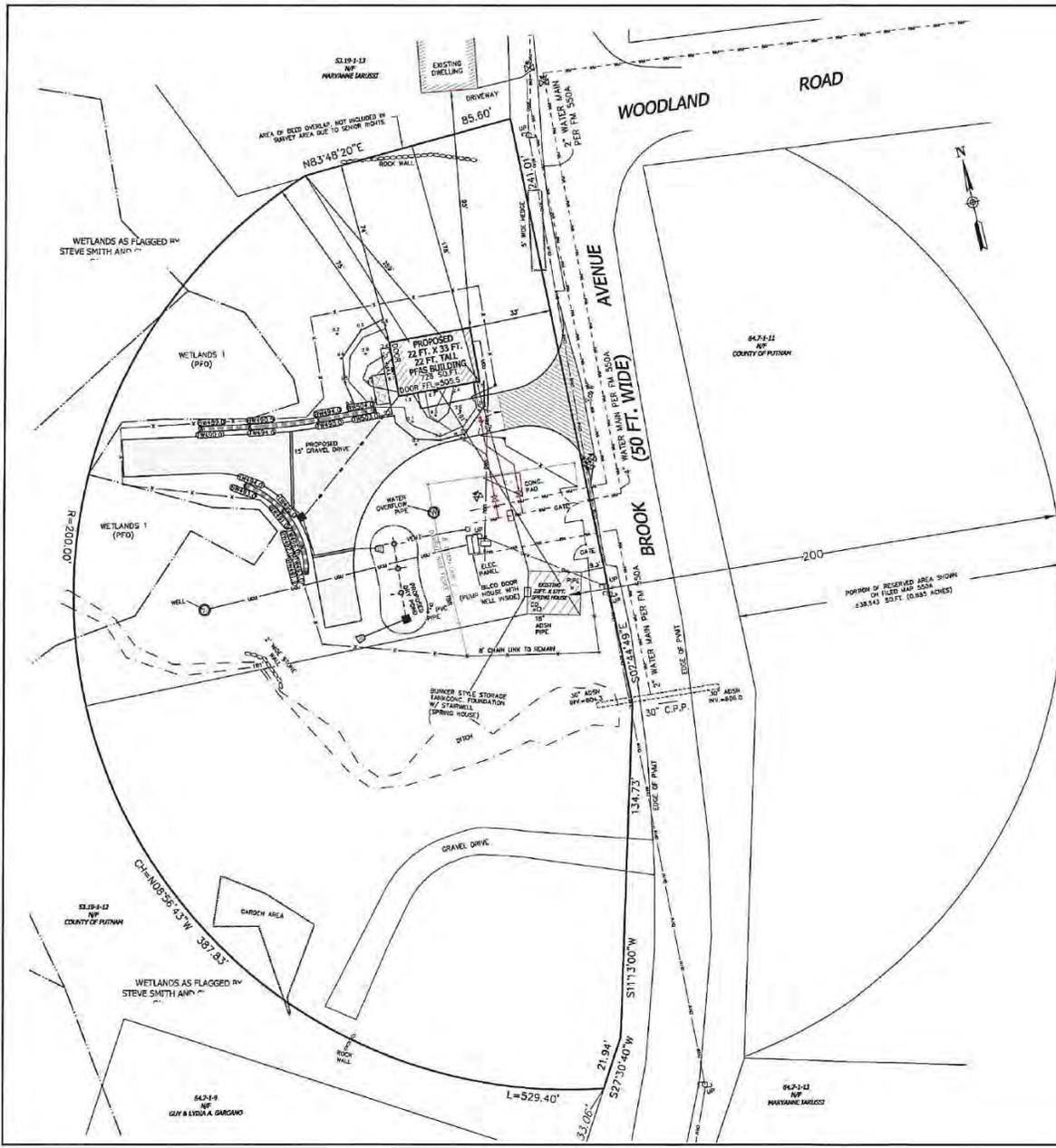
**ATZEL, NASHER & ZIGLER P.C.**  
 ENGINEERS-ARCHITECTS-PLANNERS  
 832 North Main Street  
 New City, New York 10954  
 Tel: (845) 634-4884  
 Fax: (845) 634-5548  
 E-mail: info@anzy.com  
 Web: www.anzy.com

**TOWN OF CARMEL**  
 PUTNAM COUNTY, NEW YORK

**EROSION & SEDIMENT CONTROL PLAN**

PROJECT: **SUEZ WATER NEW YORK, INC. LONDON BRIDGE WELL 1 & 2**  
 DRAWN BY: **CS** CHECKED BY: **JAN**  
 DATE: **JULY 20, 2021** SCALE: **1" = 20 FT.**  
 PROJECT NO: **4872** DRAWING NO: **5**





**LEGEND**

- EXISTING 4' CONDUIT
- EXISTING 12' CONDUIT
- EXISTING 18" WATER
- EXISTING 6" WATER
- EXISTING GAS LINE
- EXISTING CITY WATER
- EXISTING 12" WATER MAIN
- EXISTING 6" WATER MAIN
- EXISTING 4" WATER MAIN
- EXISTING 2" WATER MAIN
- EXISTING 1" WATER MAIN
- EXISTING 1/2" WATER MAIN
- EXISTING 1/4" WATER MAIN
- EXISTING 1/8" WATER MAIN
- EXISTING 1/16" WATER MAIN
- EXISTING 1/32" WATER MAIN
- EXISTING 1/64" WATER MAIN
- EXISTING 1/128" WATER MAIN
- EXISTING 1/256" WATER MAIN
- EXISTING 1/512" WATER MAIN
- EXISTING 1/1024" WATER MAIN
- EXISTING 1/2048" WATER MAIN
- EXISTING 1/4096" WATER MAIN
- EXISTING 1/8192" WATER MAIN
- EXISTING 1/16384" WATER MAIN
- EXISTING 1/32768" WATER MAIN
- EXISTING 1/65536" WATER MAIN
- EXISTING 1/131072" WATER MAIN
- EXISTING 1/262144" WATER MAIN
- EXISTING 1/524288" WATER MAIN
- EXISTING 1/1048576" WATER MAIN
- EXISTING 1/2097152" WATER MAIN
- EXISTING 1/4194304" WATER MAIN
- EXISTING 1/8388608" WATER MAIN
- EXISTING 1/16777216" WATER MAIN
- EXISTING 1/33554432" WATER MAIN
- EXISTING 1/67108864" WATER MAIN
- EXISTING 1/134217728" WATER MAIN
- EXISTING 1/268435456" WATER MAIN
- EXISTING 1/536870912" WATER MAIN
- EXISTING 1/1073741824" WATER MAIN
- EXISTING 1/2147483648" WATER MAIN
- EXISTING 1/4294967296" WATER MAIN
- EXISTING 1/8589934592" WATER MAIN
- EXISTING 1/17179869184" WATER MAIN
- EXISTING 1/34359738368" WATER MAIN
- EXISTING 1/68719476736" WATER MAIN
- EXISTING 1/137438953472" WATER MAIN
- EXISTING 1/274877906944" WATER MAIN
- EXISTING 1/549755813888" WATER MAIN
- EXISTING 1/1099511627776" WATER MAIN
- EXISTING 1/2199023255552" WATER MAIN
- EXISTING 1/4398046511104" WATER MAIN
- EXISTING 1/8796093022208" WATER MAIN
- EXISTING 1/17592180444416" WATER MAIN
- EXISTING 1/35184360888832" WATER MAIN
- EXISTING 1/70368721777664" WATER MAIN
- EXISTING 1/140737443555328" WATER MAIN
- EXISTING 1/281474887110656" WATER MAIN
- EXISTING 1/562949774221312" WATER MAIN
- EXISTING 1/1125899548442624" WATER MAIN
- EXISTING 1/2251799096885248" WATER MAIN
- EXISTING 1/4503598193770496" WATER MAIN
- EXISTING 1/9007196387540992" WATER MAIN
- EXISTING 1/18014392775081984" WATER MAIN
- EXISTING 1/36028785550163968" WATER MAIN
- EXISTING 1/72057571100327936" WATER MAIN
- EXISTING 1/144115142200655872" WATER MAIN
- EXISTING 1/288230284401311744" WATER MAIN
- EXISTING 1/576460568802623488" WATER MAIN
- EXISTING 1/1152921137605246976" WATER MAIN
- EXISTING 1/2305842275210493952" WATER MAIN
- EXISTING 1/4611684550420987904" WATER MAIN
- EXISTING 1/9223369100841975808" WATER MAIN
- EXISTING 1/18446738201683951616" WATER MAIN
- EXISTING 1/36893476403367903232" WATER MAIN
- EXISTING 1/73786952806735806464" WATER MAIN
- EXISTING 1/147573905613471612928" WATER MAIN
- EXISTING 1/295147811226943225856" WATER MAIN
- EXISTING 1/590295622453886451712" WATER MAIN
- EXISTING 1/1180591244907772903424" WATER MAIN
- EXISTING 1/2361182489815545806848" WATER MAIN
- EXISTING 1/4722364979631091613696" WATER MAIN
- EXISTING 1/9444729959262183227392" WATER MAIN
- EXISTING 1/18889459116524366454784" WATER MAIN
- EXISTING 1/37778918233048732909568" WATER MAIN
- EXISTING 1/75557836466097465819136" WATER MAIN
- EXISTING 1/151115672932194931638272" WATER MAIN
- EXISTING 1/302231345864389863276544" WATER MAIN
- EXISTING 1/604462691728779726553088" WATER MAIN
- EXISTING 1/1208925383457559453106176" WATER MAIN
- EXISTING 1/2417850766915118906212352" WATER MAIN
- EXISTING 1/4835701533830237812424704" WATER MAIN
- EXISTING 1/9671403067660475624849408" WATER MAIN
- EXISTING 1/19342806135210951249698816" WATER MAIN
- EXISTING 1/38685612270421902499397632" WATER MAIN
- EXISTING 1/77371224540843804998795264" WATER MAIN
- EXISTING 1/154742449081677609977590528" WATER MAIN
- EXISTING 1/309484898163355219955181056" WATER MAIN
- EXISTING 1/618969796326710439910362112" WATER MAIN
- EXISTING 1/1237939592653420879820724224" WATER MAIN
- EXISTING 1/2475879185306841759641448448" WATER MAIN
- EXISTING 1/4951758370613683519282896896" WATER MAIN
- EXISTING 1/9903516741227367038565793792" WATER MAIN
- EXISTING 1/19807033482457340771311587584" WATER MAIN
- EXISTING 1/39614066964914681542623175168" WATER MAIN
- EXISTING 1/79228133929829363085246350336" WATER MAIN
- EXISTING 1/158456267899658726170492706672" WATER MAIN
- EXISTING 1/316912535799317452340985413344" WATER MAIN
- EXISTING 1/633825071598634904681970826688" WATER MAIN
- EXISTING 1/1267650143177269809363941733376" WATER MAIN
- EXISTING 1/2535300286354539618727883466752" WATER MAIN
- EXISTING 1/5070600572709079237455766933504" WATER MAIN
- EXISTING 1/10141201145418158474911533867008" WATER MAIN
- EXISTING 1/20282402290836316949823067734016" WATER MAIN
- EXISTING 1/40564804581672633899646135468032" WATER MAIN
- EXISTING 1/81129609163345267799292270936064" WATER MAIN
- EXISTING 1/162259218326704535598584541872128" WATER MAIN
- EXISTING 1/324518436653409071197169083744256" WATER MAIN
- EXISTING 1/649036873306818142394338167488512" WATER MAIN
- EXISTING 1/129807374661376284788867634977024" WATER MAIN
- EXISTING 1/259614749322752569577735269954048" WATER MAIN
- EXISTING 1/519229498645505139155470539908096" WATER MAIN
- EXISTING 1/1038458992911010278311441079816192" WATER MAIN
- EXISTING 1/2076917985822020556622882159632384" WATER MAIN
- EXISTING 1/4153835971644041113245764319264768" WATER MAIN
- EXISTING 1/8307671943288082226491528638529536" WATER MAIN
- EXISTING 1/16615343886576164452983057277059072" WATER MAIN
- EXISTING 1/33230687773152328905966114554118144" WATER MAIN
- EXISTING 1/66461375546304657811932229108236288" WATER MAIN
- EXISTING 1/132922751092609315623864482216472576" WATER MAIN
- EXISTING 1/265845502185218631247728964432945152" WATER MAIN
- EXISTING 1/531691004370437262495457928865890304" WATER MAIN
- EXISTING 1/106338200874087452499091581731780608" WATER MAIN
- EXISTING 1/212676401748174904998183163463561216" WATER MAIN
- EXISTING 1/4253528034963498099963663269271224256" WATER MAIN
- EXISTING 1/8507056069926996199927326538542448512" WATER MAIN
- EXISTING 1/17014112139853992399846531077084900224" WATER MAIN
- EXISTING 1/34028224279707984799693062154169004448" WATER MAIN
- EXISTING 1/68056448559415969599386124308338008896" WATER MAIN
- EXISTING 1/136112897188831939198772248616676017792" WATER MAIN
- EXISTING 1/27222579437766387839754449723335035584" WATER MAIN
- EXISTING 1/54445158875532775679508899446670071168" WATER MAIN
- EXISTING 1/10889031775105555135901779889334014336" WATER MAIN
- EXISTING 1/21778063550211110271803559778668028672" WATER MAIN
- EXISTING 1/43556127100422220543607119557336057344" WATER MAIN
- EXISTING 1/87112254200844441087214239114672074688" WATER MAIN
- EXISTING 1/17422450440168882174444287229344149376" WATER MAIN
- EXISTING 1/34844900880337764348888574578688298752" WATER MAIN
- EXISTING 1/69689801760675528697777549157376597504" WATER MAIN
- EXISTING 1/13937960352135057339555509831475115008" WATER MAIN
- EXISTING 1/27875920704270114679111019662950230016" WATER MAIN
- EXISTING 1/55751841408540229358222039325900460032" WATER MAIN
- EXISTING 1/111503682817084487164444078651800920064" WATER MAIN
- EXISTING 1/223007365634168974328888157303601840128" WATER MAIN
- EXISTING 1/446014731268337948657776314607203680256" WATER MAIN
- EXISTING 1/892029462536675897315552629214407360512" WATER MAIN
- EXISTING 1/1784058925073351794631110558428014401024" WATER MAIN
- EXISTING 1/3568117850146703589262221116856028802048" WATER MAIN
- EXISTING 1/7136235700293407178524442233712057604096" WATER MAIN
- EXISTING 1/1427247140058801357704888446742411208192" WATER MAIN
- EXISTING 1/28544942801176027154097769334848224161344" WATER MAIN
- EXISTING 1/57089885602352054308195538669696448322688" WATER MAIN
- EXISTING 1/114179771204704106176391077339392966454576" WATER MAIN
- EXISTING 1/22835954240940821235278215467878593210912" WATER MAIN
- EXISTING 1/45671908481881642470556430935757186421824" WATER MAIN
- EXISTING 1/91343816963763284941112861871514352436448" WATER MAIN
- EXISTING 1/18268763926752656988222533743028704872896" WATER MAIN
- EXISTING 1/36537527853505313976445067486057409545792" WATER MAIN
- EXISTING 1/73075055707010627952890134972114819091168" WATER MAIN
- EXISTING 1/14615011141402125905778226984423638218336" WATER MAIN
- EXISTING 1/29230022282804251811556453968847276436672" WATER MAIN
- EXISTING 1/58460044565608503623113107937694552873344" WATER MAIN
- EXISTING 1/11692008913121700724622621587538910546688" WATER MAIN
- EXISTING 1/23384017826243401449245243175178221091376" WATER MAIN
- EXISTING 1/46768035652486802898490486350356441822752" WATER MAIN
- EXISTING 1/93536071304973605796980972700712884364544" WATER MAIN
- EXISTING 1/18707214260994721159396195440145767288888" WATER MAIN
- EXISTING 1/3741442852198944231879239088029155677776" WATER MAIN
- EXISTING 1/7482885704397888463758478176058313555552" WATER MAIN
- EXISTING 1/1496577140795776927517695632011671111104" WATER MAIN
- EXISTING 1/2993154281591553855035391264022342222176" WATER MAIN
- EXISTING 1/5986308563183107710070782528044684444352" WATER MAIN
- EXISTING 1/1197261712636621542014156515208968888704" WATER MAIN
- EXISTING 1/2394523425273243084028313030417937777408" WATER MAIN
- EXISTING 1/4789046850546486168056626060835875554176" WATER MAIN
- EXISTING 1/9578093701092972336113252121671511111104" WATER MAIN
- EXISTING 1/19156187402183446682226504233430222222176" WATER MAIN
- EXISTING 1/3831237480436689336445300846686044444352" WATER MAIN
- EXISTING 1/7662474960873378672890601693372088888704" WATER MAIN
- EXISTING 1/153249493175467535457812033867417777408" WATER MAIN
- EXISTING 1/3064989863509350709156406777348355554176" WATER MAIN
- EXISTING 1/6129979727018701418312813554696711111104" WATER MAIN
- EXISTING 1/1225995944037400283662562711393422222176" WATER MAIN
- EXISTING 1/245199188807480056732512542278684444352" WATER MAIN
- EXISTING 1/4903983776149601134650250845573688888704" WATER MAIN
- EXISTING 1/980796755229920226930050171114737777408" WATER MAIN
- EXISTING 1/1961593510459840533860100342234675554176" WATER MAIN
- EXISTING 1/3923187020919681067720200684469351111104" WATER MAIN
- EXISTING 1/7846374041839362135440401368938702222176" WATER MAIN
- EXISTING 1/1569274807667872468888802737877404444352" WATER MAIN
- EXISTING 1/3138549615335744937777605475754808888704" WATER MAIN
- EXISTING 1/6277099230671489875555211151511617777408" WATER MAIN
- EXISTING 1/125541984613439795111104230303033467554176" WATER MAIN
- EXISTING 1/25108396922687959022220846060606693111104" WATER MAIN
- EXISTING 1/5021679384537591804444169212121326222176" WATER MAIN
- EXISTING 1/1004335876907518368888838424242652444352" WATER MAIN
- EXISTING 1/2008671753815036737777676848485304888704" WATER MAIN
- EXISTING 1/4017343507630073475555353696961009777408" WATER MAIN
- EXISTING 1/8034687015260146951111071393931615554176" WATER MAIN
- EXISTING 1/1606937403052029390222214277863231111104" WATER MAIN
- EXISTING 1/3213874806104058780444428555726462222176" WATER MAIN
- EXISTING 1/6427749612208117560888857111452924444352" WATER MAIN
- EXISTING 1/1285549924416235512177771422905848888704" WATER MAIN
- EXISTING 1/257109984883247102435554285781171777408" WATER MAIN
- EXISTING 1/5142199697664942048711105715623435554176" WATER MAIN
- EXISTING 1/1028439935329988409742221142524871111104" WATER MAIN
- EXISTING 1/205687987065997681948444228504942222176" WATER MAIN
- EXISTING 1/411375974131995363896888457009884444352" WATER MAIN
- EXISTING 1/8227519482639907277937779140197777408" WATER MAIN
- EXISTING 1/16455039652679814557875582803955554176" WATER MAIN
- EXISTING 1/32910079305359629115751165607911111104" WATER MAIN
- EXISTING 1/65820158610719258231502321213822222176" WATER MAIN
- EXISTING 1/13164031722138516446300442425644444352" WATER MAIN
- EXISTING 1/26328063444277032892600884851288888704" WATER MAIN
- EXISTING 1/5265612688855406578520177700257777408" WATER MAIN
- EXISTING 1/10531225377110813157040354005155554176" WATER MAIN
- EXISTING 1/2106245075422162631408070801031111104" WATER MAIN
- EXISTING 1/4212490150844325262816141602062222176" WATER MAIN
- EXISTING 1/8424980301688650525632283204124444352" WATER MAIN
- EXISTING 1/16849960603377301051225664082488888704" WATER MAIN
- EXISTING 1/336999212067546021024513281637777408" WATER MAIN
- EXISTING 1/6739984241350920420490265632755554176" WATER MAIN
- EXISTING 1/134799684827018408409805312551111104" WATER MAIN
- EXISTING 1/269599369654036816819610625102222176" WATER MAIN
- EXISTING 1/539198739308073633639221250204444352" WATER MAIN
- EXISTING 1/1078397478616147267278442504088888704" WATER MAIN
- EXISTING 1/215679495723229453455688500817777408" WATER MAIN
- EXISTING 1/4313589914464589069113737016355554176" WATER MAIN
- EXISTING 1/862717982892917813822747403271111104" WATER MAIN
- EXISTING 1/1725435965845835627645488806542222176" WATER MAIN
- EXISTING 1/3450871931691671255289097713084444352" WATER MAIN
- EXISTING 1/69017438633833425105781814261688888704" WATER MAIN
- EXISTING 1/1380348732776668502115563652533777408" WATER MAIN
- EXISTING 1/2760697465553337004231130705071111104" WATER MAIN
- EXISTING 1/5521394931106674008462261401042222176" WATER MAIN
- EXISTING 1/1104278966213354801694522802084444352" WATER MAIN
- EXISTING 1/22085579324267096033890456041688888704" WATER MAIN
- EXISTING 1/441711586485341920677809120833777408" WATER MAIN
- EXISTING 1/8834231729706838413556181816675554176" WATER MAIN
- EXISTING 1/1766846459401367682711363633331111104" WATER MAIN
- EXISTING 1/3533692918802735365422727266662222176" WATER MAIN
- EXISTING 1/7067385837605470730845454533334444352" WATER MAIN
- EXISTING 1/14134771675210941461709090666688888704" WATER MAIN
- EXISTING 1/2826954335042188292341818133331777408" WATER MAIN
- EXISTING 1/5653908670084376584683636266675554176" WATER MAIN
- EXISTING 1/11307817340167531769367272533331111104" WATER MAIN
- EXISTING 1/22615634680335063538734545066662222176" WATER MAIN
- EXISTING 1/45231269360670127077468890133334444352" WATER MAIN
- EXISTING 1/90462538721340254155497780266688888704" WATER MAIN
- EXISTING 1/18092507542268050311099556453331777408" WATER MAIN
- EXISTING 1/36185015084536100622199112866675554176" WATER MAIN
- EXISTING 1/72370030169072201244398225733331111104" WATER MAIN
- EXISTING 1/14474006033814440248879645466662222176" WATER MAIN
- EXISTING 1/28948012067628880497759290933334444352" WATER MAIN
- EXISTING 1/57896024135257760995518581866688888704" WATER MAIN
- EXISTING 1/1157920482705155219111317373331777408" WATER MAIN
- EXISTING 1/23158409654103104382222646466675554176" WATER MAIN
- EXISTING 1/46316819308206208764445292933331111104" WATER MAIN
- EXISTING 1/9263363861641241752889058586662222176" WATER MAIN
- EXISTING 1/18526727323224835057781171733334444352" WATER MAIN
- EXISTING 1/37053454646449670115563343466688888704" WATER MAIN
- EXISTING 1/74106909292899340231126686933331777408" WATER MAIN
- EXISTING 1/14821381858579868046225337866675554176" WATER MAIN
- EXISTING 1/296427637171597360924506757333



Section 2: Drainage

**SUEZ WATER NEW YORK, INC  
LONDON BRIDGE WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**SECTION 2:**

**STORMWATER SYSTEM DESIGN REPORT  
COMPLYING WITH NYS STORMWATER  
MANAGEMENT DESIGN MANUAL  
JANUARY 2015**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**



## **ATZL, NASHER & ZIGLER P.C.**

ENGINEERS-SURVEYORS-PLANNERS

232 North Main Street, New City, NY 10956

Tel: (845) 634-4694

Fax: (845) 634-5543

Email: [rnasher@anzny.com](mailto:rnasher@anzny.com)

**Revision 2: May 03, 2022**

Revision 1: October 01, 2021

July 20, 2021

Town of Carmel  
60 McAlpin Avenue  
Mahopac, NY 10541

Att.: Richard Franzetti, PE, LEED  
Town Engineer

Ref.: Suez Water New York, INC London Bridge Well 1 & 2 (Job #4872)  
Town of Carmel  
Putnam County, New York

Sub: Hydraulic and Hydrological Study

### **1.0 REVISION OVERVIEW:**

The previous SWPPP report dated October 01, 2021, proposed an underground infiltration system (Cultec R-330XLHD) to achieve zero net increase of peak runoff. However, the SWPPP report and the construction drawings have revise due to the infiltration test performed on April 11, 2022. Per town code the bottom of the proposed system and the groundwater requires 3-feet separation. The infiltration test revealed the presence of groundwater @ EL: 489.0, the bottom of the proposed system was @ EL:488.5. Since there is not enough separation the design does not meet the code. Therefore, we have proposed a dry pond system to replace the previously proposed system (Cultec R-330XLHD).

### **1.1 INTRODUCTION:**

The following hydraulic/hydrological study has been proposed for the above-mentioned project to provide zero net increase of peak runoff for the proposed project. The project disturbed area is 0.549 acres (23,914 sq.ft.), which is smaller than 1 acre. Therefore, a general construction permit is not required according to the NYSDEC 2015 version of the design manual. However, a zero-net increase of peak runoff is required per Town code.

### **1.2 SITE LOCATION:**

The project is located at 39 Brook Street in the Town of Carmel, Putnam County, New York.

**2.0 HYDROLOGICAL SOIL GROUP:**

The soil onsite is the following, based on data from the Soil Survey of Putnam County, New York, dated October 1994.

Soil Name	Soil Map Symbol	Hydrological Soil Group	Reference Page No.*
Charlton fine sandy loam, 8 to 15 percent slopes	ChC	B	22
Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	CrC	B	29
Chatfield-Charlton complex, 15 to 35 percent slopes, very rocky	CsD	B	30

\* Soil Survey of Putnam County, New York, United States Department of Agriculture Soil Conservation Service, October 1994.

For more detailed soil information, see the Soil Survey of Putnam County, dated October 1994.

**3.1 EXISTING CONDITION:**

The existing drainage area is 0.395 acres. The land cover of the drainage area consists of woods and grass area, plus some impervious area. The drainage area delineation is shown on the Existing Condition Drainage Map (E-1).

**3.2 DEVELOPED CONDITION:**

The proposed development includes the construction of a building and a gravel driveway. The peak runoff from the study area will be increased upon completion of the proposed development. The drainage area delineation is shown on the Developed Condition Drainage Map (D-1).

**4.0 DRAINAGE STUDY:**

Due to the proposed improvement the peak runoff of the designated drainage area will be increased. The hydrological software, HydroCAD has been used to calculate pre and post peak runoff rates for 1, 10, 100-year design storm events.

**5.0 MITIGATION MEASURES:**

To attenuate the post-developed peak flow to pre-developed peak flow, we are proposing a Dry Pond System. The Westchester Method was used to calculate the 1-year storm maximum storage.

The drainage study shows that the 1-year storage for the site is 602.0 cu.ft. The Dry Pond

System provides 672.0 cu.ft, which is more than the 1-year storage. The software HydroCAD was used to calculate peak flows for different storm events at the outlet "Point of Interest", for the Existing and Developed Condition. The summary table for the peak flow of different storm frequencies (1, 10, & 100-year storms) at the point of interest (P.O.I.), and water quantity design calculations are attached for your reference.

If you have further questions or concerns, feel free to contact me. Thank you.

Very Truly Yours,



Ryan A. Nasher, P.E.

P:\STORMWATER MANAGEMENT\4872\NEW SWPPP REPORT\SECTION 2 - DRAINAGE\4872 DRAINAGE NARRATIVE.docx

Summary Table

# **SUEZ WATER NEW YORK, INC LONDON BRIDGE WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

## **SUMMARY TABLE**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**

**SUMMARY FLOW  
EXISTING AND DEVELOPED CONDITIONS  
1, 10, & 100 YEAR STORMS PEAK RUNOFF**

<b>STORM FREQUENCY (YEAR)</b>	<b>EXISTING CONDITION PEAK FLOW (CFS) (PER HYDROCAD)</b>	<b>DEVELOPED CONDITION PEAK FLOW, NO ROUTING (CFS) (PER HYDROCAD)</b>	<b>CHANGE IN FLOW, <math>\Delta Q</math> (CFS)</b>	<b>REMARK</b>
1	0.03	0.24	+0.21	*
10	0.44	0.93	+0.49	*
100	1.66	2.40	+0.74	*

\* Note: Zero net increase of peak runoff will be achieved by the proposed Dry Pond System. The location of the system is shown on the site plan drawings.

Location Maps

# **SUEZ WATER NEW YORK, INC LONDON BRIDGE WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

## **LOCATION MAPS**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**





NORTH



Source: <http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>

**SOIL MAP**

Drainage Cods.

**SUEZ WATER NEW YORK, INC  
LONDON BRIDGE WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**DRAINAGE CALCULATION**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**

**EXISTING CONDITION:**

The existing area of interest consists of one watershed (WS#1), with an area of about 0.395 acres. The site consists of woods and grass area, plus some impervious area. The drainage area is delineated on the Existing Condition Drainage Map (E-1).

**WS#1:**

The soil within WS#1 belongs to Hydrological Soil Group "B".

A = 0.395 Acres

Composition	HSG
A <sub>Impervious</sub>	0.002 acres "B"
A <sub>Wood/Grass</sub>	0.393 acres "B"

Due to the small size of the watershed, the time of concentration is considered the minimum of 0.1 hours.

**WS#1 → P.O.I.#1**

**DEVELOPED CONDITION:**

Upon development of the site, the total area of the developed watershed will remain the same as the existing watershed area (0.395 acres). The developed condition consists of the construction of a building and a gravel driveway. The watershed area is delineated on the Developed Condition Drainage Map (D-1).

**WS#1:**

The soil within WS#1 belongs to Hydrological Soil Group "B".

A = 0.395 Acres

Composition	HSG
A <sub>Impervious</sub>	0.023 acres "B"
A <sub>Gravel</sub>	0.123 acres "B"
A <sub>Grass</sub>	0.249 acres "B"

Due to the small size of the watershed, the time of concentration is considered the minimum of 0.1 hours.

**ROOFTOP/DRIVEWAY → DRY POND SYSTEM → P.O.I.#1.**

**WS#1 → P.O.I.#1.**

SMD Design

**SUEZ WATER NEW YORK, INC  
LONDON BRIDGE WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**STORMWATER MANAGEMENT  
PRACTICE DESIGN CALCULATIONS**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**

---

**WATER QUANTITY CALCULATION**  
**WESTCHESTER METHOD**

1. **Select Design Storm**  
(Use 1-Year, 24-Hour Storm)  
Total Rainfall = 2.73 inches
  
2. **Discount Additional Soil Percolation**  
Use Infiltration rate 0.00 inch/hr
  
3. **Calculate The Storage Volume (Vs):**  
1-Year, 24-Hour Rainfall = 2.73 inches

Soil: Hydrologic Soil Group (HSG) is "B", see attached Soil Survey Map.

Existing CN (WS#1) = 58,  $(Q_E)_t = 0.03$  cfs (Hydrocad, attached)  
Runoff depth = 0.19 inches

Proposed CN (WS#1) = 71,  $(Q_D)_t = 0.24$  cfs (Hydrocad, attached)  
Runoff depth = 0.61 inches

Drainage Area = 17,186 ft<sup>2</sup>

$$\Delta V_r = 0.61 \text{ in} - 0.19 \text{ in} = 0.42 \text{ in}$$

$$\Delta V_r = 0.42 \text{ in} * \frac{1 \text{ ft}}{12 \text{ in}}$$

$$\Delta V_r = 0.035 \text{ ft}$$

$$V_s = \Delta V_r * \text{Area}$$

$$V_s = 0.035 \text{ ft} * 17,186 \text{ ft}^2$$

$$V_s = 602.0 \text{ ft}^3$$

**The 1-year storm storage volume is 602.0 ft<sup>3</sup>**

## SMP SIZING CALCULATION

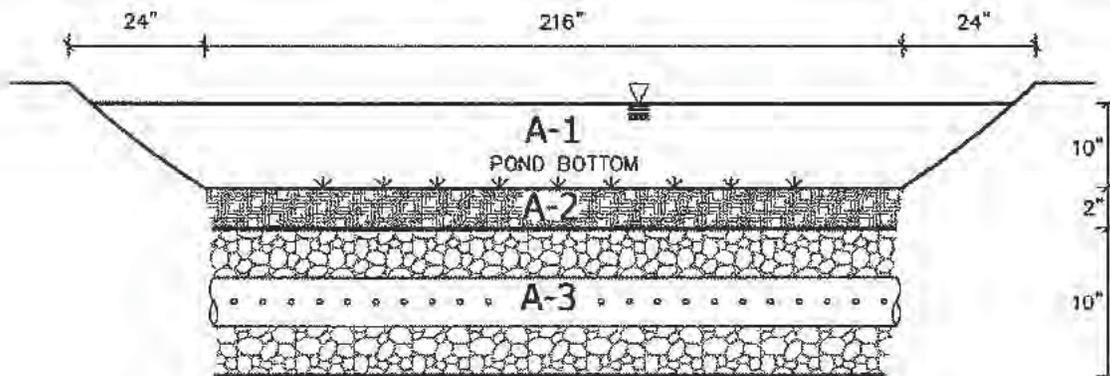
In order to provide zero net increase of peak runoff a dry pond system has been proposed. The storage is calculated as 602.0 cu.ft. for the entire WS#1.

### Calculate Provided Storage Volume:

The Dry Pond has the following characteristics:

- 22" deep
- 10" of ¾" gravel (porosity = 0.4) on bottom
- 2" of soil (porosity = 0.2) above the gravel
- 10" of freeboard between the top of the catch basin to the surface of the soil

A cross-sectional, not to scale sketch of the dry pond system is shown below:



### DRY POND CROSS SECTION

N.T.S.

Void space in the dry pond cross-section:

$$= A1 \text{ (Void area above-ground)} + A2 \text{ (Void area in planting soil)} + A3 \text{ (Void area in gravel)}$$

$$= \left[ (10") \left( \frac{1}{2} \right) (264" + 216") \right] + (0.2)(216")(2") + (0.4)(216")(10")$$

$$= 3,350.0 \text{ in}^2 \text{ or } 23.26 \text{ ft}^2$$

Required dry pond length (total):

$$= \frac{602.0 \text{ ft}^3}{23.26 \text{ ft}^2} = 25.87 \text{ ft}$$

Use one (1) dry pond. Required length of the dry pond:

$$= 25.87 \text{ ft}$$

Provided Storage:

$$= (25.87 \text{ ft})(23.26 \text{ ft}^2) = 602.0 \text{ ft}^3$$

Note: HydroCAD was used to calculate the actual storage provided by the proposed system.

**The proposed Dry Pond will provide 672.0 ft<sup>3</sup> (@ ELV= 495.50') > 602.0 ft<sup>3</sup>**

**OK✓**

(Please see HydroCAD for detailed calculations)

HydroCAD Model

**SUEZ WATER NEW YORK, INC  
LONDON BRIDGE WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**HYDROCAD MODEL  
FOR EXISTING AND PROPOSED CONDITIONS  
1, 10, AND 100 YEAR STORMS**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**

**EXISTING**  
**CONDITIONS**

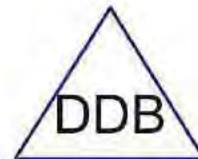
**DEVELOPED**  
**CONDITIONS**



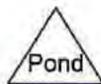
EXISTING



DEVELOPED



P-DRY DETENTION  
BASIN



Routing Diagram for 4872 SUEZ (LONDON BRIDGE WELL)  
Prepared by {enter your company name here}, Printed 5/2/2022  
HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

**4872 SUEZ (LONDON BRIDGE WELL)**

Type III 24-hr 1-Year Rainfall=2.73"

Prepared by {enter your company name here}

Printed 5/2/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 2

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentD-WS#1A: DEVELOPED**      Runoff Area=0.395 ac   5.82% Impervious   Runoff Depth=0.61"  
Tc=6.0 min   CN=71   Runoff=0.24 cfs   0.020 af

**SubcatchmentE-WS#1: EXISTING**      Runoff Area=0.395 ac   0.51% Impervious   Runoff Depth=0.19"  
Tc=6.0 min   CN=58   Runoff=0.03 cfs   0.006 af

**Pond DDB: P-DRY DETENTION BASIN**      Peak Elev=0.00'   Storage=0 cf

**Total Runoff Area = 0.790 ac   Runoff Volume = 0.026 af   Average Runoff Depth = 0.40"**  
**96.84% Pervious = 0.765 ac   3.16% Impervious = 0.025 ac**

**Summary for Subcatchment D-WS#1A: DEVELOPED**

Runoff = 0.24 cfs @ 12.10 hrs, Volume= 0.020 af, Depth= 0.61"

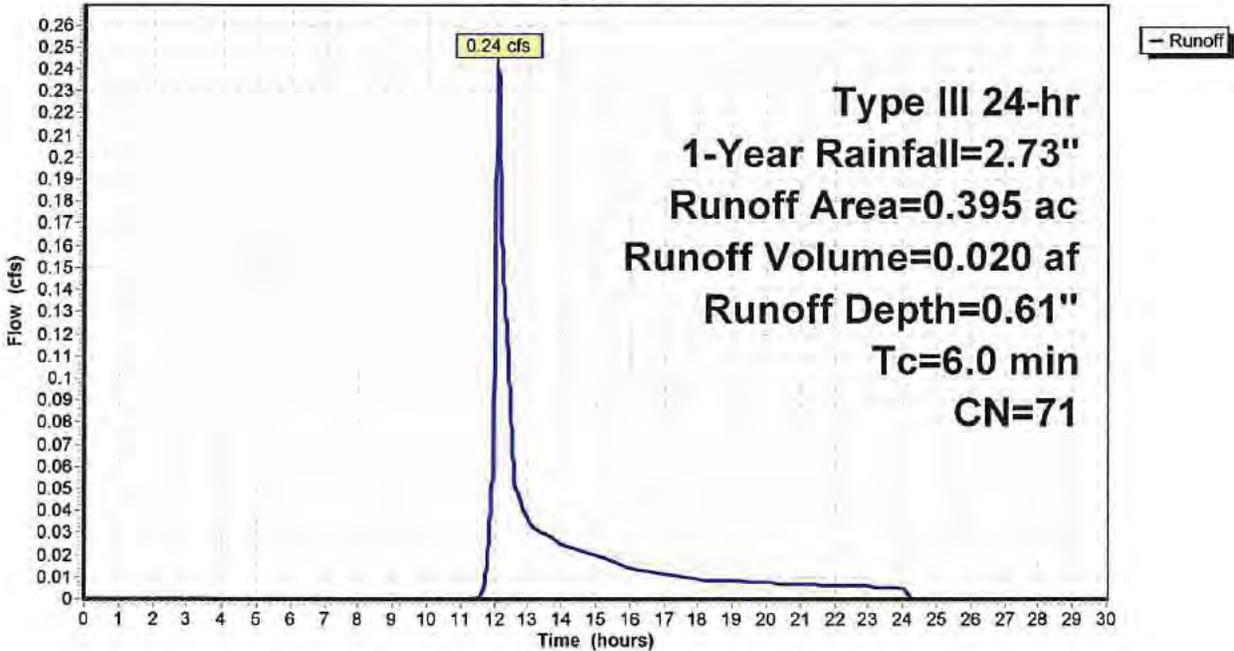
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 1-Year Rainfall=2.73"

Area (ac)	CN	Description
0.023	98	Paved parking, HSG B
0.123	85	Gravel roads, HSG B
0.249	61	>75% Grass cover, Good, HSG B
0.395	71	Weighted Average
0.372		94.18% Pervious Area
0.023		5.82% Impervious Area

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

**Subcatchment D-WS#1A: DEVELOPED**

Hydrograph



**Summary for Subcatchment E-WS#1: EXISTING**

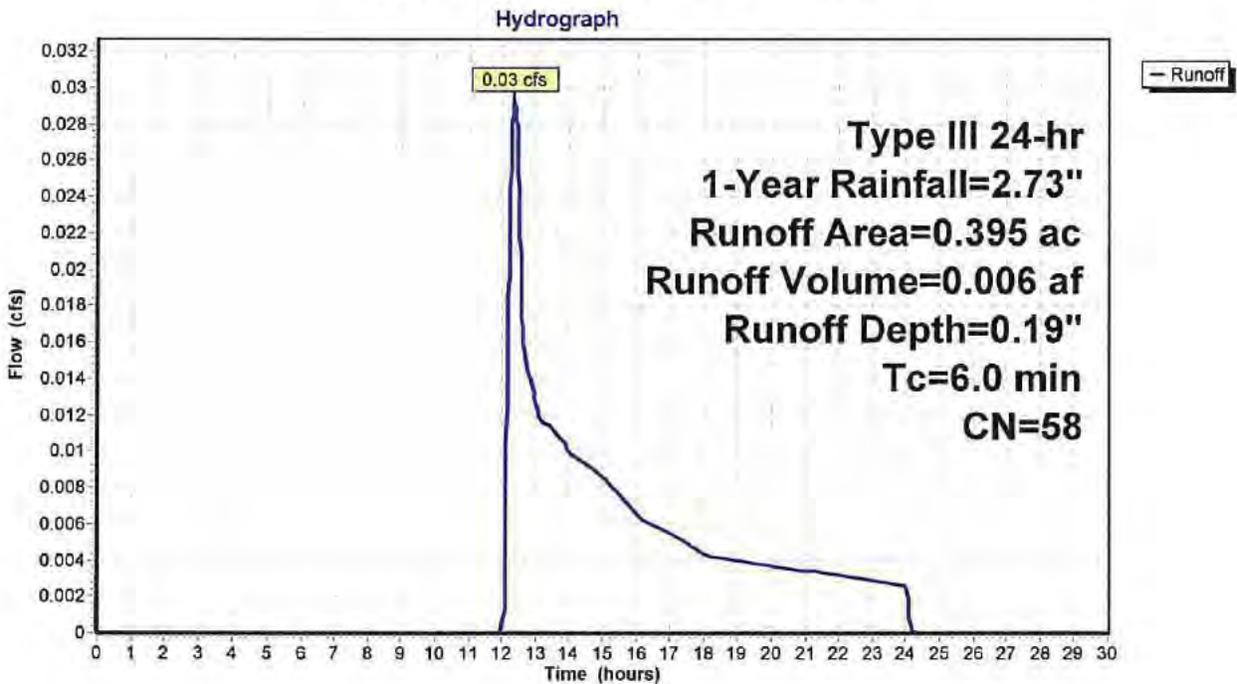
Runoff = 0.03 cfs @ 12.35 hrs, Volume= 0.006 af, Depth= 0.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 1-Year Rainfall=2.73"

Area (ac)	CN	Description
0.002	98	Paved parking, HSG B
0.393	58	Woods/grass comb., Good, HSG B
0.395	58	Weighted Average
0.393		99.49% Pervious Area
0.002		0.51% Impervious Area

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

**Subcatchment E-WS#1: EXISTING**



**Summary for Pond DDB: P-DRY DETENTION BASIN**

Volume	Invert	Avail. Storage	Storage Description		
#1	493.70'	1,019 cf	Custom Stage Data (Prismatic) Listed below (Recalc)		
Elevation (feet)	Surf. Area (sq-ft)	Voids (%)	Inc. Store (cubic-feet)	Cum. Store (cubic-feet)	
493.70	536	0.0	0	0	
494.53	536	40.0	178	178	
494.70	536	20.0	18	196	
494.71	536	100.0	5	202	
496.00	731	100.0	817	1,019	

**4872 SUEZ (LONDON BRIDGE WELL)**

Type III 24-hr 1-Year Rainfall=2.73"

Prepared by {enter your company name here}

Printed 5/2/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 6

**Stage-Discharge for Pond DDB: P-DRY DETENTION BASIN**

Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)
493.70	0.00	494.76	0.00	495.82	0.00
493.72	0.00	494.78	0.00	495.84	0.00
493.74	0.00	494.80	0.00	495.86	0.00
493.76	0.00	494.82	0.00	495.88	0.00
493.78	0.00	494.84	0.00	495.90	0.00
493.80	0.00	494.86	0.00	495.92	0.00
493.82	0.00	494.88	0.00	495.94	0.00
493.84	0.00	494.90	0.00	495.96	0.00
493.86	0.00	494.92	0.00	495.98	0.00
493.88	0.00	494.94	0.00	496.00	0.00
493.90	0.00	494.96	0.00		
493.92	0.00	494.98	0.00		
493.94	0.00	495.00	0.00		
493.96	0.00	495.02	0.00		
493.98	0.00	495.04	0.00		
494.00	0.00	495.06	0.00		
494.02	0.00	495.08	0.00		
494.04	0.00	495.10	0.00		
494.06	0.00	495.12	0.00		
494.08	0.00	495.14	0.00		
494.10	0.00	495.16	0.00		
494.12	0.00	495.18	0.00		
494.14	0.00	495.20	0.00		
494.16	0.00	495.22	0.00		
494.18	0.00	495.24	0.00		
494.20	0.00	495.26	0.00		
494.22	0.00	495.28	0.00		
494.24	0.00	495.30	0.00		
494.26	0.00	495.32	0.00		
494.28	0.00	495.34	0.00		
494.30	0.00	495.36	0.00		
494.32	0.00	495.38	0.00		
494.34	0.00	495.40	0.00		
494.36	0.00	495.42	0.00		
494.38	0.00	495.44	0.00		
494.40	0.00	495.46	0.00		
494.42	0.00	495.48	0.00		
494.44	0.00	495.50	0.00		
494.46	0.00	495.52	0.00		
494.48	0.00	495.54	0.00		
494.50	0.00	495.56	0.00		
494.52	0.00	495.58	0.00		
494.54	0.00	495.60	0.00		
494.56	0.00	495.62	0.00		
494.58	0.00	495.64	0.00		
494.60	0.00	495.66	0.00		
494.62	0.00	495.68	0.00		
494.64	0.00	495.70	0.00		
494.66	0.00	495.72	0.00		
494.68	0.00	495.74	0.00		
494.70	0.00	495.76	0.00		
494.72	0.00	495.78	0.00		
494.74	0.00	495.80	0.00		

**4872 SUEZ (LONDON BRIDGE WELL)**

Type III 24-hr 1-Year Rainfall=2.73"

Prepared by {enter your company name here}

Printed 5/2/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 7

**Stage-Area-Storage for Pond DDB: P-DRY DETENTION BASIN**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
493.70	536	0
493.75	536	11
493.80	536	21
493.85	536	32
493.90	536	43
493.95	536	54
494.00	536	64
494.05	536	75
494.10	536	86
494.15	536	96
494.20	536	107
494.25	536	118
494.30	536	129
494.35	536	139
494.40	536	150
494.45	536	161
494.50	536	172
494.55	536	180
494.60	536	185
494.65	536	191
494.70	536	196
494.75	542	223
494.80	550	250
494.85	557	278
494.90	565	306
494.95	572	335
495.00	580	363
495.05	587	393
495.10	595	422
495.15	603	452
495.20	610	482
495.25	618	513
495.30	625	544
495.35	633	576
495.40	640	607
495.45	648	640
495.50	655	672
495.55	663	705
495.60	671	738
495.65	678	772
495.70	688	806
495.75	693	841
495.80	701	876
495.85	708	911
495.90	716	946
495.95	723	982
496.00	731	1,019

**4872 SUEZ (LONDON BRIDGE WELL)**

Type III 24-hr 10-Year Rainfall=4.90"

Prepared by {enter your company name here}

Printed 5/2/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 8

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment D-WS#1A: DEVELOPED**      Runoff Area=0.395 ac   5.82% Impervious   Runoff Depth=2.04"  
Tc=6.0 min   CN=71   Runoff=0.93 cfs   0.067 af

**Subcatchment E-WS#1: EXISTING**      Runoff Area=0.395 ac   0.51% Impervious   Runoff Depth=1.11"  
Tc=6.0 min   CN=58   Runoff=0.44 cfs   0.037 af

**Pond DDB: P-DRY DETENTION BASIN**      Peak Elev=0.00'   Storage=0 cf

**Total Runoff Area = 0.790 ac   Runoff Volume = 0.104 af   Average Runoff Depth = 1.58"**  
**96.84% Pervious = 0.765 ac   3.16% Impervious = 0.025 ac**

**4872 SUEZ (LONDON BRIDGE WELL)**

Type III 24-hr 10-Year Rainfall=4.90"

Prepared by {enter your company name here}

Printed 5/2/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 9

**Summary for Subcatchment D-WS#1A: DEVELOPED**

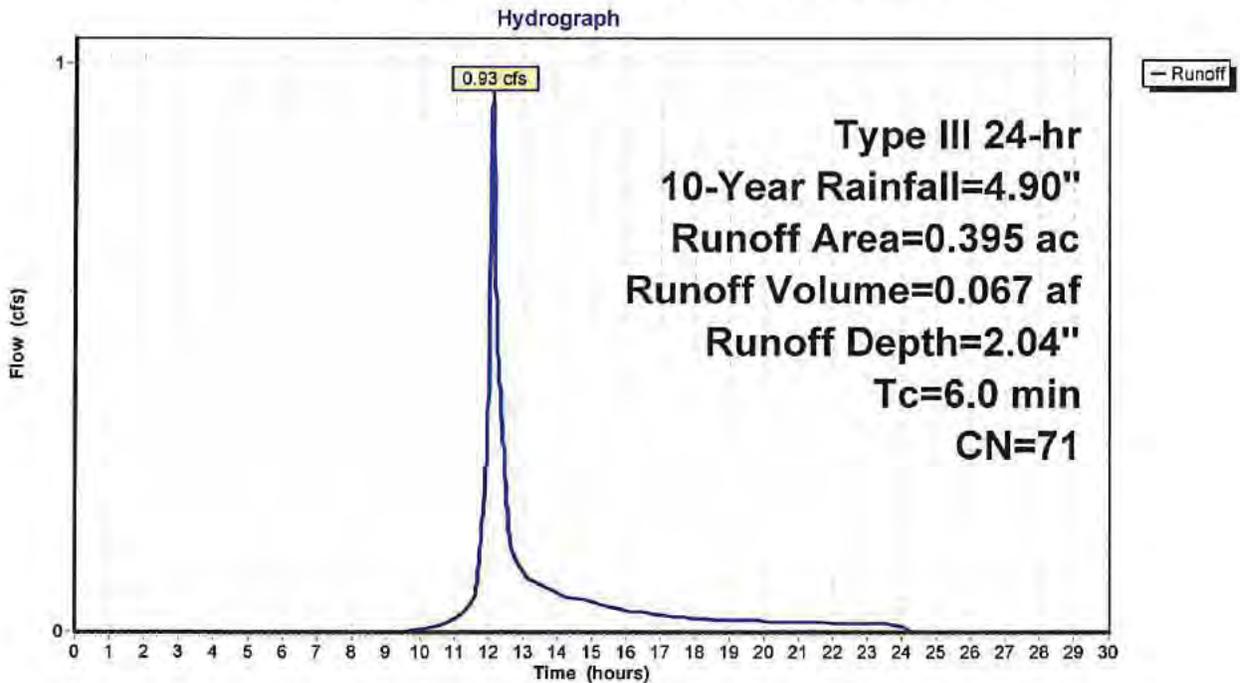
Runoff = 0.93 cfs @ 12.09 hrs, Volume= 0.067 af, Depth= 2.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-Year Rainfall=4.90"

Area (ac)	CN	Description
0.023	98	Paved parking, HSG B
0.123	85	Gravel roads, HSG B
0.249	61	>75% Grass cover, Good, HSG B
0.395	71	Weighted Average
0.372		94.18% Pervious Area
0.023		5.82% Impervious Area

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

**Subcatchment D-WS#1A: DEVELOPED**



**4872 SUEZ (LONDON BRIDGE WELL)**

Type III 24-hr 10-Year Rainfall=4.90"

Prepared by {enter your company name here}

Printed 5/2/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 10

**Summary for Subcatchment E-WS#1: EXISTING**

Runoff = 0.44 cfs @ 12.10 hrs, Volume= 0.037 af, Depth= 1.11"

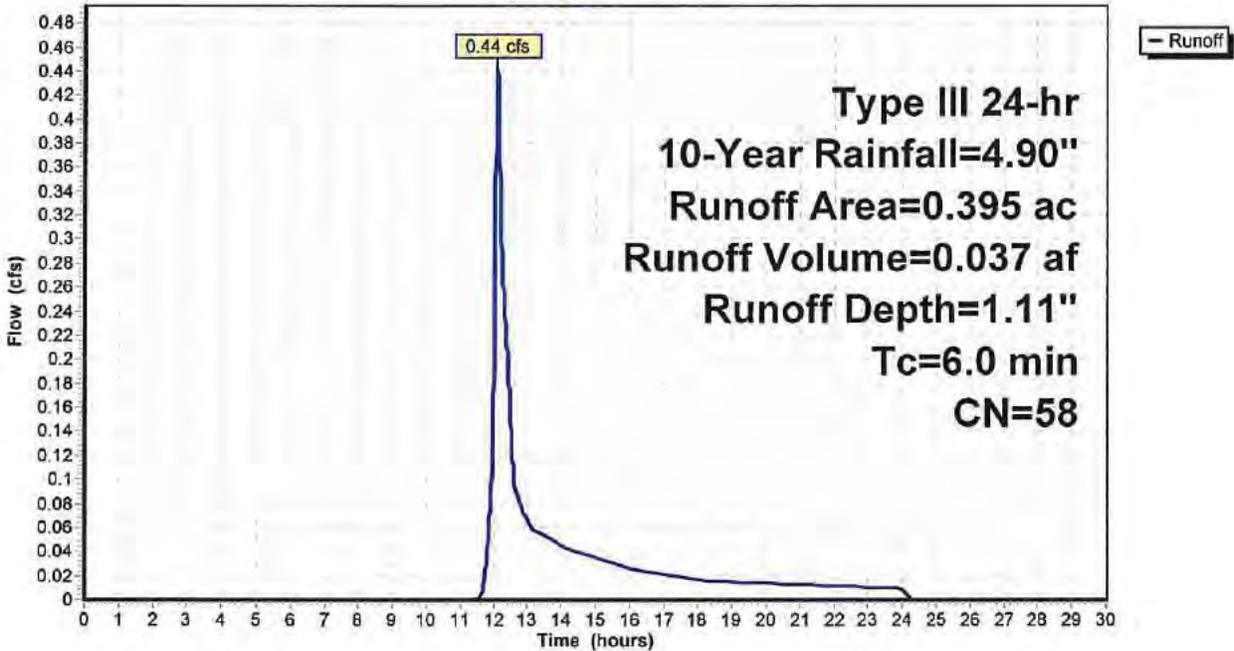
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-Year Rainfall=4.90"

Area (ac)	CN	Description
0.002	98	Paved parking, HSG B
0.393	58	Woods/grass comb., Good, HSG B
0.395	58	Weighted Average
0.393		99.49% Pervious Area
0.002		0.51% Impervious Area

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

**Subcatchment E-WS#1: EXISTING**

Hydrograph



**Summary for Pond DDB: P-DRY DETENTION BASIN**

Volume	Invert	Avail.Storage	Storage Description
#1	493.70'	1,019 cf	Custom Stage Data (Prismatic) Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
493.70	536	0.0	0	0
494.53	536	40.0	178	178
494.70	536	20.0	18	196
494.71	536	100.0	5	202
496.00	731	100.0	817	1,019

**4872 SUEZ (LONDON BRIDGE WELL)**

Type III 24-hr 10-Year Rainfall=4.90"

Prepared by {enter your company name here}

Printed 5/2/2022

HydroCAD® 10.00-2D s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 12

**Stage-Discharge for Pond DDB: P-DRY DETENTION BASIN**

Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)
493.70	0.00	494.76	0.00	495.82	0.00
493.72	0.00	494.78	0.00	495.84	0.00
493.74	0.00	494.80	0.00	495.86	0.00
493.76	0.00	494.82	0.00	495.88	0.00
493.78	0.00	494.84	0.00	495.90	0.00
493.80	0.00	494.86	0.00	495.92	0.00
493.82	0.00	494.88	0.00	495.94	0.00
493.84	0.00	494.90	0.00	495.96	0.00
493.86	0.00	494.92	0.00	495.98	0.00
493.88	0.00	494.94	0.00	496.00	0.00
493.90	0.00	494.96	0.00		
493.92	0.00	494.98	0.00		
493.94	0.00	495.00	0.00		
493.96	0.00	495.02	0.00		
493.98	0.00	495.04	0.00		
494.00	0.00	495.06	0.00		
494.02	0.00	495.08	0.00		
494.04	0.00	495.10	0.00		
494.06	0.00	495.12	0.00		
494.08	0.00	495.14	0.00		
494.10	0.00	495.16	0.00		
494.12	0.00	495.18	0.00		
494.14	0.00	495.20	0.00		
494.16	0.00	495.22	0.00		
494.18	0.00	495.24	0.00		
494.20	0.00	495.26	0.00		
494.22	0.00	495.28	0.00		
494.24	0.00	495.30	0.00		
494.26	0.00	495.32	0.00		
494.28	0.00	495.34	0.00		
494.30	0.00	495.36	0.00		
494.32	0.00	495.38	0.00		
494.34	0.00	495.40	0.00		
494.36	0.00	495.42	0.00		
494.38	0.00	495.44	0.00		
494.40	0.00	495.46	0.00		
494.42	0.00	495.48	0.00		
494.44	0.00	495.50	0.00		
494.46	0.00	495.52	0.00		
494.48	0.00	495.54	0.00		
494.50	0.00	495.56	0.00		
494.52	0.00	495.58	0.00		
494.54	0.00	495.60	0.00		
494.56	0.00	495.62	0.00		
494.58	0.00	495.64	0.00		
494.60	0.00	495.66	0.00		
494.62	0.00	495.68	0.00		
494.64	0.00	495.70	0.00		
494.66	0.00	495.72	0.00		
494.68	0.00	495.74	0.00		
494.70	0.00	495.76	0.00		
494.72	0.00	495.78	0.00		
494.74	0.00	495.80	0.00		

**4872 SUEZ (LONDON BRIDGE WELL)***Type III 24-hr 10-Year Rainfall=4.90"*

Prepared by {enter your company name here}

Printed 5/2/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 13

**Stage-Area-Storage for Pond DDB: P-DRY DETENTION BASIN**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
493.70	536	0
493.75	536	11
493.80	536	21
493.85	536	32
493.90	536	43
493.95	536	54
494.00	536	64
494.05	536	75
494.10	536	86
494.15	536	96
494.20	536	107
494.25	536	118
494.30	536	129
494.35	536	139
494.40	536	150
494.45	536	161
494.50	536	172
494.55	536	180
494.60	536	185
494.65	536	191
494.70	536	196
494.75	542	223
494.80	550	250
494.85	557	278
494.90	565	306
494.95	572	335
495.00	580	363
495.05	587	393
495.10	595	422
495.15	603	452
495.20	610	482
495.25	618	513
495.30	625	544
495.35	633	576
495.40	640	607
495.45	648	640
495.50	655	672
495.55	663	705
495.60	671	738
495.65	678	772
495.70	686	806
495.75	693	841
495.80	701	876
495.85	708	911
495.90	716	946
495.95	723	982
496.00	731	1,019

**4872 SUEZ (LONDON BRIDGE WELL)**

Type III 24-hr 100-Year Rainfall=8.70"

Prepared by {enter your company name here}

Printed 5/2/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 14

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentD-WS#1A: DEVELOPED**      Runoff Area=0.395 ac   5.82% Impervious   Runoff Depth=5.19"  
Tc=6.0 min   CN=71   Runoff=2.40 cfs   0.171 af

**SubcatchmentE-WS#1: EXISTING**      Runoff Area=0.395 ac   0.51% Impervious   Runoff Depth=3.63"  
Tc=6.0 min   CN=58   Runoff=1.66 cfs   0.119 af

**Pond DDB: P-DRY DETENTION BASIN**      Peak Elev=0.00'   Storage=0 cf

**Total Runoff Area = 0.790 ac   Runoff Volume = 0.290 af   Average Runoff Depth = 4.41"**  
**96.84% Pervious = 0.765 ac   3.16% Impervious = 0.025 ac**

**Summary for Subcatchment D-WS#1A: DEVELOPED**

Runoff = 2.40 cfs @ 12.09 hrs, Volume= 0.171 af, Depth= 5.19"

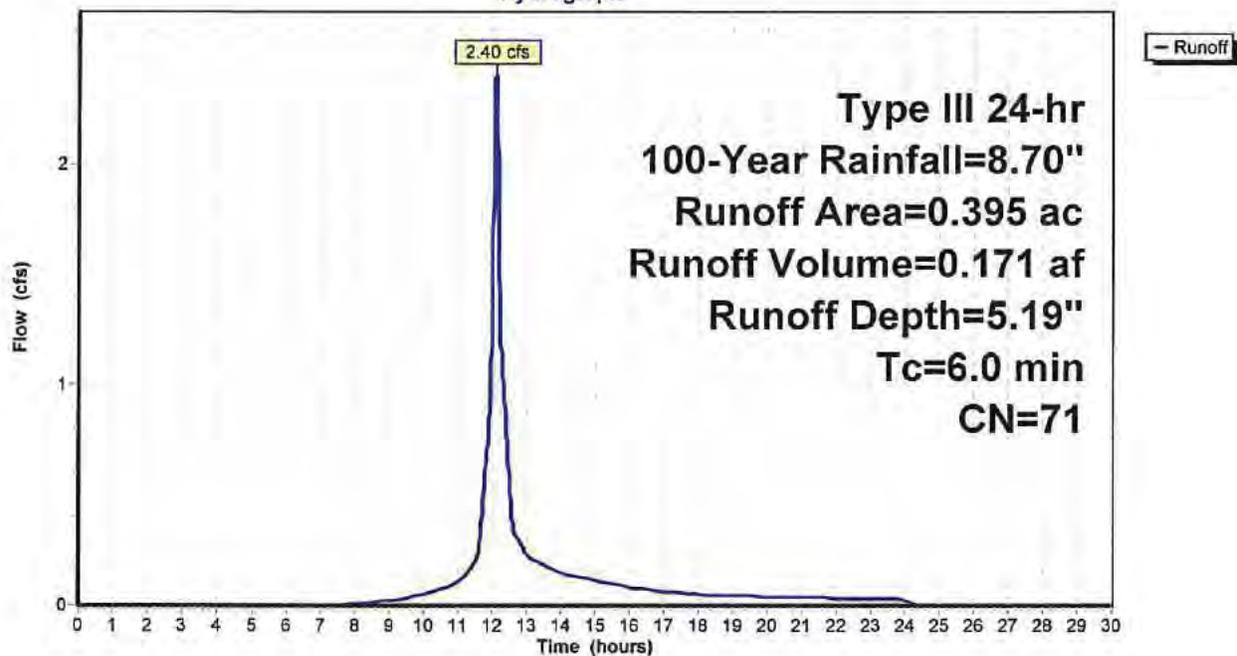
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 100-Year Rainfall=8.70"

Area (ac)	CN	Description
0.023	98	Paved parking, HSG B
0.123	85	Gravel roads, HSG B
0.249	61	>75% Grass cover, Good, HSG B
0.395	71	Weighted Average
0.372		94.18% Pervious Area
0.023		5.82% Impervious Area

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

**Subcatchment D-WS#1A: DEVELOPED**

Hydrograph



**Summary for Subcatchment E-WS#1: EXISTING**

Runoff = 1.66 cfs @ 12.09 hrs, Volume= 0.119 af, Depth= 3.63"

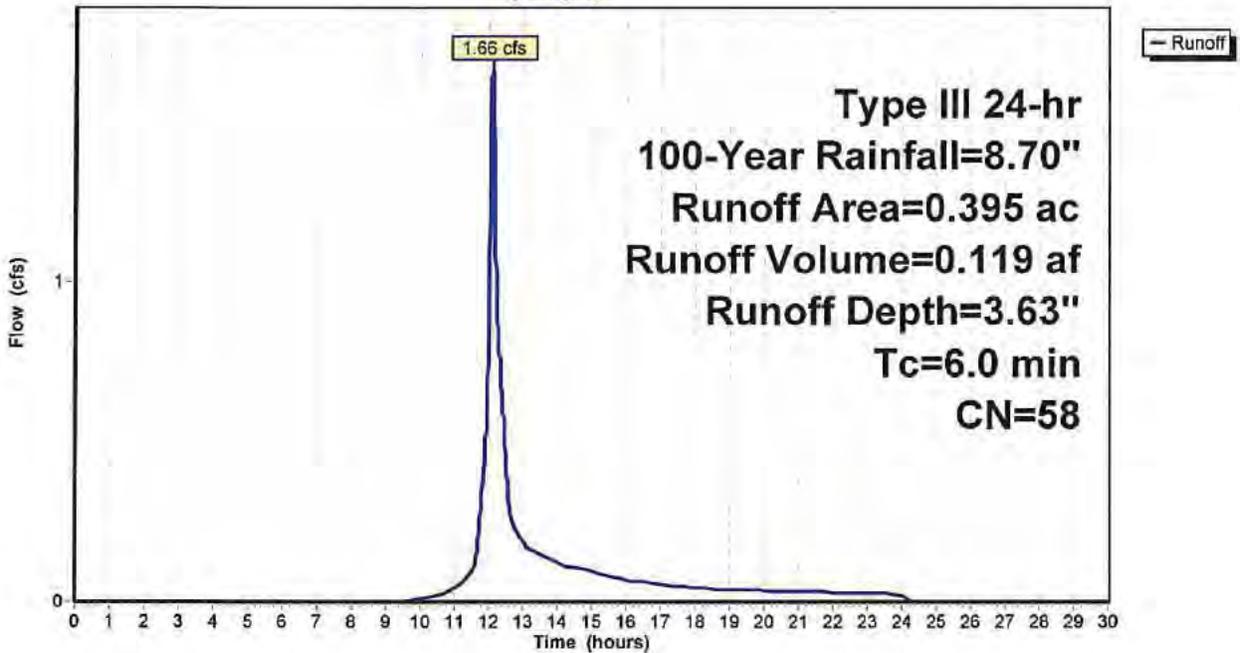
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 100-Year Rainfall=8.70"

Area (ac)	CN	Description
0.002	98	Paved parking, HSG B
0.393	58	Woods/grass comb., Good, HSG B
0.395	58	Weighted Average
0.393		99.49% Pervious Area
0.002		0.51% Impervious Area

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

**Subcatchment E-WS#1: EXISTING**

Hydrograph



**4872 SUEZ (LONDON BRIDGE WELL)**

Type III 24-hr 100-Year Rainfall=8.70"

Prepared by {enter your company name here}

Printed 5/2/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 17

**Summary for Pond DDB: P-DRY DETENTION BASIN**

Volume	Invert	Avail.Storage	Storage Description		
#1	493.70'	1,019 cf	Custom Stage Data (Prismatic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
493.70	536	0.0	0	0	
494.53	536	40.0	178	178	
494.70	536	20.0	18	196	
494.71	536	100.0	5	202	
496.00	731	100.0	817	1,019	

**4872 SUEZ (LONDON BRIDGE WELL)**

Type III 24-hr 100-Year Rainfall=8.70"

Prepared by {enter your company name here}

Printed 5/2/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 18

**Stage-Discharge for Pond DDB: P-DRY DETENTION BASIN**

Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)
493.70	0.00	494.76	0.00	495.82	0.00
493.72	0.00	494.78	0.00	495.84	0.00
493.74	0.00	494.80	0.00	495.86	0.00
493.76	0.00	494.82	0.00	495.88	0.00
493.78	0.00	494.84	0.00	495.90	0.00
493.80	0.00	494.86	0.00	495.92	0.00
493.82	0.00	494.88	0.00	495.94	0.00
493.84	0.00	494.90	0.00	495.96	0.00
493.86	0.00	494.92	0.00	495.98	0.00
493.88	0.00	494.94	0.00	496.00	0.00
493.90	0.00	494.96	0.00		
493.92	0.00	494.98	0.00		
493.94	0.00	495.00	0.00		
493.96	0.00	495.02	0.00		
493.98	0.00	495.04	0.00		
494.00	0.00	495.06	0.00		
494.02	0.00	495.08	0.00		
494.04	0.00	495.10	0.00		
494.06	0.00	495.12	0.00		
494.08	0.00	495.14	0.00		
494.10	0.00	495.16	0.00		
494.12	0.00	495.18	0.00		
494.14	0.00	495.20	0.00		
494.16	0.00	495.22	0.00		
494.18	0.00	495.24	0.00		
494.20	0.00	495.26	0.00		
494.22	0.00	495.28	0.00		
494.24	0.00	495.30	0.00		
494.26	0.00	495.32	0.00		
494.28	0.00	495.34	0.00		
494.30	0.00	495.36	0.00		
494.32	0.00	495.38	0.00		
494.34	0.00	495.40	0.00		
494.36	0.00	495.42	0.00		
494.38	0.00	495.44	0.00		
494.40	0.00	495.46	0.00		
494.42	0.00	495.48	0.00		
494.44	0.00	495.50	0.00		
494.46	0.00	495.52	0.00		
494.48	0.00	495.54	0.00		
494.50	0.00	495.56	0.00		
494.52	0.00	495.58	0.00		
494.54	0.00	495.60	0.00		
494.56	0.00	495.62	0.00		
494.58	0.00	495.64	0.00		
494.60	0.00	495.66	0.00		
494.62	0.00	495.68	0.00		
494.64	0.00	495.70	0.00		
494.66	0.00	495.72	0.00		
494.68	0.00	495.74	0.00		
494.70	0.00	495.76	0.00		
494.72	0.00	495.78	0.00		
494.74	0.00	495.80	0.00		

**4872 SUEZ (LONDON BRIDGE WELL)**

Type III 24-hr 100-Year Rainfall=8.70"

Prepared by {enter your company name here}

Printed 5/2/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 19

**Stage-Area-Storage for Pond DDB: P-DRY DETENTION BASIN**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
493.70	536	0
493.75	536	11
493.80	536	21
493.85	536	32
493.90	536	43
493.95	536	54
494.00	536	64
494.05	536	75
494.10	536	86
494.15	536	96
494.20	536	107
494.25	536	118
494.30	536	129
494.35	536	139
494.40	536	150
494.45	536	161
494.50	536	172
494.55	536	180
494.60	536	185
494.65	536	191
494.70	536	196
494.75	542	223
494.80	550	250
494.85	557	278
494.90	565	306
494.95	572	335
495.00	580	363
495.05	587	393
495.10	595	422
495.15	603	452
495.20	610	482
495.25	618	513
495.30	625	544
495.35	633	576
495.40	640	607
495.45	648	640
495.50	655	672
495.55	663	705
495.60	671	738
495.65	678	772
495.70	686	806
495.75	693	841
495.80	701	876
495.85	708	911
495.90	716	946
495.95	723	982
496.00	731	1,019

Section 3: NOI & MS4

**SUEZ WATER NEW YORK, INC  
LONDON BRIDGE WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**SECTION 3:**

**SPDES ACKNOWLEDGEMENT LETTER,  
FILLED OUT NOTICE OF INTENT (N.O.I.),  
AND  
MS4 SWPPP ACCEPTANCE FORM**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**

**NOTICE OF INTENT**

**New York State Department of Environmental Conservation**



**Division of Water**

**625 Broadway, 4th Floor**

**Albany, New York 12233-3505**

**NYR**        
(for DEC use only)

**Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-20-001**  
 All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

**- IMPORTANT -**  
**RETURN THIS FORM TO THE ADDRESS ABOVE**  
OWNER/OPERATOR MUST SIGN FORM

**Owner/Operator Information**

Owner/Operator (Company Name/Private Owner Name/Municipality Name)

S U E Z   W A T E R   N E W   Y O R K ,   I N C

Owner/Operator Contact Person Last Name (NOT CONSULTANT)

G A R A B E D

Owner/Operator Contact Person First Name

S T E V E N

Owner/Operator Mailing Address

1 6 3   O L D   M I L L   R O A D

City

W E S T   N Y A C K

State

N Y

Zip

1 0 9 9 4 -

Phone (Owner/Operator)

8 4 5 - 6 2 0 - 3 3 1 9

Fax (Owner/Operator)

-    -

Email (Owner/Operator)

S T E V E N . G A R A B E D @ S U E Z . C O M

FED TAX ID

-        (not required for individuals)

Project Site Information

Project/Site Name

S W N Y , I N C L O N D O N B R I D G E W E L L 1 & 2

Street Address (NOT P.O. BOX)

3 9 B R O O K S T R E E T

Side of Street

North  South  East  West

City/Town/Village (THAT ISSUES BUILDING PERMIT)

T O W N O F C A R M E L

State Zip

N Y 1 0 5 4 1 -

County

P U T N A M

DEC Region

3

Name of Nearest Cross Street

W O O D L A N D D R I V E

Distance to Nearest Cross Street (Feet)

2 4 0

Project In Relation to Cross Street

North  South  East  West

Tax Map Numbers

Section-Block-Parcel  
6 4 . 7 - 1 - 1 0

Tax Map Numbers

1. Provide the Geographic Coordinates for the project site. To do this, go to the NYSDEC Stormwater Interactive Map on the DEC website at:

<https://gisservices.dec.ny.gov/gis/stormwater/>

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located the centroid of your project site, go to the bottom right hand corner of the map for the X, Y coordinates. Enter the coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting)

-7 3 7 5 0 8

Ex. -73.749

Y Coordinates (Northing)

4 1 4 0 0 3

Ex. 42.652

2. What is the nature of this construction project?

New Construction

Redevelopment with increase in impervious area

Redevelopment with no increase in impervious area

3. Select the predominant land use for both pre and post development conditions.  
**SELECT ONLY ONE CHOICE FOR EACH**

- Pre-Development Existing Land Use**
- FOREST
  - PASTURE/OPEN LAND
  - CULTIVATED LAND
  - SINGLE FAMILY HOME
  - SINGLE FAMILY SUBDIVISION
  - TOWN HOME RESIDENTIAL
  - MULTIFAMILY RESIDENTIAL
  - INSTITUTIONAL/SCHOOL
  - INDUSTRIAL
  - COMMERCIAL
  - ROAD/HIGHWAY
  - RECREATIONAL/SPORTS FIELD
  - BIKE PATH/TRAIL
  - LINEAR UTILITY
  - PARKING LOT
  - OTHER

W A T E R F A C I L I T Y

- Post-Development Future Land Use**
- SINGLE FAMILY HOME
  - SINGLE FAMILY SUBDIVISION Number of Lots
  - TOWN HOME RESIDENTIAL
  - MULTIFAMILY RESIDENTIAL
  - INSTITUTIONAL/SCHOOL
  - INDUSTRIAL
  - COMMERCIAL
  - MUNICIPAL
  - ROAD/HIGHWAY
  - RECREATIONAL/SPORTS FIELD
  - BIKE PATH/TRAIL
  - LINEAR UTILITY (water, sewer, gas, etc.)
  - PARKING LOT
  - CLEARING/GRADING ONLY
  - DEMOLITION, NO REDEVELOPMENT
  - WELL DRILLING ACTIVITY \*(Oil, Gas, etc.)
  - OTHER

W A T E R F A C I L I T Y

\*Note: for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area Within Disturbed Area
<input type="text" value="1"/> <input type="text" value="6"/>	<input type="text" value="0"/> <input type="text" value="6"/>	<input type="text" value="0"/> <input type="text" value="0"/>	<input type="text" value="0"/> <input type="text" value="1"/>

5. Do you plan to disturb more than 5 acres of soil at any one time?  Yes  No

6. Indicate the percentage of each Hydrologic Soil Group (HSG) at the site.

A	B	C	D
<input type="text" value=""/> <input type="text" value=""/> %	<input type="text" value="1"/> <input type="text" value="0"/> <input type="text" value="0"/> %	<input type="text" value=""/> <input type="text" value=""/> %	<input type="text" value=""/> <input type="text" value=""/> %

7. Is this a phased project?  Yes  No

8. Enter the planned start and end dates of the disturbance activities.

Start Date:   /   /     - End Date:   /   /



15. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)?  Yes  No  Unknown

16. What is the name of the municipality/entity that owns the separate storm sewer system?  
T O W N O F C A R M E L

17. Does any runoff from the site enter a sewer classified as a Combined Sewer?  Yes  No  Unknown

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law?  Yes  No

19. Is this property owned by a state authority, state agency, federal government or local government?  Yes  No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.)  Yes  No

21. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)?  Yes  No

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)?  Yes  No  
If No, skip questions 23 and 27-39.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the current NYS Stormwater Management Design Manual?  Yes  No







Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

<u>RR Techniques (Area Reduction)</u>	<u>Total Contributing Area (acres)</u>		<u>Total Contributing Impervious Area (acres)</u>	
<input type="checkbox"/> Conservation of Natural Areas (RR-1) ...	<input type="text"/>	<input type="text"/>	and/or	<input type="text"/>
<input type="checkbox"/> Sheetflow to Riparian Buffers/Filters Strips (RR-2) .....	<input type="text"/>	<input type="text"/>	and/or	<input type="text"/>
<input type="checkbox"/> Tree Planting/Tree Pit (RR-3) .....	<input type="text"/>	<input type="text"/>	and/or	<input type="text"/>
<input type="checkbox"/> Disconnection of Rooftop Runoff (RR-4) ..	<input type="text"/>	<input type="text"/>	and/or	<input type="text"/>
 <u>RR Techniques (Volume Reduction)</u>				
<input type="checkbox"/> Vegetated Swale (RR-5) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Rain Garden (RR-6) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Stormwater Planter (RR-7) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Rain Barrel/Cistern (RR-8) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Porous Pavement (RR-9) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Green Roof (RR-10) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
 <u>Standard SMPs with RRv Capacity</u>				
<input type="checkbox"/> Infiltration Trench (I-1) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Infiltration Basin (I-2) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Dry Well (I-3) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Underground Infiltration System (I-4) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Bioretention (F-5) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Dry Swale (O-1) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
 <u>Standard SMPs</u>				
<input type="checkbox"/> Micropool Extended Detention (P-1) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Wet Pond (P-2) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Wet Extended Detention (P-3) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Multiple Pond System (P-4) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Pocket Pond (P-5) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Surface Sand Filter (F-1) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Underground Sand Filter (F-2) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Perimeter Sand Filter (F-3) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Organic Filter (F-4) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Shallow Wetland (W-1) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Extended Detention Wetland (W-2) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Pond/Wetland System (W-3) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Pocket Wetland (W-4) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Wet Swale (O-2) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>



33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

**Note:** Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29.

WQv Provided  
 .  acre-feet

**Note:** For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRv provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).

.

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)?  Yes  No

If Yes, go to question 36.

If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable.

CPv Required  
 .  acre-feet

CPv Provided  
 .  acre-feet

36a. The need to provide channel protection has been waived because:

- Site discharges directly to tidal waters or a fifth order or larger stream.
- Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

Total Overbank Flood Control Criteria (Qp)

Pre-Development  
 .  CFS

Post-development  
 .  CFS

Total Extreme Flood Control Criteria (Qf)

Pre-Development  
 .  CFS

Post-development  
 .  CFS





Owner/Operator Certification

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

Print First Name

S T E V E N

MI

Print Last Name

G A R A B E D

Owner/Operator Signature

Date

/ /



Department of  
Environmental  
Conservation

NYS Department of Environmental Conservation  
Division of Water  
625 Broadway, 4th Floor  
Albany, New York 12233-3505

**MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance  
Form**  
for

**Construction Activities Seeking Authorization Under SPDES General Permit**  
\*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

**I. Project Owner/Operator Information**

1. Owner/Operator Name: SUEZ WATER NEW YORK, INC  
2. Contact Person: STEVEN GARABED  
3. Street Address: 163 OLD MILL ROAD  
4. City/State/Zip: WEST NYACK / NY / 10994

**II. Project Site Information**

5. Project/Site Name: SUEZ WATER NEW YORK, INC LONDON BRIDGE WELL 1 & 2  
6. Street Address: 39 BROOK STREET  
7. City/State/Zip: CARMEL / NY / 10541

**III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information**

8. SWPPP Reviewed by: RICHARD FRANZETTI, PE, LEED  
9. Title/Position: TOWN ENGINEER  
10. Date Final SWPPP Reviewed and Accepted:

**IV. Regulated MS4 Information**

11. Name of MS4: TOWN OF CARMEL  
12. MS4 SPDES Permit Identification Number: NYR20A 294  
13. Contact Person: RICHARD FRANZETTI, PE, LEED  
14. Street Address: 60 MCALPIN AVENUE  
15. City/State/Zip: MAHOPAC, NY 10541  
16. Telephone Number: 845-628-1500

**MS4 SWPPP Acceptance Form - continued**

**V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative**

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s).

Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name: **RICHARD FRANZETTI, PE, LEED**

Title/Position: **TOWN ENGINEER**

Signature:

Date:

**VI. Additional Information**

Appendix - F

**SUEZ WATER NEW YORK, INC  
LONDON BRIDGE WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**APPENDIX-F  
INFILTRATION TEST CERTIFICATION**

**BY**

**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
232 NORTH MAIN STREET  
NEW CITY, NY 10956  
TEL: (845) 634-4694  
FAX: (845) 634-5543  
E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)



# ATZL, NASHER & ZIGLER P.C.

ENGINEERS-SURVEYORS-PLANNERS

232 North Main Street, New City, NY 10956

Tel: (845) 634-4694

Fax: (845) 634-5543

Email: [rnasher@anzny.com](mailto:rnasher@anzny.com)

April 15, 2022

Town of Carmel  
60 McAlpin Avenue  
Mahopac, NY 10541

Attn: Richard Franzetti, PE, LEED  
Town Engineer

Re: Infiltration Test Certification  
Suez Water New York, INC  
London Bridge Well 1&2 (Job#4872)  
Town of Carmel  
Putnam County, New York

Dear Mr. Franzetti,

A soil infiltration test was performed on April 11, 2022. The infiltration test location map is attached to this report for your reference (Page F-5). The infiltration test failed due to the presence of groundwater.

The results are as follows.

### Test Hole #1

Infiltration test was proposed at a depth of 72-inches (6-feet):

<u>Soil Log</u>	<u>Soil Type</u>
0" to 12"	Topsoil
12" to 48"	Silt & Sand

Groundwater was found at 48-inches(4-feet) deep.

**Note:** An infiltration practice is not acceptable on the site per the infiltration test.

If you have further questions or concerns, feel free to contact our office. Thank you.

Very Truly Yours,



Ryan A. Nasher, P.E.

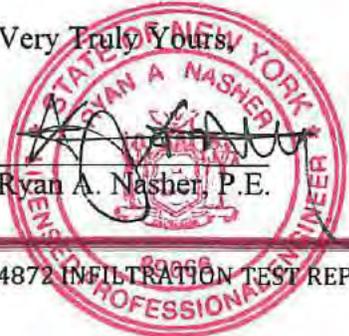




Figure 1: View of test hole #1, groundwater found 4'-0" below the existing top grade.



Figure 2: View of the soil profile (Test Hole#1).

Job no. 4872      4/11/02      PPTK

TH #1

0-12" Top soil

12-48" Sand-Silt-Clay S

48" Water

Failed

Figure 3: Field notes (Test Hole #1).



Drainage Maps

# **SUEZ WATER NEW YORK, INC LONDON BRIDGE WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

## **DRAINAGE MAPS**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

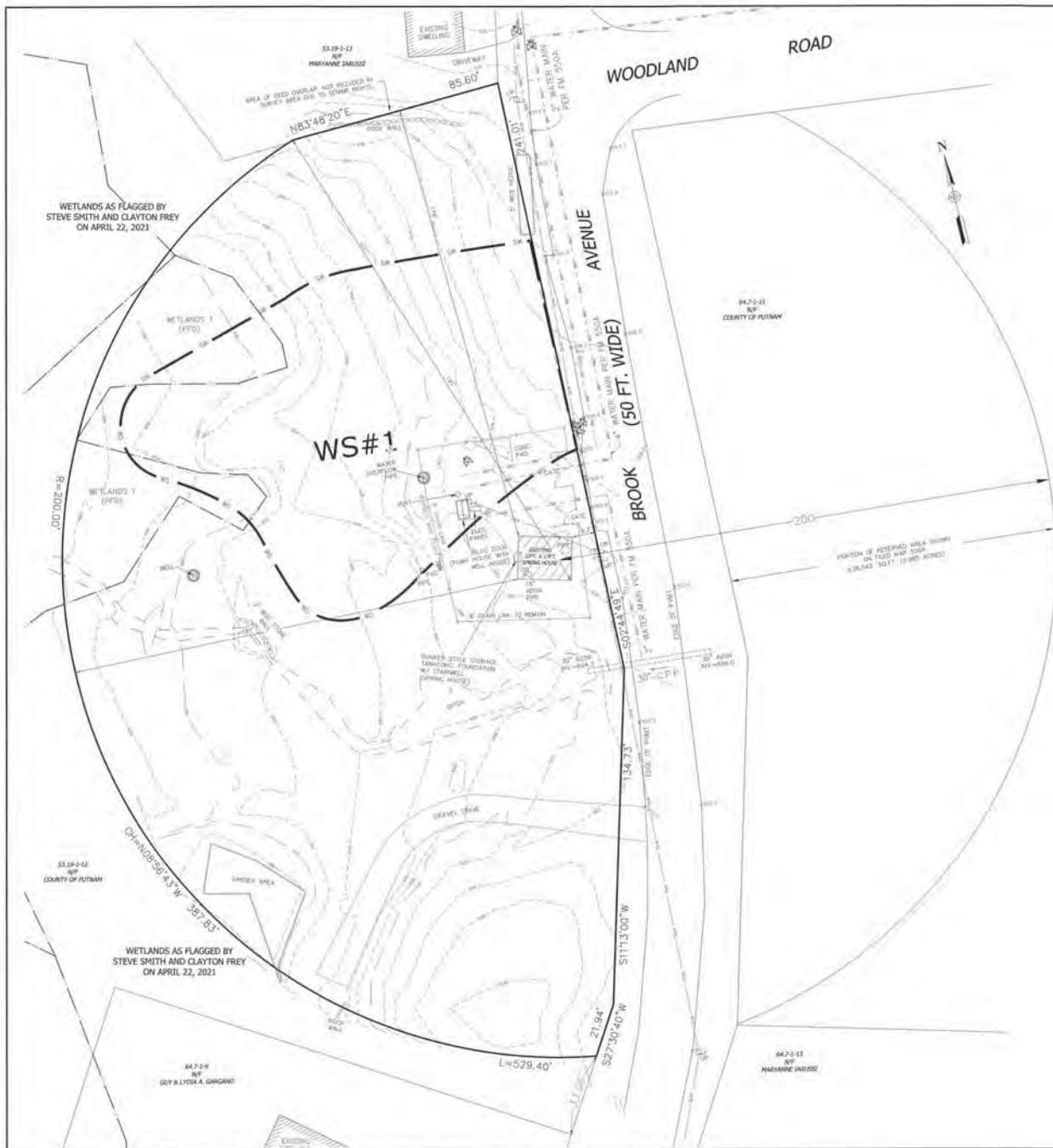
**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**





**LEGEND**

- EXISTING 2" DRAINAGE
- EXISTING 18" DRAINAGE
- EXISTING 30" DRAINAGE
- EXISTING 42" DRAINAGE
- EXISTING 60" DRAINAGE
- EXISTING 72" DRAINAGE
- EXISTING 90" DRAINAGE
- EXISTING 12" DRAINAGE
- EXISTING 15" DRAINAGE
- EXISTING 18" DRAINAGE
- EXISTING 24" DRAINAGE
- EXISTING 30" DRAINAGE
- EXISTING 36" DRAINAGE
- EXISTING 42" DRAINAGE
- EXISTING 48" DRAINAGE
- EXISTING 54" DRAINAGE
- EXISTING 60" DRAINAGE
- EXISTING 66" DRAINAGE
- EXISTING 72" DRAINAGE
- EXISTING 78" DRAINAGE
- EXISTING 84" DRAINAGE
- EXISTING 90" DRAINAGE
- EXISTING 96" DRAINAGE
- EXISTING 102" DRAINAGE
- EXISTING 108" DRAINAGE
- EXISTING 114" DRAINAGE
- EXISTING 120" DRAINAGE
- EXISTING 126" DRAINAGE
- EXISTING 132" DRAINAGE
- EXISTING 138" DRAINAGE
- EXISTING 144" DRAINAGE
- EXISTING 150" DRAINAGE
- EXISTING 156" DRAINAGE
- EXISTING 162" DRAINAGE
- EXISTING 168" DRAINAGE
- EXISTING 174" DRAINAGE
- EXISTING 180" DRAINAGE
- EXISTING 186" DRAINAGE
- EXISTING 192" DRAINAGE
- EXISTING 198" DRAINAGE
- EXISTING 204" DRAINAGE
- EXISTING 210" DRAINAGE
- EXISTING 216" DRAINAGE
- EXISTING 222" DRAINAGE
- EXISTING 228" DRAINAGE
- EXISTING 234" DRAINAGE
- EXISTING 240" DRAINAGE
- EXISTING 246" DRAINAGE
- EXISTING 252" DRAINAGE
- EXISTING 258" DRAINAGE
- EXISTING 264" DRAINAGE
- EXISTING 270" DRAINAGE
- EXISTING 276" DRAINAGE
- EXISTING 282" DRAINAGE
- EXISTING 288" DRAINAGE
- EXISTING 294" DRAINAGE
- EXISTING 300" DRAINAGE
- EXISTING 306" DRAINAGE
- EXISTING 312" DRAINAGE
- EXISTING 318" DRAINAGE
- EXISTING 324" DRAINAGE
- EXISTING 330" DRAINAGE
- EXISTING 336" DRAINAGE
- EXISTING 342" DRAINAGE
- EXISTING 348" DRAINAGE
- EXISTING 354" DRAINAGE
- EXISTING 360" DRAINAGE
- EXISTING 366" DRAINAGE
- EXISTING 372" DRAINAGE
- EXISTING 378" DRAINAGE
- EXISTING 384" DRAINAGE
- EXISTING 390" DRAINAGE
- EXISTING 396" DRAINAGE
- EXISTING 402" DRAINAGE
- EXISTING 408" DRAINAGE
- EXISTING 414" DRAINAGE
- EXISTING 420" DRAINAGE
- EXISTING 426" DRAINAGE
- EXISTING 432" DRAINAGE
- EXISTING 438" DRAINAGE
- EXISTING 444" DRAINAGE
- EXISTING 450" DRAINAGE
- EXISTING 456" DRAINAGE
- EXISTING 462" DRAINAGE
- EXISTING 468" DRAINAGE
- EXISTING 474" DRAINAGE
- EXISTING 480" DRAINAGE
- EXISTING 486" DRAINAGE
- EXISTING 492" DRAINAGE
- EXISTING 498" DRAINAGE
- EXISTING 504" DRAINAGE
- EXISTING 510" DRAINAGE
- EXISTING 516" DRAINAGE
- EXISTING 522" DRAINAGE
- EXISTING 528" DRAINAGE
- EXISTING 534" DRAINAGE
- EXISTING 540" DRAINAGE
- EXISTING 546" DRAINAGE
- EXISTING 552" DRAINAGE
- EXISTING 558" DRAINAGE
- EXISTING 564" DRAINAGE
- EXISTING 570" DRAINAGE
- EXISTING 576" DRAINAGE
- EXISTING 582" DRAINAGE
- EXISTING 588" DRAINAGE
- EXISTING 594" DRAINAGE
- EXISTING 600" DRAINAGE
- EXISTING 606" DRAINAGE
- EXISTING 612" DRAINAGE
- EXISTING 618" DRAINAGE
- EXISTING 624" DRAINAGE
- EXISTING 630" DRAINAGE
- EXISTING 636" DRAINAGE
- EXISTING 642" DRAINAGE
- EXISTING 648" DRAINAGE
- EXISTING 654" DRAINAGE
- EXISTING 660" DRAINAGE
- EXISTING 666" DRAINAGE
- EXISTING 672" DRAINAGE
- EXISTING 678" DRAINAGE
- EXISTING 684" DRAINAGE
- EXISTING 690" DRAINAGE
- EXISTING 696" DRAINAGE
- EXISTING 702" DRAINAGE
- EXISTING 708" DRAINAGE
- EXISTING 714" DRAINAGE
- EXISTING 720" DRAINAGE
- EXISTING 726" DRAINAGE
- EXISTING 732" DRAINAGE
- EXISTING 738" DRAINAGE
- EXISTING 744" DRAINAGE
- EXISTING 750" DRAINAGE
- EXISTING 756" DRAINAGE
- EXISTING 762" DRAINAGE
- EXISTING 768" DRAINAGE
- EXISTING 774" DRAINAGE
- EXISTING 780" DRAINAGE
- EXISTING 786" DRAINAGE
- EXISTING 792" DRAINAGE
- EXISTING 798" DRAINAGE
- EXISTING 804" DRAINAGE
- EXISTING 810" DRAINAGE
- EXISTING 816" DRAINAGE
- EXISTING 822" DRAINAGE
- EXISTING 828" DRAINAGE
- EXISTING 834" DRAINAGE
- EXISTING 840" DRAINAGE
- EXISTING 846" DRAINAGE
- EXISTING 852" DRAINAGE
- EXISTING 858" DRAINAGE
- EXISTING 864" DRAINAGE
- EXISTING 870" DRAINAGE
- EXISTING 876" DRAINAGE
- EXISTING 882" DRAINAGE
- EXISTING 888" DRAINAGE
- EXISTING 894" DRAINAGE
- EXISTING 900" DRAINAGE
- EXISTING 906" DRAINAGE
- EXISTING 912" DRAINAGE
- EXISTING 918" DRAINAGE
- EXISTING 924" DRAINAGE
- EXISTING 930" DRAINAGE
- EXISTING 936" DRAINAGE
- EXISTING 942" DRAINAGE
- EXISTING 948" DRAINAGE
- EXISTING 954" DRAINAGE
- EXISTING 960" DRAINAGE
- EXISTING 966" DRAINAGE
- EXISTING 972" DRAINAGE
- EXISTING 978" DRAINAGE
- EXISTING 984" DRAINAGE
- EXISTING 990" DRAINAGE
- EXISTING 996" DRAINAGE
- EXISTING 1002" DRAINAGE
- EXISTING 1008" DRAINAGE
- EXISTING 1014" DRAINAGE
- EXISTING 1020" DRAINAGE
- EXISTING 1026" DRAINAGE
- EXISTING 1032" DRAINAGE
- EXISTING 1038" DRAINAGE
- EXISTING 1044" DRAINAGE
- EXISTING 1050" DRAINAGE
- EXISTING 1056" DRAINAGE
- EXISTING 1062" DRAINAGE
- EXISTING 1068" DRAINAGE
- EXISTING 1074" DRAINAGE
- EXISTING 1080" DRAINAGE
- EXISTING 1086" DRAINAGE
- EXISTING 1092" DRAINAGE
- EXISTING 1098" DRAINAGE
- EXISTING 1104" DRAINAGE
- EXISTING 1110" DRAINAGE
- EXISTING 1116" DRAINAGE
- EXISTING 1122" DRAINAGE
- EXISTING 1128" DRAINAGE
- EXISTING 1134" DRAINAGE
- EXISTING 1140" DRAINAGE
- EXISTING 1146" DRAINAGE
- EXISTING 1152" DRAINAGE
- EXISTING 1158" DRAINAGE
- EXISTING 1164" DRAINAGE
- EXISTING 1170" DRAINAGE
- EXISTING 1176" DRAINAGE
- EXISTING 1182" DRAINAGE
- EXISTING 1188" DRAINAGE
- EXISTING 1194" DRAINAGE
- EXISTING 1200" DRAINAGE

REVISION	DATE	DESCRIPTION
8	01-03-22	DRAINAGE REVISION PER INFILTRATION TEST
5	04-07-22	PER PLANNING BOARD 01-13-22
4	03-01-22	BULK TABLE & NOTIF VARIANCES DRAFTED
3	02-08-22	PER 02-03-22 COB MEETING
2	01-25-22	NEW COB & COB SUBMISSION
1	11-15-21	PER PER ATZL 20-12-21

**ATZL, NASHER & ZIGLER P.C.**  
 ENGINEERS - SURVEYORS - PLANNERS

332 North Main Street  
 New City, New York 10956  
 TEL: (845) 634-6666  
 FAX: (845) 634-5543  
 E-mail: info@atzl.com  
 Web: www.atzl.com

**PROJECT:**  
 SUEZ WATER NEW YORK, INC.  
 LONDON BRIDGE WELL 1 & 2

**TOWN OF CARMEL**  
 PUTNAM COUNTY, NEW YORK

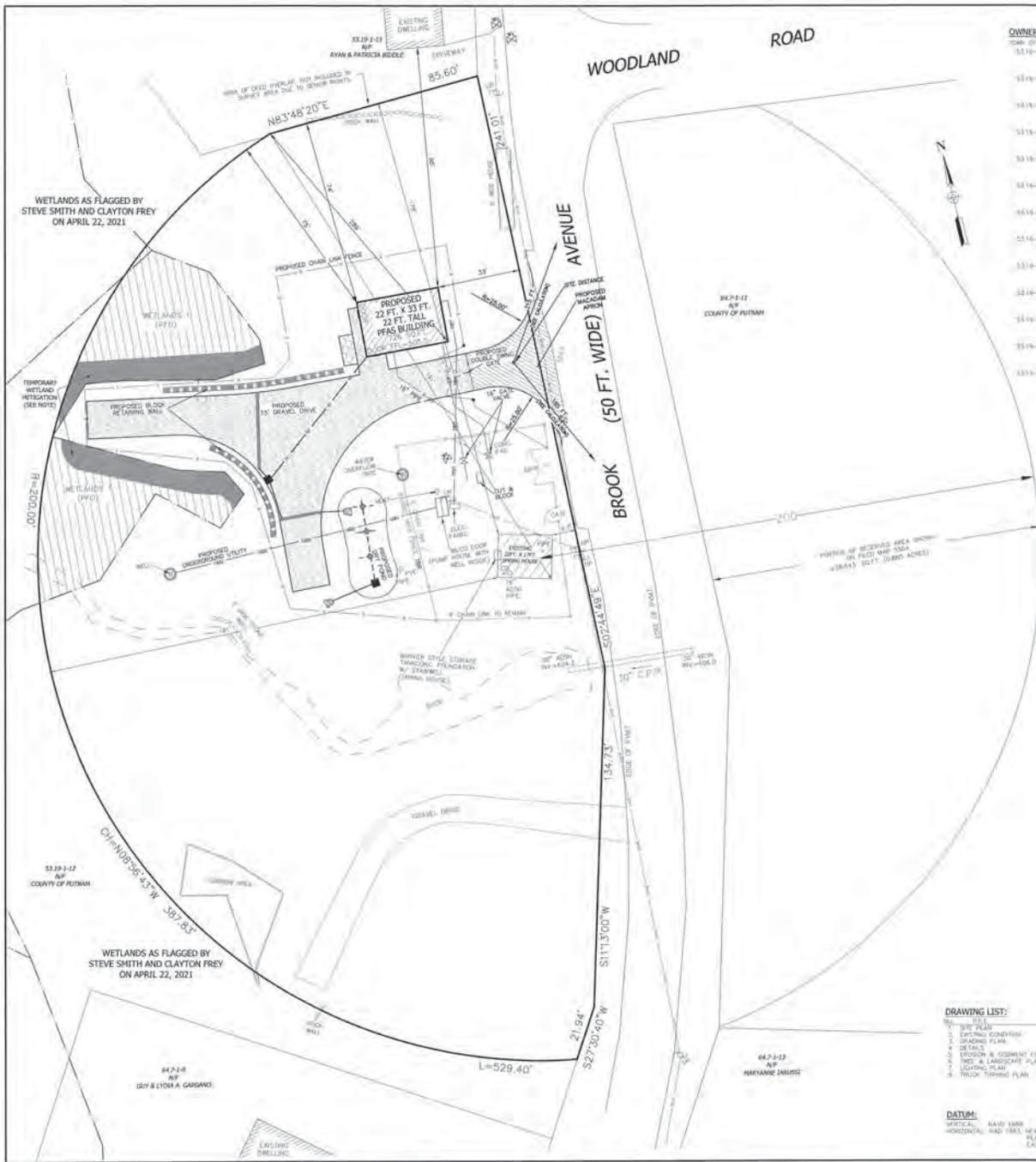
**FILE:**  
 DRAINAGE MAP  
 EXISTING CONDITION

DRAWN BY: <b>JD</b>	CHECKED BY: <b>JNA</b>
DATE: <b>JUL 20, 2021</b>	SCALE: <b>1" = 30' FT</b>
PROJECT NO: <b>4872</b>	DRAWING NO: <b>E-1</b>

THE PROFESSIONAL SEAL OF THE STATE OF NEW YORK ENGINEERS AND SURVEYORS IS HEREBY AFFIXED TO THIS DRAWING IN WITNESS WHEREOF, I HAVE HEREON SET MY HAND AND SEAL THIS 20th DAY OF JULY, 2021.

**RYAN A. NASHER, P.E.**  
 N.Y.S. PE-LIC. NO. 89066

**JOHN E. ATZL**  
 N.Y.S. ELS-LIC. NO. 30228



**OWNERS WITHIN 500 FEET**

- 5319-1-12 RYAN & PATRICK BEESE  
310 WOODLAND AVENUE  
CARMEL, NY 12021
- 5319-1-13 JAMES SULLIVAN  
310 WOODLAND AVENUE  
CARMEL, NY 12021
- 5319-1-14 ANDREW & JESSICA SULLIVAN  
310 WOODLAND AVENUE  
CARMEL, NY 12021
- 5319-1-15 CHRISTOPHER & SHARON L. HULLOWAY  
13 BROOK STREET  
CARMEL, NY 12021
- 5319-1-16 NICHOLAS P. JEROME & CARA A. STONE  
13 BROOK STREET  
CARMEL, NY 12021
- 5319-1-17 SEWARD J. FEENEY  
13 BROOK STREET  
CARMEL, NY 12021
- 5319-1-18 MICHAEL, ROSEMARIE & MARK FREHELI  
13 BROOK STREET  
CARMEL, NY 12021
- 5319-1-19 CHARLES & DONNA SOROKIN  
13 BROOK STREET  
CARMEL, NY 12021
- 5319-1-20 DEANAR H. & DIANE HANCOCK  
13 BROOK STREET  
CARMEL, NY 12021
- 5319-1-21 JOHN & KRISTINE SCALA  
13 BROOK STREET  
CARMEL, NY 12021
- 5319-1-22 ANDRE & SCOTT K. HENRI  
13 BROOK STREET  
CARMEL, NY 12021
- 5319-1-23 JIM & NANCY J. HOBBS  
13 BROOK STREET  
CARMEL, NY 12021
- 5319-1-24 JOHN A. & CORINA M. CAPELLI  
13 BROOK STREET  
CARMEL, NY 12021
- 5319-1-25 GUY & LORNA A. GARGANO  
24 BROOK STREET  
CARMEL, NY 12021
- 5319-1-26 GUY & LORNA A. GARGANO  
24 BROOK STREET  
CARMEL, NY 12021
- 5319-1-27 GUY & LORNA A. GARGANO  
24 BROOK STREET  
CARMEL, NY 12021
- 5319-1-28 PUTNAM COUNTY  
43 GLOVERA AVENUE  
CARMEL, NY 12021
- 5319-1-29 CAVA CO., LLC / JOSEPH ZAMMATI  
15 WADING CREEK  
ARDFLEET, NY 12022
- 5319-1-30 MARIANNE WILKES  
30 BROOK STREET  
CARMEL, NY 12021
- 5319-1-31 JESSICA STODOL  
113 BRUNNEN DRIVE  
CARMEL, NY 12021
- 5319-1-32 JERRY A. & DONNA M. CAPELLI  
113 BRUNNEN DRIVE  
CARMEL, NY 12021
- 5319-1-33 JESSICA STODOL  
113 BRUNNEN DRIVE  
CARMEL, NY 12021
- 5319-1-34 RICHARD & CECILIAE FRANK  
113 BRUNNEN DRIVE  
CARMEL, NY 12021
- 5319-1-35 SUSAN L. & NELL S. HULLERY  
113 BRUNNEN DRIVE  
CARMEL, NY 12021

**PLAN NOTES:**

- OWNER/APPLICANT: SUEZ WATER NEW YORK, INC. 112 OLD MILL ROAD WEST HAVEN, CT 06497
- BOUNDARY AND SITE INFORMATION TAKEN FROM A SURVEY PREPARED BY ASL NUMBER 830 ZIGLER P/C
- THE SUBJECT PROPERTY IS NOT LOCATED WITHIN A 100-YEAR FLOOD ZONE AS SHOWN ON FLOOD INSURANCE RATE MAP NUMBER 2207001001E DATED 3/1/2012
- TOPOGRAPHY SURVEYING SHOWN AND GENERALLY AT APPROPRIATE WITH HAINES SURVEY
- SITE ADDRESS: 30 BROOK STREET CARMEL, NY 12021
- EXISTING USE: COMMERCIAL WATER SUPPLY
- ALL UTILITIES ARE UNDER COVER
- PROPOSED LANDSCAPING IS TO CONFORM TO STATE OF TOWN CODES
- REGULATORY VARIANCES NOTED IN BASE REQUIREMENT TABLE WERE GRANTED ON FEBRUARY 24, 2022



**DISTRICT REGULATIONS:**

ZONE	MINIMUM LOT AREA	MINIMUM LOT WIDTH	MINIMUM STREET FRONTAGE (ON MAIN ROAD)	MINIMUM STREET FRONTAGE (ON SIDE-OR-SIDE)	MINIMUM FRONT YARD	MINIMUM SIDE YARD	MINIMUM REAR YARD	MINIMUM SIDEWALK WIDTH	MINIMUM LOT COVERAGE	MINIMUM LANDSCAPE BUFFER
R-1	10,000 SQ FT	30 FT	100 FT	50 FT	10 FT	5 FT	5 FT	10 FT	25%	10 FT
R-2	15,000 SQ FT	35 FT	120 FT	60 FT	12 FT	6 FT	6 FT	12 FT	30%	12 FT
R-3	20,000 SQ FT	40 FT	140 FT	70 FT	14 FT	7 FT	7 FT	14 FT	35%	14 FT
R-4	25,000 SQ FT	45 FT	160 FT	80 FT	16 FT	8 FT	8 FT	16 FT	40%	16 FT
R-5	30,000 SQ FT	50 FT	180 FT	90 FT	18 FT	9 FT	9 FT	18 FT	45%	18 FT
R-6	35,000 SQ FT	55 FT	200 FT	100 FT	20 FT	10 FT	10 FT	20 FT	50%	20 FT
R-7	40,000 SQ FT	60 FT	220 FT	110 FT	22 FT	11 FT	11 FT	22 FT	55%	22 FT
R-8	45,000 SQ FT	65 FT	240 FT	120 FT	24 FT	12 FT	12 FT	24 FT	60%	24 FT
R-9	50,000 SQ FT	70 FT	260 FT	130 FT	26 FT	13 FT	13 FT	26 FT	65%	26 FT
R-10	55,000 SQ FT	75 FT	280 FT	140 FT	28 FT	14 FT	14 FT	28 FT	70%	28 FT
R-11	60,000 SQ FT	80 FT	300 FT	150 FT	30 FT	15 FT	15 FT	30 FT	75%	30 FT
R-12	65,000 SQ FT	85 FT	320 FT	160 FT	32 FT	16 FT	16 FT	32 FT	80%	32 FT
R-13	70,000 SQ FT	90 FT	340 FT	170 FT	34 FT	17 FT	17 FT	34 FT	85%	34 FT
R-14	75,000 SQ FT	95 FT	360 FT	180 FT	36 FT	18 FT	18 FT	36 FT	90%	36 FT
R-15	80,000 SQ FT	100 FT	380 FT	190 FT	38 FT	19 FT	19 FT	38 FT	95%	38 FT
R-16	85,000 SQ FT	105 FT	400 FT	200 FT	40 FT	20 FT	20 FT	40 FT	100%	40 FT

**NET LOT AREA CALCULATIONS:**

GRACE LOT AREA = 45,000 SQ FT  
 LESS SIDE WETLANDS = 6,500 SQ FT  
 NET LOT AREA = 38,500 SQ FT

**FLOOD HAZARD:**

THE SUBJECT LOT IS DESIGNATED BY FEMA'S DETERMINED TO BE WITHIN THE FLOOD AREAS. CHANGES TO FLOODPLAIN AS DETERMINED BY FEMA FOR FIRM MAP 2207001001E, WITH AN EFFECTIVE DATE OF MARCH 24, 2012.

**NOTE:**

UTILITY LOCATIONS ARE BASED ON ABOVE-GROUND INSPECTIONS & UTILITY MARKING AT TIME OF FIELD SURVEY. THE TYPE AND LOCATION OF UTILITIES ARE NOT GUARANTEED TO BE ACCURATE OR ALL-INCLUSIVE.

**SUBDIVISION REFERENCES:**

MAP OF LONDON BRIDGE ADJACENT SECTION 27, PLAT IN PUTNAM COUNTY (LOW'S OFFICE) ON NOVEMBER 3, 1984, AS MAP NO. 1052A.  
 MAP OF BROOK AVENUE PLATFORM AS SHOWN ON MAP OF LONDON BRIDGE ADJACENT PLAT IN THE PUTNAM COUNTY (LOW'S OFFICE) ON MARCH 24, 1983, AS MAP NO. 998.

**DRAWING LIST:**

NO.	TITLE	DATE	REVISION
1	SITE PLAN	JULY 20, 2022	REVISED
2	EXISTING CONTOUR	JULY 20, 2022	MAY 01, 2022
3	CHANGING PLAN	JULY 20, 2022	MAY 01, 2022
4	DETAILS	JULY 20, 2022	MAY 01, 2022
5	PROPOSED CONSTRUCTION PLAN (PFAAS)	JULY 20, 2022	MAY 01, 2022
6	PROPOSED LANDSCAPE PLAN	JULY 20, 2022	MAY 01, 2022
7	UTILITY PLAN	JULY 20, 2022	MAY 01, 2022
8	TRUCK TURNING PLAN	JULY 20, 2022	MAY 01, 2022

**DATUM:**

SPECIAL: NAD 83  
 HORIZONTAL: NAD 83  
 VERTICAL: NAD 83  
 NEW YORK STATE PLANNING COORDINATE SYSTEM  
 EAST ZONE



**VICINITY MAP**  
SCALE: 1"=300'

**LEGEND**

- EXISTING 6" DRAINAGE
- EXISTING 12" DRAINAGE
- EXISTING 18" DRAINAGE
- EXISTING 24" DRAINAGE
- EXISTING 30" DRAINAGE
- EXISTING 36" DRAINAGE
- EXISTING 42" DRAINAGE
- EXISTING 48" DRAINAGE
- EXISTING 54" DRAINAGE
- EXISTING 60" DRAINAGE
- EXISTING 66" DRAINAGE
- EXISTING 72" DRAINAGE
- EXISTING 78" DRAINAGE
- EXISTING 84" DRAINAGE
- EXISTING 90" DRAINAGE
- EXISTING 96" DRAINAGE
- EXISTING 102" DRAINAGE
- EXISTING 108" DRAINAGE
- EXISTING 114" DRAINAGE
- EXISTING 120" DRAINAGE
- EXISTING 126" DRAINAGE
- EXISTING 132" DRAINAGE
- EXISTING 138" DRAINAGE
- EXISTING 144" DRAINAGE
- EXISTING 150" DRAINAGE
- EXISTING 156" DRAINAGE
- EXISTING 162" DRAINAGE
- EXISTING 168" DRAINAGE
- EXISTING 174" DRAINAGE
- EXISTING 180" DRAINAGE
- EXISTING 186" DRAINAGE
- EXISTING 192" DRAINAGE
- EXISTING 198" DRAINAGE
- EXISTING 204" DRAINAGE
- EXISTING 210" DRAINAGE
- EXISTING 216" DRAINAGE
- EXISTING 222" DRAINAGE
- EXISTING 228" DRAINAGE
- EXISTING 234" DRAINAGE
- EXISTING 240" DRAINAGE
- EXISTING 246" DRAINAGE
- EXISTING 252" DRAINAGE
- EXISTING 258" DRAINAGE
- EXISTING 264" DRAINAGE
- EXISTING 270" DRAINAGE
- EXISTING 276" DRAINAGE
- EXISTING 282" DRAINAGE
- EXISTING 288" DRAINAGE
- EXISTING 294" DRAINAGE
- EXISTING 300" DRAINAGE
- EXISTING 306" DRAINAGE
- EXISTING 312" DRAINAGE
- EXISTING 318" DRAINAGE
- EXISTING 324" DRAINAGE
- EXISTING 330" DRAINAGE
- EXISTING 336" DRAINAGE
- EXISTING 342" DRAINAGE
- EXISTING 348" DRAINAGE
- EXISTING 354" DRAINAGE
- EXISTING 360" DRAINAGE
- EXISTING 366" DRAINAGE
- EXISTING 372" DRAINAGE
- EXISTING 378" DRAINAGE
- EXISTING 384" DRAINAGE
- EXISTING 390" DRAINAGE
- EXISTING 396" DRAINAGE
- EXISTING 402" DRAINAGE
- EXISTING 408" DRAINAGE
- EXISTING 414" DRAINAGE
- EXISTING 420" DRAINAGE
- EXISTING 426" DRAINAGE
- EXISTING 432" DRAINAGE
- EXISTING 438" DRAINAGE
- EXISTING 444" DRAINAGE
- EXISTING 450" DRAINAGE
- EXISTING 456" DRAINAGE
- EXISTING 462" DRAINAGE
- EXISTING 468" DRAINAGE
- EXISTING 474" DRAINAGE
- EXISTING 480" DRAINAGE
- EXISTING 486" DRAINAGE
- EXISTING 492" DRAINAGE
- EXISTING 498" DRAINAGE
- EXISTING 504" DRAINAGE
- EXISTING 510" DRAINAGE
- EXISTING 516" DRAINAGE
- EXISTING 522" DRAINAGE
- EXISTING 528" DRAINAGE
- EXISTING 534" DRAINAGE
- EXISTING 540" DRAINAGE
- EXISTING 546" DRAINAGE
- EXISTING 552" DRAINAGE
- EXISTING 558" DRAINAGE
- EXISTING 564" DRAINAGE
- EXISTING 570" DRAINAGE
- EXISTING 576" DRAINAGE
- EXISTING 582" DRAINAGE
- EXISTING 588" DRAINAGE
- EXISTING 594" DRAINAGE
- EXISTING 600" DRAINAGE
- EXISTING 606" DRAINAGE
- EXISTING 612" DRAINAGE
- EXISTING 618" DRAINAGE
- EXISTING 624" DRAINAGE
- EXISTING 630" DRAINAGE
- EXISTING 636" DRAINAGE
- EXISTING 642" DRAINAGE
- EXISTING 648" DRAINAGE
- EXISTING 654" DRAINAGE
- EXISTING 660" DRAINAGE
- EXISTING 666" DRAINAGE
- EXISTING 672" DRAINAGE
- EXISTING 678" DRAINAGE
- EXISTING 684" DRAINAGE
- EXISTING 690" DRAINAGE
- EXISTING 696" DRAINAGE
- EXISTING 702" DRAINAGE
- EXISTING 708" DRAINAGE
- EXISTING 714" DRAINAGE
- EXISTING 720" DRAINAGE
- EXISTING 726" DRAINAGE
- EXISTING 732" DRAINAGE
- EXISTING 738" DRAINAGE
- EXISTING 744" DRAINAGE
- EXISTING 750" DRAINAGE
- EXISTING 756" DRAINAGE
- EXISTING 762" DRAINAGE
- EXISTING 768" DRAINAGE
- EXISTING 774" DRAINAGE
- EXISTING 780" DRAINAGE
- EXISTING 786" DRAINAGE
- EXISTING 792" DRAINAGE
- EXISTING 798" DRAINAGE
- EXISTING 804" DRAINAGE
- EXISTING 810" DRAINAGE
- EXISTING 816" DRAINAGE
- EXISTING 822" DRAINAGE
- EXISTING 828" DRAINAGE
- EXISTING 834" DRAINAGE
- EXISTING 840" DRAINAGE
- EXISTING 846" DRAINAGE
- EXISTING 852" DRAINAGE
- EXISTING 858" DRAINAGE
- EXISTING 864" DRAINAGE
- EXISTING 870" DRAINAGE
- EXISTING 876" DRAINAGE
- EXISTING 882" DRAINAGE
- EXISTING 888" DRAINAGE
- EXISTING 894" DRAINAGE
- EXISTING 900" DRAINAGE
- EXISTING 906" DRAINAGE
- EXISTING 912" DRAINAGE
- EXISTING 918" DRAINAGE
- EXISTING 924" DRAINAGE
- EXISTING 930" DRAINAGE
- EXISTING 936" DRAINAGE
- EXISTING 942" DRAINAGE
- EXISTING 948" DRAINAGE
- EXISTING 954" DRAINAGE
- EXISTING 960" DRAINAGE
- EXISTING 966" DRAINAGE
- EXISTING 972" DRAINAGE
- EXISTING 978" DRAINAGE
- EXISTING 984" DRAINAGE
- EXISTING 990" DRAINAGE
- EXISTING 996" DRAINAGE
- EXISTING 1002" DRAINAGE
- EXISTING 1008" DRAINAGE
- EXISTING 1014" DRAINAGE
- EXISTING 1020" DRAINAGE
- EXISTING 1026" DRAINAGE
- EXISTING 1032" DRAINAGE
- EXISTING 1038" DRAINAGE
- EXISTING 1044" DRAINAGE
- EXISTING 1050" DRAINAGE
- EXISTING 1056" DRAINAGE
- EXISTING 1062" DRAINAGE
- EXISTING 1068" DRAINAGE
- EXISTING 1074" DRAINAGE
- EXISTING 1080" DRAINAGE
- EXISTING 1086" DRAINAGE
- EXISTING 1092" DRAINAGE
- EXISTING 1098" DRAINAGE
- EXISTING 1104" DRAINAGE
- EXISTING 1110" DRAINAGE
- EXISTING 1116" DRAINAGE
- EXISTING 1122" DRAINAGE
- EXISTING 1128" DRAINAGE
- EXISTING 1134" DRAINAGE
- EXISTING 1140" DRAINAGE
- EXISTING 1146" DRAINAGE
- EXISTING 1152" DRAINAGE
- EXISTING 1158" DRAINAGE
- EXISTING 1164" DRAINAGE
- EXISTING 1170" DRAINAGE
- EXISTING 1176" DRAINAGE
- EXISTING 1182" DRAINAGE
- EXISTING 1188" DRAINAGE
- EXISTING 1194" DRAINAGE
- EXISTING 1200" DRAINAGE
- EXISTING 1206" DRAINAGE
- EXISTING 1212" DRAINAGE
- EXISTING 1218" DRAINAGE
- EXISTING 1224" DRAINAGE
- EXISTING 1230" DRAINAGE
- EXISTING 1236" DRAINAGE
- EXISTING 1242" DRAINAGE
- EXISTING 1248" DRAINAGE
- EXISTING 1254" DRAINAGE
- EXISTING 1260" DRAINAGE
- EXISTING 1266" DRAINAGE
- EXISTING 1272" DRAINAGE
- EXISTING 1278" DRAINAGE
- EXISTING 1284" DRAINAGE
- EXISTING 1290" DRAINAGE
- EXISTING 1296" DRAINAGE
- EXISTING 1302" DRAINAGE
- EXISTING 1308" DRAINAGE
- EXISTING 1314" DRAINAGE
- EXISTING 1320" DRAINAGE
- EXISTING 1326" DRAINAGE
- EXISTING 1332" DRAINAGE
- EXISTING 1338" DRAINAGE
- EXISTING 1344" DRAINAGE
- EXISTING 1350" DRAINAGE
- EXISTING 1356" DRAINAGE
- EXISTING 1362" DRAINAGE
- EXISTING 1368" DRAINAGE
- EXISTING 1374" DRAINAGE
- EXISTING 1380" DRAINAGE
- EXISTING 1386" DRAINAGE
- EXISTING 1392" DRAINAGE
- EXISTING 1398" DRAINAGE
- EXISTING 1404" DRAINAGE
- EXISTING 1410" DRAINAGE
- EXISTING 1416" DRAINAGE
- EXISTING 1422" DRAINAGE
- EXISTING 1428" DRAINAGE
- EXISTING 1434" DRAINAGE
- EXISTING 1440" DRAINAGE
- EXISTING 1446" DRAINAGE
- EXISTING 1452" DRAINAGE
- EXISTING 1458" DRAINAGE
- EXISTING 1464" DRAINAGE
- EXISTING 1470" DRAINAGE
- EXISTING 1476" DRAINAGE
- EXISTING 1482" DRAINAGE
- EXISTING 1488" DRAINAGE
- EXISTING 1494" DRAINAGE
- EXISTING 1500" DRAINAGE
- EXISTING 1506" DRAINAGE
- EXISTING 1512" DRAINAGE
- EXISTING 1518" DRAINAGE
- EXISTING 1524" DRAINAGE
- EXISTING 1530" DRAINAGE
- EXISTING 1536" DRAINAGE
- EXISTING 1542" DRAINAGE
- EXISTING 1548" DRAINAGE
- EXISTING 1554" DRAINAGE
- EXISTING 1560" DRAINAGE
- EXISTING 1566" DRAINAGE
- EXISTING 1572" DRAINAGE
- EXISTING 1578" DRAINAGE
- EXISTING 1584" DRAINAGE
- EXISTING 1590" DRAINAGE
- EXISTING 1596" DRAINAGE
- EXISTING 1602" DRAINAGE
- EXISTING 1608" DRAINAGE
- EXISTING 1614" DRAINAGE
- EXISTING 1620" DRAINAGE
- EXISTING 1626" DRAINAGE
- EXISTING 1632" DRAINAGE
- EXISTING 1638" DRAINAGE
- EXISTING 1644" DRAINAGE
- EXISTING 1650" DRAINAGE
- EXISTING 1656" DRAINAGE
- EXISTING 1662" DRAINAGE
- EXISTING 1668" DRAINAGE
- EXISTING 1674" DRAINAGE
- EXISTING 1680" DRAINAGE
- EXISTING 1686" DRAINAGE
- EXISTING 1692" DRAINAGE
- EXISTING 1698" DRAINAGE
- EXISTING 1704" DRAINAGE
- EXISTING 1710" DRAINAGE
- EXISTING 1716" DRAINAGE
- EXISTING 1722" DRAINAGE
- EXISTING 1728" DRAINAGE
- EXISTING 1734" DRAINAGE
- EXISTING 1740" DRAINAGE
- EXISTING 1746" DRAINAGE
- EXISTING 1752" DRAINAGE
- EXISTING 1758" DRAINAGE
- EXISTING 1764" DRAINAGE
- EXISTING 1770" DRAINAGE
- EXISTING 1776" DRAINAGE
- EXISTING 1782" DRAINAGE
- EXISTING 1788" DRAINAGE
- EXISTING 1794" DRAINAGE
- EXISTING 1800" DRAINAGE
- EXISTING 1806" DRAINAGE
- EXISTING 1812" DRAINAGE
- EXISTING 1818" DRAINAGE
- EXISTING 1824" DRAINAGE
- EXISTING 1830" DRAINAGE
- EXISTING 1836" DRAINAGE
- EXISTING 1842" DRAINAGE
- EXISTING 1848" DRAINAGE
- EXISTING 1854" DRAINAGE
- EXISTING 1860" DRAINAGE
- EXISTING 1866" DRAINAGE
- EXISTING 1872" DRAINAGE
- EXISTING 1878" DRAINAGE
- EXISTING 1884" DRAINAGE
- EXISTING 1890" DRAINAGE
- EXISTING 1896" DRAINAGE
- EXISTING 1902" DRAINAGE
- EXISTING 1908" DRAINAGE
- EXISTING 1914" DRAINAGE
- EXISTING 1920" DRAINAGE
- EXISTING 1926" DRAINAGE
- EXISTING 1932" DRAINAGE
- EXISTING 1938" DRAINAGE
- EXISTING 1944" DRAINAGE
- EXISTING 1950" DRAINAGE
- EXISTING 1956" DRAINAGE
- EXISTING 1962" DRAINAGE
- EXISTING 1968" DRAINAGE
- EXISTING 1974" DRAINAGE
- EXISTING 1980" DRAINAGE
- EXISTING 1986" DRAINAGE
- EXISTING 1992" DRAINAGE
- EXISTING 1998" DRAINAGE
- EXISTING 2004" DRAINAGE
- EXISTING 2010" DRAINAGE
- EXISTING 2016" DRAINAGE
- EXISTING 2022" DRAINAGE
- EXISTING 2028" DRAINAGE
- EXISTING 2034" DRAINAGE
- EXISTING 2040" DRAINAGE
- EXISTING 2046" DRAINAGE
- EXISTING 2052" DRAINAGE
- EXISTING 2058" DRAINAGE
- EXISTING 2064" DRAINAGE
- EXISTING 2070" DRAINAGE
- EXISTING 2076" DRAINAGE
- EXISTING 2082" DRAINAGE
- EXISTING 2088" DRAINAGE
- EXISTING 2094" DRAINAGE
- EXISTING 2100" DRAINAGE
- EXISTING 2106" DRAINAGE
- EXISTING 2112" DRAINAGE
- EXISTING 2118" DRAINAGE
- EXISTING 2124" DRAINAGE
- EXISTING 2130" DRAINAGE
- EXISTING 2136" DRAINAGE
- EXISTING 2142" DRAINAGE
- EXISTING 2148" DRAINAGE
- EXISTING 2154" DRAINAGE
- EXISTING 2160" DRAINAGE
- EXISTING 2166" DRAINAGE
- EXISTING 2172" DRAINAGE
- EXISTING 2178" DRAINAGE
- EXISTING 2184" DRAINAGE
- EXISTING 2190" DRAINAGE
- EXISTING 2196" DRAINAGE
- EXISTING 2202" DRAINAGE
- EXISTING 2208" DRAINAGE
- EXISTING 2214" DRAINAGE
- EXISTING 2220" DRAINAGE
- EXISTING 2226" DRAINAGE
- EXISTING 2232" DRAINAGE
- EXISTING 2238" DRAINAGE
- EXISTING 2244" DRAINAGE
- EXISTING 2250" DRAINAGE
- EXISTING 2256" DRAINAGE
- EXISTING 2262" DRAINAGE
- EXISTING 2268" DRAINAGE
- EXISTING 2274" DRAINAGE
- EXISTING 2280" DRAINAGE
- EXISTING 2286" DRAINAGE
- EXISTING 2292" DRAINAGE
- EXISTING 2298" DRAINAGE
- EXISTING 2304" DRAINAGE
- EXISTING 2310" DRAINAGE
- EXISTING 2316" DRAINAGE
- EXISTING 2322" DRAINAGE
- EXISTING 2328" DRAINAGE
- EXISTING 2334" DRAINAGE
- EXISTING 2340" DRAINAGE
- EXISTING 2346" DRAINAGE
- EXISTING 2352" DRAINAGE
- EXISTING 2358" DRAINAGE
- EXISTING 2364" DRAINAGE
- EXISTING 2370" DRAINAGE
- EXIST

















# ATZL, NASHER & ZIGLER P.C.

ENGINEERS - SURVEYORS - PLANNERS

Web: [www.anzny.com](http://www.anzny.com)

May 11, 2022

Planning Board  
Town of Carmel  
60 McAlpin Avenue  
Mahopac, NY 10541  
Attn: Craig Paepfer, Chairman

Re: Suez Water Geymer Wells  
70 Geymer Drive  
Tax Lot 75.13-1-6

Dear Chairman Paepfer and Honorable Board Members,

The following is our response to Richard J. Franzetti, P.E., letter dated March 8, 2022.

## General Comments

1. Comment: The following referrals are required:
  - a. New York State Department of Environmental Conservation (NYSDEC).
  - b. Putnam County Department of Health (PCDOH).
  - c. The Town of Carmel Environmental Conservation Board (ECB).
  - d. Mahopac Falls Fire Department.

The applicant has previously noted these referrals.

*Response: No response required.*

2. Comment: The following permits are required.
  - a. NYSDEC - for stormwater and wetlands.
  - b. PCDOH for well and treatment system.
  - c. ECB for wetlands.

The applicant has previously noted these permit requirements.

*Response: No response required.*

3. Comment: The area of disturbance for the work as provided is ~6,672 sf. The threshold criteria of disturbances for the NYSDEC stormwater regulation are between 5,000 square feet and one (1) acre and over one (1) acre. The project will require coverage under the NYSEC SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-20-001) and the development of Stormwater Pollution Prevention Plan (SWPPP) that has erosion and sediment controls.

The applicant has provided a SWPPP which is currently under review.

*Response: The area of disturbance as noted on the site plan is 0.635 acres. An updated SWPPP is being provided with this submission for review by the town engineer.*

4. Comment: The full environmental assessment form identified the following that the project is located in 100-year flood plain. A Town of Carmel Flood Plain permit is required.

The applicant has previously noted the need for this permit.

*Response: The Floodplain permit has been submitted to the Town of Carmel.*

5. Comment: All re-grading required to accomplish the intended development should be provided. It is unclear from the drawings provide the extent of cut and fill proposed for the site.

The applicant has provided a grading plan. The amount of fill, if any, being brought to the site should be provided.

All fill brought to the site must be certified per NYSDEC regulations and manifests/certification of the fill material being delivered should be provided. A note should be added to the drawing.

*Response: Sheet 5 of the site plan contains the note regarding certification of fill as well as a Cut & Fill analysis.*

6. Traffic and Vehicle Movement Plans should be provided which provide the following:

a. Comment: All turning radii for the site should be graphically provided. This includes the turning radii into the site entrance.

*Response: Turning radii have been provided on the Sheet 8- Truck Turning Plan.*

b. Comment: The applicant provided sight distances at the driveway location.

All calculations should be provided

*Response: Sight distance calculations are referenced on Sheet 8- Truck Turning Plan.*

c. Comment: Slopes at the entrance way need to be defined. It is suggested that slopes of less than 6% be used for the first 20 feet of entry and that slopes of no greater than 8% be used entering the site. Please refer to AASHTO guidelines for commercial properties.

A driveway profile should be provided.

*Response: Driveway profile provided on Sheet 3 – Detail & Overall Grading Plan. Entrance conforms with AASHTO requirements.*

7. Comment: Should any public improvements be deemed necessary as part of the development of the tract, a Performance Bond and associated Engineering Fee must eventually be established for the work. The applicant will need to develop a quantity take off for bonding purposes.

The applicant has noted this requirement. The applicant should note that a Performance Bond and associated Engineering fee is minimally required for the stormwater management practices, erosion and sediment control drainage features, landscaping etc. installed on the site. Please see §156-61 J and K of the Town Code for additional information.

*Response: No response required.*

## Detailed Comments

8. Comment: A landscaping plan should be provided to show the location and extent of all plantings. Applicant has indicated that a tree plan has been provided. No tree planting plan was provided, only a tree removal plan.

*Response: A landscape waiver has been respectfully requested for this site. Thus, the tree plan shows existing trees and the trees proposed to be removed.*

9. Comment: The rain garden locations have been provided. The applicant should note that then must meet the criteria as defined by the NYSDEC. This includes providing sufficient depth to groundwater.

Applicant indicated that the calculation will be provide prior to construction. Minimally these calculations will need to be provided/approved as part of the ECB approval and prior to seeking coverage under the NYSDEC general stormwater permit.

*Response: The drainage plans have been updated to provide a proposed dry pond (see sheet 1). Depth to groundwater has been showcased in the dry pond detail provided on sheet 5.*

10. Comment: It is unclear if additional electrical utilities are being installed. Applicant has indicated that they are investigating an electrical service upgrade. The installation of the upgraded electrical service should be buried.

*Response: The pole transformer is being upgraded and then there will be an underground conduit running to both the new PFAS treatment building as well as the wells.*

The following comments are generic and are only applicable if being installed by the applicant, notes should be added to the drawing as needed:

11. Comment: Gate valves shall be AWWA non-rising stem type, as manufactured by Mueller Company, Model A-2360-23, or approved equal, conforming to the latest AWWA Standard for Gate Valves - 3" through 48" - for Water and Other Liquids, AWWA Designation C-509.

*Response: No response required.*

12. Comment: Sizes up to and including 12" shall be 250 psi working pressure. The valve body and bonnet shall be ductile iron. All interior and exterior metal surfaces shall be coated with a two-part thermosetting epoxy complying with AWWA C550.

*Response: No response required.*

13. Comment: Valves shall have dual "O" ring seals, inside screw, resilient wedge seats in accordance with AWWA Designation C-550 and shall be constructed so as to provide unobstructed full port clearance when fully open and immediate complete closure when closed. The ends of the valves shall be mechanical joint.

*Response: No response required.*

14. Comment: All valves shall be arranged to open in counterclockwise direction unless otherwise specifically indicated and operating nuts shall be 2" square.

*Response: SUEZ valves are arranged to open in a clockwise direction.*

15. Comment: Valves shall be tested to a pressure of not less than two times the working pressure.

*Response: No response required.*

16. Comment: All hydrants shall be six inches in size with six-inch mechanical joint inlet connection and shall be equal to the Mueller Centurion A-421, with one (1) 4 ½" pumper nozzle and two (2) 2 ½" hose nozzles.

*Response: SUEZ's standard is the Sigelock Systems Spartan 300. Hydrants will be green in color to signify they are only for company use.*

17. Comment: Water Service Saddles shall be equal to those manufactured by Mueller, Model 7 ½" x 1" SS Series Stainless Steel Saddle, Double Stud.

*Response: No response required.*

18. Comment: Corporation stops shall be equal to those as manufactured by Mueller Company, Model B-25000Series, NRS and of the size required. Such corporation stops shall meet the requirements of AWWA Specification No. C800.

*Response: No response required.*

19. Comment: Curb valves (stops) shall be equal to those as manufactured by Mueller Company, Model H-15214 and shall conform to AWWA Specification No. C800.

*Response: No response required.*

20. Comment: Curb boxes shall be equal to those as manufactured by Mueller Company and similar to Mueller extension type with arch pattern base model H-10314 all extension rods shall be stainless steel.

*Response: No response required.*

21. Comment: All fire hydrants shall be the approved AWWA type fire hydrants in conformance with the American Water Works Association Standard for Fire Hydrants for Ordinary Water Works Service, AWWA Designation C502, and shall have a 5-1/4" valve opening, a 6" mechanical joint inlet complete with an auxiliary gate valve (close coupled), a 6" mechanical joint shoe, and all appurtenances.

*Response: No response required.*

22. Comment: Fire hydrants shall be rated for a working pressure of 250 Psi. Fire hydrants shall be sized for a 4'-6" bury.

*Response: No response required.*

Comment: Applicant has noted these comments. The only exception is comment 8 where SUEZ standard is to open right.

*Response: Applicant takes exception to comment 14 and 16. Please see the responses to these comments above.*

The following is our response to Patrick Cleary, AICP, CEP, PP, LEED AP, letter January 13, 2022:

1. Comment: The ZBA ruled that the Applicant is a public water company, and as such, the proposed use is a permitted principal use.

*Response: No response required.*

2. Comment: The Applicant will seek NYSDEC and USACOE permits for the wetland buffer encroachment.

*Response: No response required.*

3. Comment: The Applicant has confirmed that the proposed building is located outside the designated floodway, however it is within the 100-year floodplain. The first-floor elevation of the new building will be located 2' above the base flood elevation, which conforms to the floodplain requirements.

*Response: No response required.*

4. Comment: The Applicant has clarified that they would be prevented to bring in fill to elevate the access driveway above the base flood elevation. So, in certain storm events the driveway would flood (as it does today). Maintenance personnel would utilize trucks with high ground clearance to access the building when feasible. If unable to physically access the building, the facility is designed to be monitored remotely.

*Response: No response required.*

5. Comment: The Applicant has clarified that the PFAS treatment facility will be a permanent and on-going operation.

*Response: No response required.*

6. Comment: No new fencing is proposed.

*Response: No response required.*

7. Comment: In response to the question of whether landscaped screening is necessary, the Applicant has taken the position that due to the distance from the facility to the nearest neighbor (145') and the presence of intervening existing vegetation, additional landscaping is unnecessary. Photographs have been submitted to support this position.

*Response: No response required.*

8. Comment: The Applicant has clarified that the new pumps will be located within the wells and are between 168' and 252' below grade. No noise impacts are expected, and the project will comply with the sound level standards for residential districts established in Chapter 105 of the Town Code.

*Response: No response required.*

9. Comment: The Applicant has clarified that all chemical storage tanks will have secondary containment structures designed to accommodate the entire volume of chemical storage. Chemical levels are constantly monitored remotely.

*Response: No response required.*

10. Comment: The Applicant has clarified that site visits the site once per day. The carbon in the system will need to be replaced every one or two years.

*Response: No response required.*

11. Comment: Lighting details have been provided.

*Response: No response required.*

12. Comment: The Applicant has located a vendor that can provide the prefabricated building to meet the project timeframe. The building will be a prefabricated metal building with steel framing, a standing seam roof system and a cast in place concrete foundation. The color of the building

will be "hemlock green." The roof trim, gutters and downspouts will be "cool harvest." A 4' split face masonry wall is proposed around the building, to be "Tribeca tan." Revised project renderings have been provided.

A color sample of "hemlock green", "cool harvest" and Tribeca tan" should be provided.

*Response: Color samples were shown to the Planning Board members and consultants at the February 10<sup>th</sup>, 2022 meeting. Wall guard sample will also be shown to the Planning Board members at the next meeting.*

The following is our response to Michael G. Carnazza, Director of Code Enforcement for the Town of Carmel, letter dated January 13, 2022:

1. Comment: The applicants propose to add a PFAS Treatment Building to the water treatment facility off Geymer Dr. in Mahopac.

*Response: No response required.*

2. Comment: A Use Variance is not required for the Private Utility. The ZBA interpreted that Private and Public Utilities are permitted in the Town of Carmel.

*Response: No response required.*

3. Comment: Provide a detail of the buffer. Code§ 156-37C requires "A landscaped buffer area at least 10 feet in width and six feet in height shall be provided and maintained along all property lines to satisfactorily screen public utility substations and any other buildings from surrounding uses of land.

This building is set back quite far from the roadway. A buffer is already in place. In my opinion, no additional trees are needed.

*Response: No response required.*

4. Comment: Referral to the ECB, Fire Department and Putnam County Dept. of Health are required by code.

*Response: No response required.*

5. Comment: Lot area variance is required from the ZBA 120,000 s.f. req'd, 26,030 provided, 93,970 s.f. variance.

*Response: The ZBA granted the required variances on February 24<sup>th</sup>, 2022. These have been noted on the site plan.*

The following is our response to Richard J. Franzetti, P.E., letter dated December 30, 2021.

#### General Comments

1. Comment: The following referrals are required:
- e. New York State Department of Environmental Conservation (NYSDEC).
  - f. Putnam County Department of Health (PCDOH).
  - g. The Town of Carmel Environmental Conservation Board (ECB).
  - h. Mahopac Falls Fire Department.

The applicant has noted these referrals

*Response: No response required.*

2. Comment: The following permits are required.
- d. NYSDEC - for stormwater and wetlands.
  - e. PCDOH for well and treatment system.
  - f. ECB for wetlands.

The applicant has noted these permit requirements

*Response: No response required.*

3. Comment: The area of disturbance for the work as provided is ~6,672 sf. The threshold criteria of disturbances for the NYSDEC stormwater regulation are between 5,000 square feet and one (1) acre and over one (1) acre. The

project will require coverage under the NYSEC SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-20-001) and the development of Stormwater Pollution Prevention Plan (SWPPP) that has erosion and sediment controls.

The applicant has provided a SWPPP which is currently under review.

*Response: The area of disturbance as noted on the site plan is 0.635 acres. An updated SWPPP is being provided with this submission for review by the town engineer.*

4. Comment: The full environmental assessment form identified the following that the project is located in 100-year flood plain. A Town of Carmel Flood Plain permit is required.

The applicant has noted the need for this permit.

*Response: The Floodplain permit has been submitted to the Town of Carmel.*

5. Comment: All re-grading required to accomplish the intended development should be provided. It is unclear from the drawings provide the extent of cut and fill proposed for the site.

The applicant has provided a grading plan. The amount of fill, if any, being brought to the site should be provided.

All fill brought to the site must be certified per NYSDEC regulations and manifests/certification of the fill material being delivered should be provided. A note should be added to the drawing.

*Response: Sheet 5 of the site plan contains the note regarding certification of fill as well as a Cut & Fill analysis.*

6. Traffic and Vehicle Movement Plans should be provided which provide the following:

- a. Comment: All turning radii for the site should be graphically provided. This includes the turning radii into the site entrance.

*Response: Turning radii have been provided on the Sheet 8- Truck Turning*

*Plan.*

b. Comment: The applicant provided sight distances at the driveway location.

All calculations should be provided

*Response: Sight distance calculations are referenced on Sheet 8- Truck Turning Plan.*

c. Comment: Slopes at the entrance way need to be defined. It is suggested that slopes of less than 6% be used for the first 20 feet of entry and that slopes of no greater than 8% be used entering the site. Please refer to AASHTO guidelines for commercial properties.

A driveway profile should be provided.

*Response: Driveway profile provided on Sheet 3 – Detail & Overall Grading Plan. Entrance conforms with AASHTO requirements.*

7. Comment: Should any public improvements be deemed necessary as part of the development of the tract, a Performance Bond and associated Engineering Fee must eventually be established for the work. The applicant will need to develop a quantity take off for bonding purposes. The applicant has noted this requirement. The applicant should note that a Performance Bond and associated Engineering fee is minimally required for the stormwater management practices, erosion and sediment control drainage features, landscaping etc. installed on the site. Please see §156-61 J and K of the Town Code for additional information.

*Response: No response required.*

#### Detailed Comments

8. Comment: A landscaping plan should be provided to show the location and extent of all plantings. Applicant has indicated that a tree plan has been provided. No tree planting plan was provided, only a tree removal plan.

*Response: A landscape waiver has been respectfully requested for this site. Thus, the tree plan shows existing trees and the trees proposed to be removed.*

9. Comment: The rain garden locations have been provided. The applicant should note that then must meet the criteria as defined by the NYSDEC. This includes providing sufficient depth to groundwater.

Applicant indicated that the calculation will be provided prior to construction. Minimally these calculations will need to be provided/approved as part of the ECB approval and prior to seeking coverage under the NYSDEC general stormwater permit.

*Response: The drainage plans have been updated to provide a proposed dry pond (see sheet 1). Depth to groundwater has been showcased in the dry pond detail provided on sheet 5.*

10. Comment: It is unclear if additional electrical utilities are being installed. Applicant has indicated that they are investigating an electrical service upgrade. The installation of the upgraded electrical service should be buried.

*Response: The pole transformer is being upgraded and then there will be an underground conduit running to both the new PFAS treatment building as well as the wells.*

The following comments are generic and are only applicable if being installed by the applicant, notes should be added to the drawing as needed:

11. Comment: Gate valves shall be AWWA non-rising stem type, as manufactured by Mueller Company, Model A-2360-23, or approved equal, conforming to the latest AWWA Standard for Gate Valves - 3" through 48" - for Water and Other Liquids, AWWA Designation C-509.

*Response: No response required.*

12. Comment: Sizes up to and including 12" shall be 250 psi working pressure. The valve body and bonnet shall be ductile iron. All interior and exterior metal surfaces shall be coated with a two-part thermosetting epoxy complying with AWWA C550.

*Response: No response required.*

13. Comment: Valves shall have dual "O" ring seals, inside screw, resilient wedge seats in accordance with AWWA Designation C-550 and shall be constructed so as to provide unobstructed full port clearance when fully open and immediate complete closure when closed. The ends of the valves shall be mechanical joint.

*Response: No response required.*

14. Comment: All valves shall be arranged to open in counterclockwise direction unless otherwise specifically indicated and operating nuts shall be 2" square.

*Response: SUEZ valves are arranged to open in a clockwise direction.*

15. Comment: Valves shall be tested to a pressure of not less than two times the working pressure.

*Response: No response required.*

16. Comment: All hydrants shall be six inches in size with six-inch mechanical joint inlet connection and shall be equal to the Mueller Centurion A-421, with one (1) 4 ½" pumper nozzle and two (2) 2 ½ " hose nozzles.

*Response: SUEZ's standard is the Sigelock Systems Spartan 300. Hydrants will be green in color to signify they are only for company use.*

17. Comment: Water Service Saddles shall be equal to those manufactured by Mueller, Model 7 ½" x 1" SS Series Stainless Steel Saddle, Double Stud.

*Response: No response required.*

18. Comment: Corporation stops shall be equal to those as manufactured by Mueller Company, Model B-25000Series, NRS and of the size required. Such corporation stops shall meet the requirements of AWWA Specification No. C800.

*Response: No response required.*

19. Comment: Curb valves (stops) shall be equal to those as manufactured by Mueller Company, Model H-15214 and shall conform to AWWA Specification No. C800.

*Response: No response required.*

20. Comment: Curb boxes shall be equal to those as manufactured by Mueller Company and similar to Mueller extension type with arch pattern base model H-10314 all extension rods shall be stainless steel.

*Response: No response required.*

21. Comment: All fire hydrants shall be the approved AWWA type fire hydrants in conformance with the American Water Works Association Standard for Fire Hydrants for Ordinary Water Works Service, AWWA Designation C502, and shall have a 5-1/4" valve opening, a 6" mechanical joint inlet complete with an auxiliary gate valve (close coupled), a 6" mechanical joint shoe, and all appurtenances.

*Response: No response required.*

22. Comment: Fire hydrants shall be rated for a working pressure of 250 Psi. Fire hydrants shall be sized for a 4'-6" bury.

*Response: No response required.*

Comment: Applicant has noted these comments. The only exception is comment 8 where SUEZ standard is to open right.

*Response: Applicant takes exception to comment 14 and 16. Please see the responses to these comments above.*



## PFAS COMPLIANCE AT GEYMER WELL



SITE VIEW



STREETVIEW

This SWPPP was prepared in accordance with SPDES Permit No. GP-0-20-001 and must be kept on the job site and available for use of contractors and sub-contractors. Certifications by applicant/developer and by the contractors/subcontractors are included. A copy of the Notice of Intent (NOI), which must be filed at least 5 days prior to the commencement of any work along with the MS4 SWPPP acceptance form, is included herein. Notice of Termination (NOT) must be filed when all stormwater management facilities are in place and the site has been stabilized with specified vegetation. Sample inspection forms are included. Operation and maintenance plan is attached and included both temporary and permanent facilities maintenance. This SWPPP, together with all required plans, completed inspection forms and log of activities including any mitigation of items noted on inspection forms must be kept on the job site and available for inspection by all regulatory authorities.

## FULL STORMWATER POLLUTION PREVENTION PLAN (SWPPP) REPORT

Prepared For:

**SUEZ WATER NEW YORK, INC**  
**GEYMER WELL 1 & 2**  
Town of Carmel, Putnam County, New York

Prepared By:



**ATZL, NASHER & ZIGLER P.C.**  
Engineers – Surveyors – Planners  
232 North Main Street  
New City, New York 10956  
Tel. (845) 634-4694 • Fax (845) 634-5543

This plan has been prepared to comply with the provisions of the SPDES general permit no. GP-0-20-001, issued by the New York State Department of Environmental Conservation for storm water discharges from construction site activities.

I certify under penalty of law that this document and all attachments were prepared and revised under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment of knowing violations.

Revision 1: May 11, 2022  
Date: November 22, 2021  
Job No. 4873

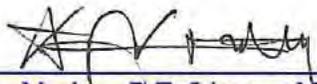
  
Ryan A. Nasher, P.E. License No.: 89066  
New York State Professional Engineer

Table of Contents

**TABLE OF CONTENTS**

**SECTION 1: Stormwater Pollution Prevention Plan Report Complying  
GP 0-20-001**

- 1.0 INTRODUCTION
  - 1.1 NOTICE OF INTENT
  - 1.2 SWPPP GOALS AND OBJECTIVS
- 2.0 SITE DESCRIPTION
  - 2.1 Project Name & Location:
  - 2.2 Owner/Operator Name & Address:
  - 2.3 General Contractor\*:
  - 2.4 Description:
  - 2.5 Impervious Cover:
  - 2.6 Site Area:
  - 2.7 Location Map
  - 2.8 Sequence of Major Activities:
- 3.0 CONTROLS
  - 3.1 EROSION AND SEDIMENT CONTROLS STABILIZATION PRACTICES
    - 3.1.1 Temporary Stabilization:
    - 3.1.2 Permanent Stabilization:
  - 3.2 STRUCTURAL PRACTICES
  - 3.3 STORMWATER MANAGEMENT WATER QUALITY
    - 3.3.1 Name of Receiving Waters:
  - 3.4 PEAK FLOW ATTENUATION
  - 3.5 RUNOFF CONVEYANCE SYSTEMS
  - 3.6 OTHER CONTROLS
    - 3.6.1 Waste Materials:
    - 3.6.2 Hazardous waste:
    - 3.6.3 Sanitary Waste:
    - 3.6.4 Offsite Vehicle Tracking:
  - 3.7 TIMING OF CONTROL MEASURES
  - 3.8 CERTIFICATION OF COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS
- 4.0 MAINTENANCE & INSPECTION PROCEDURES
  - 4.1 SEDIMENT & EROSION CONTROL INSPECTION AND MAINTENANCE PRACTICES
  - 4.2 SUMMARY OF SWPPP REQUIRED DOCUMENT FILINGS
- 5.0 NON-STORM WATER DISCHARGES

**SUEZ WATER NEW YORK, INC GEYMER WELL 1 & 2**  
**Full Stormwater Pollution Prevention Plan Report**

- 5.1 NON-STORMWATER DISCHARGES
- 6.0 INVENTORY FOR POLLUTION PREVENTION PLAN
  - 6.1 MATERIAL SUBSTANCES
- 7.0 SPILL CONTROL & PREVENTION
  - 7.1 MATERIAL MANAGEMENT PRACTICES
    - 7.1.1 Good Housekeeping:
    - 7.1.2 Hazardous Products:
  - 7.2 PRODUCT SPECIFIC PRACTICES
    - 7.2.1 Petroleum Products:
    - 7.2.2 Fertilizers:
    - 7.2.3 Paints:
    - 7.2.4 Concrete Trucks:
  - 7.3 SPILL CONTROL PRACTICES
- 8.0 SUPPORTING PLANS & REPORTS
- 9.0 POLLUTION PREVENTION PLAN CERTIFICATION
  - 9.1 OWNER/OPERATOR CERTIFICATION
- 10.0 CERTIFICATION BY CONTRACTORS
  - 10.1 PRIME CONTRACTOR CERTIFICATION
  - 10.2 SUB-CONTRACTOR CERTIFICATION

Figures

Figure 1: Site Location Map (source: maps.google.com)

Appendices

- Appendix A – SWPPP CONSTRUCTION SITE LOG BOOK
- Appendix B – STORMWATER POND CONSTRUCTION INSPECTION CHECKLIST FORM
- Appendix C – SPILL CONTROL & PREVENTION LOG
- Appendix D – STORMWATER MANAGEMENT FACILITIES MAINTENANCE AGREEMENT
- Appendix E – CONSTRUCTION PLAN DRAWINGS IN (11" X 17")

**SECTION 2: Stormwater System Design Report Complying NYS  
Stormwater Management Design Manual, January 2015.**

**SUEZ WATER NEW YORK, INC GEYMER WELL 1 & 2  
Full Stormwater Pollution Prevention Plan Report**

**Hydraulic & Hydrological Study:**

- Revision Overview ..... 2-1
- Introduction ..... 2-1
- Site Location ..... 2-1
- Hydrological Soil Group ..... 2-2
- Existing Watershed ..... 2-2
- Developed Watersheds ..... 2-2
- Drainage Study ..... 2-2
- Mitigation ..... 2-2

**Summary Table:**

- Summary Flow Table at P.O.I.#1 ..... 2-4

**Location Maps:**

- Street Map ..... 2-5
- Soil Map ..... 2-6

**Drainage Calculation**

- Existing Condition ..... 2-7
- Developed Condition ..... 2-7

**Stormwater Management Practice Design Calculations**

- Water Quantity Calculation ..... 2-8
- Stormwater Sizing Calculation ..... 2-9

**HydroCAD Model for Existing and Proposed Conditions 1, 10, & 100 Year Storms**

- Drainage Schematic ..... 2-11
- 1-Year Storm Model ..... 2-12
- 10-Year Storm Model ..... 2-18
- 100-Year Storm Model ..... 2-24

**SECTION 3: SPDES General Permit Per GP 0-20-001**

- 3.1 SPDES ACKNOWLEDGEMENT LETTER ISSUED BY NYSDEC
- 3.2 FILED OUT NOTICE OF INTENT (N.O.I.)
- 3.3 MS4 SWPPP ACCEPTANCE FORM

**APPENDIX-F:**

- Infiltration Test Certification ..... F-1

**MAPS:**

- Drainage Map Existing Condition ..... E-1
- Drainage Map Proposed Condition ..... D-1

Section 1: 0 & M

# **SUEZ WATER NEW YORK, INC GEYMER WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

## **SECTION 1: OPERATION INSPECTION AND MAINTENANCE PLAN REPORT**

**BY**

**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
232 NORTH MAIN STREET  
NEW CITY, NY 10956  
TEL: (845) 634-4694  
FAX: (845) 634-5543  
E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)

## **1.0 INTRODUCTION**

---

### **1.1 Notice of Intent:**

Section 402 of the Clean Water Act requires permits for stormwater discharge from construction activities, which disturb one or more acres of land to obtain a permit. To implement this law, the New York State Department of Environmental Conservation (NYSDEC) issued the General Permit GP-0-20-001 for Stormwater Discharges from Construction Activities. The Notice of Intent (NOI) is the means to obtain coverage under this permit.

### **1.2 SWPPP Goals and Objective:**

The goal of the Stormwater Pollution Prevention Plan (SWPPP) is to control runoff of pollutants from the project site during and after construction activities by complying with the NY State Pollutant Discharge Elimination System (SPDES) Stormwater Permit for construction activities and local rules and regulations. The SWPPP will implement the following practices:

- Reduction or elimination of erosion and sediment loading to waterbodies during construction;
- Control of the impact of stormwater runoff on the water quality of the receiving waters;
- Control of the increased volume and peak rate of runoff during and after construction; and
- Maintenance of stormwater controls during and after completion of construction.

The SWPPP will incorporate the proper selection, sizing and siting of the Stormwater Management Practices (SMPs) to protect water resources from stormwater impacts. The design of the proposed SMPs were determined using current engineering methodologies to provide appropriate sizing criteria to avoid overburdening stormwater conveyance structures. Erosion and Sediment Control (ESC), Water Quantity Control, and Water Quality Controls are inter-related components of the SWPPP.

The SWPPP is intended to be a "living" document. The document should be revised and updated by a qualified professional whenever site conditions dictate. Any proposed revisions shall undergo review by the owner or his designated representative prior to incorporation in the SWPPP and implementation at the site. Any proposed modifications shall be in accordance with the New York State Department of Environmental Conservation's technical standards.

## **2.0 SITE DESCRIPTION**

---

### **2.1 Project Name & Location:**

Suez Water New York, INC Geymer Well 1 & 2  
Town of Carmel  
Putnam County, New York  
Town of Ramapo Tax Map: Section 75.13, Block 1, Lot 6

### **2.2 Owner/Operator Name & Address:**

Suez Water New York, Inc.  
Attention: Steven Garabed  
162 Old Mill Road  
West Nyack, NY 10994  
Email: [steven.garabed@suez.com](mailto:steven.garabed@suez.com)

### **2.3 General Contractor\*:**

\_\_\_\_\_  
(Company Name)

\_\_\_\_\_  
(Street Address)

\_\_\_\_\_  
(City, State, Zip Code)

\_\_\_\_\_  
(Phone Number)

\*note – General Contractor shall be identified prior to commencement of work.

### **2.4 Description:**

The project is located at 70 Geymer Drive in the Town of Carmel, Putnam County, New York. The site has an area of about 3.982 acres. The existing site consists of woods, grass, and impervious area from a gravel road. The developed site includes the construction of a building and an increase to the existing gravel road.

**SUEZ WATER NEW YORK, INC GEYMER WELL 1 & 2  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

Soil Name	Soil Map Symbol	Hydrological Soil Group	Reference Page No.*
Fluvaquents-Udifluvents complex, frequently flooded	Ff	D	34

\* Soil Survey of Putnam County, New York, United States Department of Agriculture Soil Conservation Service, October 1994.

Soil disturbing activities will include clearing and grubbing; installation of a stabilized construction entrance; grading (cuts & fills); excavation for the installation of drainage pipes, SMPs, sanitary sewer connections, water main connections, building foundations, stormwater management facilities and the preparation for final planting and seeding.

**2.5 Impervious Cover:**

Impervious cover within the planned disturbance will be increased from 0.054 acres in the existing condition to 0.101 acres in the proposed condition.

**2.6 Site Area:**

The site is approximately 3.982 acres and about 0.635 acres will be disturbed by the proposed construction activities.

**SUEZ WATER NEW YORK, INC GEYMER WELL 1 & 2  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

**2.7 Location Map:**



**2.8 Sequence of Major Activities:**

Phasing and schedule of construction is as follows (several phases will overlap):

Phase 1: Clearing and grubbing of designated areas

Phase 2: Land grading according to the approved site development plan

Phase 3: Building construction

Phase 4: Paving and utilities construction

Phase 5: Final Grading, landscaping

The general order of activities will be as follows:

1. Schedule a pre-construction meeting.
2. Locate natural resources and the limit of disturbance per approved plans.
3. Install perimeter erosion and sediment control practices (silt fences).
4. Install construction entrances and temporary staging.
5. Limit grading for installation of E&SC practices.
6. Dispose clearing and grading materials as construction progresses.
7. Stockpile top soil and stabilize.
8. Perform rough grading/cut & fill and stabilize inactive areas.
9. Install utilities and drainage structures.
10. Proceed with partial road construction where applicable.
11. Construct foundation and building structure as per plan.
12. Apply soil restoration practices as described in the plan.
13. Perform final stabilization, i.e. top soil and landscaping.
14. Remove sediment accumulations and complete permanent post construction SMPs per the approved plan.
15. Remove E&SC practices and apply for a Notice of Termination (N.O.T.).

### **3.0 CONTROLS**

---

#### **3.1 Erosion and Sediment Controls Stabilization Practices:**

##### **3.1.1 Temporary Stabilization:**

Topsoil, stockpiles, and soils that are exposed and left bare for a period of 14 days which are not being graded, not under active construction for 14 days or more, or not scheduled for permanent seeding within 14 days will be stabilized with temporary seed and mulch. All grass seed mixtures and application rates shall comply with Sediment and Erosion Control Plan.

Areas of the site, which are to be paved; will be temporarily stabilized by applying stone sub-base until bituminous pavement can be applied.

##### **3.1.2 Permanent Stabilization:**

Disturbed portions of the site where construction activities permanently cease shall be stabilized with permanent seed no later than 14 days after the last construction activity.

#### **3.2 Structural Practices:**

Proposed measures will include silt fences, storm inlet protection, and stabilized construction entrance.

#### **3.3 Stormwater Management Water Quality:**

Stormwater runoff generated by the rooftop will be directed towards the proposed underground infiltration system through a combination of downspouts and pipes.

The stormwater management system has been designed to comply with the most recent NYSDEC design manual requirements. The dry pond system is designed to treat the first flush water quality volume of required impervious area, according to NYSDEC redevelopment rules.

The property owner shall be responsible for the long-term operation, maintenance and inspection of the proposed stormwater management facilities and provide maintenance records to the Town of Carmel.

**SUEZ WATER NEW YORK, INC GEYMER WELL 1 & 2**  
**Full Stormwater Pollution Prevention Plan (SWPPP) Report**

**3.3.1 Name of Receiving Waters:**

The site drains towards a NYSDEC wetland. The site is located in one of the watersheds identified in Appendix C of GP-0-20-001.

**3.4 Peak Flow Attenuation:**

In order to provide the zero net increase of peak runoff, a Dry Pond System has been proposed.

**3.5 Runoff Conveyance Systems:**

The stormwater pipes are design to convey the 10-year peak flow discharge.

**3.6 Other Controls:**

**3.6.1 Waste Materials:**

All waste materials will be collected and stored in securely lidded metal dumpsters rented from \_\_\_\_\_, a solid waste management company located in Putnam County (name of carting company to be identified 30 days prior to commencement of work). The dumpsters will meet Town of Carmel, Putnam County, and New York State solid waste management regulations. All trash and construction debris from the site will be deposited in the dumpsters. The dumpsters will be emptied as necessary, and the trash will be hauled off site to \_\_\_\_\_ (destination to be identified 30 days prior to commencement of work). No construction waste materials will be buried on site. All personnel will be instructed regarding the correct procedure for waste disposal. Notices stating these practices will be posted in the office trailer and \_\_\_\_\_, the Job Supervisor, individual who is responsible for managing the day to day site operations, will be responsible for seeing that these procedures are followed (Job Supervisor shall be identified 30 days prior to commencement of work).

**3.6.2 Hazardous waste:**

All hazardous waste materials will be disposed of in the manner specified by local or state regulation or by the manufacturer. Site personnel will be instructed in these practices and \_\_\_\_\_, Job Supervisor, individual who is responsible for managing the day to day site operations, will be responsible for seeing that these procedures are followed (Job Supervisor shall be identified 30 days prior to commencement of work).

**3.6.3 Sanitary Waste:**

**SUEZ WATER NEW YORK, INC GEYMER WELL 1 & 2  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

A licensed sanitary waste management contractor (sanitary waste management contractor to be identified 30 days prior to commencement of work) will collect all sanitary waste from the portable units.

**3.6.4 Offsite Vehicle Tracking:**

A stabilized construction entrance and gravel pad will be provided to wash or spray-clean trucks over before leaving the site in order to prevent track-out of dirt, mud, debris and dust. In addition, trucks will be covered with a tarp and at least 6 inches of freeboard clearance will be maintained to keep excessive dust from escaping the truck during hauling operations.

**3.7 Timing of Control Measures:**

As indicated in the Sequence of Major Activities, the stabilized construction entrance and other sediment and erosion control activities will be constructed prior to earthwork activities on any part of the site. Any soil areas that are exposed and left bare for a period of 14 days which are not being graded, not under active construction for 14 days or more, or not scheduled for permanent seeding within 14 days will be treated with temporary seed and mulch. Once construction activity ceases permanently in an area, that area will be stabilized with permanent seed and mulch. After the entire site is stabilized, accumulated sediments will be removed from the sediment and erosion control structures and the controls will be removed.

**3.8 Certification of Compliance With Federal, State And Local Regulations:**

The stormwater pollution prevention plan reflects New York State Department of Environmental Conservation requirements for storm water management and erosion and sediment control, as established in Article 17, Titles 7, 8 and Article 70 of the Environmental Conservation Law. To ensure compliance, this plan was prepared in accordance with guidelines issued with the SPDES General Permit for Storm Water Discharges from Construction Activities that are Classified as "Associated with Construction Activity", published by the NYSDEC.

## **4.0 MAINTENANCE & INSPECTION PROCEDURES**

### **4.1 Sediment & Erosion Control Inspection And Maintenance Practices:**

The following are inspection and maintenance practices that will be used in coordination with the SWPPP Construction Log Book prepared for this project, the template which is included in Appendix A, to maintain sediment and erosion controls:

- The Operator shall have a qualified professional conduct an assessment of the site prior to the commencement of construction and certify in this inspection report that the appropriate erosion and sediment controls described in the SWPPP, as required by the SPDES General Permit for Stormwater Discharges, have been adequately installed or implemented to ensure overall preparedness of the site for commencement of construction. Qualified professional means a person knowledgeable in the principles and practice of erosion and sediment controls, such as a licensed professional engineer, Certified Professional in Erosion and Sediment Control (CPESC), soil scientist, or someone working under the direction and supervision of a licensed professional engineer, Certified Professional in Erosion and Sediment Control (CPESC), or soil scientist (person must have experience in the principles and practices of erosion and sediment control). The template for the initial inspection and assessment is included in Appendix A.
- All control measures will be inspected by a qualified professional at least once each week (7 days) and immediately following any storm event of 0.5 inches or greater.
- All measures will be maintained in good working order. If a repair is necessary, it will be initiated within 24 hours of discovery.
- Provide sprinkle water on the dirt road during hot summer or when appropriate to prevent particles to be air born.
- Built up sediment to be removed from the silt fence when it has reached 1/3 the height of the fence. Sediment traps will be cleaned when built up sediments reaches 25 percent of design capacity.
- Silt fence will be inspected for depth of sediment, tears, to see if the fabric is securely attached to the fence posts, and to see that the fence posts are firmly in the ground.
- Temporary and permanent seeding and planting will be inspected for bare spots, washouts, and healthy growth.
- A maintenance inspection report will be filled out after each inspection and will become part of the SWPPP.
- \_\_\_\_\_, Job Supervisor – Trained Individual per GP-0-20-001, will select individuals who will be responsible for coordinating efforts with the qualified professional for regular inspections, maintenance and repair activities, and filling out the inspection and maintenance report forms. Inspection reports will summarize:

**SUEZ WATER NEW YORK, INC GEYMER WELL 1 & 2  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

1. Name of Inspector
2. Qualifications of Inspector
3. Date of Inspection
4. Weather Conditions
5. Areas inspected, including measurements
6. Areas that have undergone temporary and permanent stabilization
7. Indicate all disturbed areas that have not undergone active site work during the previous 14-day period
8. Observed condition of all erosion and sediment control practices
9. Inspect all sediment control practices and record approximate degree of sediment accumulation as a percentage of the sediment storage volume
10. Actions Taken to Correct Problems
11. Incorporate changes necessary to the SWPPP

The template for regular inspections is included in Appendix A.

- Personnel selected for inspection and maintenance responsibilities will receive training from the Job Supervisor and/or the qualified professional. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used on site in good working order.
- The Operator shall ensure that a record of all inspection reports is maintained in the SWPPP Construction Log Book. The site logbook shall be maintained on site and be made available to the permitting authorities upon request. Prior to the commencement of construction, the Operator shall certify in the site log book that the SWPPP was prepared in accordance with the State's standards and meets all Federal, State and local erosion and sediment control requirements. The Operator shall retain copies of SWPPPs and any reports submitted in conjunction with this permit, and records of all data used to complete the NOI to be covered by this permit, for a period of at least three years from the date that the site is finally stabilized. The Operator shall post at the site, in a publicly accessible location, a summary of the site inspection activities on a monthly basis. The template for SWPPP Construction Log Book is included in Appendix A.
- Prior to filing of the Notice of Termination (NOT) or the end of permit term, the Operator shall have the qualified professional perform a final site inspection. The qualified professional shall certify that the site has undergone final stabilization using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed. Final stabilization means that all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of 80% has been established, or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structure. The template for final inspections is included in Appendix A.

**SUEZ WATER NEW YORK, INC GEYMER WELL 1 & 2  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

- Clean out all **temporary** structures and pipes upon completion of the project.
- When the site has been finally stabilized, the operator must submit a Notice of Termination form to terminate coverage under the SPDES General Permit GP 0-20-001. The permittee must identify all of the permanent stormwater management structures that have been constructed. In addition, an manual describing the operation and maintenance practices that will be necessary for the structures to function as designed after the site is stabilized must be finalized and in-place. The permittee must also certify that the permanent structure have been constructed as described in the SWPPP.

The inspection procedures that will be used for the construction of the proposed Stormwater management facilities are included in the CONSTRUCTION INSPECTION CHECKLIST FORM prepared for this project, the template of which is included in Appendix B, to be used to ensure proper construction.

**4.2 Summary of SWPPP Required Document Filings:**

The following table provides a summary of the required forms and inspections that need to be completed as part of the SWPPP requirements and which checklist or report document forms need to be used for each:

<u>Name of Document</u>	<u>Form to be Used</u>	<u>When to complete</u>
Pre-Construction Meeting Documents Form	Appendix A – SWPPP Construction Site Log Book	Prior to beginning of construction
Owner/Operator Certification	Appendix A, SWPPP Report	Prior to beginning of construction
Prime Contractor Certification	SWPPP Report	Prior to beginning of construction
Sub-Contractor Certification	SWPPP Report	Prior to beginning of construction
Pre-Construction Site Assessment Form	Appendix A	Prior to beginning of construction
Construction Duration Inspection Forms	Appendix A	Every seven days
Three-Month Status Reports	Appendix A	Every three months
SMPs Construction Inspection Checklist Form	Appendix B	During the construction of the proposed stormwater facilities
Final Stabilization and Retention of Records	Appendix B	At completion of project
Spill Control & Prevention Log	Appendix C	Before and after completion of Project
Stormwater Facilities Maintenance Plan and Inspection Checklists	Appendix D	After completion of Project

## **5.0 NON-STORM WATER DISCHARGES**

### **5.1 Non-Stormwater Discharges:**

It is expected that the following non-storm water discharges will occur from the site during the construction period:

- Water from water line flushing.
- Pavement wash waters (where no spills or leaks of toxic or hazardous materials have occurred).
- Uncontaminated groundwater (from natural springs)

## **6.0 INVENTORY FOR POLLUTION PREVENTION PLAN**

### **6.1 Material substances:**

The materials or substances listed below are expected to be present on the site during construction:

- Concrete
- Detergents
- Paints (enamels and latex)
- Metal Studs
- Roofing Materials
- Tar and Paving Materials
- Fertilizers
- Petroleum Based Products
- Cleaning Solvents
- Wood
- Masonry Block

## **7.0 SPILL CONTROL & PREVENTION**

### **7.1 Material Management Practices:**

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff:

**SUEZ WATER NEW YORK, INC GEYMER WELL 1 & 2  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

**7.1.1 Good Housekeeping:**

The following good housekeeping practices will be followed on site during the construction project:

- An effort will be made to store only enough products required to do the job.
- All materials stored on site will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
- Product will be kept in their original containers with the original manufacturer's label.
- Substances will not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all of a product will be used up before disposing of the container.
- Manufacturer's recommendations for proper use and disposal will be followed.
- The Job Supervisor will inspect daily to ensure proper use and disposal of materials on site.

**7.1.2 Hazardous Products:**

The following practices will be used to reduce the risks associated with hazardous materials:

- Products will be kept in original containers unless they are not reseal able.
- Original labels and material safety data will be retained; they contain important product information.
- If surplus product must be disposed of, manufacturer's or local and State recommended methods for proper disposal will be followed.

**7.2 Product Specific Practices:**

The following product specific practices will be followed on site:

**7.2.1 Petroleum Products:**

All onsite vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers, which are clearly labeled. Any asphalt substances used on site will be applied according to the manufacturer's recommendations.

### 7.2.2 Fertilizers:

Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to stormwater. Storage will be in a covered shed. The content of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

### 7.2.3 Paints:

All containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm drainage system, but will be properly disposed of according to manufacturer's instructions or State and local regulations.

### 7.2.4 Concrete Trucks:

Concrete trucks will not be allowed to wash out or discharge surplus concrete or drum wash water on the site.

## 7.3 Spill Control Practices:

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanups:

- Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage areas on site. Equipment and materials will include, but not be limited to, brooms, dustpans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated, and personnel will wear appropriate protective clothing to prevent injury from contact with hazardous substances.
- Spills of toxic or hazardous material will be reported to the appropriate State or local government agency, regardless of the size of the spill. The Spill Control & Prevention Log form provided in Appendix C should be used for this purpose.
- The spill prevention plan will be adjusted to include measures to prevent a repetitive type of spill from re-occurring and how to clean up the spill if it does re-occur. A description of the spill, what caused it, and the cleanup measures will also be included.
- The Job Supervisor responsible for daily site operations, will be designated as the spill prevention and cleanup coordinator. He will designate at least

**SUEZ WATER NEW YORK, INC GEYMER WELL 1 & 2  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

three other site personnel who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of the responsible spill personnel will be posted in the material storage area and in the office trailer on site.

## **8.0 SUPPORTING PLANS & REPORTS**

---

1. Site Plan Drawings prepared by Atzl, Nasher & Zigler P.C.
2. Soil & Erosion Control Plans prepared by Atzl, Nasher & Zigler P.C.
3. Stormwater Management Design Report by Atzl, Nasher & Zigler P.C.

## 9.0 POLLUTION PREVENTION PLAN CERTIFICATION

### 9.1 OWNER/OPERATOR CERTIFICATION

"I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I also certify under penalty of law that this document and all corresponding attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person(s) who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgement that I will receive as a result of submitting this NOI. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction and agree to comply with all the terms and conditions of the general permit for which this NOI is being submitted."

Signed: \_\_\_\_\_  
(Owner/Operator)

Date: \_\_\_\_\_

\_\_\_\_\_  
(Printed Name & Title)

\_\_\_\_\_  
(Company Name, Address & Telephone Number)

## **10.0 CERTIFICATION BY CONTRACTORS**

---

Made pursuant to the State Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (Permit No. GP 0-20-001) for:

Suez Water New York, INC Geymer Well 1 & 2, Town of Carmel, Putnam County, New York

### **10.1 Prime Contractor Certification:**

"I certify under penalty of law that I understand and agree to comply with the terms and conditions of the stormwater pollution prevention plan for the construction site identified in this plan as a condition of authorization to discharge stormwater. I also understand that the operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards."

Prime Contractor:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Company)

\_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Street Address)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(City, State, Zip Code)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Phone Number)

**SUEZ WATER NEW YORK, INC GEYMER WELL 1 & 2  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

**10.2 Sub-Contractor Certification:**

“I certify under penalty of law that I understand and agree to comply with the terms and conditions of the stormwater pollution prevention plan for the construction site identified in this plan as a condition of authorization to discharge stormwater. I also understand that the operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards.”

Sub-Contractor:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Company)

\_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Street Address)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(City, State, Zip Code)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Phone Number)

**SUEZ WATER NEW YORK, INC GEYMER WELL 1 & 2  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

**CONTRACTOR and SUBCONTRACTOR CERTIFICATION STATEMENT**

*for the New York State Department of Environmental Conservation (DEC) State Pollutant Discharge Elimination System Permit for Stormwater Discharges from Construction Activity (GP-0-20-001)*

As per Part III.A.6 on page 13 of GP-0-20-001 (effective January 29, 2020):

‘Prior to the commencement of construction activity, the owner or operator must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The owner or operator shall have each of the contractors and sub-contractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor*. The owner or operator shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.’

The owner or operator shall have each contractor and subcontractor involved in soil disturbance sign a copy of the following certification statement before they commence any construction activity:

_____ Name of Construction Site	NYR _____ DEC Permit ID	_____ Municipality (MS4)
<p><i>"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.</i></p>		
_____ Responsible Corporate Officer/Partner Signature	_____ Date	
_____ Name of above Signatory	_____ Name of Company	
_____ Title of above Signatory	_____ Mailing Address	
_____ Telephone of Company	_____ City, State, and Zip	
<p><b>Identify the specific elements of the SWPPP the contractor or subcontractor is responsible for:</b></p>		
<p><b>'TRAINED CONTRACTOR' FOR THE CERTIFIED CONTRACTOR OR SUBCONTRACTOR</b></p>		
_____ Name of Trained Employee	_____ Title of Trained Employee	_____ NYSDEC SWT #

*A copy of this signed contractor certification statement must be maintained at the SWPPP on site*

Appendix - A

**SUEZ WATER NEW YORK, INC  
GEYMER WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**APPENDIX-A**

**CONSTRUCTION SITE LOGBOOK**

**BY**

**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
232 NORTH MAIN STREET  
NEW CITY, NY 10956  
TEL: (845) 634-4694  
FAX: (845) 634-5543  
E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)

**SWPPP CONSTRUCTION SITE LOG BOOK FOR SUEZ WATER NEW YORK, INC  
GEYMER WELL 1 & 2**

**NY STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM  
FOR CONSTRUCTION ACTIVITIES**

# **SWPPP CONSTRUCTION SITE LOG BOOK**

**For**

**Suez Water New York, INC  
Geymer Well 1 & 2  
Town of Carmel  
Putnam County, New York**

## Table of Contents

---

- I. Pre-Construction Meeting Documents.
  - a. Preamble to Site Assessment and Inspections
  - b. Operator's Certification
  - c. Qualified Professional's Credentials & Certification
  - d. Pre-Construction Site Assessment Checklist
- II. Construction Duration Inspections
  - a. Directions
  - b. Modification to the SWPPP
- III. Monthly Summary Reports
- IV. Monitoring, Reporting, and Three-Month Status Reports
  - a. Operator's Compliance Response Format

Properly completing forms such as those contained in this document meet the inspection requirement of NYSDEC SPDES GP for Construction Activities. Completed forms shall be kept on site at all times and made available to authorities upon request.

**SWPPP CONSTRUCTION SITE LOG BOOK FOR SUEZ WATER NEW YORK, INC  
GEYMER WELL 1 & 2**

**I. PRE-CONSTRUCTION MEETING DOCUMENTS**

**Project Name** SUEZ WATER NEW YORK, INC GEYMER WELL 1 & 2

**Permit No.** \_\_\_\_\_ **Date of Authorization** \_\_\_\_\_

**Name of Operator** \_\_\_\_\_

**Prime Contractor** \_\_\_\_\_

**a. Preamble to Site Assessment and Inspections** -the following information to be read by all person's involved in the construction of stormwater related activities:

The Operator agrees to have a qualified professional<sup>1</sup> conduct an assessment of the site prior to the commencement of construction<sup>2</sup> and certify in this inspection report that the appropriate erosion and sediment controls described in the SWPPP have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction.

Prior to the commencement of construction, the Operator shall certify in this site logbook that the SWPPP has been prepared in accordance with the State's standards and meets all Federal, State and local erosion and sediment control requirements.

When construction starts, site inspections shall be conducted by the qualified professional at least every 7 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater (Construction Duration Inspections). The Operator shall maintain a record of all inspection reports in this site log book. The site log book shall be maintained on site and be made available to the permitting authorities upon request. The Operator shall post at the site, in a publicly accessible location, a summary of the site inspection activities on a monthly basis (Monthly Summary Report).

The operator shall also prepare a written summary of compliance with this general permit at a minimum frequency of every three months (Operator's Compliance Response Form), while coverage exists. The summary should address the status of achieving each component of the SWPPP.

Prior to filing the Notice of Termination or the end of permit term, the Operator shall have a qualified professional perform a final site inspection. The qualified professional shall certify that the site has undergone final stabilization<sup>3</sup> using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed. In addition, the Operator must identify and certify that all permanent structures described in the SWPPP have been constructed and provide the owner(s) with an operation and maintenance plan that ensures the structure(s) continuously functions as designed.

1 "Qualified Professional means a person knowledgeable in the principles and practice of erosion and sediment controls, such as a Certified Professional in Erosion and Sediment Control (CPESC), soil scientist, licensed engineer or someone working under the direction and supervision of a licensed engineer (person must have experience in the principles and practices of erosion and sediment control).

2 "Commencement of construction" means the initial removal of vegetation and disturbance of soils associated with clearing, grading or excavating activities or other construction activities.

3 "Final stabilization" means that all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of eighty (80) percent has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.

**SWPPP CONSTRUCTION SITE LOG BOOK FOR SUEZ WATER NEW YORK, INC  
GEYMER WELL 1 & 2**

**b. Operators Certification**

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. Further, I hereby certify that the SWPPP meets all Federal, State, and local erosion and sediment control requirements. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law. "

Name (Please Print): \_\_\_\_\_

Title \_\_\_\_\_ Date: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

Signature: \_\_\_\_\_

**c. Qualified Professional's Credentials & Certification**

"I hereby certify that I meet the criteria set forth in the General Permit to conduct site inspections for this project and that the appropriate erosion and sediment controls described in the SWPPP and as described in the following Pre-construction Site Assessment Checklist have been adequately installed or implemented, ensuring the overall preparedness of this site for the commencement of construction."

Name (Please Print): \_\_\_\_\_

Title \_\_\_\_\_ Date: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

Signature: \_\_\_\_\_

**d. Pre-construction Site Assessment Checklist (NOTE: Provide comments below as necessary)**

**1. Notice of Intent, SWPPP, and Contractors Certification:**

**Yes No NA**

Has a Notice of Intent been filed with the NYS Department of Conservation?

Is the SWPPP on-site? Where? \_\_\_\_\_

Is the Plan current? What is the latest revision date? \_\_\_\_\_

Is a copy of the NOI (with brief description) onsite? Where? \_\_\_\_\_

Have all contractors involved with stormwater related activities signed a contractor's certification?

**Pre-construction Site Assessment Checklist (continued)**

**SWPPP CONSTRUCTION SITE LOG BOOK FOR SUEZ WATER NEW YORK, INC  
GEYMER WELL 1 & 2**

**2. Resource Protection**

**Yes No NA**

- Are construction limits clearly flagged or fenced?
- Important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips, especially in perimeter areas, have been flagged for protection.
- Creek crossings installed prior to land-disturbing activity, including clearing and blasting.

**3. Surface Water Protection**

**Yes No NA**

- Clean stormwater runoff has been diverted from areas to be disturbed.
- Bodies of water located either on site or in the vicinity of the site have been identified and protected.
- Appropriate practices to protect on-site or downstream surface water are installed.
- Are clearing and grading operations divided into areas <5 acres?

**4. Stabilized Construction Entrance**

**Yes No NA**

- A temporary construction entrance to capture mud and debris from construction vehicles before they enter the public highway has been installed.
- Other access areas (entrances, construction routes, equipment parking areas) are stabilized immediately as work takes place with gravel or other cover.
- Sediment tracked onto public streets is removed or cleaned on a regular basis.

**5. Perimeter Sediment Controls**

**Yes No NA**

- Silt fence material and installation comply with the standard drawing and specifications.
- Silt fences are installed at appropriate spacing intervals
- Sediment/detention basin was installed as first land disturbing activity.
- Sediment traps and barriers are installed.

**6. Pollution Prevention for Waste and Hazardous Materials**

**Yes No NA**

- The Operator or designated representative has been assigned to implement the spill prevention avoidance and response plan.
- The plan is contained in the SWPPP on page \_\_\_\_\_
- Appropriate materials to control spills are onsite. Where? \_\_\_\_\_

**SWPPP CONSTRUCTION SITE LOG BOOK FOR SUEZ WATER NEW YORK, INC  
GEYMER WELL 1 & 2**

**II. CONSTRUCTION DURATION INSPECTIONS**

**a. Directions:**

**Inspection Forms will be filled out during the entire construction phase of the project.**

**Required Elements:**

(1) On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period;

(2) Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization;

(3) Indicate all disturbed site areas that have not undergone active site work during the previous 14-day period;

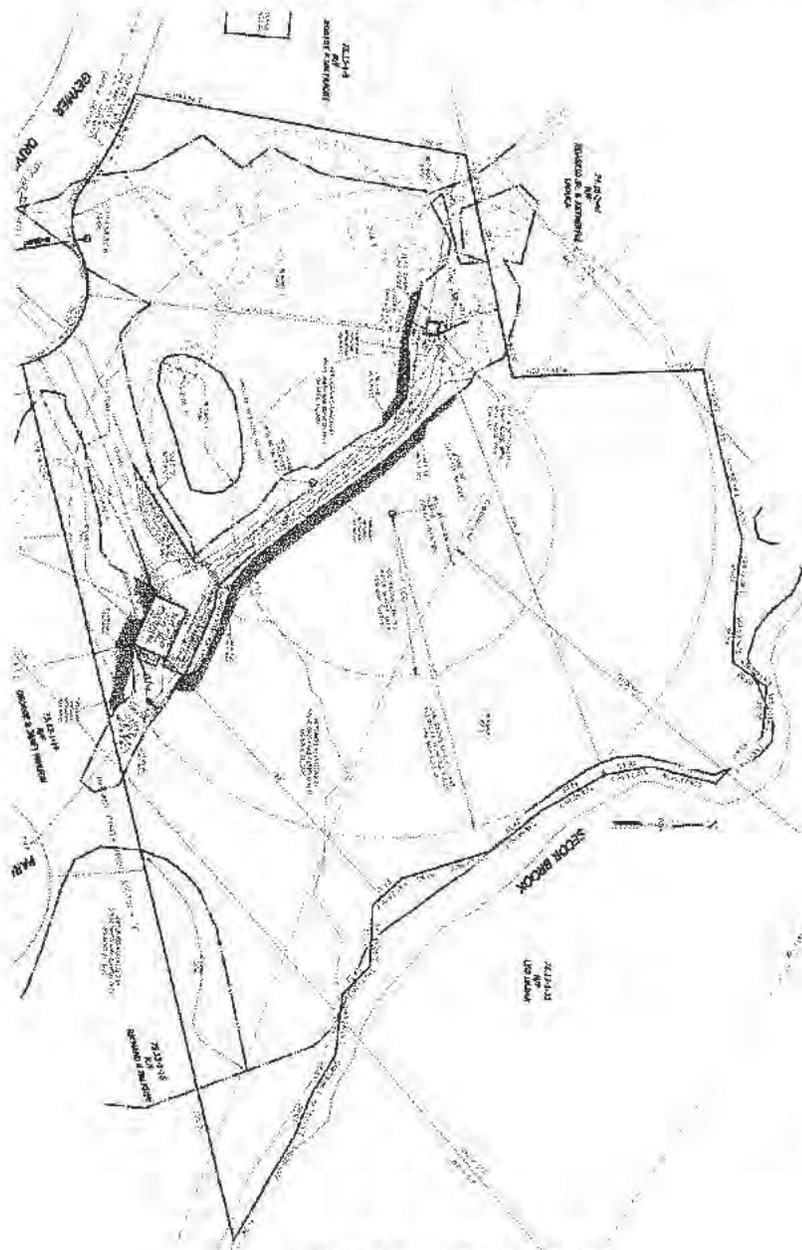
Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of sediment storage volume (for example, 10 percent, 20 percent, 50 percent);

(5) Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water; and

(6) Immediately report to the Operator any deficiencies that are identified with the implementation of the SWPPP.

**SWPPP CONSTRUCTION SITE LOG BOOK FOR SUEZ WATER NEW YORK, INC  
GEYMER WELL 1 & 2**

**CONSTRUCTION DURATION INSPECTIONS**



**SITE PLAN/SKETCH**

\_\_\_\_\_  
**Inspector (Print Name)**

\_\_\_\_\_  
**Date of Inspection**

\_\_\_\_\_  
**Qualified Professional (Print Name)**

\_\_\_\_\_  
**Qualified Professional Signature**

The above signed acknowledges that, to the best of his/her knowledge, all information provided on the forms is accurate and complete.

**SWPPP CONSTRUCTION SITE LOG BOOK FOR SUEZ WATER NEW YORK, INC  
GEYMER WELL 1 & 2**

**CONSTRUCTION DURATION INSPECTIONS**

**Maintaining Water Quality**

**Yes No NA**

- Is there an increase in turbidity causing a substantial visible contrast to natural conditions?
- Is there residue from oil and floating substances, visible oil film, or globules or grease?
- All disturbance is within the limits of the approved plans.
- Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

**Housekeeping**

**1. General Site Conditions**

**Yes No NA**

- Is construction site litter and debris appropriately managed?
- Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?
- Is construction impacting the adjacent property?
- Is dust adequately controlled?

**2. Temporary Stream Crossing**

**Yes No NA**

- Maximum diameter pipes necessary to span creek without dredging are installed.
- Installed non-woven geotextile fabric beneath approaches.
- Is fill composed of aggregate (no earth or soil)?
- Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

**Runoff Control Practices**

**1. Excavation Dewatering**

**Yes No NA**

- Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
- Clean water from upstream pool is being pumped to the downstream pool.
- Sediment laden water from work area is being discharged to a silt-trapping device.
- Constructed upstream berm with one-foot minimum freeboard.

**2. Level Spreader**

**Yes No NA**

- Installed per plan.
- Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.
- Flow sheets out of level spreader without erosion on downstream edge.

**3. Interceptor Dikes and Swales**

**Yes No NA**

- Installed per plan with minimum side slopes 2H:1V or flatter.
- Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
- Sediment-laden runoff directed to sediment trapping structure

**4. Stone Check Dam**

**SWPPP CONSTRUCTION SITE LOG BOOK FOR SUEZ WATER NEW YORK, INC  
GEYMER WELL 1 & 2**

**Yes No NA**

- Is channel stable? (flow is not eroding soil underneath or around the structure).  
   Check is in good condition (rocks in place and no permanent pools behind the structure).  
   Has accumulated sediment been removed?.

**5. Rock Outlet Protection**

**Yes No NA**

- Installed per plan.  
   Installed concurrently with pipe installation.

**Soil Stabilization**

**1. Topsoil and Spoil Stockpiles**

**Yes No NA**

- Stockpiles are stabilized with vegetation and/or mulch.  
   Sediment control is installed at the toe of the slope.

**2. Revegetation**

**Yes No NA**

- Temporary seedings and mulch have been applied to idle areas.  
   4 inches minimum of topsoil has been applied under permanent seedings

**Sediment Control**

**1. Stabilized Construction Entrance**

**Yes No NA**

- Stone is clean enough to effectively remove mud from vehicles.  
   Installed per standards and specifications?  
   Does all traffic use the stabilized entrance to enter and leave site?  
   Is adequate drainage provided to prevent ponding at entrance?

**2. Silt Fence**

**Yes No NA**

- Installed on Contour, 10 feet from toe of slope (not across conveyance channels).  
   Joints constructed by wrapping the two ends together for continuous support.  
   Fabric buried 6 inches minimum.  
   Posts are stable, fabric is tight and without rips or frayed areas.  
   Sediment accumulation is \_\_\_% of design capacity.

**3. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated practices)**

**Yes No NA**

- Installed concrete blocks lengthwise so open ends face outward, not upward.  
   Placed wire screen between No. 3 crushed stone and concrete blocks.  
   Drainage area is 1 acre or less.  
   Excavated area is 900 cubic feet.  
   Excavated side slopes should be 2:1.

**SWPPP CONSTRUCTION SITE LOG BOOK FOR SUEZ WATER NEW YORK, INC  
GEYMER WELL 1 & 2**

- 2" x 4" frame is constructed and structurally sound.
- Posts 3-foot maximum spacing between posts.
- Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at max 8-inch spacing.
- Posts are stable, fabric is tight and without rips or frayed areas.
- Sediment accumulation \_\_\_% of design capacity.

**4. Temporary Sediment Trap**

**Yes No NA**

- Outlet structure is constructed per the approved plan or drawing.
- Geotextile fabric has been placed beneath rock fill.
- Sediment accumulation is \_\_\_% of design capacity.

**5. Temporary Sediment Basin**

**Yes No NA**

- Basin and outlet structure constructed per the approved plan.
- Basin side slopes are stabilized with seed/mulch.
- Drainage structure flushed and basin surface restored upon removal of sediment basin facility.
- Sediment accumulation is \_\_\_% of design capacity.

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design.

Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.





Appendix - B

**SUEZ WATER NEW YORK, INC  
GEYMER WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**APPENDIX-B  
CONSTRUCTION INSPECTION CHECKLISTS**

**BY**

**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
232 NORTH MAIN STREET  
NEW CITY, NY 10956  
TEL: (845) 634-4694  
FAX: (845) 634-5543  
E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)

**SUEZ WATER NEW YORK, INC GEYMER WELL 1 & 2**  
**Stormwater System Design**  
**Construction Inspection Checklist Form**

**STORMWATER MANAGEMENT**  
**CONSTRUCTION INSPECTION CHECKLIST FORM**

Project: **Suez Water New York, INC Geymer Well 1 & 2**  
 Location: **Town of Carmel, Putnam County, NY**

Site Status: \_\_\_\_\_

Date of Inspection: \_\_\_\_\_

Time of Inspection: \_\_\_\_\_

Weather Conditions  
 (including recent rainfall): \_\_\_\_\_

Inspector's Name: \_\_\_\_\_

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
<b>1. Pre-Construction/Materials and Equipment</b>		
Pre-construction meeting		
Pipe and appurtenances on-site prior to construction and dimensions checked		
1. Material (including protective coating, if specified)		
2. Diameter		
3. Dimensions of metal riser or pre-cast concrete outlet structure		
4. Required dimensions between water control structures (orifices, weirs, etc.) are in accordance with approved plans		
5. Barrel stub for prefabricated pipe structures at proper angle for design barrel slope		
6. Number and dimensions of prefabricated anti-seep collars		
7. Watertight connectors and gaskets		
8. Outlet drain valve		
Project benchmark near pond site		
Equipment for temporary de-watering		
<b>2. Subgrade Preparation</b>		
Area beneath embankment stripped of all Vegetation, topsoil, and organic matter		
<b>3. Pipe Spillway Installation</b>		
Method of installation detailed on plans		
<b>A. Bed preparation</b>		
Installation trench excavated with specified side slopes		

**SUEZ WATER NEW YORK, INC GEYMER WELL 1 & 2**  
**Stormwater System Design**  
**Construction Inspection Checklist Form**

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
Stable, uniform, dry subgrade of relatively impervious material (If subgrade is wet, contractor shall have defined steps before proceeding with installation)		
Invert at proper elevation and grade		
<b>B. Pipe placement</b>		
<b>Metal / plastic pipe</b>		
1. Watertight connectors and gaskets properly installed		
2. Anti-seep collars properly spaced and having watertight connections to pipe		
3. Backfill placed and tamped by hand under "haunches" of pipe		
4. Remaining backfill placed in max. 8 inch lifts using small power tamping equipment until 2 feet cover over pipe is reached		
<b>3. Pipe Spillway Installation</b>		
<b>Concrete pipe</b>		
1. Pipe set on blocks or concrete slab for pouring of low cradle		
2. Pipe installed with rubber gasket joints with no spalling in gasket interface area		
3. Excavation for lower half of anti-seep collar(s) with reinforcing steel set		
4. Entire area where anti-seep collar(s) will come in contact with pipe coated with mastic or other approved waterproof sealant		
5. Low cradle and bottom half of anti-seep collar installed as monolithic pour and of an approved mix		
6. Upper half of anti-seep collar(s) formed with reinforcing steel set		
7. Concrete for collar of an approved mix and vibrated into place (protected from freezing while curing, if necessary)		
8. Forms stripped and collar inspected for honeycomb prior to backfilling. Parge if necessary.		
<b>C. Backfilling</b>		
Fill placed in maximum 8 inch lifts		
Backfill taken minimum 2 feet above top of anti-seep collar elevation before traversing with heavy equipment		
<b>4. Riser / Outlet Structure Installation</b>		
<b>Riser located within embankment</b>		
<b>A. Metal riser</b>		
Riser base excavated or formed on stable subgrade to design dimensions		

**SUEZ WATER NEW YORK, INC GEYMER WELL 1 & 2**  
**Stormwater System Design**  
**Construction Inspection Checklist Form**

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
Set on blocks to design elevations and plumbed		
Reinforcing bars placed at right angles and projecting into sides of riser		
Concrete poured so as to fill inside of riser to invert of barrel		
<b>B. Pre-cast concrete structure</b>		
Dry and stable subgrade		
Riser base set to design elevation		
If more than one section, no spalling in gasket interface area; gasket or approved caulking material placed securely		
Watertight and structurally sound collar or Gasket joint where structure connects to pipe spillway		
<b>C. Poured concrete structure</b>		
Footing excavated or formed on stable Subgrade, to design dimensions with reinforcing steel set		
Structure formed to design dimensions, with reinforcing steel set as per plan		
Concrete of an approved mix and vibrated into place (protected from freezing while curing, if necessary)		
Forms stripped & inspected for "honeycomb" prior to backfilling; pare if necessary		
<b>5. Embankment Construction</b>		
Fill material		
Compaction		
Embankment		
1. Fill placed in specified lifts and compacted with appropriate equipment		
2. Constructed to design cross-section, side slopes and top width		
3. Constructed to design elevation plus allowance for settlement		
<b>6. Impounded Area Construction</b>		
Excavated / graded to design contours and side slopes		
Inlet pipes have adequate outfall protection		
Forebay(s)		
Pond benches		
<b>7. Earth Emergency Spillway Construction</b>		
Spillway located in cut or structurally stabilized with riprap, gabions, concrete, etc.		
Excavated to proper cross-section, side slopes and bottom width		
Entrance channel, crest, and exit channel Constructed to design grades and elevations		

**SUEZ WATER NEW YORK, INC GEYMER WELL 1 & 2**  
**Stormwater System Design**  
**Construction Inspection Checklist Form**

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
<b>8. Outlet Protection</b>		
<b>A. End section</b>		
Securely in place and properly backfilled		
<b>B. Endwall</b>		
Footing excavated or formed on stable Subgrade, to design dimensions and reinforcing steel set, if specified	<b>SATISFACTORY/ UNSATISFACTORY</b>	<b>COMMENTS</b>
Endwall formed to design dimensions with Reinforcing steel set as per plan		
Concrete of an approved mix and vibrated into place (protected from freezing, if necessary)		
Forms stripped and structure inspected for "honeycomb" prior to backfilling; parge if necessary		
<b>C. Riprap apron / channel</b>		
Apron / channel excavated to design cross-section with proper transition to existing ground		
Filter fabric in place		
Stone sized as per plan and uniformly placed at the thickness specified		
<b>9. Vegetative Stabilization</b>		
Approved seed mixture or sod		
Proper surface preparation and required soil Amendments		
Excelsior mat or other stabilization, as per plan		
<b>10. Miscellaneous</b>		
Drain for ponds having a permanent pool		
Trash rack / anti-vortex device secured to outlet structure		
Trash protection for low flow pipes, orifices, etc.		
Fencing (when required)		
Access road		
Set aside for clean-out maintenance		
<b>11. Stormwater Wetlands</b>		
Adequate water balance		
Variety of depth zones present		
Approved pondscaping plan in place reinforcement budget for additional plantings		
Plants and materials ordered 6 months prior to construction		
Construction planned to allow for adequate planting and establishment of plant community (April-June planting window)		
Wetland buffer area preserved to maximum extent possible		



Appendix - C

**SUEZ WATER NEW YORK, INC  
GEYMER WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**APPENDIX-C**

**SPILL CONTROL AND PREVENTION LOG**

**BY**

**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
232 NORTH MAIN STREET  
NEW CITY, NY 10956  
TEL: (845) 634-4694  
FAX: (845) 634-5543  
E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)



Appendix - 0

**SUEZ WATER NEW YORK, INC  
GEYMER WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**APPENDIX-D  
MAINTENANCE AGREEMENT**

**BY**

**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
232 NORTH MAIN STREET  
NEW CITY, NY 10956  
**TEL: (845) 634-4694**  
**FAX: (845) 634-5543**  
**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**

**STORMWATER CONTROL FACILITY MAINTENANCE AGREEMENT**  
**RE: SUEZ WATER NEW YORK, INC GEYMER WELL 1 & 2**  
**(Tax Map: Section 75.13, Block 1, Lot 6)**

Whereas, the Town of Carmel ("Town") and Suez Water New York, Inc ("Facility Owner") want to enter into an agreement to provide for the long term maintenance and continuation of stormwater control measures approved by the Town for the above named project, and

Whereas, the Town and the Facility Owner desire that the stormwater control measures be built in accordance with the approved project plans and thereafter be maintained, cleaned, repaired, replaced and continued in perpetuity in order to ensure optimum performance of the components. Therefore, the Town and the Facility Owner agree as follows:

1. This agreement binds the Facility Owner, its successors and assigns, to the maintenance provisions depicted in the approved project plans which are attached as Schedule A-1 of this agreement.
2. The Facility Owner shall maintain, clean, repair, replace and continue the Stormwater control measures as listed in Schedule A-2 as necessary to ensure optimum performance of the measures to design specifications. The stormwater control measures shall include, but shall not be limited to, the following: drop inlets, pipes, culverts, underground solid pipe storage system and dry pond system, but only to the extent that the same are shown on Schedule A-2.
3. The Facility Owner shall be responsible for all expenses related to the maintenance of the stormwater control measures and shall establish a means for the collection and distribution of expenses among parties for any commonly owned facilities.
4. The Facility Owner shall provide for the annual inspection of the stormwater control measures, in perpetuity, to determine the condition and integrity of the measures. A Professional Engineer licensed by the State of New York shall perform such inspection. The inspecting engineer shall prepare and submit to the Town within 30 days of the inspection, a written report of the findings including recommendations for those actions necessary for the continuation of the Stormwater control measures.
5. The Facility Owner shall not authorize, undertake or permit alteration, abandonment, modification or discontinuation of the Stormwater control measures except in accordance with written approval of the Town.
6. The Facility Owner shall undertake all necessary repairs and replacement of the stormwater control measures at the direction of the Town or in accordance with the recommendations of the inspecting engineer.
7. The Facility Owner shall provide to the Town, prior to Mayor's endorsement, a security for the maintenance and continuation of the stormwater control measures.
8. This agreement shall be recorded in the Office of the County Clerk, County of Putnam. In the event that the facility is a commercial or residential condominium, this agreement shall be included in any offering plan or prospectus.

9. If ever the Town determines that the Facility Owner has failed to construct or maintain the stormwater control measures in accordance with the project plan or has failed to undertake corrective action specified by the Town or by the inspecting engineer, the Town is authorized to undertake such steps as reasonably necessary for the preservation, continuation or maintenance of the stormwater control measures and to affix the expenses thereof as a tax lien against the property. By virtue of this agreement, the facility owner hereby grants on behalf of itself, its successors and/or assigns an irrevocable right of entry to the Town, its employees, contractors, vendees and/or officers to perform the corrective measures referred to in this paragraph and agrees to hold them harmless, defend and indemnify them for any damages, except gross negligence.
10. This agreement is effective as of the date of execution of the Stormwater Control Facility Maintenance Agreement.

Town of Carmel

Suez Water New York, INC  
Geymer Well 1 & 2

By: \_\_\_\_\_  
Kenneth Schmitt, Town Supervisor

By: \_\_\_\_\_  
Steven Garabed, Manager of  
Engineering West Nyack Operations

State of New York, County of Rockland ss.:

On \_\_\_\_\_, before me, the undersigned, personally appeared Kenneth Schmitt personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

\_\_\_\_\_  
Notary Public

State of New York, County of \_\_\_\_\_ ss.:

On \_\_\_\_\_, before me, the undersigned, personally appeared Steven Garabed personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

\_\_\_\_\_  
Notary Public



## **SCHEDULE "A-2"**

### **STORMWATER MANAGEMENT SYSTEM INSPECTION AND MAINTENANCE SCHEDULE**

#### **Stormwater Management Structures:**

- Stormwater Piping
- Dry Pond System

#### **Inspections Schedule:**

- Stormwater Pipes, Catch Basins and Control Structures:
  - Monthly, and after major storms: Check for debris at inlets, outlets, and cleanouts.
- Dry Pond System
  - Monthly inspections during construction and on an annual basis thereafter.

#### **Maintenance Schedule:**

- Stormwater Piping: Must be cleaned as found necessary by inspection.
- Dry Pond System
  - Remove accumulated sediment and clean out and/or replace the filter gravel bed at the outfall pipe whenever accumulated sediment reaches a volume of 10% of the available basin capacity.
  - Restore any eroded embankments.
  - Remove accumulated debris within the basin and at outfall structures.

## Stormwater Piping Inspection and Maintenance Checklist

Project: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Site: \_\_\_\_\_  
 Status: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Time: \_\_\_\_\_  
 Inspector: \_\_\_\_\_

Inspection/Maintenance Items	Satisfactory or Unsatisfactory	Comments/Corrective Action
<b>I. Inspection (Quarter-annually, After Major Storms)</b>		
1. Accumulated sediment exceeds 10% of the diameter of the pipe.		
2. Vegetation the reduces free movement of water through pipes.		
3. Pipe damage: Any dent that increases flow area by more than 10% or puncture that impacts performance		
4. Trash accumulated to reduce free movement of water through pipes.		

Inspector shall use one sheet for each individual pipe run.

(Provide sketch to show location of unsatisfactory items)

**ACTIONS TO BE TAKEN:**

---



---



---

**COMMENTS:**

---



---

## Dry Pond System Inspection and Maintenance Checklist

Project: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Site \_\_\_\_\_  
 Status: \_\_\_\_\_  
  
 Date: \_\_\_\_\_  
 Time: \_\_\_\_\_  
  
 Inspector: \_\_\_\_\_

Inspection/Maintenance Items	Satisfactory or Unsatisfactory	Comments/Corrective Action
<b>I. Embankment and emergency spillway (Annual, After Major Storms)</b>		
1. Vegetation and ground cover adequate		
2. Embankment erosion		
3. Animal burrows		
4. Unauthorized planting		
5. Cracking, bulging, or sliding of dam		
a) Upstream face		
b) Downstream face		
c) At or beyond toe		
• Downstream		
• Upstream		
d) Emergency spillway		
6. Pond, toe & chimney drains clear and functioning		
7. Seeps/leaks on downstream face		
8. Slope protection or riprap failure		
9. Vertical/horizontal alignment of top of dam "As-Built"		
10. Emergency spillway clear of obstructions and debris		

11. Other (specify)		
<b>2. Riser and principal spillway</b>	<b>(Annual)</b>	
Type: Reinforced concrete		
- Corrugated pipe		
- Masonry		
1. Low flow orifice obstructed		
2. Low flow trash rack.		
a) Debris removal necessary		
b) Corrosion control		
3. Weir trash rack maintenance		
a) Debris removal necessary		
b) corrosion control		
4. Excessive sediment accumulation insides riser		
5. Concrete/masonry condition riser and barrels		
a) cracks or displacement		
b) Minor spalling (1")		
c) Major spalling (rebars exposed)		
d) Joint failures		
e) Water tightness		
6. Metal pipe condition		
7. Control valve		
a) Operational/exercised		
b) Chained and locked		
8. Pond drain valve		
a) Operational/exercised		
b) Chained and locked		
9. Outfall channels functioning		
10. Other (specify)		
<b>3. Dry Pond Areas</b>		
1. Vegetation adequate		

2. Undesirable vegetative growth		
3. Undesirable woody vegetation		
4. Low flow channels clear of obstructions		
5. Standing water or wet spots		
6. Sediment and / or trash accumulation		
7. Other (specify)		
<b>4. Condition of Outfalls</b>	<b>(Annual, After Major Storms)</b>	
1. Riprap failures		
2. Slope erosion		
3. Storm drain pipes		
4. Endwalls / Headwalls		
5. Other (specify)		
<b>5. Other</b>	<b>(Annual)</b>	
1. Encroachment on pond, wetland or easement area		
2. Complaints from residents		
3. Aesthetics		
a) Grass growing required		
b) Graffiti removal needed		
c) Other (specify)		
4. Conditions of maintenance access routes.		
5. Signs of hydrocarbon build-up		
6. Any public hazards (specify)		

**ACTIONS TO BE TAKEN:**

---



---



---

**COMMENTS:**

---



---



---

Appendix - E

**SUEZ WATER NEW YORK, INC  
GEYMER WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**APPENDIX-E**

**CONSTRUCTION PLANS  
IN  
(11"X17") FORMAT**

**BY**

**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
232 NORTH MAIN STREET  
NEW CITY, NY 10956  
TEL: (845) 634-4694  
FAX: (845) 634-5543  
E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)

















Section 2: Drainage

**SUEZ WATER NEW YORK, INC  
GEYMER WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**SECTION 2:**

**STORMWATER SYSTEM DESIGN REPORT  
COMPLYING WITH NYS STORMWATER  
MANAGEMENT DESIGN MANUAL  
JANUARY 2015**

**BY**

**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
232 NORTH MAIN STREET  
NEW CITY, NY 10956  
TEL: (845) 634-4694  
FAX: (845) 634-5543  
E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)



## **ATZL, NASHER & ZIGLER P.C.**

ENGINEERS-SURVEYORS-PLANNERS

---

232 North Main Street, New City, NY 10956

Tel: (845) 634-4694

Fax: (845) 634-5543

Email: [rnasher@anzny.com](mailto:rnasher@anzny.com)

**Revision 2: May 11, 2022**

Revision 1: November 15, 2021

July 12, 2021

Town of Carmel  
60 McAlpin Avenue  
Mahopac, NY 10541

Att.: Richard Franzetti, PE, LEED  
Town Engineer

Ref.: Suez Water New York, INC Geymer Well 1 & 2 (Job #4873)  
Town of Carmel  
Putnam County, New York

Sub: Hydraulic and Hydrological Study

### **1.0 REVISION OVERVIEW:**

The previous SWPPP report dated November 15, 2021, proposed a rain garden system to achieve zero net increase of peak runoff. The proposed rain garden system included 3-foot deep of planting soil media and 1-foot of gravel. As a result, the maximum allowable groundwater level had to maintain 7-feet (5' + 2' G.W. separation from the bottom of the Rain Garden) separation at EL: 513 from the top of the rain garden. However, the infiltration test revealed the presence of groundwater @ EL: 514.5. Since there is not enough groundwater separation the design did not meet the code. In order to provide enough groundwater separation, we have proposed a dry pond system to replace the previously proposed system (Rain Garden). The dry pond system is design to provide adequate groundwater separation to meet the state and town code. The construction detail of the pond is shown to the revised site plan.

### **1.1 INTRODUCTION:**

The following hydraulic/hydrological study has been proposed for the above-mentioned project to provide zero net increase of peak runoff for the proposed project. The project disturbed area is 0.635 acres (27,660.0 sq.ft.), which is smaller than 1 acre. Therefore, a general construction permit is not required according to the NYSDEC 2015 version of the design manual. However, a zero-net increase of peak runoff is required per Town code.

## 1.2 SITE LOCATION:

The project is located at 70 Geymer Drive in the Town of Carmel, Putnam County, New York.

## 2.0 HYDROLOGICAL SOIL GROUP:

The soil onsite is the following, based on data from the Soil Survey of Putnam County, New York, dated October 1994.

Soil Name	Soil Map Symbol	Hydrological Soil Group	Reference Page No.*
Fluvaquents-Udifulvents complex, frequently flooded	Ff	D	34

\* Soil Survey of Putnam County, New York, United States Department of Agriculture Soil Conservation Service, October 1994.

For more detailed soil information, see the Soil Survey of Putnam County, dated October 1994.

## 3.1 EXISTING CONDITION:

The existing drainage area is 0.153 acres. The land cover of the drainage area consists of woods and grass area, plus a gravel road. The drainage area delineation is shown on the Existing Condition Drainage Map (E-1).

## 3.2 DEVELOPED CONDITION:

The proposed development includes the construction of a building and an increased to the existing gravel road. The peak runoff from the study area will be increased upon completion of the proposed development. The drainage area delineation is shown on the Developed Condition Drainage Map (D-1).

## 4.0 DRAINAGE STUDY:

Due to the proposed improvement the peak runoff of the designated drainage area will be increased. The hydrological software, HydroCAD has been used to calculate pre and post peak runoff rates for 1, 10, 100-year design storm events.

## 5.0 MITIGATION MEASURES:

To attenuate the post-developed peak flow to pre-developed peak flow, we are proposing a Dry Pond System. The Westchester Method was used to calculate the 10-year storm maximum storage.

The drainage study shows that the 10-year storage for the site is 273.0 cu.ft. The Dry Pond System provides 309.0 cu.ft (@ELV= 519.5'), which is more than the 10-year storage volume. The software HydroCAD was used to calculate peak flows for different storm events at the outlet "Point of Interest", for the Existing and Developed Condition. The summary table for the peak flow of different storm frequencies (1, 10, & 100-year storms) at the point of interest (P.O.I.), and water quantity design calculations are attached for your reference.

If you have further questions or concerns, feel free to contact me. Thank you.

Very Truly Yours,



Ryan A. Nasher, P.E.

P:\STORMWATER MANAGEMENT\4873\NEW SWPPP REPORT\SECTION 2\4873 DRAINAGE NARRATIVE.docx

Summary Table

# **SUEZ WATER NEW YORK, INC GEYMER WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

## **SUMMARY TABLE**

**BY**

**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
232 NORTH MAIN STREET  
NEW CITY, NY 10956  
TEL: (845) 634-4694  
FAX: (845) 634-5543  
E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)

**SUMMARY FLOW  
EXISTING AND DEVELOPED CONDITIONS  
1, 10, & 100 YEAR STORMS PEAK RUNOFF**

<b>STORM FREQUENCY (YEAR)</b>	<b>EXISTING CONDITION PEAK FLOW (CFS) (PER HYDROCAD)</b>	<b>DEVELOPED CONDITION PEAK FLOW, NO ROUTING (CFS) (PER HYDROCAD)</b>	<b>CHANGE IN FLOW, ΔQ (CFS)</b>	<b>REMARK</b>
1	0.22	0.28	+0.06	*
10	0.55	0.63	+0.08	*
100	1.15	1.23	+0.08	*

\* Note: Zero net increase of peak runoff will be achieved by the proposed Dry Pond System. The location of the system is shown on the site plan drawings.

Location Maps

# **SUEZ WATER NEW YORK, INC GEYMER WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

## **LOCATION MAPS**

**BY**

**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
232 NORTH MAIN STREET  
NEW CITY, NY 10956  
TEL: (845) 634-4694  
FAX: (845) 634-5543  
E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)



**NORTH**



Source: [maps.google.com](https://maps.google.com)

**STREET MAP**



NORTH



Source: <http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>

## SOIL MAP

Drainage Calculation

**SUEZ WATER NEW YORK, INC  
GEYMER WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**DRAINAGE CALCULATION**

**BY**

**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
232 NORTH MAIN STREET  
NEW CITY, NY 10956  
TEL: (845) 634-4694  
FAX: (845) 634-5543  
E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)

**EXISTING CONDITION:**

The existing area of interest consists of one watershed (WS#1), with an area of about 0.153 acres. The site consists of woods and grass area, plus an access gravel road. The drainage area is delineated on the Existing Condition Drainage Map (E-1).

**WS#1:**

All soil within WS#1 belongs to Hydrological Soil Group "D".

A = 0.153 Acres	Composition	HSG "D"
	A <sub>Wood-grass</sub>	0.099 acs
	A <sub>Gravel</sub>	0.054 acs

Due to the small size of the watershed, the time of concentration is considered the minimum of 0.1 hours.

**WS#1 → P.O.I.#1**

**DEVELOPED CONDITION:**

Upon development of the site, the total area of the developed watershed will remain the same as the existing watershed area (0.153 acres). The developed condition consists of the construction of a building and an increase to the existing gravel road. The watershed area is delineated on the Developed Condition Drainage Map (D-1).

**WS#1:**

All soil within WS#1 belongs to Hydrological Soil Group "D".

A = 0.153 Acres	Composition	HSG "D"
	A <sub>Roof</sub>	0.017 acs
	A <sub>Gravel</sub>	0.084 acs
	A <sub>Grass</sub>	0.052 acs

Due to the small size of the watershed, the time of concentration is considered the minimum of 0.1 hours.

**ROOFTOP → DRY POND SYSTEM → P.O.I.#1.**

**WS#1 → P.O.I.#1.**

SMP Design

**SUEZ WATER NEW YORK, INC  
GEYMER WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**STORMWATER MANAGEMENT  
PRACTICE DESIGN CALCULATIONS**

**BY**

**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
232 NORTH MAIN STREET  
NEW CITY, NY 10956  
TEL: (845) 634-4694  
FAX: (845) 634-5543  
E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)

---

**WATER QUANTITY CALCULATION**  
**WESTCHESTER METHOD**

1. **Select Design Storm**  
(Use 10-Year, 24-Hour Storm)  
Total Rainfall = 4.90 inches
  
2. **Discount Additional Soil Percolation**  
Use Infiltration rate 0.00 inch/hr
  
3. **Calculate The Storage Volume (Vs):**  
10-Year, 24-Hour Rainfall = 4.90 inches

Soil: Hydrologic Soil Group (HSG) is "D", see attached Soil Survey Map.

Existing CN (WS#1) = 83,  $(Q_E)_{10} = 0.55$  cfs (Hydrocad, attached)  
Runoff depth = 3.08 inches

Proposed CN (WS#1) = 88,  $(Q_D)_{10} = 0.63$  cfs (Hydrocad, attached)  
Runoff depth = 3.57 inches

Drainage Area = 6,672 ft<sup>2</sup>

$$\Delta Vr = 3.57 \text{ in} - 3.08 \text{ in} = 0.49 \text{ in}$$

$$\Delta Vr = 0.49 \text{ in} * \frac{1 \text{ ft}}{12 \text{ in}}$$

$$\Delta Vr = 0.041 \text{ ft}$$

$$V_s = \Delta Vr * \text{Area}$$

$$V_s = 0.041 \text{ ft} * 6,672 \text{ ft}^2$$

$$V_s = 273.0 \text{ ft}^3$$

**The 10-year storm storage volume is 273.0 ft<sup>3</sup>**

## SMP SIZING CALCULATION

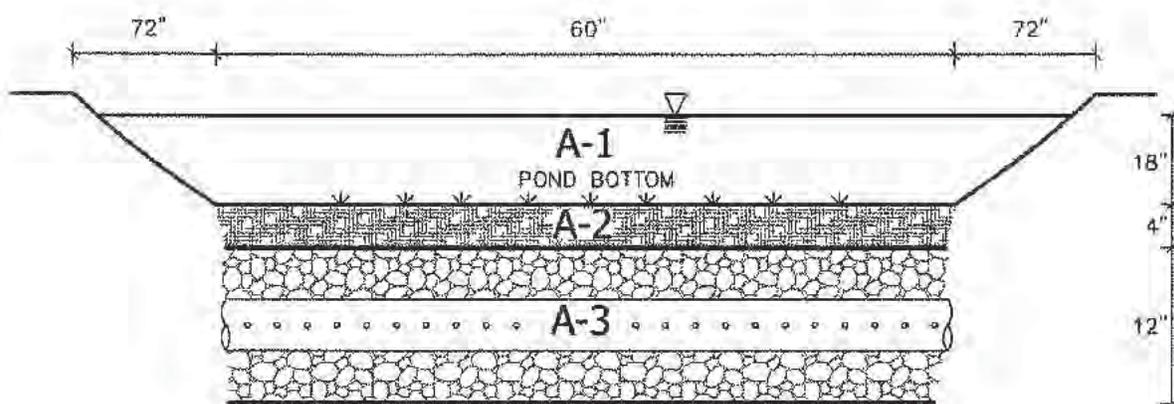
In order to provide zero net increase of peak runoff a dry pond system has been proposed. The storage is calculated as 273.0 cu.ft. for the entire WS#1.

### Calculate Provided Storage Volume:

The Dry Pond has the following characteristics:

- 34" deep
- 12" of ¾" gravel (porosity = 0.4) on bottom
- 4" of soil (porosity = 0.2) above the gravel
- 18" of freeboard between the top of the control structure to the surface of the soil

A cross-sectional, not to scale sketch of the dry pond system is shown below:



### DRY POND CROSS SECTION

N.T.S.

Void space in the dry pond cross-section:

$$= A1 \text{ (Void area above-ground)} + A2 \text{ (Void area in planting soil)} + A3 \text{ (Void area in gravel)}$$

$$= \left[ (18") \left( \frac{1}{2} \right) (204" + 60") \right] + (0.2)(60")(4") + (0.4)(60")(12")$$

$$= 2,712.0 \text{ in}^2 \text{ or } 18.8 \text{ ft}^2$$

Required dry pond length (total):

$$= \frac{273.0 \text{ ft}^3}{18.8 \text{ ft}^2} = 14.49 \text{ ft}$$

Use one (1) dry pond. Required length of the dry pond:

$$= 14.49 \text{ ft}$$

Provided Storage:

$$= (14.49 \text{ ft})(18.8 \text{ ft}^2) = 273.0 \text{ ft}^3$$

Note: HydroCAD was used to calculate the actual storage provided by the proposed system.

**The proposed Dry Pond will provide 309.0 ft<sup>3</sup> (@ ELV= 519.50') > 273.0 ft<sup>3</sup>**

OK✓

(Please see HydroCAD for detailed calculations)

Hydro CAD Model

**SUEZ WATER NEW YORK, INC  
GEYMER WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**HYDROCAD MODEL  
FOR EXISTING AND PROPOSED CONDITIONS  
1, 10, AND 100 YEAR STORMS**

**BY**

**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
232 NORTH MAIN STREET  
NEW CITY, NY 10956  
TEL: (845) 634-4694  
FAX: (845) 634-5543  
E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)

**EXISTING**  
**CONDITIONS**

**DEVELOPED**  
**CONDITIONS**



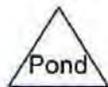
EXISTING



DEVELOPED



P-DRY DETENTION  
BASIN



Routing Diagram for 4873 SUEZ WATER NY  
Prepared by (enter your company name here), Printed 5/11/2022  
HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

**4873 SUEZ WATER NY**

Type III 24-hr 1-Year Rainfall=2.73"

Prepared by {enter your company name here}

Printed 5/11/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 2

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentD-WS#1A: DEVELOPED**

Runoff Area=0.153 ac 11.11% Impervious Runoff Depth=1.58"  
Tc=6.0 min CN=88 Runoff=0.28 cfs 0.020 af

**SubcatchmentE-WS#1: EXISTING**

Runoff Area=0.153 ac 0.00% Impervious Runoff Depth=1.23"  
Tc=6.0 min CN=83 Runoff=0.22 cfs 0.016 af

**Pond DDB: P-DRY DETENTION BASIN**

Peak Elev=0.00' Storage=0 cf

**Total Runoff Area = 0.306 ac Runoff Volume = 0.036 af Average Runoff Depth = 1.41"**  
**94.44% Pervious = 0.289 ac 5.56% Impervious = 0.017 ac**

**Summary for Subcatchment D-WS#1A: DEVELOPED**

Runoff = 0.28 cfs @ 12.09 hrs, Volume= 0.020 af, Depth= 1.58"

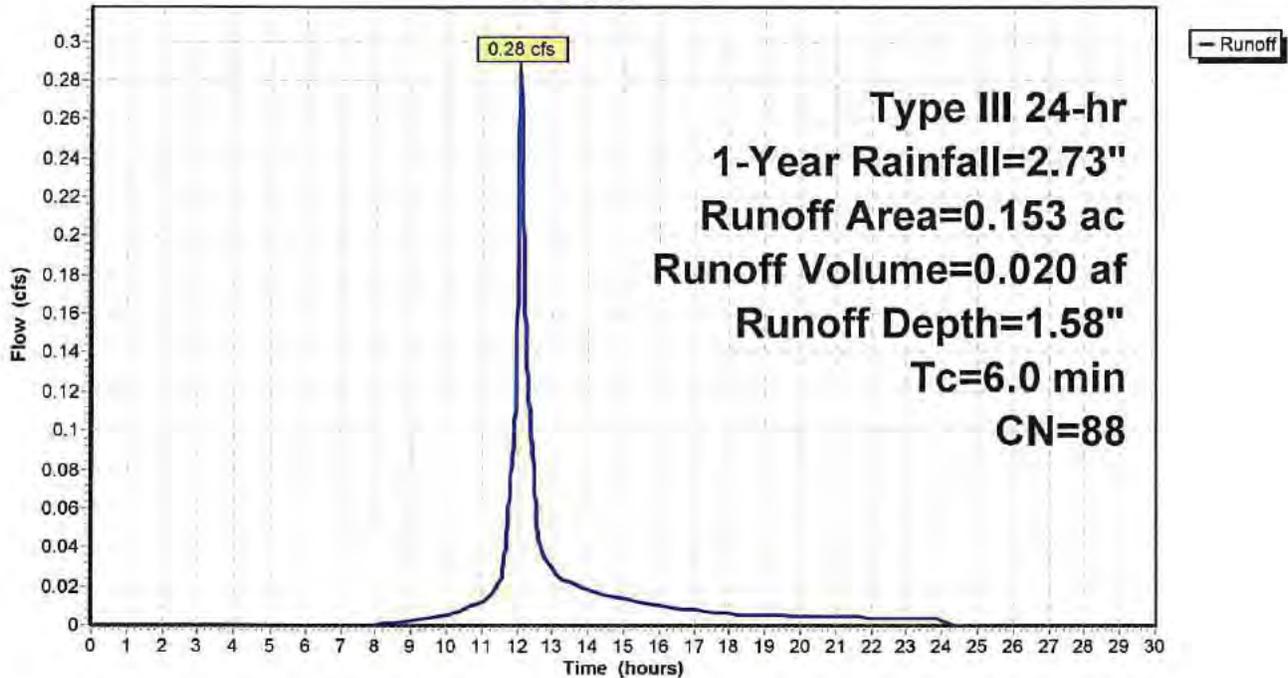
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 1-Year Rainfall=2.73"

Area (ac)	CN	Description
0.017	98	Roofs, HSG D
0.084	91	Gravel roads, HSG D
0.052	80	>75% Grass cover, Good, HSG D
0.153	88	Weighted Average
0.136		88.89% Pervious Area
0.017		11.11% Impervious Area

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

**Subcatchment D-WS#1A: DEVELOPED**

Hydrograph



**Summary for Subcatchment E-WS#1: EXISTING**

Runoff = 0.22 cfs @ 12.09 hrs, Volume= 0.016 af, Depth= 1.23"

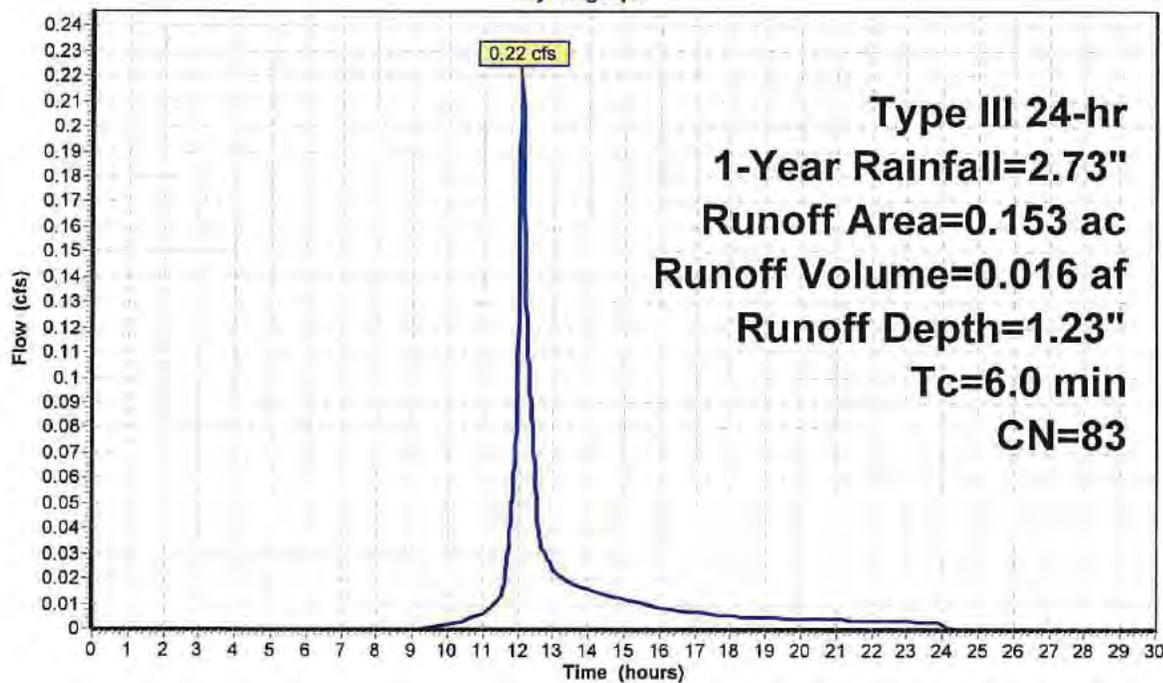
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 1-Year Rainfall=2.73"

Area (ac)	CN	Description
0.099	79	Woods/grass comb., Good, HSG D
0.054	91	Gravel roads, HSG D
0.153	83	Weighted Average
0.153		100.00% Pervious Area

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

**Subcatchment E-WS#1: EXISTING**

Hydrograph



— Runoff

**Summary for Pond DDB: P-DRY DETENTION BASIN**

Volume	Invert	Avail.Storage	Storage Description	
#1	516.67'	482 cf	Custom Stage Data (Prismatic) Listed below (Recalc)	
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
516.67	66	0.0	0	0
517.67	66	40.0	26	26
518.00	66	20.0	4	31
518.01	66	100.0	1	31
520.00	387	100.0	451	482

**Stage-Discharge for Pond DDB: P-DRY DETENTION BASIN**

Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)
516.67	0.00	517.73	0.00	518.79	0.00	519.85	0.00
516.69	0.00	517.75	0.00	518.81	0.00	519.87	0.00
516.71	0.00	517.77	0.00	518.83	0.00	519.89	0.00
516.73	0.00	517.79	0.00	518.85	0.00	519.91	0.00
516.75	0.00	517.81	0.00	518.87	0.00	519.93	0.00
516.77	0.00	517.83	0.00	518.89	0.00	519.95	0.00
516.79	0.00	517.85	0.00	518.91	0.00	519.97	0.00
516.81	0.00	517.87	0.00	518.93	0.00	519.99	0.00
516.83	0.00	517.89	0.00	518.95	0.00		
516.85	0.00	517.91	0.00	518.97	0.00		
516.87	0.00	517.93	0.00	518.99	0.00		
516.89	0.00	517.95	0.00	519.01	0.00		
516.91	0.00	517.97	0.00	519.03	0.00		
516.93	0.00	517.99	0.00	519.05	0.00		
516.95	0.00	518.01	0.00	519.07	0.00		
516.97	0.00	518.03	0.00	519.09	0.00		
516.99	0.00	518.05	0.00	519.11	0.00		
517.01	0.00	518.07	0.00	519.13	0.00		
517.03	0.00	518.09	0.00	519.15	0.00		
517.05	0.00	518.11	0.00	519.17	0.00		
517.07	0.00	518.13	0.00	519.19	0.00		
517.09	0.00	518.15	0.00	519.21	0.00		
517.11	0.00	518.17	0.00	519.23	0.00		
517.13	0.00	518.19	0.00	519.25	0.00		
517.15	0.00	518.21	0.00	519.27	0.00		
517.17	0.00	518.23	0.00	519.29	0.00		
517.19	0.00	518.25	0.00	519.31	0.00		
517.21	0.00	518.27	0.00	519.33	0.00		
517.23	0.00	518.29	0.00	519.35	0.00		
517.25	0.00	518.31	0.00	519.37	0.00		
517.27	0.00	518.33	0.00	519.39	0.00		
517.29	0.00	518.35	0.00	519.41	0.00		
517.31	0.00	518.37	0.00	519.43	0.00		
517.33	0.00	518.39	0.00	519.45	0.00		
517.35	0.00	518.41	0.00	519.47	0.00		
517.37	0.00	518.43	0.00	519.49	0.00		
517.39	0.00	518.45	0.00	519.51	0.00		
517.41	0.00	518.47	0.00	519.53	0.00		
517.43	0.00	518.49	0.00	519.55	0.00		
517.45	0.00	518.51	0.00	519.57	0.00		
517.47	0.00	518.53	0.00	519.59	0.00		
517.49	0.00	518.55	0.00	519.61	0.00		
517.51	0.00	518.57	0.00	519.63	0.00		
517.53	0.00	518.59	0.00	519.65	0.00		
517.55	0.00	518.61	0.00	519.67	0.00		
517.57	0.00	518.63	0.00	519.69	0.00		
517.59	0.00	518.65	0.00	519.71	0.00		
517.61	0.00	518.67	0.00	519.73	0.00		
517.63	0.00	518.69	0.00	519.75	0.00		
517.65	0.00	518.71	0.00	519.77	0.00		
517.67	0.00	518.73	0.00	519.79	0.00		
517.69	0.00	518.75	0.00	519.81	0.00		
517.71	0.00	518.77	0.00	519.83	0.00		

**Stage-Area-Storage for Pond DDB: P-DRY DETENTION BASIN**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
516.67	66	0	519.32	277	256
516.72	66	1	519.37	285	270
516.77	66	3	519.42	293	285
516.82	66	4	519.47	302	300
516.87	66	5	519.52	310	315
516.92	66	7	519.57	318	331
516.97	66	8	519.62	326	347
517.02	66	9	519.67	334	363
517.07	66	11	519.72	342	380
517.12	66	12	519.77	350	397
517.17	66	13	519.82	358	415
517.22	66	15	519.87	366	433
517.27	66	16	519.92	374	452
517.32	66	17	519.97	382	471
517.37	66	18			
517.42	66	20			
517.47	66	21			
517.52	66	22			
517.57	66	24			
517.62	66	25			
517.67	66	26			
517.72	66	27			
517.77	66	28			
517.82	66	28			
517.87	66	29			
517.92	66	30			
517.97	66	30			
518.02	68	32			
518.07	76	36			
518.12	84	40			
518.17	92	44			
518.22	100	49			
518.27	108	54			
518.32	116	60			
518.37	124	66			
518.42	132	72			
518.47	140	79			
518.52	148	86			
518.57	156	94			
518.62	164	102			
518.67	172	110			
518.72	181	119			
518.77	189	128			
518.82	197	138			
518.87	205	148			
518.92	213	158			
518.97	221	169			
519.02	229	180			
519.07	237	192			
519.12	245	204			
519.17	253	217			
519.22	261	229			
519.27	269	243			



**Summary for Subcatchment D-WS#1A: DEVELOPED**

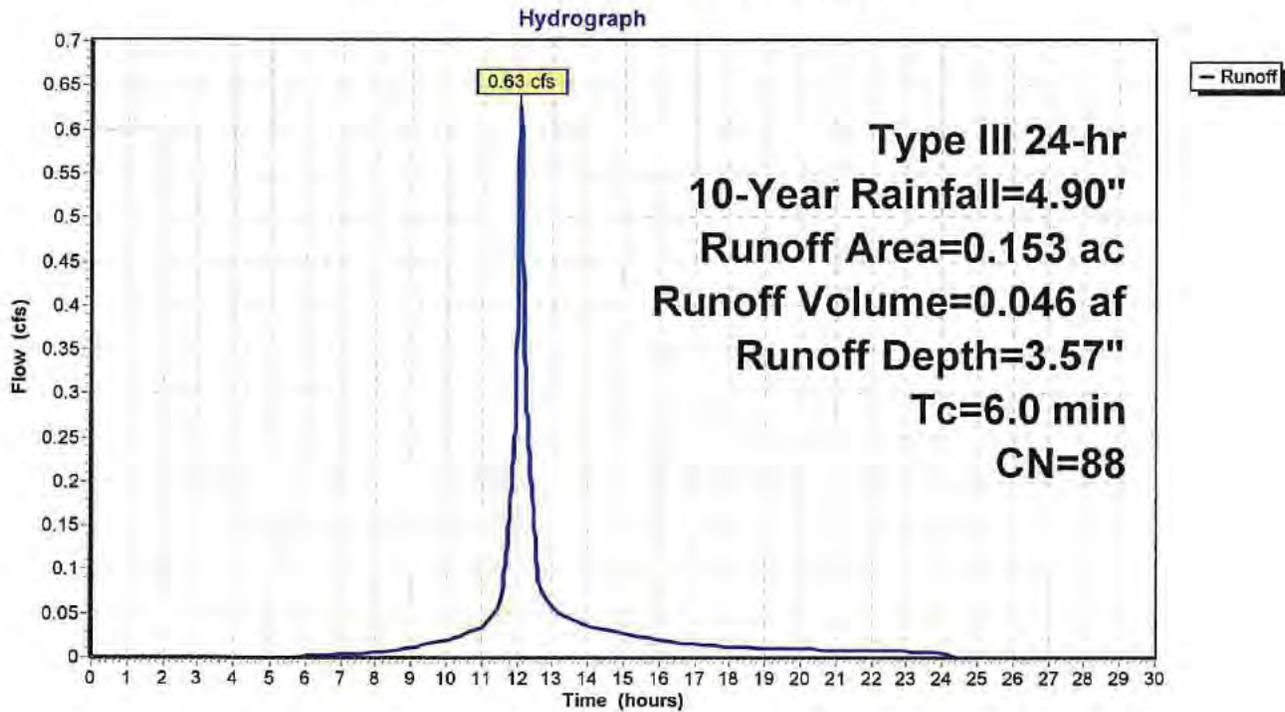
Runoff = 0.63 cfs @ 12.09 hrs, Volume= 0.046 af, Depth= 3.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-Year Rainfall=4.90"

Area (ac)	CN	Description
0.017	98	Roofs, HSG D
0.084	91	Gravel roads, HSG D
0.052	80	>75% Grass cover, Good, HSG D
0.153	88	Weighted Average
0.136		88.89% Pervious Area
0.017		11.11% Impervious Area

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

**Subcatchment D-WS#1A: DEVELOPED**



**Summary for Subcatchment E-WS#1: EXISTING**

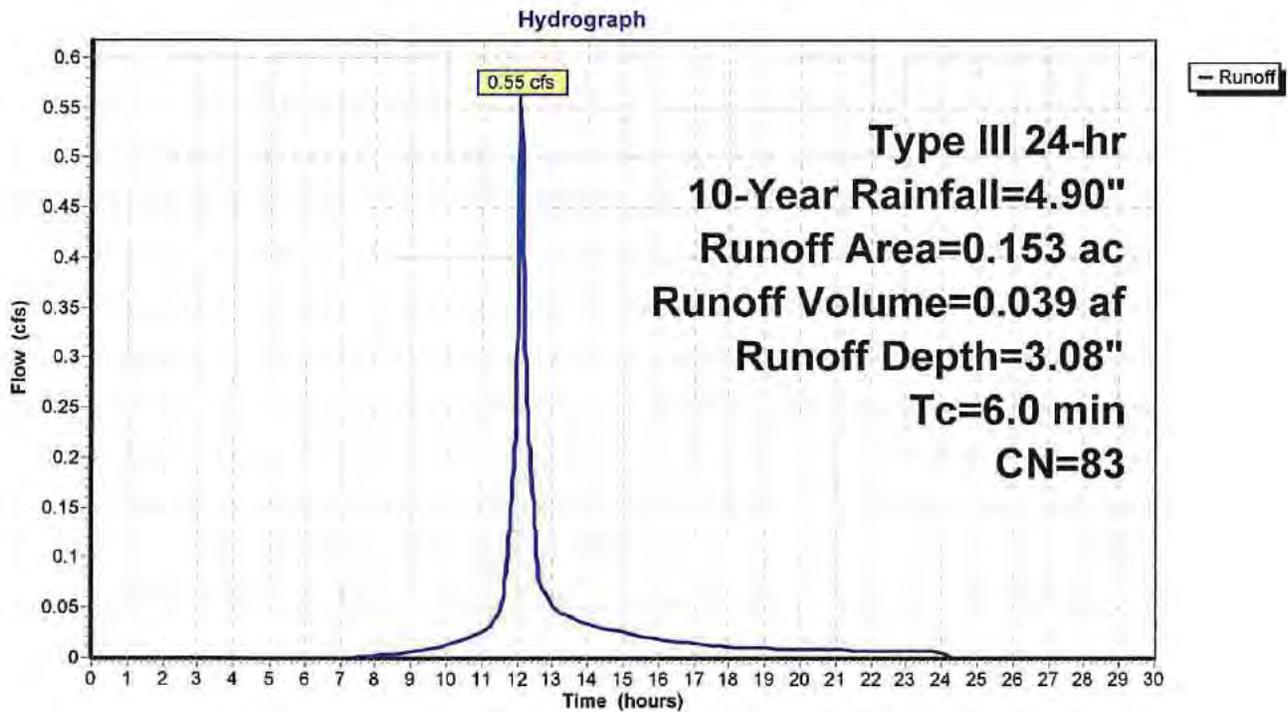
Runoff = 0.55 cfs @ 12.09 hrs, Volume= 0.039 af, Depth= 3.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-Year Rainfall=4.90"

Area (ac)	CN	Description
0.099	79	Woods/grass comb., Good, HSG D
0.054	91	Gravel roads, HSG D
0.153	83	Weighted Average
0.153		100.00% Pervious Area

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

**Subcatchment E-WS#1: EXISTING**



**Summary for Pond DDB: P-DRY DETENTION BASIN**

Volume #1	Invert 516.67'	Avail.Storage 482 cf	Storage Description Custom Stage Data (Prismatic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
516.67	66	0.0	0	0	
517.67	66	40.0	26	26	
518.00	66	20.0	4	31	
518.01	66	100.0	1	31	
520.00	387	100.0	451	482	

**Stage-Discharge for Pond DDB: P-DRY DETENTION BASIN**

Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)
516.67	0.00	517.73	0.00	518.79	0.00	519.85	0.00
516.69	0.00	517.75	0.00	518.81	0.00	519.87	0.00
516.71	0.00	517.77	0.00	518.83	0.00	519.89	0.00
516.73	0.00	517.79	0.00	518.85	0.00	519.91	0.00
516.75	0.00	517.81	0.00	518.87	0.00	519.93	0.00
516.77	0.00	517.83	0.00	518.89	0.00	519.95	0.00
516.79	0.00	517.85	0.00	518.91	0.00	519.97	0.00
516.81	0.00	517.87	0.00	518.93	0.00	519.99	0.00
516.83	0.00	517.89	0.00	518.95	0.00		
516.85	0.00	517.91	0.00	518.97	0.00		
516.87	0.00	517.93	0.00	518.99	0.00		
516.89	0.00	517.95	0.00	519.01	0.00		
516.91	0.00	517.97	0.00	519.03	0.00		
516.93	0.00	517.99	0.00	519.05	0.00		
516.95	0.00	518.01	0.00	519.07	0.00		
516.97	0.00	518.03	0.00	519.09	0.00		
516.99	0.00	518.05	0.00	519.11	0.00		
517.01	0.00	518.07	0.00	519.13	0.00		
517.03	0.00	518.09	0.00	519.15	0.00		
517.05	0.00	518.11	0.00	519.17	0.00		
517.07	0.00	518.13	0.00	519.19	0.00		
517.09	0.00	518.15	0.00	519.21	0.00		
517.11	0.00	518.17	0.00	519.23	0.00		
517.13	0.00	518.19	0.00	519.25	0.00		
517.15	0.00	518.21	0.00	519.27	0.00		
517.17	0.00	518.23	0.00	519.29	0.00		
517.19	0.00	518.25	0.00	519.31	0.00		
517.21	0.00	518.27	0.00	519.33	0.00		
517.23	0.00	518.29	0.00	519.35	0.00		
517.25	0.00	518.31	0.00	519.37	0.00		
517.27	0.00	518.33	0.00	519.39	0.00		
517.29	0.00	518.35	0.00	519.41	0.00		
517.31	0.00	518.37	0.00	519.43	0.00		
517.33	0.00	518.39	0.00	519.45	0.00		
517.35	0.00	518.41	0.00	519.47	0.00		
517.37	0.00	518.43	0.00	519.49	0.00		
517.39	0.00	518.45	0.00	519.51	0.00		
517.41	0.00	518.47	0.00	519.53	0.00		
517.43	0.00	518.49	0.00	519.55	0.00		
517.45	0.00	518.51	0.00	519.57	0.00		
517.47	0.00	518.53	0.00	519.59	0.00		
517.49	0.00	518.55	0.00	519.61	0.00		
517.51	0.00	518.57	0.00	519.63	0.00		
517.53	0.00	518.59	0.00	519.65	0.00		
517.55	0.00	518.61	0.00	519.67	0.00		
517.57	0.00	518.63	0.00	519.69	0.00		
517.59	0.00	518.65	0.00	519.71	0.00		
517.61	0.00	518.67	0.00	519.73	0.00		
517.63	0.00	518.69	0.00	519.75	0.00		
517.65	0.00	518.71	0.00	519.77	0.00		
517.67	0.00	518.73	0.00	519.79	0.00		
517.69	0.00	518.75	0.00	519.81	0.00		
517.71	0.00	518.77	0.00	519.83	0.00		

**Stage-Area-Storage for Pond DDB: P-DRY DETENTION BASIN**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
516.67	66	0	519.32	277	256
516.72	66	1	519.37	285	270
516.77	66	3	519.42	293	285
516.82	66	4	519.47	302	300
516.87	66	5	519.52	310	315
516.92	66	7	519.57	318	331
516.97	66	8	519.62	326	347
517.02	66	9	519.67	334	363
517.07	66	11	519.72	342	380
517.12	66	12	519.77	350	397
517.17	66	13	519.82	358	415
517.22	66	15	519.87	366	433
517.27	66	16	519.92	374	452
517.32	66	17	519.97	382	471
517.37	66	18			
517.42	66	20			
517.47	66	21			
517.52	66	22			
517.57	66	24			
517.62	66	25			
517.67	66	26			
517.72	66	27			
517.77	66	28			
517.82	66	28			
517.87	66	29			
517.92	66	30			
517.97	66	30			
518.02	68	32			
518.07	76	36			
518.12	84	40			
518.17	92	44			
518.22	100	49			
518.27	108	54			
518.32	116	60			
518.37	124	66			
518.42	132	72			
518.47	140	79			
518.52	148	86			
518.57	156	94			
518.62	164	102			
518.67	172	110			
518.72	181	119			
518.77	189	128			
518.82	197	138			
518.87	205	148			
518.92	213	158			
518.97	221	169			
519.02	229	180			
519.07	237	192			
519.12	245	204			
519.17	253	217			
519.22	261	229			
519.27	269	243			

**4873 SUEZ WATER NY**

Type III 24-hr 100-Year Rainfall=8.70"

Prepared by {enter your company name here}

Printed 5/11/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 14

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment D-WS#1A: DEVELOPED**

Runoff Area=0.153 ac 11.11% Impervious Runoff Depth=7.25"  
Tc=6.0 min CN=88 Runoff=1.23 cfs 0.092 af

**Subcatchment E-WS#1: EXISTING**

Runoff Area=0.153 ac 0.00% Impervious Runoff Depth=6.65"  
Tc=6.0 min CN=83 Runoff=1.15 cfs 0.085 af

**Pond DDB: P-DRY DETENTION BASIN**

Peak Elev=0.00' Storage=0 cf

**Total Runoff Area = 0.306 ac Runoff Volume = 0.177 af Average Runoff Depth = 6.95"**  
**94.44% Pervious = 0.289 ac 5.56% Impervious = 0.017 ac**

**Summary for Subcatchment D-WS#1A: DEVELOPED**

Runoff = 1.23 cfs @ 12.08 hrs, Volume= 0.092 af, Depth= 7.25"

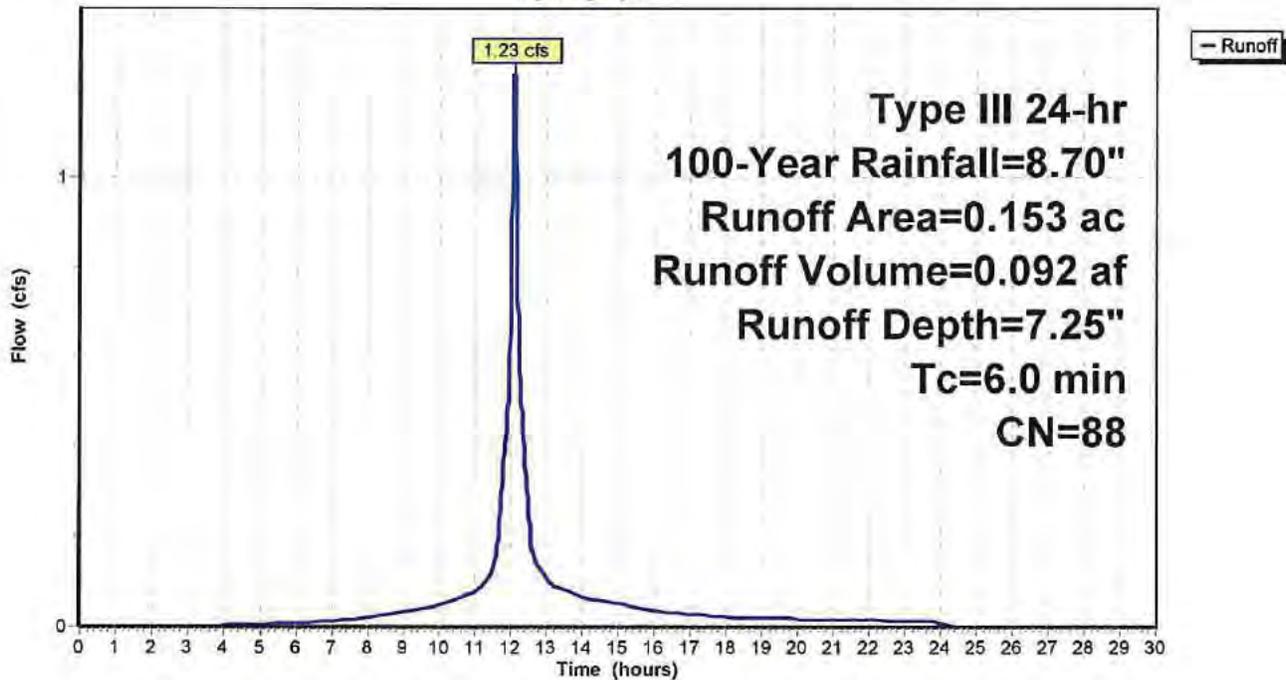
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 100-Year Rainfall=8.70"

Area (ac)	CN	Description
0.017	98	Roofs, HSG D
0.084	91	Gravel roads, HSG D
0.052	80	>75% Grass cover, Good, HSG D
0.153	88	Weighted Average
0.136		88.89% Pervious Area
0.017		11.11% Impervious Area

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

**Subcatchment D-WS#1A: DEVELOPED**

Hydrograph



**Summary for Subcatchment E-WS#1: EXISTING**

Runoff = 1.15 cfs @ 12.09 hrs, Volume= 0.085 af, Depth= 6.65"

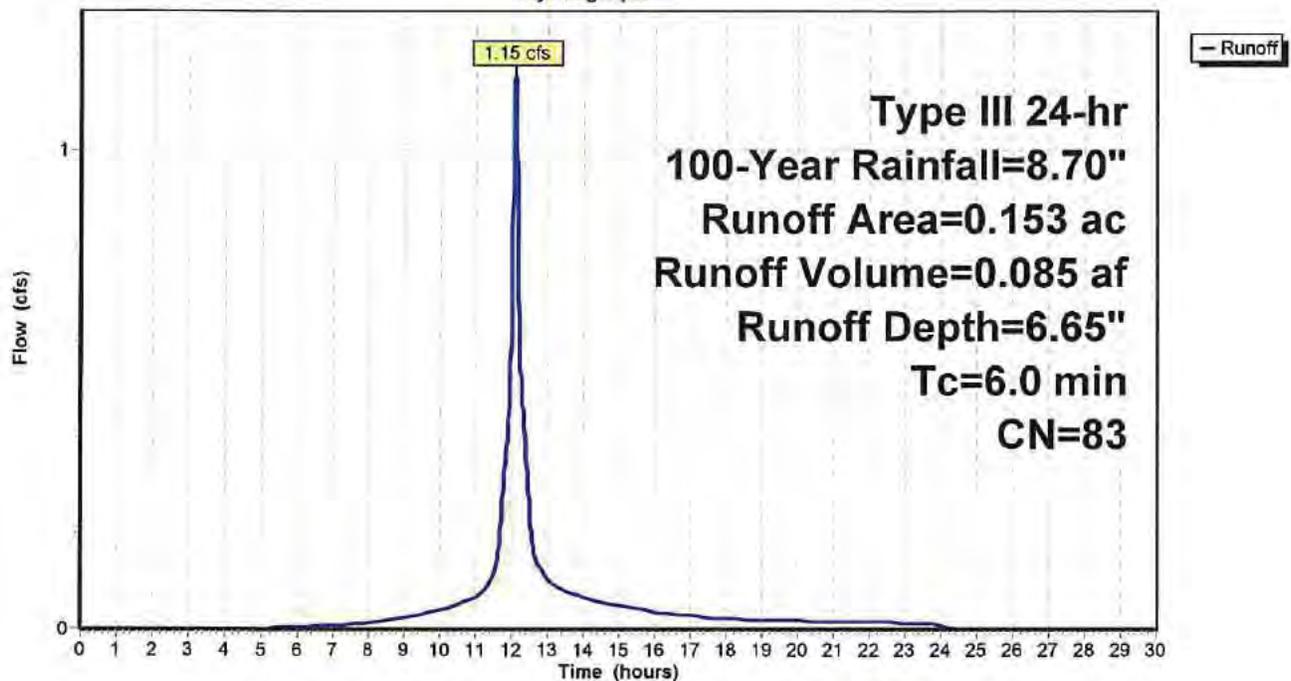
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 100-Year Rainfall=8.70"

Area (ac)	CN	Description
0.099	79	Woods/grass comb., Good, HSG D
0.054	91	Gravel roads, HSG D
0.153	83	Weighted Average
0.153		100.00% Pervious Area

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

**Subcatchment E-WS#1: EXISTING**

Hydrograph



**Summary for Pond DDB: P-DRY DETENTION BASIN**

Volume #1	Invert	Avail.Storage	Storage Description		
	516.67'	482 cf	Custom Stage Data (Prismatic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
516.67	66	0.0	0	0	
517.67	66	40.0	26	26	
518.00	66	20.0	4	31	
518.01	66	100.0	1	31	
520.00	387	100.0	451	482	

**Stage-Discharge for Pond DDB: P-DRY DETENTION BASIN**

Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)
516.67	0.00	517.73	0.00	518.79	0.00	519.85	0.00
516.69	0.00	517.75	0.00	518.81	0.00	519.87	0.00
516.71	0.00	517.77	0.00	518.83	0.00	519.89	0.00
516.73	0.00	517.79	0.00	518.85	0.00	519.91	0.00
516.75	0.00	517.81	0.00	518.87	0.00	519.93	0.00
516.77	0.00	517.83	0.00	518.89	0.00	519.95	0.00
516.79	0.00	517.85	0.00	518.91	0.00	519.97	0.00
516.81	0.00	517.87	0.00	518.93	0.00	519.99	0.00
516.83	0.00	517.89	0.00	518.95	0.00		
516.85	0.00	517.91	0.00	518.97	0.00		
516.87	0.00	517.93	0.00	518.99	0.00		
516.89	0.00	517.95	0.00	519.01	0.00		
516.91	0.00	517.97	0.00	519.03	0.00		
516.93	0.00	517.99	0.00	519.05	0.00		
516.95	0.00	518.01	0.00	519.07	0.00		
516.97	0.00	518.03	0.00	519.09	0.00		
516.99	0.00	518.05	0.00	519.11	0.00		
517.01	0.00	518.07	0.00	519.13	0.00		
517.03	0.00	518.09	0.00	519.15	0.00		
517.05	0.00	518.11	0.00	519.17	0.00		
517.07	0.00	518.13	0.00	519.19	0.00		
517.09	0.00	518.15	0.00	519.21	0.00		
517.11	0.00	518.17	0.00	519.23	0.00		
517.13	0.00	518.19	0.00	519.25	0.00		
517.15	0.00	518.21	0.00	519.27	0.00		
517.17	0.00	518.23	0.00	519.29	0.00		
517.19	0.00	518.25	0.00	519.31	0.00		
517.21	0.00	518.27	0.00	519.33	0.00		
517.23	0.00	518.29	0.00	519.35	0.00		
517.25	0.00	518.31	0.00	519.37	0.00		
517.27	0.00	518.33	0.00	519.39	0.00		
517.29	0.00	518.35	0.00	519.41	0.00		
517.31	0.00	518.37	0.00	519.43	0.00		
517.33	0.00	518.39	0.00	519.45	0.00		
517.35	0.00	518.41	0.00	519.47	0.00		
517.37	0.00	518.43	0.00	519.49	0.00		
517.39	0.00	518.45	0.00	519.51	0.00		
517.41	0.00	518.47	0.00	519.53	0.00		
517.43	0.00	518.49	0.00	519.55	0.00		
517.45	0.00	518.51	0.00	519.57	0.00		
517.47	0.00	518.53	0.00	519.59	0.00		
517.49	0.00	518.55	0.00	519.61	0.00		
517.51	0.00	518.57	0.00	519.63	0.00		
517.53	0.00	518.59	0.00	519.65	0.00		
517.55	0.00	518.61	0.00	519.67	0.00		
517.57	0.00	518.63	0.00	519.69	0.00		
517.59	0.00	518.65	0.00	519.71	0.00		
517.61	0.00	518.67	0.00	519.73	0.00		
517.63	0.00	518.69	0.00	519.75	0.00		
517.65	0.00	518.71	0.00	519.77	0.00		
517.67	0.00	518.73	0.00	519.79	0.00		
517.69	0.00	518.75	0.00	519.81	0.00		
517.71	0.00	518.77	0.00	519.83	0.00		

**Stage-Area-Storage for Pond DDB: P-DRY DETENTION BASIN**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)	Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
516.67	66	0	519.32	277	256
516.72	66	1	519.37	285	270
516.77	66	3	519.42	293	285
516.82	66	4	519.47	302	300
516.87	66	5	519.52	310	315
516.92	66	7	519.57	318	331
516.97	66	8	519.62	326	347
517.02	66	9	519.67	334	363
517.07	66	11	519.72	342	380
517.12	66	12	519.77	350	397
517.17	66	13	519.82	358	415
517.22	66	15	519.87	366	433
517.27	66	16	519.92	374	452
517.32	66	17	519.97	382	471
517.37	66	18			
517.42	66	20			
517.47	66	21			
517.52	66	22			
517.57	66	24			
517.62	66	25			
517.67	66	26			
517.72	66	27			
517.77	66	28			
517.82	66	28			
517.87	66	29			
517.92	66	30			
517.97	66	30			
518.02	68	32			
518.07	76	36			
518.12	84	40			
518.17	92	44			
518.22	100	49			
518.27	108	54			
518.32	116	60			
518.37	124	66			
518.42	132	72			
518.47	140	79			
518.52	148	86			
518.57	156	94			
518.62	164	102			
518.67	172	110			
518.72	181	119			
518.77	189	128			
518.82	197	138			
518.87	205	148			
518.92	213	158			
518.97	221	169			
519.02	229	180			
519.07	237	192			
519.12	245	204			
519.17	253	217			
519.22	261	229			
519.27	269	243			

Section 3: NOI & NS4

**SUEZ WATER NEW YORK, INC  
GEYMER WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**SECTION 3:**

**SPDES ACKNOWLEDGEMENT LETTER,  
FILLED OUT NOTICE OF INTENT (N.O.I.),  
AND  
MS4 SWPPP ACCEPTANCE FORM**

**BY**

**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
232 NORTH MAIN STREET  
NEW CITY, NY 10956  
TEL: (845) 634-4694  
FAX: (845) 634-5543  
E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)

## NOTICE OF INTENT



**New York State Department of Environmental Conservation**  
**Division of Water**  
**625 Broadway, 4th Floor**  
**Albany, New York 12233-3505**

NYR       
 (for DEC use only)

**Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-20-001**  
 All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

**-IMPORTANT-**

**RETURN THIS FORM TO THE ADDRESS ABOVE**

**OWNER/OPERATOR MUST SIGN FORM**

Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)

S U E Z W A T E R N E W Y O R K , I N C

Owner/Operator Contact Person Last Name (NOT CONSULTANT)

G A R A B E D

Owner/Operator Contact Person First Name

S T E V E N

Owner/Operator Mailing Address

1 6 3 O L D M I L L R O A D

City

W E S T N Y A C K

State

N Y

Zip

1 0 9 9 4 -

Phone (Owner/Operator)

8 4 5 - 6 2 0 - 3 3 1 9

Fax (Owner/Operator)

- - - - -

Email (Owner/Operator)

S T E V E N . G A R A B E D @ S U E Z . C O M

FED TAX ID

- (not required for individuals)

## Project Site Information

Project/Site Name

S W N Y , I N C G E Y M E R W E L L 1 &amp; 2

Street Address (NOT P.O. BOX)

7 0 G E Y M E R D R I V E

Side of Street

 North  South  East  West

City/Town/Village (THAT ISSUES BUILDING PERMIT)

T O W N O F C A R M E L

State Zip

N Y 1 0 5 4 1 -

County

P U T N A M

DEC Region

3

Name of Nearest Cross Street

P A R K E R D R E

Distance to Nearest Cross Street (Feet)

9 0 0

Project In Relation to Cross Street

 North  South  East  West

Tax Map Numbers

Section-Block-Parcel

7 5 . 1 3 - 1 - 6

Tax Map Numbers

1. Provide the Geographic Coordinates for the project site. To do this, go to the NYSDEC Stormwater Interactive Map on the DEC website at:

<https://gisservices.dec.ny.gov/gis/stormwater/>

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located the centroid of your project site, go to the bottom right hand corner of the map for the X, Y coordinates. Enter the coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting)

-7 3 7 7 7 3

Ex. -73.749

Y Coordinates (Northing)

4 1 3 6 4 7

Ex. 42.652

2. What is the nature of this construction project?

- New Construction
- Redevelopment with increase in impervious area
- Redevelopment with no increase in impervious area

3. Select the predominant land use for both pre and post development conditions.  
**SELECT ONLY ONE CHOICE FOR EACH**

**Pre-Development  
Existing Land Use**

**Post-Development  
Future Land Use**

Number of Lots

--	--

- FOREST
- PASTURE/OPEN LAND
- CULTIVATED LAND
- SINGLE FAMILY HOME
- SINGLE FAMILY SUBDIVISION
- TOWN HOME RESIDENTIAL
- MULTIFAMILY RESIDENTIAL
- INSTITUTIONAL/SCHOOL
- INDUSTRIAL
- COMMERCIAL
- ROAD/HIGHWAY
- RECREATIONAL/SPORTS FIELD
- BIKE PATH/TRAIL
- LINEAR UTILITY
- PARKING LOT
- OTHER

- SINGLE FAMILY HOME
- SINGLE FAMILY SUBDIVISION
- TOWN HOME RESIDENTIAL
- MULTIFAMILY RESIDENTIAL
- INSTITUTIONAL/SCHOOL
- INDUSTRIAL
- COMMERCIAL
- MUNICIPAL
- ROAD/HIGHWAY
- RECREATIONAL/SPORTS FIELD
- BIKE PATH/TRAIL
- LINEAR UTILITY (water, sewer, gas, etc.)
- PARKING LOT
- CLEARING/GRADING ONLY
- DEMOLITION, NO REDEVELOPMENT
- WELL DRILLING ACTIVITY \*(Oil, Gas, etc.)
- OTHER

W	A	T	E	R	F	A	C	I	L	I	T	Y
---	---	---	---	---	---	---	---	---	---	---	---	---

W	A	T	E	R	F	A	C	I	L	I	T	Y
---	---	---	---	---	---	---	---	---	---	---	---	---

\*Note: for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

Total Site Area	Total Area To Be Disturbed	Existing Impervious Area To Be Disturbed	Future Impervious Area Within Disturbed Area
<input type="text"/> <input type="text"/> <input type="text"/> 4 . <input type="text"/> 0	<input type="text"/> <input type="text"/> <input type="text"/> 0 . <input type="text"/> 6	<input type="text"/> <input type="text"/> <input type="text"/> 0 . <input type="text"/> 0	<input type="text"/> <input type="text"/> <input type="text"/> 0 . <input type="text"/> 1

5. Do you plan to disturb more than 5 acres of soil at any one time?  Yes  No

6. Indicate the percentage of each Hydrologic Soil Group(HSG) at the site.

<input type="text"/> <input type="text"/> <input type="text"/> %	<input type="text"/> <input type="text"/> <input type="text"/> %	<input type="text"/> <input type="text"/> <input type="text"/> %	<input type="text"/> 1 <input type="text"/> 0 <input type="text"/> 0 %
--	--	--	--

7. Is this a phased project?  Yes  No

8. Enter the planned start and end dates of the disturbance activities.

Start Date	End Date
<input type="text"/> 0 <input type="text"/> 6 / <input type="text"/> 0 <input type="text"/> 6 / <input type="text"/> 2 <input type="text"/> 0 <input type="text"/> 2 <input type="text"/> 2	- <input type="text"/> 0 <input type="text"/> 6 / <input type="text"/> 0 <input type="text"/> 5 / <input type="text"/> 2 <input type="text"/> 0 <input type="text"/> 2 <input type="text"/> 3









Post-construction Stormwater Management Practice (SMP) Requirements

**Important: Completion of Questions 27-39 is not required if response to Question 22 is No.**

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

- Preservation of Undisturbed Areas
- Preservation of Buffers
- Reduction of Clearing and Grading
- Locating Development in Less Sensitive Areas
- Roadway Reduction
- Sidewalk Reduction
- Driveway Reduction
- Cul-de-sac Reduction
- Building Footprint Reduction
- Parking Reduction

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

- All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).
- Compacted areas were considered as impervious cover when calculating the WQv Required, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

**Total WQv Required**

.     acre-feet

29. Identify the RR techniques (Area Reduction), RR techniques (Volume Reduction) and Standard SMPs with RR Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required (#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

**Note:** Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

<u>RR Techniques (Area Reduction)</u>	<u>Total Contributing Area (acres)</u>		<u>Total Contributing Impervious Area (acres)</u>	
<input type="checkbox"/> Conservation of Natural Areas (RR-1) ...	<input type="text"/>	<input type="text"/>	and/or	<input type="text"/>
<input type="checkbox"/> Sheetflow to Riparian Buffers/Filters Strips (RR-2) .....	<input type="text"/>	<input type="text"/>	and/or	<input type="text"/>
<input type="checkbox"/> Tree Planting/Tree Pit (RR-3) .....	<input type="text"/>	<input type="text"/>	and/or	<input type="text"/>
<input type="checkbox"/> Disconnection of Rooftop Runoff (RR-4) ..	<input type="text"/>	<input type="text"/>	and/or	<input type="text"/>
<u>RR Techniques (Volume Reduction)</u>				
<input type="checkbox"/> Vegetated Swale (RR-5) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Rain Garden (RR-6) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Stormwater Planter (RR-7) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Rain Barrel/Cistern (RR-8) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Porous Pavement (RR-9) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Green Roof (RR-10) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<u>Standard SMPs with RRv Capacity</u>				
<input type="checkbox"/> Infiltration Trench (I-1) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Infiltration Basin (I-2) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Dry Well (I-3) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Underground Infiltration System (I-4) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Bioretention (F-5) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Dry Swale (O-1) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<u>Standard SMPs</u>				
<input type="checkbox"/> Micropool Extended Detention (P-1) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Wet Pond (P-2) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Wet Extended Detention (P-3) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Multiple Pond System (P-4) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Pocket Pond (P-5) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Surface Sand Filter (F-1) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Underground Sand Filter (F-2) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Perimeter Sand Filter (F-3) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Organic Filter (F-4) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Shallow Wetland (W-1) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Extended Detention Wetland (W-2) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Pond/Wetland System (W-3) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Pocket Wetland (W-4) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Wet Swale (O-2) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>









**Owner/Operator Certification**

I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I hereby certify that this document and the corresponding documents were prepared under my direction or supervision. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgment that I will receive as a result of submitting this NOI and can be as long as sixty (60) business days as provided for in the general permit. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction, and agreeing to comply with all the terms and conditions of the general permit for which this NOI is being submitted.

**Print First Name**

S	T	E	V	E	N														
---	---	---	---	---	---	--	--	--	--	--	--	--	--	--	--	--	--	--	--

**MI**

--

**Print Last Name**

G	A	R	A	B	E	D													
---	---	---	---	---	---	---	--	--	--	--	--	--	--	--	--	--	--	--	--

**Owner/Operator Signature**

--

**Date**

		/			/			
--	--	---	--	--	---	--	--	--



Department of  
Environmental  
Conservation

NYS Department of Environmental Conservation  
Division of Water  
625 Broadway, 4th Floor  
Albany, New York 12233-3505

**MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance  
Form**

for  
**Construction Activities Seeking Authorization Under SPDES General Permit**  
**\*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)**

**I. Project Owner/Operator Information**

1. Owner/Operator Name: SUEZ WATER NEW YORK, INC  
2. Contact Person: STEVEN GARABED  
3. Street Address: 163 OLD MILL ROAD  
4. City/State/Zip: WEST NYACK / NY / 10994

**II. Project Site Information**

5. Project/Site Name: SUEZ WATER NEW YORK, INC GEYMER WELL 1 & 2  
6. Street Address: 70 GEYMER DRIVE  
7. City/State/Zip: CARMEL / NY / 10541

**III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information**

8. SWPPP Reviewed by: RICHARD FRANZETTI, PE, LEED  
9. Title/Position: TOWN ENGINEER  
10. Date Final SWPPP Reviewed and Accepted:

**IV. Regulated MS4 Information**

11. Name of MS4: TOWN OF CARMEL  
12. MS4 SPDES Permit Identification Number: NYR20A 294  
13. Contact Person: RICHARD FRANZETTI, PE, LEED  
14. Street Address: 60 MCALPIN AVENUE  
15. City/State/Zip: MAHOPAC, NY 10541  
16. Telephone Number: 845-628-1500

## MS4 SWPPP Acceptance Form - continued

### V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s).  
Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name: RICHARD FRANZETTI, PE, LEED

Title/Position: TOWN ENGINEER

Signature:

Date:

### VI. Additional Information

Appendix - F

**SUEZ WATER NEW YORK, INC  
GEYMER WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**APPENDIX F  
INFILTRATION TEST CERTIFICATION**

**BY**

**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
232 NORTH MAIN STREET  
NEW CITY, NY 10956  
TEL: (845) 634-4694  
FAX: (845) 634-5543  
E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)



# ATZL, NASHER & ZIGLER P.C.

ENGINEERS-SURVEYORS-PLANNERS

232 North Main Street, New City, NY 10956

Tel: (845) 634-4694

Fax: (845) 634-5543

Email: [rnasher@anznv.com](mailto:rnasher@anznv.com)

March 21, 2022

Town of Carmel  
60 McAlpin Avenue  
Mahopac, NY 10541

Attn: Richard Franzetti, PE, LEED  
Town Engineer

Re: Infiltration Test Certification  
Suez Water New York, INC  
Geymer Well 1&2(Job #4873)  
Town of Carmel  
Putnam County, New York

Dear Mr. Franzetti,

A soil infiltration test was performed on April 11, 2022. The infiltration test location map is attached to this report for your reference (Page F-5). The infiltration test failed due to the presence of groundwater.

The results are as follows.

### Test Hole #1

Infiltration test was proposed at a depth of 72-inches (6-feet):

#### Soil Log

0" to 6"

6" to 42"

#### Soil Type

Topsoil

Sand & Clay

Groundwater was found at 42-inches (3.5-feet) deep.

**Note:** An infiltration practice is not acceptable on the site per the infiltration test.

If you have further questions or concerns, feel free to contact our office. Thank you.

Very Truly Yours,

Ryan A. Nasher, P.E.

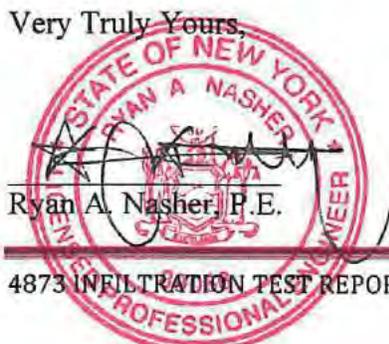




Figure 1: View of test hole #1, groundwater found 3'-6" below the existing top grade.



Figure 2: View of the soil profile (Test Hole#1).





Drainage Maps

**SUEZ WATER NEW YORK, INC  
GEYMER WELL 1 & 2**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**DRAINAGE MAPS**

**BY**

**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
232 NORTH MAIN STREET  
NEW CITY, NY 10956  
TEL: (845) 634-4694  
FAX: (845) 634-5543  
E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)















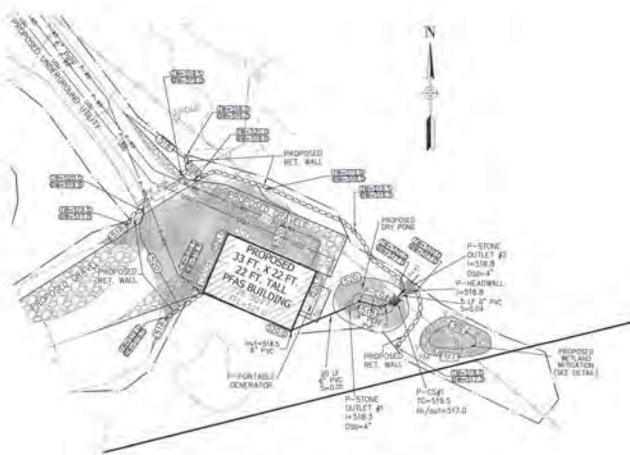
**LEGEND**

	12\"/>		18\"/>
	24\"/>		30\"/>
	36\"/>		42\"/>
	48\"/>		54\"/>
	60\"/>		66\"/>
	72\"/>		78\"/>
	84\"/>		90\"/>
	96\"/>		102\"/>
	108\"/>		114\"/>
	120\"/>		126\"/>
	132\"/>		138\"/>
	144\"/>		150\"/>
	156\"/>		162\"/>
	168\"/>		174\"/>
	180\"/>		186\"/>
	192\"/>		198\"/>
	204\"/>		210\"/>
	216\"/>		222\"/>
	228\"/>		234\"/>
	240\"/>		246\"/>
	252\"/>		258\"/>
	264\"/>		270\"/>
	276\"/>		282\"/>
	288\"/>		294\"/>
	300\"/>		306\"/>
	312\"/>		318\"/>
	324\"/>		330\"/>
	336\"/>		342\"/>
	348\"/>		354\"/>
	360\"/>		366\"/>
	372\"/>		378\"/>
	384\"/>		390\"/>
	396\"/>		402\"/>
	408\"/>		414\"/>
	420\"/>		426\"/>
	432\"/>		438\"/>
	444\"/>		450\"/>
	456\"/>		462\"/>
	468\"/>		474\"/>
	480\"/>		486\"/>
	492\"/>		498\"/>
	504\"/>		510\"/>
	516\"/>		522\"/>
	528\"/>		534\"/>
	540\"/>		546\"/>
	552\"/>		558\"/>
	564\"/>		570\"/>
	576\"/>		582\"/>
	588\"/>		594\"/>
	600\"/>		606\"/>
	612\"/>		618\"/>
	624\"/>		630\"/>
	636\"/>		642\"/>
	648\"/>		654\"/>
	660\"/>		666\"/>
	672\"/>		678\"/>
	684\"/>		690\"/>
	696\"/>		702\"/>
	708\"/>		714\"/>
	720\"/>		726\"/>
	732\"/>		738\"/>
	744\"/>		750\"/>
	756\"/>		762\"/>
	768\"/>		774\"/>
	780\"/>		786\"/>
	792\"/>		798\"/>
	804\"/>		810\"/>
	816\"/>		822\"/>
	828\"/>		834\"/>
	840\"/>		846\"/>
	852\"/>		858\"/>
	864\"/>		870\"/>
	876\"/>		882\"/>
	888\"/>		894\"/>
	900\"/>		906\"/>
	912\"/>		918\"/>
	924\"/>		930\"/>
	936\"/>		942\"/>
	948\"/>		954\"/>
	960\"/>		966\"/>
	972\"/>		978\"/>
	984\"/>		990\"/>
	996\"/>		1002\"/>

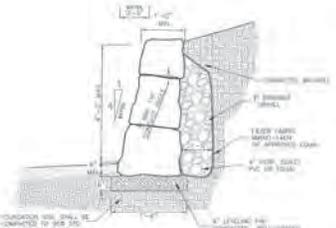
**CUT/FILL LEGEND:**

	CUT - 45 D&D
	FILL - 2400 D&D

**NOTES:**  
 1. ALL FILL MATERIALS MUST ACCORD TO THE STATE MANUAL SPECIFICATIONS.



**PROPOSED DRY POND & CUT & FILL PLAN**  
SCALE: 1"=20'

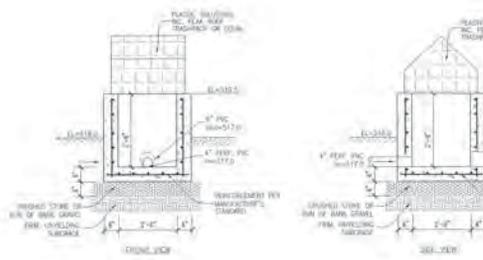


**TYPICAL SECTION: BOULDER WALL DETAIL**  
SCALE: 1"=12'

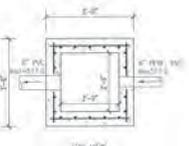
- NOTES:**
- MINIMUM 4000 P.S.I. CONCRETE AT 28 DAYS WITH 5.5% A.C.
  - REINFORCEMENT - A-514 #8'S
  - CRACK WIDTH MAXIMUM 1/16" COVER
  - ALL EXPOSED EDGES ARE CHAMFERED 1"
  - MATERIAL AND CONSTRUCTION SHALL COMPLY WITH RETAINING WALL 405
  - ASBESTOS WEIGHTS  
 10" = 4,200 LBS  
 12" = 4,100 LBS  
 14" = 4,000 LBS



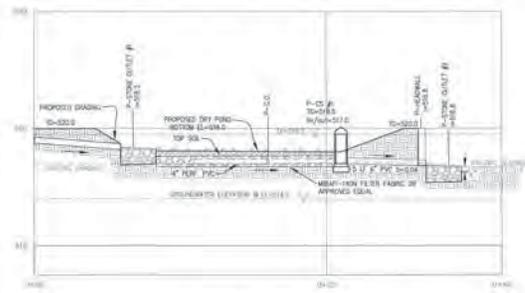
**TYPICAL PRECAST CONCRETE HEADWALL DETAIL**  
SCALE: 1"=12'



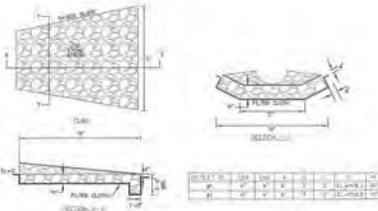
**P-CS #1 DETAIL**  
SCALE: 1"=12'



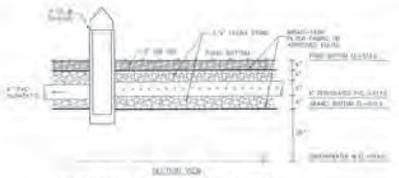
**TOP VIEW**



**PROPOSED DRY POND PROFILE**  
SCALE: 1"=10'



**STONE OUTLET DETAIL**  
SCALE: 1"=12'



**P-DRY POND FLOOR TILE DRAIN DETAIL**  
SCALE: 1"=12'



ATZL, NASHER & ZIGLER P.C.  
 ENGINEERS-ARCHITECTS-PLANNERS  
 234 North Main Street  
 New City, New York 10954  
 Tel: (914) 634-1800  
 Fax: (914) 634-5545  
 E-mail: info@anz.com  
 Web: www.ANZNY.com

RYAN R. ATZL  
 N.Y.S. P.L.C. NO. 00028

1	08-17-05	ISSUED UNDER NO. 0521 FOR 05
2	03-17-05	ISSUE TABLE & NOTES REVISIONS DRAWING
3	02-09-05	REV. 02-09-05 SEE MEETING
4	01-20-05	TOP CITY & TMA SUBMITTALS
5	11-18-04	PREP. PRELIM. SUBMITTALS
6	10-24-04	TOP. PRELIM. SUBMITTALS
7	09-10-04	PRELIM. SUBMITTALS
8	08-10-04	PRELIM. SUBMITTALS
9	07-10-04	PRELIM. SUBMITTALS
10	06-10-04	PRELIM. SUBMITTALS
11	05-10-04	PRELIM. SUBMITTALS
12	04-10-04	PRELIM. SUBMITTALS
13	03-10-04	PRELIM. SUBMITTALS
14	02-10-04	PRELIM. SUBMITTALS
15	01-10-04	PRELIM. SUBMITTALS
16	12-10-03	PRELIM. SUBMITTALS
17	11-10-03	PRELIM. SUBMITTALS
18	10-10-03	PRELIM. SUBMITTALS
19	09-10-03	PRELIM. SUBMITTALS
20	08-10-03	PRELIM. SUBMITTALS
21	07-10-03	PRELIM. SUBMITTALS
22	06-10-03	PRELIM. SUBMITTALS
23	05-10-03	PRELIM. SUBMITTALS
24	04-10-03	PRELIM. SUBMITTALS
25	03-10-03	PRELIM. SUBMITTALS
26	02-10-03	PRELIM. SUBMITTALS
27	01-10-03	PRELIM. SUBMITTALS
28	12-10-02	PRELIM. SUBMITTALS
29	11-10-02	PRELIM. SUBMITTALS
30	10-10-02	PRELIM. SUBMITTALS
31	09-10-02	PRELIM. SUBMITTALS
32	08-10-02	PRELIM. SUBMITTALS
33	07-10-02	PRELIM. SUBMITTALS
34	06-10-02	PRELIM. SUBMITTALS
35	05-10-02	PRELIM. SUBMITTALS
36	04-10-02	PRELIM. SUBMITTALS
37	03-10-02	PRELIM. SUBMITTALS
38	02-10-02	PRELIM. SUBMITTALS
39	01-10-02	PRELIM. SUBMITTALS
40	12-10-01	PRELIM. SUBMITTALS
41	11-10-01	PRELIM. SUBMITTALS
42	10-10-01	PRELIM. SUBMITTALS
43	09-10-01	PRELIM. SUBMITTALS
44	08-10-01	PRELIM. SUBMITTALS
45	07-10-01	PRELIM. SUBMITTALS
46	06-10-01	PRELIM. SUBMITTALS
47	05-10-01	PRELIM. SUBMITTALS
48	04-10-01	PRELIM. SUBMITTALS
49	03-10-01	PRELIM. SUBMITTALS
50	02-10-01	PRELIM. SUBMITTALS
51	01-10-01	PRELIM. SUBMITTALS
52	12-10-00	PRELIM. SUBMITTALS
53	11-10-00	PRELIM. SUBMITTALS
54	10-10-00	PRELIM. SUBMITTALS
55	09-10-00	PRELIM. SUBMITTALS
56	08-10-00	PRELIM. SUBMITTALS
57	07-10-00	PRELIM. SUBMITTALS
58	06-10-00	PRELIM. SUBMITTALS
59	05-10-00	PRELIM. SUBMITTALS
60	04-10-00	PRELIM. SUBMITTALS
61	03-10-00	PRELIM. SUBMITTALS
62	02-10-00	PRELIM. SUBMITTALS
63	01-10-00	PRELIM. SUBMITTALS
64	12-10-99	PRELIM. SUBMITTALS
65	11-10-99	PRELIM. SUBMITTALS
66	10-10-99	PRELIM. SUBMITTALS
67	09-10-99	PRELIM. SUBMITTALS
68	08-10-99	PRELIM. SUBMITTALS
69	07-10-99	PRELIM. SUBMITTALS
70	06-10-99	PRELIM. SUBMITTALS
71	05-10-99	PRELIM. SUBMITTALS
72	04-10-99	PRELIM. SUBMITTALS
73	03-10-99	PRELIM. SUBMITTALS
74	02-10-99	PRELIM. SUBMITTALS
75	01-10-99	PRELIM. SUBMITTALS
76	12-10-98	PRELIM. SUBMITTALS
77	11-10-98	PRELIM. SUBMITTALS
78	10-10-98	PRELIM. SUBMITTALS
79	09-10-98	PRELIM. SUBMITTALS
80	08-10-98	PRELIM. SUBMITTALS
81	07-10-98	PRELIM. SUBMITTALS
82	06-10-98	PRELIM. SUBMITTALS
83	05-10-98	PRELIM. SUBMITTALS
84	04-10-98	PRELIM. SUBMITTALS
85	03-10-98	PRELIM. SUBMITTALS
86	02-10-98	PRELIM. SUBMITTALS
87	01-10-98	PRELIM. SUBMITTALS
88	12-10-97	PRELIM. SUBMITTALS
89	11-10-97	PRELIM. SUBMITTALS
90	10-10-97	PRELIM. SUBMITTALS
91	09-10-97	PRELIM. SUBMITTALS
92	08-10-97	PRELIM. SUBMITTALS
93	07-10-97	PRELIM. SUBMITTALS
94	06-10-97	PRELIM. SUBMITTALS
95	05-10-97	PRELIM. SUBMITTALS
96	04-10-97	PRELIM. SUBMITTALS
97	03-10-97	PRELIM. SUBMITTALS
98	02-10-97	PRELIM. SUBMITTALS
99	01-10-97	PRELIM. SUBMITTALS
100	12-10-96	PRELIM. SUBMITTALS

**SUEZ WATER NEW YORK, INC.**  
**PUTNAM WELL 1 & 2**

**TOWN OF CARMEL**  
**PUTNAM COUNTY, NEW YORK**

**PROPOSED DRY POND & DETAILS**

OWNER: NY	DESIGNED BY: ANZ
DRAWN: ANZ	SCALE: 1"=20' (SEE 1\"/>
PROJECT NO: 4873	ISSUED: 05









# ATZL, NASHER & ZIGLER P.C.

ENGINEERS - SURVEYORS - PLANNERS

Web: [www.anzny.com](http://www.anzny.com)

April 27, 2022

Planning Board  
Town of Carmel  
60 McAlpin Avenue  
Mahopac, NY 10541  
Attn: Craig Paeprer, Chairman

Re: Suez Water Chateau Wells  
Tax Lot 75.20-1-16

Dear Chairman Paeprer and Honorable Board Members,

The following is our response to Patrick Cleary, AICP, CEP, PP, LEED AP of Cleary Consulting, letter dated February 10, 2022:

1.     Comment:     The Applicant's attorney has reviewed the easement connecting the sewer line to Coventry Circle. The easement gives Suez the right to install and maintain necessary utility lines anywhere in the Hunters Run subdivision. This opinion must be confirmed by the Planning Board Attorney.

          Response:    *The utility easement referenced in the comment is for the Mahopac project, not the Chateau project.*
  
2.     Comment:     The Applicant has clarified that the emergency generator is required by the Putman County Department of Health and cannot be relocated off-site. To mitigate concerns about views of the generator, it will be painted to match the color of the new PFAS building. The norther property line will be planted with sky rocket junipers, which grow to a mature height of 20'.

          Response:    *No response required.*
  
3.     Comment:     In response to the request by the Board, the Applicant will bring color samples to the Planning Board meeting for review.

*Response: Color samples were shown to the Planning Board at the February 10, 2022 meeting. Wall guard sample will also be shown to the Planning Board members at the next meeting.*

The following is our response to Michael G. Carnazza, Director of Code Enforcement for the Town of Carmel, letter dated February 10, 2022:

1. Comment: The applicants propose to add a PFAS Treatment Building to the water treatment facility off McNair Dr. in Mahopac.

*Response: No response required.*

2. Comment: Provide a detail of the buffer. Code § 156-37C requires "A landscaped buffer area at least 10 feet in width and six feet in height shall be provided and maintained along all property lines to satisfactorily screen public utility substations and any other buildings from surrounding uses of land". The submission includes 6-8 ft. trees. The building is somewhat close to the McNair cul-de-sac. It makes it more difficult to screen the building

*Response: To clarify, the submission shows the landscaping as it will look when initially completed using 6' to 8' trees. It also shows how the site will look when the trees have had a few years to grow and have reached a height of 20'. We are not planning to plant 20' trees. While we would prefer a landscaping alternative that allows the residents to view activities on the site so they can call the police if any illegal activities are observed, we have created a plan to hide as much of the property as possible.*

*In an October 22, 2021 letter from the residents of McNair Drive, we received comments about the need for "appropriate landscaping" to hide the view of the on-site structures. To address the resident's concerns, our plan was developed to hide as much of the facility as possible. We would be open to discussing with the Board an alternative that offers increased visibility of the site and a reduction in the number of trees.*

3. Comment: Referral to the ECB, Fire Department and Putnam County Dept. of Health are required by code.

*Response: No response required.*

4. Comment: Lot area variance 120,000 s.f. req'd, 47,745 provided, 72,255 s.f. variance needed.

*Response: Required variances would be requested from the ZBA.*

5. Comment: The portable generator is shown on the plat on the east side of the proposed building. Provide the driveway width at the generator. Will the F.D. vehicles be able to fit if needed? A variance for 2-way aisle width may be needed. Once the measurements are submitted, I will confirm 24 ft. is required.

*Response: Driveway width is 15 ft., as has been discussed with the Code Enforcement Director.*

The following is our response to Richard J. Franzetti, P.E, letter February 4, 2022:

#### General Comments

1. Comment: The following referrals are required:
- a. New York State Department of Environmental Conservation (NYSDEC).
  - b. Putnam County Department of Health (PCDOH).
  - c. The Town of Carmel Environmental Conservation Board (ECB).
  - d. Mahopac Fire Department.

The applicant has noted these referrals

*Response: No response required.*

2. Comment: The following permits are required:
- a. NYSDEC - for stormwater and wetlands.
  - b. PCDOH for well and treatment system.
  - c. ECB for wetlands.

The applicant has noted these permit requirements.

*Response: No response required.*

3. Comment: The area of disturbance for the work as provided is ~13,600 sf. The threshold criteria of disturbances for the NYSDEC stormwater regulation are between 5,000 square feet and one (1) acre and over one (1) acre. The project will require coverage under the NYSEC SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-20-001) and the development of Stormwater Pollution Prevention Plan (SWPPP) that has erosion and sediment controls.

The applicant has provided a SWPPP which is currently under review.

The total area of disturbance should be noted on the drawings.

*Response: The area of disturbance as noted on the site plan is 0.368 acres. An updated SWPPP is being provided with this submission for review by the town engineer.*

4. Comment: All re-grading required to accomplish the intended development should be provided. It is unclear from the drawings provide the extent of cut and fill proposed for the site.

All fill brought to the site must be certified per NYSDEC regulations and manifests/certification of the fill material being delivered should be provided. A note should be added to the drawing.

Applicant has noted that a cut and fill analysis will be provided.

*Response: Cut and fill analysis along with the note regarding fill has been provided on sheet 3.*

5. Traffic and Vehicle Movement Plans should be provided which provide the following:

- a. Comment: Slopes at the entrance way need to be defined. It is suggested that slopes of less than 6% be used for the first 20 feet of entry and that slopes of no greater than 8% be used entering the site. Please refer to AASHTO guidelines for commercial properties.

Per the applicant the existing driveway is at 12% and will be modified to 10% slope at the entrance way. A driveway profile should be provided.

Town driveway specifications are 8 inches base course, 3 inches binder and 2 inches top course.

*Response: Driveway plan view and profile has been provided on sheet 3. Asphaltic concrete pavement detail has been updated to match Town's driveway specification (see sheet 4 – Details & Notes).*

6. Comment: Should any public improvements be deemed necessary as part of the development of the tract, a Performance Bond and associated Engineering Fee must eventually be established for the work. The applicant will need to develop a quantity take off for bonding purposes.

The applicant has noted this requirement. The applicant should note that a Performance Bond and associated Engineering fee is minimally required for the stormwater management practices, erosion and sediment control drainage features, landscaping etc. installed on the site. Please see §156-61 J and K of the Town Code for additional information.

*Response: No response required.*

#### Detailed Comments

1. Comment: The rain garden locations have been provided. The applicant should note that then must meet the criteria as defined by the NYSDEC. This includes providing sufficient depth to groundwater.

Applicant indicated that the calculation will be provide prior to construction. Minimally these calculations will need to be provided/approved as part of the Planning Board approval. The applicant has noted that testing for groundwater will be performed as soon as weather permits.

*Response: The drainage plans have been updated to provide a proposed dry pond (see sheet 1). Depth to groundwater has been showcased in the dry pond detail provided on sheet 4.*

2. Comment: Adequate protection should be provided in the stormwater management practice (SMP) areas to minimize disturbance during construction. Details should be provided to show how the rain garden will be protected during construction.

*Response: The drainage plans have been updated to provide a proposed dry pond. This should not require any specific protection during construction.*

3. Comment: Gate valves shall be AWWA non-rising stem type, as manufactured by Mueller Company, Model A-2360-23, or approved equal, conforming to the latest AWWA Standard for Gate Valves - 3" through 48" - for Water and Other Liquids, AWWA Designation C-509.

*Response: No response required.*

4. Comment: Sizes up to and including 12" shall be 250 psi working pressure. The valve body and bonnet shall be ductile iron. All interior and exterior metal surfaces shall be coated with a two-part thermosetting epoxy complying with AWWA C550.

*Response: No response required.*

5. Comment: Valves shall have dual "O" ring seals, inside screw, resilient wedge seats in accordance with AWWA Designation C-550 and shall be constructed so as to provide unobstructed full port clearance when fully open and immediate complete closure when closed. The ends of the valves shall be mechanical joint.

*Response: No response required.*

6. Comment: All valves shall be arranged to open in counterclockwise direction unless otherwise specifically indicated and operating nuts shall be 2" square.

*Response: SUEZ valves are arranged to open in a clockwise direction.*

7. Comment: Valves shall be tested to a pressure of not less than two times the working pressure.

*Response: No response required.*

8. Comment: All hydrants shall be six inches in size with six-inch mechanical joint inlet connection and shall be equal to the Mueller Centurion A-421, with one (1) 4 ½ " pumper nozzle and two (2) 2 ½ " hose nozzles.

*Response: SUEZ's standard is the Sigelock Systems Spartan 300. Hydrants will be green in color to signify they are only for company use.*

9. Comment: Water Service Saddles shall be equal to those manufactured by Mueller, Model 7 ½" x 1" SS Series Stainless Steel Saddle, Double Stud.

*Response: No response required.*

10. Comment: Corporation stops shall be equal to those as manufactured by Mueller Company, Model B-25000Series, NRS and of the size required. Such corporation stops shall meet the requirements of AWWA Specification No. C800.

*Response: No response required.*

11. Comment: Curb valves (stops) shall be equal to those as manufactured by Mueller Company, Model H-15214 and shall conform to AWWA Specification No. C800.

*Response: No response required.*

12. Comment: Curb boxes shall be equal to those as manufactured by Mueller Company and similar to Mueller extension type with arch pattern base model H-10314 all extension rods shall be stainless steel.

*Response: No response required.*

13. Comment: All fire hydrants shall be the approved AWWA type fire hydrants in conformance with the American Water Works Association Standard for Fire Hydrants for Ordinary Water Works Service, AWWA Designation C502, and shall have a 5-1/4" valve opening, a 6" mechanical joint inlet complete with an auxiliary gate valve (close coupled), a 6" mechanical joint shoe, and all appurtenances.

*Response: No response required.*

14. Comment: Fire hydrants shall be rated for a working pressure of 250 Psi. Fire hydrants shall be sized for a 4'-6" bury.

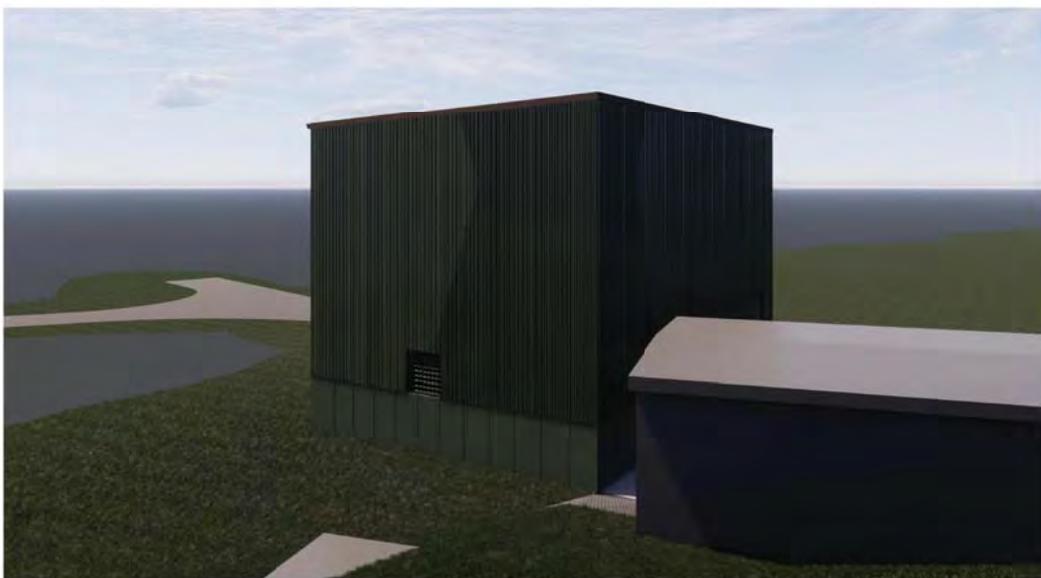
*Response: No response required.*

**Comment:** Applicant has noted these comments. The only exception is comment 8 where SUEZ standard is to open right.

*Response: Applicant takes exception to comment 6 and 8. Please see the responses to these comments above.*



PFAS COMPLIANCE AT  
**CHATEAU WELL**



SWNY PFAS Compliance - Chateau Well Site  
8 FT Trees



SWNY PFAS Compliance - Chateau Well Site  
20 FT Trees



This SWPPP was prepared in accordance with SPDES Permit No. GP-0-20-001 and must be kept on the job site and available for use of contractors and sub-contractors. Certifications by applicant/developer and by the contractors/subcontractors are included. A copy of the Notice of Intent (NOI), which must be filed at least 5 days prior to the commencement of any work along with the MS4 SWPPP acceptance form, is included herein. Notice of Termination (NOT) must be filed when all stormwater management facilities are in place and the site has been stabilized with specified vegetation. Sample inspection forms are included. Operation and maintenance plan is attached and included both temporary and permanent facilities maintenance. This SWPPP, together with all required plans, completed inspection forms and log of activities including any mitigation of items noted on inspection forms must be kept on the job site and available for inspection by all regulatory authorities.

## FULL STORMWATER POLLUTION PREVENTION PLAN (SWPPP) REPORT

Prepared For:

**SUEZ WATER NEW YORK, INC**  
**CHATEAU WELL 1, 2, & 3**  
Town of Carmel, Putnam County, New York

Prepared By:



**ATZL, NASHER & ZIGLER P.C.**  
Engineers – Surveyors – Planners  
232 North Main Street  
New City, New York 10956  
Tel. (845) 634-4694 • Fax (845) 634-5543

This plan has been prepared to comply with the provisions of the SPDES general permit no. GP-0-20-001, issued by the New York State Department of Environmental Conservation for storm water discharges from construction site activities.

I certify under penalty of law that this document and all attachments were prepared and revised under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment of knowing violations.

Revision 1: April 27, 2022  
Date: October 04, 2021  
Job No. 4874

  
\_\_\_\_\_  
Ryan A. Nasher, P.E. License No.: 89066  
New York State Professional Engineer

## Table of Contents

## TABLE OF CONTENTS

### **SECTION 1: Stormwater Pollution Prevention Plan Report Complying GP 0-20-001**

- 1.0 INTRODUCTION
  - 1.1 NOTICE OF INTENT
  - 1.2 SWPPP GOALS AND OBJECTIVS
- 2.0 SITE DESCRIPTION
  - 2.1 Project Name & Location:
  - 2.2 Owner/Operator Name & Address:
  - 2.3 General Contractor\*:
  - 2.4 Description:
  - 2.5 Impervious Cover:
  - 2.6 Site Area:
  - 2.7 Location Map
  - 2.8 Sequence of Major Activities:
- 3.0 CONTROLS
  - 3.1 EROSION AND SEDIMENT CONTROLS STABILIZATION PRACTICES
    - 3.1.1 Temporary Stabilization:
    - 3.1.2 Permanent Stabilization:
  - 3.2 STRUCTURAL PRACTICES
  - 3.3 STORMWATER MANAGEMENT WATER QUALITY
    - 3.3.1 Name of Receiving Waters:
  - 3.4 PEAK FLOW ATTENUATION
  - 3.5 RUNOFF CONVEYANCE SYSTEMS
  - 3.6 OTHER CONTROLS
    - 3.6.1 Waste Materials:
    - 3.6.2 Hazardous waste:
    - 3.6.3 Sanitary Waste:
    - 3.6.4 Offsite Vehicle Tracking:
  - 3.7 TIMING OF CONTROL MEASURES
  - 3.8 CERTIFICATION OF COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS
- 4.0 MAINTENANCE & INSPECTION PROCEDURES
  - 4.1 SEDIMENT & EROSION CONTROL INSPECTION AND MAINTENANCE PRACTICES
  - 4.2 SUMMARY OF SWPPP REQUIRED DOCUMENT FILINGS
- 5.0 NON-STORM WATER DISCHARGES

**SUEZ WATER NEW YORK, INC CHATEAU WELL 1, 2, & 3  
Full Stormwater Pollution Prevention Plan Report**

5.1 NON-STORMWATER DISCHARGES

6.0 INVENTORY FOR POLLUTION PREVENTION PLAN

6.1 MATERIAL SUBSTANCES

7.0 SPILL CONTROL & PREVENTION

7.1 MATERIAL MANAGEMENT PRACTICES

7.1.1 Good Housekeeping:

7.1.2 Hazardous Products:

7.2 PRODUCT SPECIFIC PRACTICES

7.2.1 Petroleum Products:

7.2.2 Fertilizers:

7.2.3 Paints:

7.2.4 Concrete Trucks:

7.3 SPILL CONTROL PRACTICES

8.0 SUPPORTING PLANS & REPORTS

9.0 POLLUTION PREVENTION PLAN CERTIFICATION

9.1 OWNER/OPERATOR CERTIFICATION

10.0 CERTIFICATION BY CONTRACTORS

10.1 PRIME CONTRACTOR CERTIFICATION

10.2 SUB-CONTRACTOR CERTIFICATION

Figures

Figure 1: Site Location Map (source: maps.google.com)

Appendices

Appendix A – SWPPP CONSTRUCTION SITE LOG BOOK

Appendix B – STORMWATER POND CONSTRUCTION INSPECTION CHECKLIST FORM

Appendix C – SPILL CONTROL & PREVENTION LOG

Appendix D – STORMWATER MANAGEMENT FACILITIES MAINTENANCE AGREEMENT

Appendix E – CONSTRUCTION PLAN DRAWINGS IN (11" X 17")

**SECTION 2: Stormwater System Design Report Complying NYS  
Stormwater Management Design Manual, January 2015.**

**Hydraulic & Hydrological Study:**

• Revision Overview .....	2-1
• Introduction .....	2-1
• Site Location .....	2-1
• Hydrological Soil Group .....	2-2
• Existing Watershed .....	2-2
• Developed Watersheds .....	2-2
• Drainage Study .....	2-2
• Mitigation .....	2-2

**Summary Table:**

• Summary Flow Table at P.O.I.#1 .....	2-4
--	-----

**Location Maps:**

• Street Map .....	2-5
• Soil Map .....	2-6

**Drainage Calculation**

• Existing Condition .....	2-7
• Developed Condition .....	2-8

**Stormwater Management Practice Design Calculations**

• Water Quantity Calculation .....	2-9
• Stormwater Sizing Calculation .....	2-10

**HydroCAD Model for Existing and Proposed Conditions 1, 10, & 100 Year Storms**

• Drainage Schematic .....	2-12
• 1-Year Storm Model .....	2-13
• 10-Year Storm Model .....	2-19
• 100-Year Storm Model .....	2-25

**SECTION 3: SPDES General Permit Per GP 0-20-001**

- 3.1 SPDES ACKNOWLEDGEMENT LETTER ISSUED BY NYSDEC
- 3.2 FILED OUT NOTICE OF INTENT (N.O.I.)
- 3.3 MS4 SWPPP ACCEPTANCE FORM

**APPENDIX-F:**

• Infiltration Test Certification .....	A-1
---	-----

**MAPS:**

• Drainage Map Existing Condition .....	E-1
• Drainage Map Proposed Condition .....	D-1

Section 1: O&M

**SUEZ WATER NEW YORK, INC  
CHATEAU WELL 1, 2, & 3**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**SECTION 1:  
OPERATION INSPECTION  
AND  
MAINTENANCE PLAN REPORT**

**BY**

**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
232 NORTH MAIN STREET  
NEW CITY, NY 10956  
TEL: (845) 634-4694  
FAX: (845) 634-5543  
E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)

## **1.0 INTRODUCTION**

---

### **1.1 Notice of Intent:**

Section 402 of the Clean Water Act requires permits for stormwater discharge from construction activities, which disturb one or more acres of land to obtain a permit. To implement this law, the New York State Department of Environmental Conservation (NYSDEC) issued the General Permit GP-0-20-001 for Stormwater Discharges from Construction Activities. The Notice of Intent (NOI) is the means to obtain coverage under this permit.

### **1.2 SWPPP Goals and Objective:**

The goal of the Stormwater Pollution Prevention Plan (SWPPP) is to control runoff of pollutants from the project site during and after construction activities by complying with the NY State Pollutant Discharge Elimination System (SPDES) Stormwater Permit for construction activities and local rules and regulations. The SWPPP will implement the following practices:

- Reduction or elimination of erosion and sediment loading to waterbodies during construction;
- Control of the impact of stormwater runoff on the water quality of the receiving waters;
- Control of the increased volume and peak rate of runoff during and after construction; and
- Maintenance of stormwater controls during and after completion of construction.

The SWPPP will incorporate the proper selection, sizing and siting of the Stormwater Management Practices (SMPs) to protect water resources from stormwater impacts. The design of the proposed SMPs were determined using current engineering methodologies to provide appropriate sizing criteria to avoid overburdening stormwater conveyance structures. Erosion and Sediment Control (ESC), Water Quantity Control, and Water Quality Controls are inter-related components of the SWPPP.

The SWPPP is intended to be a “living” document. The document should be revised and updated by a qualified professional whenever site conditions dictate. Any proposed revisions shall undergo review by the owner or his designated representative prior to incorporation in the SWPPP and implementation at the site. Any proposed modifications shall be in accordance with the New York State Department of Environmental Conservation’s technical standards.

## 2.0 SITE DESCRIPTION

---

### 2.1 Project Name & Location:

Suez Water New York, INC Chateau Well 1 & 2  
Town of Carmel  
Putnam County, New York  
Town of Ramapo Tax Map: Section 75.20, Block 1, Lot 16

### 2.2 Owner/Operator Name & Address:

Suez Water New York, Inc.  
Attention: Steven Garabed  
162 Old Mill Road  
West Nyack, NY 10994  
Email: [steven.garabed@suez.com](mailto:steven.garabed@suez.com)

### 2.3 General Contractor\*:

\_\_\_\_\_  
(Company Name)

\_\_\_\_\_  
(Street Address)

\_\_\_\_\_  
(City, State, Zip Code)

\_\_\_\_\_  
(Phone Number)

\*note – General Contractor shall be identified prior to commencement of work.

### 2.4 Description:

The project is located at 59 McNair Drive in the Town of Carmel, Putnam County, New York. The site has an area of about 1.5 acres. The existing site consists of woods, grass, and some impervious area. The developed site includes the construction of a building and a gravel driveway.

**SUEZ WATER NEW YORK, INC CHATEAU WELL 1, 2, & 3  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

Soil Name	Soil Map Symbol	Hydrological Soil Group	Reference Page No.*
Catden muck, 0 to 2 percent slopes	Ce	D	19
Nutchaug and Catden mucks, ponded, 0 to 2 percent slopes	NdA	D	N/A
Paxton fine sandy loam, 8 to 15 percent slopes	PnC	C	45

\* Soil Survey of Putnam County, New York, United States Department of Agriculture Soil Conservation Service, October 1994.

Soil disturbing activities will include clearing and grubbing; installation of a stabilized construction entrance; grading (cuts & fills); excavation for the installation of drainage pipes, SMPs, sanitary sewer connections, water main connections, building foundations, stormwater management facilities and the preparation for final planting and seeding.

**2.5 Impervious Cover:**

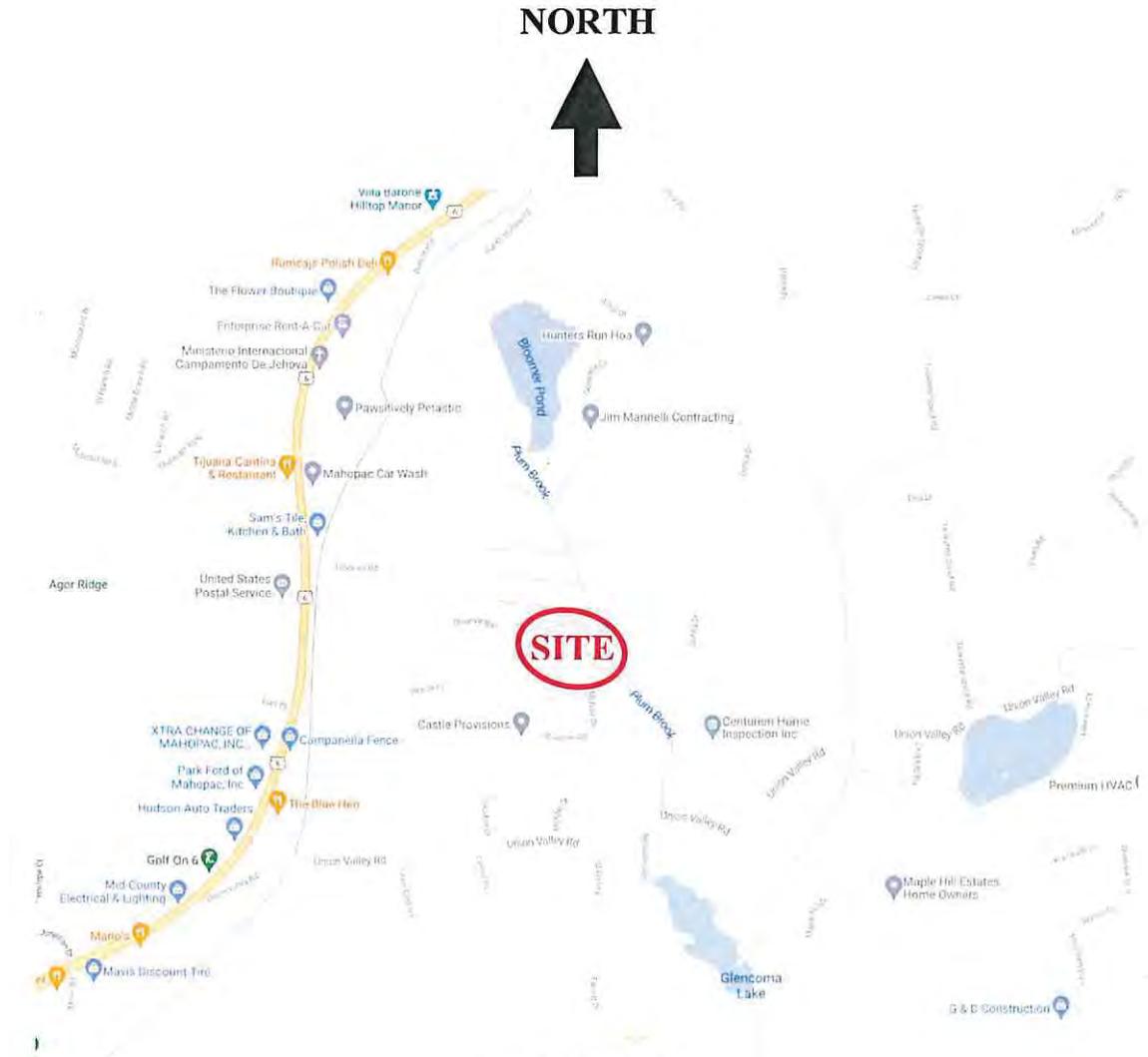
Impervious cover within the planned disturbance will be increased from 0.045 acres in the existing condition to 0.135 acres in the proposed condition.

**2.6 Site Area:**

The site is approximately 1.5 acres and about 0.368 acres will be disturbed by the proposed construction activities.

**SUEZ WATER NEW YORK, INC CHATEAU WELL 1, 2, & 3  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

**2.7 Location Map:**



**STREET MAP**  
Source: [maps.google.com](https://maps.google.com)

**2.8 Sequence of Major Activities:**

Phasing and schedule of construction is as follows (several phases will overlap):

Phase 1: Clearing and grubbing of designated areas

Phase 2: Land grading according to the approved site development plan

Phase 3: Building construction

Phase 4: Paving and utilities construction

Phase 5: Final Grading, landscaping

The general order of activities will be as follows:

1. Schedule a pre-construction meeting.
2. Locate natural resources and the limit of disturbance per approved plans.
3. Install perimeter erosion and sediment control practices (silt fences).
4. Install construction entrances and temporary staging.
5. Limit grading for installation of E&SC practices.
6. Dispose clearing and grading materials as construction progresses.
7. Stockpile top soil and stabilize.
8. Perform rough grading/cut & fill and stabilize inactive areas.
9. Install utilities and drainage structures.
10. Proceed with partial road construction where applicable.
11. Construct foundation and building structure as per plan.
12. Apply soil restoration practices as described in the plan.
13. Perform final stabilization, i.e. top soil and landscaping.
14. Remove sediment accumulations and complete permanent post construction SMPs per the approved plan.
15. Remove E&SC practices and apply for a Notice of Termination (N.O.T.).

## **3.0 CONTROLS**

---

### **3.1 Erosion and Sediment Controls Stabilization Practices:**

#### **3.1.1 Temporary Stabilization:**

Topsoil, stockpiles, and soils that are exposed and left bare for a period of 14 days which are not being graded, not under active construction for 14 days or more, or not scheduled for permanent seeding within 14 days will be stabilized with temporary seed and mulch. All grass seed mixtures and application rates shall comply with Sediment and Erosion Control Plan.

Areas of the site, which are to be paved; will be temporarily stabilized by applying stone sub-base until bituminous pavement can be applied.

#### **3.1.2 Permanent Stabilization:**

Disturbed portions of the site where construction activities permanently cease shall be stabilized with permanent seed no later than 14 days after the last construction activity.

### **3.2 Structural Practices:**

Proposed measures will include silt fences, storm inlet protection, and stabilized construction entrance.

### **3.3 Stormwater Management Water Quality:**

Stormwater runoff generated by the rooftop will be directed towards the proposed rain garden system through a combination of downspouts, and pipes.

The stormwater management system has been designed to comply with the most recent NYSDEC design manual requirements. The dry pond system is designed to treat the first flush water quality volume of required impervious area, according to NYSDEC redevelopment rules.

The property owner shall be responsible for the long-term operation, maintenance and inspection of the proposed stormwater management facilities and provide maintenance records to the Town of Carmel.

3.3.1 Name of Receiving Waters:

The site drains towards a NYSDEC wetland. The site is located in one of the watersheds identified in Appendix C of GP-0-20-001.

3.4 Peak Flow Attenuation:

In order to provide the zero net increase of peak runoff, a Dry Pond System has been proposed.

3.5 Runoff Conveyance Systems:

The stormwater pipes are design to convey the 10-year peak flow discharge.

3.6 Other Controls:

3.6.1 Waste Materials:

All waste materials will be collected and stored in securely lidded metal dumpsters rented from \_\_\_\_\_, a solid waste management company located in Putnam County (name of carting company to be identified 30 days prior to commencement of work). The dumpsters will meet Town of Carmel, Putnam County, and New York State solid waste management regulations. All trash and construction debris from the site will be deposited in the dumpsters. The dumpsters will be emptied as necessary, and the trash will be hauled off site to \_\_\_\_\_ (destination to be identified 30 days prior to commencement of work). No construction waste materials will be buried on site. All personnel will be instructed regarding the correct procedure for waste disposal. Notices stating these practices will be posted in the office trailer and \_\_\_\_\_, the Job Supervisor, individual who is responsible for managing the day to day site operations, will be responsible for seeing that these procedures are followed (Job Supervisor shall be identified 30 days prior to commencement of work).

3.6.2 Hazardous waste:

All hazardous waste materials will be disposed of in the manner specified by local or state regulation or by the manufacturer. Site personnel will be instructed in these practices and \_\_\_\_\_, Job Supervisor, individual who is responsible for managing the day to day site operations, will be responsible for seeing that these procedures are followed (Job Supervisor shall be identified 30 days prior to commencement of work).

3.6.3 Sanitary Waste:

**SUEZ WATER NEW YORK, INC CHATEAU WELL 1, 2, & 3  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

A licensed sanitary waste management contractor (sanitary waste management contractor to be identified 30 days prior to commencement of work) will collect all sanitary waste from the portable units.

**3.6.4 Offsite Vehicle Tracking:**

A stabilized construction entrance and gravel pad will be provided to wash or spray-clean trucks over before leaving the site in order to prevent track-out of dirt, mud, debris and dust. In addition, trucks will be covered with a tarp and at least 6 inches of freeboard clearance will be maintained to keep excessive dust from escaping the truck during hauling operations.

**3.7 Timing of Control Measures:**

As indicated in the Sequence of Major Activities, the stabilized construction entrance and other sediment and erosion control activities will be constructed prior to earthwork activities on any part of the site. Any soil areas that are exposed and left bare for a period of 14 days which are not being graded, not under active construction for 14 days or more, or not scheduled for permanent seeding within 14 days will be treated with temporary seed and mulch. Once construction activity ceases permanently in an area, that area will be stabilized with permanent seed and mulch. After the entire site is stabilized, accumulated sediments will be removed from the sediment and erosion control structures and the controls will be removed.

**3.8 Certification of Compliance With Federal, State And Local Regulations:**

The stormwater pollution prevention plan reflects New York State Department of Environmental Conservation requirements for storm water management and erosion and sediment control, as established in Article 17, Titles 7, 8 and Article 70 of the Environmental Conservation Law. To ensure compliance, this plan was prepared in accordance with guidelines issued with the SPDES General Permit for Storm Water Discharges from Construction Activities that are Classified as "Associated with Construction Activity", published by the NYSDEC.

## **4.0 MAINTENANCE & INSPECTION PROCEDURES**

---

### **4.1 Sediment & Erosion Control Inspection And Maintenance Practices:**

The following are inspection and maintenance practices that will be used in coordination with the SWPPP Construction Log Book prepared for this project, the template which is included in Appendix A, to maintain sediment and erosion controls:

- The Operator shall have a qualified professional conduct an assessment of the site prior to the commencement of construction and certify in this inspection report that the appropriate erosion and sediment controls described in the SWPPP, as required by the SPDES General Permit for Stormwater Discharges, have been adequately installed or implemented to ensure overall preparedness of the site for commencement of construction. Qualified professional means a person knowledgeable in the principles and practice of erosion and sediment controls, such as a licensed professional engineer, Certified Professional in Erosion and Sediment Control (CPESC), soil scientist, or someone working under the direction and supervision of a licensed professional engineer, Certified Professional in Erosion and Sediment Control (CPESC), or soil scientist (person must have experience in the principles and practices of erosion and sediment control). The template for the initial inspection and assessment is included in Appendix A.
- All control measures will be inspected by a qualified professional at least once each week (7 days) and immediately following any storm event of 0.5 inches or greater.
- All measures will be maintained in good working order. If a repair is necessary, it will be initiated within 24 hours of discovery.
- Provide sprinkle water on the dirt road during hot summer or when appropriate to prevent particles to be air born.
- Built up sediment to be removed from the silt fence when it has reached 1/3 the height of the fence. Sediment traps will be cleaned when built up sediments reaches 25 percent of design capacity.
- Silt fence will be inspected for depth of sediment, tears, to see if the fabric is securely attached to the fence posts, and to see that the fence posts are firmly in the ground.
- Temporary and permanent seeding and planting will be inspected for bare spots, washouts, and healthy growth.
- A maintenance inspection report will be filled out after each inspection and will become part of the SWPPP.
- \_\_\_\_\_, Job Supervisor – Trained Individual per GP-0-20-001, will select individuals who will be responsible for coordinating efforts with the qualified professional for regular inspections, maintenance and repair activities, and filling out the inspection and maintenance report forms. Inspection reports will summarize:

**SUEZ WATER NEW YORK, INC CHATEAU WELL 1, 2, & 3  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

1. Name of Inspector
2. Qualifications of Inspector
3. Date of Inspection
4. Weather Conditions
5. Areas inspected, including measurements
6. Areas that have undergone temporary and permanent stabilization
7. Indicate all disturbed areas that have not undergone active site work during the previous 14-day period
8. Observed condition of all erosion and sediment control practices
9. Inspect all sediment control practices and record approximate degree of sediment accumulation as a percentage of the sediment storage volume
10. Actions Taken to Correct Problems
11. Incorporate changes necessary to the SWPPP

The template for regular inspections is included in Appendix A.

- Personnel selected for inspection and maintenance responsibilities will receive training from the Job Supervisor and/or the qualified professional. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used on site in good working order.
- The Operator shall ensure that a record of all inspection reports is maintained in the SWPPP Construction Log Book. The site logbook shall be maintained on site and be made available to the permitting authorities upon request. Prior to the commencement of construction, the Operator shall certify in the site log book that the SWPPP was prepared in accordance with the State's standards and meets all Federal, State and local erosion and sediment control requirements. The Operator shall retain copies of SWPPPs and any reports submitted in conjunction with this permit, and records of all data used to complete the NOI to be covered by this permit, for a period of at least three years from the date that the site is finally stabilized. The Operator shall post at the site, in a publicly accessible location, a summary of the site inspection activities on a monthly basis. The template for SWPPP Construction Log Book is included in Appendix A.
- Prior to filing of the Notice of Termination (NOT) or the end of permit term, the Operator shall have the qualified professional perform a final site inspection. The qualified professional shall certify that the site has undergone final stabilization using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed. Final stabilization means that all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of 80% has been established, or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structure. The template for final inspections is included in Appendix A.

**SUEZ WATER NEW YORK, INC CHATEAU WELL 1, 2, & 3  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

- Clean out all **temporary** structures and pipes upon completion of the project.
- When the site has been finally stabilized, the operator must submit a Notice of Termination form to terminate coverage under the SPDES General Permit GP 0-20-001. The permittee must identify all of the permanent stormwater management structures that have been constructed. In addition, an manual describing the operation and maintenance practices that will be necessary for the structures to function as designed after the site is stabilized must be finalized and in-place. The permittee must also certify that the permanent structure have been constructed as described in the SWPPP.

The inspection procedures that will be used for the construction of the proposed Stormwater management facilities are included in the CONSTRUCTION INSPECTION CHECKLIST FORM prepared for this project, the template of which is included in Appendix B, to be used to ensure proper construction.

**4.2 Summary of SWPPP Required Document Filings:**

The following table provides a summary of the required forms and inspections that need to be completed as part of the SWPPP requirements and which checklist or report document forms need to be used for each:

<u>Name of Document</u>	<u>Form to be Used</u>	<u>When to complete</u>
Pre-Construction Meeting Documents Form	Appendix A – SWPPP Construction Site Log Book	Prior to beginning of construction
Owner/Operator Certification	Appendix A, SWPPP Report	Prior to beginning of construction
Prime Contractor Certification	SWPPP Report	Prior to beginning of construction
Sub-Contractor Certification	SWPPP Report	Prior to beginning of construction
Pre-Construction Site Assessment Form	Appendix A	Prior to beginning of construction
Construction Duration Inspection Forms	Appendix A	Every seven days
Three-Month Status Reports	Appendix A	Every three months
SMPs Construction Inspection Checklist Form	Appendix B	During the construction of the proposed stormwater facilities
Final Stabilization and Retention of Records	Appendix B	At completion of project
Spill Control & Prevention Log	Appendix C	Before and after completion of Project
Stormwater Facilities Maintenance Plan and Inspection Checklists	Appendix D	After completion of Project

## **5.0 NON-STORM WATER DISCHARGES**

---

### **5.1 Non-Stormwater Discharges:**

It is expected that the following non-storm water discharges will occur from the site during the construction period:

- Water from water line flushing.
- Pavement wash waters (where no spills or leaks of toxic or hazardous materials have occurred).
- Uncontaminated groundwater (from natural springs)

## **6.0 INVENTORY FOR POLLUTION PREVENTION PLAN**

---

### **6.1 Material substances:**

The materials or substances listed below are expected to be present on the site during construction:

- Concrete
- Detergents
- Paints (enamels and latex)
- Metal Studs
- Roofing Materials
- Tar and Paving Materials
- Fertilizers
- Petroleum Based Products
- Cleaning Solvents
- Wood
- Masonry Block

## **7.0 SPILL CONTROL & PREVENTION**

---

### **7.1 Material Management Practices:**

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff:

#### 7.1.1 Good Housekeeping:

The following good housekeeping practices will be followed on site during the construction project:

- An effort will be made to store only enough products required to do the job.
- All materials stored on site will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
- Product will be kept in their original containers with the original manufacturer's label.
- Substances will not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all of a product will be used up before disposing of the container.
- Manufacturer's recommendations for proper use and disposal will be followed.
- The Job Supervisor will inspect daily to ensure proper use and disposal of materials on site.

#### 7.1.2 Hazardous Products:

The following practices will be used to reduce the risks associated with hazardous materials:

- Products will be kept in original containers unless they are not reseal able.
- Original labels and material safety data will be retained; they contain important product information.
- If surplus product must be disposed of, manufacturer's or local and State recommended methods for proper disposal will be followed.

#### 7.2 Product Specific Practices:

The following product specific practices will be followed on site:

##### 7.2.1 Petroleum Products:

All onsite vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers, which are clearly labeled. Any asphalt substances used on site will be applied according to the manufacturer's recommendations.

#### 7.2.2 Fertilizers:

Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to stormwater. Storage will be in a covered shed. The content of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

#### 7.2.3 Paints:

All containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm drainage system, but will be properly disposed of according to manufacturer's instructions or State and local regulations.

#### 7.2.4 Concrete Trucks:

Concrete trucks will not be allowed to wash out or discharge surplus concrete or drum wash water on the site.

### 7.3 Spill Control Practices:

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanups:

- Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
- Materials and equipment necessary for spill cleanup will be kept in the material storage areas on site. Equipment and materials will include, but not be limited to, brooms, dustpans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated, and personnel will wear appropriate protective clothing to prevent injury from contact with hazardous substances.
- Spills of toxic or hazardous material will be reported to the appropriate State or local government agency, regardless of the size of the spill. The Spill Control & Prevention Log form provided in Appendix C should be used for this purpose.
- The spill prevention plan will be adjusted to include measures to prevent a repetitive type of spill from re-occurring and how to clean up the spill if it does re-occur. A description of the spill, what caused it, and the cleanup measures will also be included.
- The Job Supervisor responsible for daily site operations, will be designated as the spill prevention and cleanup coordinator. He will designate at least

**SUEZ WATER NEW YORK, INC CHATEAU WELL 1, 2, & 3  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

three other site personnel who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of the responsible spill personnel will be posted in the material storage area and in the office trailer on site.

## **8.0 SUPPORTING PLANS & REPORTS**

---

1. Site Plan Drawings prepared by Atzl, Nasher & Zigler P.C.
2. Soil & Erosion Control Plans prepared by Atzl, Nasher & Zigler P.C.
3. Stormwater Management Design Report by Atzl, Nasher & Zigler P.C.

## 9.0 POLLUTION PREVENTION PLAN CERTIFICATION

---

### 9.1 OWNER/OPERATOR CERTIFICATION

“I have read or been advised of the permit conditions and believe that I understand them. I also understand that, under the terms of the permit, there may be reporting requirements. I also certify under penalty of law that this document and all corresponding attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person(s) who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I further understand that coverage under the general permit will be identified in the acknowledgement that I will receive as a result of submitting this NOI. I also understand that, by submitting this NOI, I am acknowledging that the SWPPP has been developed and will be implemented as the first element of construction and agree to comply with all the terms and conditions of the general permit for which this NOI is being submitted.”

Signed: \_\_\_\_\_  
(Owner/Operator)

Date: \_\_\_\_\_

\_\_\_\_\_  
(Printed Name & Title)

\_\_\_\_\_  
(Company Name, Address & Telephone Number)

## 10.0 CERTIFICATION BY CONTRACTORS

---

Made pursuant to the State Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (Permit No. GP 0-20-001) for:

Suez Water New York, INC Chateau Well 1, 2, & 3, Town of Carmel, Putnam County, New York

### 10.1 Prime Contractor Certification:

“I certify under penalty of law that I understand and agree to comply with the terms and conditions of the stormwater pollution prevention plan for the construction site identified in this plan as a condition of authorization to discharge stormwater. I also understand that the operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards.”

Prime Contractor:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Company)

\_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Street Address)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(City, State, Zip Code)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Phone Number)

SUEZ WATER NEW YORK, INC CHATEAU WELL 1, 2, & 3  
Full Stormwater Pollution Prevention Plan (SWPPP) Report

**10.2 Sub-Contractor Certification:**

“I certify under penalty of law that I understand and agree to comply with the terms and conditions of the stormwater pollution prevention plan for the construction site identified in this plan as a condition of authorization to discharge stormwater. I also understand that the operator must comply with the terms and conditions of the New York State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards.”

Sub-Contractor:

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Company)

\_\_\_\_\_  
(Name)

\_\_\_\_\_  
(Street Address)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(City, State, Zip Code)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Phone Number)

**SUEZ WATER NEW YORK, INC CHATEAU WELL 1, 2, & 3  
Full Stormwater Pollution Prevention Plan (SWPPP) Report**

**CONTRACTOR and SUBCONTRACTOR CERTIFICATION STATEMENT**

*for the New York State Department of Environmental Conservation (DEC) State Pollutant Discharge Elimination System Permit for Stormwater Discharges from Construction Activity (GP-0-20-001)*

As per Part III.A.6 on page 13 of GP-0-20-001 (effective January 29, 2020):

*'Prior to the commencement of construction activity, the owner or operator must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The owner or operator shall have each of the contractors and sub-contractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the trained contractor. The owner or operator shall ensure that at least one trained contractor is on site on a daily basis when soil disturbance activities are being performed.'*

**The owner or operator shall have each contractor and subcontractor involved in soil disturbance sign a copy of the following certification statement before they commence any construction activity:**

_____ <i>Name of Construction Site</i>	NYR _____ <i>DEC Permit ID</i>	_____ <i>Municipality (MS4)</i>
<p><i>"I hereby certify that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.</i></p>		
_____ Responsible Corporate Officer/Partner Signature	_____ Date	
_____ Name of above Signatory	_____ Name of Company	
_____ Title of above Signatory	_____ Mailing Address	
_____ Telephone of Company	_____ City, State, and Zip	
<p><b>Identify the specific elements of the SWPPP the contractor or subcontractor is responsible for:</b></p>		
<p><b>'TRAINED CONTRACTOR' FOR THE CERTIFIED CONTRACTOR OR SUBCONTRACTOR</b></p>		
_____ <i>Name of Trained Employee</i>	_____ <i>Title of Trained Employee</i>	_____ <i>NYSDEC SWT #</i>

*A copy of this signed contractor certification statement must be maintained at the SWPPP on site*

Appendix - A

**SUEZ WATER NEW YORK, INC  
CHATEAU WELL 1, 2, & 3**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**APPENDIX-A**

**CONSTRUCTION SITE LOGBOOK**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**

**SWPPP CONSTRUCTION SITE LOG BOOK FOR SUEZ WATER NEW YORK, INC  
CHATEAU WELL 1, 2, & 3**

**NY STATE POLLUTANT DISCHARGE ELIMINATION SYSTEM  
FOR CONSTRUCTION ACTIVITIES**

# **SWPPP CONSTRUCTION SITE LOG BOOK**

**For**

**Suez Water New York, INC  
Chateau Well 1, 2, & 3  
Town of Carmel  
Putnam County, New York**

## Table of Contents

---

- I. Pre-Construction Meeting Documents.
  - a. Preamble to Site Assessment and Inspections
  - b. Operator's Certification
  - c. Qualified Professional's Credentials & Certification
  - d. Pre-Construction Site Assessment Checklist
- II. Construction Duration Inspections
  - a. Directions
  - b. Modification to the SWPPP
- III. Monthly Summary Reports
- IV. Monitoring, Reporting, and Three-Month Status Reports
  - a. Operator's Compliance Response Format

Properly completing forms such as those contained in this document meet the inspection requirement of NYSDEC SPDES GP for Construction Activities. Completed forms shall be kept on site at all times and made available to authorities upon request.

### I. PRE-CONSTRUCTION MEETING DOCUMENTS

**SWPPP CONSTRUCTION SITE LOG BOOK FOR SUEZ WATER NEW YORK, INC  
CHATEAU WELL 1, 2, & 3**

**Project Name** SUEZ WATER NEW YORK, INC CHATEAU WELL 1, 2, & 3  
**Permit No.** \_\_\_\_\_ **Date of Authorization** \_\_\_\_\_  
**Name of Operator** \_\_\_\_\_  
**Prime Contractor** \_\_\_\_\_

**a. Preamble to Site Assessment and Inspections** -the following information to be read by all person's involved in the construction of stormwater related activities:

The Operator agrees to have a qualified professional<sup>1</sup> conduct an assessment of the site prior to the commencement of construction<sup>2</sup> and certify in this inspection report that the appropriate erosion and sediment controls described in the SWPPP have been adequately installed or implemented to ensure overall preparedness of the site for the commencement of construction.

Prior to the commencement of construction, the Operator shall certify in this site logbook that the SWPPP has been prepared in accordance with the State's standards and meets all Federal, State and local erosion and sediment control requirements.

When construction starts, site inspections shall be conducted by the qualified professional at least every 7 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater (Construction Duration Inspections). The Operator shall maintain a record of all inspection reports in this site log book. The site log book shall be maintained on site and be made available to the permitting authorities upon request. The Operator shall post at the site, in a publicly accessible location, a summary of the site inspection activities on a monthly basis (Monthly Summary Report).

The operator shall also prepare a written summary of compliance with this general permit at a minimum frequency of every three months (Operator's Compliance Response Form), while coverage exists. The summary should address the status of achieving each component of the SWPPP.

Prior to filing the Notice of Termination or the end of permit term, the Operator shall have a qualified professional perform a final site inspection. The qualified professional shall certify that the site has undergone final stabilization<sup>3</sup> using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed. In addition, the Operator must identify and certify that all permanent structures described in the SWPPP have been constructed and provide the owner(s) with an operation and maintenance plan that ensures the structure(s) continuously functions as designed.

<p>1 "Qualified Professional means a person knowledgeable in the principles and practice of erosion and sediment controls, such as a Certified Professional in Erosion and Sediment Control (CPESC), soil scientist, licensed engineer or someone working under the direction and supervision of a licensed engineer (person must have experience in the principles and practices of erosion and sediment control).</p> <p>2 "Commencement of construction" means the initial removal of vegetation and disturbance of soils associated with clearing, grading or excavating activities or other construction activities.</p> <p>3 "Final stabilization" means that all soil-disturbing activities at the site have been completed and a uniform, perennial vegetative cover with a density of eighty (80) percent has been established or equivalent stabilization measures (such as the use of mulches or geotextiles) have been employed on all unpaved areas and areas not covered by permanent structures.</p>
---

**b. Operators Certification**

**SWPPP CONSTRUCTION SITE LOG BOOK FOR SUEZ WATER NEW YORK, INC  
CHATEAU WELL 1, 2, & 3**

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. Further, I hereby certify that the SWPPP meets all Federal, State, and local erosion and sediment control requirements. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law. "

**Name (Please Print):** \_\_\_\_\_

**Title** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Phone:** \_\_\_\_\_ **Email:** \_\_\_\_\_

**Signature:** \_\_\_\_\_

**c. Qualified Professional's Credentials & Certification**

"I hereby certify that I meet the criteria set forth in the General Permit to conduct site inspections for this project and that the appropriate erosion and sediment controls described in the SWPPP and as described in the following Pre-construction Site Assessment Checklist have been adequately installed or implemented, ensuring the overall preparedness of this site for the commencement of construction."

**Name (Please Print):** \_\_\_\_\_

**Title** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Phone:** \_\_\_\_\_ **Email:** \_\_\_\_\_

**Signature:** \_\_\_\_\_

**d. Pre-construction Site Assessment Checklist (NOTE: Provide comments below as necessary)**

1. Notice of Intent, SWPPP, and Contractors Certification:

**Yes No NA**

Has a Notice of Intent been filed with the NYS Department of Conservation?

Is the SWPPP on-site? Where? \_\_\_\_\_

Is the Plan current? What is the latest revision date? \_\_\_\_\_

Is a copy of the NOI (with brief description) onsite? Where? \_\_\_\_\_

Have all contractors involved with stormwater related activities signed a contractor's certification?

**Pre-construction Site Assessment Checklist (continued)**

2. Resource Protection

**SWPPP CONSTRUCTION SITE LOG BOOK FOR SUEZ WATER NEW YORK, INC  
CHATEAU WELL 1, 2, & 3**

**Yes No NA**

- Are construction limits clearly flagged or fenced?
- Important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips, especially in perimeter areas, have been flagged for protection.
- Creek crossings installed prior to land-disturbing activity, including clearing and blasting.

**3. Surface Water Protection**

**Yes No NA**

- Clean stormwater runoff has been diverted from areas to be disturbed.
- Bodies of water located either on site or in the vicinity of the site have been identified and protected.
- Appropriate practices to protect on-site or downstream surface water are installed.
- Are clearing and grading operations divided into areas <5 acres?

**4. Stabilized Construction Entrance**

**Yes No NA**

- A temporary construction entrance to capture mud and debris from construction vehicles before they enter the public highway has been installed.
- Other access areas (entrances, construction routes, equipment parking areas) are stabilized immediately as work takes place with gravel or other cover.
- Sediment tracked onto public streets is removed or cleaned on a regular basis.

**5. Perimeter Sediment Controls**

**Yes No NA**

- Silt fence material and installation comply with the standard drawing and specifications.
- Silt fences are installed at appropriate spacing intervals
- Sediment/detention basin was installed as first land disturbing activity.
- Sediment traps and barriers are installed.

**6. Pollution Prevention for Waste and Hazardous Materials**

**Yes No NA**

- The Operator or designated representative has been assigned to implement the spill prevention avoidance and response plan.
- The plan is contained in the SWPPP on page \_\_\_\_\_
- Appropriate materials to control spills are onsite. Where? \_\_\_\_\_

## II. CONSTRUCTION DURATION INSPECTIONS

### a. Directions:

Inspection Forms will be filled out during the entire construction phase of the project.

Required Elements:

(1) On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period;

(2) Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization;

(3) Indicate all disturbed site areas that have not undergone active site work during the previous 14-day period;

Inspect all sediment control practices and record the approximate degree of sediment accumulation as a percentage of sediment storage volume (for example, 10 percent, 20 percent, 50 percent);

(5) Inspect all erosion and sediment control practices and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water; and

(6) Immediately report to the Operator any deficiencies that are identified with the implementation of the SWPPP.



**SWPPP CONSTRUCTION SITE LOG BOOK FOR SUEZ WATER NEW YORK, INC  
CHATEAU WELL 1, 2, & 3**

**CONSTRUCTION DURATION INSPECTIONS**

**Maintaining Water Quality**

**Yes No NA**

- Is there an increase in turbidity causing a substantial visible contrast to natural conditions?
- Is there residue from oil and floating substances, visible oil film, or globules or grease?
- All disturbance is within the limits of the approved plans.
- Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

**Housekeeping**

1. General Site Conditions

**Yes No NA**

- Is construction site litter and debris appropriately managed?
- Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?
- Is construction impacting the adjacent property?
- Is dust adequately controlled?

2. Temporary Stream Crossing

**Yes No NA**

- Maximum diameter pipes necessary to span creek without dredging are installed.
- Installed non-woven geotextile fabric beneath approaches.
- Is fill composed of aggregate (no earth or soil)?
- Rock on approaches is clean enough to remove mud from vehicles & prevent sediment from entering stream during high flow.

**Runoff Control Practices**

1. Excavation Dewatering

**Yes No NA**

- Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
- Clean water from upstream pool is being pumped to the downstream pool.
- Sediment laden water from work area is being discharged to a silt-trapping device.
- Constructed upstream berm with one-foot minimum freeboard.

2. Level Spreader

**Yes No NA**

- Installed per plan.
- Constructed on undisturbed soil, not on fill, receiving only clear, non-sediment laden flow.
- Flow sheets out of level spreader without erosion on downstream edge.

3. Interceptor Dikes and Swales

**Yes No NA**

- Installed per plan with minimum side slopes 2H:1V or flatter.
- Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
- Sediment-laden runoff directed to sediment trapping structure

4. Stone Check Dam

**SWPPP CONSTRUCTION SITE LOG BOOK FOR SUEZ WATER NEW YORK, INC  
CHATEAU WELL 1, 2, & 3**

**Yes No NA**

- Is channel stable? (flow is not eroding soil underneath or around the structure).
- Check is in good condition (rocks in place and no permanent pools behind the structure).
- Has accumulated sediment been removed?.

**5. Rock Outlet Protection**

**Yes No NA**

- Installed per plan.
- Installed concurrently with pipe installation.

**Soil Stabilization**

**1. Topsoil and Spoil Stockpiles**

**Yes No NA**

- Stockpiles are stabilized with vegetation and/or mulch.
- Sediment control is installed at the toe of the slope.

**2. Revegetation**

**Yes No NA**

- Temporary seedings and mulch have been applied to idle areas.
- 4 inches minimum of topsoil has been applied under permanent seedings.

**Sediment Control**

**1. Stabilized Construction Entrance**

**Yes No NA**

- Stone is clean enough to effectively remove mud from vehicles.
- Installed per standards and specifications?
- Does all traffic use the stabilized entrance to enter and leave site?
- Is adequate drainage provided to prevent ponding at entrance?

**2. Silt Fence**

**Yes No NA**

- Installed on Contour, 10 feet from toe of slope (not across conveyance channels).
- Joints constructed by wrapping the two ends together for continuous support.
- Fabric buried 6 inches minimum.
- Posts are stable, fabric is tight and without rips or frayed areas.
- Sediment accumulation is \_\_\_% of design capacity.

**3. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated practices)**

**Yes No NA**

- Installed concrete blocks lengthwise so open ends face outward, not upward.
- Placed wire screen between No. 3 crushed stone and concrete blocks.
- Drainage area is 1acre or less.
- Excavated area is 900 cubic feet.
- Excavated side slopes should be 2:1.

**SWPPP CONSTRUCTION SITE LOG BOOK FOR SUEZ WATER NEW YORK, INC  
CHATEAU WELL 1, 2, & 3**

- 2" x 4" frame is constructed and structurally sound.
- Posts 3-foot maximum spacing between posts.
- Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at max 8-inch spacing.
- Posts are stable, fabric is tight and without rips or frayed areas.
- Sediment accumulation \_\_\_% of design capacity.

**4. Temporary Sediment Trap**

**Yes No NA**

- Outlet structure is constructed per the approved plan or drawing.
- Geotextile fabric has been placed beneath rock fill.
- Sediment accumulation is \_\_\_% of design capacity.

**5. Temporary Sediment Basin**

**Yes No NA**

- Basin and outlet structure constructed per the approved plan.
- Basin side slopes are stabilized with seed/mulch.
- Drainage structure flushed and basin surface restored upon removal of sediment basin facility.
- Sediment accumulation is \_\_\_% of design capacity.

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site specific design.  
Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.





Appendix - B

**SUEZ WATER NEW YORK, INC  
CHATEAU WELL 1, 2, & 3**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**APPENDIX-B**

**CONSTRUCTION INSPECTION CHECKLISTS**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**

SUEZ WATER NEW YORK, INC CHATEAU WELL 1, 2, & 3  
Stormwater System Design  
Construction Inspection Checklist Form

## STORMWATER MANAGEMENT CONSTRUCTION INSPECTION CHECKLIST FORM

Project: **Suez Water New York, INC Chateau Well 1, 2, & 3**

Location: **Town of Carmel, Putnam County, NY**

Site Status: \_\_\_\_\_

Date of Inspection: \_\_\_\_\_

Time of Inspection: \_\_\_\_\_

Weather Conditions  
(including recent rainfall): \_\_\_\_\_

Inspector's Name: \_\_\_\_\_

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
<b>1. Pre-Construction/Materials and Equipment</b>		
Pre-construction meeting		
Pipe and appurtenances on-site prior to construction and dimensions checked		
1. Material (including protective coating, if specified)		
2. Diameter		
3. Dimensions of metal riser or pre-cast concrete outlet structure		
4. Required dimensions between water control structures (orifices, weirs, etc.) are in accordance with approved plans		
5. Barrel stub for prefabricated pipe structures at proper angle for design barrel slope		
6. Number and dimensions of prefabricated anti-seep collars		
7. Watertight connectors and gaskets		
8. Outlet drain valve		
Project benchmark near pond site		
Equipment for temporary de-watering		
<b>2. Subgrade Preparation</b>		
Area beneath embankment stripped of all Vegetation, topsoil, and organic matter		
<b>3. Pipe Spillway Installation</b>		
Method of installation detailed on plans		
<b>A. Bed preparation</b>		
Installation trench excavated with specified side slopes		

**SUEZ WATER NEW YORK, INC CHATEAU WELL 1, 2, & 3**  
**Stormwater System Design**  
**Construction Inspection Checklist Form**

CONSTRUCTION SEQUENCE	SATISFACTORY/ UNSATISFACTORY	COMMENTS
Stable, uniform, dry subgrade of relatively impervious material (If subgrade is wet, contractor shall have defined steps before proceeding with installation)		
Invert at proper elevation and grade		
<b>B. Pipe placement</b>		
<b>Metal / plastic pipe</b>		
1. Watertight connectors and gaskets properly installed		
2. Anti-seep collars properly spaced and having watertight connections to pipe		
3. Backfill placed and tamped by hand under "haunches" of pipe		
4. Remaining backfill placed in max. 8 inch lifts using small power tamping equipment until 2 feet cover over pipe is reached		
<b>3. Pipe Spillway Installation</b>		
<b>Concrete pipe</b>		
1. Pipe set on blocks or concrete slab for pouring of low cradle		
2. Pipe installed with rubber gasket joints with no spalling in gasket interface area		
3. Excavation for lower half of anti-seep collar(s) with reinforcing steel set		
4. Entire area where anti-seep collar(s) will come in contact with pipe coated with mastic or other approved waterproof sealant		
5. Low cradle and bottom half of anti-seep collar installed as monolithic pour and of an approved mix		
6. Upper half of anti-seep collar(s) formed with reinforcing steel set		
7. Concrete for collar of an approved mix and vibrated into place (protected from freezing while curing, if necessary)		
8. Forms stripped and collar inspected for honeycomb prior to backfilling. Parge if necessary.		
<b>C. Backfilling</b>		
Fill placed in maximum 8 inch lifts		
Backfill taken minimum 2 feet above top of anti-seep collar elevation before traversing with heavy equipment		
<b>4. Riser / Outlet Structure Installation</b>		
Riser located within embankment		
<b>A. Metal riser</b>		
Riser base excavated or formed on stable subgrade to design dimensions		
	<b>SATISFACTORY/</b>	

**SUEZ WATER NEW YORK, INC CHATEAU WELL 1, 2, & 3**  
**Stormwater System Design**  
**Construction Inspection Checklist Form**

CONSTRUCTION SEQUENCE	UNSATISFACTORY	COMMENTS
Set on blocks to design elevations and plumbed		
Reinforcing bars placed at right angles and projecting into sides of riser		
Concrete poured so as to fill inside of riser to invert of barrel		
<b>B. Pre-cast concrete structure</b>		
Dry and stable subgrade		
Riser base set to design elevation		
If more than one section, no spalling in gasket interface area; gasket or approved caulking material placed securely		
Watertight and structurally sound collar or Gasket joint where structure connects to pipe spillway		
<b>C. Poured concrete structure</b>		
Footing excavated or formed on stable Subgrade, to design dimensions with reinforcing steel set		
Structure formed to design dimensions, with reinforcing steel set as per plan		
Concrete of an approved mix and vibrated into place (protected from freezing while curing, if necessary)		
Forms stripped & inspected for "honeycomb" prior to backfilling; parge if necessary		
<b>5. Embankment Construction</b>		
Fill material		
Compaction		
Embankment		
1. Fill placed in specified lifts and compacted with appropriate equipment		
2. Constructed to design cross-section, side slopes and top width		
3. Constructed to design elevation plus allowance for settlement		
<b>6. Impounded Area Construction</b>		
Excavated / graded to design contours and side slopes		
Inlet pipes have adequate outfall protection		
Forebay(s)		
Pond benches		
<b>7. Earth Emergency Spillway Construction</b>		
Spillway located in cut or structurally stabilized with riprap, gabions, concrete, etc.		
Excavated to proper cross-section, side slopes and bottom width		
Entrance channel, crest, and exit channel Constructed to design grades and elevations		
<b>CONSTRUCTION SEQUENCE</b>	<b>SATISFACTORY/ UNSATISFACTORY</b>	<b>COMMENTS</b>

**SUEZ WATER NEW YORK, INC CHATEAU WELL 1, 2, & 3**  
**Stormwater System Design**  
**Construction Inspection Checklist Form**

<b>8. Outlet Protection</b>		
<b>A. End section</b>		
Securely in place and properly backfilled		
<b>B. Endwall</b>		
Footing excavated or formed on stable Subgrade, to design dimensions and reinforcing steel set, if specified	<b>SATISFACTORY/ UNSATISFACTORY</b>	<b>COMMENTS</b>
Endwall formed to design dimensions with Reinforcing steel set as per plan		
Concrete of an approved mix and vibrated into place (protected from freezing, if necessary)		
Forms stripped and structure inspected for "honeycomb" prior to backfilling; parge if necessary		
<b>C. Riprap apron / channel</b>		
Apron / channel excavated to design cross-section with proper transition to existing ground		
Filter fabric in place		
Stone sized as per plan and uniformly place at the thickness specified		
<b>9. Vegetative Stabilization</b>		
Approved seed mixture or sod		
Proper surface preparation and required soil Amendments		
Excelsior mat or other stabilization, as per plan		
<b>10. Miscellaneous</b>		
Drain for ponds having a permanent pool		
Trash rack / anti-vortex device secured to outlet structure		
Trash protection for low flow pipes, orifices, etc.		
Fencing (when required)		
Access road		
Set aside for clean-out maintenance		
<b>11. Stormwater Wetlands</b>		
Adequate water balance		
Variety of depth zones present		
Approved pondscaping plan in place reinforcement budget for additional plantings		
Plants and materials ordered 6 months prior to construction		
Construction planned to allow for adequate planting and establishment of plant community (April-June planting window)		
Wetland buffer area preserved to maximum extent possible		

**Comments:**

---



---



---



Appendix C

**SUEZ WATER NEW YORK, INC  
CHATEAU WELL 1, 2, & 3**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**APPENDIX-C**

**SPILL CONTROL AND PREVENTION LOG**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**



Appendix - D

**SUEZ WATER NEW YORK, INC  
CHATEAU WELL 1, 2, & 3**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**APPENDIX-D  
MAINTENANCE AGREEMENT**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**

**STORMWATER CONTROL FACILITY MAINTENANCE AGREEMENT**  
**RE: SUEZ WATER NEW YORK, INC CHATEAU WELL 1, 2, & 3**  
**(Tax Map: Section 75.20, Block 1, Lot 16)**

Whereas, the Town of Carmel (“Town”) and Suez Water New York, Inc (“Facility Owner”) want to enter into an agreement to provide for the long term maintenance and continuation of stormwater control measures approved by the Town for the above named project, and

Whereas, the Town and the Facility Owner desire that the stormwater control measures be built in accordance with the approved project plans and thereafter be maintained, cleaned, repaired, replaced and continued in perpetuity in order to ensure optimum performance of the components. Therefore, the Town and the Facility Owner agree as follows:

1. This agreement binds the Facility Owner, its successors and assigns, to the maintenance provisions depicted in the approved project plans which are attached as Schedule A-1 of this agreement.
2. The Facility Owner shall maintain, clean, repair, replace and continue the Stormwater control measures as listed in Schedule A-2 as necessary to ensure optimum performance of the measures to design specifications. The stormwater control measures shall include, but shall not be limited to, the following: drop inlets, pipes, culverts, underground solid pipe storage system and dry pond system, but only to the extent that the same are shown on Schedule A-2.
3. The Facility Owner shall be responsible for all expenses related to the maintenance of the stormwater control measures and shall establish a means for the collection and distribution of expenses among parties for any commonly owned facilities.
4. The Facility Owner shall provide for the annual inspection of the stormwater control measures, in perpetuity, to determine the condition and integrity of the measures. A Professional Engineer licensed by the State of New York shall perform such inspection. The inspecting engineer shall prepare and submit to the Town within 30 days of the inspection, a written report of the findings including recommendations for those actions necessary for the continuation of the Stormwater control measures.
5. The Facility Owner shall not authorize, undertake or permit alteration, abandonment, modification or discontinuation of the Stormwater control measures except in accordance with written approval of the Town.
6. The Facility Owner shall undertake all necessary repairs and replacement of the stormwater control measures at the direction of the Town or in accordance with the recommendations of the inspecting engineer.
7. The Facility Owner shall provide to the Town, prior to Mayor’s endorsement, a security for the maintenance and continuation of the stormwater control measures.
8. This agreement shall be recorded in the Office of the County Clerk, County of Putnam. In the event that the facility is a commercial or residential condominium, this agreement shall be included in any offering plan or prospectus.

9. If ever the Town determines that the Facility Owner has failed to construct or maintain the stormwater control measures in accordance with the project plan or has failed to undertake corrective action specified by the Town or by the inspecting engineer, the Town is authorized to undertake such steps as reasonably necessary for the preservation, continuation or maintenance of the stormwater control measures and to affix the expenses thereof as a tax lien against the property. By virtue of this agreement, the facility owner hereby grants on behalf of itself, its successors and/or assigns an irrevocable right of entry to the Town, its employees, contractors, vendees and/or officers to perform the corrective measures referred to in this paragraph and agrees to hold them harmless, defend and indemnify them for any damages, except gross negligence.
10. This agreement is effective as of the date of execution of the Stormwater Control Facility Maintenance Agreement.

Town of Carmel

Suez Water New York, INC  
Chateau Well 1, 2, & 3

By: \_\_\_\_\_  
Kenneth Schmitt, Town Supervisor

By: \_\_\_\_\_  
Steven Garabed, Manager of  
Engineering West Nyack Operations

State of New York, County of Rockland ss.:

On \_\_\_\_\_, before me, the undersigned, personally appeared Kenneth Schmitt personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

\_\_\_\_\_  
Notary Public

State of New York, County of \_\_\_\_\_ ss.:

On \_\_\_\_\_, before me, the undersigned, personally appeared Steven Garabed personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

\_\_\_\_\_  
Notary Public



## SCHEDULE "A-2"

### STORMWATER MANAGEMENT SYSTEM INSPECTION AND MAINTENANCE SCHEDULE

#### Stormwater Management Structures:

- Stormwater Piping
- Dry Pond System

#### Inspections Schedule:

- Stormwater Pipes, Catch Basins and Control Structures:
  - Monthly, and after major storms: Check for debris at inlets, outlets, and cleanouts.
- Dry Pond System
  - Monthly inspections during construction and on an annual basis thereafter.

#### Maintenance Schedule:

- Stormwater Piping: Must be cleaned as found necessary by inspection.
- Dry Pond System
  - Remove accumulated sediment and clean out and/or replace the filter gravel bed at the outfall pipe whenever accumulated sediment reaches a volume of 10% of the available basin capacity.
  - Restore any eroded embankments.
  - Remove accumulated debris within the basin and at outfall structures.

## Stormwater Piping Inspection and Maintenance Checklist

Project: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Site \_\_\_\_\_  
 Status: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Time: \_\_\_\_\_  
 Inspector: \_\_\_\_\_

Inspection/Maintenance Items	Satisfactory or Unsatisfactory	Comments/Corrective Action
<b>1. Inspection (Quarter-annually, After Major Storms)</b>		
1. Accumulated sediment exceeds 10% of the diameter of the pipe.		
2. Vegetation the reduces free movement of water through pipes.		
3. Pipe damage: Any dent that increases flow area by more than 10% or puncture that impacts performance		
4. Trash accumulated to reduce free movement of water through pipes.		

Inspector shall use one sheet for each individual pipe run.

(Provide sketch to show location of unsatisfactory items)

**ACTIONS TO BE TAKEN:**

---



---



---

**COMMENTS:**

---



---

## Dry Pond System Inspection and Maintenance Checklist

Project: \_\_\_\_\_  
 Location: \_\_\_\_\_  
 Site \_\_\_\_\_  
 Status: \_\_\_\_\_  
 Date: \_\_\_\_\_  
 Time: \_\_\_\_\_  
 Inspector: \_\_\_\_\_

Inspection/Maintenance Items	Satisfactory or Unsatisfactory	Comments/Corrective Action
<b>1. Embankment and emergency spillway (Annual, After Major Storms)</b>		
1. Vegetation and ground cover adequate		
2. Embankment erosion		
3. Animal burrows		
4. Unauthorized planting		
5. Cracking, bulging, or sliding of dam		
a) Upstream face		
b) Downstream face		
c) At or beyond toe		
• Downstream		
• Upstream		
d) Emergency spillway		
6. Pond, toe & chimney drains clear and functioning		
7. Seeps/leaks on downstream face		
8. Slope protection or riprap failure		
9. Vertical/horizontal alignment of top of dam "As-Built"		
10. Emergency spillway clear of obstructions and debris		

11. Other (specify)		
<b>2. Riser and principal spillway</b>	<b>(Annual)</b>	
Type: Reinforced concrete		
- Corrugated pipe		
- Masonry		
1. Low flow orifice obstructed		
2. Low flow trash rack.		
a) Debris removal necessary		
b) Corrosion control		
3. Weir trash rack maintenance		
a) Debris removal necessary		
b) corrosion control		
4. Excessive sediment accumulation insides riser		
5. Concrete/masonry condition riser and barrels		
a) cracks or displacement		
b) Minor spalling (1")		
c) Major spalling (rebars exposed)		
d) Joint failures		
e) Water tightness		
6. Metal pipe condition		
7. Control valve		
a) Operational/exercised		
b) Chained and locked		
8. Pond drain valve		
a) Operational/exercised		
b) Chained and locked		
9. Outfall channels functioning		
10. Other (specify)		
<b>3. Dry Pond Areas</b>		
1. Vegetation adequate		

2. Undesirable vegetative growth		
3. Undesirable woody vegetation		
4. Low flow channels clear of obstructions		
5. Standing water or wet spots		
6. Sediment and / or trash accumulation		
7. Other (specify)		
<b>4. Condition of Outfalls (Annual, After Major Storms)</b>		
1. Riprap failures		
2. Slope erosion		
3. Storm drain pipes		
4. Endwalls / Headwalls		
5. Other (specify)		
<b>5. Other (Annual)</b>		
1. Encroachment on pond, wetland or easement area		
2. Complaints from residents		
3. Aesthetics		
a) Grass growing required		
b) Graffiti removal needed		
c) Other (specify)		
4. Conditions of maintenance access routes.		
5. Signs of hydrocarbon build-up		
6. Any public hazards (specify)		

**ACTIONS TO BE TAKEN:**

---



---



---

**COMMENTS:**

---



---



---

Appendix - E

**SUEZ WATER NEW YORK, INC  
CHATEAU WELL 1, 2, & 3**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**APPENDIX-E**

**CONSTRUCTION PLANS  
IN  
(11"X17") FORMAT**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

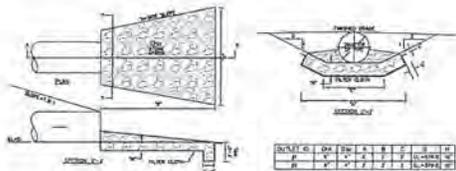
**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**

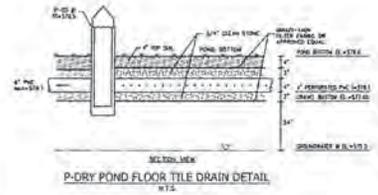




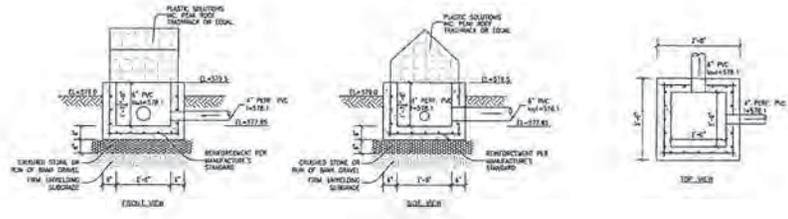




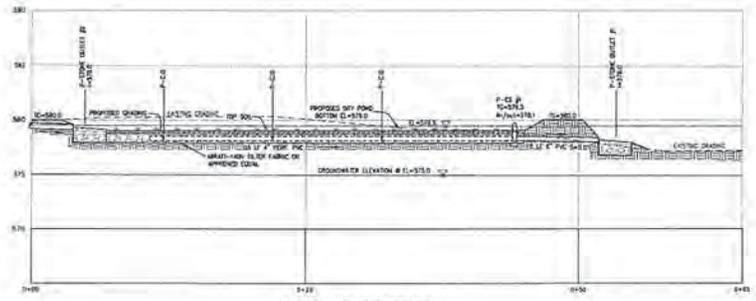
STONE OUTLET DETAIL  
#15



P-DRY POND FLOOR TILE DRAIN DETAIL  
#15



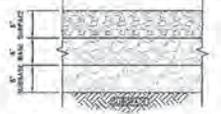
P-C5 #1 DETAIL  
SCALE: 1/2"=1'



PROPOSED DRY POND PROFILE  
SCALE: 1/4"=1'

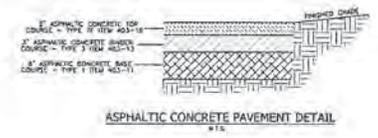
TABLE-1 PERCENT PASSING BY WEIGHT OF GRAVEL MATERIALS

SIEVE (U.S. SIEVE)	GRAVEL TYPE		
	SURFACE	BASE	SUBGRADE
3"	-	100	100
2"	-	100	-
1.5"	-	80-100	70-100
1"	100	-	-
3/4"	80-100	-	-
1/2"	50-75	30-50	20-35
#40	15-35	5-20	3-25
#200	8-15	0-85	0-8

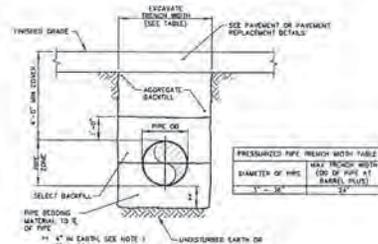


NOTES:  
1. SURFACE, BASE AND SURFACE MATERIAL SHALL CONFORM TO GRADING PLANS OR TABLE-1.  
2. USE LAYERS, GRAVEL, STONE AND MATERIALS BETWEEN THE ROADWAY LANE.

TYPICAL GRAVEL PAVING SECTION  
SCALE: 1/4"=1'



ASPHALTIC CONCRETE PAVEMENT DETAIL  
#15



TYP. TRENCH PAVED AREAS DETAIL  
#15

- TRENCH NOTES:
- IF UNDESIRABLE SUBSOIL IS ENCOUNTERED AT THE NORMAL TRENCH SURFACE, THE CONTRACTOR SHALL REMOVE IT TO THE DEPTH DIRECTED BY THE ENGINEER IN THE FIELD AND BACKFILL WITH PIPE BEDDING MATERIAL IN 4" LAYERS.
  - BOTTOM OF TRENCH SHALL BE FREE OF WATER PRIOR TO PLACING BEDDING.
  - PROVIDE 4" OF TOPSOIL ABOVE BEDDING AS REQUIRED.
  - CONTRACTOR SHALL CHOOSE THE TRENCH IN ACCORDANCE WITH SLOPE DEGREE OF THE SPECIFICATIONS.
  - GRADE AND PAVED DRIVEWAYS TO BE RESTORED TO EXIST WITH UNPAVED DRIVEWAYS AS INDICATED ON THIS SHEET.

ATZL, NASHER & ZIGLER P.C.  
ENGINEERS-SURVEYORS-PLANNERS  
235 North Main Street  
New City, New York 10956  
Tel: (845) 834-4999  
Fax: (845) 834-5843  
E-mail: info@anzly.com  
Web: www.ANZLY.com

PROJECT:  
**SUEZ WATER NEW YORK, INC.**  
**CHATEAU WELL 1, 2 & 3**

TOWN OF CARMEL  
PUTNAM COUNTY, NEW YORK

SCALE: AS SHOWN

NO.	DATE	DESCRIPTION
1	04-27-21	ISSUANCE PERMIT FOR INTERCONNECTION TEST
2	02-07-21	REV. 11-13-21 FOR NOTING
3	01-29-21	FOR ECR & PER SUBMISSION
4	11-15-21	FOR PER. W.P. 9-22-21

PROJECT NO. 4874

DATE: JULY 18, 2021

DRAWN BY: JB

CHECKED BY: JMS

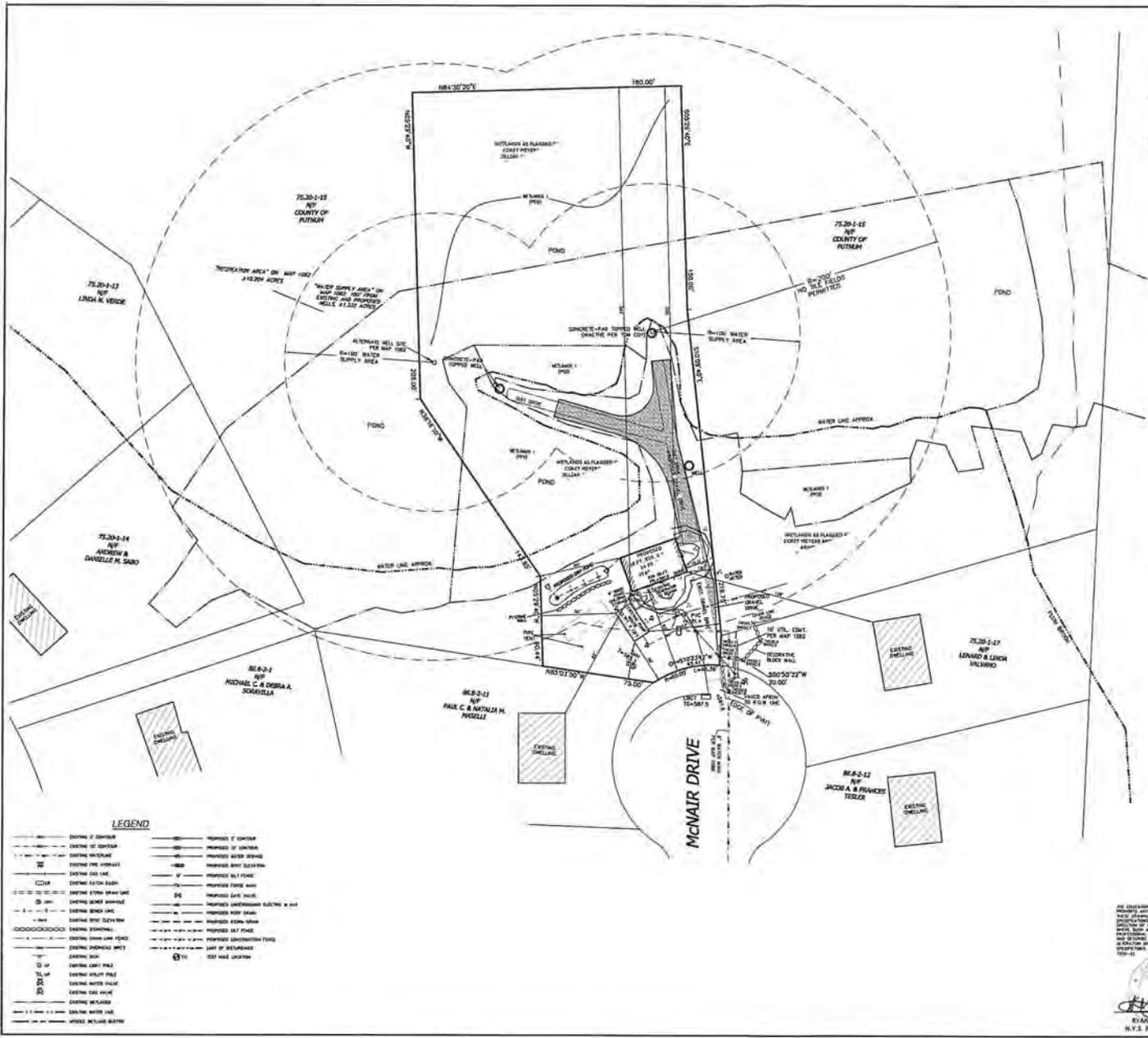
SCALE: AS SHOWN

PROJECT NO. 4874

ISSUANCE NO. 4







**RAB** CONTACT INFORMATION:  
 DAVON SALES (732) 945-6996  
 RAB LIGHTING (201) 831-6682



IS NOT TO BE USED FOR ANY OTHER USE OR FOR ANY OTHER PURPOSES WITHOUT THE WRITTEN PERMISSION OF RAB LIGHTING. THIS DRAWING IS THE PROPERTY OF RAB LIGHTING AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.

YOUR MODEL: SLIMIZY WALL MOUNT DETAIL  
 WTS

Quantity	Size	Label	Arrangement	Trade/Line/Length	LLF	Dimensions	Stock Part
1	2	SLIMIZY	SINGLE	N/A	1.000	1000 MM	SL150-02

**LEGEND**

- |     |   |     |   |
|-----|---|-----|---|
| --- | EXISTING OF CENTER  | --- | PROPOSED OF CENTER  |
| --- | EXISTING OF CENTER  | --- | PROPOSED OF CENTER  |
| --- | EXISTING FIRE HYDRANT   | --- | PROPOSED FIRE HYDRANT   |
| --- | EXISTING GAS LINE   | --- | PROPOSED GAS LINE   |
| --- | EXISTING FIBER OPTIC  | --- | PROPOSED FIBER OPTIC  |
| --- | EXISTING 8" WATER MAIN  | --- | PROPOSED 8" WATER MAIN  |
| --- | EXISTING 6" WATER MAIN  | --- | PROPOSED 6" WATER MAIN  |
| --- | EXISTING 4" WATER MAIN  | --- | PROPOSED 4" WATER MAIN  |
| --- | EXISTING 3" WATER MAIN  | --- | PROPOSED 3" WATER MAIN  |
| --- | EXISTING 2" WATER MAIN  | --- | PROPOSED 2" WATER MAIN  |
| --- | EXISTING 1.5" WATER MAIN  | --- | PROPOSED 1.5" WATER MAIN  |
| --- | EXISTING 1" WATER MAIN  | --- | PROPOSED 1" WATER MAIN  |
| --- | EXISTING 0.75" WATER MAIN   | --- | PROPOSED 0.75" WATER MAIN   |
| --- | EXISTING 0.5" WATER MAIN  | --- | PROPOSED 0.5" WATER MAIN  |
| --- | EXISTING 0.25" WATER MAIN   | --- | PROPOSED 0.25" WATER MAIN   |
| --- | EXISTING 0.125" WATER MAIN  | --- | PROPOSED 0.125" WATER MAIN  |
| --- | EXISTING 0.0625" WATER MAIN   | --- | PROPOSED 0.0625" WATER MAIN   |
| --- | EXISTING 0.03125" WATER MAIN  | --- | PROPOSED 0.03125" WATER MAIN  |
| --- | EXISTING 0.015625" WATER MAIN   | --- | PROPOSED 0.015625" WATER MAIN   |
| --- | EXISTING 0.0078125" WATER MAIN  | --- | PROPOSED 0.0078125" WATER MAIN  |
| --- | EXISTING 0.00390625" WATER MAIN   | --- | PROPOSED 0.00390625" WATER MAIN   |
| --- | EXISTING 0.001953125" WATER MAIN  | --- | PROPOSED 0.001953125" WATER MAIN  |
| --- | EXISTING 0.0009765625" WATER MAIN   | --- | PROPOSED 0.0009765625" WATER MAIN   |
| --- | EXISTING 0.00048828125" WATER MAIN  | --- | PROPOSED 0.00048828125" WATER MAIN  |
| --- | EXISTING 0.000244140625" WATER MAIN   | --- | PROPOSED 0.000244140625" WATER MAIN   |
| --- | EXISTING 0.0001220703125" WATER MAIN  | --- | PROPOSED 0.0001220703125" WATER MAIN  |
| --- | EXISTING 0.00006103515625" WATER MAIN   | --- | PROPOSED 0.00006103515625" WATER MAIN   |
| --- | EXISTING 0.000030517578125" WATER MAIN  | --- | PROPOSED 0.000030517578125" WATER MAIN  |
| --- | EXISTING 0.0000152587890625" WATER MAIN   | --- | PROPOSED 0.0000152587890625" WATER MAIN   |
| --- | EXISTING 0.00000762939453125" WATER MAIN  | --- | PROPOSED 0.00000762939453125" WATER MAIN  |
| --- | EXISTING 0.000003814697265625" WATER MAIN   | --- | PROPOSED 0.000003814697265625" WATER MAIN   |
| --- | EXISTING 0.0000019073486328125" WATER MAIN  | --- | PROPOSED 0.0000019073486328125" WATER MAIN  |
| --- | EXISTING 0.00000095367431640625" WATER MAIN   | --- | PROPOSED 0.00000095367431640625" WATER MAIN   |
| --- | EXISTING 0.000000476837158203125" WATER MAIN  | --- | PROPOSED 0.000000476837158203125" WATER MAIN  |
| --- | EXISTING 0.0000002384185791015625" WATER MAIN   | --- | PROPOSED 0.0000002384185791015625" WATER MAIN   |
| --- | EXISTING 0.00000011920928955078125" WATER MAIN  | --- | PROPOSED 0.00000011920928955078125" WATER MAIN  |
| --- | EXISTING 0.000000059604644775390625" WATER MAIN   | --- | PROPOSED 0.000000059604644775390625" WATER MAIN   |
| --- | EXISTING 0.0000000298023223876953125" WATER MAIN  | --- | PROPOSED 0.0000000298023223876953125" WATER MAIN  |
| --- | EXISTING 0.00000001490116119384765625" WATER MAIN   | --- | PROPOSED 0.00000001490116119384765625" WATER MAIN   |
| --- | EXISTING 0.000000007450580596923828125" WATER MAIN  | --- | PROPOSED 0.000000007450580596923828125" WATER MAIN  |
| --- | EXISTING 0.0000000037252902984619140625" WATER MAIN   | --- | PROPOSED 0.0000000037252902984619140625" WATER MAIN   |
| --- | EXISTING 0.00000000186264514923095703125" WATER MAIN  | --- | PROPOSED 0.00000000186264514923095703125" WATER MAIN  |
| --- | EXISTING 0.000000000931322574615478515625" WATER MAIN   | --- | PROPOSED 0.000000000931322574615478515625" WATER MAIN   |
| --- | EXISTING 0.0000000004656612873077392578125" WATER MAIN  | --- | PROPOSED 0.0000000004656612873077392578125" WATER MAIN  |
| --- | EXISTING 0.00000000023283064365386962890625" WATER MAIN   | --- | PROPOSED 0.00000000023283064365386962890625" WATER MAIN   |
| --- | EXISTING 0.000000000116415321826934814453125" WATER MAIN  | --- | PROPOSED 0.000000000116415321826934814453125" WATER MAIN  |
| --- | EXISTING 0.000000000058207660913467407171875" WATER MAIN  | --- | PROPOSED 0.000000000058207660913467407171875" WATER MAIN  |
| --- | EXISTING 0.000000000029103830456733703589375" WATER MAIN  | --- | PROPOSED 0.000000000029103830456733703589375" WATER MAIN  |
| --- | EXISTING 0.0000000000145519152283668517946875" WATER MAIN   | --- | PROPOSED 0.0000000000145519152283668517946875" WATER MAIN   |
| --- | EXISTING 0.00000000000727595761418342589734375" WATER MAIN  | --- | PROPOSED 0.00000000000727595761418342589734375" WATER MAIN  |
| --- | EXISTING 0.000000000003637978807091712147171875" WATER MAIN   | --- | PROPOSED 0.000000000003637978807091712147171875" WATER MAIN   |
| --- | EXISTING 0.00000000000181898940354585607089375" WATER MAIN  | --- | PROPOSED 0.00000000000181898940354585607089375" WATER MAIN  |
| --- | EXISTING 0.000000000000909494701772928035446875" WATER MAIN   | --- | PROPOSED 0.000000000000909494701772928035446875" WATER MAIN   |
| --- | EXISTING 0.00000000000045474735088641177234375" WATER MAIN  | --- | PROPOSED 0.00000000000045474735088641177234375" WATER MAIN  |
| --- | EXISTING 0.000000000000227373675443205886171875" WATER MAIN   | --- | PROPOSED 0.000000000000227373675443205886171875" WATER MAIN   |
| --- | EXISTING 0.000000000000113686837721602943089375" WATER MAIN   | --- | PROPOSED 0.000000000000113686837721602943089375" WATER MAIN   |
| --- | EXISTING 0.0000000000000568434188608014715446875" WATER MAIN  | --- | PROPOSED 0.0000000000000568434188608014715446875" WATER MAIN  |
| --- | EXISTING 0.00000000000002842170943040073577234375" WATER MAIN   | --- | PROPOSED 0.00000000000002842170943040073577234375" WATER MAIN   |
| --- | EXISTING 0.000000000000014210854715200367886171875" WATER MAIN  | --- | PROPOSED 0.000000000000014210854715200367886171875" WATER MAIN  |
| --- | EXISTING 0.000000000000007105427357600183943089375" WATER MAIN  | --- | PROPOSED 0.000000000000007105427357600183943089375" WATER MAIN  |
| --- | EXISTING 0.00000000000000355271367880009197171875" WATER MAIN   | --- | PROPOSED 0.00000000000000355271367880009197171875" WATER MAIN   |
| --- | EXISTING 0.00000000000000177635683940004598589375" WATER MAIN   | --- | PROPOSED 0.00000000000000177635683940004598589375" WATER MAIN   |
| --- | EXISTING 0.000000000000000888178419700022992946875" WATER MAIN  | --- | PROPOSED 0.000000000000000888178419700022992946875" WATER MAIN  |
| --- | EXISTING 0.0000000000000004440892098500114964734375" WATER MAIN   | --- | PROPOSED 0.0000000000000004440892098500114964734375" WATER MAIN   |
| --- | EXISTING 0.00000000000000022204460492500574823671875" WATER MAIN  | --- | PROPOSED 0.00000000000000022204460492500574823671875" WATER MAIN  |
| --- | EXISTING 0.0000000000000001110223024625002872413089375" WATER MAIN  | --- | PROPOSED 0.0000000000000001110223024625002872413089375" WATER MAIN  |
| --- | EXISTING 0.000000000000000055511151231250014362171875" WATER MAIN   | --- | PROPOSED 0.000000000000000055511151231250014362171875" WATER MAIN   |
| --- | EXISTING 0.0000000000000000277555756156250007181089375" WATER MAIN  | --- | PROPOSED 0.0000000000000000277555756156250007181089375" WATER MAIN  |
| --- | EXISTING 0.00000000000000001387778780781250003590446875" WATER MAIN   | --- | PROPOSED 0.00000000000000001387778780781250003590446875" WATER MAIN   |
| --- | EXISTING 0.0000000000000000069388939039062500017952234375" WATER MAIN                                       | --- | PROPOSED 0.0000000000000000069388939039062500017952234375" WATER MAIN                                       |
| --- | EXISTING 0.00000000000000000346944695195312500008976171875" WATER MAIN                                      | --- | PROPOSED 0.00000000000000000346944695195312500008976171875" WATER MAIN                                      |
| --- | EXISTING 0.000000000000000001734723475976562500004488089375" WATER MAIN                                     | --- | PROPOSED 0.000000000000000001734723475976562500004488089375" WATER MAIN                                     |
| --- | EXISTING 0.0000000000000000008673617379882812500002244046875" WATER MAIN                                    | --- | PROPOSED 0.0000000000000000008673617379882812500002244046875" WATER MAIN                                    |
| --- | EXISTING 0.00000000000000000043368086899414062500011220234375" WATER MAIN                                   | --- | PROPOSED 0.00000000000000000043368086899414062500011220234375" WATER MAIN                                   |
| --- | EXISTING 0.0000000000000000002168404344970703125000056101171875" WATER MAIN                                 | --- | PROPOSED 0.0000000000000000002168404344970703125000056101171875" WATER MAIN                                 |
| --- | EXISTING 0.00000000000000000010842021724853515625000028050589375" WATER MAIN                                | --- | PROPOSED 0.00000000000000000010842021724853515625000028050589375" WATER MAIN                                |
| --- | EXISTING 0.00000000000000000005421010862426781250000140252946875" WATER MAIN                                | --- | PROPOSED 0.00000000000000000005421010862426781250000140252946875" WATER MAIN                                |
| --- | EXISTING 0.0000000000000000000271050543121339062500000701264734375" WATER MAIN                              | --- | PROPOSED 0.0000000000000000000271050543121339062500000701264734375" WATER MAIN                              |
| --- | EXISTING 0.000000000000000000013552502656066953125000003506323671875" WATER MAIN                            | --- | PROPOSED 0.000000000000000000013552502656066953125000003506323671875" WATER MAIN                            |
| --- | EXISTING 0.000000000000000000006776251328033476562500000175316171875" WATER MAIN                            | --- | PROPOSED 0.000000000000000000006776251328033476562500000175316171875" WATER MAIN                            |
| --- | EXISTING 0.000000000000000000003388125664016738281250000008765589375" WATER MAIN                            | --- | PROPOSED 0.000000000000000000003388125664016738281250000008765589375" WATER MAIN                            |
| --- | EXISTING 0.00000000000000000000169406283200836914062500000043827946875" WATER MAIN                          | --- | PROPOSED 0.00000000000000000000169406283200836914062500000043827946875" WATER MAIN                          |
| --- | EXISTING 0.00000000000000000000084703141600418471875000000219139734375" WATER MAIN                          | --- | PROPOSED 0.00000000000000000000084703141600418471875000000219139734375" WATER MAIN                          |
| --- | EXISTING 0.0000000000000000000004235157080020923593750000001095698671875" WATER MAIN                        | --- | PROPOSED 0.0000000000000000000004235157080020923593750000001095698671875" WATER MAIN                        |
| --- | EXISTING 0.0000000000000000000002117578540010461796875000000054784934375" WATER MAIN                        | --- | PROPOSED 0.0000000000000000000002117578540010461796875000000054784934375" WATER MAIN                        |
| --- | EXISTING 0.00000000000000000000010587892700052309843750000000273924671875" WATER MAIN                       | --- | PROPOSED 0.00000000000000000000010587892700052309843750000000273924671875" WATER MAIN                       |
| --- | EXISTING 0.00000000000000000000005293946350026154921875000000013696233671875" WATER MAIN                    | --- | PROPOSED 0.00000000000000000000005293946350026154921875000000013696233671875" WATER MAIN                    |
| --- | EXISTING 0.000000000000000000000026469731750130774609375000000006848116834375" WATER MAIN                   | --- | PROPOSED 0.000000000000000000000026469731750130774609375000000006848116834375" WATER MAIN                   |
| --- | EXISTING 0.000000000000000000000013234865875006538730304687500000034240584171875" WATER MAIN                | --- | PROPOSED 0.000000000000000000000013234865875006538730304687500000034240584171875" WATER MAIN                |
| --- | EXISTING 0.0000000000000000000000066174329375003269365153437500000017120292089375" WATER MAIN               | --- | PROPOSED 0.0000000000000000000000066174329375003269365153437500000017120292089375" WATER MAIN               |
| --- | EXISTING 0.00000000000000000000000330871646875001634682757687500000008560146046875" WATER MAIN              | --- | PROPOSED 0.00000000000000000000000330871646875001634682757687500000008560146046875" WATER MAIN              |
| --- | EXISTING 0.000000000000000000000001654358234375000817341378828125000000042800730234375" WATER MAIN          | --- | PROPOSED 0.000000000000000000000001654358234375000817341378828125000000042800730234375" WATER MAIN          |
| --- | EXISTING 0.000000000000000000000000827179117187500040867068914062500000021400365171875" WATER MAIN          | --- | PROPOSED 0.000000000000000000000000827179117187500040867068914062500000021400365171875" WATER MAIN          |
| --- | EXISTING 0.00000000000000000000000041358958859375002043353445312500000010700182589375" WATER MAIN           | --- | PROPOSED 0.00000000000000000000000041358958859375002043353445312500000010700182589375" WATER MAIN           |
| --- | EXISTING 0.0000000000000000000000002067947942968750010216767226562500000005350091446875" WATER MAIN         | --- | PROPOSED 0.0000000000000000000000002067947942968750010216767226562500000005350091446875" WATER MAIN         |
| --- | EXISTING 0.00000000000000000000000010339739714843750005108383632812500000002675047234375" WATER MAIN        | --- | PROPOSED 0.00000000000000000000000010339739714843750005108383632812500000002675047234375" WATER MAIN        |
| --- | EXISTING 0.00000000000000000000000005169869857421875000255419168164062500000013375236171875" WATER MAIN     | --- | PROPOSED 0.00000000000000000000000005169869857421875000255419168164062500000013375236171875" WATER MAIN     |
| --- | EXISTING 0.0000000000000000000000000258493492871093750001277095840820312500000006687618089375" WATER MAIN   | --- | PROPOSED 0.0000000000000000000000000258493492871093750001277095840820312500000006687618089375" WATER MAIN   |
| --- | EXISTING 0.0000000000000000000000000129246746435546875000638547920101562500000003343809046875" WATER MAIN   | --- | PROPOSED 0.0000000000000000000000000129246746435546875000638547920101562500000003343809046875" WATER MAIN   |
| --- | EXISTING 0.000000000000000000000000006462337321777343750003192739600507812500000016719045234375" WATER MAIN | --- | PROPOSED 0.000000000000000000000000006462337321777343750003192739600507812500000016719045234375" WATER MAIN |



## Section 2: Drainage

**SUEZ WATER NEW YORK, INC  
CHATEAU WELL 1, 2, & 3**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**SECTION 2:  
STORMWATER SYSTEM DESIGN REPORT  
COMPLYING WITH NYS STORMWATER  
MANAGEMENT DESIGN MANUAL  
JANUARY 2015**

**BY**

**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
232 NORTH MAIN STREET  
NEW CITY, NY 10956  
TEL: (845) 634-4694  
FAX: (845) 634-5543  
E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)



## **ATZL, NASHER & ZIGLER P.C.**

ENGINEERS-SURVEYORS-PLANNERS

232 North Main Street, New City, NY 10956

Tel: (845) 634-4694

Fax: (845) 634-5543

Email: [rnasher@anzny.com](mailto:rnasher@anzny.com)

**Revision 2: April 27, 2022**

Revision 1: October 04, 2021

July 19, 2021

Town of Carmel  
60 McAlpin Avenue  
Mahopac, NY 10541

Att.: Richard Franzetti, PE, LEED  
Town Engineer

Ref.: Suez Water New York, INC Chateau Well 1, 2, & 3 (Job #4874)  
Town of Carmel  
Putnam County, New York

Sub: Hydraulic and Hydrological Study

### **1.0 REVISION OVERVIEW:**

The previous SWPPP report dated October 04, 2021, proposed a rain garden system to achieve zero net increase of peak runoff. The proposed rain garden system included 4-foot deep of planting soil media and 1-foot of gravel. As a result, the maximum allowable groundwater level had to maintain 8-feet (6' + 2' G.W. separation from the bottom of the Rain Garden) separation at EL: 572 from the top of the rain garden. However, the infiltration test revealed the presence of groundwater @ EL: 575.0. Since there is not enough groundwater separation the design did not meet the code. In order to provide enough groundwater separation, we have proposed a dry pond system to replace the previously proposed system (Rain Garden). The dry pond system is design to provide adequate groundwater separation to meet the state and town code. The construction detail of the pond is shown to the revised site plan.

### **1.1 INTRODUCTION:**

The following hydraulic/hydrological study has been proposed for the above-mentioned project to provide zero net increase of peak runoff for the proposed project. The project disturbed area is 0.368 acres (16,030 sq.ft.), which is smaller than 1 acre. Therefore, a general construction permit is not required according to the NYSDEC 2015 version of the design manual. However, a zero-net increase of peak runoff is required per Town code.

### **1.2 SITE LOCATION:**

The project is located at 59 McNair Drive in the Town of Carmel, Putnam County, New York.

## 2.0 HYDROLOGICAL SOIL GROUP:

The soil onsite is the following, based on data from the Soil Survey of Putnam County, New York, dated October 1994.

Soil Name	Soil Map Symbol	Hydrological Soil Group	Reference Page No.*
Catden muck, 0 to 2 percent slopes	Ce	D	19
Nutchaug and Catden mucks, ponded, 0 to 2 percent slopes	NdA	D	N/A
Paxton fine sandy loam, 8 to 15 percent slopes	PnC	C	45

\* Soil Survey of Putnam County, New York, United States Department of Agriculture Soil Conservation Service, October 1994.

## 3.1 EXISTING CONDITION:

The existing drainage area is 0.312 acres. The land cover of the drainage area consists of woods and grass area, plus a pump house and a gravel road. The drainage area delineation is shown on the Existing Condition Drainage Map (E-1).

## 3.2 DEVELOPED CONDITION:

The proposed development includes the construction of a building and a gravel driveway. The peak runoff from the study area will be increased upon completion of the proposed development. The drainage area delineation is shown on the Developed Condition Drainage Map (D-1).

## 4.0 DRAINAGE STUDY:

Due to the proposed improvement the peak runoff of the designated drainage area will be increased. The hydrological software, HydroCAD has been used to calculate pre and post peak runoff rates for 1, 10, 100-year design storm events.

## 5.0 MITIGATION MEASURES:

To attenuate the post-developed peak flow to pre-developed peak flow, we are proposing a Dry Pond System. The Westchester Method was used to calculate the 1-year storm maximum storage.

The drainage study shows that the 1-year storage for the site is 283.0 cu.ft. The Dry Pond

System provides 288.0 cu.ft (@ELV= 579.90'), which is more than the 1-year storage volume. The software HydroCAD was used to calculate peak flows for different storm events at the outlet "Point of Interest", for the Existing and Developed Condition. The summary table for the peak flow of different storm frequencies (1, 10, & 100-year storms) at the point of interest (P.O.I.), and water quantity design calculations are attached for your reference.

If you have further questions or concerns, feel free to contact me. Thank you.

Very Truly Yours,



Ryan A. Nasher, P.E.

P:\STORMWATER MANAGEMENT\4874\NEW SWPPP REPORT\SECTION 2\4874 DRAINAGE NARRATIVE.docx

Summary Table

**SUEZ WATER NEW YORK, INC  
CHATEAU WELL 1, 2, & 3**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**SUMMARY TABLE**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**

**SUMMARY FLOW  
EXISTING AND DEVELOPED CONDITIONS  
1, 10, & 100 YEAR STORMS PEAK RUNOFF**

<b>STORM FREQUENCY (YEAR)</b>	<b>EXISTING CONDITION PEAK FLOW (CFS) (PER HYDROCAD)</b>	<b>DEVELOPED CONDITION PEAK FLOW, NO ROUTING (CFS) (PER HYDROCAD)</b>	<b>CHANGE IN FLOW, ΔQ (CFS)</b>	<b>REMARK</b>
1	0.38	0.47	+0.09	*
10	1.03	1.16	+0.13	*
100	2.25	2.39	+0.14	*

\* Note: Zero net increase of peak runoff will be achieved by the proposed Dry Pond System. The location of the system is shown on the site plan drawings.

Location Maps

**SUEZ WATER NEW YORK, INC  
CHATEAU WELL 1, 2, & 3**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**LOCATION MAPS**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

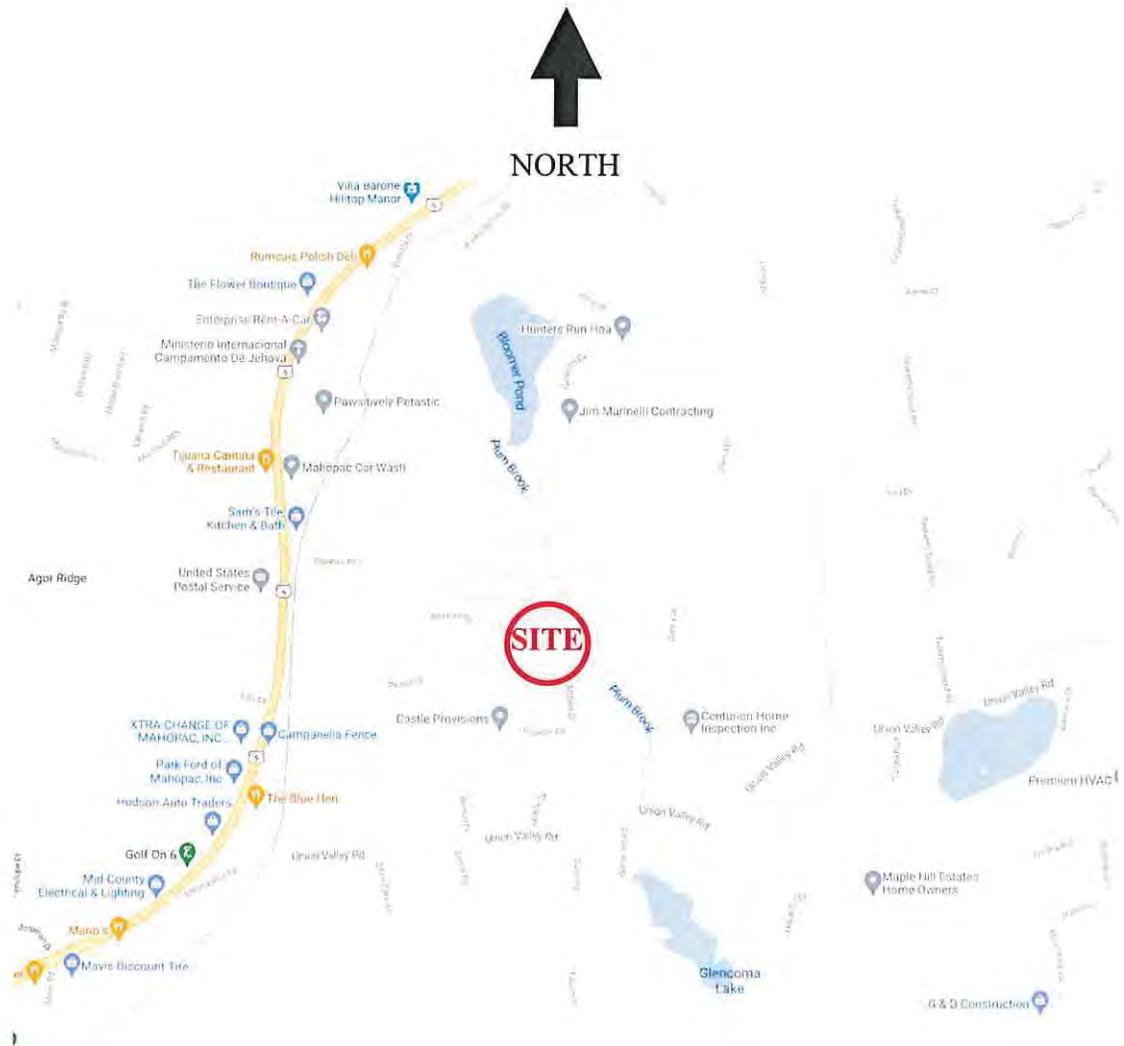
**232 NORTH MAIN STREET**

**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**



Source: [maps.google.com](https://maps.google.com)

**STREET MAP**



NORTH



Source: <http://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>

**SOIL MAP**

## Drainage Calculations

**SUEZ WATER NEW YORK, INC  
CHATEAU WELL 1, 2, & 3**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**DRAINAGE CALCULATION**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**

**EXISTING CONDITION:**

The existing area of interest consists of one watershed (WS#1), with an area of about 0.312 acres. The site consists of woods and grass area, plus an access gravel road and a pump house. The drainage area is delineated on the Existing Condition Drainage Map (E-1).

**WS#1:**

The soil within WS#1 belongs to Hydrological Soil Group "C & D".

Composition	HSG
A <sub>Impervious</sub>	0.014 acres "D"
A <sub>Wood/Grass</sub>	0.207 acres "D"
A <sub>Gravel</sub>	0.016 acres "D"
A <sub>Impervious</sub>	0.003 acres "C"
A <sub>Gravel</sub>	0.012 acres "C"
A <sub>Wood/Grass</sub>	0.060 acres "C"

A = 0.312 Acres

Due to the small size of the watershed, the time of concentration is considered the minimum of 0.1 hours.

**WS#1 → P.O.I.#1**

**DEVELOPED CONDITION:**

Upon development of the site, the total area of the developed watershed will remain the same as the existing watershed area (0.312 acres). The developed condition consists of the construction of a building and a gravel driveway. The watershed area is delineated on the Developed Condition Drainage Map (D-1).

**WS#1:**

The soil within WS#1 belongs to Hydrological Soil Group "C & D".

A = 0.312 Acres

Composition	HSG
A <sub>Impervious</sub>	0.035 acres "D"
A <sub>Gravel</sub>	0.082 acres "D"
A <sub>Grass</sub>	0.120 acres "D"
A <sub>Impervious</sub>	0.003 acres "C"
A <sub>Gravel</sub>	0.015 acres "C"
A <sub>Grass</sub>	0.057 acres "C"

Due to the small size of the watershed, the time of concentration is considered the minimum of 0.1 hours.

**ROOFTOP → DRY POND SYSTEM → P.O.I.#1.**

**WS#1 → P.O.I.#1.**

SMP Design

**SUEZ WATER NEW YORK, INC  
CHATEAU WELL 1, 2, & 3**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**STORMWATER MANAGEMENT  
PRACTICE DESIGN CALCULATIONS**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**

---

**WATER QUANTITY CALCULATION**  
**WESTCHESTER METHOD**

1. **Select Design Storm**  
(Use 1-Year, 24-Hour Storm)  
Total Rainfall = 2.73 inches
  
2. **Discount Additional Soil Percolation**  
Use Infiltration rate 0.00 inch/hr
  
3. **Calculate The Storage Volume (Vs):**  
1-Year, 24-Hour Rainfall = 2.73 inches

Soil: Hydrologic Soil Group (HSG) is "C & D", see attached Soil Survey Map.

Existing CN (WS#1) = 80,  $(Q_E)_1 = 0.38$  cfs (Hydrocad, attached)  
Runoff depth = 1.05 inches

Proposed CN (WS#1) = 84,  $(Q_D)_1 = 0.47$  cfs (Hydrocad, attached)  
Runoff depth = 1.30 inches

Drainage Area = 13,607 ft<sup>2</sup>

$$\Delta V_r = 1.30 \text{ in} - 1.05 \text{ in} = 0.25 \text{ in}$$

$$\Delta V_r = 0.02 \text{ in} * \frac{1 \text{ ft}}{12 \text{ in}}$$

$$\Delta V_r = 0.02 \text{ ft}$$

$$V_s = \Delta V_r * \text{Area}$$

$$V_s = 0.02 \text{ ft} * 13,607 \text{ ft}^2$$

$$V_s = 283.0 \text{ ft}^3$$

The 1-year storm storage volume is 283.0 ft<sup>3</sup>

## SMP SIZING CALCULATION

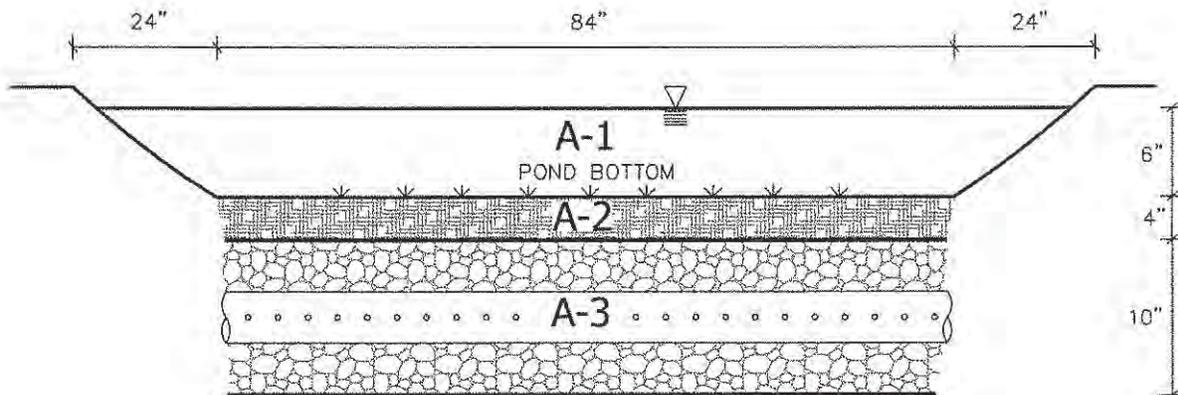
In order to provide zero net increase of peak runoff a dry pond system has been proposed. The storage is calculated as 283.0 cu.ft. for the entire WS#1.

### Calculate Provided Storage Volume:

The Dry Pond has the following characteristics:

- 20" deep
- 10" of ¾" gravel (porosity = 0.4) on bottom
- 4" of soil (porosity = 0.2) above the gravel
- 6" of freeboard between the top of the catch basin to the surface of the soil

A cross-sectional, not to scale sketch of the dry pond system is shown below:



### DRY POND CROSS SECTION

N.T.S.

Void space in the dry pond cross-section:

$$= A1 \text{ (Void area above-ground)} + A2 \text{ (Void area in planting soil)} + A3 \text{ (Void area in gravel)}$$

$$= \left[ (6") \left( \frac{1}{2} \right) (132" + 84") \right] + (0.2)(84")(4") + (0.4)(84")(10")$$

$$= 1,051 \text{ in}^2 \text{ or } 7.3 \text{ ft}^2$$

Required dry pond length (total):

$$= \frac{283.0 \text{ ft}^3}{8.63 \text{ ft}^2} = 32.79 \text{ ft}$$

Use one (1) dry pond. Required length of the dry pond:

$$= 33.0 \text{ ft}$$

Provided Storage:

$$= (33.0 \text{ ft})(8.63 \text{ ft}^2) = 283.0 \text{ ft}^3$$

Note: HydroCAD was used to calculate the actual storage provided by the proposed system.

**The proposed Dry Pond will provide 288.0 ft<sup>3</sup> (@ ELV= 579.90') > 283.0 ft<sup>3</sup>**

OK✓

(Please see HydroCAD for detailed calculations)

Hydro CAD Model -

**SUEZ WATER NEW YORK, INC  
CHATEAU WELL 1, 2, & 3**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**HYDROCAD MODEL  
FOR EXISTING AND PROPOSED CONDITIONS  
1, 10, AND 100 YEAR STORMS**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**

**EXISTING**  
**CONDITIONS**

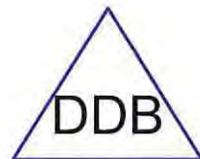
**DEVELOPED**  
**CONDITIONS**



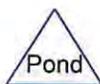
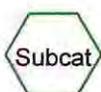
EXISTING



DEVELOPED



P-DRY DETENTION  
BASIN



Routing Diagram for 4874 SUEZ (CHATEAU WELL 1, 2, &3)  
Prepared by {enter your company name here}, Printed 4/26/2022  
HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

**4874 SUEZ (CHATEAU WELL 1, 2, &3)**

Type III 24-hr 1-Year Rainfall=2.73"

Prepared by {enter your company name here}

Printed 4/26/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 2

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentD-WS#1A: DEVELOPED**      Runoff Area=0.312 ac    12.18% Impervious    Runoff Depth=1.30"  
Tc=6.0 min    CN=84    Runoff=0.47 cfs    0.034 af

**SubcatchmentE-WS#1: EXISTING**      Runoff Area=0.312 ac    5.45% Impervious    Runoff Depth=1.05"  
Tc=6.0 min    CN=80    Runoff=0.38 cfs    0.027 af

**Pond DDB: P-DRY DETENTION BASIN**      Peak Elev=0.00'    Storage=0 cf

**Total Runoff Area = 0.624 ac    Runoff Volume = 0.061 af    Average Runoff Depth = 1.17"**  
**91.19% Pervious = 0.569 ac    8.81% Impervious = 0.055 ac**

**Summary for Subcatchment D-WS#1A: DEVELOPED**

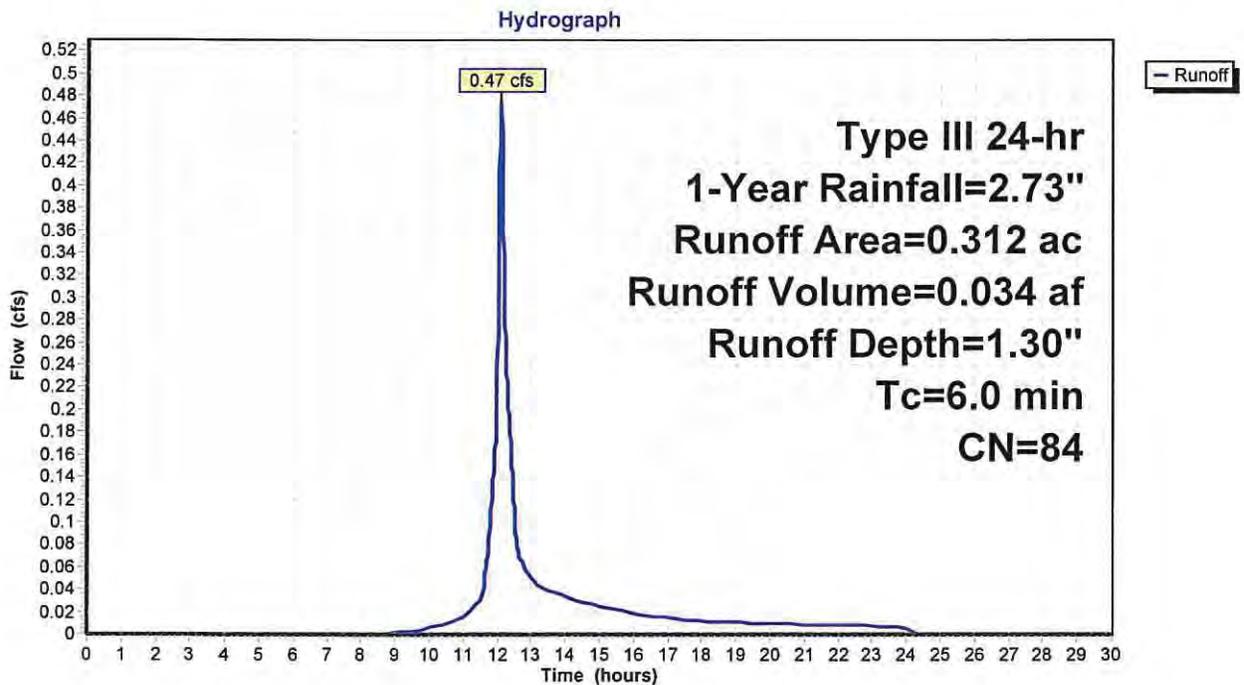
Runoff = 0.47 cfs @ 12.09 hrs, Volume= 0.034 af, Depth= 1.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 1-Year Rainfall=2.73"

Area (ac)	CN	Description
0.033	98	Paved parking, HSG D
0.059	91	Gravel roads, HSG D
0.108	80	>75% Grass cover, Good, HSG D
0.003	98	Paved parking, HSG C
0.015	89	Gravel roads, HSG C
0.057	74	>75% Grass cover, Good, HSG C
0.002	98	Paved parking, HSG D
0.023	91	Gravel roads, HSG D
0.012	80	>75% Grass cover, Good, HSG D
<hr/>		
0.312	84	Weighted Average
0.274		87.82% Pervious Area
0.038		12.18% Impervious Area

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

**Subcatchment D-WS#1A: DEVELOPED**



**4874 SUEZ (CHATEAU WELL 1, 2, &3)**

Type III 24-hr 1-Year Rainfall=2.73"

Prepared by {enter your company name here}

Printed 4/26/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 4

**Summary for Subcatchment E-WS#1: EXISTING**

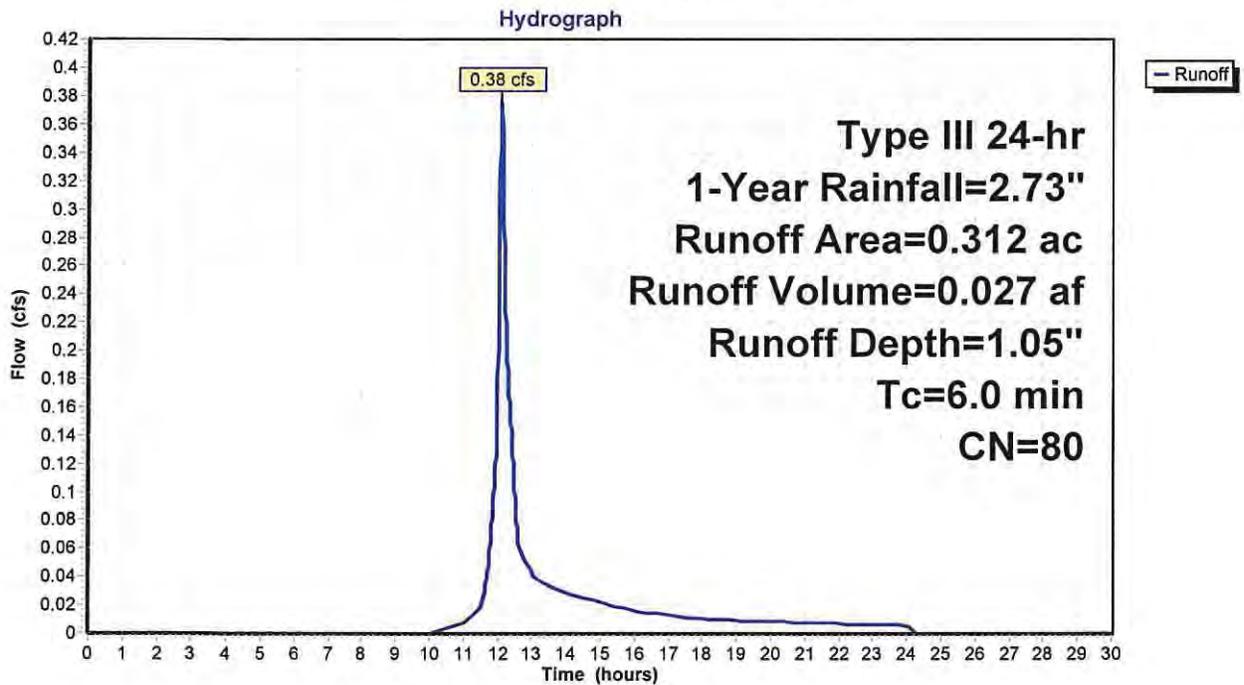
Runoff = 0.38 cfs @ 12.09 hrs, Volume= 0.027 af, Depth= 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 1-Year Rainfall=2.73"

Area (ac)	CN	Description
0.014	98	Paved parking, HSG D
0.003	91	Gravel roads, HSG D
0.183	79	Woods/grass comb., Good, HSG D
0.013	91	Gravel roads, HSG D
0.024	79	Woods/grass comb., Good, HSG D
0.003	98	Paved parking, HSG C
0.012	89	Gravel roads, HSG C
0.060	72	Woods/grass comb., Good, HSG C
0.312	80	Weighted Average
0.295		94.55% Pervious Area
0.017		5.45% Impervious Area

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

**Subcatchment E-WS#1: EXISTING**



**Summary for Pond DDB: P-DRY DETENTION BASIN**

Volume	Invert	Avail.Storage	Storage Description		
#1	577.85'	322 cf	Custom Stage Data (Prismatic) Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
577.85	163	0.0	0	0	
578.68	163	40.0	54	54	
578.99	163	20.0	10	64	
579.00	163	100.0	2	66	
580.00	349	100.0	256	322	

**4874 SUEZ (CHATEAU WELL 1, 2, &3)**

Type III 24-hr 1-Year Rainfall=2.73"

Prepared by {enter your company name here}

Printed 4/26/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 6

**Stage-Discharge for Pond DDB: P-DRY DETENTION BASIN**

Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)
577.85	0.00	578.91	0.00	579.97	0.00
577.87	0.00	578.93	0.00	579.99	0.00
577.89	0.00	578.95	0.00		
577.91	0.00	578.97	0.00		
577.93	0.00	578.99	0.00		
577.95	0.00	579.01	0.00		
577.97	0.00	579.03	0.00		
577.99	0.00	579.05	0.00		
578.01	0.00	579.07	0.00		
578.03	0.00	579.09	0.00		
578.05	0.00	579.11	0.00		
578.07	0.00	579.13	0.00		
578.09	0.00	579.15	0.00		
578.11	0.00	579.17	0.00		
578.13	0.00	579.19	0.00		
578.15	0.00	579.21	0.00		
578.17	0.00	579.23	0.00		
578.19	0.00	579.25	0.00		
578.21	0.00	579.27	0.00		
578.23	0.00	579.29	0.00		
578.25	0.00	579.31	0.00		
578.27	0.00	579.33	0.00		
578.29	0.00	579.35	0.00		
578.31	0.00	579.37	0.00		
578.33	0.00	579.39	0.00		
578.35	0.00	579.41	0.00		
578.37	0.00	579.43	0.00		
578.39	0.00	579.45	0.00		
578.41	0.00	579.47	0.00		
578.43	0.00	579.49	0.00		
578.45	0.00	579.51	0.00		
578.47	0.00	579.53	0.00		
578.49	0.00	579.55	0.00		
578.51	0.00	579.57	0.00		
578.53	0.00	579.59	0.00		
578.55	0.00	579.61	0.00		
578.57	0.00	579.63	0.00		
578.59	0.00	579.65	0.00		
578.61	0.00	579.67	0.00		
578.63	0.00	579.69	0.00		
578.65	0.00	579.71	0.00		
578.67	0.00	579.73	0.00		
578.69	0.00	579.75	0.00		
578.71	0.00	579.77	0.00		
578.73	0.00	579.79	0.00		
578.75	0.00	579.81	0.00		
578.77	0.00	579.83	0.00		
578.79	0.00	579.85	0.00		
578.81	0.00	579.87	0.00		
578.83	0.00	579.89	0.00		
578.85	0.00	579.91	0.00		
578.87	0.00	579.93	0.00		
578.89	0.00	579.95	0.00		

**4874 SUEZ (CHATEAU WELL 1, 2, &3)**

Type III 24-hr 1-Year Rainfall=2.73"

Prepared by {enter your company name here}

Printed 4/26/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 7

**Stage-Area-Storage for Pond DDB: P-DRY DETENTION BASIN**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
577.85	163	0
577.90	163	3
577.95	163	7
578.00	163	10
578.05	163	13
578.10	163	16
578.15	163	20
578.20	163	23
578.25	163	26
578.30	163	29
578.35	163	33
578.40	163	36
578.45	163	39
578.50	163	42
578.55	163	46
578.60	163	49
578.65	163	52
578.70	163	55
578.75	163	56
578.80	163	58
578.85	163	60
578.90	163	61
578.95	163	63
579.00	163	66
579.05	172	74
579.10	182	83
579.15	191	92
579.20	200	102
579.25	210	112
579.30	219	123
579.35	228	134
579.40	237	146
579.45	247	158
579.50	256	171
579.55	265	184
579.60	275	197
579.65	284	211
579.70	293	226
579.75	303	240
579.80	312	256
579.85	321	272
579.90	330	288
579.95	340	305
580.00	349	322

**4874 SUEZ (CHATEAU WELL 1, 2, &3)**

Type III 24-hr 10-Year Rainfall=4.90"

Prepared by {enter your company name here}

Printed 4/26/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 8

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**Subcatchment D-WS#1A: DEVELOPED**      Runoff Area=0.312 ac    12.18% Impervious    Runoff Depth=3.18"  
Tc=6.0 min    CN=84    Runoff=1.16 cfs    0.083 af

**Subcatchment E-WS#1: EXISTING**      Runoff Area=0.312 ac    5.45% Impervious    Runoff Depth=2.81"  
Tc=6.0 min    CN=80    Runoff=1.03 cfs    0.073 af

**Pond DDB: P-DRY DETENTION BASIN**      Peak Elev=0.00'    Storage=0 cf

**Total Runoff Area = 0.624 ac    Runoff Volume = 0.156 af    Average Runoff Depth = 2.99"**  
**91.19% Pervious = 0.569 ac    8.81% Impervious = 0.055 ac**

**4874 SUEZ (CHATEAU WELL 1, 2, &3)**

Type III 24-hr 10-Year Rainfall=4.90"

Prepared by {enter your company name here}

Printed 4/26/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 9

**Summary for Subcatchment D-WS#1A: DEVELOPED**

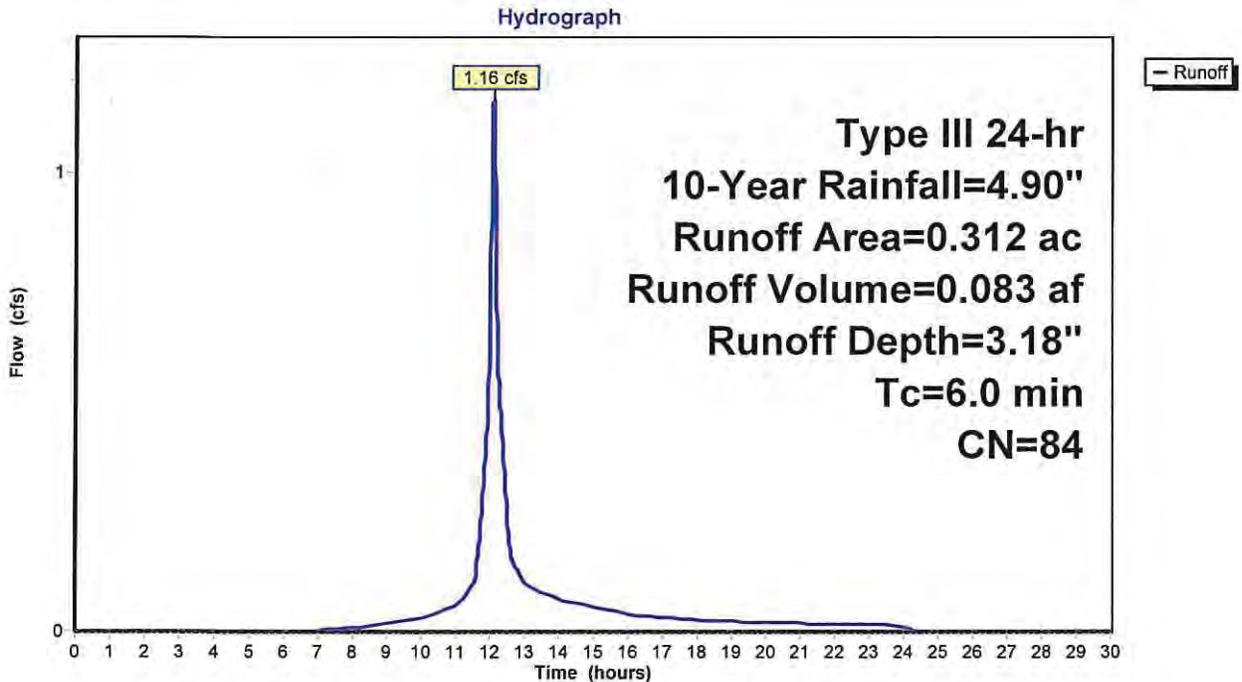
Runoff = 1.16 cfs @ 12.09 hrs, Volume= 0.083 af, Depth= 3.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 10-Year Rainfall=4.90"

Area (ac)	CN	Description
0.033	98	Paved parking, HSG D
0.059	91	Gravel roads, HSG D
0.108	80	>75% Grass cover, Good, HSG D
0.003	98	Paved parking, HSG C
0.015	89	Gravel roads, HSG C
0.057	74	>75% Grass cover, Good, HSG C
0.002	98	Paved parking, HSG D
0.023	91	Gravel roads, HSG D
0.012	80	>75% Grass cover, Good, HSG D
0.312	84	Weighted Average
0.274		87.82% Pervious Area
0.038		12.18% Impervious Area

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

**Subcatchment D-WS#1A: DEVELOPED**



**4874 SUEZ (CHATEAU WELL 1, 2, &3)**

Type III 24-hr 10-Year Rainfall=4.90"

Prepared by {enter your company name here}

Printed 4/26/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 10

**Summary for Subcatchment E-WS#1: EXISTING**

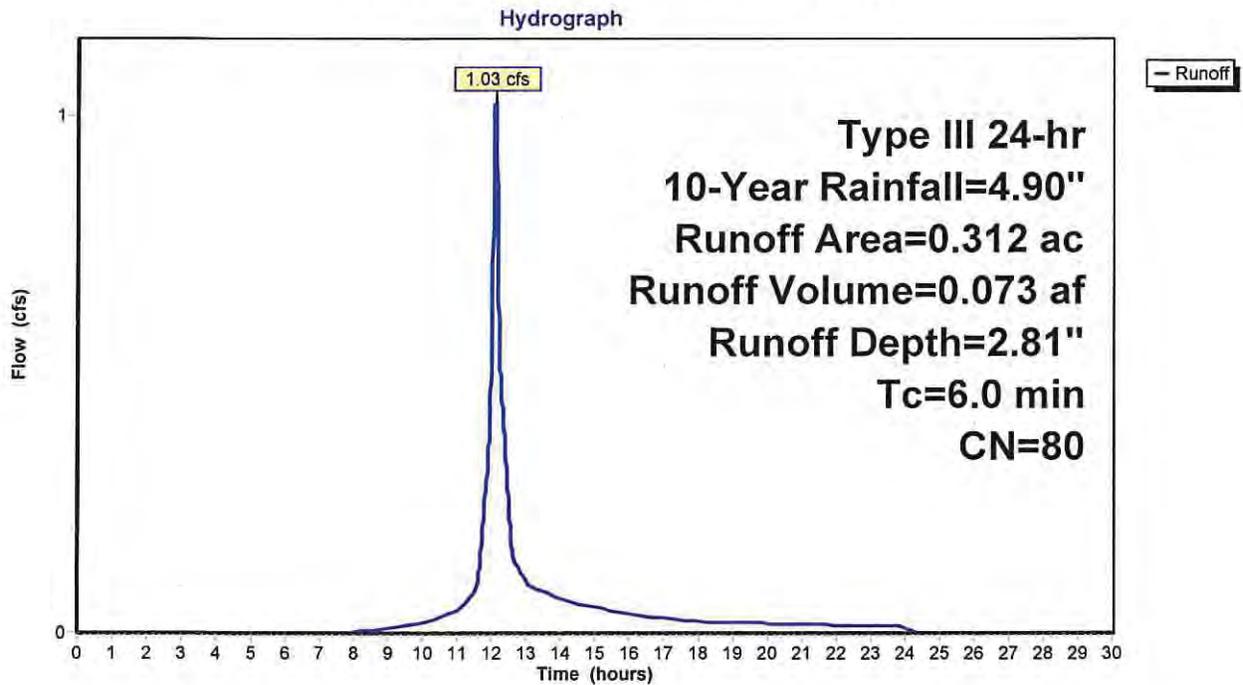
Runoff = 1.03 cfs @ 12.09 hrs, Volume= 0.073 af, Depth= 2.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
Type III 24-hr 10-Year Rainfall=4.90"

Area (ac)	CN	Description
0.014	98	Paved parking, HSG D
0.003	91	Gravel roads, HSG D
0.183	79	Woods/grass comb., Good, HSG D
0.013	91	Gravel roads, HSG D
0.024	79	Woods/grass comb., Good, HSG D
0.003	98	Paved parking, HSG C
0.012	89	Gravel roads, HSG C
0.060	72	Woods/grass comb., Good, HSG C
0.312	80	Weighted Average
0.295		94.55% Pervious Area
0.017		5.45% Impervious Area

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

**Subcatchment E-WS#1: EXISTING**



**Summary for Pond DDB: P-DRY DETENTION BASIN**

Volume	Invert	Avail.Storage	Storage Description		
#1	577.85'	322 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
577.85	163	0.0	0	0	
578.68	163	40.0	54	54	
578.99	163	20.0	10	64	
579.00	163	100.0	2	66	
580.00	349	100.0	256	322	

**4874 SUEZ (CHATEAU WELL 1, 2, &3)**

Type III 24-hr 10-Year Rainfall=4.90"

Prepared by {enter your company name here}

Printed 4/26/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 12

**Stage-Discharge for Pond DDB: P-DRY DETENTION BASIN**

Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)
577.85	0.00	578.91	0.00	579.97	0.00
577.87	0.00	578.93	0.00	579.99	0.00
577.89	0.00	578.95	0.00		
577.91	0.00	578.97	0.00		
577.93	0.00	578.99	0.00		
577.95	0.00	579.01	0.00		
577.97	0.00	579.03	0.00		
577.99	0.00	579.05	0.00		
578.01	0.00	579.07	0.00		
578.03	0.00	579.09	0.00		
578.05	0.00	579.11	0.00		
578.07	0.00	579.13	0.00		
578.09	0.00	579.15	0.00		
578.11	0.00	579.17	0.00		
578.13	0.00	579.19	0.00		
578.15	0.00	579.21	0.00		
578.17	0.00	579.23	0.00		
578.19	0.00	579.25	0.00		
578.21	0.00	579.27	0.00		
578.23	0.00	579.29	0.00		
578.25	0.00	579.31	0.00		
578.27	0.00	579.33	0.00		
578.29	0.00	579.35	0.00		
578.31	0.00	579.37	0.00		
578.33	0.00	579.39	0.00		
578.35	0.00	579.41	0.00		
578.37	0.00	579.43	0.00		
578.39	0.00	579.45	0.00		
578.41	0.00	579.47	0.00		
578.43	0.00	579.49	0.00		
578.45	0.00	579.51	0.00		
578.47	0.00	579.53	0.00		
578.49	0.00	579.55	0.00		
578.51	0.00	579.57	0.00		
578.53	0.00	579.59	0.00		
578.55	0.00	579.61	0.00		
578.57	0.00	579.63	0.00		
578.59	0.00	579.65	0.00		
578.61	0.00	579.67	0.00		
578.63	0.00	579.69	0.00		
578.65	0.00	579.71	0.00		
578.67	0.00	579.73	0.00		
578.69	0.00	579.75	0.00		
578.71	0.00	579.77	0.00		
578.73	0.00	579.79	0.00		
578.75	0.00	579.81	0.00		
578.77	0.00	579.83	0.00		
578.79	0.00	579.85	0.00		
578.81	0.00	579.87	0.00		
578.83	0.00	579.89	0.00		
578.85	0.00	579.91	0.00		
578.87	0.00	579.93	0.00		
578.89	0.00	579.95	0.00		

**Stage-Area-Storage for Pond DDB: P-DRY DETENTION BASIN**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
577.85	163	0
577.90	163	3
577.95	163	7
578.00	163	10
578.05	163	13
578.10	163	16
578.15	163	20
578.20	163	23
578.25	163	26
578.30	163	29
578.35	163	33
578.40	163	36
578.45	163	39
578.50	163	42
578.55	163	46
578.60	163	49
578.65	163	52
578.70	163	55
578.75	163	56
578.80	163	58
578.85	163	60
578.90	163	61
578.95	163	63
579.00	163	66
579.05	172	74
579.10	182	83
579.15	191	92
579.20	200	102
579.25	210	112
579.30	219	123
579.35	228	134
579.40	237	146
579.45	247	158
579.50	256	171
579.55	265	184
579.60	275	197
579.65	284	211
579.70	293	226
579.75	303	240
579.80	312	256
579.85	321	272
579.90	330	288
579.95	340	305
580.00	349	322

**4874 SUEZ (CHATEAU WELL 1, 2, &3)**

Type III 24-hr 100-Year Rainfall=8.70"

Prepared by {enter your company name here}

Printed 4/26/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 14

Time span=0.00-30.00 hrs, dt=0.01 hrs, 3001 points  
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN  
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

**SubcatchmentD-WS#1A: DEVELOPED**      Runoff Area=0.312 ac    12.18% Impervious    Runoff Depth=6.77"  
Tc=6.0 min    CN=84    Runoff=2.39 cfs    0.176 af

**SubcatchmentE-WS#1: EXISTING**      Runoff Area=0.312 ac    5.45% Impervious    Runoff Depth=6.28"  
Tc=6.0 min    CN=80    Runoff=2.25 cfs    0.163 af

**Pond DDB: P-DRY DETENTION BASIN**      Peak Elev=0.00'    Storage=0 cf

**Total Runoff Area = 0.624 ac    Runoff Volume = 0.339 af    Average Runoff Depth = 6.53"**  
**91.19% Pervious = 0.569 ac    8.81% Impervious = 0.055 ac**

**Summary for Subcatchment D-WS#1A: DEVELOPED**

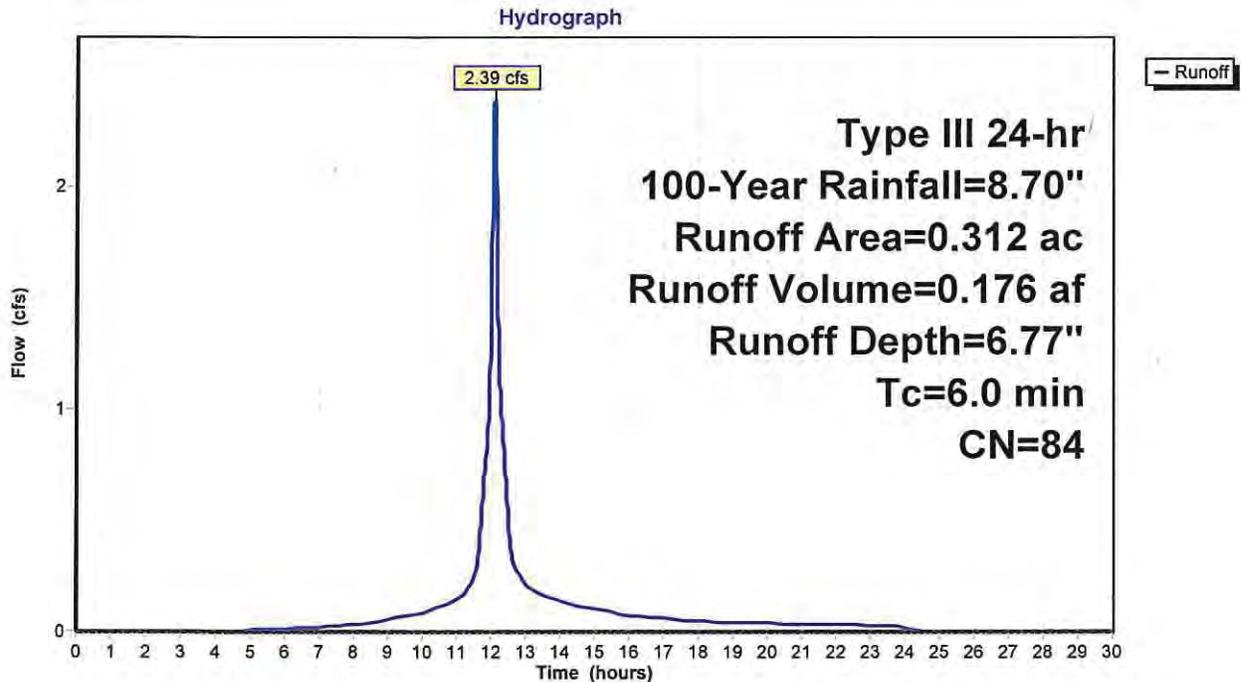
Runoff = 2.39 cfs @ 12.09 hrs, Volume= 0.176 af, Depth= 6.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 100-Year Rainfall=8.70"

Area (ac)	CN	Description
0.033	98	Paved parking, HSG D
0.059	91	Gravel roads, HSG D
0.108	80	>75% Grass cover, Good, HSG D
0.003	98	Paved parking, HSG C
0.015	89	Gravel roads, HSG C
0.057	74	>75% Grass cover, Good, HSG C
0.002	98	Paved parking, HSG D
0.023	91	Gravel roads, HSG D
0.012	80	>75% Grass cover, Good, HSG D
0.312	84	Weighted Average
0.274		87.82% Pervious Area
0.038		12.18% Impervious Area

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

**Subcatchment D-WS#1A: DEVELOPED**



**4874 SUEZ (CHATEAU WELL 1, 2, &3)**

Type III 24-hr 100-Year Rainfall=8.70"

Prepared by {enter your company name here}

Printed 4/26/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 16

**Summary for Subcatchment E-WS#1: EXISTING**

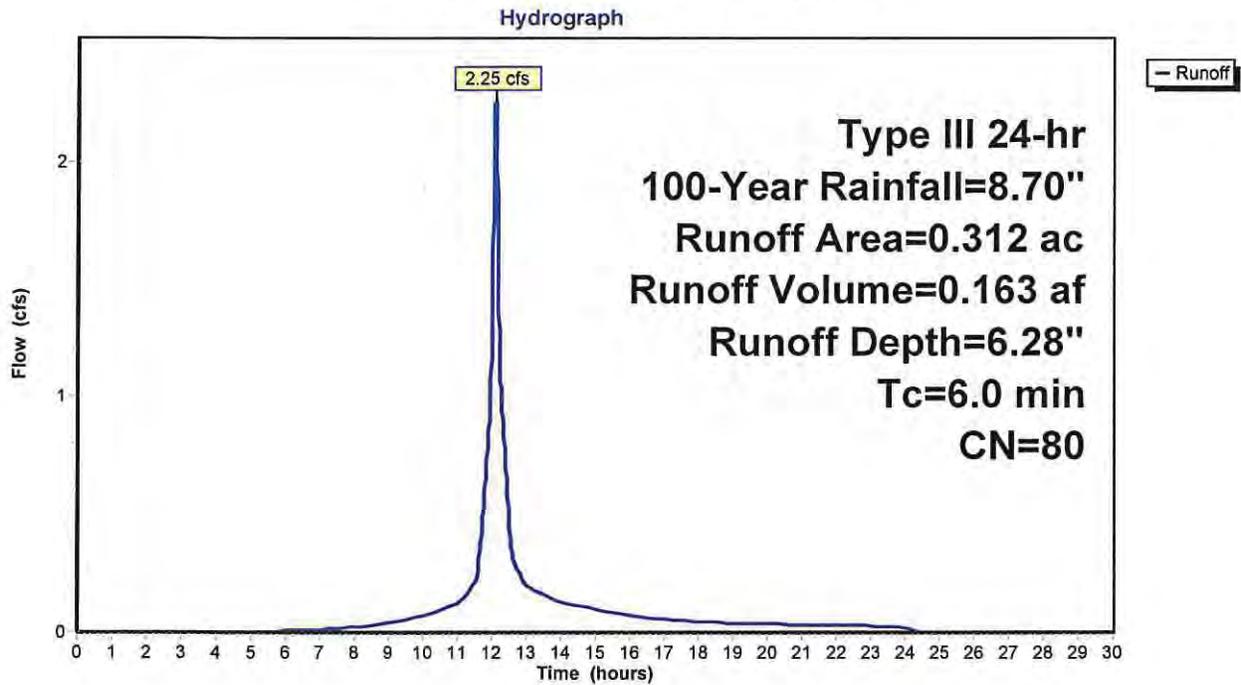
Runoff = 2.25 cfs @ 12.09 hrs, Volume= 0.163 af, Depth= 6.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.01 hrs  
 Type III 24-hr 100-Year Rainfall=8.70"

Area (ac)	CN	Description
0.014	98	Paved parking, HSG D
0.003	91	Gravel roads, HSG D
0.183	79	Woods/grass comb., Good, HSG D
0.013	91	Gravel roads, HSG D
0.024	79	Woods/grass comb., Good, HSG D
0.003	98	Paved parking, HSG C
0.012	89	Gravel roads, HSG C
0.060	72	Woods/grass comb., Good, HSG C
0.312	80	Weighted Average
0.295		94.55% Pervious Area
0.017		5.45% Impervious Area

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

**Subcatchment E-WS#1: EXISTING**



**Summary for Pond DDB: P-DRY DETENTION BASIN**

Volume	Invert	Avail.Storage	Storage Description		
#1	577.85'	322 cf	<b>Custom Stage Data (Prismatic)</b> Listed below (Recalc)		
Elevation (feet)	Surf.Area (sq-ft)	Voids (%)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	
577.85	163	0.0	0	0	
578.68	163	40.0	54	54	
578.99	163	20.0	10	64	
579.00	163	100.0	2	66	
580.00	349	100.0	256	322	

Stage-Discharge for Pond DDB: P-DRY DETENTION BASIN

Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)	Elevation (feet)	Discharge (cfs)
577.85	0.00	578.91	0.00	579.97	0.00
577.87	0.00	578.93	0.00	579.99	0.00
577.89	0.00	578.95	0.00		
577.91	0.00	578.97	0.00		
577.93	0.00	578.99	0.00		
577.95	0.00	579.01	0.00		
577.97	0.00	579.03	0.00		
577.99	0.00	579.05	0.00		
578.01	0.00	579.07	0.00		
578.03	0.00	579.09	0.00		
578.05	0.00	579.11	0.00		
578.07	0.00	579.13	0.00		
578.09	0.00	579.15	0.00		
578.11	0.00	579.17	0.00		
578.13	0.00	579.19	0.00		
578.15	0.00	579.21	0.00		
578.17	0.00	579.23	0.00		
578.19	0.00	579.25	0.00		
578.21	0.00	579.27	0.00		
578.23	0.00	579.29	0.00		
578.25	0.00	579.31	0.00		
578.27	0.00	579.33	0.00		
578.29	0.00	579.35	0.00		
578.31	0.00	579.37	0.00		
578.33	0.00	579.39	0.00		
578.35	0.00	579.41	0.00		
578.37	0.00	579.43	0.00		
578.39	0.00	579.45	0.00		
578.41	0.00	579.47	0.00		
578.43	0.00	579.49	0.00		
578.45	0.00	579.51	0.00		
578.47	0.00	579.53	0.00		
578.49	0.00	579.55	0.00		
578.51	0.00	579.57	0.00		
578.53	0.00	579.59	0.00		
578.55	0.00	579.61	0.00		
578.57	0.00	579.63	0.00		
578.59	0.00	579.65	0.00		
578.61	0.00	579.67	0.00		
578.63	0.00	579.69	0.00		
578.65	0.00	579.71	0.00		
578.67	0.00	579.73	0.00		
578.69	0.00	579.75	0.00		
578.71	0.00	579.77	0.00		
578.73	0.00	579.79	0.00		
578.75	0.00	579.81	0.00		
578.77	0.00	579.83	0.00		
578.79	0.00	579.85	0.00		
578.81	0.00	579.87	0.00		
578.83	0.00	579.89	0.00		
578.85	0.00	579.91	0.00		
578.87	0.00	579.93	0.00		
578.89	0.00	579.95	0.00		

**4874 SUEZ (CHATEAU WELL 1, 2, &3)**

Type III 24-hr 100-Year Rainfall=8.70"

Prepared by {enter your company name here}

Printed 4/26/2022

HydroCAD® 10.00-20 s/n 03403 © 2017 HydroCAD Software Solutions LLC

Page 19

**Stage-Area-Storage for Pond DDB: P-DRY DETENTION BASIN**

Elevation (feet)	Surface (sq-ft)	Storage (cubic-feet)
577.85	163	0
577.90	163	3
577.95	163	7
578.00	163	10
578.05	163	13
578.10	163	16
578.15	163	20
578.20	163	23
578.25	163	26
578.30	163	29
578.35	163	33
578.40	163	36
578.45	163	39
578.50	163	42
578.55	163	46
578.60	163	49
578.65	163	52
578.70	163	55
578.75	163	56
578.80	163	58
578.85	163	60
578.90	163	61
578.95	163	63
579.00	163	66
579.05	172	74
579.10	182	83
579.15	191	92
579.20	200	102
579.25	210	112
579.30	219	123
579.35	228	134
579.40	237	146
579.45	247	158
579.50	256	171
579.55	265	184
579.60	275	197
579.65	284	211
579.70	293	226
579.75	303	240
579.80	312	256
579.85	321	272
579.90	330	288
579.95	340	305
580.00	349	322

Section 3: NOI & MS4

**SUEZ WATER NEW YORK, INC  
CHATEAU WELL 1, 2, & 3**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

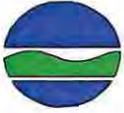
**SECTION 3:**

**SPDES ACKNOWLEDGEMENT LETTER,  
FILLED OUT NOTICE OF INTENT (N.O.I.),  
AND  
MS4 SWPPP ACCEPTANCE FORM**

**BY**

**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
232 NORTH MAIN STREET  
NEW CITY, NY 10956  
TEL: (845) 634-4694  
FAX: (845) 634-5543  
E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)

### NOTICE OF INTENT



## New York State Department of Environmental Conservation Division of Water

625 Broadway, 4th Floor  
Albany, New York 12233-3505

NYR   
(for DEC use only)

**Stormwater Discharges Associated with Construction Activity Under State Pollutant Discharge Elimination System (SPDES) General Permit # GP-0-20-001**  
All sections must be completed unless otherwise noted. Failure to complete all items may result in this form being returned to you, thereby delaying your coverage under this General Permit. Applicants must read and understand the conditions of the permit and prepare a Stormwater Pollution Prevention Plan prior to submitting this NOI. Applicants are responsible for identifying and obtaining other DEC permits that may be required.

**- IMPORTANT -**  
**RETURN THIS FORM TO THE ADDRESS ABOVE**  
OWNER/OPERATOR MUST SIGN FORM

#### Owner/Operator Information

Owner/Operator (Company Name/Private Owner Name/Municipality Name)

S U E Z   W A T E R   N E W   Y O R K ,   I N C

Owner/Operator Contact Person Last Name (NOT CONSULTANT)

G A R A B E D

Owner/Operator Contact Person First Name

S T E V E N

Owner/Operator Mailing Address

1 6 3   O L D   M I L L   R O A D

City

W E S T   N Y A C K

State

N Y

Zip

1 0 9 9 4 -

Phone (Owner/Operator)

8 4 5 - 6 2 0 - 3 3 1 9

Fax (Owner/Operator)

-  -

Email (Owner/Operator)

S T E V E N . G A R A B E D @ S U E Z . C O M

FED TAX ID

-  (not required for individuals)

## Project Site Information

Project/Site Name

S W N Y , I N C C H A T E A U W E L L 1 , 2 , &amp; 3

Street Address (NOT P.O. BOX)

5 9 M C N A I R D R I V E

Side of Street

 North  South  East  West

City/Town/Village (THAT ISSUES BUILDING PERMIT)

T O W N O F C A R M E L

State

N Y

Zip

1 0 5 4 1 -

County

P U T N A M

DEC Region

3

Name of Nearest Cross Street

B L O O M E R R O A D

Distance to Nearest Cross Street (Feet)

1 7 5

Project In Relation to Cross Street

 North  South  East  West

Tax Map Numbers

Section-Block-Parcel

7 5 . 2 0 - 1 - 1 6

Tax Map Numbers

1. Provide the Geographic Coordinates for the project site. To do this, go to the NYSDEC Stormwater Interactive Map on the DEC website at:

<https://gisservices.dec.ny.gov/gis/stormwater/>

Zoom into your Project Location such that you can accurately click on the centroid of your site. Once you have located the centroid of your project site, go to the bottom right hand corner of the map for the X, Y coordinates. Enter the coordinates into the boxes below. For problems with the interactive map use the help function.

X Coordinates (Easting)

-7 3 7 4 0 2

Ex. -73.749

Y Coordinates (Northing)

4 1 3 5 7 1

Ex. 42.652

2. What is the nature of this construction project?

- New Construction
- Redevelopment with increase in impervious area
- Redevelopment with no increase in impervious area

3. Select the predominant land use for both pre and post development conditions.  
**SELECT ONLY ONE CHOICE FOR EACH**

**Pre-Development  
Existing Land Use**

**Post-Development  
Future Land Use**

- FOREST
- PASTURE/OPEN LAND
- CULTIVATED LAND
- SINGLE FAMILY HOME
- SINGLE FAMILY SUBDIVISION
- TOWN HOME RESIDENTIAL
- MULTIFAMILY RESIDENTIAL
- INSTITUTIONAL/SCHOOL
- INDUSTRIAL
- COMMERCIAL
- ROAD/HIGHWAY
- RECREATIONAL/SPORTS FIELD
- BIKE PATH/TRAIL
- LINEAR UTILITY
- PARKING LOT
- OTHER

W A T E R   F A C I L I T Y

- SINGLE FAMILY HOME
- SINGLE FAMILY SUBDIVISION
- TOWN HOME RESIDENTIAL
- MULTIFAMILY RESIDENTIAL
- INSTITUTIONAL/SCHOOL
- INDUSTRIAL
- COMMERCIAL
- MUNICIPAL
- ROAD/HIGHWAY
- RECREATIONAL/SPORTS FIELD
- BIKE PATH/TRAIL
- LINEAR UTILITY (water, sewer, gas, etc.)
- PARKING LOT
- CLEARING/GRADING ONLY
- DEMOLITION, NO REDEVELOPMENT
- WELL DRILLING ACTIVITY \*(Oil, Gas, etc.)
- OTHER

Number of Lots

--	--	--

W A T E R   F A C I L I T Y

\*Note: for gas well drilling, non-high volume hydraulic fractured wells only

4. In accordance with the larger common plan of development or sale, enter the total project site area; the total area to be disturbed; existing impervious area to be disturbed (for redevelopment activities); and the future impervious area constructed within the disturbed area. (Round to the nearest tenth of an acre.)

<b>Total Site Area</b>	<b>Total Area To Be Disturbed</b>	<b>Existing Impervious Area To Be Disturbed</b>	<b>Future Impervious Area Within Disturbed Area</b>																				
<table border="1" style="display: inline-table;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table>						<table border="1" style="display: inline-table;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table>						<table border="1" style="display: inline-table;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table>						<table border="1" style="display: inline-table;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table>					
1.5	0.4	0.0	0.1																				

5. Do you plan to disturb more than 5 acres of soil at any one time?       Yes     No

6. Indicate the percentage of each Hydrologic Soil Group (HSG) at the site.

A	B	C	D												
<table border="1" style="display: inline-table;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table>				<table border="1" style="display: inline-table;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table>				<table border="1" style="display: inline-table;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table>				<table border="1" style="display: inline-table;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table>			
%	%	25%	75%												

7. Is this a phased project?       Yes     No

8. Enter the planned start and end dates of the disturbance activities.

<b>Start Date</b>	<b>End Date</b>										
<table border="1" style="display: inline-table;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table>						<table border="1" style="display: inline-table;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table>					
06 / 06 / 2022	- 06 / 05 / 2023										









Post-construction Stormwater Management Practice (SMP) Requirements

**Important: Completion of Questions 27-39 is not required if response to Question 22 is No.**

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.

- Preservation of Undisturbed Areas
- Preservation of Buffers
- Reduction of Clearing and Grading
- Locating Development in Less Sensitive Areas
- Roadway Reduction
- Sidewalk Reduction
- Driveway Reduction
- Cul-de-sac Reduction
- Building Footprint Reduction
- Parking Reduction

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual (2010 version).

- All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).
- Compacted areas were considered as impervious cover when calculating the **WQv Required**, and the compacted areas were assigned a post-construction Hydrologic Soil Group (HSG) designation that is one level less permeable than existing conditions for the hydrology analysis.

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout).

**Total WQv Required**

.     acre-feet

29. Identify the RR techniques (Area Reduction), RR techniques (Volume Reduction) and Standard SMPs with RRv Capacity in Table 1 (See Page 9) that were used to reduce the Total WQv Required (#28).

Also, provide in Table 1 the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

**Note:** Redevelopment projects shall use Tables 1 and 2 to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

Table 1 - Runoff Reduction (RR) Techniques and Standard Stormwater Management Practices (SMPs)

<u>RR Techniques (Area Reduction)</u>	<u>Total Contributing Area (acres)</u>		<u>Total Contributing Impervious Area (acres)</u>	
<input type="checkbox"/> Conservation of Natural Areas (RR-1) ...	<input type="text"/>	<input type="text"/>	and/or	<input type="text"/>
<input type="checkbox"/> Sheetflow to Riparian Buffers/Filters Strips (RR-2) .....	<input type="text"/>	<input type="text"/>	and/or	<input type="text"/>
<input type="checkbox"/> Tree Planting/Tree Pit (RR-3) .....	<input type="text"/>	<input type="text"/>	and/or	<input type="text"/>
<input type="checkbox"/> Disconnection of Rooftop Runoff (RR-4) ..	<input type="text"/>	<input type="text"/>	and/or	<input type="text"/>
<u>RR Techniques (Volume Reduction)</u>				
<input type="checkbox"/> Vegetated Swale (RR-5) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Rain Garden (RR-6) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Stormwater Planter (RR-7) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Rain Barrel/Cistern (RR-8) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Porous Pavement (RR-9) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Green Roof (RR-10) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<u>Standard SMPs with RRv Capacity</u>				
<input type="checkbox"/> Infiltration Trench (I-1) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Infiltration Basin (I-2) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Dry Well (I-3) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Underground Infiltration System (I-4) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Bioretention (F-5) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Dry Swale (O-1) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<u>Standard SMPs</u>				
<input type="checkbox"/> Micropool Extended Detention (P-1) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Wet Pond (P-2) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Wet Extended Detention (P-3) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Multiple Pond System (P-4) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Pocket Pond (P-5) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Surface Sand Filter (F-1) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Underground Sand Filter (F-2) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Perimeter Sand Filter (F-3) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Organic Filter (F-4) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Shallow Wetland (W-1) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Extended Detention Wetland (W-2) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Pond/Wetland System (W-3) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Pocket Wetland (W-4) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>
<input type="checkbox"/> Wet Swale (O-2) .....	<input type="text"/>	<input type="text"/>		<input type="text"/>



33. Identify the Standard SMPs in Table 1 and, if applicable, the Alternative SMPs in Table 2 that were used to treat the remaining total WQv(=Total WQv Required in 28 - Total RRv Provided in 30).

Also, provide in Table 1 and 2 the total impervious area that contributes runoff to each practice selected.

**Note:** Use Tables 1 and 2 to identify the SMPs used on Redevelopment projects.

- 33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question 29.

**WQv Provided**

.     acre-feet

**Note:** For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - RRv provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).

.

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)?  Yes  No

If Yes, go to question 36.

If No, sizing criteria has not been met, so NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv) required and provided or select waiver (36a), if applicable.

**CPv Required**

.     acre-feet

**CPv Provided**

.     acre-feet

- 36a. The need to provide channel protection has been waived because:

- Site discharges directly to tidal waters or a fifth order or larger stream.
- Reduction of the total CPv is achieved on site through runoff reduction techniques or infiltration systems.

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (37a), if applicable.

Total Overbank Flood Control Criteria (Qp)

**Pre-Development**

.     CFS

**Post-development**

.     CFS

Total Extreme Flood Control Criteria (Qf)

**Pre-Development**

.     CFS

**Post-development**

.     CFS









Department of  
Environmental  
Conservation

NYS Department of Environmental Conservation  
Division of Water  
625 Broadway, 4th Floor  
Albany, New York 12233-3505

**MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance  
Form**  
for

**Construction Activities Seeking Authorization Under SPDES General Permit**  
\*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

**I. Project Owner/Operator Information**

1. Owner/Operator Name: SUEZ WATER NEW YORK, INC  
2. Contact Person: STEVEN GARABED  
3. Street Address: 163 OLD MILL ROAD  
4. City/State/Zip: WEST NYACK / NY / 10994

**II. Project Site Information**

5. Project/Site Name: SUEZ WATER NEW YORK, INC CHATEAU WELL 1, 2, & 3  
6. Street Address: 59 MCNAIR DRIVE  
7. City/State/Zip: CARMEL / NY / 10541

**III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information**

8. SWPPP Reviewed by: RICHARD FRANZETTI, PE, LEED  
9. Title/Position: TOWN ENGINEER  
10. Date Final SWPPP Reviewed and Accepted:

**IV. Regulated MS4 Information**

11. Name of MS4: TOWN OF CARMEL  
12. MS4 SPDES Permit Identification Number: NYR20A 294  
13. Contact Person: RICHARD FRANZETTI, PE, LEED  
14. Street Address: 60 MCALPIN AVENUE  
15. City/State/Zip: MAHOPAC, NY 10541  
16. Telephone Number: 845-628-1500

**MS4 SWPPP Acceptance Form - continued**

**V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative**

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s).

Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name: **RICHARD FRANZETTI, PE, LEED**

Title/Position: **TOWN ENGINEER**

Signature:

Date:

**VI. Additional Information**

Appendix - F

**SUEZ WATER NEW YORK, INC  
CHATEAU WELL 1, 2, & 3**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**APPENDIX-F  
INFILTRATION TEST CERTIFICATION**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**



# ATZL, NASHER & ZIGLER P.C.

ENGINEERS-SURVEYORS-PLANNERS

232 North Main Street, New City, NY 10956

Tel: (845) 634-4694

Fax: (845) 634-5543

Email: [rnasher@anzny.com](mailto:rnasher@anzny.com)

March 21, 2022

Town of Carmel  
60 McAlpin Avenue  
Mahopac, NY 10541

Attn: Richard Franzetti, PE, LEED  
Town Engineer

Re: Infiltration Test Certification  
Suez Water New York, INC  
Chateau Well 1, 2, & 3 (Job #4874)  
Town of Carmel  
Putnam County, New York

Dear Mr. Franzetti,

A soil infiltration test was performed on April 11, 2022. The infiltration test location map is attached to this report for your reference (Page F-5). The infiltration test failed due to the presence of groundwater.

The results are as follows.

### Test Hole #1

Infiltration test at a depth of 72-inches (6-feet):

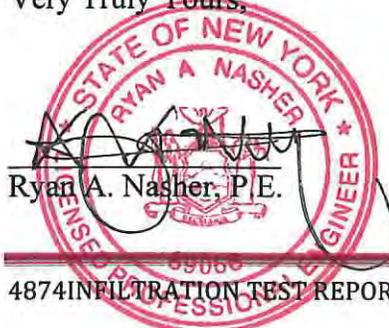
<u>Soil Log</u>	<u>Soil Type</u>
0" to 12"	Topsoil
12" to 60"	Silt & Sand

Groundwater was found at 60-inches (5-feet) deep.

**Note:** An infiltration practice is not acceptable on the site per the infiltration test.

If you have further questions or concerns, feel free to contact our office. Thank you.

Very Truly Yours,



Ryan A. Nasher, P.E.



Figure 1: View of test hole #1, groundwater found 5'-0" below the existing top grade.



Figure 2: View of the soil profile (Test Hole#1).

# Infiltr. Test

Job 4874 4-11-22

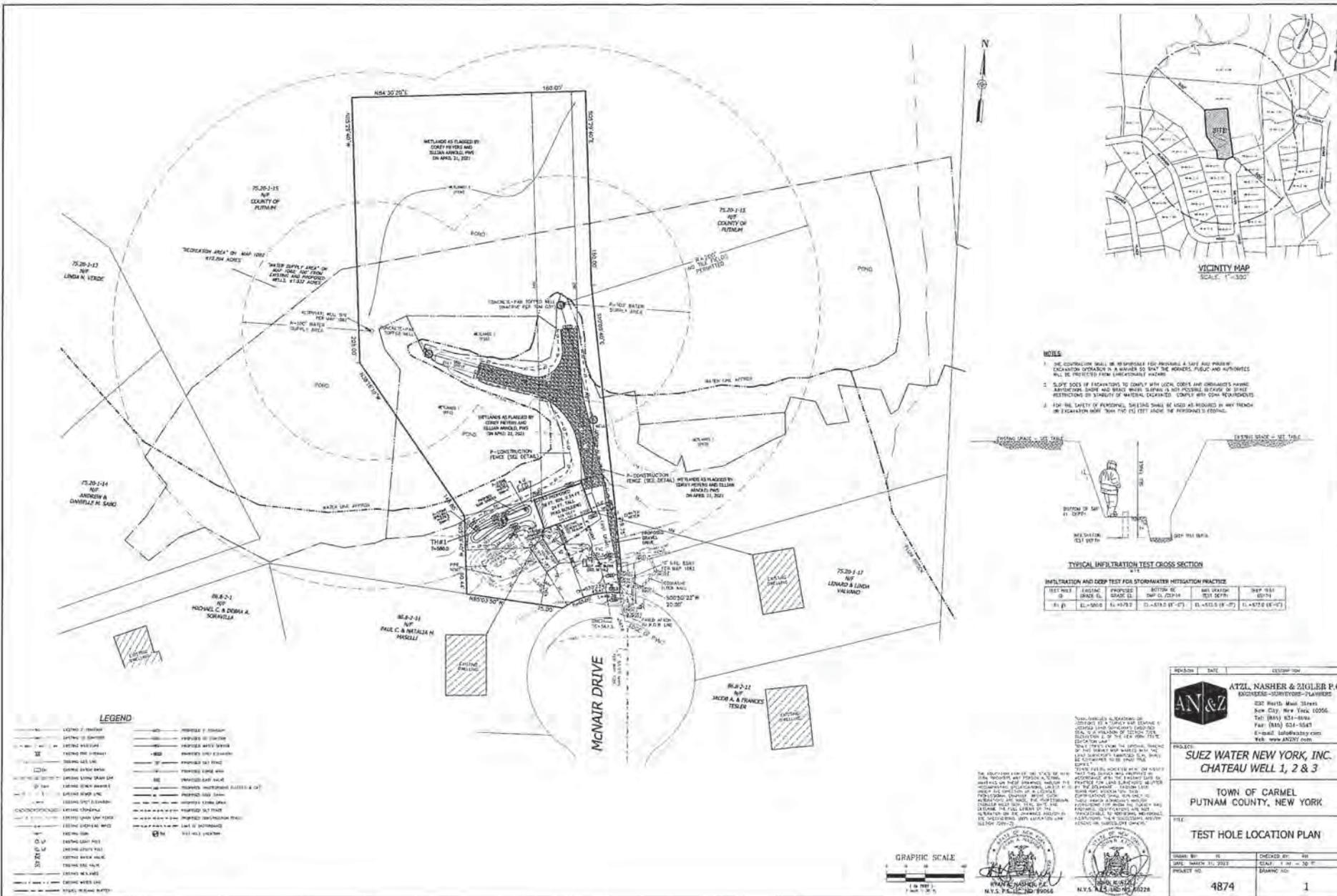
TH 1

0"-12" Top soil

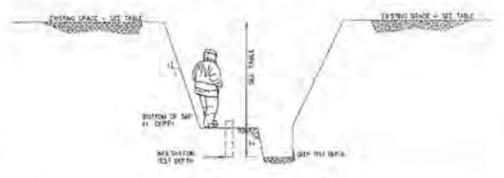
12"-60" Silt - Sand - Rock

60" Water

Figure 3: Field notes (Test Hole #1).



- NOTES**
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A SAFE AND PROPER EXCAVATION OPERATING IN A MANNER SO THAT THE WORKERS, PUBLIC AND ADJACENTS WILL BE PROTECTED FROM UNDESIRABLE HAZARDS.
  2. SLOPE SIDES OF EXCAVATIONS TO COMPLY WITH LOCAL CODES AND ORDINANCES HAVING APPLICABLE UNDER AND SHALL BE MAINTAINED THROUGHOUT THE PROJECT PERIOD WITH RESTRICTIONS TO STABILITY OF MATERIAL EXCAVATED. COMPLY WITH CODE REQUIREMENTS.
  3. FOR THE SAFETY OF PERSONNEL, EXCAVATION SHALL BE COVERED AS REQUIRED BY ANY TOWN OR EXCAVATION CODE. THE 10' TEST SHALL BE PERFORMED AS REQUIRED.



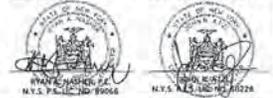
**TYPICAL INFILTRATION TEST CROSS SECTION**

**INFILTRATION AND DEEP TEST FOR STORMWATER MITIGATION PRACTICE**

TEST HOLE NO.	TEST DATE	TEST TIME	TEST RESULTS	TEST RESULTS	TEST RESULTS	TEST RESULTS
1	11/11/2011	11:00 AM	1.5 GPM	1.5 GPM	1.5 GPM	1.5 GPM

**LEGEND**

---	EXISTING CURB	---	PROPOSED 12" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 18" DRAINAGE
---	EXISTING DRIVE	---	PROPOSED 24" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 30" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 36" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 42" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 48" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 54" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 60" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 66" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 72" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 78" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 84" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 90" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 96" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 102" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 108" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 114" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 120" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 126" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 132" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 138" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 144" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 150" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 156" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 162" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 168" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 174" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 180" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 186" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 192" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 198" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 204" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 210" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 216" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 222" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 228" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 234" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 240" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 246" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 252" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 258" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 264" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 270" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 276" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 282" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 288" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 294" DRAINAGE
---	EXISTING SIDEWALK	---	PROPOSED 300" DRAINAGE



**ATZI, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS

630 West Main Street  
New City, New York 10956  
Tel: (914) 834-8800  
Fax: (914) 834-8847  
E-mail: info@anaz.com  
Web: www.anaz.com

**PROJECT:**  
SUEZ WATER NEW YORK, INC.  
CHATEAU WELL 1, 2 & 3

**TOWN OF CARMEL**  
PUTNAM COUNTY, NEW YORK

**TEST HOLE LOCATION PLAN**

DATE: 11/11/2011  
DRAWN BY: [Name]  
CHECKED BY: [Name]  
SCALE: 1" = 100'  
PROJECT NO.: 4874  
SHEET NO.: 1

Drainage Maps

**SUEZ WATER NEW YORK, INC  
CHATEAU WELL 1, 2, & 3**

**TOWN OF CARMEL  
PUTNAM COUNTY  
NEW YORK**

**DRAINAGE MAPS**

**BY**

**ATZL, NASHER & ZIGLER P.C.**

**ENGINEERS-SURVEYORS-PLANNERS**

**232 NORTH MAIN STREET**

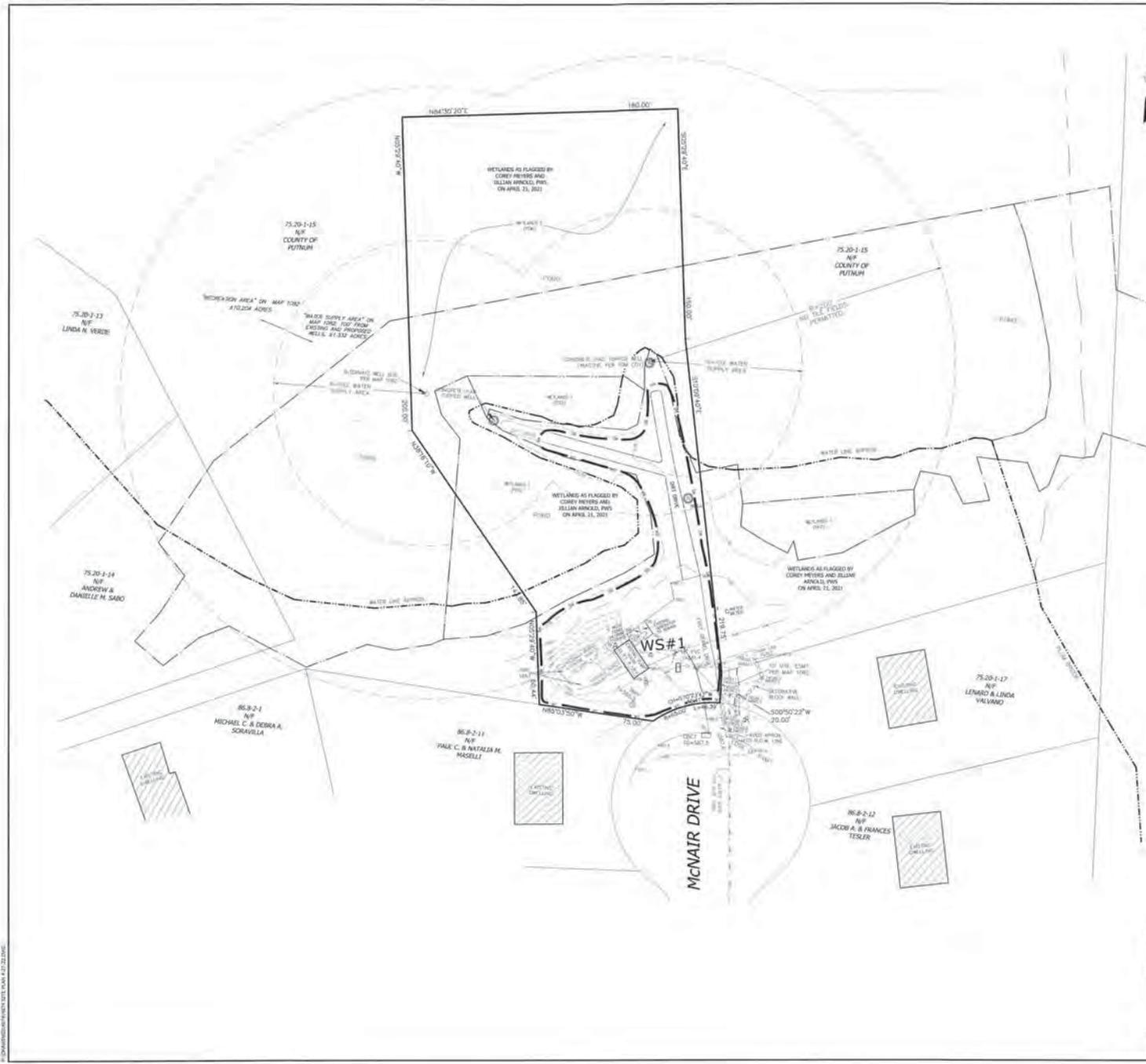
**NEW CITY, NY 10956**

**TEL: (845) 634-4694**

**FAX: (845) 634-5543**

**E-MAIL: [rnasher@anzny.com](mailto:rnasher@anzny.com)**





**LEGEND**

[Symbol]	WETLAND 1 (POND)
[Symbol]	WETLAND 2 (POND)
[Symbol]	WETLAND 3 (POND)
[Symbol]	WETLAND 4 (POND)
[Symbol]	WETLAND 5 (POND)
[Symbol]	WETLAND 6 (POND)
[Symbol]	WETLAND 7 (POND)
[Symbol]	WETLAND 8 (POND)
[Symbol]	WETLAND 9 (POND)
[Symbol]	WETLAND 10 (POND)
[Symbol]	WETLAND 11 (POND)
[Symbol]	WETLAND 12 (POND)
[Symbol]	WETLAND 13 (POND)
[Symbol]	WETLAND 14 (POND)
[Symbol]	WETLAND 15 (POND)
[Symbol]	WETLAND 16 (POND)
[Symbol]	WETLAND 17 (POND)
[Symbol]	WETLAND 18 (POND)
[Symbol]	WETLAND 19 (POND)
[Symbol]	WETLAND 20 (POND)
[Symbol]	WETLAND 21 (POND)
[Symbol]	WETLAND 22 (POND)
[Symbol]	WETLAND 23 (POND)
[Symbol]	WETLAND 24 (POND)
[Symbol]	WETLAND 25 (POND)
[Symbol]	WETLAND 26 (POND)
[Symbol]	WETLAND 27 (POND)
[Symbol]	WETLAND 28 (POND)
[Symbol]	WETLAND 29 (POND)
[Symbol]	WETLAND 30 (POND)
[Symbol]	WETLAND 31 (POND)
[Symbol]	WETLAND 32 (POND)
[Symbol]	WETLAND 33 (POND)
[Symbol]	WETLAND 34 (POND)
[Symbol]	WETLAND 35 (POND)
[Symbol]	WETLAND 36 (POND)
[Symbol]	WETLAND 37 (POND)
[Symbol]	WETLAND 38 (POND)
[Symbol]	WETLAND 39 (POND)
[Symbol]	WETLAND 40 (POND)
[Symbol]	WETLAND 41 (POND)
[Symbol]	WETLAND 42 (POND)
[Symbol]	WETLAND 43 (POND)
[Symbol]	WETLAND 44 (POND)
[Symbol]	WETLAND 45 (POND)
[Symbol]	WETLAND 46 (POND)
[Symbol]	WETLAND 47 (POND)
[Symbol]	WETLAND 48 (POND)
[Symbol]	WETLAND 49 (POND)
[Symbol]	WETLAND 50 (POND)
[Symbol]	WETLAND 51 (POND)
[Symbol]	WETLAND 52 (POND)
[Symbol]	WETLAND 53 (POND)
[Symbol]	WETLAND 54 (POND)
[Symbol]	WETLAND 55 (POND)
[Symbol]	WETLAND 56 (POND)
[Symbol]	WETLAND 57 (POND)
[Symbol]	WETLAND 58 (POND)
[Symbol]	WETLAND 59 (POND)
[Symbol]	WETLAND 60 (POND)
[Symbol]	WETLAND 61 (POND)
[Symbol]	WETLAND 62 (POND)
[Symbol]	WETLAND 63 (POND)
[Symbol]	WETLAND 64 (POND)
[Symbol]	WETLAND 65 (POND)
[Symbol]	WETLAND 66 (POND)
[Symbol]	WETLAND 67 (POND)
[Symbol]	WETLAND 68 (POND)
[Symbol]	WETLAND 69 (POND)
[Symbol]	WETLAND 70 (POND)
[Symbol]	WETLAND 71 (POND)
[Symbol]	WETLAND 72 (POND)
[Symbol]	WETLAND 73 (POND)
[Symbol]	WETLAND 74 (POND)
[Symbol]	WETLAND 75 (POND)
[Symbol]	WETLAND 76 (POND)
[Symbol]	WETLAND 77 (POND)
[Symbol]	WETLAND 78 (POND)
[Symbol]	WETLAND 79 (POND)
[Symbol]	WETLAND 80 (POND)
[Symbol]	WETLAND 81 (POND)
[Symbol]	WETLAND 82 (POND)
[Symbol]	WETLAND 83 (POND)
[Symbol]	WETLAND 84 (POND)
[Symbol]	WETLAND 85 (POND)
[Symbol]	WETLAND 86 (POND)
[Symbol]	WETLAND 87 (POND)
[Symbol]	WETLAND 88 (POND)
[Symbol]	WETLAND 89 (POND)
[Symbol]	WETLAND 90 (POND)
[Symbol]	WETLAND 91 (POND)
[Symbol]	WETLAND 92 (POND)
[Symbol]	WETLAND 93 (POND)
[Symbol]	WETLAND 94 (POND)
[Symbol]	WETLAND 95 (POND)
[Symbol]	WETLAND 96 (POND)
[Symbol]	WETLAND 97 (POND)
[Symbol]	WETLAND 98 (POND)
[Symbol]	WETLAND 99 (POND)
[Symbol]	WETLAND 100 (POND)

THIS DRAWING IS THE PROPERTY OF ATZL, NASHER & ZIGLER P.C. ENGINEERS-SURVEYORS-PLANNERS. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON. ANY REUSE OR MODIFICATION OF THIS DRAWING WITHOUT THE WRITTEN CONSENT OF ATZL, NASHER & ZIGLER P.C. IS STRICTLY PROHIBITED. THE USER OF THIS DRAWING SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES. THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE ACCURACY OF ALL DATA AND INFORMATION PROVIDED TO ATZL, NASHER & ZIGLER P.C. BY OTHER SOURCES. ATZL, NASHER & ZIGLER P.C. ACCEPTS NO LIABILITY FOR ANY DAMAGE OR LOSS OF ANY KIND, INCLUDING CONSEQUENTIAL DAMAGES, ARISING FROM THE USE OF THIS DRAWING. THE USER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES. THE USER SHALL BE RESPONSIBLE FOR VERIFYING THE ACCURACY OF ALL DATA AND INFORMATION PROVIDED TO ATZL, NASHER & ZIGLER P.C. BY OTHER SOURCES. ATZL, NASHER & ZIGLER P.C. ACCEPTS NO LIABILITY FOR ANY DAMAGE OR LOSS OF ANY KIND, INCLUDING CONSEQUENTIAL DAMAGES, ARISING FROM THE USE OF THIS DRAWING.

1	04-17-22	DRAINAGE DESIGN/REVISION (SHEET 1 OF 3)
2	05-07-22	REV 1-11-22 ECD (REVISED)
3	05-19-22	REV FOR R. P. SURVEYOR
4	11-18-23	REV FOR R. P. SURVEYOR
5	01-18-24	REV FOR R. P. SURVEYOR
6	01-18-24	REV FOR R. P. SURVEYOR

**ATZL, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
302E Markle Main Street  
New City, New York 10956  
Tel: (845) 634-4544  
Fax: (845) 634-5543  
E-mail: info@anzny.com  
Web: www.AZNY.com

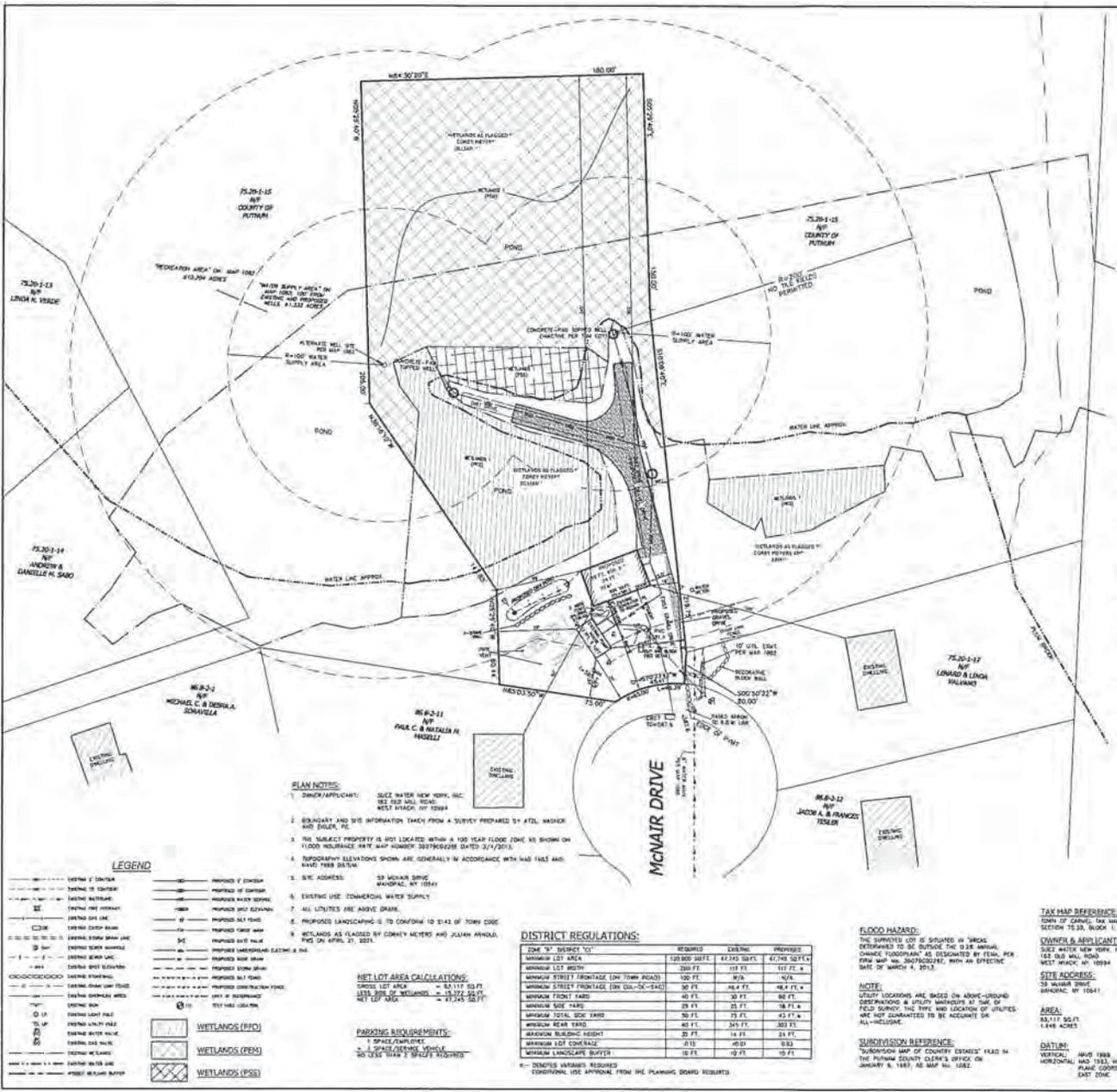
**PROJECT:**  
SUEZ WATER NEW YORK, INC.  
CHATEAU WELL 1, 2 & 3

**TOWN OF CARMEL**  
PUTNAM COUNTY, NEW YORK

**DRAINAGE MAP**  
EXISTING CONDITION

DRAWN BY: [Signature]	CHECKED BY: [Signature]
DATE: JULY 18, 2023	SCALE: 1" = 50.00'
PROJECT NO: 4874	DRAWING NO: E-1

S:\DRAWINGS\PROJECTS\NEW YORK\4874\23\23.DWG

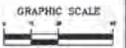


**OWNERS WITHIN 500 FEET**

75.20-1-11 WARD & SUTTS 58 BLOOMER ROAD MANHATTAN, NY 10841	75.20-1-12 STONEN & MARY BEITH WHEEL 20 BLOOMER ROAD MANHATTAN, NY 10841	75.20-1-13 LINDA M WARD 14 BLOOMER ROAD MANHATTAN, NY 10841	75.20-1-14 ANDREW & SHARLENE W SAND 1870 TROBAND AVENUE LITTLETON HEIGHTS, NY 10841	75.20-1-15 COUNTY OF PUTNAM 45 GLENDA AVENUE CARROLL, NY 10842	75.20-1-16 LEONARD & LINDA VALIANO 85 MCNAIR DRIVE MANHATTAN, NY 10841	75.20-1-17 JAMES & ROSE PACARLO 31 GARDEN DRIVE MANHATTAN, NY 10841	75.20-1-18 ROBERT & MARIE ANNA SWENSKI 5 CROCKET PLACE MANHATTAN, NY 10841	75.20-1-19 COUNTY OF PUTNAM 43 BLOOMER ROAD CARROLL, NY 10842	75.20-1-20 WERNER JACOB 11 CROCKET DRIVE MANHATTAN, NY 10841	75.20-1-21 JES & DORA L BENNETT 10 CROCKET PLACE MANHATTAN, NY 10841	75.20-1-22 ZBIGNIEW PIWAS PO BOX 333 BARDONVILLE, NY 10843	75.20-1-23 KYLE & BARBARA CORREA 31 MCNAIR DRIVE MANHATTAN, NY 10841	75.20-1-24 COUNTY OF PUTNAM 45 GLENDA AVENUE CARROLL, NY 10842	75.20-1-25 SHARON R & THOMAS DEARY 21 BLOOMER ROAD MANHATTAN, NY 10841	75.20-1-26 JERRY J & WARE PANNARISE 14 BLOOMER ROAD MANHATTAN, NY 10841	75.20-1-27 JOSEPH G & JANEH BEARD 14 BLOOMER ROAD MANHATTAN, NY 10841	75.20-1-28 JOHN E & JANEH W O'BRIEN 45 BLOOMER ROAD MANHATTAN, NY 10841	75.20-1-29 CHESTER & MARY BARRETT 28 BLOOMER ROAD MANHATTAN, NY 10841	75.20-1-30 DAPHNE A & LUCY SUFAJ 33 BLOOMER ROAD MANHATTAN, NY 10841	75.20-1-31 STEVEN J & LAUREN M 28 BLOOMER ROAD MANHATTAN, NY 10841	75.20-1-32 DANIEL J & ALICIA SHANNON 24 BLOOMER ROAD MANHATTAN, NY 10841	75.20-1-33 CAROLINA FRANKLY HICKY TRUST #2 28 BLOOMER ROAD MANHATTAN, NY 10841	75.20-1-34 JENNIFER M & JEROME GOODMAN 8 BLOOMER DRIVE MANHATTAN, NY 10841	75.20-1-35 EVA RYAN PO BOX 333 BARDONVILLE, NY 10843	75.20-1-36 ANN F MURRAY 43 MCNAIR DRIVE MANHATTAN, NY 10841	88.8-2-8 ALBA & NICOLA ALOISI 43 MCNAIR DRIVE MANHATTAN, NY 10841	88.8-2-10 HOWARD J & NICOLELLA F HANMER 21 BLOOMER ROAD MANHATTAN, NY 10841	88.8-2-11 PAUL C & RAFAELA W MARZILLI 43 MCNAIR DRIVE MANHATTAN, NY 10841	88.8-2-12 JACOB R & FRANCESCA TOSCANI 28 BLOOMER ROAD MANHATTAN, NY 10841	88.8-2-13 WALTER FAMILI TRUST 43 MCNAIR DRIVE MANHATTAN, NY 10841	88.8-2-14 CHESTER E & LAURE D'AY 43 MCNAIR DRIVE MANHATTAN, NY 10841	88.8-2-15 JOHN W WELTON 43 MCNAIR DRIVE MANHATTAN, NY 10841	88.8-2-16 EDWARD R LUCIFERA D'AY 43 MCNAIR DRIVE MANHATTAN, NY 10841	88.8-2-18 JAMES ROLD & FELICIA CHARLES 43 MCNAIR DRIVE MANHATTAN, NY 10841	88.8-2-19 MORRIS FANNING 43 MCNAIR DRIVE MANHATTAN, NY 10841	88.8-2-20 TOWN OF CARMEL 85 MCNAIR AVENUE MANHATTAN, NY 10841
--	---	--	--	---	---	--	---	--	---	---	---	---	---	---	--	--	--	--	---	---	---	---	---	---	--	--	--	--	--	--	---	--	---	---	---	--

**DRAWING LIST:**

NO.	FILE	DATE	REVISION
1	SITE PLAN	JULY 19, 2021	ISSUE
2	EXISTING CONDITION	JULY 19, 2021	APRIL 27, 2022
3	SEWER PLAN	JULY 19, 2021	APRIL 27, 2022
4	SCHEMATIC	JULY 19, 2021	APRIL 27, 2022
5	CRUSHED & SLOTTED CONTROL PLAN	JULY 19, 2021	APRIL 27, 2022
6	WETLANDS CONTROL PLAN	JULY 19, 2021	APRIL 27, 2022
7	LOADING PLAN	JULY 19, 2021	APRIL 27, 2022
8	TRUCK TURNING PLAN	NOVEMBER 15, 2021	APRIL 27, 2022



**ATZLI, NASHER & ZIGLER P.C.**  
ENGINEERS-SURVEYORS-PLANNERS  
232 RIVERSIDE DRIVE  
NEW CITY, NEW YORK 10988  
TEL: (845) 834-4894  
FAX: (845) 834-5543  
E-mail: info@atnz.com  
Web: www.atnz.com

**SUEZ WATER NEW YORK, INC.**  
CHATEAU WELL 1, 2 & 3

TOWN OF CARMEL  
PUTNAM COUNTY, NEW YORK

**SITE PLAN**

DRAWN BY: IS	CHECKED BY: JMS
DATE: JULY 19, 2021	SCALE: 1" = 30' FT
PROJECT NO: 4874	DRAWING NO: 1

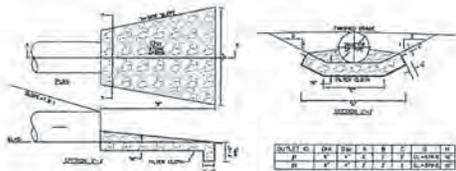
**PLAN NOTES:**  
1. OWNER/APPLICANT: SUEZ WATER NEW YORK, INC. 100 BUCKLE RD WEST STARCH, NY 10841  
2. BOUNDARY AND SITE INFORMATION TAKEN FROM A SURVEY PREPARED BY ATZLI NASHER & ZIGLER P.C. (DATE: 1/13/2021)  
3. THE SUBJECT PROPERTY IS NOT LOCATED WITHIN A 100 YEAR FLOOD ZONE AS SHOWN ON FLOOD INSURANCE RATE MAP NUMBER 220780022E DATED 2/1/2013.  
4. TOPOGRAPHY ELEVATIONS SHOWN ARE GENERALLY IN ACCORDANCE WITH THE 2011 AND 2014 FEMA FLOOD ZONE MAPS.

**LEGEND**

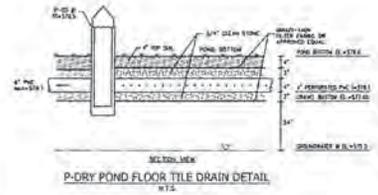
---	EXISTING LOT BOUNDARY	---	PROPOSED LOT BOUNDARY
---	EXISTING LOT CENTERLINE	---	PROPOSED LOT CENTERLINE
---	EXISTING WATER SUPPLY	---	PROPOSED WATER SUPPLY
---	EXISTING WATER MAIN	---	PROPOSED WATER MAIN
---	EXISTING WATER SERVICE LINE	---	PROPOSED WATER SERVICE LINE
---	EXISTING WATER METER	---	PROPOSED WATER METER
---	EXISTING WATER VALVE	---	PROPOSED WATER VALVE
---	EXISTING WATER TAP	---	PROPOSED WATER TAP
---	EXISTING WATER HYDRANT	---	PROPOSED WATER HYDRANT
---	EXISTING WATER PUMP	---	PROPOSED WATER PUMP
---	EXISTING WATER STORAGE TANK	---	PROPOSED WATER STORAGE TANK
---	EXISTING WATER DISTRIBUTION SYSTEM	---	PROPOSED WATER DISTRIBUTION SYSTEM
---	EXISTING WATER TREATMENT PLANT	---	PROPOSED WATER TREATMENT PLANT
---	EXISTING WATER COLLECTION SYSTEM	---	PROPOSED WATER COLLECTION SYSTEM
---	EXISTING WATER CONDUIT	---	PROPOSED WATER CONDUIT
---	EXISTING WATER TRENCH	---	PROPOSED WATER TRENCH
---	EXISTING WATER DUCT	---	PROPOSED WATER DUCT
---	EXISTING WATER PIPE	---	PROPOSED WATER PIPE
---	EXISTING WATER VALVE	---	PROPOSED WATER VALVE
---	EXISTING WATER TAP	---	PROPOSED WATER TAP
---	EXISTING WATER HYDRANT	---	PROPOSED WATER HYDRANT
---	EXISTING WATER PUMP	---	PROPOSED WATER PUMP
---	EXISTING WATER STORAGE TANK	---	PROPOSED WATER STORAGE TANK
---	EXISTING WATER DISTRIBUTION SYSTEM	---	PROPOSED WATER DISTRIBUTION SYSTEM
---	EXISTING WATER TREATMENT PLANT	---	PROPOSED WATER TREATMENT PLANT
---	EXISTING WATER COLLECTION SYSTEM	---	PROPOSED WATER COLLECTION SYSTEM
---	EXISTING WATER CONDUIT	---	PROPOSED WATER CONDUIT
---	EXISTING WATER TRENCH	---	PROPOSED WATER TRENCH
---	EXISTING WATER DUCT	---	PROPOSED WATER DUCT
---	EXISTING WATER PIPE	---	PROPOSED WATER PIPE
---	EXISTING WATER VALVE	---	PROPOSED WATER VALVE
---	EXISTING WATER TAP	---	PROPOSED WATER TAP
---	EXISTING WATER HYDRANT	---	PROPOSED WATER HYDRANT
---	EXISTING WATER PUMP	---	PROPOSED WATER PUMP
---	EXISTING WATER STORAGE TANK	---	PROPOSED WATER STORAGE TANK
---	EXISTING WATER DISTRIBUTION SYSTEM	---	PROPOSED WATER DISTRIBUTION SYSTEM
---	EXISTING WATER TREATMENT PLANT	---	PROPOSED WATER TREATMENT PLANT
---	EXISTING WATER COLLECTION SYSTEM	---	PROPOSED WATER COLLECTION SYSTEM
---	EXISTING WATER CONDUIT	---	PROPOSED WATER CONDUIT
---	EXISTING WATER TRENCH	---	PROPOSED WATER TRENCH
---	EXISTING WATER DUCT	---	PROPOSED WATER DUCT
---	EXISTING WATER PIPE	---	PROPOSED WATER PIPE
---	EXISTING WATER VALVE	---	PROPOSED WATER VALVE
---	EXISTING WATER TAP	---	PROPOSED WATER TAP
---	EXISTING WATER HYDRANT	---	PROPOSED WATER HYDRANT
---	EXISTING WATER PUMP	---	PROPOSED WATER PUMP
---	EXISTING WATER STORAGE TANK	---	PROPOSED WATER STORAGE TANK
---	EXISTING WATER DISTRIBUTION SYSTEM	---	PROPOSED WATER DISTRIBUTION SYSTEM
---	EXISTING WATER TREATMENT PLANT	---	PROPOSED WATER TREATMENT PLANT
---	EXISTING WATER COLLECTION SYSTEM	---	PROPOSED WATER COLLECTION SYSTEM
---	EXISTING WATER CONDUIT	---	PROPOSED WATER CONDUIT
---	EXISTING WATER TRENCH	---	PROPOSED WATER TRENCH
---	EXISTING WATER DUCT	---	PROPOSED WATER DUCT
---	EXISTING WATER PIPE	---	PROPOSED WATER PIPE
---	EXISTING WATER VALVE	---	PROPOSED WATER VALVE
---	EXISTING WATER TAP	---	PROPOSED WATER TAP
---	EXISTING WATER HYDRANT	---	PROPOSED WATER HYDRANT
---	EXISTING WATER PUMP	---	PROPOSED WATER PUMP
---	EXISTING WATER STORAGE TANK	---	PROPOSED WATER STORAGE TANK
---	EXISTING WATER DISTRIBUTION SYSTEM	---	PROPOSED WATER DISTRIBUTION SYSTEM
---	EXISTING WATER TREATMENT PLANT	---	PROPOSED WATER TREATMENT PLANT
---	EXISTING WATER COLLECTION SYSTEM	---	PROPOSED WATER COLLECTION SYSTEM
---	EXISTING WATER CONDUIT	---	PROPOSED WATER CONDUIT
---	EXISTING WATER TRENCH	---	PROPOSED WATER TRENCH
---	EXISTING WATER DUCT	---	PROPOSED WATER DUCT
---	EXISTING WATER PIPE	---	PROPOSED WATER PIPE
---	EXISTING WATER VALVE	---	PROPOSED WATER VALVE
---	EXISTING WATER TAP	---	PROPOSED WATER TAP
---	EXISTING WATER HYDRANT	---	PROPOSED WATER HYDRANT
---	EXISTING WATER PUMP	---	PROPOSED WATER PUMP
---	EXISTING WATER STORAGE TANK	---	PROPOSED WATER STORAGE TANK
---	EXISTING WATER DISTRIBUTION SYSTEM	---	PROPOSED WATER DISTRIBUTION SYSTEM
---	EXISTING WATER TREATMENT PLANT	---	PROPOSED WATER TREATMENT PLANT
---	EXISTING WATER COLLECTION SYSTEM	---	PROPOSED WATER COLLECTION SYSTEM
---	EXISTING WATER CONDUIT	---	PROPOSED WATER CONDUIT
---	EXISTING WATER TRENCH	---	PROPOSED WATER TRENCH
---	EXISTING WATER DUCT	---	PROPOSED WATER DUCT
---	EXISTING WATER PIPE	---	PROPOSED WATER PIPE
---	EXISTING WATER VALVE	---	PROPOSED WATER VALVE
---	EXISTING WATER TAP	---	PROPOSED WATER TAP
---	EXISTING WATER HYDRANT	---	PROPOSED WATER HYDRANT
---	EXISTING WATER PUMP	---	PROPOSED WATER PUMP
---	EXISTING WATER STORAGE TANK	---	PROPOSED WATER STORAGE TANK
---	EXISTING WATER DISTRIBUTION SYSTEM	---	PROPOSED WATER DISTRIBUTION SYSTEM
---	EXISTING WATER TREATMENT PLANT	---	PROPOSED WATER TREATMENT PLANT
---	EXISTING WATER COLLECTION SYSTEM	---	PROPOSED WATER COLLECTION SYSTEM
---	EXISTING WATER CONDUIT	---	PROPOSED WATER CONDUIT
---	EXISTING WATER TRENCH	---	PROPOSED WATER TRENCH
---	EXISTING WATER DUCT	---	PROPOSED WATER DUCT
---	EXISTING WATER PIPE	---	PROPOSED WATER PIPE
---	EXISTING WATER VALVE	---	PROPOSED WATER VALVE
---	EXISTING WATER TAP	---	PROPOSED WATER TAP
---	EXISTING WATER HYDRANT	---	PROPOSED WATER HYDRANT
---	EXISTING WATER PUMP	---	PROPOSED WATER PUMP
---	EXISTING WATER STORAGE TANK	---	PROPOSED WATER STORAGE TANK
---	EXISTING WATER DISTRIBUTION SYSTEM	---	PROPOSED WATER DISTRIBUTION SYSTEM
---	EXISTING WATER TREATMENT PLANT	---	PROPOSED WATER TREATMENT PLANT
---	EXISTING WATER COLLECTION SYSTEM	---	PROPOSED WATER COLLECTION SYSTEM
---	EXISTING WATER CONDUIT	---	PROPOSED WATER CONDUIT
---	EXISTING WATER TRENCH	---	PROPOSED WATER TRENCH
---	EXISTING WATER DUCT	---	PROPOSED WATER DUCT
---	EXISTING WATER PIPE	---	PROPOSED WATER PIPE
---	EXISTING WATER VALVE	---	PROPOSED WATER VALVE
---	EXISTING WATER TAP	---	PROPOSED WATER TAP
---	EXISTING WATER HYDRANT	---	PROPOSED WATER HYDRANT
---	EXISTING WATER PUMP	---	PROPOSED WATER PUMP
---	EXISTING WATER STORAGE TANK	---	PROPOSED WATER STORAGE TANK
---	EXISTING WATER DISTRIBUTION SYSTEM	---	PROPOSED WATER DISTRIBUTION SYSTEM
---	EXISTING WATER TREATMENT PLANT	---	PROPOSED WATER TREATMENT PLANT
---	EXISTING WATER COLLECTION SYSTEM	---	PROPOSED WATER COLLECTION SYSTEM
---	EXISTING WATER CONDUIT	---	PROPOSED WATER CONDUIT
---	EXISTING WATER TRENCH	---	PROPOSED WATER TRENCH
---	EXISTING WATER DUCT	---	PROPOSED WATER DUCT
---	EXISTING WATER PIPE	---	PROPOSED WATER PIPE
---	EXISTING WATER VALVE	---	PROPOSED WATER VALVE
---	EXISTING WATER TAP	---	PROPOSED WATER TAP
---	EXISTING WATER HYDRANT	---	PROPOSED WATER HYDRANT
---	EXISTING WATER PUMP	---	PROPOSED WATER PUMP
---	EXISTING WATER STORAGE TANK	---	PROPOSED WATER STORAGE TANK
---	EXISTING WATER DISTRIBUTION SYSTEM	---	PROPOSED WATER DISTRIBUTION SYSTEM
---	EXISTING WATER TREATMENT PLANT	---	PROPOSED WATER TREATMENT PLANT
---	EXISTING WATER COLLECTION SYSTEM	---	PROPOSED WATER COLLECTION SYSTEM
---	EXISTING WATER CONDUIT	---	PROPOSED WATER CONDUIT
---	EXISTING WATER TRENCH	---	PROPOSED WATER TRENCH
---	EXISTING WATER DUCT	---	PROPOSED WATER DUCT
---	EXISTING WATER PIPE	---	PROPOSED WATER PIPE
---	EXISTING WATER VALVE	---	PROPOSED WATER VALVE
---	EXISTING WATER TAP	---	PROPOSED WATER TAP
---	EXISTING WATER HYDRANT	---	PROPOSED WATER HYDRANT
---	EXISTING WATER PUMP	---	PROPOSED WATER PUMP
---	EXISTING WATER STORAGE TANK	---	PROPOSED WATER STORAGE TANK
---	EXISTING WATER DISTRIBUTION SYSTEM	---	PROPOSED WATER DISTRIBUTION SYSTEM
---	EXISTING WATER TREATMENT PLANT	---	PROPOSED WATER TREATMENT PLANT
---	EXISTING WATER COLLECTION SYSTEM	---	PROPOSED WATER COLLECTION SYSTEM
---	EXISTING WATER CONDUIT	---	PROPOSED WATER CONDUIT
---	EXISTING WATER TRENCH	---	PROPOSED WATER TRENCH
---	EXISTING WATER DUCT	---	PROPOSED WATER DUCT
---	EXISTING WATER PIPE	---	PROPOSED WATER PIPE
---	EXISTING WATER VALVE	---	PROPOSED WATER VALVE
---	EXISTING WATER TAP	---	PROPOSED WATER TAP
---	EXISTING WATER HYDRANT	---	PROPOSED WATER HYDRANT
---	EXISTING WATER PUMP	---	PROPOSED WATER PUMP
---	EXISTING WATER STORAGE TANK	---	PROPOSED WATER STORAGE TANK
---	EXISTING WATER DISTRIBUTION SYSTEM	---	PROPOSED WATER DISTRIBUTION SYSTEM
---	EXISTING WATER TREATMENT PLANT	---	PROPOSED WATER TREATMENT PLANT
---	EXISTING WATER COLLECTION SYSTEM	---	PROPOSED WATER COLLECTION SYSTEM
---	EXISTING WATER CONDUIT	---	PROPOSED WATER CONDUIT
---	EXISTING WATER TRENCH	---	PROPOSED WATER TRENCH
---	EXISTING WATER DUCT	---	PROPOSED WATER DUCT
---	EXISTING WATER PIPE	---	PROPOSED WATER PIPE
---	EXISTING WATER VALVE	---	PROPOSED WATER VALVE
---	EXISTING WATER TAP	---	PROPOSED WATER TAP
---	EXISTING WATER HYDRANT	---	PROPOSED WATER HYDRANT
---	EXISTING WATER PUMP	---	PROPOSED WATER PUMP
---	EXISTING WATER STORAGE TANK	---	PROPOSED WATER STORAGE TANK
---	EXISTING WATER DISTRIBUTION SYSTEM	---	PROPOSED WATER DISTRIBUTION SYSTEM
---	EXISTING WATER TREATMENT PLANT	---	PROPOSED WATER TREATMENT PLANT
---	EXISTING WATER COLLECTION SYSTEM	---	PROPOSED WATER COLLECTION SYSTEM
---	EXISTING WATER CONDUIT	---	PROPOSED WATER CONDUIT
---	EXISTING WATER TRENCH	---	PROPOSED WATER TRENCH
---	EXISTING WATER DUCT	---	PROPOSED WATER DUCT
---	EXISTING WATER PIPE	---	PROPOSED WATER PIPE
---	EXISTING WATER VALVE	---	PROPOSED WATER VALVE
---	EXISTING WATER TAP	---	PROPOSED WATER TAP
---	EXISTING WATER HYDRANT	---	PROPOSED WATER HYDRANT
---	EXISTING WATER PUMP	---	PROPOSED WATER PUMP
---	EXISTING WATER STORAGE TANK	---	PROPOSED WATER STORAGE TANK
---	EXISTING WATER DISTRIBUTION SYSTEM	---	PROPOSED WATER DISTRIBUTION SYSTEM
---	EXISTING WATER TREATMENT PLANT	---	PROPOSED WATER TREATMENT PLANT
---	EXISTING WATER COLLECTION SYSTEM	---	PROPOSED WATER COLLECTION SYSTEM
---	EXISTING WATER CONDUIT	---	PROPOSED WATER CONDUIT
---	EXISTING WATER TRENCH	---	PROPOSED WATER TRENCH
---	EXISTING WATER DUCT	---	PROPOSED WATER DUCT
---	EXISTING WATER PIPE	---	PROPOSED WATER PIPE
---	EXISTING WATER VALVE	---	PROPOSED WATER VALVE
---	EXISTING WATER TAP	---	PROPOSED WATER TAP
---	EXISTING WATER HYDRANT	---	PROPOSED WATER HYDRANT
---	EXISTING WATER PUMP	---	PROPOSED WATER PUMP
---	EXISTING WATER STORAGE TANK	---	PROPOSED WATER STORAGE TANK
---	EXISTING WATER DISTRIBUTION SYSTEM	---	PROPOSED WATER DISTRIBUTION SYSTEM
---	EXISTING WATER TREATMENT PLANT	---	PROPOSED WATER TREATMENT PLANT
---	EXISTING WATER COLLECTION SYSTEM	---	PROPOSED WATER COLLECTION SYSTEM
---	EXISTING WATER CONDUIT	---	PROPOSED WATER CONDUIT
---	EXISTING WATER TRENCH	---	PROPOSED WATER TRENCH
---	EXISTING WATER DUCT	---	PROPOSED WATER DUCT
---	EXISTING WATER PIPE	---	PROPOSED WATER PIPE
---	EXISTING WATER VALVE	---	PROPOSED WATER VALVE
---	EXISTING WATER TAP	---	PROPOSED WATER TAP
---	EXISTING WATER HYDRANT	---	PROPOSED WATER HYDRANT
---	EXISTING WATER PUMP	---	PROPOSED WATER PUMP
---	EXISTING WATER STORAGE TANK	---	PROPOSED WATER STORAGE TANK
---	EXISTING WATER DISTRIBUTION SYSTEM	---	PROPOSED WATER DISTRIBUTION SYSTEM
---	EXISTING WATER TREATMENT PLANT	---	PROPOSED WATER TREATMENT PLANT
---	EXISTING WATER COLLECTION SYSTEM	---	PROPOSED WATER COLLECTION SYSTEM
---	EXISTING WATER CONDUIT	---	PROPOSED WATER CONDUIT
---	EXISTING WATER TRENCH	---	PROPOSED WATER TRENCH
---	EXISTING WATER DUCT	---	PROPOSED WATER DUCT
---	EXISTING WATER PIPE	---	PROPOSED WATER PIPE
---	EXISTING WATER VALVE	---	PROPOSED WATER VALVE
---	EXISTING WATER TAP	---	PROPOSED WATER TAP
---	EXISTING WATER HYDRANT	---	PROPOSED WATER HYDRANT
---	EXISTING WATER PUMP	---	PROPOSED WATER PUMP
---	EXISTING WATER STORAGE TANK	---	PROPOSED WATER STORAGE TANK
---	EXISTING WATER DISTRIBUTION		



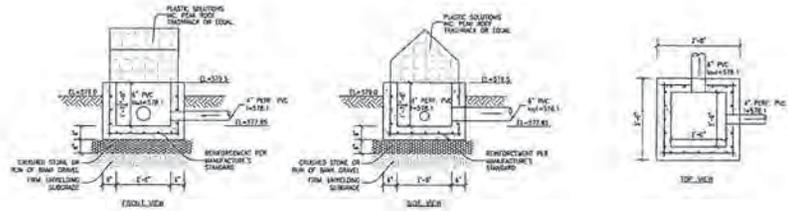




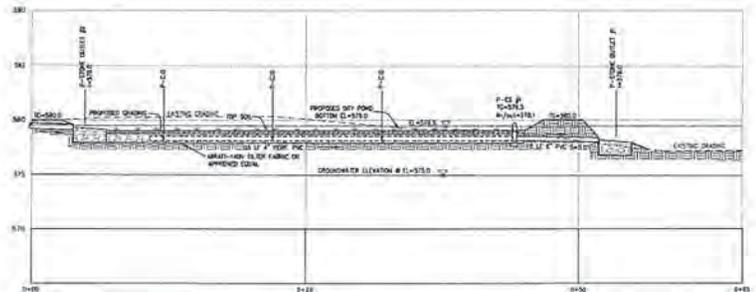
STONE OUTLET DETAIL  
#15



P-DRY POND FLOOR TILE DRAIN DETAIL  
#15



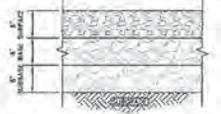
P-C5 #1 DETAIL  
SCALE: 1/2"=1'



PROPOSED DRY POND PROFILE  
SCALE: 1/4"=1'

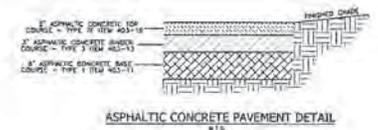
TABLE-1 PERCENT PASSING BY WEIGHT OF GRAVEL MATERIALS

SIEM (U.S. SIEVE)	SURFACE	BASE	SUBGRADE
3"	-	100	-
2"	-	100	-
1.5"	-	80-100	70-100
1"	100	-	-
3/4"	80-100	-	-
1/2"	50-75	30-50	20-35
#40	15-35	5-20	3-25
#200	8-15	0-85	0-4

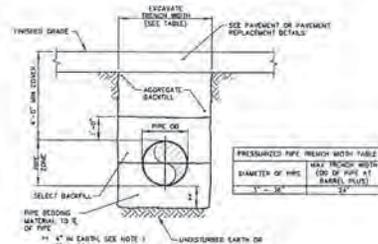


NOTES:  
 1. SURFACE, BASE AND SURFACE MATERIAL SHALL CONFORM TO GRADING PLANS OR TABLE-1.  
 2. USE LAYERS OF GRAVEL, TILES AND MATERIALS BETWEEN THE ROADWAY LANE.

TYPICAL GRAVEL PAVING SECTION  
SCALE: 1/4"=1'



ASPHALTIC CONCRETE PAVEMENT DETAIL  
#15



TYP. TRENCH PAVED AREAS DETAIL  
#15

- TRENCH NOTES:
- IF UNDESIRABLE SUBSOIL IS ENCOUNTERED AT THE NORMAL TRENCH SURFACE, THE CONTRACTOR SHALL REMOVE IT TO THE DEPTH DIRECTED BY THE ENGINEER IN THE FIELD AND BACKFILL WITH PIPE BEDDING MATERIAL IN 4" LAYERS.
  - BOTTOM OF TRENCH SHALL BE FREE OF WATER PRIOR TO PLACING BEDDING.
  - PROVIDE 4" OF TOPSOIL ABOVE BEDDING AS REQUIRED.
  - CONTRACTOR SHALL CHOOSE THE TRENCH IN ACCORDANCE WITH SLOPE DEGREE OF THE SPECIFICATIONS.
  - GRADE AND PAVED DRIVEWAYS TO BE RESTORED TO EXIST WITH UNPAVED DRIVEWAYS AS INDICATED ON THIS SHEET.

ATZL, NASHER & ZIGLER P.C.  
 ENGINEERS-SURVEYORS-PLANNERS  
 235 North Main Street  
 New City, New York 10856  
 Tel: (845) 834-4999  
 Fax: (845) 834-5843  
 E-mail: info@anzly.com  
 Web: www.ANZLY.com

ATZL, NASHER & ZIGLER P.C.  
 ENGINEERS-SURVEYORS-PLANNERS  
 235 North Main Street  
 New City, New York 10856  
 Tel: (845) 834-4999  
 Fax: (845) 834-5843  
 E-mail: info@anzly.com  
 Web: www.ANZLY.com

1	04-27-21	ISSUANCE PERMIT FOR IMPLEMENTATION TEST
2	02-07-21	REV 11-13-21 FOR NOTING
3	01-29-21	FOR FOR & FOR SUBMISSION
4	11-15-21	FOR FOR & FOR SUBMISSION

PROJECT: SUEZ WATER NEW YORK, INC. CHATEAU WELL 1, 2 & 3

TOWN OF CARMEL PUTNAM COUNTY, NEW YORK

DETAILS & NOTES

DRAWN BY: JB	CHECKED BY: JMS
DATE: JULY 18, 2021	SCALE: AS SHOWN
PROJECT NO: 4874	SHEET NO: 4









TOWN OF CARMEL  
PLANNING BOARD



60 McAlpin Avenue  
Mahopac, New York 10541  
Tel. (845) 628-1500 - Ext.190  
www.ci.carmel.ny.us

REGRADING APPLICATION

SUBMIT 11 APPLICATIONS, 11 SHORT EAF FORMS, 2 DISCLOSURE ADDENDUM STATEMENTS,  
5 SITE PLANS & APPROPRIATE FEE.

PROPERTY ADDRESS: 26 GLENVUE DRIVE TAX MAP # 55.5-1-18

DATE SUBMITTED: 4/25/2012 COMMERCIAL: \_\_\_\_\_ RESIDENTIAL:  OTHER: \_\_\_\_\_

NAME OF APPLICANT: HERNANE DE ALMEIDA TELEPHONE NUMBER: 914-469-9741

APPLICANT'S ADDRESS: 26 GLENVUE DRIVE, CARMEL NY 10512

APPLICANT'S SIGNATURE: [Signature] EMAIL: HERNANE@ENGINEER.COM

NAME OF PRESENT OWNER (IF DIFFERENT FROM APPLICANT): \_\_\_\_\_

ADDRESS: 26 TELEPHONE NUMBER: \_\_\_\_\_

PROJECT PROFESSIONAL ENGINEER OF RECORD: HERNANE DE ALMEIDA, P.E.

ADDRESS: 26 GLENVUE DRIVE, CARMEL NY TELEPHONE NUMBER: 914 469 9741

EMAIL: HERNANE@ENGINEER.COM SIZE OF LOT: 60,536 sq ft (1.38 ACRES)

DESCRIPTION OF PROPOSED WORK & PURPOSE: RE-GRADE LOT TO ACCOMMODATE  
A POOL, DETACHED GARAGE AND STORM WATER MANAGEMENT GREEN PRACTICE

\*\*\*\*\*

REFER TO ATTACHED TOWN OF CARMEL CODE A FOR FURTHER REGULATIONS AND  
REQUIREMENTS.

AMOUNT OF FEE PAID: (UP TO 2 ACRES \$300.00) \$ 300.00 - Check # 101  
(FROM 2 TO 5 ACRES - \$600.00) \$ \_\_\_\_\_  
(OVER 5 ACRES \$900.00 PLUS \$40.00/ACRE) \$ \_\_\_\_\_

# Short Environmental Assessment Form

## Part 1 - Project Information

### Instructions for Completing

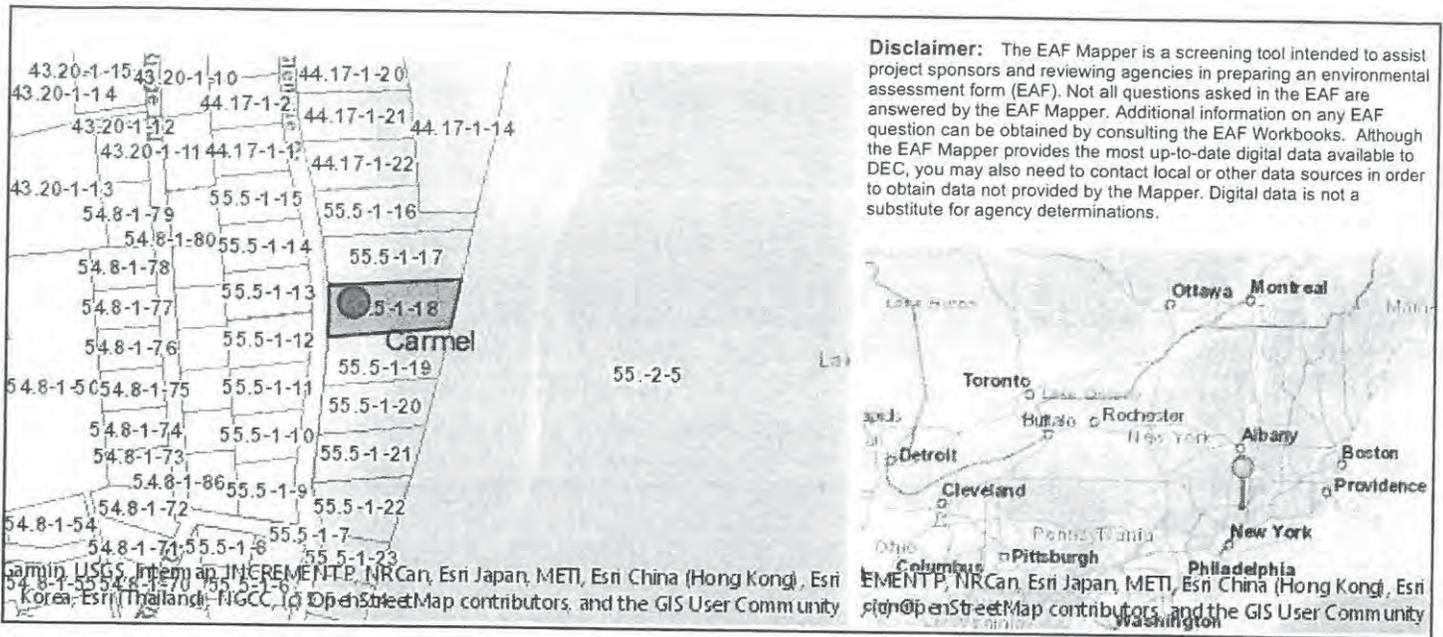
**Part 1 – Project Information.** The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available.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

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

<b>Part 1 – Project and Sponsor Information</b>			
Name of Action or Project: Improvements to 26 Glenvue Drive			
Project Location (describe, and attach a location map): 26 Glenvue Drive, Carmel NY 10512			
Brief Description of Proposed Action: The project consists of a re-grading the property to accommodate the construction of a garage, in ground pool, shed, retaining walls, patios, driveway, utilities and stormwater management facilities. The project will maintain existing drainage patterns, control any increase in the rate of stormwater runoff, and reduce potential impacts on water quality and erosion generated during and after construction.			
Name of Applicant or Sponsor: Hernane De Almeida		Telephone: 914-664-5058	
Address: 26 Glenvue Drive		E-Mail: <a href="mailto:Hernane@engineer.com">Hernane@engineer.com</a>	
City/PO: Carmel		State: NY	Zip Code: 10512
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.			NO <input checked="" type="checkbox"/>
2. Does the proposed action require a permit, approval or funding from any other government Agency? If Yes, list agency(s) name and permit or approval:			YES <input type="checkbox"/>
3. a. Total acreage of the site of the proposed action? _____ 1.35 acres			
b. Total acreage to be physically disturbed? _____ 0.95 acres			
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? _____ 1.35 acres			
4. Check all land uses that occur on, are adjoining or near the proposed action:			
5. <input type="checkbox"/> Urban <input type="checkbox"/> Rural (non-agriculture) <input type="checkbox"/> Industrial <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Residential (suburban)			
<input type="checkbox"/> Forest <input type="checkbox"/> Agriculture <input type="checkbox"/> Aquatic <input type="checkbox"/> Other(Specify):			
<input type="checkbox"/> Parkland			

5. Is the proposed action, a. A permitted use under the zoning regulations? b. Consistent with the adopted comprehensive plan?	NO	YES	N/A
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	NO	YES	
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area? If Yes, identify: _____	NO	YES	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
8. a. Will the proposed action result in a substantial increase in traffic above present levels? b. Are public transportation services available at or near the site of the proposed action? c. Are any pedestrian accommodations or bicycle routes available on or near the site of the proposed action?	NO	YES	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
9. Does the proposed action meet or exceed the state energy code requirements? If the proposed action will exceed requirements, describe design features and technologies: _____ _____	NO	YES	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
10. Will the proposed action connect to an existing public/private water supply? If No, describe method for providing potable water: _____ _____	NO	YES	
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
11. Will the proposed action connect to existing wastewater utilities? If No, describe method for providing wastewater treatment: _____ _____	NO	YES	
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
12. a. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places?  b. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory?	NO	YES	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency? b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody? If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: _____ _____ _____	NO	YES	
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	



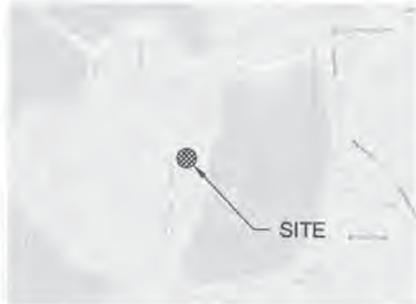


Part 1 / Question 7 [Critical Environmental Area]	No
Part 1 / Question 12a [National or State Register of Historic Places or State Eligible Sites]	No
Part 1 / Question 12b [Archeological Sites]	No
Part 1 / Question 13a [Wetlands or Other Regulated Waterbodies]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
Part 1 / Question 15 [Threatened or Endangered Animal]	Yes
Part 1 / Question 15 [Threatened or Endangered Animal - Name]	Northern Long-eared Bat
Part 1 / Question 16 [100 Year Flood Plain]	No
Part 1 / Question 20 [Remediation Site]	No

# PROPOSED IMPROVEMENTS TO 26 GLENVUE DRIVE

## PROJECT DESCRIPTION

THIS PROPOSED PROJECT IS FOR THE CONSTRUCTION OF A GARAGE WITH POOL HOUSE ABOVE, AN IN-GROUND POOL, PATIOS, WALLS AND DRIVEWAY EXTENSION. THE TOPOGRAPHY OF THE SITE WILL REQUIRE GRADING TO ACCOMMODATE THE IMPROVEMENTS AND ASSOCIATED STORMWATER MANAGEMENT. GREEN PRACTICES FOR STORMWATER MANAGEMENT ARE ALSO PROPOSED AS MITIGATION MEASURES.



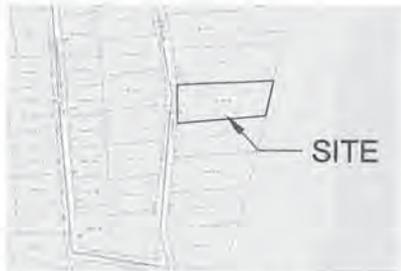
**AREA MAP**

SCALE: NTS

**LANDSCAPING PLAN NOTE**  
ENGINEER OF RECORD SHALL MEET TOWN OF CARMEL WETLAND INSPECTOR TO REVIEW LANDSCAPING PLAN PRIOR TO LANDSCAPING. INVASIVE SPECIES OF VEGETATION WILL NOT BE ALLOWED.

Lot and Bulk Requirements			
Zone:	Residential	Existing	Proposed
Lot Size:	120,000 sq. ft. (min.)	60,536 sq. ft.	60,536 sq. ft.
Lot Width:	200 feet (min)	150 ft.	150 ft.
Street Frontage:	75 feet (min)	150.7 ft.	150.7 ft.
Lot Depth:	200 feet (min)	381.3 ft.	381.3 ft.
Total Building Coverage:	15 % (max)	5 %	8 %
<b>Principle Building Setbacks</b>			
Front:	40 feet (min)	56.6 ft.	56.6 ft.
Side 1:	25 feet (min)	22.5 ft.	22.5 ft.
Side 2:	25 feet (min)	35.2 ft.	35.2 ft.
Rear:	40 feet (min)	280.8 ft.	280.8 ft.
<b>Accessory Building Setbacks</b>			
Principal Building:	40 feet (min)	N/A ft.	98.9 ft.
Side 1:	20 feet (min)	N/A ft.	20 ft.
Rear:	20 feet (min)	N/A ft.	122.1 ft.
Building Height-Feet:	35 feet (max.)	14 feet	30 feet
Garage Height-Feet:	20 feet (max.)	N/A feet	13.92 feet

Sheet Title	Sheet #
Title Sheet	1
Existing Site Plan	2
Proposed Site Plan	3
Grading Sections A-A, B-B	4
Grading Section C-C	5
Site Details	6
Site Details 2	7
Proposed Stormwater Plan	8
Stormwater Details	9
Infiltration Basin Details	10
Proposed Garage Plan	11
Proposed Pool House Plan Empty w/Struc	12
Proposed Garage Structural Plan	13
Garage/Pool House Front Elevation	14
Garage/Pool House Rear Elevation	15
Garage/Pool House Side Elevations	16
Garage/Pool House Details	17
Notes	18



**TAX MAP**

SCALE: NTS

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

GROUND SNOW LOAD	WIND SPEED	SEISMIC DESIGN CATEGORY	SUBJECT TO DAMAGE FROM				WINTER DESIGN TEMP	ICE SHIELD UNDERLAYMENT REQUIRED	FLOOD HAZARDS
			WEATHERING	FROST LINE DEPTH	TERMITE	DECAY			
30psf	100 - 110 MPH	'B'	SEVERE	3'-6"	MODERATE TO HEAVY	SLIGHT TO MODERATE	7°	YES	FIRM MAP 36079C0140E DATED 3/4/2013

REVISIONS		
NO.	DATE	DESCRIPTION

DATE: 5/16/2022

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER ANY ITEM ON THIS DRAWING AND/OR RELATED SPECIFICATION. ALL ALTERATIONS MUST BE MADE IN COMPLIANCE WITH THE NEW YORK STATE EDUCATION LAW. THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS HEREON ASSUMES NO RESPONSIBILITY FOR ANY SUCH ALTERATION OR RE-USE WITHOUT HIS CONSENT.

ALL CONDITIONS OF APPROVAL AS NOTED IN FORMAL LETTERS OF APPROVAL OR FINDINGS ARE A PART OF THE APPROVED SITE PLAN, SUBDIVISION OR VARIANCE PLATS, DRAWINGS OR PLANS, AND ARE HEREBY REFERENCED FOR ADDITIONAL APPROVAL DETAILS.

**HERNANE DE ALMEIDA**  
PROFESSIONAL ENGINEER  
26 GLENVUE DRIVE, CARMEL, NY 10512  
914-469-9741  
HERNANE@ENGINEER.COM

**MR. & MRS. DE ALMEIDA**  
26 GLENVUE DRIVE  
NY 10512

OWNER

**TITLE SHEET**

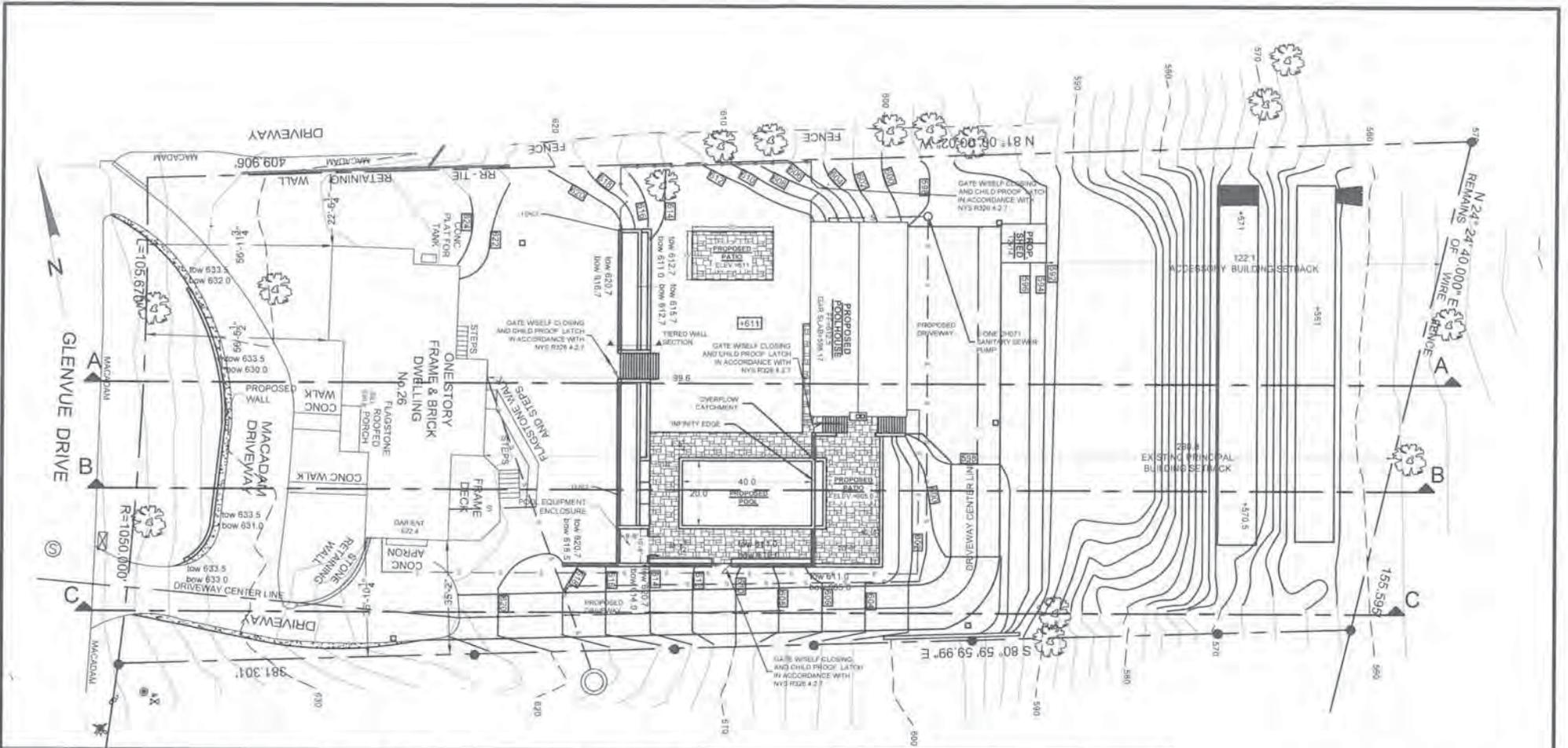
SHEET TITLE



SEAL

1  
OF  
18





**IMPORT SOIL NOTES:** NUMBER OF SAMPLES AND TYPE OF SAMPLE, DISCRETE AND COMPOSITE, WILL BE TAKEN IN ACCORDANCE WITH RECOMMENDATIONS SET FORTH IN THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION, DIVISION OF ENVIRONMENTAL REMEDIATION TECHNICAL GUIDANCE FOR SITE INVESTIGATION AND REMEDIATION (DER-10) TABLE 5.4 (E) 10. PARAMETERS AND REQUIREMENTS OF SOIL TESTING MUST BE IN ACCORDANCE WITH TITLE 8 NEW YORK CODE, RULES AND REGULATIONS PART 375(6 NYCRR PART 375). EACH OF THE DISCRETE SAMPLES SHALL BE TESTED FOR VOLATILE ORGANIC COMPOUNDS (VOCs) WHILE THE COMPOSITE SAMPLE SHALL BE TESTED FOR METALS, PCBs/PESTICIDES AND SEMI VOLATILE ORGANIC COMPOUNDS (SVOCs). FOR CONSIDERATION AND APPROVAL OF THE TOWN ENGINEER, SAMPLE RESULTS MUST BE WITHIN THE LIMITS OUTLINED IN TABLE 375-6.8(a) FOR UNRESTRICTED USE OR TABLE 375-6.8(b) RESIDENTIAL USE

DATE: 5/16/2022

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER ANY ITEM ON THIS DRAWING AND/OR RELATED SPECIFICATION. ALL ALTERATIONS MUST BE MADE IN COMPLIANCE WITH THE NEW YORK STATE EDUCATION LAW. THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS HEREON ASSUMES NO RESPONSIBILITY FOR ANY SUCH ALTERATION OR RE-USE WITHOUT HIS CONSENT.

ALL CONDITIONS OF APPROVAL AS NOTED IN FORMAL LETTERS OF APPROVAL OR FINDINGS ARE A PART OF THE APPROVED SITE PLAN. SUBDIVISION OR VARIANCE PLATS, DRAWINGS OR PLANS, AND ARE HEREBY REFERENCED FOR ADDITIONAL APPROVAL DETAILS.

SCALE: 1" = 30'

**HERNANE DE ALMEIDA**  
 PROFESSIONAL ENGINEER  
 26 GLENVUE DRIVE, CARMEL, NY 10512  
 914-469-9741  
 HERNANE@ENGINEER.COM

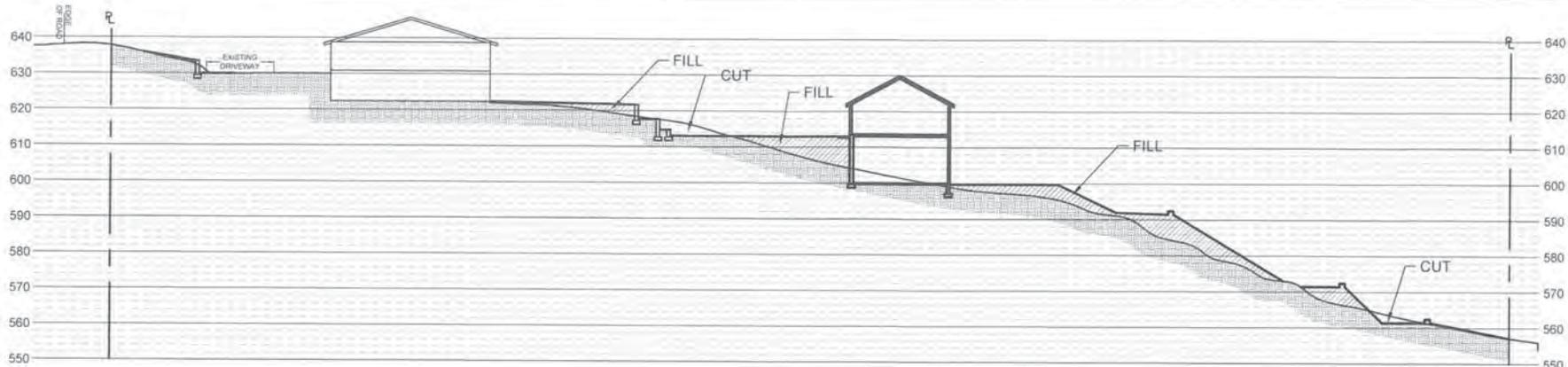
**MR. & MRS. DE ALMEIDA**  
 26 GLENVUE DRIVE  
 NY 10512  
 OWNER

**PROPOSED SITE PLAN**  
 SHEET TITLE



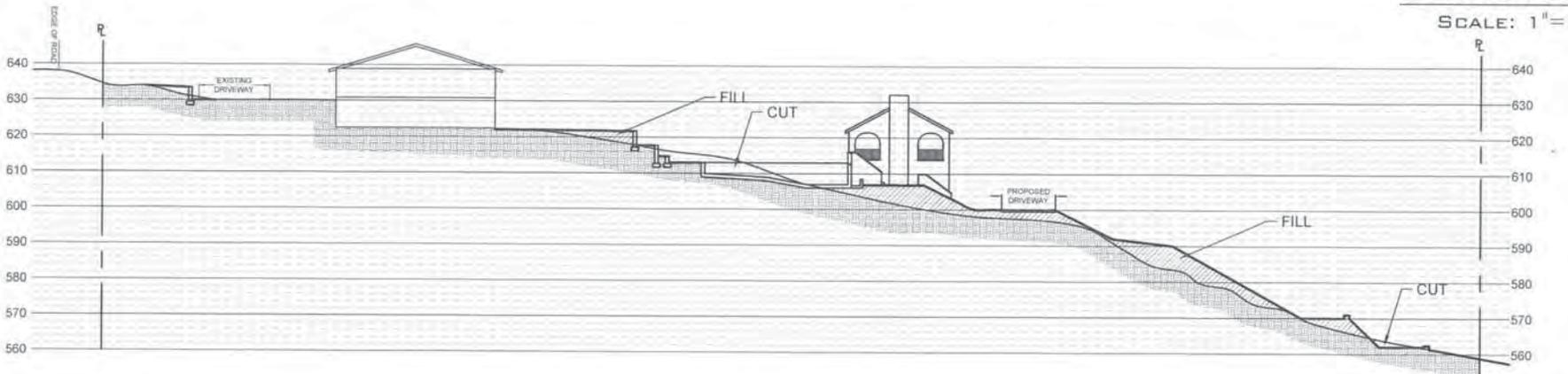
3  
 OF  
 18

SEAL



**SECTION A-A**

SCALE: 1"=30'



**SECTION B-B**

SCALE: 1"=30'

DATE: 5/16/2022

**PROJECT TOTAL CUT/FILL**  
 CUT: 677 CY  
 FILL: 2501 CY  
 NET: 1824 CY FILL

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER ANY ITEM ON THIS DRAWING AND/OR RELATED SPECIFICATION. ALL ALTERATIONS MUST BE MADE IN COMPLIANCE WITH THE NEW YORK STATE EDUCATION LAW. THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS HEREON ASSUMES NO RESPONSIBILITY FOR ANY SUCH ALTERATION OR RE-USE WITHOUT HIS CONSENT.  
 ALL CONDITIONS OF APPROVAL AS NOTED IN FORMAL LETTERS OF APPROVAL OR FINDINGS ARE A PART OF THE APPROVED SITE PLAN, SUBDIVISION OR VARIANCE PLATS, DRAWINGS OR PLANS, AND ARE HEREBY REFERENCED FOR ADDITIONAL APPROVAL DETAILS.

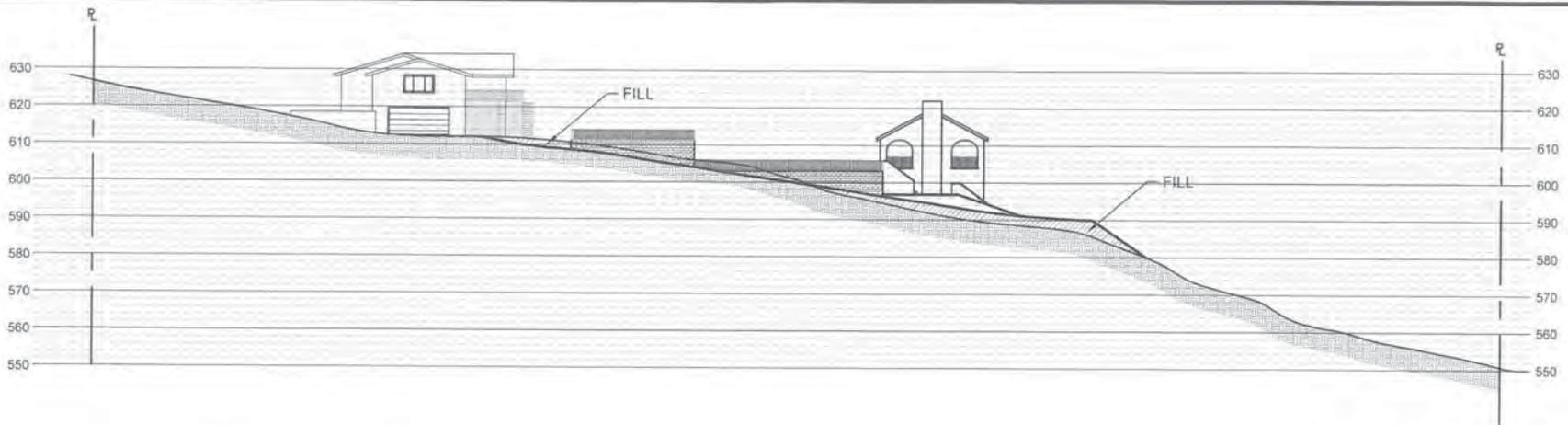
**HERNANE DE ALMEIDA**  
 PROFESSIONAL ENGINEER  
 26 GLENVUE DRIVE, CARMEL, NY 10512  
 914-469-9741  
 HERNANE@ENGINEER.COM

**MR. & MRS. DE ALMEIDA**  
 26 GLENVUE DRIVE  
 NY 10512  
 OWNER

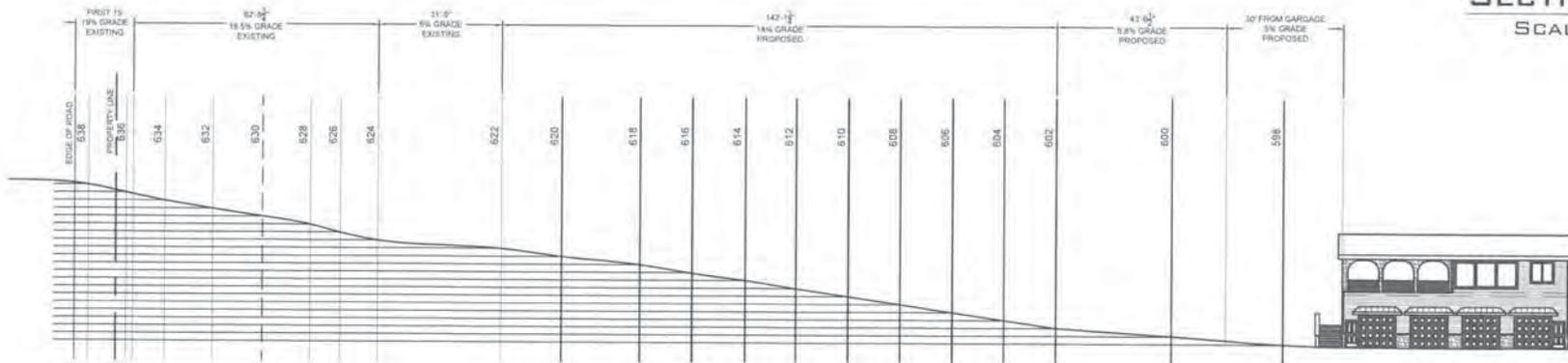
**GRADING SECTIONS A-A & B-B**  
 SHEET TITLE



**4 OF 18**



**SECTION C-C**  
SCALE: 1" = 30'



**DRIVEWAY PROFILE**  
SCALE: 1" = 30'

DATE: 5/16/2022

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER ANY ITEM ON THIS DRAWING AND/OR RELATED SPECIFICATION. ALL ALTERATIONS MUST BE MADE IN COMPLIANCE WITH THE NEW YORK STATE EDUCATION LAW. THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS HEREON ASSUMES NO RESPONSIBILITY FOR ANY SUCH ALTERATION OR RE-USE WITHOUT HIS CONSENT.

ALL CONDITIONS OF APPROVAL AS NOTED IN FORMAL LETTERS OF APPROVAL OR FINDINGS ARE A PART OF THE APPROVED SITE PLAN, SUBDIVISION OR VARIANCE PLATS, DRAWINGS OR PLANS, AND ARE HEREBY REFERENCED FOR ADDITIONAL APPROVAL DETAILS.

**HERNANE DE ALMEIDA**  
PROFESSIONAL ENGINEER  
26 GLENVUE DRIVE, CARMEL, NY 10512  
914-469-9741  
HERNANE@ENGINEER.COM

**MR. & MRS. DE ALMEIDA**  
26 GLENVUE DRIVE  
NY 10512

OWNER

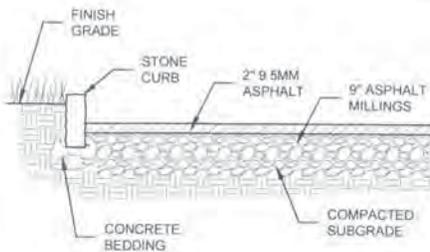
**GRADING SECTION C-C & DRIVEWAY PROFILE**

SHEET TITLE



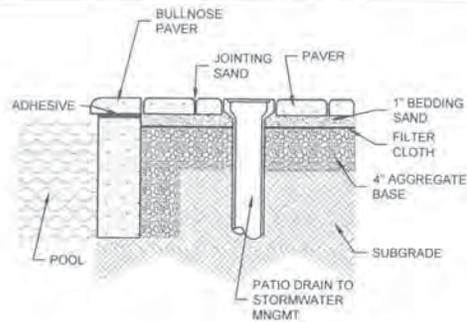
SEAL

5  
OF  
18



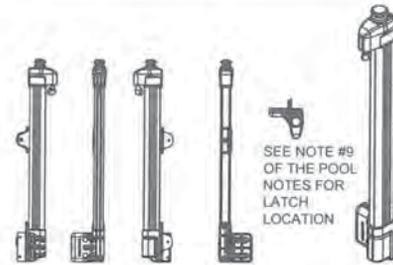
**PAVEMENT DETAIL**

SCALE: NTS



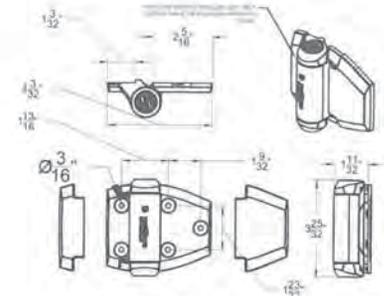
**PAVER DETAIL**

SCALE: NTS



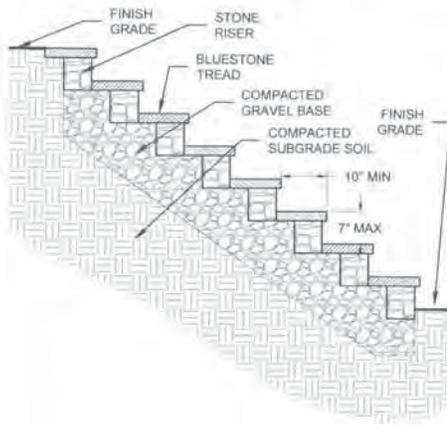
**GATE LATCH DETAIL**

SCALE: NTS



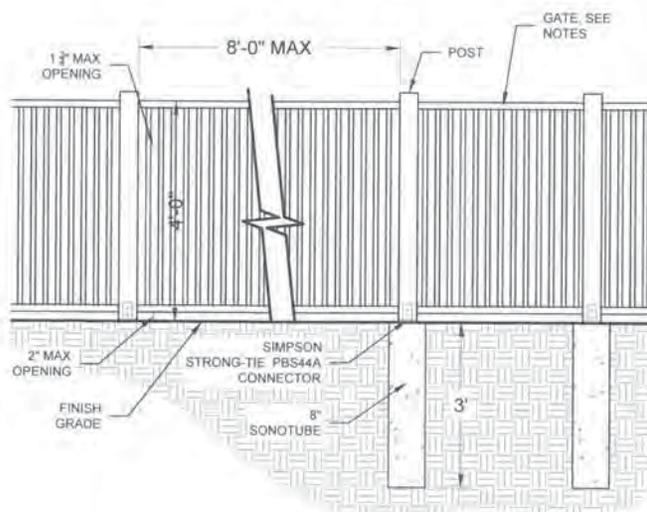
**SELF CLOSING HINGE DETAIL**

SCALE: NTS



**LANDSCAPE STAIR DETAIL**

SCALE: NTS



**FENCE DETAIL**

SCALE: NTS

**POOL NOTES**

AN OUTDOOR SWIMMING POOL, INCLUDING AN IN-GROUND, ABOVE-GROUND OR ON-GROUND POOL, HOT TUB OR SPA SHALL BE SURROUNDED BY A BARRIER WHICH SHALL COMPLY WITH THE FOLLOWING:

1. THE TOP OF THE BARRIER SHALL BE AT LEAST 48 INCHES ABOVE GRADE MEASURED ON THE SIDE OF THE BARRIER WHICH FACES AWAY FROM THE SWIMMING POOL. THE MAXIMUM VERTICAL CLEARANCE BETWEEN GRADE AND THE BOTTOM OF THE BARRIER SHALL BE 2 INCHES MEASURED ON THE SIDE OF THE BARRIER WHICH FACES AWAY FROM THE SWIMMING POOL. WHERE THE TOP OF THE POOL STRUCTURE IS ABOVE GRADE, SUCH AS AN ABOVE-GROUND POOL, THE BARRIER MAY BE AT GROUND LEVEL, SUCH AS THE POOL STRUCTURE, OR MOUNTED ON TOP OF THE POOL STRUCTURE. WHERE THE BARRIER IS MOUNTED ON TOP OF THE POOL STRUCTURE, THE MAXIMUM VERTICAL CLEARANCE BETWEEN THE TOP OF THE POOL STRUCTURE AND THE BOTTOM OF THE BARRIER SHALL BE 4 INCHES.
2. OPENINGS IN THE BARRIER SHALL NOT ALLOW PASSAGE OF A 4-INCH-DIAMETER SPHERE.
3. SOLID BARRIERS WHICH DO NOT HAVE OPENINGS, SUCH AS A MASONRY OR STONE WALL, SHALL NOT CONTAIN INDENTATIONS OR PROTRUSIONS EXCEPT FOR NORMAL CONSTRUCTION TOLERANCES AND TOOLED MASONRY JOINTS.
4. WHERE THE BARRIER IS COMPOSED OF HORIZONTAL AND VERTICAL MEMBERS AND THE DISTANCE BETWEEN THE TOPS OF THE HORIZONTAL MEMBERS IS LESS THAN 48 INCHES, THE HORIZONTAL MEMBERS SHALL BE LOCATED ON THE SWIMMING POOL SIDE OF THE FENCE. SPACING BETWEEN VERTICAL MEMBERS SHALL NOT EXCEED 13-4 INCHES IN WIDTH WHERE THERE ARE DECORATIVE CUTOUTS WITHIN VERTICAL MEMBERS. SPACING WITHIN THE CUTOUTS SHALL NOT EXCEED 13-4 INCHES IN WIDTH.
5. WHERE THE BARRIER IS COMPOSED OF HORIZONTAL AND VERTICAL MEMBERS AND THE DISTANCE BETWEEN THE TOPS OF THE HORIZONTAL MEMBERS IS 48 INCHES OR MORE, SPACING BETWEEN VERTICAL MEMBERS SHALL NOT EXCEED 4 INCHES. WHERE THERE ARE DECORATIVE CUTOUTS WITHIN VERTICAL MEMBERS, SPACING WITHIN THE CUTOUTS SHALL NOT EXCEED 13-4 INCHES IN WIDTH.
6. MAXIMUM MESH SIZE FOR CHAIN LINK FENCES SHALL BE A 21-4 INCH SQUARE UNLESS THE FENCE HAS SLATS FASTENED AT THE TOP OR THE BOTTOM WHICH REDUCE THE OPENINGS TO NOT MORE THAN 13-4 INCHES.
7. WHERE THE BARRIER IS COMPOSED OF DIAGONAL MEMBERS, SUCH AS A LATTICE FENCE, THE MAXIMUM OPENING FORMED BY THE DIAGONAL MEMBERS SHALL NOT BE MORE THAN 13-4 INCHES.
8. ALL GATES SHALL BE SELF-CLOSING. IN ADDITION, IF THE GATE IS A PEDESTRIAN ACCESS GATE, THE GATE SHALL OPEN OUTWARD, AWAY FROM THE POOL.
9. ALL GATES SHALL BE SELF-CLOSING, SELF-LATCHING, WITH THE LATCH HANDLE LOCATED WITHIN THE ENCLOSURE (I.E., ON THE POOL SIDE OF THE ENCLOSURE) AND AT LEAST 40 INCHES ABOVE GRADE. IN ADDITION, IF THE LATCH HANDLE IS LOCATED LESS THAN 54 INCHES FROM THE BOTTOM OF THE GATE, THE LATCH HANDLE SHALL BE LOCATED AT LEAST 3 INCHES BELOW THE TOP OF THE GATE, AND NEITHER THE GATE NOR THE BARRIER SHALL HAVE ANY OPENING GREATER THAN 0-8 INCH WITHIN 18 INCHES OF THE LATCH HANDLE.
10. ALL GATES SHALL BE SECURELY LOCKED WITH A KEY, COMBINATION OR OTHER CHILD PROOF LOCK SUFFICIENT TO PREVENT ACCESS TO THE SWIMMING POOL THROUGH SUCH GATE WHEN THE SWIMMING POOL IS NOT IN USE OR SUPERVISED.

DATE: 5/16/2022

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER ANY ITEM ON THIS DRAWING AND/OR RELATED SPECIFICATION. ALL ALTERATIONS MUST BE MADE IN COMPLIANCE WITH THE NEW YORK STATE EDUCATION LAW. THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS HEREON ASSUMES NO RESPONSIBILITY FOR ANY SUCH ALTERATION OR RE-USE WITHOUT HIS CONSENT.

ALL CONDITIONS OF APPROVAL AS NOTED IN FORMAL LETTERS OF APPROVAL OR FINDINGS ARE A PART OF THE APPROVED SITE PLAN, SUBDIVISION OR VARIANCE PLATS, DRAWINGS OR PLANS, AND ARE HEREBY REFERENCED FOR ADDITIONAL APPROVAL DETAILS.

**HERNANE DE ALMEIDA**  
 PROFESSIONAL ENGINEER  
 26 GLENVUE DRIVE, CARMEL, NY 10512  
 914-469-9741  
 HERNANE@ENGINEER.COM

**MR. & MRS. DE ALMEIDA**  
 26 GLENVUE DRIVE  
 NY 10512

OWNER

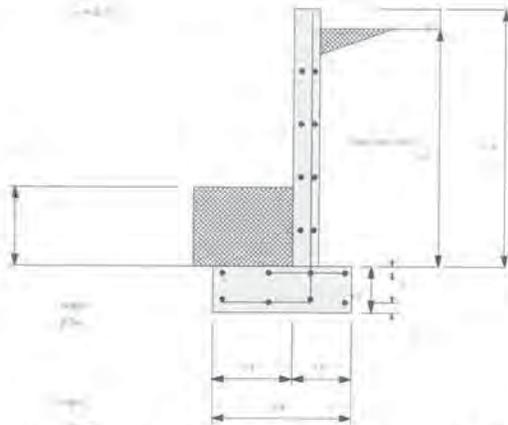
**SITE DETAILS**

SHEET TITLE



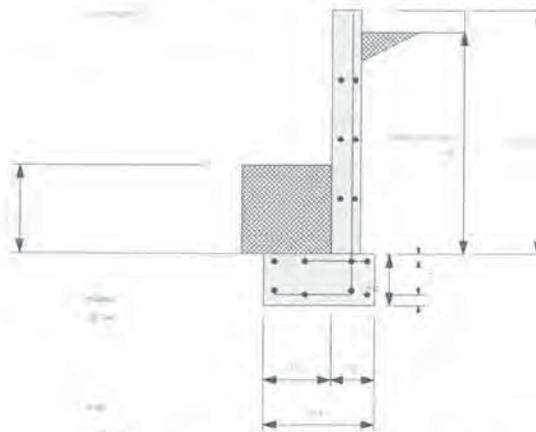
SEAL

**6 OF 18**



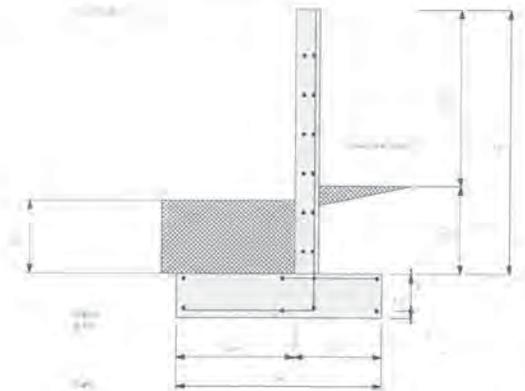
**UPPER TIERED WALL DETAIL**

SCALE: NTS



**MIDDLE TIERED WALL DETAIL**

SCALE: NTS

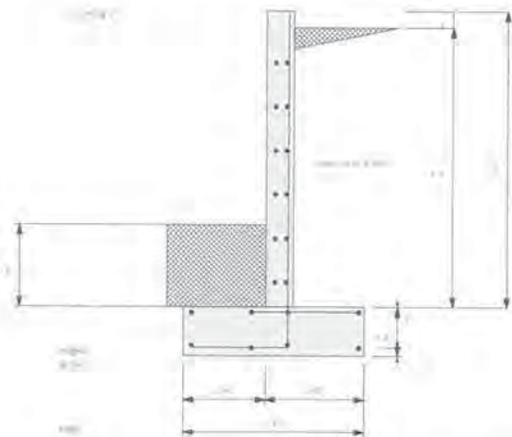


**POOL INFINITY WALL DETAIL**

SCALE: NTS

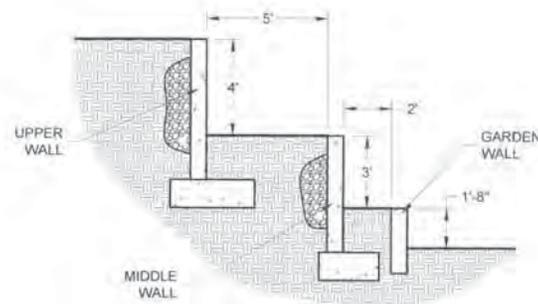
**NOTES:**

1. POOL DESIGN DEFERRED
2. RETAINING WALL OF THE INFINITY EDGE SIDE OF POOL SHALL BE CONSTRUCTED TO THE MINIMUM STANDARDS OF THIS DETAIL
3. TOP OF WALL TO BE CONSTRUCTED WITH A SHARP CREST
4. ENGINEER APPROVED CONCRETE WATERPROOFING ADMIXTURE SHALL BE PROVIDED.
5. ALL REINFORCING BARS SHALL BE EPOXY COATED



**SOUTH PATIO DECK WALL (SOUTH) DETAIL**

SCALE: NTS



**TIERED WALL SECTION**

SCALE: NTS

DATE: 5/16/2022

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER ANY ITEM ON THIS DRAWING AND/OR RELATED SPECIFICATION. ALL ALTERATIONS MUST BE MADE IN COMPLIANCE WITH THE NEW YORK STATE EDUCATION LAW. THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS HEREON ASSUMES NO RESPONSIBILITY FOR ANY SUCH ALTERATION OR RE-USE WITHOUT HIS CONSENT.

ALL CONDITIONS OF APPROVAL AS NOTED IN FORMAL LETTERS OF APPROVAL OR FINDINGS ARE A PART OF THE APPROVED SITE PLAN, SUBDIVISION OR VARIANCE PLATS, DRAWINGS OR PLANS, AND ARE HEREBY REFERENCED FOR ADDITIONAL APPROVAL DETAILS.

**HERNANE DE ALMEIDA**  
 PROFESSIONAL ENGINEER  
 26 GLENVUE DRIVE, CARMEL, NY 10512  
 914-469-9741  
 HERNANE@ENGINEER.COM

**MR. & MRS. DE ALMEIDA**  
 26 GLENVUE DRIVE  
 NY 10512

OWNER

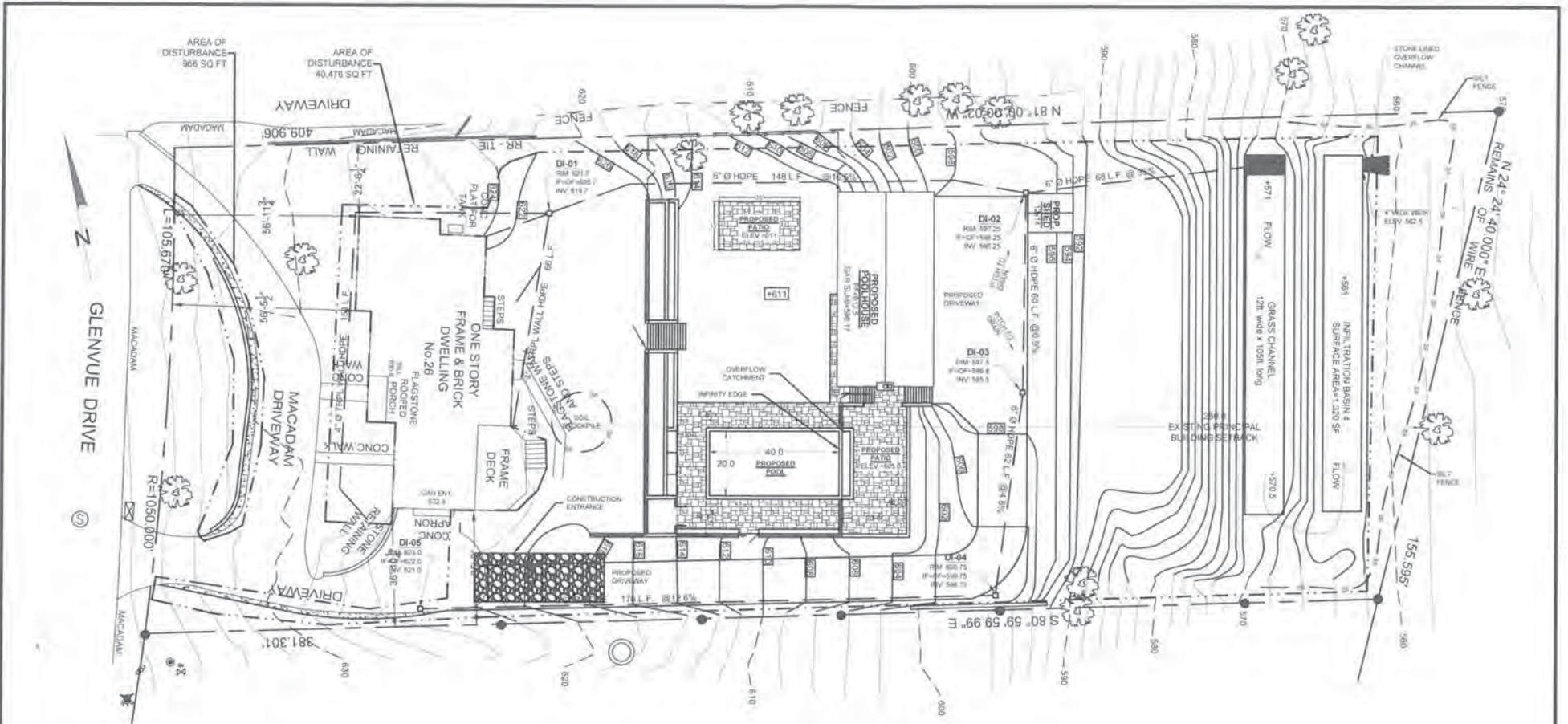
**SITE DETAILS**

SHEET TITLE



SEAL

**7**  
 OF  
**18**



- = SILT FENCE LOCATION
- - - = LIMITS OF DISTURBANCE
- = PIPE

DATE: 5/16/2022

**PROPOSED STORMWATER PLAN**  
SCALE: 1" = 30'

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER TO ALTER ANY ITEM ON THIS DRAWING AND/OR RELATED SPECIFICATION. ALL ALTERATIONS MUST BE MADE IN COMPLIANCE WITH THE NEW YORK STATE EDUCATION LAW. THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS HEREON ASSUMES NO RESPONSIBILITY FOR ANY SUCH ALTERATION OR RE-USE WITHOUT HIS CONSENT.  
ALL CONDITIONS OF APPROVAL AS NOTED IN FORMAL LETTERS OF APPROVAL OR FINDINGS ARE A PART OF THE APPROVED SITE PLAN, SUBDIVISION OR VARIANCE PLATS, DRAWINGS OR PLANS, AND ARE HEREBY REFERENCED FOR ADDITIONAL APPROVAL DETAILS.

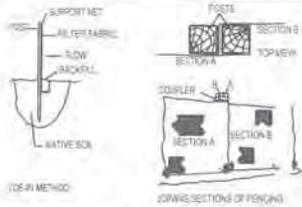
**HERNANE DE ALMEIDA**  
PROFESSIONAL ENGINEER  
26 GLENVUE DRIVE, CARMEL, NY 10512  
914-469-9741  
HERNANE@ENGINEER.COM

**MR. & MRS. DE ALMEIDA**  
26 GLENVUE DRIVE  
NY 10512  
OWNER

**PROPOSED STORMWATER PLAN**  
SHEET TITLE



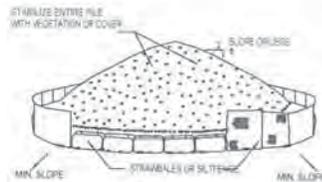
8  
OF  
18



**INSTALLATION NOTES**

1. EXCAVATE A 4 INCH \* 4 INCH TRENCH ALONG THE LOWER PERIMETER OF THE SITE
2. UNROLL A SECTION AT A TIME AND POSITION THE POSTS AGAINST THE BACK (DOWNSTREAM) WALL OF THE TRENCH (NET SIDE AWAY FROM DIRECTION OF FLOW)
3. DRIVE THE POST INTO THE GROUND UNTIL THE NETTING IS APPROXIMATELY 2 INCHES FROM THE TRENCH BOTTOM
4. LAY THE TOE-IN FLAP OF FABRIC ONTO THE UNDISTURBED BOTTOM OF THE TRENCH. BACKFILL THE TRENCH AND TAMP THE SOIL. STEEPER SLOPES REQUIRE AN INTERCEPT TRENCH
5. JOIN SECTIONS AS SHOWN ABOVE

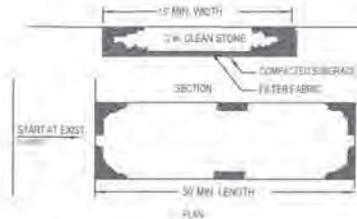
**SILT FENCE DETAIL**  
SCALE: NTS



**INSTALLATION NOTES**

1. AREA CHOSEN FOR STOCKPILING OPERATIONS SHALL BE DRY AND STABLE
2. MAXIMUM SLOPE OF STOCKPILE SHALL BE 1:2
3. UPON COMPLETION OF SOIL STOCKPILING, EACH PILE SHALL BE SURROUNDED WITH EITHER SILT FENCING OR STRAWBALES, THEN STABILIZED WITH VEGETATION OR COVERED.
4. SEE SPECIFICATIONS (THIS MANUAL) FOR INSTALLATION OF SILT FENCE

**SOIL STOCKPILE DETAIL**  
SCALE: NTS



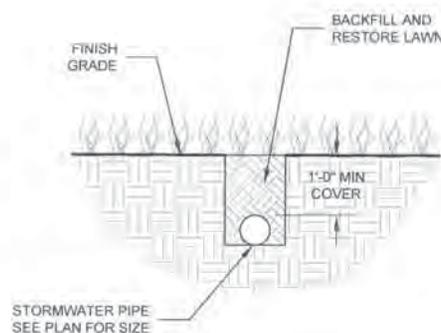
**INSTALLATION NOTES**

1. EXISTING DRIVEWAY TO BE USED AS STABILIZED CONSTRUCTION ENTRANCE. IF REQUIRED, THIS DETAIL WILL BE USED TO CONSTRUCT A STABILIZED CONSTRUCTION ENTRANCE
2. STONE SIZE - USE 3" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT
3. LENGTH - AS REQUIRED, 30 FOOT MINIMUM LENGTH
4. THICKNESS - NOT LESS THAN SIX (6) INCHES
5. WIDTH - 15 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCUR
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT OF WAY THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DRIPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT OF WAY MUST BE REMOVED IMMEDIATELY
8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

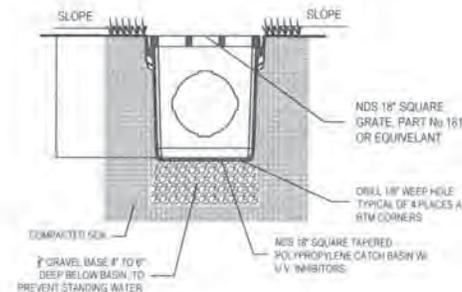
**CONSTRUCTION ENTRANCE DETAIL**  
SCALE: NTS

**STORWATER CONSTRUCTION PLAN**

1. OBTAIN PLAN APPROVAL AND OTHER APPLICABLE PERMITS.
2. FLAG THE WORK LIMITS AND MARK THE OAK TREE AND BUFFER AREA FOR PROTECTION
3. HOLD PRE-CONSTRUCTION CONFERENCE AT LEAST ONE WEEK PRIOR TO STARTING CONSTRUCTION.
4. INSTALL SILT FENCE AS PER PLAN
5. INSTALL TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT.
6. COMPLETE SITE CLEARING
7. STOCKPILE TOPSOIL AND INSTALL SEDIMENT FENCE AS NEEDED AND BEGIN ROUGH GRADING.
8. INSTALL POST CONSTRUCTION STORMWATER MANAGEMENT SYSTEM. BEGIN WITH INFILTRATION BASIN 4 WORKING UPHILL TOWARD INFILTRATION BASIN 1
9. INSTALL SILT FENCE AT THE TOE OF SLOPES UPON COMPLETION OF EACH BASIN
10. CONSTRUCT STRUCTURES AS PER PLAN
11. COMPLETE FINAL GRADING OF GROUNDS, TOPSOIL CRITICAL AREAS, AND PERMANENTLY VEGETATE, LANDSCAPE, AND MULCH.
12. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE INSPECTED WEEKLY AND AFTER RAINFALL EVENTS. NEEDED REPAIRS WILL BE MADE IMMEDIATELY.
13. AFTER THE SITE IS STABILIZED, REMOVE ALL TEMPORARY MEASURES AND INSTALL PERMANENT VEGETATION ON THE DISTURBED AREAS.
14. ESTIMATED TIME BEFORE FINAL STABILIZATION—12 MONTHS.



**PIPE TRENCH DETAIL**  
SCALE: NTS



**NOTES**

1. GRATE TO BE ATTACHED TO CATCH BASIN WITH SCREW PROVIDED AT TIME OF INSTALLATION.
2. RISER CAN BE CUT TO ACHIEVE EXACT ELEVATION
3. DO NOT USE OVER 5 RISERS WITH CATCH BASIN.
4. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS
5. DO NOT SCALE DRAWING
6. THIS DRAWING IS INTENDED FOR USE BY ARCHITECTS, ENGINEERS, CONTRACTORS, CONSULTANTS AND DESIGN PROFESSIONALS FOR PLANNING PURPOSES ONLY
7. ALL INFORMATION CONTAINED HEREIN WAS CURRENT AT THE TIME OF DEVELOPMENT BUT MUST BE REVIEWED AND APPROVED BY THE PRODUCT MANUFACTURER TO BE CONSIDERED ACCURATE.

**DRAIN INLET DETAIL**  
SCALE: NTS

DATE: 5/16/2022

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER ANY ITEM ON THIS DRAWING AND/OR RELATED SPECIFICATION. ALL ALTERATIONS MUST BE MADE IN COMPLIANCE WITH THE NEW YORK STATE EDUCATION LAW. THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS HEREON ASSUMES NO RESPONSIBILITY FOR ANY SUCH ALTERATION OR RE-USE WITHOUT HIS CONSENT.

ALL CONDITIONS OF APPROVAL AS NOTED IN FORMAL LETTERS OF APPROVAL OR FINDINGS ARE A PART OF THE APPROVED SITE PLAN, SUBDIVISION OR VARIANCE PLATS, DRAWINGS OR PLANS, AND ARE HEREBY REFERENCED FOR ADDITIONAL APPROVAL DETAILS.

**HERNANE DE ALMEIDA**  
PROFESSIONAL ENGINEER  
26 GLENVUE DRIVE, CARMEL, NY 10512  
914-469-9741  
HERNANE@ENGINEER.COM

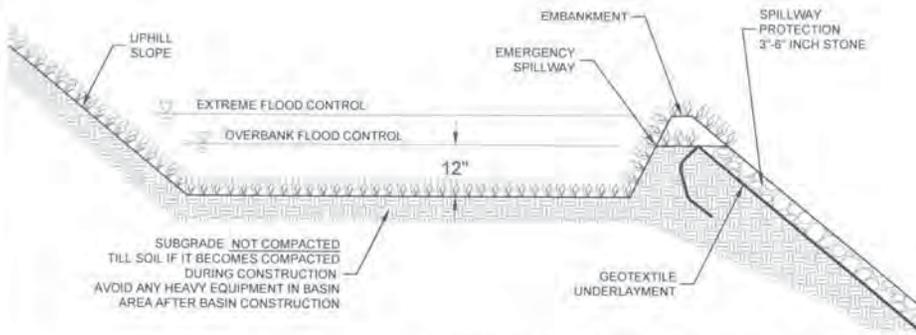
**MR. & MRS. DE ALMEIDA**  
26 GLENVUE DRIVE  
NY 10512

**STORMWATER DETAILS**  
SHEET TITLE



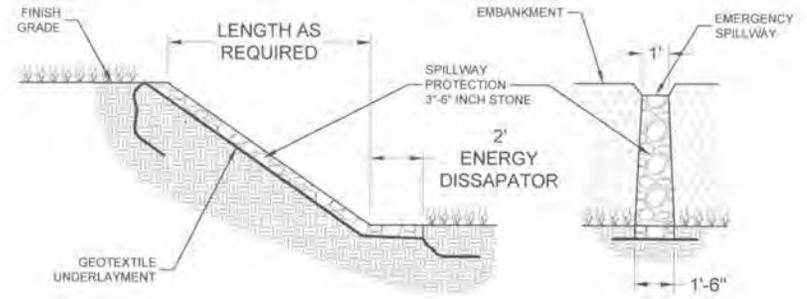
9 OF 18

SEAL



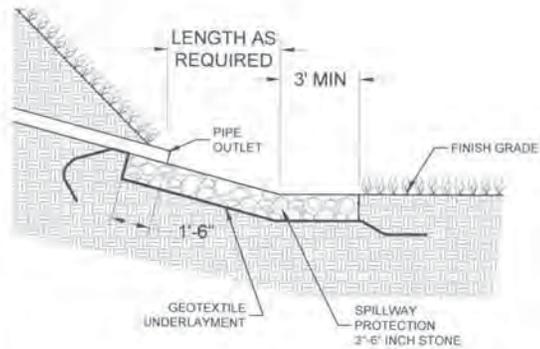
**INFILTRATION BASIN DETAIL**

SCALE: NTS



**SPILLWAY DETAIL**

SCALE: NTS



**PIPE OUTLET DETAIL**

SCALE: NTS

**STORMWATER MANAGEMENT MAINTENANCE NOTES**

THE FOLLOWING GUIDELINES SHALL BE ADHERED TO FOR THE OPERATION AND MAINTENANCE OF THE STORMWATER MANAGEMENT SYSTEM:

- i. THE OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE AND SHOULD MAINTAIN A LOG WHICH SHALL INCLUDE DETAILS OF ANY EVENTS WHICH WOULD HAVE AN EFFECT ON THE SYSTEM'S OPERATIONAL CAPACITY.
- ii. THE OPERATION AND MAINTENANCE PROCEDURE SHALL BE REVIEWED PERIODICALLY AND CHANGED TO MEET SITE CONDITIONS.
- iii. MAINTENANCE OF THE STORMWATER MANAGEMENT SYSTEM SHALL BE PERFORMED BY QUALIFIED WORKERS AND SHALL FOLLOW APPLICABLE OCCUPATIONAL HEALTH AND SAFETY REQUIREMENTS.
- iv. DEBRIS REMOVED FROM THE STORMWATER MANAGEMENT SYSTEM SHALL BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE LAWS AND REGULATIONS.

- A. **MINOR MAINTENANCE**  
THE FOLLOWING SUGGESTED SCHEDULE SHOULD BE FOLLOWED FOR ROUTINE MAINTENANCE DURING THE REGULAR OPERATION OF THE STORMWATER SYSTEM

FREQUENCY	ACTION
MONTHLY IN FIRST YEAR	CHECK INLETS, OUTLETS AND SUMPS FOR CLOGGING AND REMOVE ANY DEBRIS, AS REQUIRED
SPRING AND FALL	CHECK INLETS, OUTLETS AND SUMPS FOR CLOGGING AND REMOVE ANY DEBRIS, AS REQUIRED

B. **MAJOR MAINTENANCE**

THE FOLLOWING SUGGESTED MAINTENANCE SCHEDULE SHOULD BE FOLLOWED TO MAINTAIN THE PERFORMANCE OF THE STORMWATER MANAGEMENT CHAMBERS. ADDITIONAL WORK MAY BE NECESSARY DUE TO INSUFFICIENT PERFORMANCE AND OTHER ISSUES THAT MIGHT BE FOUND DURING THE INSPECTION OF THE STORMWATER MANAGEMENT CHAMBERS.

	FREQUENCY	ACTION
INLETS, OUTLETS AND SUMPS	EVERY 2 YEARS	OBTAIN DOCUMENTATION THAT THE INLETS, OUTLETS AND VENTS HAVE BEEN CLEANED AND WILL FUNCTION AS INTENDED.
	SPRING AND FALL	CHECK INLET AND OUTLETS FOR CLOGGING AND REMOVE ANY DEBRIS AS REQUIRED.
INFILTRATION BASIN	2 YEARS AFTER COMMISSIONING	INSPECT THE SURFACE SOIL OF THE INFILTRATION BASIN FOR FINE BEDDING OR ANY OBSTRUCTION TO WATER INFILTRATION. CHECK SPILLWAYS, ENSURE THEY ARE FREE OF DEBRIS AND NO EROSION EXISTS.
	4 YEARS AFTER COMMISSIONING AND EVERY 4 YEARS FOLLOWING	OBTAIN DOCUMENTATION THAT THE STORMWATER MANAGEMENT PRACTICE FUNCTIONS AS ANTICIPATED.  AERATE SOIL AND SEED AS NECESSARY.
SURROUNDING SITE	MONTHLY IN 1ST YEAR	CHECK FOR DEPRESSIONS IN AREAS OVER AND SURROUNDING THE STORMWATER MANAGEMENT SYSTEM. IF FOUND, REPORT THEM TO A NY'S LICENSED PROFESSIONAL ENGINEER FOR AN EVALUATION AND RECOMMENDATIONS.
	WEEKLY	CONFIRM THAT NO UNAUTHORIZED MODIFICATIONS HAVE BEEN PERFORMED TO THE SITE.  CHECK FOR DEPRESSIONS IN AREAS OVER AND SURROUNDING THE STORMWATER MANAGEMENT SYSTEM. IF FOUND, REPORT THEM TO A NY'S LICENSED PROFESSIONAL ENGINEER FOR AN EVALUATION AND RECOMMENDATIONS.

DATE: 5/16/2022

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER ANY ITEM ON THIS DRAWING AND/OR RELATED SPECIFICATION. ALL ALTERATIONS MUST BE MADE IN COMPLIANCE WITH THE NEW YORK STATE EDUCATION LAW. THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS HEREON ASSUMES NO RESPONSIBILITY FOR ANY SUCH ALTERATION OR RE-USE WITHOUT HIS CONSENT.

ALL CONDITIONS OF APPROVAL, AS NOTED IN FORMAL LETTERS OF APPROVAL OR FINDINGS ARE A PART OF THE APPROVED SITE PLAN, SUBDIVISION OR VARIANCE PLATS, DRAWINGS OR PLANS, AND ARE HEREBY REFERENCED FOR ADDITIONAL APPROVAL DETAILS.

**HERNANE DE ALMEIDA**  
PROFESSIONAL ENGINEER  
26 GLENVUE DRIVE, CARMEL, NY 10512  
914-469-9741  
HERNANE@ENGINEER.COM

**MR. & MRS. DE ALMEIDA**  
26 GLENVUE DRIVE  
NY 10512

OWNER

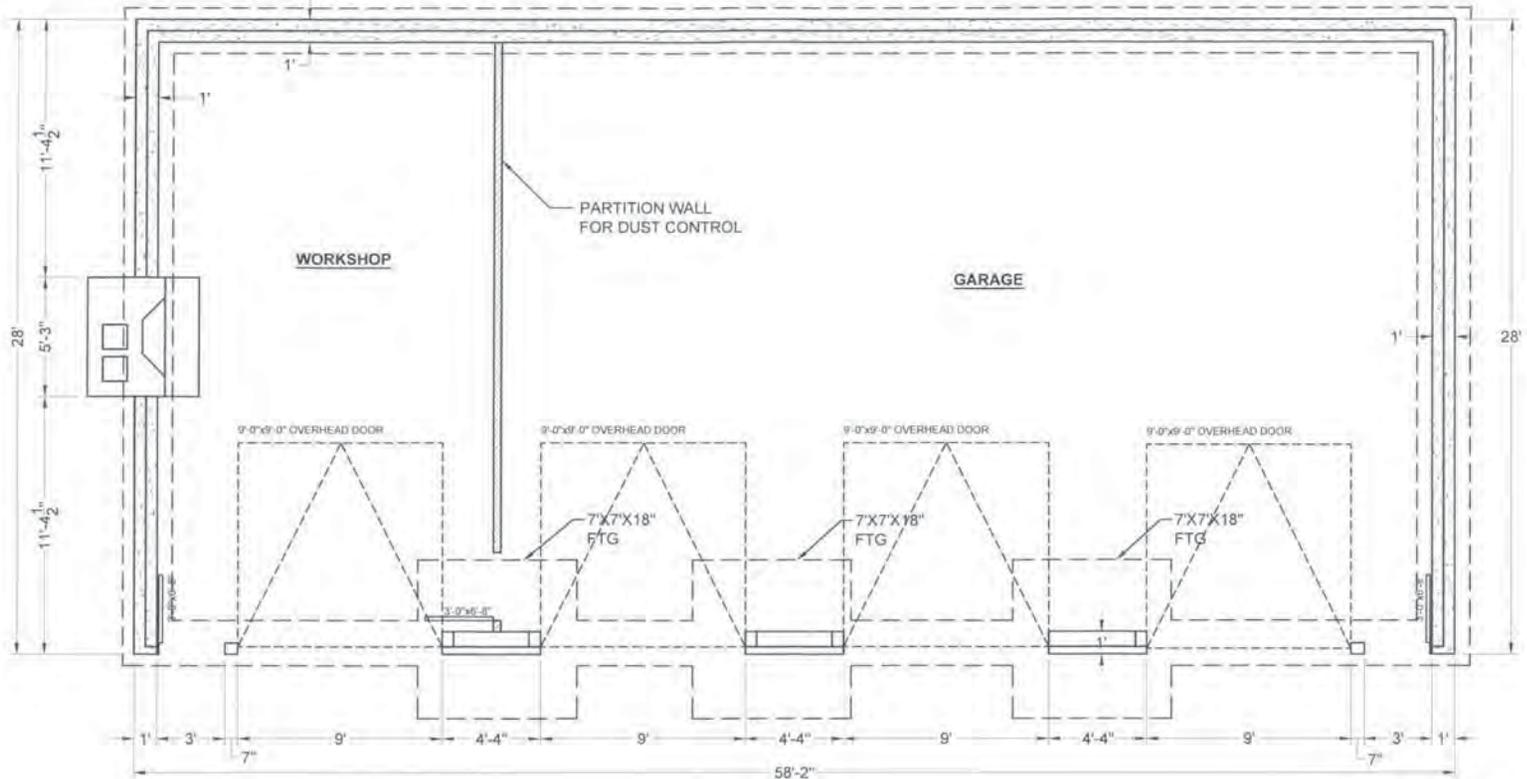
**STORMWATER DETAILS**

SHEET TITLE



SEAL

10  
OF  
18



DATE: 5/16/2022

**GARAGE FOUNDATION PLAN**

SCALE: 1/8" = 1'-0"

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER ANY ITEM ON THIS DRAWING AND/OR RELATED SPECIFICATION. ALL ALTERATIONS MUST BE MADE IN COMPLIANCE WITH THE NEW YORK STATE EDUCATION LAW. THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS HEREON ASSUMES NO RESPONSIBILITY FOR ANY SUCH ALTERATION OR RE-USE WITHOUT HIS CONSENT.

ALL CONDITIONS OF APPROVAL AS NOTED IN FORMAL LETTERS OF APPROVAL OR FINDINGS ARE A PART OF THE APPROVED SITE PLAN, SUBDIVISION OR VARIANCE PLATS, DRAWINGS OR PLANS, AND ARE HEREBY REFERENCED FOR ADDITIONAL APPROVAL DETAILS.

**HERNANE DE ALMEIDA**  
 PROFESSIONAL ENGINEER  
 26 GLENVUE DRIVE, CARMEL, NY 10512  
 914-469-9741  
 HERNANE@ENGINEER.COM

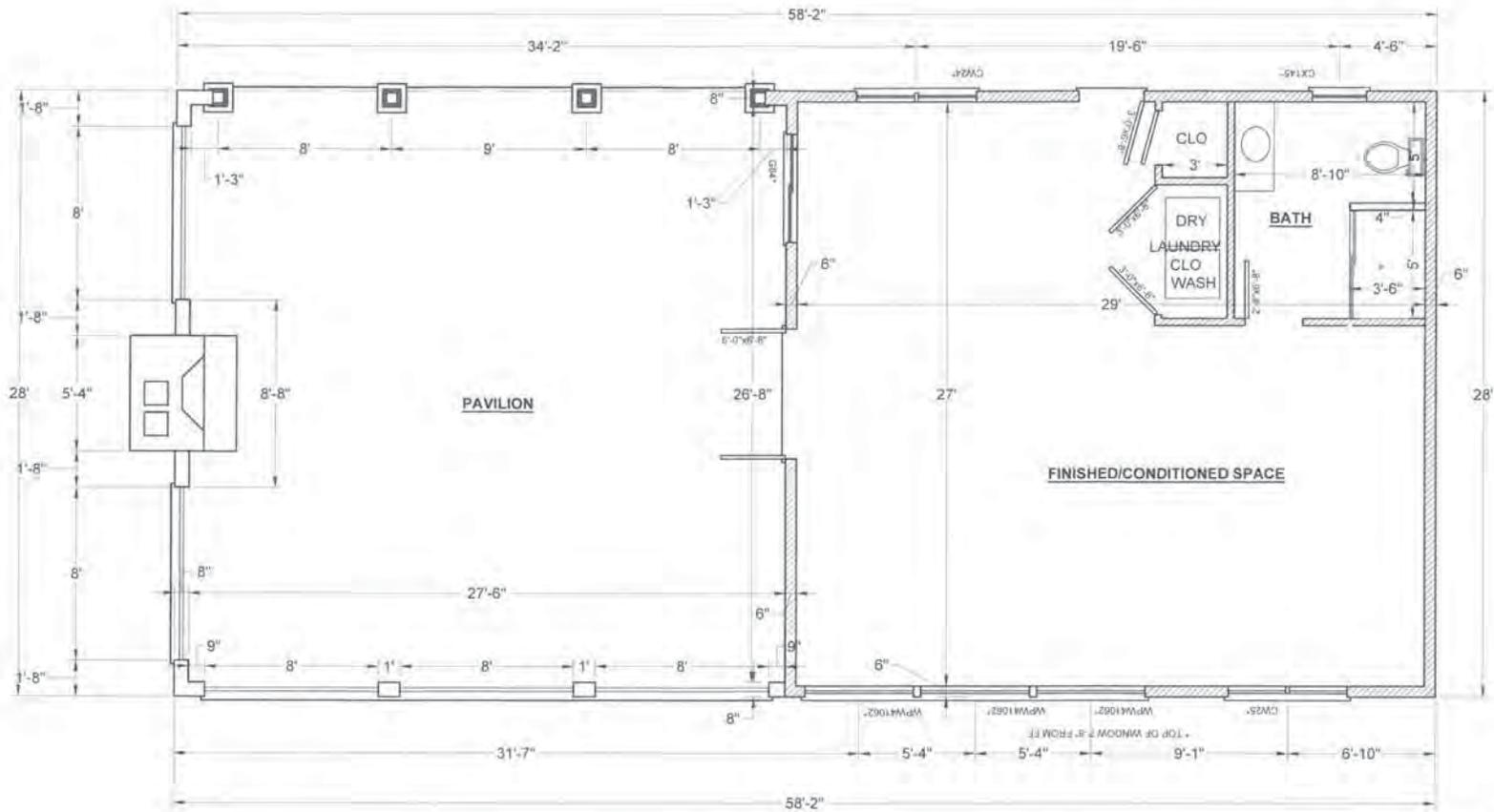
**MR. & MRS. DE ALMEIDA**  
 26 GLENVUE DRIVE  
 NY 10512  
 OWNER

**PROPOSED GARAGE PLAN**  
 SHEET TITLE



11  
 OF  
 18

SEAL



DATE: 5/16/2022

**PROPOSED FIRST FLOOR  
(ABOVE GARAGE)**

SCALE: 3/16" = 1'-0"

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER ANY ITEM ON THIS DRAWING AND/OR RELATED SPECIFICATION. ALL ALTERATIONS MUST BE MADE IN COMPLIANCE WITH THE NEW YORK STATE EDUCATION LAW. THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS HEREON ASSUMES NO RESPONSIBILITY FOR ANY SUCH ALTERATION OR RE-USE WITHOUT HIS CONSENT.

ALL CONDITIONS OF APPROVAL AS NOTED IN FORMAL LETTERS OF APPROVAL OR FINDINGS ARE A PART OF THE APPROVED SITE PLAN, SUBDIVISION OR VARIANCE PLATS, DRAWINGS OR PLANS, AND ARE HEREBY REFERENCED FOR ADDITIONAL APPROVAL DETAILS.

**HERNANE DE ALMEIDA**  
PROFESSIONAL ENGINEER  
26 GLENVUE DRIVE, CARMEL, NY 10512  
914-469-9741  
HERNANE@ENGINEER.COM

**MR. & MRS.  
DE ALMEIDA**  
26 GLENVUE DRIVE  
NY 10512

OWNER

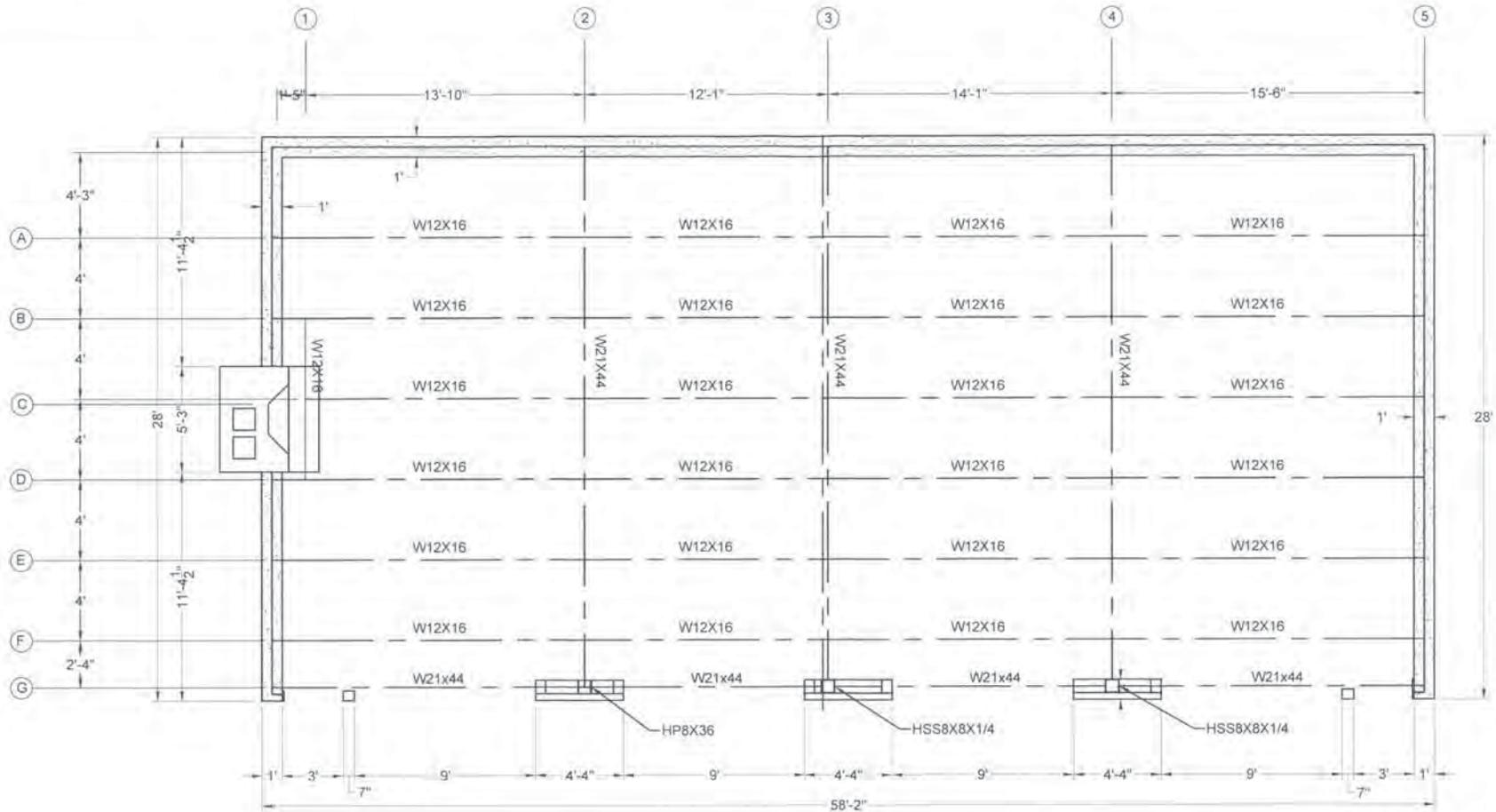
**PROPOSED  
GARAGE PLAN**

SHEET TITLE



SEAL

12  
OF  
18



DATE: 5/16/2022

**GARAGE STRUCTURAL PLAN**

SCALE: 1/8" = 1'-0"

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER ANY ITEM ON THIS DRAWING AND/OR RELATED SPECIFICATION. ALL ALTERATIONS MUST BE MADE IN COMPLIANCE WITH THE NEW YORK STATE EDUCATION LAW. THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS HEREON ASSUMES NO RESPONSIBILITY FOR ANY SUCH ALTERATION OR RE-USE WITHOUT HIS CONSENT.

ALL CONDITIONS OF APPROVAL AS NOTED IN FORMAL LETTERS OF APPROVAL OR FINDINGS ARE A PART OF THE APPROVED SITE PLAN, SUBDIVISION OR VARIANCE PLATS, DRAWINGS OR PLANS, AND ARE HEREBY REFERENCED FOR ADDITIONAL APPROVAL DETAILS.

**HERNANE DE ALMEIDA**  
 PROFESSIONAL ENGINEER  
 26 GLENVUE DRIVE, CARMEL, NY 10512  
 914-469-9741  
 HERNANE@ENGINEER.COM

**MR. & MRS. DE ALMEIDA**  
 26 GLENVUE DRIVE  
 NY 10512

OWNER

**PROPOSED GARAGE STRUCTURAL PLAN**

SHEET TITLE



SEAL

13  
 OF  
 18



DATE: 5/16/2022

**PROPOSED GARAGE/POOL  
HOUSE FRONT ELEVATION**

SCALE: 3/16" = 1'-0"

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER ANY ITEM ON THIS DRAWING AND/OR RELATED SPECIFICATION. ALL ALTERATIONS MUST BE MADE IN COMPLIANCE WITH THE NEW YORK STATE EDUCATION LAW. THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS HEREON ASSUMES NO RESPONSIBILITY FOR ANY SUCH ALTERATION OR RE-USE WITHOUT HIS CONSENT.

ALL CONDITIONS OF APPROVAL AS NOTED IN FORMAL LETTERS OF APPROVAL OR FINDINGS ARE A PART OF THE APPROVED SITE PLAN, SUBDIVISION OR VARIANCE PLATS, DRAWINGS OR PLANS, AND ARE HEREBY REFERENCED FOR ADDITIONAL APPROVAL DETAILS.

**HERNANE DE ALMEIDA**  
PROFESSIONAL ENGINEER  
26 GLENVUE DRIVE, CARMEL, NY 10512  
914-469-9741  
HERNANE@ENGINEER.COM

**MR. & MRS.  
DE ALMEIDA**  
26 GLENVUE DRIVE  
NY 10512

OWNER

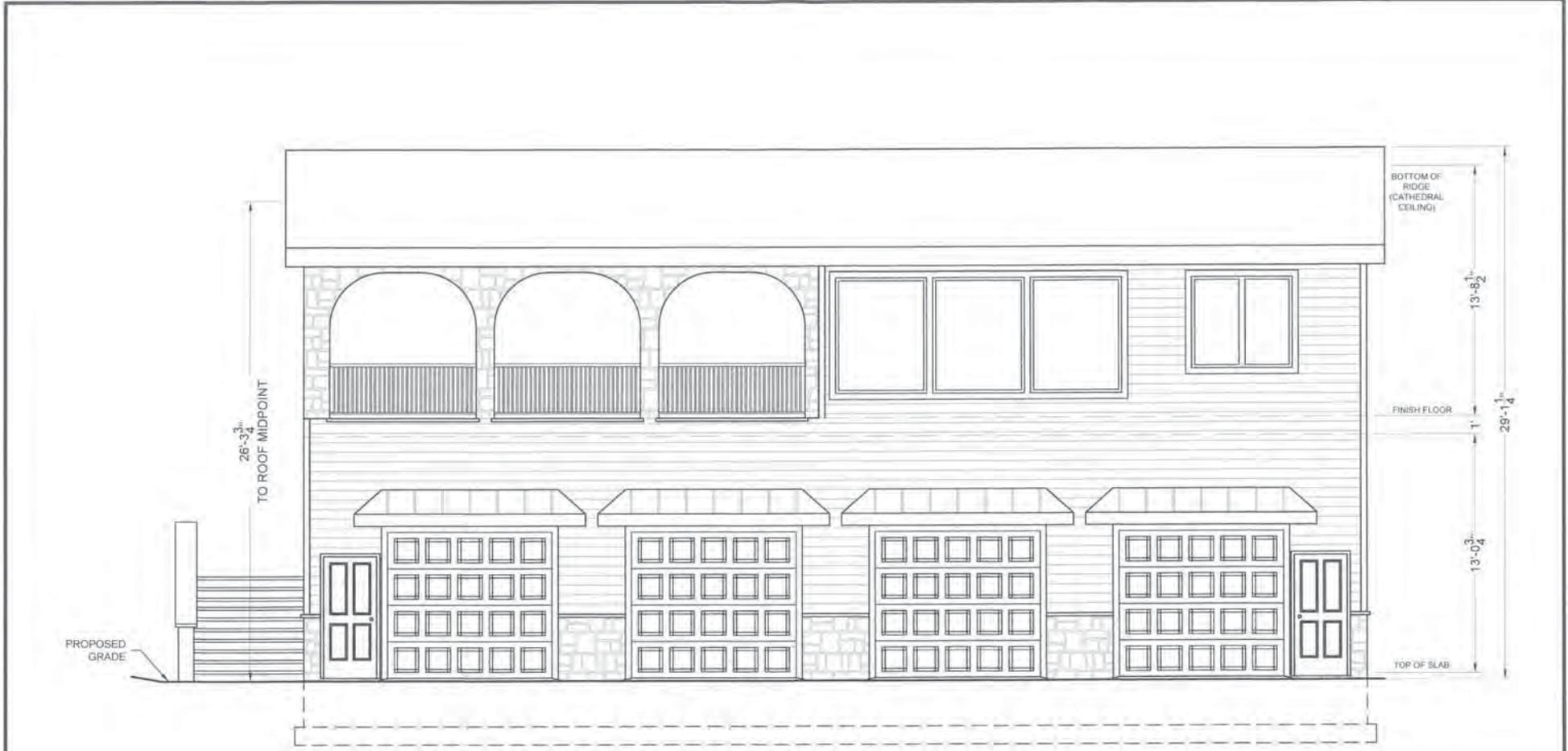
**PROPOSED GARAGE/  
POOL HOUSE FRONT  
ELEVATION**

SHEET TITLE



SEAL

14  
OF  
18



DATE: 5/16/2022

**PROPOSED GARAGE/POOL  
HOUSE REAR ELEVATION**

SCALE: 3/16" = 1'-0"

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER ANY ITEM ON THIS DRAWING AND/OR RELATED SPECIFICATION. ALL ALTERATIONS MUST BE MADE IN COMPLIANCE WITH THE NEW YORK STATE EDUCATION LAW. THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS HEREON ASSUMES NO RESPONSIBILITY FOR ANY SUCH ALTERATION OR RE-USE WITHOUT HIS CONSENT.  
ALL CONDITIONS OF APPROVAL AS NOTED IN FORMAL LETTERS OF APPROVAL OR FINDINGS ARE A PART OF THE APPROVED SITE PLAN, SUBDIVISION OR VARIANCE PLATS, DRAWINGS OR PLANS, AND ARE HEREBY REFERENCED FOR ADDITIONAL APPROVAL DETAILS.

**HERNANE DE ALMEIDA**  
PROFESSIONAL ENGINEER  
26 GLENVUE DRIVE, CARMEL, NY 10512  
914-469-9741  
HERNANE@ENGINEER.COM

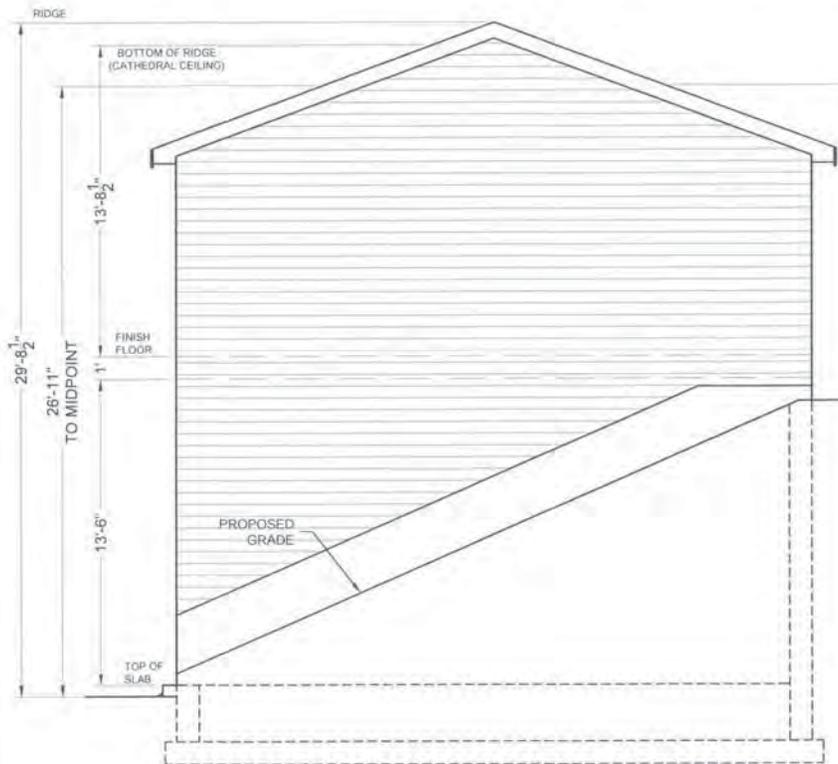
**MR. & MRS.  
DE ALMEIDA**  
26 GLENVUE DRIVE  
NY 10512  
OWNER

**PROPOSED GARAGE/  
POOL HOUSE REAR  
ELEVATION**  
SHEET TITLE



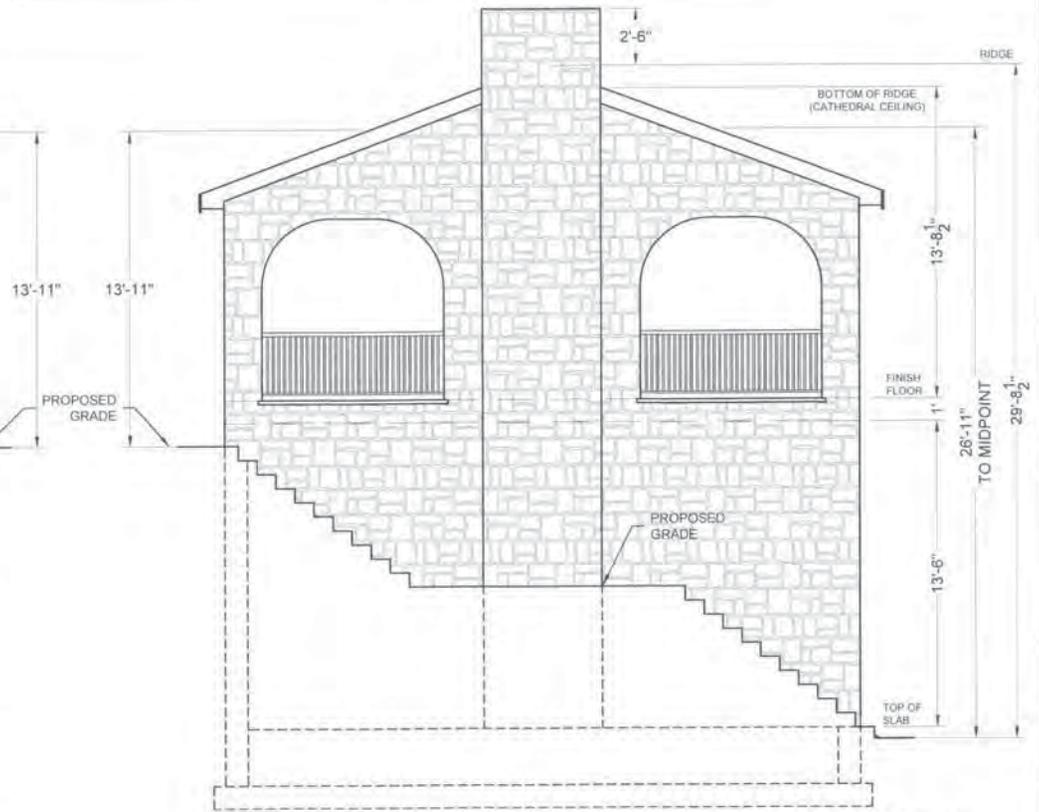
SEAL

15  
OF  
18



**PROPOSED GARAGE/POOL  
HOUSE LEFT ELEVATION**

SCALE: 3/16" = 1'-0"



**PROPOSED GARAGE/POOL  
HOUSE RIGHT ELEVATION**

SCALE: 3/16" = 1'-0"

DATE: 5/16/2022

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER ANY ITEM ON THIS DRAWING AND/OR RELATED SPECIFICATION. ALL ALTERATIONS MUST BE MADE IN COMPLIANCE WITH THE NEW YORK STATE EDUCATION LAW. THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS HEREON ASSUMES NO RESPONSIBILITY FOR ANY SUCH ALTERATION OR RE-USE WITHOUT HIS CONSENT.

ALL CONDITIONS OF APPROVAL AS NOTED IN FORMAL LETTERS OF APPROVAL OR FINDINGS ARE A PART OF THE APPROVED SITE PLAN, SUBDIVISION OR VARIANCE PLATS, DRAWINGS OR PLANS, AND ARE HEREBY REFERENCED FOR ADDITIONAL APPROVAL DETAILS.

**HERNANE DE ALMEIDA**  
PROFESSIONAL ENGINEER  
26 GLENVUE DRIVE, CARMEL, NY 10512  
914-469-9741  
HERNANE@ENGINEER.COM

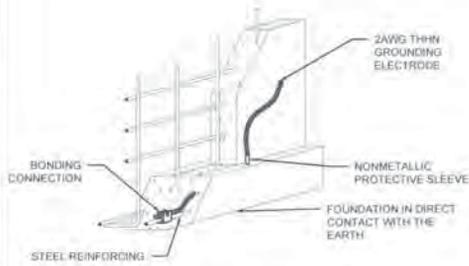
**MR. & MRS.  
DE ALMEIDA**  
26 GLENVUE DRIVE  
NY 10512  
OWNER

**PROPOSED GARAGE/  
POOL HOUSE SIDE  
ELEVATIONS**  
SHEET TITLE



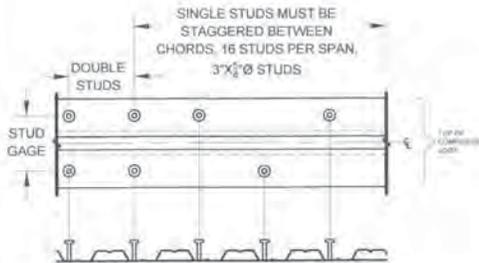
SEAL

16  
OF  
18



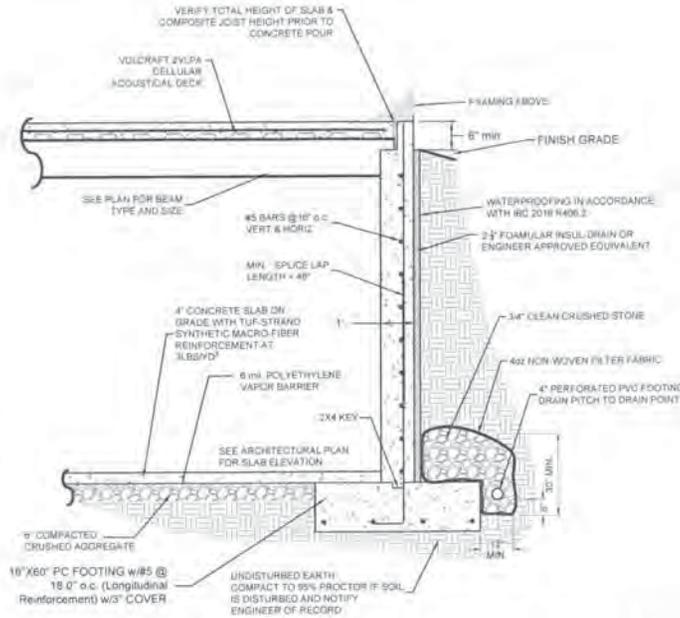
**BONDING DETAIL**

SCALE: NTS



**SHEAR STUD DETAIL**

SCALE: NTS

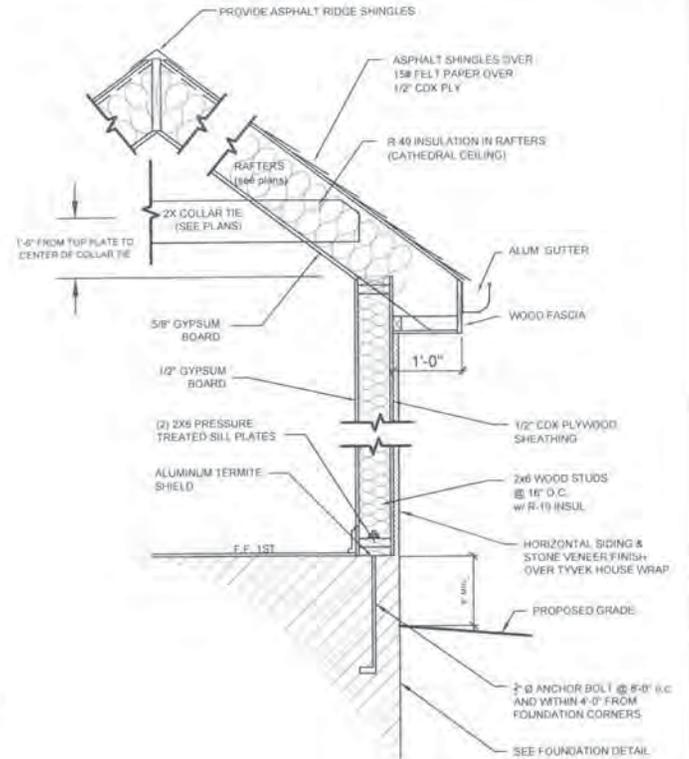


**FOUNDATION DETAIL**

SCALE: NTS

\*ACCEPTABLE WATERPROOFING (IRC 2015 R406.2) IN ACCORDANCE WITH ONE OF THE FOLLOWING:

1. TWO-PLY HOT-MOPPED FELTS.
  2. FIFTY-FIVE-POUND (25 KG) ROLL ROOFING.
  3. SIX-MIL (0.15 MM) POLYVINYL CHLORIDE.
  4. SIX-MIL (0.15 MM) POLYETHYLENE.
  5. FORTY-MIL (1 MM) POLYMER-MODIFIED ASPHALT.
  6. SIXTY-MIL (1.5 MM) FLEXIBLE POLYMER CEMENT.
  7. ONE-EIGHTH-INCH (3 MM) CEMENT-BASED, FIBER-REINFORCED, WATERPROOF COATING.
  8. SIXTY-MIL (1.5 MM) SOLVENT-FREE LIQUID-APPLIED SYNTHETIC RUBBER.
- ALL JOINTS IN MEMBRANE WATERPROOFING SHALL BE LAPPED AND SEALED WITH AN ADHESIVE COMPATIBLE WITH THE MEMBRANE.



**WALL DETAIL**

SCALE: NTS

DATE: 5/16/2022

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER ANY ITEM ON THIS DRAWING AND/OR RELATED SPECIFICATION. ALL ALTERATIONS MUST BE MADE IN COMPLIANCE WITH THE NEW YORK STATE EDUCATION LAW. THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS HEREON ASSUMES NO RESPONSIBILITY FOR ANY SUCH ALTERATION OR RE-USE WITHOUT HIS CONSENT.

ALL CONDITIONS OF APPROVAL AS NOTED IN FORMAL LETTERS OF APPROVAL OR FINDINGS ARE A PART OF THE APPROVED SITE PLAN, SUBDIVISION OR VARIANCE PLATS, DRAWINGS OR PLANS, AND ARE HEREBY REFERENCED FOR ADDITIONAL APPROVAL DETAILS.

**HERNANE DE ALMEIDA**  
 PROFESSIONAL ENGINEER  
 26 GLENVUE DRIVE, CARMEL, NY 10512  
 914-469-9741  
 HERNANE@ENGINEER.COM

**MR. & MRS. DE ALMEIDA**  
 26 GLENVUE DRIVE  
 NY 10512

OWNER

**PROPOSED GARAGE DETAILS**

SHEET TITLE

	17
	OF
18	SEAL

GENERAL NOTES

1. THE CONTRACTOR USING THESE DRAWINGS SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE (IBC) AS ADOPTED BY THE STATE OF NEW YORK, INCLUDING THE UNIFORM FIRE PREVENTION AND BUILDING CODE, THE ENERGY CONSERVATION CONSTRUCTION CODE AND LOCAL BUILDING CODES HAVING JURISDICTION. THIS SHALL NOT BE CONSTRUED TO MEAN THAT ANY REQUIREMENTS SET FORTH ON THE DRAWINGS MAY BE MODIFIED BECAUSE THEY ARE MORE STRINGENT THAN THE CODE REQUIREMENTS OR BECAUSE THEY ARE NOT SPECIFICALLY REQUIRED BY CODE. IF THE CONTRACTOR DOES NOT HAVE ACCESS TO THE DOCUMENTS, HE OR SHE SHOULD CONTACT THE PROFESSIONAL OF RECORD FOR DIRECTIONS TO SOURCES. THESE SPECIFICATIONS ARE MADE IN GENERAL FORM ONLY AND NOT SPECIFICALLY FOR ONE BUILDING. THE OWNER IN APPLYING THESE SPECIFICATIONS ASSUMES COMPLETE RESPONSIBILITY FOR THEIR USE, CHANGE OR OMISSIONS.

2. CONTRACTOR SHALL VERIFY ALL CONDITIONS PRIOR TO THE START OF WORK AND THEY SHALL FAMILIARIZE THEMSELVES WITH THE INTENT OF THE DRAWINGS AND SPECIFICATIONS AND MAKE THE WORK ACCORD WITH THE SAME BEFORE ORDERING ANY MATERIAL OR DOING ANY WORK. THE CONTRACTOR IS RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB. THE PROFESSIONAL OF RECORD OR ENGINEER OF RECORD MAY BE NOTIFIED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN BY THESE DRAWINGS. THE CONTRACTOR SHALL NOT SCALE OFF DRAWINGS. ALL WRITTEN DIMENSION SHALL HAVE PRECEDENCE OVER GRAPHIC SCALED DIMENSIONS. SHOULD THE CONTRACTOR DISCOVER THE DESIGNER OF RECORD OR UNDERSTANDING WITHIN A REASONABLE TIME, THE CONTRACTOR WILL BE RESPONSIBLE FOR THE COST OF RECTIFYING SUCH ERRORS.

3. SHOULD ANY CONTRADICTION OR AMBIGUITY OCCUR IN OR BETWEEN THE DRAWINGS AND SPECIFICATIONS, THE PROFESSIONAL OF RECORD AND THE DESIGNER OF RECORD SHALL BE FINAL, AND BINDING ON BOTH PARTIES.

4. THE CONTRACTOR PERFORMING THE WORK SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES BEFORE COMMENCEMENT OF WORK. CONTRACTORS ARE TO FILE INSURANCE CERTIFICATE. AT THE COMPLETION OF WORK, THEY SHALL HAVE THE NECESSARY APPROVALS FROM THE APPROPRIATE AGENCY AND SHALL FILE AND OBTAIN A CERTIFICATE OF COMPLETION.

5. A PERMIT CARD, BEARING THE PERMIT NUMBER, APPLICATION NUMBER, AND LOCATION OF THE PREMISES FOR WHICH THE PERMIT IS ISSUED, SHALL BE POSTED ON THE JOB SITE.

6. THE DESIGNER/ENGINEER SHALL NOT BE RESPONSIBLE FOR THE SUPERVISION OF CONSTRUCTION OR THE CONSTRUCTION SITE. THE DESIGNER/ENGINEER ARE NOT BEING RETAINED AS PROJECT MANAGERS TO ANY AND ALL VIOLATIONS FOR THE UNLAWFUL USES TO BE IDENTIFIED TO THE PROFESSIONAL SEALING THESE DRAWINGS BY THE CONTRACTOR. THE PROFESSIONAL ACCEPTS NO RESPONSIBILITY FOR ANY VIOLATIONS IN THE GIVEN AREA OF WORK ON THE PROJECT SITE.

7. EACH CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ADJACENT REMAINING AREAS AS A RESULT OF HIS WORK, AND SHALL BE RESPONSIBLE TO REPAIR AND RESTORE THE SAME TO THE ORIGINAL CONDITIONS OR AS MAY BE REQUIRED TO COMPLETE THE ENTIRE SCOPE OF WORK.

8. SHOP DRAWINGS FROM ALL OTHER TRADES ARE SUPPLEMENTARY TO THE PROFESSIONAL OF RECORD SUPPLEMENTAL DRAWINGS MUST BE APPROVED BY THE PROFESSIONAL OF RECORD AND WITH HIS CONSENT. ALL VAS WRITTEN CORRECTIONS THROUGH THE PROFESSIONAL OF RECORD FOR HIS CONSULTANTS. THE CONTRACTOR SHALL CHECK AND COORDINATE ALL THE DRAWINGS BEFORE FABRICATION AND/OR INSTALLATION OF ANY WORK. CONTRACTORS SHALL IMMEDIATELY NOTIFY PROFESSIONAL OF RECORD OF ANY DISCREPANCIES OR ERRORS. CONTRACTOR SHALL COORDINATE ALL WORK ON THESE DRAWINGS WITH WORK OF ALL OTHER TRADES.

9. BALL SYMBOLS AND ABBREVIATIONS USED ON THE DRAWINGS ARE CONSIDERED CONSTRUCTION STANDARDS. IF THE CONTRACTOR HAS ANY QUESTIONS REGARDING THE SAME OR THEIR EXACT MEANING, PROFESSIONAL OF RECORD SHALL BE NOTIFIED FOR CLARIFICATION.

10. DRAWINGS AROUND NEW CONSTRUCTION SHALL DEPART AWAY FROM NEW STRUCTURES AND REMAINING EXISTING.

11. THE CONTRACTOR SHALL DELIVER TO THE PROFESSIONAL OF RECORD, UPON COMPLETION OF ALL WORK UNDER THE CONTRACT AND BEFORE FINAL PAYMENT IS MADE, HIS WRITTEN GUARANTEE MADE OUT TO THE OWNER, IN TWO COPIES, BY THE PROFESSIONAL OF RECORD GUARANTEEING ALL THE WORK, MATERIALS, EQUIPMENT, ETC., PROVIDED UNDER THE CONTRACT TO BE FREE FROM DEFECTS AND REPAIR WORKS AND TO BE WATER TIGHT AND LEAK PROOF. THE CONTRACTOR AGREES TO REPLACE OR RE-EXECUTE IN A MANNER SATISFACTORY TO THE PROFESSIONAL OF RECORD, WITHOUT COST TO OWNER OR THE PROFESSIONAL OF RECORD, SUCH WORK AS MAY BE FOUND TO BE DEFECTIVE AND/OR FULLY IN THE OPINION OF THE PROFESSIONAL OF RECORD AND PAY FOR ALL DAMAGE AND/OR MATERIALS REQUIRED FOR SUCH REPLACEMENT OR RE-EXECUTION.

12. INDEMNIFICATION AGREEMENT OR HOLD HARMLESS CLAUSE INCURRED BY CONTRACTUAL LIABILITY, SHALL BE IDENTIFIED AND ITS LANGUAGE TO THE EFFECT THAT THE CONTRACTOR AGREES TO INDEMNIFY AND SAVE HARMLESS THE OWNER AND THE PROFESSIONAL OF RECORD AGAINST LOSS OR EXPENSE, BY REASON OF THE LIABILITY INCURRED BY LAW UPON THE OWNER AND THE PROFESSIONAL OF RECORD, FOR DAMAGE CAUSED BY DEFECTS INCURRED, INCLUDING DEATH, AT ANY TIME ARISING THEREFROM ACCIDENTALLY SUSTAINED BY ANY PERSON OR PERSONS OR ON ACCOUNT OF DAMAGE TO PROPERTY ARISING OUT OF OR IN CONSEQUENCE OF THE PERFORMANCE OF THE CONTRACT, WHETHER SUCH DAMAGES TO PERSONS OR DAMAGE TO PROPERTY ARE DUE TO OR CLAIMED TO BE DUE TO ANY NEGLIGENCE OF THE OWNER AND/OR THE PROFESSIONAL OF RECORD, HIS EMPLOYEES,

OR AGENTS OR ANY OTHER PERSON. THIS AGREEMENT SHALL NOT APPLY IF THE INSURED OR INSUREES IS A PROFESSIONAL OF RECORD, ENGINEER, OR SUPERVISOR, TO ANY LIABILITY ARISING OUT OF DEFECTS IN MAPS, PLANS, DESIGN OR SPECIFICATIONS PREPARED OR USED BY SUCH PROFESSIONAL OF RECORD, ENGINEER, OR THEIR DESIGNATED AGENTS.

13. THE GENERAL CONTRACTOR TO MAINTAIN A FULL SET OF COMPLETE UP TO DATE PLANS AVAILABLE AT THE JOB SITE. CONTRACTOR TO PROVIDE MARKED UP AS-BUILT/PROVIDE TO FINAL PAYMENT.

14. THE WORK SHOWN ON THESE DRAWINGS HAS BEEN DESIGNED IN ACCORDANCE WITH THE STRUCTURAL REQUIREMENTS OF THE STATE OF NEW YORK STATE BUILDING CODE.

15. THE STRUCTURAL COMPONENTS HAVE BEEN DESIGNED IN ACCORDANCE WITH CHAPTER 19 OF 2019 IBC, SEE:

16. ALL STRUCTURAL WORK SHOWN OR SPECIFIED ON THESE DRAWINGS IS SUBJECT TO REVIEW BY THE ENGINEER OF RECORD. SUBJECTS OF THE WORK PLANNED TO BE RECTIFIED BECAUSE IT DOES NOT MEET THE REQUIREMENTS SHOWN OR SPECIFIED SHALL BE CORRECTED BY THE CONTRACTOR AT NO EXTRA COST TO THE OWNER AS DIRECTED BY THE ENGINEER.

17. THIS WORK HAS BEEN DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE CONSTRUCTION HAS BEEN COMPLETED. THE STABILITY OF THE STRUCTURE PRIOR TO COMPLETION IS SOLELY THE RESPONSIBILITY OF THE CONTRACTOR. THIS RESPONSIBILITY EXTENDS TO ALL ASPECTS OF THE CONSTRUCTION ACTIVITY INCLUDING, BUT NOT LIMITED TO: JOBSITE SAFETY, ERECTION METHODS, ERECTION SEQUENCE, TEMPORARY BRACING AND SHORING, USE OF EQUIPMENT AND SIMILAR CONSTRUCTION PROCEDURES. REVIEW OF CONSTRUCTION BY THE ENGINEER DOES NOT CONSTITUTE AN ENDORSEMENT OF THE CONTRACTOR'S CONSTRUCTION PROCEDURES. LACK OF COMMENT ON THE PART OF THE ENGINEER WITH REGARD TO ANY CONSTRUCTION PROCEDURES IS NOT TO BE INTERPRETED AS APPROVAL OF THOSE PROCEDURES.

STRUCTURAL STEEL NOTES

1. DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE SPECIFICATION FOR STRUCTURAL STEEL FOR BUILDINGS AS ADOPTED IN JULY 7, 2018 BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION AND THE "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES," ADOPTED EDITION OF AISC 308.

MATERIALS:  
W SHAPES ASTM A 99  
ANGLES PLATES ETC. ASTM A 36  
STRUCTURAL STEEL TUBING SQUARE TUBING ASTM A 309, GRADE B  
ROUND TUBING ASTM A 33, TYPE B  
SOLTS ASTM A 323  
ANCHOR BOLTS ASTM A 307  
WELDING ELECTRODE E6010 E7018 LOW HYDROGEN  
SHEAR CONNECTORS ASTM A 108

2. NON-SHANK GROUT UNDER STEEL COLUMN BASE PLATES SHALL BE NON-SHANK NON-METALLIC, WITH MINIMUM 7 DAY COMPRESSIVE STRENGTH OF 4,000 PSI. CONFORM TO ASTM C 827.

3. ALL WELDING SHALL CONFORM TO THE CODE FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION OF THE AMERICAN WELDING SOCIETY AND BE PERFORMED BY A CERTIFIED WELDER IN ACCORDANCE WITH A W.S. STANDARD. ALL WELDS ARE TO BE CLEANED UP TO REMOVE VISUAL IMPRESSION.

4. CONNECTIONS NOT SHOWN ARE TO BE DETAILED BY THE FABRICATOR FOR THE SHEAR AND MOMENT REACTIONS SHOWN ON THE PLAN IN ACCORDANCE WITH AISC 3. CONNECTIONS REFERRED TO IN NOTE 1 ABOVE. DETAILS OF ALL CONNECTIONS MUST BE SHOWN ON THE SHOP DRAWINGS. MINIMUM CONNECTION ANGLE THICKNESS SHALL BE 5/16".

5. STEEL SHALL BE ERRECTED TO A TOLERANCE OF NOT MORE THAN 1/8" IN 10 FEET OUT OF PLUMB, NOR 1/8" FROM THE REQUIRED ELEVATION.

6. ALL STRUCTURAL STEEL BEAMS AND COLUMNS ADJACENT TO MASONRY SHALL HAVE 1/2" X 1/2" STRIP ANCHORS SET 2 1/2" X 2 1/2" UNLESS OTHERWISE NOTED. FOR LINTELS OVER DOORS, WINDOWS, DUCTS, AND MISCELLANEOUS OPENINGS USE FOR EACH 4" WIDTH OF WALL.

7. LINTELS 12" X 12" (8" BEARING) FOR M.O.S. UP TO 2'-0"  
3 1/2" X 12" X 12" (8" BEARING) FOR M.O.S. UP TO 2'-0"  
3 1/2" X 12" X 12" (8" BEARING) FOR M.O.S. UP TO 2'-0"

8. IN WELD SUPPORTING EXTERIOR WINDS ARE TO BE HOT DIPPED GALVANIZED ACCORDANCE WITH ASTM A 123.

9. ALL FIELD WELDING IS TO BE VISUAL INSPECTED BY AN AWS CERTIFIED WELD INSPECTOR. REPORTS ARE TO BE SENT TO THE ENGINEER AND OWNER IN A TIMELY MANNER.

10. ALL EXPOSED GALVANIZED EXTERIOR STEEL SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A 123. ALL EXPOSED EXTERIOR STEEL, CONNECTIONS HARDWARE INCLUDING NUTS, WASHERS, AND THREADED FASTENERS, ETC., SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A 153.

CONCRETE NOTES

1. STRUCTURAL CONCRETE WORK SHALL CONFORM TO ALL THE REQUIREMENTS OF A.C.I. 308.4B. SPECIFICATIONS FOR STRUCTURAL CONCRETE PUBLISHED IN FULL ENTIRETY. CERTAIN PORTIONS OF THE SPECIFICATION ARE PRESENTED HERE ONLY FOR CLARIFICATION AND THE CONTRACTOR'S CONCURRENCE AND ARE NOT INTENDED TO REPLACE OR AMEND THE SPECIFICATION.

2. CONCRETE SHALL BE NORMAL WEIGHT, DEVELOP A MINIMUM 28 DAY STRENGTH OF 4,000 PSI AND HAVE A MAXIMUM WATER/CEMENT RATIO (W/C) AS FOLLOWS:  
LOCATION STRENGTH (PSI) W/C RATIO (W/C)  
FOOTINGS AND WALLS 4,000 PSI 0.50  
SLABS 4,000 PSI 0.50

3. NO ADJUSTIVES ARE PERMITTED WITHOUT THE ENGINEER'S WRITTEN PERMISSION OTHER THAN ENTRAINED AIR. CONCRETE EXPOSED TO THE WEATHER, SUCH AS THAT USED IN FOUNDATION WALLS, SHALL CONTAIN 5% ± 1% BY ENTRAINED AIR. INTERIOR SLABS, SHALL CONTAIN NO MORE THAN 2% ENTRAINED AIR.

4. AGGREGATES SHALL CONFORM TO ASTM C 33. MAXIMUM DOSAGE AGGREGATE SIZE TO BE 3/4".

5. WILD WIRE FABRIC SHALL CONFORM TO ASTM A 186 WITH A MINIMUM WELD STRENGTH OF 70 KSI. LAP ONE MESH SIZE AND END ANCHORS AND WIRE TIEING.

6. CONTRACT ENGINEERS RECOMMENDING FIBERS SHALL BE USED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS BUT IN NO INSTANCE WITH A DOSAGE RATE OF LESS THAN 1 VOLUME PER HUNDRED CUBIC YARD OF CONCRETE.

7. NO WELDING OF REINFORCING WILL BE PERMITTED.

8. CONCRETE FORMWORK SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 4, A.C.I. 308 - 19.

9. FABRICATION AND PLACEMENT OF REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 5, A.C.I. 308 - 19.

10. CONSTRUCTION JOINTS AND EMBEDDED ITEMS, SUCH AS IRONING BELT, SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 5, A.C.I. 308 - 19.

11. THE PRODUCTION OF CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 5, A.C.I. 308 - 19.

12. THE CONVEYANCE, PLACEMENT AND PROTECTION OF THE CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 5, A.C.I. 308 - 19. MECHANICAL VIBRATORS ARE TO BE USED TO CONSOLIDATE THE FRESHLY CAST CONCRETE AROUND THE REINFORCEMENT AND AGAINST FORM SURFACES AND TO PREVENT THE FORMATION OF AIR OR STONE ON THE SURFACE. CONCRETE SHALL BE PLACED IN LAYERS OF 18" MAXIMUM. HOWEVER, CARE MUST BE USED TO AVOID OVERVIBRATION THAT CAUSE TO AGGREGATE SEGREGATION.

13. THE INSTALLATION OF SLABS SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 11, A.C.I. 308 - 19. INTERIOR FINISH SLAB SURFACES ARE TO HAVE A CLASS 2 STEEL MODEL FINISH. SURFACE OF SLABS FORMING THE SUBSTRATE FOR FLOORS ARE TO HAVE A CLASS C SCRATCHED SURFACE. EXTERIOR SLAB SURFACES ARE TO HAVE A CLASS B TOLERANCE WITH THE FINISH AS SPECIFIED ON THE ARCHITECTURAL DRAWINGS.

14. THE CURING AND PROTECTION OF CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 12, A.C.I. 308 - 19. CONCRETE SURFACES SHALL BE PROTECTED FROM LOSS OF SURFACE MOISTURE FOR NOT LESS THAN 7 DAYS USING A CURING COMPOUND CONFORMING TO ASTM C 308 - 19 OR CONTINUOUSLY WETTED BURLAP. IN COLD WEATHER CONCRETE CURING CONDITIONS LISTED AS DEFINED BY A PERIOD OF MORE THAN THREE DAYS WHEN THE AVERAGE OUTDOOR TEMPERATURE, HIGH + LOW IS LESS THAN 40° F, THE PROCEDURES OUTLINED IN A.C.I. 308 - 19 STANDARD SPECIFICATION FOR "COLD WEATHER CONCRETE" SHALL BE UTILIZED.

15. A DESIGNATED TESTING LABORATORY SHALL CONDUCT STRENGTH TESTS IN ACCORDANCE WITH THE FOLLOWING PROCEDURES: (A) STRENGTH TESTS CONSIST OF FOUR CONCRETE CYLINDERS. THE QUALIFICATIONS FOR THE INSPECTOR WILL BE SPECIFIC TO THE INSPECTION. PERFORMED. THE MINIMUM QUALIFICATIONS WILL BE AS LISTED BY THE QUALIFICATION REQUIREMENTS FOR SPECIAL INSPECTORS, OR AS APPROVED BY THE CODE OFFICIAL. THE FORMS WILL BE REVIEWED BY THE TOWN FOR COMPLIANCE. SUBMITTALS SHALL INCLUDE COVER LETTER CERTIFICATIONS FOR TESTING LABORATORY RESUMES AND CERTIFICATIONS FOR ALL INSPECTORS INCLUDING DESIGN INFORMATION.

16. MAKE ONE STRENGTH TEST FOR EACH SIX CUBIC YARD OF PRACTICE TIE FROM EACH MIX DESIGN OF CONCRETE PLACED IN ANY ONE DAY, EXCEPT THAT IN NO CASE SHALL A SINGLE MIX DESIGN BE REPRESENTED BY LESS THAN FIVE TESTS.

17. SECURE COMPOSITE SAMPLES IN ACCORDANCE WITH "METHOD OF SAMPLING FRESH CONCRETE" (ASTM C 172). EACH STRENGTH TEST SHALL BE OBTAINED FROM DIFFERENT BATCHES OF CONCRETE OR REPRESENTATIVE TRUCK LOADS. WHEN PUMPING OR PLUMBING EQUIPMENT IS USED, SAMPLES SHALL BE TAKEN AT THE DISCHARGE END.

18. HOLD FOUR SPECIMENS FROM EACH SAMPLE IN ACCORDANCE WITH "METHOD OF MAKING AND CURING CONCRETE COMPRESSION AND FLEXURE SPECIMENS IN THE FIELD" (ASTM C 31) AND CURE UNDER STANDARD MOISTURE AND TEMPERATURE CONDITIONS IN ACCORDANCE WITH SECTION 7(A) AND 7(B) OF THE ABOVE ASTM METHOD.

19. DETERMINE SLUMP OF THE CONCRETE SAMPLE FOR EACH STRENGTH TEST AND WHENEVER CONSISTENCY OF CONCRETE APPEARS TO VARY USING "METHOD OF TEST OF SLUMP OF PORTLAND CEMENT CONCRETE" (ASTM C 43).

20. DETERMINE AIR CONTENT OF NORMAL WEIGHT CONCRETE SAMPLE FOR EACH STRENGTH TEST IN ACCORDANCE WITH EITHER METHOD OF TEST FOR AIR CONTENT OF FRESHLY MIXED CONCRETE BY PRESSURE METHOD (ASTM C 231) "METHOD OF TEST FOR AIR CONTENT OF FRESHLY MIXED CONCRETE BY THE VOLUMETRIC METHOD" (ASTM C 173).

21. TEST THREE SPECIMENS, ONE AT SEVEN DAYS AND TWO AT 28 DAYS IN ACCORDANCE WITH "METHOD OF TEST FOR COMPRESSIVE STRENGTH OF MOLDED CONCRETE" (ASTM C 39). THE TEST RESULTS SHALL BE THE AVERAGE OF THE TWO SPECIMENS. IF THE AVERAGE OF THE TWO SPECIMENS IS LESS THAN THE REQUIRED STRENGTH, TEST TWO MORE SPECIMENS AT 42 DAYS. WHEN MORE THAN FIVE TESTS ARE REQUIRED, TWO SPECIMENS SHALL BE TESTED AT SEVEN DAYS.

22. READY MIX OR JOB MIXED CONCRETE MAY BE USED AT CONTRACTOR OPTION MUST MEET COMPRESSION STRENGTH REQUIREMENTS.

23. REMOVE TOPSOIL AND OTHER SURFACE MATERIALS IN PREPARATION FOR POURING CONCRETE. SLABS, AVERAGE SLABS ON GRADE TO BE POURED ON COMPACTED 90% POROUS FILL OR SUITABLE ON SITE MATERIAL. A MAX. THICKNESS VARIATION BARBER SHOULD TO LEAD, LABOR SLAB. SLAB TO BE STEEL TROWEL. SLAB TO BE REINFORCED WITH W.W.M. # 6 @ 18" O.C. OR FIBER/REINFORCED CONCRETE.

24. CONCRETE FORMS MUST USE AN APPROVED RELEASE AGENT FORM WORK MAY NOT BE REUSED FOR A MINIMUM OF (2) DAYS AND BEFORE REUSING FOR A MINIMUM OF (4) DAYS.

25. BIDD REINFORCEMENT SHALL BE WITHIN TOLERANCE: SETFORMED BASES CONFORMING TO ASTM A 615 AND AIR REINFORCEMENT SHALL CONFORM TO ASTM A 615 AND AIR.

26. DETAILS AND GENERAL PROVISIONS FOR CONCRETE CONSTRUCTION, SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST AS BUILDING CODE, A.C.I. 308 AND MANUAL A.C.I. 308.

27. PORTLAND CEMENT COMPLYING WITH ASTM C 150.

28. AGGREGATE COMPLYING WITH ASTM C 33.

29. REINFORCING SHALL COMPLY WITH ASTM A 615, D609, 60R, 60R BAR AND ASTM A 185 FOR WELDED WIRE MESH.

30. IMMEDIATELY PRIOR TO PLACING THE CONCRETE, THE SUBGRADE SHALL BE THOROUGHLY DAMPENED TO THAT IT IS MOIST BUT NOT SATURATED. SEE FLAG AND DETAILS.

31. PLACING CONCRETE UNDER TEMPERATURES ARE ABOVE 80° DEGREES OR BELOW FREEZING SHALL BE DONE IN ACCORDANCE WITH A.C.I. SPECIFICATIONS.

CONNECTIONS TO EXISTING MASONRY OR CAST-IN-PLACE CONCRETE

1. CONNECTIONS TO EXISTING BUILT-UP CAST-IN-PLACE CONCRETE MASONRY OR CLAY BRICK MASONRY SHALL BE MADE WITH ASTM A307 OR A36 (EYES) ANCHOR BOLTS.

2. EMBED ANCHOR RODS INTO DRILLED HOLES A MINIMUM OF 3 ANCHOR DIAMETERS, MEASURED FROM THE EDGE OF THE FOUNDATION TO THE CENTERLINE OF THE ANCHOR. INCREASED EMBEDMENT DEPTH OR LONG DISTANCES MAY BE REQUIRED AT CERTAIN LOCATIONS. SEE FLAG AND DETAILS.

3. WORKMAN SURFACES OF DRILLED HOLES ARE TO BE BRUSHED CLEAN AND THE HOLE CLEANED OF ALL EXCESS DUST AND DEBRIS WITH COMPRESSED AIR PRIOR TO INSTALLING ANCHORS.

4. CONNECTIONS TO EXISTING SOLID CAST-IN-PLACE CONCRETE MASONRY OR CLAY BRICK MASONRY FOUNDATIONS SHALL BE MADE USING HP F113 HP 130 EPOXY ADHESIVE SYSTEM OR EQUAL APPROVED BY THE ENGINEER.

5. CONNECTIONS TO MASONRY SHALL BE MADE WITH #4 W16 HYPS DOWELS OR #4 BRICK MASONRY TIE RODS SPECIFIED, APPROVED BY THE ENGINEER.

FOUNDATION NOTES

1. THE ENGINEER SHALL BE NOTIFIED IF SOIL OF QUESTIONABLE CAPACITY IS ENCOUNTERED DURING EXCAVATION.

2. IN SITU TESTING OF SOIL BEARING CAPACITY TO BE PERFORMED THROUGH SPECIAL INSPECTION PRIOR TO POURING FOOTINGS.

3. WITHIN THE PERIMETER OF THE PROPOSED STRUCTURE STRIP THE EXISTING SURFACE OF ALL TOPSOIL, GRAVEL AND FILL MATERIAL. COMPACT TOP OR REMAINING EXCAVATED SURFACE.

4. THE BOTTOM OF EXTERIOR FOOTINGS NOT ON SLOTTED ROCK SHALL BE AT LEAST 3" BELOW FINISHED GRADE. FOOTINGS ON LEDGE SHALL REST ON BROOM CLEAN SOLID ROCK. IF THE SLOPE OF THE ROCK SURFACE EXCEEDS 1:2, THE FOOTING SHALL BE DOWNLOTTED TO THE LEDGE WITH 1/4" STEEL ROSS DRILLED 12 INCHES INTO THE ROCK SURFACE AT 2 FEET ON CENTER.

5. DO NOT UNDERMINE EXISTING OR NEWLY PLACED FOUNDATIONS BY EXCAVATING WITHIN A ZONE DIRECTLY BELOW THESE FOUNDATIONS AND EXTENDING OUTWARD OUTWARDS AT A 45° ANGLE.

6. AREAS REQUIRING FILL, THE FILL MATERIAL SHALL BE UNIFORM, GRADED MIXTURES OF SAND AND GRAVEL WEIGHING NO LESS THAN 100 LBS PER CUBIC YARD AFTER COMPACTION IN PLACE. THIS MIXTURE SHALL BE COMPACTED IN PLACE.

7. THE INVERT OF THE PIPE SHALL NOT BE LOWER THAN THE BASEMENT FLOOR ELEVATION. THE TOP OF JOINTS OF THE TOP OF REBAR/RODS SHALL BE PROTECTED WITH AN APPROVED 1/2" MINIMUM MATERIAL. THE PIPE SHALL BE COVERED TO NOT LESS THAN 2 INCHES OR 12" MINIMUM AND SHALL BE COVERED WITH NOT LESS THAN 6 INCHES OF THE SAME MATERIAL THAT THE MOISTURE CONTENT OF THE FILL CANNOT BE PROVED TO BE LESS THAN 95%.

8. IN PLACING AND COMPACTING FILL AND BACKFILL MATERIAL, DO NOT DAMAGE FORM SURFACE CONCRETE WITH ALREADY IN PLACE. BY SUBJECTING IT TO OVERLOADING FROM HEAVY COMPACTING EQUIPMENT OR ANY OTHER CAUSE. BRIND FILL AGAINST SUCH CONTACT AT THE SAME RATE AS THE REMAINDER OF FILL. THIS MIXTURE SHALL BE COMPACTED IN PLACE. THIS MIXTURE SHALL BE COMPACTED IN PLACE. THIS MIXTURE SHALL BE COMPACTED IN PLACE. THIS MIXTURE SHALL BE COMPACTED IN PLACE.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LIMITING POURS TO MINIMIZE SHRINKAGE CRACKING. IN GENERAL, WALLS SHALL NOT BE POURED IN CONTINUOUS LENGTHS EXCEEDING 30 FEET AND SLABS NOT EXCEEDING 20 FEET WITHOUT CONTROL JOINTS. THE LOCATION AND DIMENSION OF CONTROL JOINTS IS TO BE DETERMINED BY THE CONTRACTOR.

10. ANCHOR ANCHOR BOLT REQUIREMENTS FOR ATTACHMENT OF SUPERSTRUCTURE TO FOUNDATION SHALL BE AS FOLLOWS:

11. DRILL, GRACE AND SLAB ON GRADE. 10" TRIMMER AT 1'-0" O.C. MAX SPACING.

12. FULL HEIGHT BARBERS: 3" DIAMETER AT 4'-0" O.C. MAX SPACING.

13. EMBED ANCHOR BOLTS A MINIMUM OF 15 INCHES INTO MASONRY. 1 INCHES INTO CAST CONCRETE. INSTALL BOLTS WITH 12 INCHES OF CORNERS OR ALL EXTERIOR WALLS.

14. SIZES AND LOCATIONS OF ALL REQUIRED EMBEDDED ITEMS FOR ALL TRADES SUCH AS ANCHOR BOLTS, PIPING, SLEEVES, HOLDOWN ANCHORS, ETC. SHALL BE COORDINATED BY THE GENERAL CONTRACTOR WITH OTHER TRADES.

15. FOOTING DRAIN INVERTS ARE TO BE SET A MINIMUM OF 4 INCHES ABOVE THE BOTTOM OF ADJACENT FOOTINGS.

16. PRIOR TO EXCAVATION, THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL UTILITY LINES.

17. PREPARATION OF SUBGRADE: THE SUBGRADE FOR ALL CONCRETE WORK SHALL BE PROPERLY PREPARED BY REMOVAL OF ALL UNDESIRABLE MATERIAL AND REPLACED WITH SUITABLE GRANULAR MATERIAL. THOROUGHLY TAMPERED. THE SUBGRADE SURFACE SHALL BE THE GRAD AND THOROUGHLY COMPACTED PRIOR TO PLACEMENT OF ANY CONCRETE.

18. WALLS SHALL BE DAMP PROOF FROM BOTTOM OF FOOTING TO WITHIN 1" OF GRADE WITH TROWEL COAT OF BITUMINOUS MASTIC. SEPARATED BY A 1/4" GRC ALPHAL SATURATED MESH.

19. CONTRACTOR MAY BACK FILL AGAINST WALLS ONLY.

AFTER SEVEN (7) DAYS OF CONCRETE CURE THE USING PROPER CONSTRUCTION METHODS AND EQUIPMENT TO AVOID DAMAGE TO THE WALLS. WALLS ARE TO BE SPRAYED ACCORDING WITH FIRST FLOOR JOINTS AND PL-WOOD DECK. ALL EXISTING TO BE BACK FILL FROM ALL NEW AND EXISTING STRUCTURES.

20. STEEL FOOTINGS, WHERE ELEVATION CHANGES 1 VERTICAL TO 2 HORIZONTAL.

21. PROVIDE REBAR DOWELS FROM FOOTINGS INTO P.C. WALL. DOWELS TO HAVE MIN 4" HOOK END EMBEDDED INTO FOOTINGS AND MIN 24" INTO WALL TOP.

22. COORDINATION OF ALL THROUGH WALL UTILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

23. UPON BACKFILLING WALLS, CHEMICALLY TREAT SOIL FOR PROTECTION FROM TERMITES AS PER AGENCIES HAVING JURISDICTION.

24. FORMS SHALL BE METAL OR PL-WOOD. FORMS SHALL BE CAREFULLY SET TO LINE AND GRADE.

25. SIFT AND BUILT INTO CONCRETE WORK ALL ANCHORS, SLEEVES OR OTHER EMBEDDED ITEMS REQUIRED FOR OTHER WORK.

FOOTING DRAIN NOTES

1. THE WALL DRAIN SHALL BE PLACED AROUND THE PERIMETER OF THE WALLS AND SHALL BE CLEAN AND FREE FROM DEBRIS. THE DRAIN SHALL HAVE A MINIMUM OF 3 INCHES BEHIND THE OUTSIDE EDGE OF THE FOOTING. THE THICKNESS SHALL BE SUCH THAT THE BOTTOM OF THE DRAIN IS NOT HIGHER THAN THE BOTTOM OF THE BASE UNDER THE BANK WITH 1/2" ON EACH SIDE OF THE DRAIN. THE TOP OF THE DRAIN IS TO BE COVERED WITH AN APPROVED FILTER MEMBRANE MATTER.

2. THE INVERT OF THE PIPE SHALL NOT BE LOWER THAN THE BASEMENT FLOOR ELEVATION. THE TOP OF JOINTS OF THE TOP OF REBAR/RODS SHALL BE PROTECTED WITH AN APPROVED 1/2" MINIMUM MATERIAL. THE PIPE SHALL BE COVERED TO NOT LESS THAN 2 INCHES OR 12" MINIMUM AND SHALL BE COVERED WITH NOT LESS THAN 6 INCHES OF THE SAME MATERIAL THAT THE MOISTURE CONTENT OF THE FILL CANNOT BE PROVED TO BE LESS THAN 95%.

3. WALL DRAIN TO BE IN 60 DAY CONNECTED TO THE ON SITE STORMWATER MANAGEMENT SYSTEM.

WOOD CONSTRUCTION NOTES

1. LUMBER MATERIALS SHALL BE SPOKE, SPOKE, OAK, FREE FROM DEFECTS AND LOGS, KNOTS, MARKS AND OTHER DEFECTS WHICH WOULD REDUCE THE STRENGTH OR BE DAMAGED.

2. ALL NEW LUMBER SHALL CONFORM TO THE LATEST INTERNATIONAL ORGANIZATION OF STANDARDS FOR THE MEASUREMENT OF THE QUALITY OF LUMBER (I.C.I.F.).

3. PROVIDE BLOCKING, BRACKETS, BRACING, FRAMING HARDWARE AS REQUIRED UPON ALL BEAMS, ROYS AND RAFTERS TO BE SET WITH NAIL ORN UP.

4. ALL LUMBER SHALL BE VISIBLE GRAIN STAMP. ALL STRUCTURAL LUMBER IS TO BE 100% DISQUALIFIED SHALL BE INSTALLED PER DRAWING AND MANUFACTURER'S SPECIFICATIONS. ALL HANDING AND INSTALLATION PROCEDURES MUST BE SPECIFIED BY THE MANUFACTURER AND SHALL BE FOLLOWED.

5. STRUCTURAL AND TREATED LUMBER SHALL NOT BE ALLOWED TO BE WET AT ANY TIME.

6. ALL PRESURE TREATED LUMBER SHALL BE SOUTHERN YELLOW PINE, GRADE 1, 1 1/2" SQUARE. ALL OTHER LUMBER SHALL BE DOUGLASS FIR, LARCH, NORTH, GRADE 2 OR BETTER, 1 1/2" SQUARE.

MASONRY STEPS, PLATFORMS AND RAMPS

1. TOP SURFACE OF STEPS SHALL BE FINISHED TOWARD THE NORMAL. RISERS SHALL SLANT OUT TOWARDS NORMAL. RISINGS SHALL BE FINISHED WITH A BULL NOSE.

2. AFTER TRAVELLING, TOP SURFACE OF PLATFORMS, STEPS AND OF RAMPS SHALL BE LIGHTLY BROOMED. RAMPS SHALL BE BROOMED AT RIGHT ANGLES TO THE DIRECTION OF TRIP.

3. RAMPS SHALL BE CONSTRUCTED TO THE DIMENSIONS INDICATED. MAXIMUM SLOPE SHALL BE 1/4" INCH IN 12 INCHES. MAX RISE TO BE 30" WITHOUT INTERMEDIATE PLATFORMS TO CODE MIN 6" X 6" X 6".

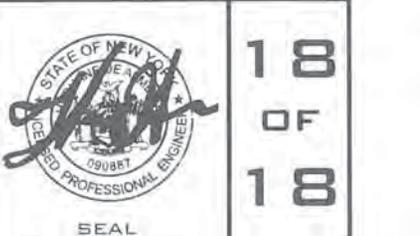
4. CONCRETE SHALL CONFORM TO A.C.I. 308 AND 308 WITH SPECIAL. A TENSION TOWEL MEASUREMENT INSTALLATION AND REMOVAL OF FORMS.

5. CROSS-SLOPE OF ALL WALKING SURFACES SHALL NOT EXCEED 2%.

DATE: 5/16/2022

HERNANE DE ALMEIDA PROFESSIONAL ENGINEER 26 GLENVIEW DRIVE, CARMEL, NY 10512 914-469-9741 HERNANE@ENGINEER.COM

MR. & MRS. DE ALMEIDA 26 GLENVIEW DRIVE NY 10512 OWNER SHEET TITLE SEAL



18 OF 18