BOROUGH OF BERGENFIELD

BOARD OF ADJUSTMENT

APPLICATION AND INSTRUCTIONS TO APPLICANTS

Instructions include: page 1-3

Application include: page 1-9

RECEIVED BY _____ Date _____

PROPERTY ADDRESS 396 New Bridge Road

BLOCK 302 LOTS 16, 17, 18, 19 and 21

DATE APPLICATION RECEIVED _____

ESCROW FEES _____ Collected by _____

Date _____

APPLICATION FEES _____ Collected by _____

Date _____

FILE NO. _____ DATE _____

DATE OF HEARING _____ DISPOSITION _____

BOARD OF ADJUSTMENT
MUNICIPAL BUILDING, BERGENFIELD, N.J.

APPLICATION FOR VARIATION/APPEAL
OF REQUIREMENTS OF ZONING ORDINANCE 1123

APPLICANT'S NAME CONGREGATION BETH ABRAHAM

ADDRESS 396 New Bridge Rd

OWNER'S NAME SAME

OWNER'S ADDRESS 873 Main Street PHONE # C/o 385-3788
Hackensack 07601 FED I.D.# or S S _____

Applicant will be represented at public hearing by M. MADAIO

TO THE BOARD OF ADJUSTMENT:
Application is hereby made for a variation/appeal from the requirements of Section(s) _____ and/or from the requirements of the Scheduled Limiting Bulk of Buildings of the Zoning Ordinance in accordance with plans and specifications attached hereto and/or decision of Zoning Officer. The location of this property is at
NUMBER: _____

DESIGNATED AS Block(s) 302 and Lot(s) 16,17,18,19,21 on the Assessment Map of the Borough of Bergenfield.

ZONING DISTRICT R-6

VARIANCES REQUIRED: LOT AREA ____ LOT FRONTAGE ____

LOT COVERAGE ✓ FRONT YARD ___ REAR YARD ___ SIDE YARD ____

TOTAL SIDE YARD ___ OTHER(specify) LOT COVERAGE, HEIGHT PARKING

THE REASON FOR DESIRED VARIANCE/APPEAL

ALL VARIANCES ARE SAME AS, OR LESS THAN, PRIOR APPROVAL (SEE ATTACHED)

DESCRIPTION OF PROPERTY

1. SIZE OF LOT 125 x 219 2. SQUARE FEET IN LOT 42,633

3. SIZE OF PRESENT BUILDINGS 50 x 50 4. STORIES 1-2

____ x ____

5. TOTAL AREA ± 10,000 SQ. FT. 6. NUMBER OF ROOMS NA

7. PERCENTAGE OF PROPERTY NOW OCCUPIED BY ALL BUILDINGS 50 %

8. PRESENT OCCUPANCY OF BUILDING OR PROPERTY

House of Worship

9. ARE THERE ANY DEED RESTRICTIONS ON THE PROPERTY? YES____

NO ✓ (If yes, provide a copy of same)

10. CHARACTER OF BUILDINGS WITHIN 200 FT. OF PROPERTY

RESIDENTIAL

11. HAS THERE BEEN ANY PREVIOUS APPEAL INVOLVING THESE PREMISES? YES Y NO____ IF SO, DATE FILED See previously

DISPOSITION Approved

12. ARE THERE ANY EXISTING VIOLATIONS OF THE ZONING ORDINANCE? YES____ NO X (IF SO, EXPLAIN)____

13. IS THIS, OR ANY PART OF THIS PROPERTY IN THE FLOOD ZONE?

YES____ NO X

14. DOES THIS PROPERTY BORDER ON ANY COUNTY ROAD?

YES X NO____

15. DOES THIS PROPERTY BORDER WITHIN 200 FT. OF ANY OTHER MUNICIPALITY? YES____ NO X

DESCRIPTION OF PROPOSED CHANGES

16. ARE ANY BUILDINGS TO BE DEMOLISHED? YES _____ NO X

17. SIZE OF NEW ADDITION 120 x 120 SQ. FT.

14400 AREA 38.29 HEIGHT

18. SIZE OF NEW BUILDINGS 120 x 120 SQ. FT.

14400 AREA 38.29 HEIGHT

19. PERCENTAGE OF PROPERTY TO BE OCCUPIED BY ALL BUILDINGS

43.9 %

20. NUMBER OF FAMILIES/PERSONS TO BE PROVIDED FOR NA

NOTE: ALL APPLICATIONS MUST INCLUDE: 1. Completed Application Form with Affidavits of Accuracy and Ownership. 2. An accurate Location Survey listing location of all structures with dimension to property lines with proposal sketched onto survey or submitted separately. 3. Copy of letter of denial by Construction Code Official or Zoning Officer , if applicable. ALL APPLICATIONS MUST BE FILED NO LESS THAN 30 DAYS PRIOR TO HEARING DATE. ALL PROOFS OF SERVICE, PUBLICATION, AND CERTIFICATE OF TAXES PAID MUST BE COMPLETED AND FILED WITH THE CONSTRUCTION CODE OFFICIAL NO LESS THAN TEN (10) DAYS PRIOR TO THE HEARING DATE. (All Return Receipts must be submitted prior to hearing.)

LIMITING SCHEDULE

BOROUGH OF BERGENFIELD – BLOCK 302, LOT 16, 17, 18, 19 & 21

R–6 RESIDENTIAL ZONE

	AS PER ZONING	EXISTING (*)	PREVIOUSLY APPROVED	PROPOSED
MIN. LOT AREA	10,000 SQ FT (0.23 AC)	42,633.7 SQ FT (0.97 AC)	NO CHANGE	NO CHANGE
MIN. LOT WIDTH	100 FT	490 FT	NO CHANGE	NO CHANGE
MAX. IMPROVED LOT COVERAGE	35%	50.5% (21,530 SF) (5)	76.1% (32,444 SF)	74.54% (31,780 SF) (6)
MAX. LOT COVERAGE	30%	26.3%	43.9%	42.25% (7)
MAX. BUILDING HEIGHT MAX. STORIES	30 FEET 2 STORIES	45.67 FT (1) 2 STORY	48.17 FT 2 STORY	43.84 FT (8)(**) – NEW ADDITION 2 STORY
MIN. FRONT YARD	25 FT	8.88 FT (2)	NO CHANGE	NO CHANGE
MIN. SIDE YARD ONE AGGREGATE OF 2 SIDES	 15 FT 30 FT	 6 FT (3) N/A	 15 FT N/A	 15 FT N/A
MIN. REAR YARD	25 FT	32.4 FT	18.5 FT	26.3 FT
PARKING REQUIREMENTS	198 SPACES AUDITORIUM/ASSEMBLY HALL (SIMILAR USE) 1 SPACE FOR EVERY 3 SEATS (§ 186–49A.(6))	15 SPACES (4)	16 SPACES	16 SPACES (9)

NOTES:

(1) EXISTING NON–CONFORMING CONDITIONS – BUILDING HEIGHT – 45.67 FT>28 FT PERMITTED (§ 186–SCHEDULE B)
(2) EXISTING NON–CONFORMING CONDITIONS – EXISTING FRONT YARD – 8.88 FT<25 FT REQUIRED (§ 186–SCHEDULE B)
(3) EXISTING NON–CONFORMING CONDITIONS – EXISTING SIDE YARD ONE – 6 FT<15 FT REQUIRED (§ 186–SCHEDULE B)
(4) EXISTING NON–CONFORMING CONDITIONS – EXISTING PARKING SPACES 15<117 SPACES REQUIRED (350 SEATS) (§ 186–49A.)
(5) EXISTING NON–CONFORMING CONDITIONS – EXISTING IMPROVED LOT COVERAGE 50.5%>35% PERMITTED (§ 186–SCHEDULE B)
(6) PROPOSED IMPROVED LOT COVERAGE 74.54%>35%; WHICH IS <76.1% (PREVIOUSLY APPROVED)
(7) LOT COVERAGE PROPOSED 42.25%>30%; WHICH IS <43.9% (PREVIOUSLY APPROVED)
(8) BUILDING HEIGHT PROPOSED 43.84 FT (TO TOP OF MECH. ROOF SCREEN) >30 FT; WHICH IS <48.17 FT (PREVIOUSLY APPROVED)
(9) PARKING SPACES PROPOSED 16<198***; WHICH IS = 16 (PREVIOUSLY APPROVED)

(*) THIS LIMITING SCHEDULE TABLES ASSUMES THAT LOTS 16, 17, 18, 19 & 21 AS CONSOLIDATED TO ONE (FUTURE) LOT
(**) EXISTING AVERAGE GRADE = 118.0'
(***) EXIST. SEATS = 350 + PROPOSED SEATS = 232 : 350+232=582/3=198 REQUIRED

By order of the Board of Adjustment of Bergenfield

AFFIDAVIT BOARD OF ADJUSTMENT

OF THE

BOROUGH OF BERGENFIELD

STATE OF NEW JERSEY
COUNTY OF BERGEN
BOROUGH OF BERGENFIELD ss:

Congregation Beth Abraham
Name of Applicant

Jonathan Landa, Vice President of ↑ being duly sworn deposes and says; that he reside at number 55 Hallberg Ave in the Borough of Bergenfield, in the County of Bergen in the State of New Jersey, and says that he is the appellant making appeal for a variation/appeal of the provisions of the Zoning Ordinance of the Borough of Bergenfield in connection with the property which is the subject matter of this appeal and known as number 396 New Bridge Rd designated as Block 302 and Lots 16-19 & 21 on the Assessment Map of the Borough of Bergenfield. That all statements made in this application, and statements made in the plans submitted herewith are true. The applicant further states that he is ready and able to proceed with the construction if and when the application is granted.

Sworn to me this 27
day of April 2021

Notary Public

Applicant

Note: All partnerships and corporations must supply a list of stockholder with a 10% or greater share, they must also be represented by an Attorney at the hearing.

DEBORAH ABRAMOVITZ
ID #2434560
NOTARY PUBLIC
STATE OF NEW JERSEY
My Commission Expires 5/30/2023

AFFIDAVIT OF OWNERSHIP

STATE OF NEW JERSEY,
COUNTY OF BERGEN SS:

Congregation Beth Abraham
Jonathan Landa, Vice President of full age, duly sworn according to the law, deposes and says that he resides at 55 Hallberg Avenue in the Borough of Bergenfield in the County of Bergen in the State of New Jersey that he is the Vice President of Congregation Beth Abraham, the owner in fee of real property lying in the Borough of Bergenfield, known and designated as number 396 New Bridge Rd and that he hereby authorizes Mark D. Madaio Esq. to make the within application in his behalf and that the statements in the said application are true.

SWORN TO BEFORE ME THIS 27
DAY OF April 2021

Owner
Jonathan Landa, Vice President
Congregation Beth Abraham

Notary Public

EDWARD ABRAMOVITZ
ID #2434560
NOTARY PUBLIC
STATE OF NEW JERSEY
My commission expires 7/30/2025

Note: If partnership and corporations must supply a list of stockholders with 10% or greater share, that they must also be represented by an Attorney at the hearing.

BOROUGH OF BERGENFIELD
198 NORTH WASHINGTON AVENUE
BERGENFIELD, NEW JERSEY 07621

CONSTRUCTION CODE DEPT.
(201) 387-4055 EXT. 1-4092
FAX: (201) 385-7376

April 23, 2021

Congregation Beth Abraham
396 New Bridge Rd
Bergenfield, NJ 07621

Attn: Mark D. Madaio, Attorney for Applicant

Re: New house of worship

Dear Mr. Madaio,

Your application for you client, Congregation Beth Abraham, for the new house of worship has been denied for the following reason:

- Amended site plan, to review changes made to original drawing for approval.

You have the right to appeal my decision to the Planning Board. You may also contact the Building Department to obtain the proper applications.

If you have any question on the above matter, please contact our office. You can call the Building Department at 201-387-4055 Ext. 4

Sincerely,

Michael Ravenda
Zoning Officer

BOROUGH OF BERGENFIELD
198 NORTH WASHINGTON AVENUE
BERGENFIELD, NEW JERSEY 07621

TAX COLLECTOR'S CERTIFICATION
PAYMENT OF PROPERTY TAXES

Date: 4/27/21

Block: 302 Lots: 16, 17, 18, 19 and 21 Address: 396 New Bridge Road

Owners Name: Congregation Beth Abraham

Owner's Address: 396 New Bridge Road
c/o Madaio

Phone Number: 201-385-3766 Cell Number: _____

Application for: ✓ Board of Adjustment ____ Planning Board

____ Building Department Permit

Description of Work to be Performed:
Seeking amended site plan approval, reducing the size of the approved structure

All applications for the above are required to obtain a certification from the Tax Collector's Office prior to receiving placement on the agenda of any board and / or receiving a permit from the building department for construction or certificate of occupancy. "No Exceptions"

****

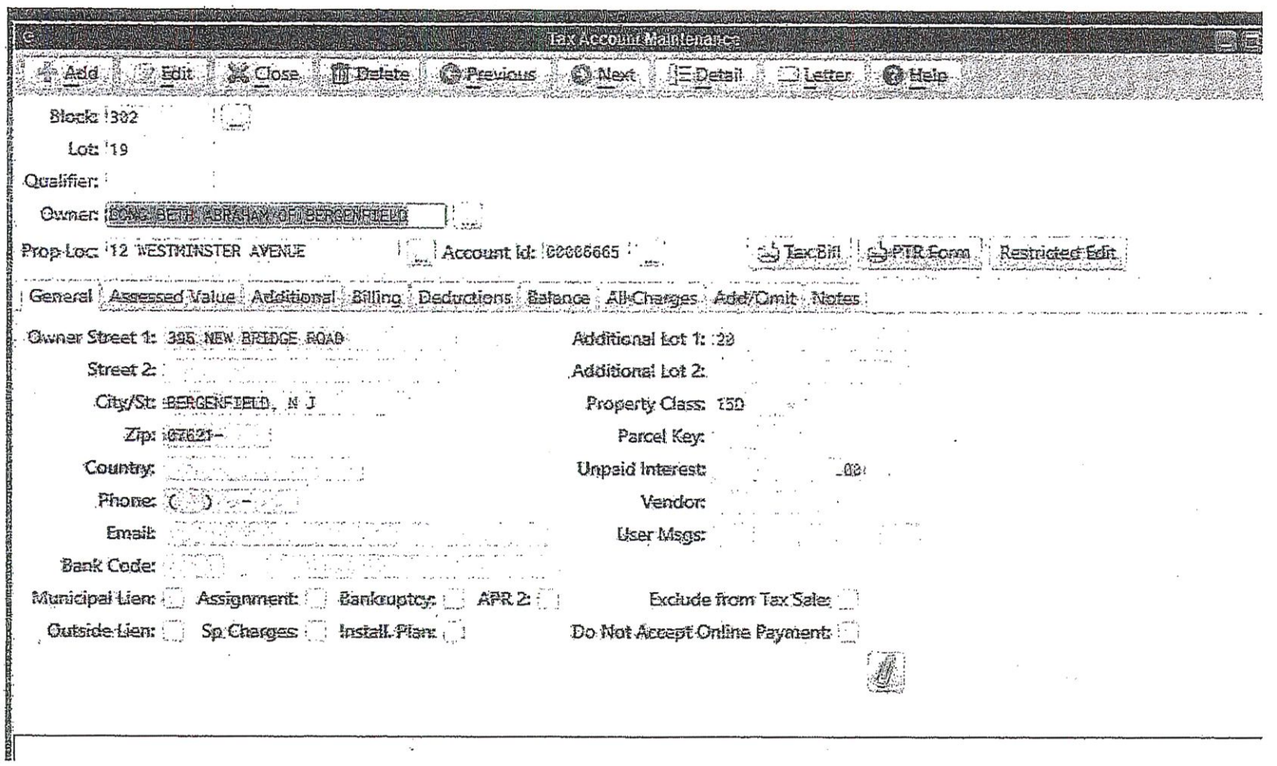
Tax Office Use Only: Not applicable, all of these property are exempt from property taxes.

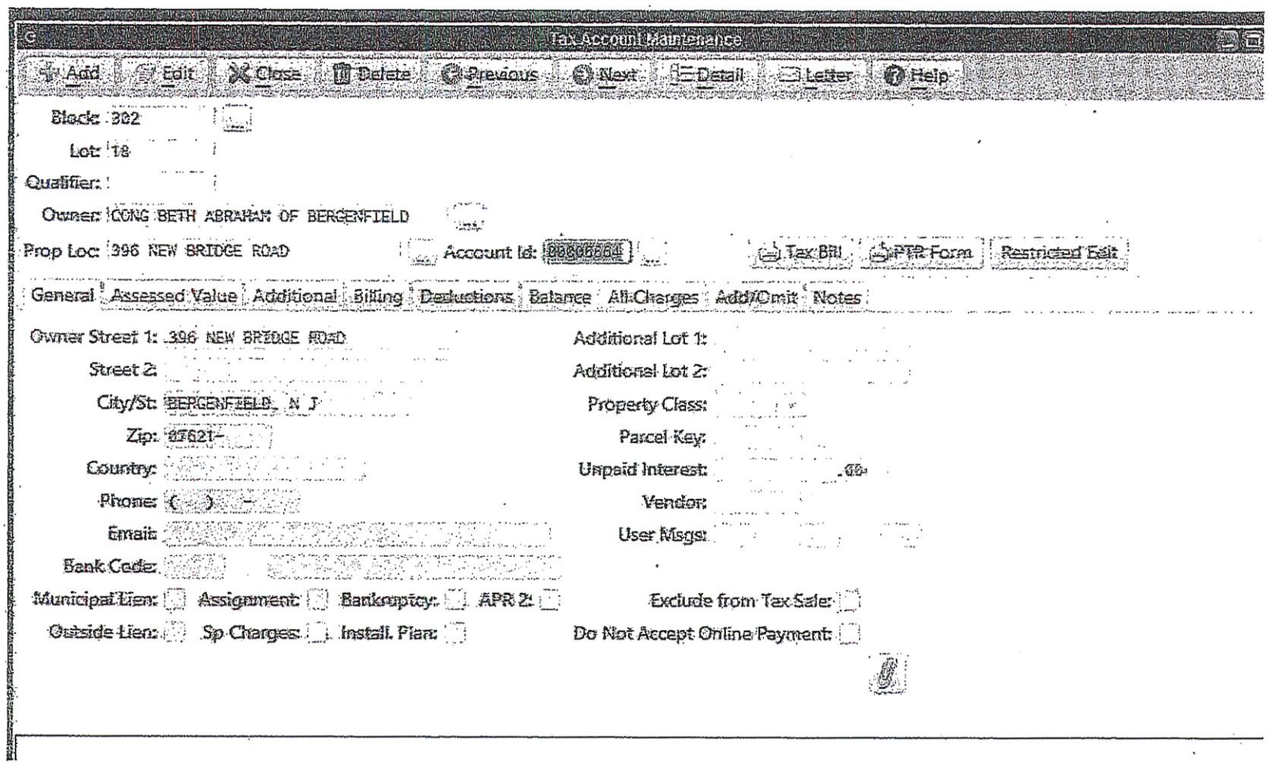
Tax Current: N/A Yes N/A No Last Quarter Paid On: N/A
(Printout Attached)

Tax Collector / Deputy Tax Collector Certification:

April 27, 2021
Date:

Certification Number: T-8454


Tax Account Maintenance
Add
Edit
Close
Delete
Previous
Next
Detail
Letter
Help
Block: 302
Lot: 19
Qualifier:
Owner: BOND, SETH, ABRAHAM OF BERGENFIELD
Prop Loc: 12 WESTMINSTER AVENUE
Account Id: 00006665
TaxBill
PTR Form
Restricted Edit
General
Assessed Value
Additional
Billing
Deductions
Balance
All Charges
Add/Omit
Notes
Owner Street 1: 395 NEW BRIDGE ROAD
Street 2:
City/St: BERGENFIELD, N J
Zip: 07621-
Country:
Phone: ( ) -
Email:
Bank Code:
Additional Lot 1: 20
Additional Lot 2:
Property Class: 150
Parcel Key:
Unpaid Interest:
Vendor:
User Msgs:
Municipal Lien:
Assignment:
Bankruptcy:
APR 2:
Exclude from Tax Sale:
Outside Lien:
Sp Charges:
Install. Plan:
Do Not Accept Online Payment:

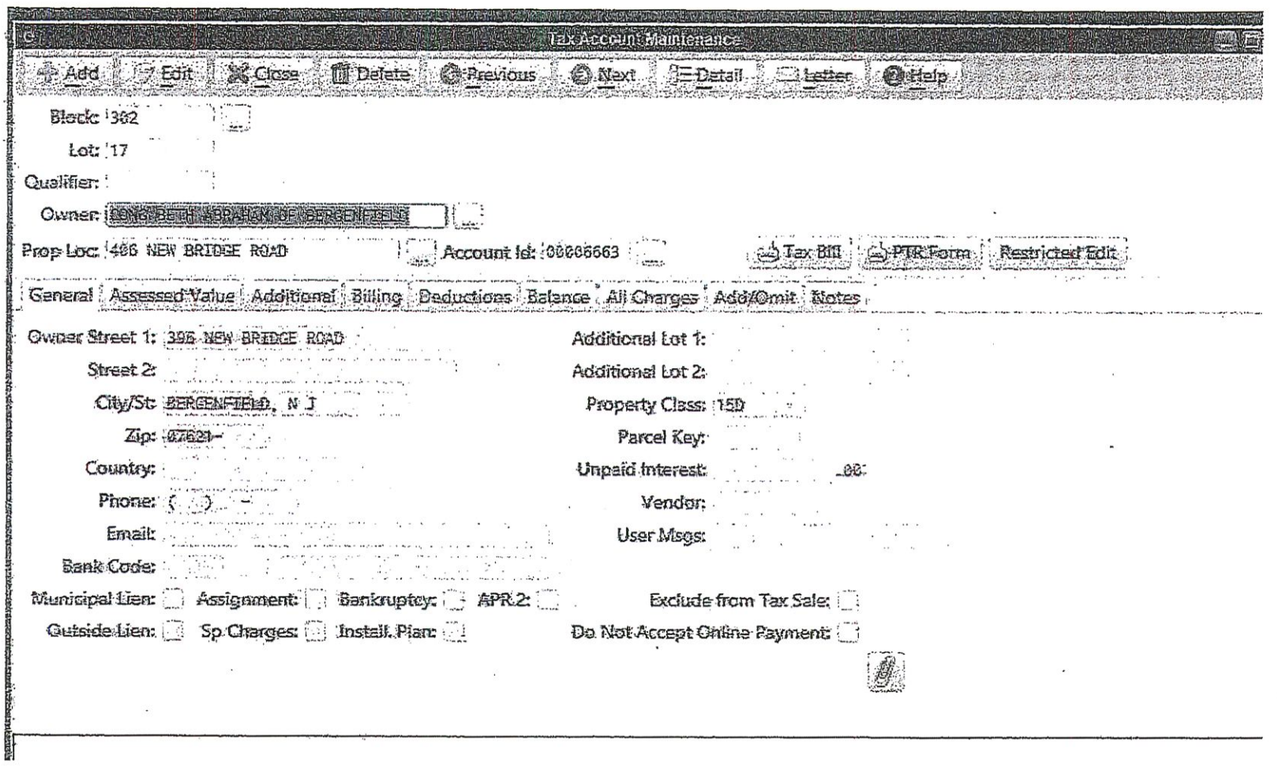

Tax Account Maintenance
Add
Edit
Close
Delete
Previous
Next
Detail
Letter
Help
Block: 302
Lot: 18
Qualifier:
Owner: CONG BETH ABRAHAM OF BERGENFIELD
Prop Loc: 396 NEW BRIDGE ROAD
Account Id:
Tax Bill
PTR Form
Restricted Edit
General
Assessed Value
Additional
Billing
Deductions
Balance
All Charges
Add/Omit
Notes
Owner Street 1: 396 NEW BRIDGE ROAD
Street 2:
City/St: BERGENFIELD N J
Zip: 07621-
Country:
Phone: ( ) -
Email:
Bank Code:
Municipal Lien:
Assignment:
Bankruptcy:
APR 2:
Outside Lien:
Sp Charges:
Install. Plan:
Additional Lot 1:
Additional Lot 2:
Property Class:
Parcel Key:
Unpaid Interest:
Vendor:
User Msgs:
Exclude from Tax Sale:
Do Not Accept Online Payment:

BLQ: 302. 17. Tax Year: 2021 to 2021
Owner Name: CONG BETH ABRAHAM OF BERGENFIELD Property Location: 406 NEW BRIDGE ROAD

Tax Year: 2021	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Total
Payments:	0.00	0.00	0.00	0.00	0.00
Balance:	0.00	0.00	0.00	0.00	0.00

Date	Qtr	Type Description	Code	Check No	Mthd	Reference	Batch Id	Principal	Interest	2021 Prin Balance
		Original Billed						0.00		0.00

Total Principal Balance for Tax Years in Range: 0.00

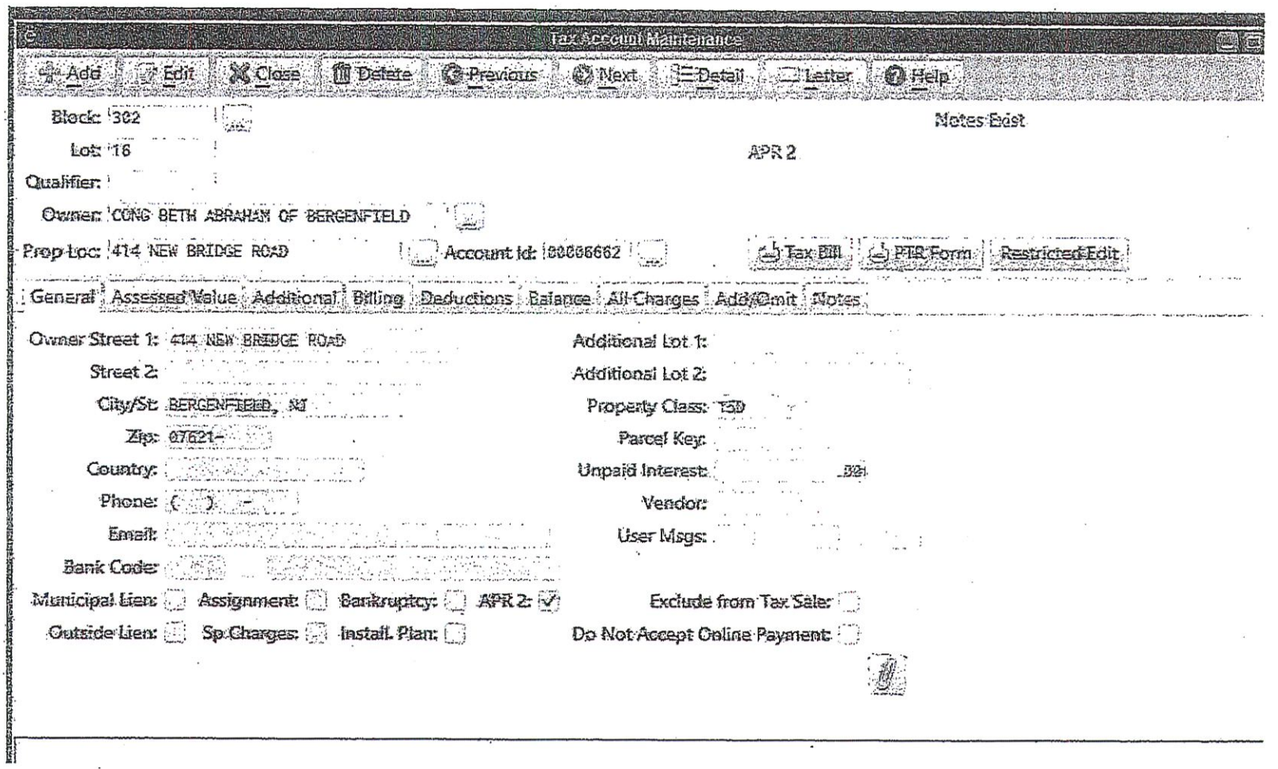

Tax Account Maintenance
Add
Edit
Close
Delete
Previous
Next
Detail
Letter
Help
Block: 382
Lot: 17
Qualifier:
Owner:
Prop Loc: 486 NEW BRIDGE ROAD
Account Id: 00006663
Tax Bill
PTR Form
Restricted Edit
General
Assessed Value
Additional
Billing
Deductions
Balance
All Charges
Add/Omit
Notes
Owner Street 1: 396 NEW BRIDGE ROAD
Street 2:
City/St: BERGENFIELD, N J
Zip: 07621-
Country:
Phone: ( ) -
Email:
Bank Code:
Additional Lot 1:
Additional Lot 2:
Property Class: 15D
Parcel Key:
Unpaid Interest: .00
Vendor:
User Msgs:
Municipal Lien:
Assignment:
Bankruptcy:
APR 2:
Exclude from Tax Sale:
Outside Lien:
Sp Charges:
Install. Plan:
Do Not Accept Online Payment:

BLQ: 302. 16. Tax Year: 2021 to 2021
Owner Name: CONG BETH ABRAHAM OF BERGENFIELD Property Location: 414 NEW BRIDGE ROAD

Tax Year: 2021	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Total
Payments:	0.00	0.00	0.00	0.00	0.00
Balance:	0.00	0.00	0.00	0.00	0.00

Date	Qtr	Type Description	Code	Check No	Mthd	Reference	Batch Id	Principal	Interest	2021 Prin Balance
		Original Billed						0.00		0.00

Total Principal Balance for Tax Years in Range: 0.00


Tax Account Maintenance
Add
Edit
Close
Delete
Previous
Next
Detail
Letter
Help
Block: 302
Lot: 16
Qualifier:
Notes Exist
APR 2
Owner: CONG BETH ABRAHAM OF BERGENFIELD
Prop Loc: 414 NEW BRIDGE ROAD
Account Id: 00006662
Tax Bill
PTR Form
Restricted Edit
General
Assessed Value
Additional
Billing
Deductions
Balance
All Charges
Add/Omit
Notes
Owner Street 1: 414 NEW BRIDGE ROAD
Street 2:
City/St: BERGENFIELD, NJ
Zip: 07621-
Country:
Phone: ( ) -
Email:
Bank Code:
Additional Lot 1:
Additional Lot 2:
Property Class: 15D
Parcel Key:
Unpaid Interest:
Vendor:
User Msgs:
Municipal Lien:
Assignment:
Bankruptcy:
APR 2:
Exclude from Tax Sale:
Outside Lien:
Sp Charges:
Install. Plan:
Do Not Accept Online Payment:

IN THE MATTER OF THE APPLICATION OF **CONGREGATION BETH ABRAHAM** **396 NEW BRIDGE ROAD** **BLOCK 302, LOTS 16, 17, 18, 19,21** **R-6 RESIDENTIAL DISTRICT**	**BERGENFIELD ZONING BOARD OF ADJUSTMENT** **RESOLUTION EXTENDING THE TIME OF VARIANCES AND AMENDMENT TO RESOLUTION MEMORIALIZED ON JUNE 4, 2018**

WHEREAS, CONGREGATION BETH ABRAHAM, hereinafter referred to as "Applicant", and the owner of property at **396 NEW BRIDGE ROAD** in Bergenfield, New Jersey, hereinafter referred to as "Property", RECEIVED APPROVAL ON April 16, 2018 and a Resolution was memorialized on June 4, 2018 by the Bergenfield Zoning Board for a use variance (height), and any other required variances site plan approval and such as may be necessary in order to permit the house of worship use at the property located within the r-6 Residential District (R-6) Zone; and

WHEREAS the Applicant had applied for variances in accordance with N.J.S.A. 40:55D-70(c)(2) from the strict application of the zoning ordinances of the Borough of Bergenfield as the proposed height exceeded the maximum building height by more than 10%; and

WHEREAS, the application was the subject of a public hearing on April 16, 2018, at which hearing the Applicant presented testimony and documents into evidence in favor of the Board granting the requested relief; and

WHEREAS, the Board found that the Applicant did provide sufficient proofs to meet its burden for the variance relief requested under the Municipal Land Use Law and applicable case law; and

WHEREAS, at the hearing held on April 16, 2018 the Board of Adjustment approved the application, which was memorialized on June 4, 2018; and

WHEREAS, the applicant was granted an extension of the approvals for one year from September 9, 2019 to September 9, 2020 on October 7, 2019; and

WHEREAS, the applicant now requests a second extension of the approvals for the period from June 1, 2020 to June 1, 2021, and requests an amendment to the original application.

NOW, THEREFORE, BE IT RESOLVED by the Board of Adjustment that the following facts are hereby made and determined:

FINDINGS OF FACT

1. Board Attorney Ronald Mondello stated that he received a letter from Mr. Madaio, attorney for the Applicant, Congregation Beth Abraham dated May 19, 2020, requesting an extension. The last extension was granted from September 2019 until September 2020. Attorney Mondello read the letter into the record, and he

stated that he can draft a second Resolution indicating the new time period will be from June 1, 2020 until June 1, 2021. It is up to the three members involved with the case, Member Smith, Member Steinel and Member Berkowitz. Member Steinel inquired as to what determines when construction commences. Attorney Mondello stated that it is when the shovel goes into the ground. Motion to Accept Request for the Extension from June 1, 2020 to June 1, 2021, by John Smith, seconded by Charles Steinel, all ayes.

NOW, THEREFORE, BE IT RESOLVED, that the Zoning Board of Adjustment of the Borough of Bergenfield hereby approves the Applicant's request for an extension of the approvals until ONE YEAR from June 1, 2020 until June 1, 2021.

This application for an amendment and extension was approved by the Zoning Board of Adjustment of the Borough of Bergenfield at its meeting of June 1, 2020 upon the motion of John Smith and seconded by Charles Steinel and upon the roll call as follows:

Congregation Beth Abraham

MEMBER	YES	NO	ABSTAIN	ABSENT
Shimmy Stein (Chairman)			X	
Amnon Wenger (Vice Chairman)			X	
Marc Friedman (Secretary)				X
Joel Nunez				X
Charles Steinel	X			
John Smith	X			
Richard Morf				X
Sara Berger			X	
Joel Berkowitz	X			

BE IT FURTHER RESOLVED that a copy of this Resolution be forwarded to the Applicant, Borough Clerk, Tax Assessor, Construction Code Official, the Zoning Officer of the Borough of Bergenfield and Board Engineer.

Adopted this 6th day of July 2020 by a majority of the members of the Board present at such meeting who voted for the action taken on the 1st day of June 2020.

Decided: June 1, 2020
Memorialized: July 6, 2020

Board Member

I do certify that this is a true and correct copy of the Resolution as adopted by the Board of Adjustment of the Borough of Bergenfield, County of Bergen, State of New Jersey, in the within application.

Hilda Tavitian

Hilda Tavitian, Board Secretary

IN THE MATTER OF THE APPLICATION OF CONGREGATION BETH ABRAHAM	:	BERGENFIELD ZONING BOARD OF ADJUSTMENT
396 NEW BRIDGE ROAD	:	
BLOCK 302 - LOTS 16,17,18,19,21	:	
ZONE - R-6 RESIDENTIAL DISTRICT	:	RESOLUTION OF FINDINGS & CONCLUSIONS OF THE ZONING BOARD OF ADJUSTMENT OF THE BOROUGH OF BERGENFIELD

WHEREAS, Congregation Beth Abraham, whose address is 396 New Bridge Road, Bergenfield, New Jersey, hereinafter referred to as Applicant has applied to the Bergenfield Zoning Board of Adjustment for a use variance (height), any other required variances, site plan approval and such as may be necessary in order to permit the house of worship use at the property located within the R-6 Residential District (R-6) Zone; and

WHEREAS, the Applicant proposes to expand in order to accommodate those who wish to worship at the Congregation Beth Abraham and engage in the activities associated with a house of worship; and

WHEREAS, the Applicant has applied to the Zoning Board of Adjustment for use variance relief in accordance with

N.J.S.A. 40:55D-70[d-6] from the strict application of the zoning ordinances of the Borough of Bergenfield as the proposed height exceeds the maximum building height by more than 10%; and

WHEREAS, the application was the subject of a public hearings on March 5, 2018, April 16, 2018 and May 7, 2018, at which hearing the Applicant, through counsel Elliott W. Urdang, Esq. and Mark MaDaio, Esq., presented testimony and exhibits in favor of the Board granting the requested variance relief; and

WHEREAS, during the course of said hearing property owners within 200 feet of the subject property, residents and the public in general were given the opportunity to ask questions of the Applicant's witnesses;

NOW, THEREFORE, be it remembered that the Zoning Board of Adjustment at its official meeting held on May 7, 2018 in accordance with the Open Public Meetings Act did make the following findings of fact, conclusions and determinations:

FINDINGS OF FACT

1. All persons required to be served with notice of the hearing were duly served and proof thereof has been filed with the Board.

2. The Applicant has properly published notice of the hearing 10 days prior to the public meeting.

3. The property in question is shown on the tax map of the Borough of Bergenfield as Lots 16, 17, 18, 19 and 21 1,82 in Block 302 and is commonly known as 396 New Bridge Raod. The property is located in the R-6 where the Applicant's temple is a permitted use. The Applicant is seeking a height variance, several other variances and site plan approval for the purpose of expanding the existing House of Worship.

4. The following documents were marked into evidence:

A-1 through A-19.

March 5, 2018

5. The Applicant's testimony may be summarized as follows:

5.1. Mr. Konigerburg, the Applicant's President, was duly affirmed. He testified regarding the existing conditions today. The congregation members live within ½ mile of the temple. About 85%. He has a list of the members in order to prove that the membership live close by. This is an orthodox synagogue so they do not drive at night. Our basic principle is that we worship orthodox and place emphasis on family and community. There are 361 full time families and 130 affiliates. There are 180 men seats and 120 women seats in the sanctuary. On Friday night, there are 250-260 attendees. On a Sabbath day they run multiple services (6 services on Saturday morning). Before sunrise there are 20 attendees, 100 at the 8:40 and 250 at the

8:45, 100 at the 9:10. Sequential and concurrent services are going on. Teenagers over 13 are being housed in a residential house. In another residential home, a youth program is being held with toilet trained children. The proposed plan places everyone in the same structure. There are various youth rooms that accommodate boys, girls and different age groups. Teens will be in the library room. We want to combine grades to make use of the space. It is very difficult to run services and turn over some of the rooms for eating. Everything wraps up around noon on Saturday. Services are before and after sunset. Friday night into Saturday night is the Sabbath. Sunday people will drive to the temple. There is also a youth program on Sundays. Things "calm down" on Sunday afternoon. Services are also conducted Monday through Friday. In the morning there are about 100 plus attendees and in the evening about 40. We also conduct classes and there are 25-40 people in attendance. We are trying to avoid the juggling and combining everyone into the same spaces. At least 4-5 services could be run without using the social hall that is needed to serve food. Currently, we can fit 300 in the main sanctuary and are proposing an expansion to accommodate 450 people. The other rooms will be larger in order to accommodate this increase. The maximum usage is on the Sabbath. On the days that people can drive (Sunday through

Friday) the maximum number of cars would be about 40-50 parking around the synagogue. The new main sanctuary will not be used during the week. As far as social events, 1-2% might not be orthodox and will drive to a bar mitzvah. During a circumcision celebration we can expect 20-30 cars. The social hall will be rented out and people will be driving so expect 100 cars.

April 16, 2018

5.2. John M. Lignos, was duly sworn and accepted as an expert in the field of architecture. Mr. Lignos testified that the plans have some changes to the interior and exterior. He testified as to A-14 a revised Site Plan dated 3/28/2018 and the religious aspect of the sanctuary. The sanctuary was reworked. The sanctuary now runs north and south with the front facing east. Before this change it was more east to west. The revised plans have added some additional lobby space, the way that you would exit and the location of the bathrooms. This plan is smaller in area than the prior plan. About 54 square feet smaller. The main entrance has moved about 6 feet. A new emergency exit was created. A new sidewalk along with a dumb waiter was added. There is no intention to add more seating or more people. This is just a change to accommodate based on religious reasons. He referred to A-15 which is the Elevation drawings and A-16 Elevations on a board. He testified that the

north elevation at its highest point is 5 inches lower than the previous plans. There is a height peak rather than a linear building. They are now able to have additional, larger windows permitting additional natural light. The glass is tinted and will not cause a reflection. The applicant will be installing a fire masonry, concrete block separation wall. The north and south elevations are lower than what was originally planned. He testified that IF an emergency exit is required than they will of course install it and even if it is not required they may do so. The meeting was opened to the public for questions. Elmo Randolph inquired as to the wall and trees.

6. Mr. Konigerburg, the Applicant's President, was duly affirmed. He testified that the addition is to meet the needs of current members not to increase membership. There is a gravel parking area and the members will be told to park properly The meeting was opened to the public and there were no objectors.

7. Mark Madaio, applicant's attorney, stated it was a very good idea to refer this matter to the Site Plan Committee. Applicant can work from report. The plans submitted are designed to accommodate families already there. Mr. Madaio submitted a copy of the First Amendment (Exhibit A-17),

Religious Land Use (Exhibit A-18) and letter from DAAG to governments re RLUIPA (Exhibit A-19). Board as to enforce law. Applicant does not have burden to prove. Board has to have prove compelling reason to deny. We do have to treat houses of worship differently. Board engineer's concerns: impervious, seepage pits, storm water, fire department access, excavation and building schedule. Applicant will meet all requests. Site Plan concerns: Fire hydrant installed - Water company charges for maintenance. Additional street lights - Town will be charged. The applicant has agreed to abide by Site Plan Committee report. Floor opened to Board members. Board does not have authority to put bills on town for fire hydrant and street lights. These two items are only subject to governing body approval by resolutions by it. We cannot put it in as stipulation in the Board resolution except as subject to approval of governing body approval. Floor opened and closed to property owners within and outside 200 feet with no comment.

CONCLUSIONS OF LAW

1. The Applicant seeks a use variance under N.J.S.A. 40:55D-70(d-1) in order for the Applicant to establish an addition to the existing House of Worship requiring a height variance.

2. The Board of Adjustment has the power, pursuant to N.J.S.A. 40:55D-70(d), to grant a variance to allow departure from regulations to permit (1) a use of principal structure in a district restricted against such use or principal structure; (2) an expansion of a non-conforming use, (3) deviation from a specification or standard pertaining solely to a conditional use, (4) an increase in the floor area ratio, (5) an increase in the permitted density, (6) a height of a principal structure which exceeds by 10 feet or 10% the maximum height permitted in the district for a principal structure.

3. Such use variance must be approved by the affirmative vote of at least five members of the municipal Board.

4. A variance may be granted only upon a showing that such variance or other relief can be granted "without substantial detriment to the public good and will not substantially impair the intent and purpose of the zoning plan and zoning ordinance."

5. To approve the expansion of a prior, non-conforming use, there must be a showing of no detriment to the public good.

6. The statute thus requires an applicant to prove both positive and negative criteria to obtain a use variance. In

general, the positive criteria require that an applicant establish "special reasons" for granting the variance. *Sica v. Board of Adjustment*, 127 N.J. 152, 156, 603 A.2d 30 (1992).

7. "The negative criteria require proof that the variance 'can be granted without substantial detriment to the public good' and that it 'will not substantially impair the intent and purpose of the zone plan and zoning ordinance.'" *Ibid.*

8. Generally, to satisfy the positive criteria, an applicant must prove that "the use promotes the general welfare because the proposed site is particularly suitable for the proposed use." *Medici v. BPR Co.*, 107 N.J. 1, 4, 526 A.2d 109 (1987). Special reasons include demonstrating that (1) the proposed use promotes the purposes of zoning as enumerated in N.J.S.A. 40:55D-2 or (2) showing undue hardship (i.e. The property cannot reasonably be developed with a conforming use.). If, however, the proposed use is *inherently beneficial*, an applicant's burden of proof is significantly lessened. An inherently beneficial use presumptively satisfies the positive criteria. *Burbridge v. Mine Hill Tp.*, 117 N.J. 376, 394, 568 A.2d 527 (1990).

9. To satisfy the negative criteria, in addition to proving that the variance can be granted "without substantial

detriment to the public good," *id.* at 22 n.12, an applicant must demonstrate through "an enhanced quality of proof . . . that the variance sought is not inconsistent with the intent and purpose of the master plan and zoning ordinance." *Id.* at 21. . Therefore, in order to satisfy the negative criteria an Applicant must show that the proposed development will (1) not cause substantial detriment to the public good by adversely affecting the surrounding properties and the character of the surrounding neighborhood and (2) that it will not substantially impair the intent and purpose of the master plan and zoning ordinance. With an inherently beneficial use satisfaction of the negative criteria does not depend on an enhanced quality of proof. *Sica*, 127 N.J. at 160-61. Instead, grant of the variance depends on balancing the positive and negative criteria. *Sica*, 127 N.J. at 163.

10. When striking the balance: first, this Board is required to identify the public interest at stake. Some uses are more compelling than others. Second, the Board should identify the detrimental effect that will ensue from the grant of the variance. Third, in some situations, this Board may reduce the detrimental effect by imposing reasonable conditions on the use. If so, the weight accorded the adverse effect should be reduced by the anticipated effect of those restrictions.

11. Fourth, the Board should then weigh the positive and negative criteria and determine whether, on balance, the grant of the variance would cause a substantial detriment to the public good. *Sica*, 127 N.J. at 165-66.

12. No variance or other relief may be granted under the terms of this section, without a showing that such variance or other relief can be granted without substantial detriment to the public good and will not substantially impair the intent and the purpose of the zone plan and zoning ordinance.

14. The Board specifically accepts the uncontradicted testimony of applicant's witnesses. The Board finds that this use is an inherently beneficial use and therefore presumptively satisfies the positive criteria. However, the Board also finds that the use would promote safety and the general welfare and that this use that is complementary to the neighborhood. The proposed site is particularly suitable for the proposed use as the use is not inconsistent with the neighborhood as the structure exists today. This is a reasonable expansion. In other words, the Board finds that the proposed application will contribute positively to the area.

15. The Board finds that the only negative effect is the height variance. The Board also finds that this is not substantial and the applicant has taken steps to ameliorate this

condition. In general, the Board finds that the expansion of this existing House of Worship is a positive planning tool and creates a much more desirous place to live and conduct business. The Board therefore finds that the proposed development will (1) not cause substantial detriment to the public good by adversely affecting the surrounding properties and the character of the surrounding neighborhood and (2) that it will not substantially impair the intent and purpose of the master plan and zoning ordinance.

16. The Board finds that the proposed use satisfies both the positive and negative criteria for a use variance. The Board has weighed the positive and negative criteria and determined that the grant of the variance would not cause a substantial detriment to the public good.

17. The Applicant has demonstrated and the Board of Adjustment agrees that the benefits of having this expansion of the existing House of Worship exceeds any detriment. The Boards accepts the testimony of the applicant's professionals. The Board finds that there would be no negative impact on the property or surrounding neighborhood from the variance but in fact a positive impact as a result of same.

18. The Board further finds that the within application meets the statutory requirements for variance

approval for the reasons more particularly set forth in the record, including the testimony of the Applicant's experts. The granting of said variances are appropriate as the purposes of the Municipal Land Use Law are advanced thereby and the benefits including the protection of property values and the aesthetic enhancement of the surrounding area with an attractive structure substantially outweigh any detriment.

19. The proceedings in this matter were recorded. The recital of facts in this Resolution is not intended to be all inclusive but merely a summary and a highlight of the complete record made before this board.

NOW, THEREFORE, BE IT RESOLVED, that the Zoning Board of Adjustment of the Borough of Bergenfield hereby grants the Applicant's request for a use variance as set forth in this Resolution above in order for the Applicant to expand the House of Worship which is a permitted use in this zone are hereby granted by this Board subject to the following conditions:

A. The Applicant agrees to install a water retention system or seepage pit in accordance with the Board Engineer's specifications. The applicant agrees to paving in the front to support site management plan and soil management plan. The Applicant will need to install a fire hydrant and pay fees to maintain all subject to Governing Body approval and direction.

B. No Certificate of Occupancy shall be issued until a report of compliance with this Resolution has been issued by the Building Department. The Applicant must

submit accurate drawings with dimensions to the Building Department.

C. The Applicant shall comply with all ordinances and directives of the Borough of Bergenfield and all applicable County, State, and Federal statutes, rules, and regulations.

D. The Applicant shall obtain all necessary approvals, if applicable, from the Department of Environmental Protection, Department of Transportation, and Bergen County.

E. The Applicant shall comply with all the terms, conditions and recommendations set forth in any written report of the Board Engineer, Remington & Vernick, and any other written reports to the extent not already complied therewith. If the Applicant and the Borough Engineer are unable to resolve any of the compliance issues contained in the report, the Applicant shall return to the Board for further discussion and resolution of such issues.

F. This application is granted expressly conditioned upon the Applicant showing satisfactory proof that all taxes and assessments are current at the time of the approval or that the Applicant will pay all of the appropriate taxes and assessments within 15 days of the date hereof and that failure to pay same within this time period may result in this Resolution being declared null and void.

G. The approval of the within application does not constitute a determination by this Board as to whether or not the proposed development complies with the Federal Americans with Disabilities Act or the applicable regulations thereunder.

H. All outstanding fees and costs, including legal and engineering fees, shall be paid to the Borough of Bergenfield prior to the issuance of a certificate of occupancy.

I. Development shall be in accordance with the land survey submitted as aforesaid. In addition, pursuant

to Sec. 186-35 - "Expiration of variance", the Applicant is hereby notified that said variances shall expire unless such construction or alteration as indicated in the site plan is commenced within one year from the date of this Resolution.

This application was approved by the Zoning Board of Adjustment of the Borough of Bergenfield at its meeting of April 16, 2018 upon the motion of John Smith and seconded by Richard Morf and upon the roll call as follows:

MEMBER	YES	NO	ABSTAIN	ABSENT
Shimmy Stein (Chairman)			X	
Richard Morf (Secretary)	X			
Sara Berger			X	
Steve Madsen	X			
Charles Steinel	X			
John Smith	X			
Rene Palma				X
Amnon Wenger, 1st alternate			X	
Delvis Garcia, 2nd alternate	X			

BE IT FURTHER RESOLVED that a copy of this Resolution be forwarded to the Applicant, Borough Clerk, Tax Assessor, Construction Code Official, the Zoning Officer of the Borough of Bergenfield and Board Engineer.

Adopted this 4th day of June, 2018 by a majority of the members of the Board present at such meeting who voted for the action taken on the 16th day of June, 2018.

Decided: April 16, 2018
Memorialized: June 4, 2018

Acting Chairman Richard Morf

I do certify that this is a true and correct copy of the Resolution as adopted by the Board of Adjustment of the Borough of Bergenfield, County of Bergen, State of New Jersey, in the within application.

Joan Compton, Board Secretary

SNS Architects & Engineers, PC

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John M. Lignos, AIA, LEED AP
Lorin J. Sonenshine, AIA
Steven Napolitano, PE, LEED AP

Director

Helen Marie Logan, AIA, CID

Associate

Robert G. Nocella, AIA

Congregation Beth Abraham of Bergenfield
396 New Bridge Road, Bergenfield, NJ

STORMWATER MANAGEMENT REPORT

March 2021

(Note: These stormwater management calculations were previously approved by the Bergen County Department of Planning and Engineering, the Bergen County Soil Conservation District and the Borough of Bergenfield in 2018. The applicant/owner did not move forward at that time with the construction improvements. The only change in this current (2021) submission from the 2018 approvals, is that the proposed impervious coverage is approximately **770 square feet less** than the 2018 approvals. The design of the detention system remains unchanged from what was previously approved.

1. Location

The project is located along New Bridge Road, Bergenfield, New Jersey.

2. Existing Conditions

The soil within the site is identified as BUC (Boonton-Urban) that corresponds to Hydrologic Group Type C.

3. Existing Conditions

The site consists of existing buildings, parking areas, and vegetated areas.

4. Proposed Development

The property has an area of 0.97 acres. The existing structure that covers an area of 0.16 acres will remain unchanged. It has an independent drainage system and it's not considered in these calculations. The remainder 0.81 acres consist of:

	Vegetated	Gravel	Roof/Sidewalk	Paved	Total
Existing (acres)	0.48	.03	0.19	0.11	0.81
Proposed (acres)	0.26		0.35	0.19	0.81

The total existing impervious areas are 0.30 acres and 0.54 acres for the proposed condition. An underground infiltration system will be provided for the difference of 0.24 acres.

5. Design Criteria

The TR-55 method is used to calculate the runoff time of concentration. The following CN values have been selected:

Soil Cover	CN
Vegetated	74
Gravel	89
Impervious	98

6. Runoffs

The calculated existing peak runoffs are:

Area	Storm Frequency 2-year	10-year	25-year	100-year
Runoff (cfs)	1.12	2.16	2.88	4.13

The calculated post-development peak runoffs are:

Area	Storm Frequency 2-year	10-year	25-year	100-year
Runoff (cfs)	1.83	3.10	3.94	5.39

To reduce the post-development runoff, an underground retention system will be provided and be sized to store and infiltrate the runoff from the 0.29 acres of additional impervious area.

The calculated runoffs from the 0.29 acres are:

Area	Storm Frequency 2-year	10-year	25-year	100-year
Runoff (cfs)	0.78	1.21	1.50	2.00

7. Underground Retention Pipe

Percolation tests conducted at the site of the retention system indicate an infiltration rate of 2.0 inches/hour. An infiltration rate of 1.0 inch/hour is selected to size the infiltration system.

The retention system will consist of 140 feet of 60" diameter perforated corrugated HDPE pipe (invert 107.00) installed in crushed stone. It includes a 12" diameter overflow at invert elevation 115.00. The outflow from the retention pipe will discharge to the existing stormwater collection system.

All runoff will infiltrate.

8. Post-Development Runoff – After Detention without Infiltration

The Bergen County Soil District requires that the pre- and post-development runoffs be equal for the 2 and 10-year storms, with no infiltration. The detention system is re-routed for this condition. The runoffs are summarized below:

	Storm Frequency	
	2-year	10-year
Existing Peak Runoff	0.25 cfs	0.58 cfs
Detention Peak Outflow	0.00 cfs	0.15 cfs

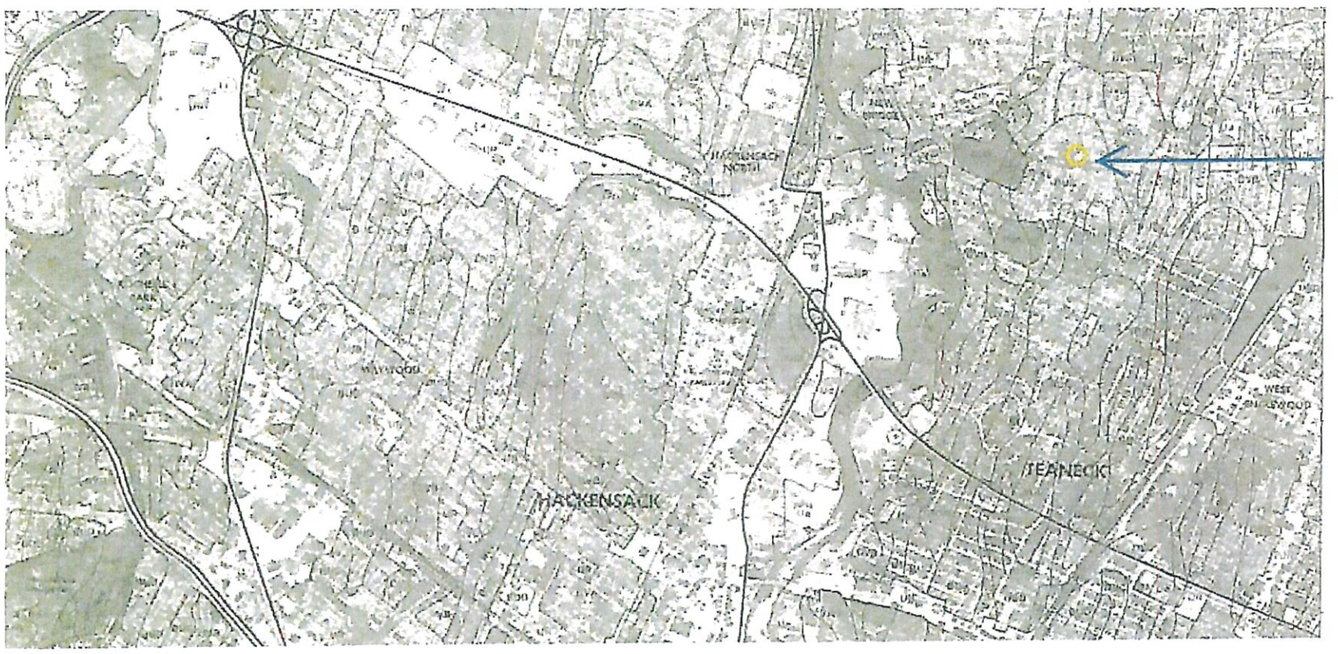
9. Quality Control

The peak quality flows will be:

$$0.95 \times (0.625 \text{ in/hr}) \times (0.19 \text{ acres}) = 0.12 \text{ cfs}$$

Two Quality Control Manholes, each 1.0 cfs capacity will be provided, as shown on the drawings. In addition Flogard filters will be provided at each paved area trench drain and catch basin. The roof runoff will be connected directly to the retention system.

The combined effect of Flogard filters, Quality Control Manholes, the long detention time, and the infiltration of all runoff, will result to an overall suspended solids removal of 80%.



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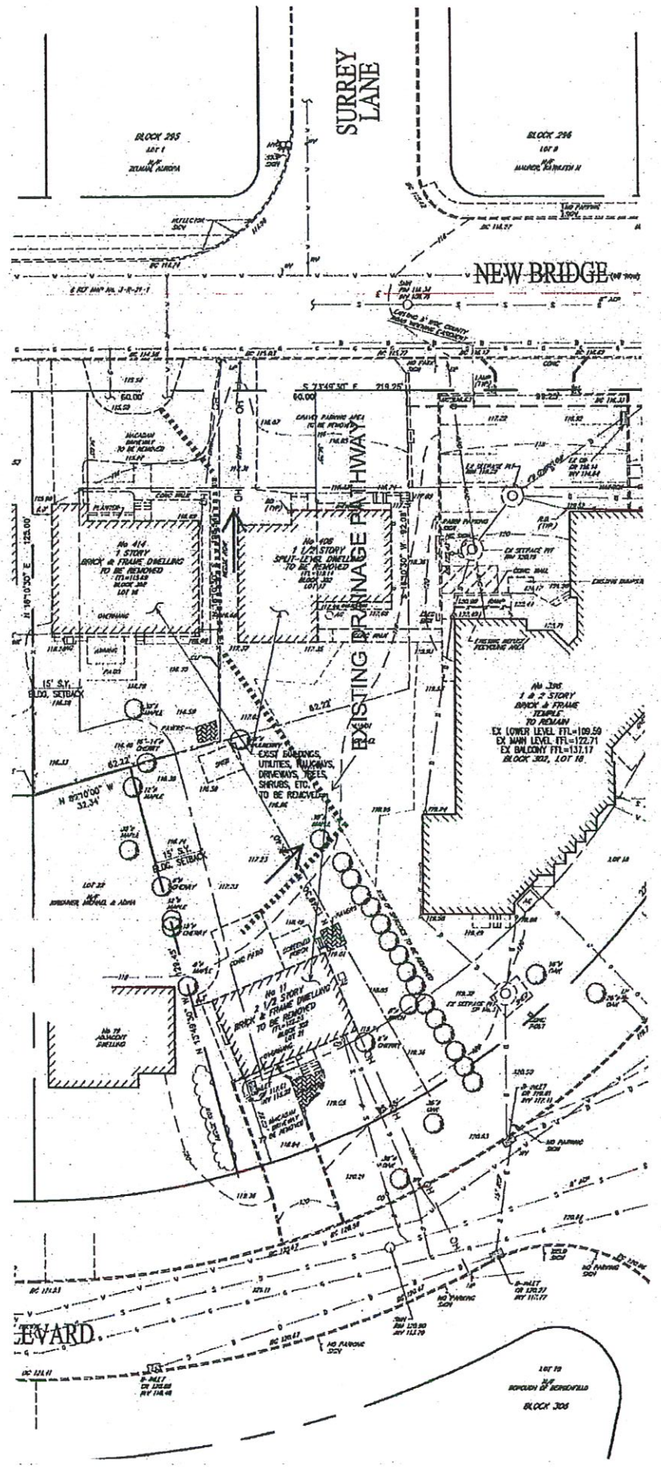

SURREY LANE
NEW BRIDGE
EXISTING DRAINAGE PATHWAY
BLOCK 295
BLOCK 296
EXISTING BUILDINGS, UTILITIES, RAILWAYS, DRIVEWAYS, POLES, SHRUBS, ETC. TO BE REMOVED
No 414 1 STORY BRICK & FRAME DWELLING TO BE REMOVED
No 408 1 1/2 STORY SPLIT-LEVEL DWELLING TO BE REMOVED
No 396 1 & 2 STORY BRICK & FRAME DWELLING TO REMAIN
EX LOWER LEVEL FFL=109.59
EX MAIN LEVEL FFL=122.71
EX BALCONY FFL=137.17
BLOCK 302, LOT 16
No 11 1 1/2 STORY BRICK & FRAME DWELLING TO BE REMOVED
No 72 ADJACENT DWELLING
BLOCK 306
EVARD

TR55 Tc Worksheet

Hydraflow Hydrographs by Intelisolve v9.2

Hyd. No. 1

Description	A		B		C		Totals
Sheet Flow							
Manning's n-value	= 0.240		0.011		0.011		
Flow length (ft)	= 150.0		50.0		0.0		
Two-year 24-hr precip. (in)	= 3.30		3.30		0.00		
Land slope (%)	= 2.00		2.00		0.00		
Travel Time (min)	**= 19.44**	**+**	**0.69**	**+**	**0.00**	**=**	**20.12**
Shallow Concentrated Flow							
Flow length (ft)	= 0.00		0.00		0.00		
Watercourse slope (%)	= 0.00		0.00		0.00		
Surface description	= Paved		Paved		Paved		
Average velocity (ft/s)	= 0.00		0.00		0.00		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**
Channel Flow							
X sectional flow area (sqft)	= 0.00		0.00		0.00		
Wetted perimeter (ft)	= 0.00		0.00		0.00		
Channel slope (%)	= 0.00		0.00		0.00		
Manning's n-value	= 0.015		0.015		0.015		
Velocity (ft/s)	= 0.00		0.00		0.00		
Flow length (ft)	= 0.0		0.0		0.0		
Travel Time (min)	**= 0.00**	**+**	**0.00**	**+**	**0.00**	**=**	**0.00**

Total Travel Time, Tc ..... **20.12 min**

Hydrograph Report

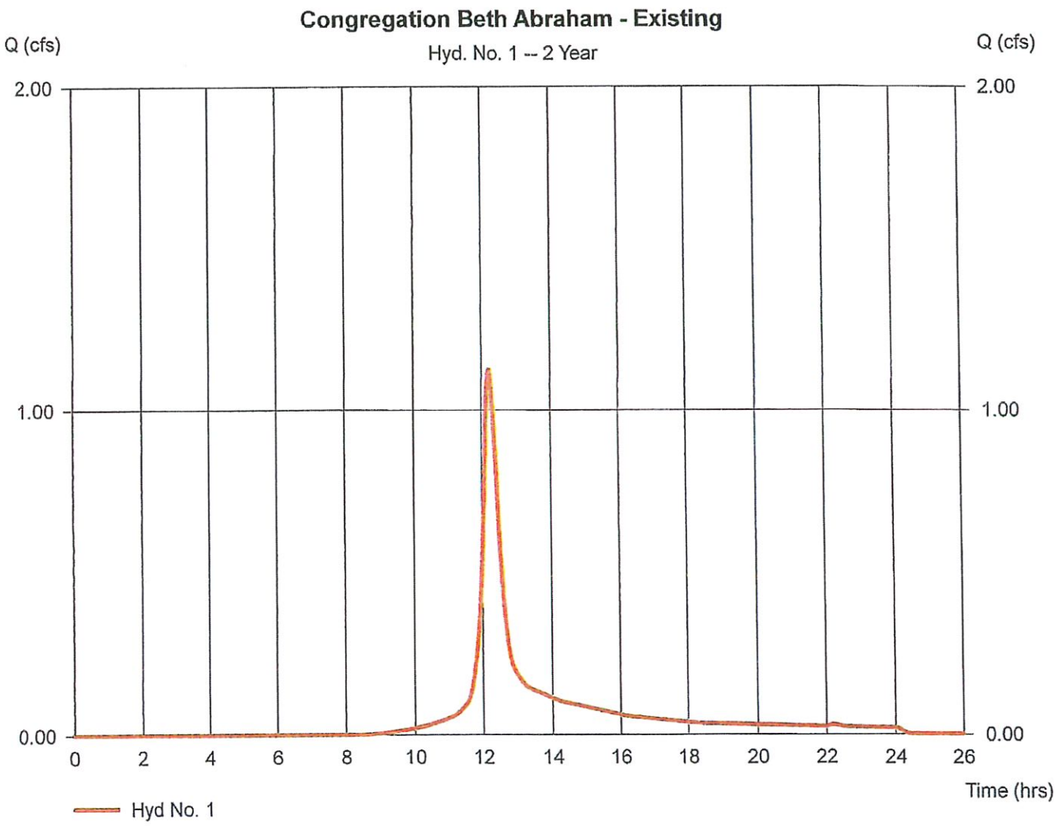
Hydraflow Hydrographs by Intelisolve v9.2 — Thursday, Jun 15, 2017

Hyd. No. 1

Congregation Beth Abraham - Existing

Hydrograph type	= SCS Runoff	Peak discharge	= 1.125 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.23 hrs
Time interval	= 2 min	Hyd. volume	= 4,974 cuft
Drainage area	= 0.810 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 20.10 min
Total precip.	= 3.30 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.480 x 74) + (0.030 x 89) + (0.300 x 98)] / 0.810



Hydrograph Report

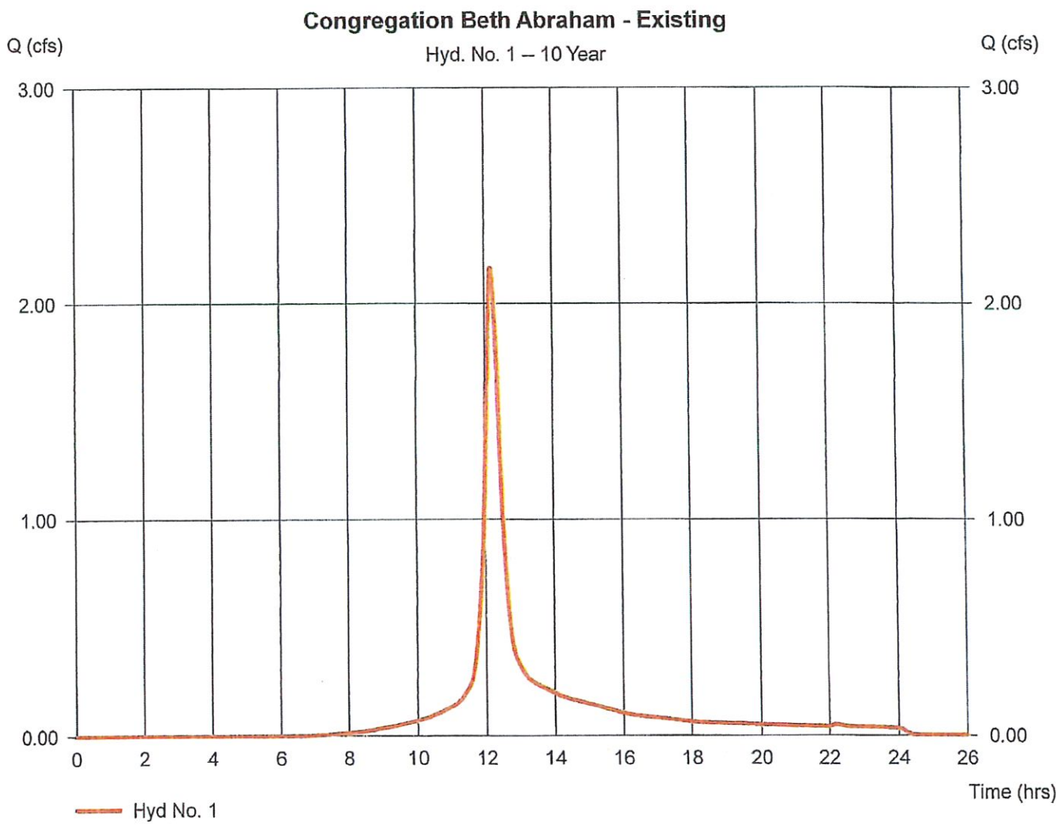
Hydraflow Hydrographs by Intelisolve v9.2 — Thursday, Jun 15, 2017

Hyd. No. 1

Congregation Beth Abraham - Existing

Hydrograph type	= SCS Runoff	Peak discharge	= 2.165 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 9,599 cuft
Drainage area	= 0.810 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 20.10 min
Total precip.	= 5.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.480 x 74) + (0.030 x 89) + (0.300 x 98)] / 0.810



Hydrograph Report

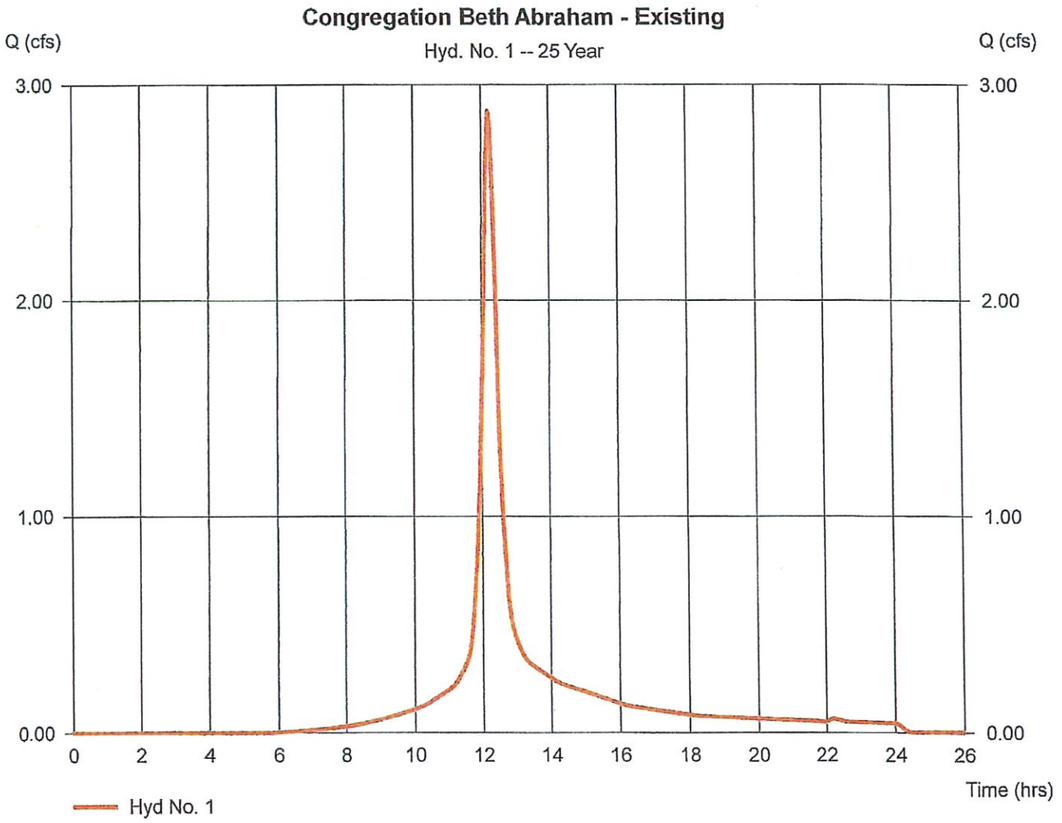
Hydraflow Hydrographs by Intelisolve v9.2 — Thursday, Jun 15, 2017

Hyd. No. 1

Congregation Beth Abraham - Existing

Hydrograph type	= SCS Runoff	Peak discharge	= 2.879 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 12,851 cuft
Drainage area	= 0.810 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 20.10 min
Total precip.	= 6.30 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.480 x 74) + (0.030 x 89) + (0.300 x 98)] / 0.810



Hydrograph Report

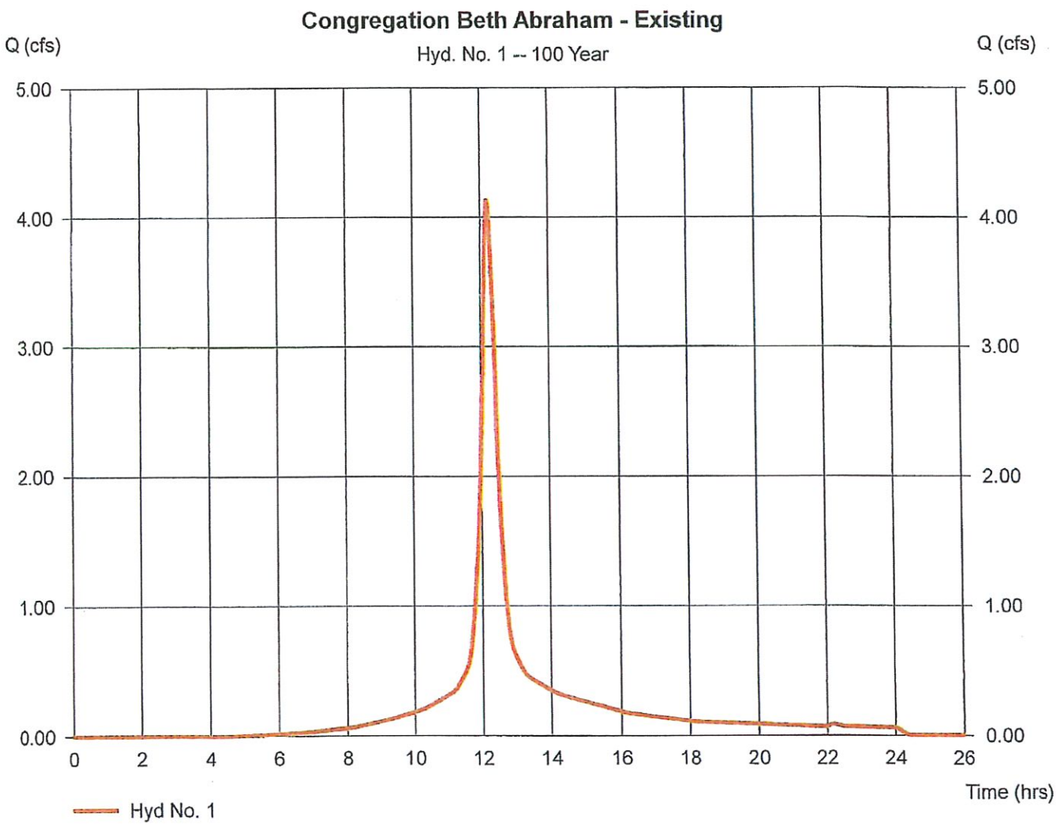
Hydraflow Hydrographs by Intelisolve v9.2 — Thursday, Jun 15, 2017

Hyd. No. 1

Congregation Beth Abraham - Existing

Hydrograph type	= SCS Runoff	Peak discharge	= 4.133 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.20 hrs
Time interval	= 2 min	Hyd. volume	= 18,701 cuft
Drainage area	= 0.810 ac	Curve number	= 83*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= TR55	Time of conc. (Tc)	= 20.10 min
Total precip.	= 8.40 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.480 x 74) + (0.030 x 89) + (0.300 x 98)] / 0.810



Hydrograph Report

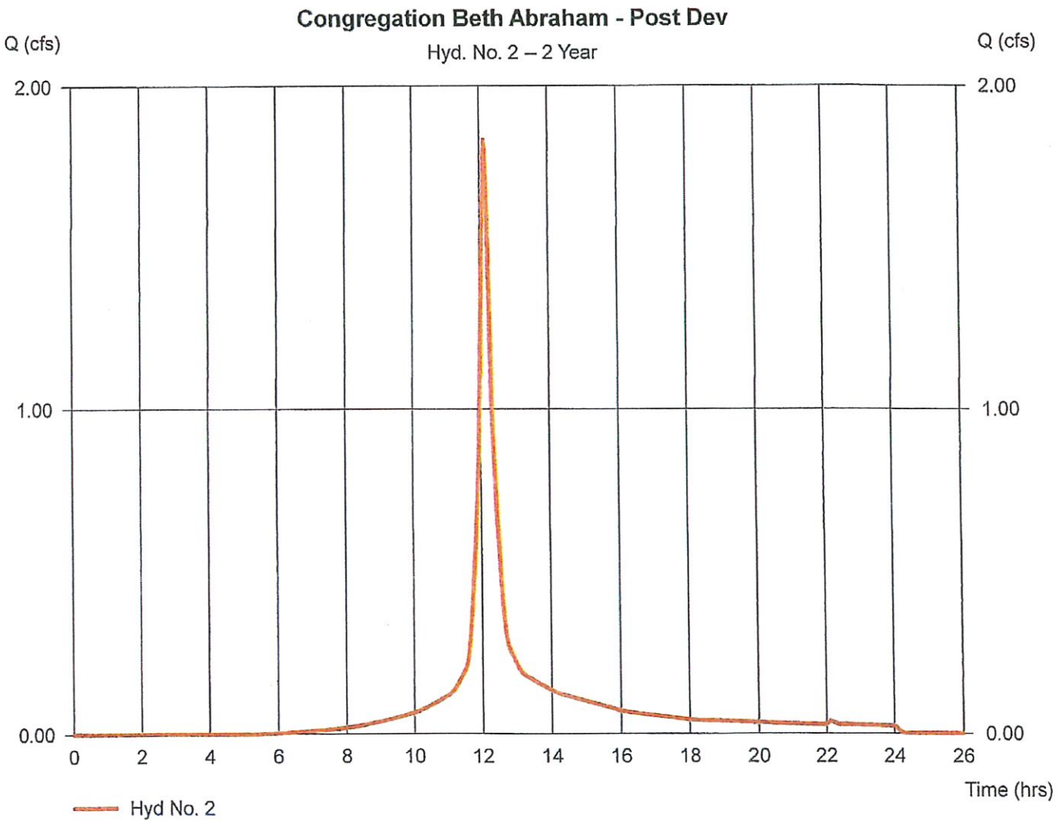
Hydraflow Hydrographs by Intelisolve v9.2 — Thursday, Jun 15, 2017

Hyd. No. 2

Congregation Beth Abraham - Post Dev

Hydrograph type	= SCS Runoff	Peak discharge	= 1.835 cfs
Storm frequency	= 2 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 7,133 cuft
Drainage area	= 0.810 ac	Curve number	= 91*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 3.30 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.220 x 74) + (0.590 x 98)] / 0.810



Hydrograph Report

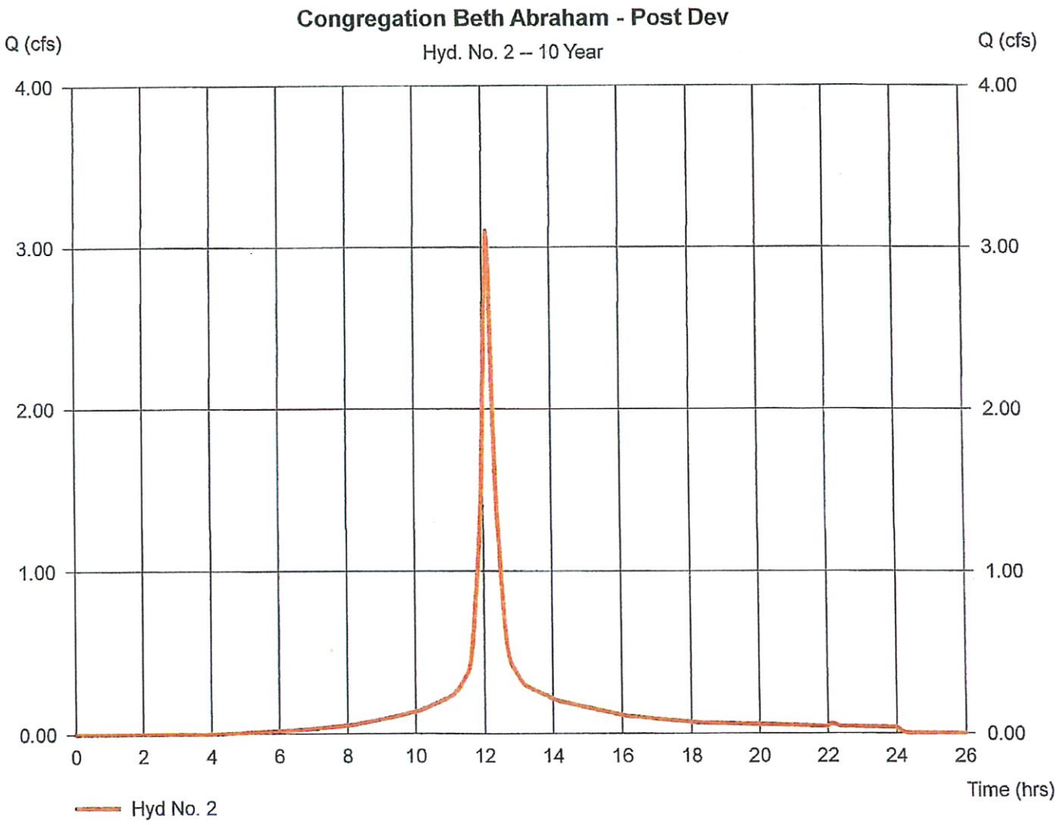
Hydraflow Hydrographs by Intelisolve v9.2 — Thursday, Jun 15, 2017

Hyd. No. 2

Congregation Beth Abraham - Post Dev

Hydrograph type	= SCS Runoff	Peak discharge	= 3.103 cfs
Storm frequency	= 10 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 12,369 cuft
Drainage area	= 0.810 ac	Curve number	= 91*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 5.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.220 x 74) + (0.590 x 98)] / 0.810



Hydrograph Report

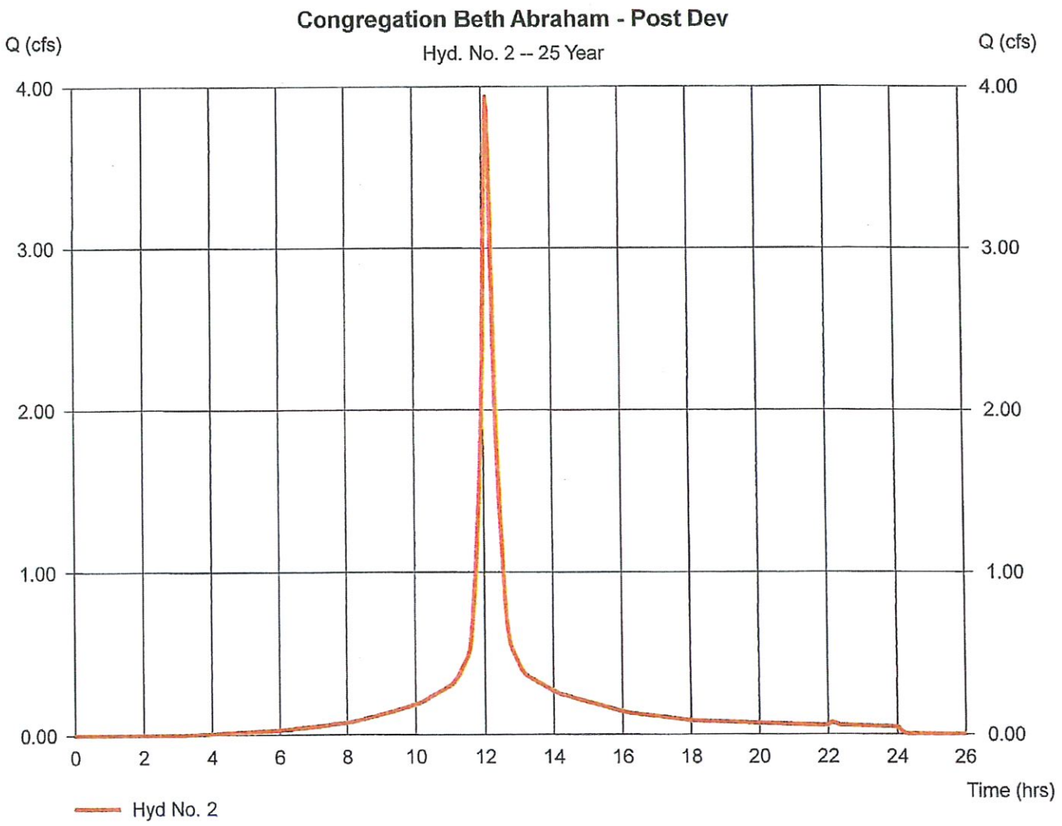
Hydraflow Hydrographs by Intelisolve v9.2 — Thursday, Jun 15, 2017

Hyd. No. 2

Congregation Beth Abraham - Post Dev

Hydrograph type	= SCS Runoff	Peak discharge	= 3.940 cfs
Storm frequency	= 25 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 15,922 cuft
Drainage area	= 0.810 ac	Curve number	= 91*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 6.30 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.220 x 74) + (0.590 x 98)] / 0.810



Hydrograph Report

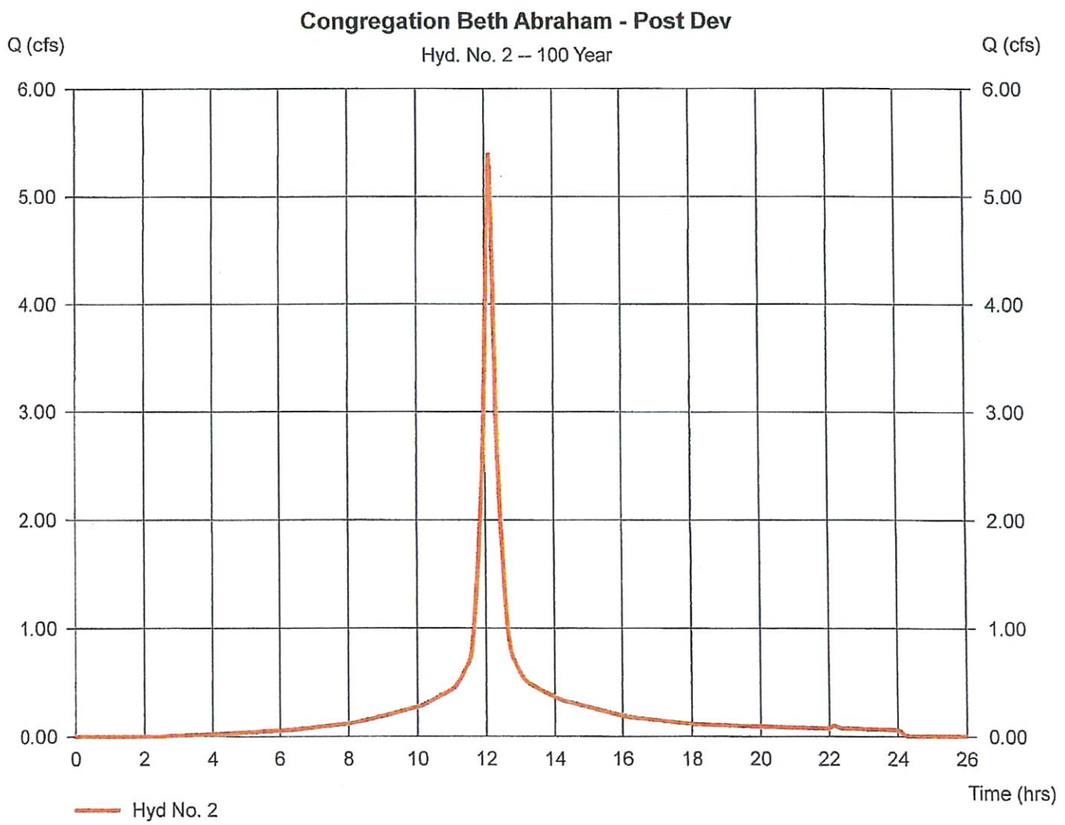
Hydraflow Hydrographs by Intelisolve v9.2 — Thursday, Jun 15, 2017

Hyd. No. 2

Congregation Beth Abraham - Post Dev

Hydrograph type	= SCS Runoff	Peak discharge	= 5.392 cfs
Storm frequency	= 100 yrs	Time to peak	= 12.13 hrs
Time interval	= 2 min	Hyd. volume	= 22,194 cuft
Drainage area	= 0.810 ac	Curve number	= 91*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 8.40 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.220 x 74) + (0.590 x 98)] / 0.810



Hydrograph Report

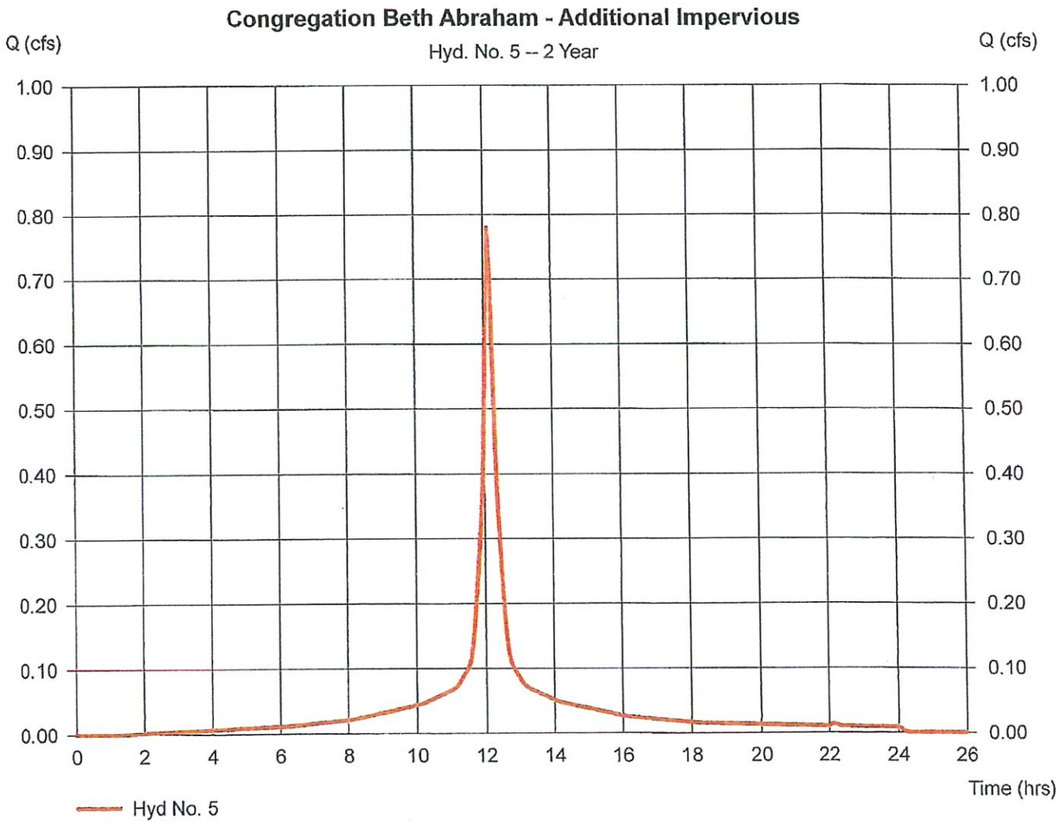
Hydraflow Hydrographs by Intelisolve v9.2 — Friday, Jun 16, 2017

Hyd. No. 5

Congregation Beth Abraham - Additional Impervious

Hydrograph type	= SCS Runoff	Peak discharge	= 0.780 cfs
Storm frequency	= 2 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 3,330 cuft
Drainage area	= 0.290 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 3.30 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.290 x 98)] / 0.290



Hydrograph Report

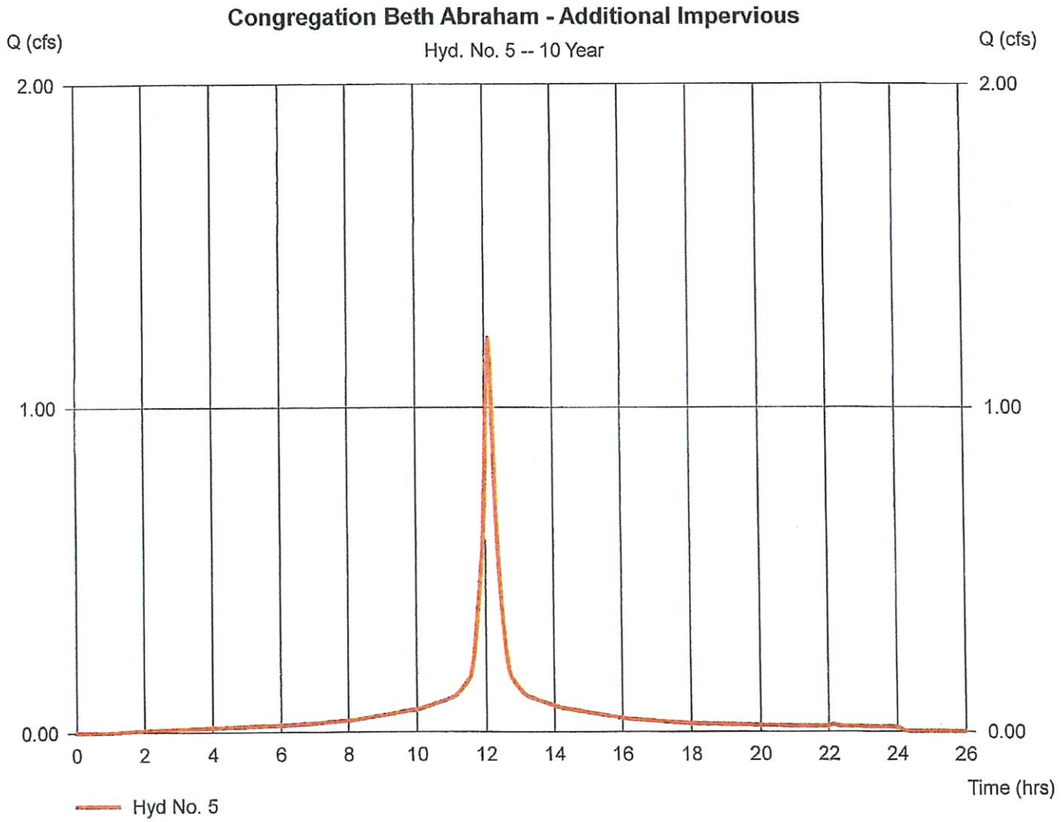
Hydraflow Hydrographs by Intelisolve v9.2 — Friday, Jun 16, 2017

Hyd. No. 5

Congregation Beth Abraham - Additional Impervious

Hydrograph type	= SCS Runoff	Peak discharge	= 1.215 cfs
Storm frequency	= 10 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 5,279 cuft
Drainage area	= 0.290 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 5.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.290 x 98)] / 0.290



Hydrograph Report

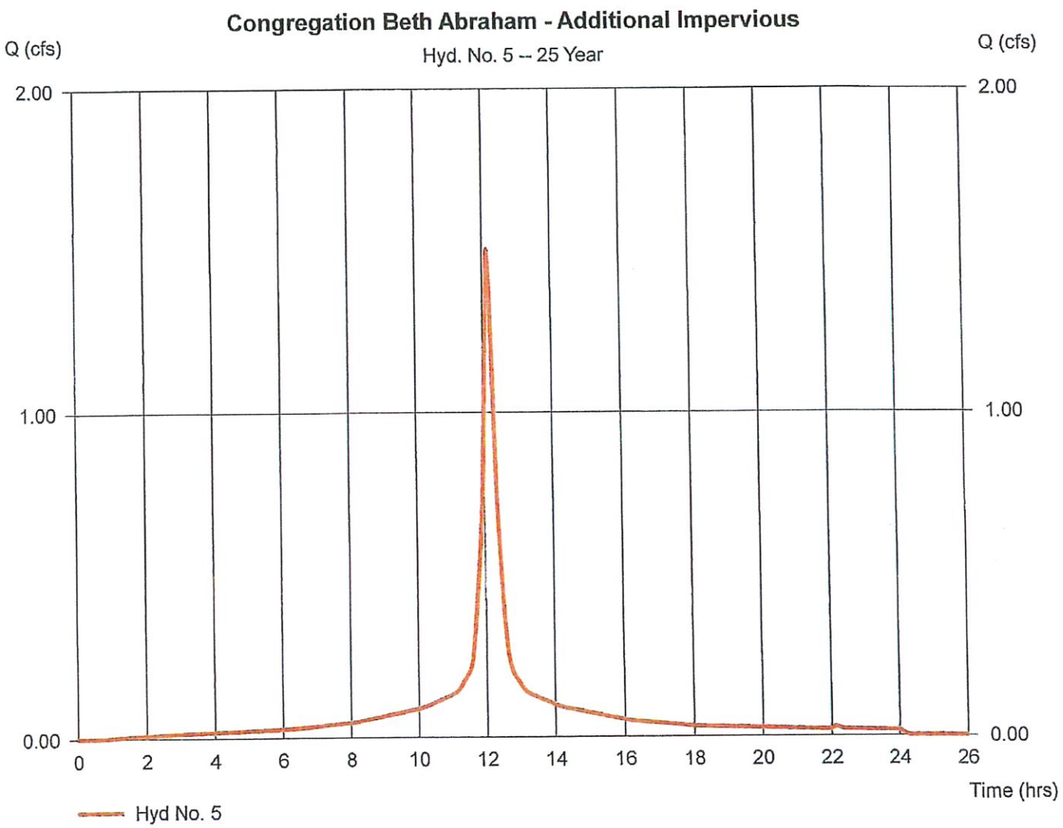
Hydraflow Hydrographs by Intelisolve v9.2 — Friday, Jun 16, 2017

Hyd. No. 5

Congregation Beth Abraham - Additional Impervious

Hydrograph type	= SCS Runoff	Peak discharge	= 1.504 cfs
Storm frequency	= 25 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 6,580 cuft
Drainage area	= 0.290 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 6.30 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.290 x 98)] / 0.290



Hydrograph Report

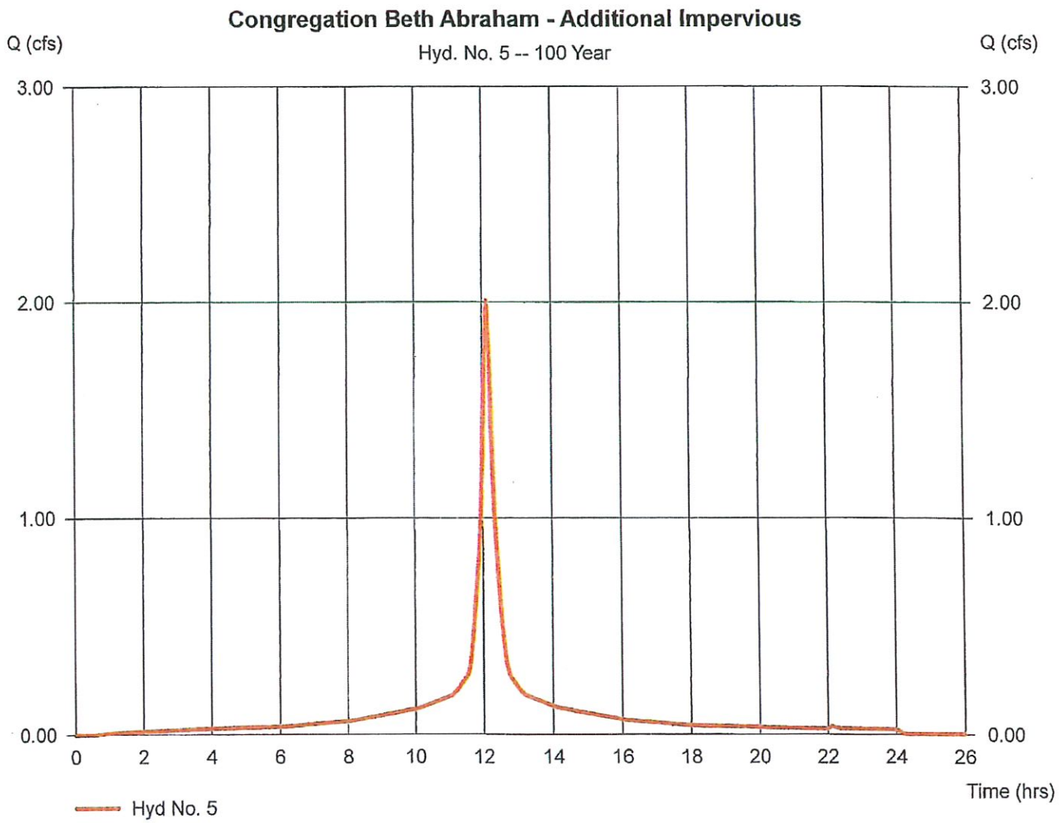
Hydraflow Hydrographs by Intelisolve v9.2 — Friday, Jun 16, 2017

Hyd. No. 5

Congregation Beth Abraham - Additional Impervious

Hydrograph type	= SCS Runoff	Peak discharge	= 2.008 cfs
Storm frequency	= 100 yrs	Time to peak	= 728 min
Time interval	= 2 min	Hyd. volume	= 8,858 cuft
Drainage area	= 0.290 ac	Curve number	= 98*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 10.00 min
Total precip.	= 8.40 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.290 x 98)] / 0.290



Pond Report

Hydraflow Hydrographs by Intelisolve v9.2 — Friday, Jun 23, 2017

Pond No. 3 - Retention Pipe

Pond Data

UG Chambers - Invert elev. = 107.00 ft, Rise x Span = 5.00 x 5.00 ft, Barrel Len = 140.00 ft, No. Barrels = 1, Slope = 0.00%, Headers = No
Encasement - Invert elev. = 107.00 ft, Width = 10.00 ft, Height = 8.00 ft, Voids = 35.00%

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	107.00	n/a	0	0
0.80	107.80	n/a	577	577
1.60	108.60	n/a	701	1,278
2.40	109.40	n/a	747	2,025
3.20	110.20	n/a	752	2,777
4.00	111.00	n/a	717	3,493
4.80	111.80	n/a	622	4,116
5.60	112.60	n/a	416	4,532
6.40	113.40	n/a	392	4,924
7.20	114.20	n/a	392	5,316
8.00	115.00	n/a	392	5,708

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 0.00	0.00	0.00	0.00
Span (in)	= 0.00	0.00	0.00	0.00
No. Barrels	= 0	0	0	0
Invert El. (ft)	= 0.00	0.00	0.00	0.00
Length (ft)	= 0.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 1.00	0.00	0.00	0.00
Crest El. (ft)	= 115.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= Rect	—	—	—
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 1.000 (by Wet area)
TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	107.00	—	—	—	—	0.00	—	—	—	0.000	—	0.000
0.80	577	107.80	—	—	—	—	0.00	—	—	—	0.038	—	0.038
1.60	1,278	108.60	—	—	—	—	0.00	—	—	—	0.043	—	0.043
2.40	2,025	109.40	—	—	—	—	0.00	—	—	—	0.048	—	0.048
3.20	2,777	110.20	—	—	—	—	0.00	—	—	—	0.053	—	0.053
4.00	3,493	111.00	—	—	—	—	0.00	—	—	—	0.058	—	0.058
4.80	4,116	111.80	—	—	—	—	0.00	—	—	—	0.064	—	0.064
5.60	4,532	112.60	—	—	—	—	0.00	—	—	—	0.069	—	0.069
6.40	4,924	113.40	—	—	—	—	0.00	—	—	—	0.074	—	0.074
7.20	5,316	114.20	—	—	—	—	0.00	—	—	—	0.079	—	0.079
8.00	5,708	115.00	—	—	—	—	0.00	—	—	—	0.084	—	0.084

Hydrograph Report

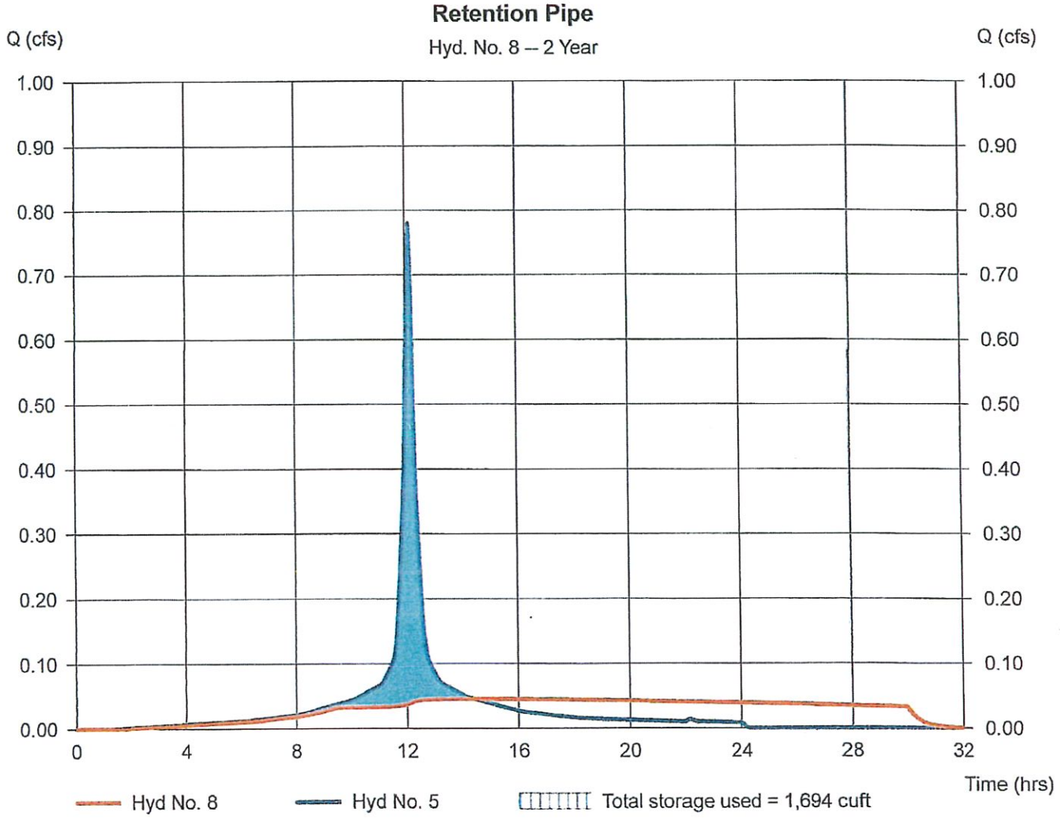
Hydraflow Hydrographs by Intelisolve v9.2 — Friday, Jun 23, 2017

Hyd. No. 8

Retention Pipe

Hydrograph type	= Reservoir	Peak discharge	= 0.046 cfs
Storm frequency	= 2 yrs	Time to peak	= 864 min
Time interval	= 2 min	Hyd. volume	= 3,328 cuft
Inflow hyd. No.	= 5 - Congregation Beth Abraham - Additio	Max. Elevation	= 109.05 ft
Reservoir name	= Retention Pipe	Max. Storage	= 1,694 cuft

Storage Indication method used. Outflow includes exfiltration.



Hydrograph Report

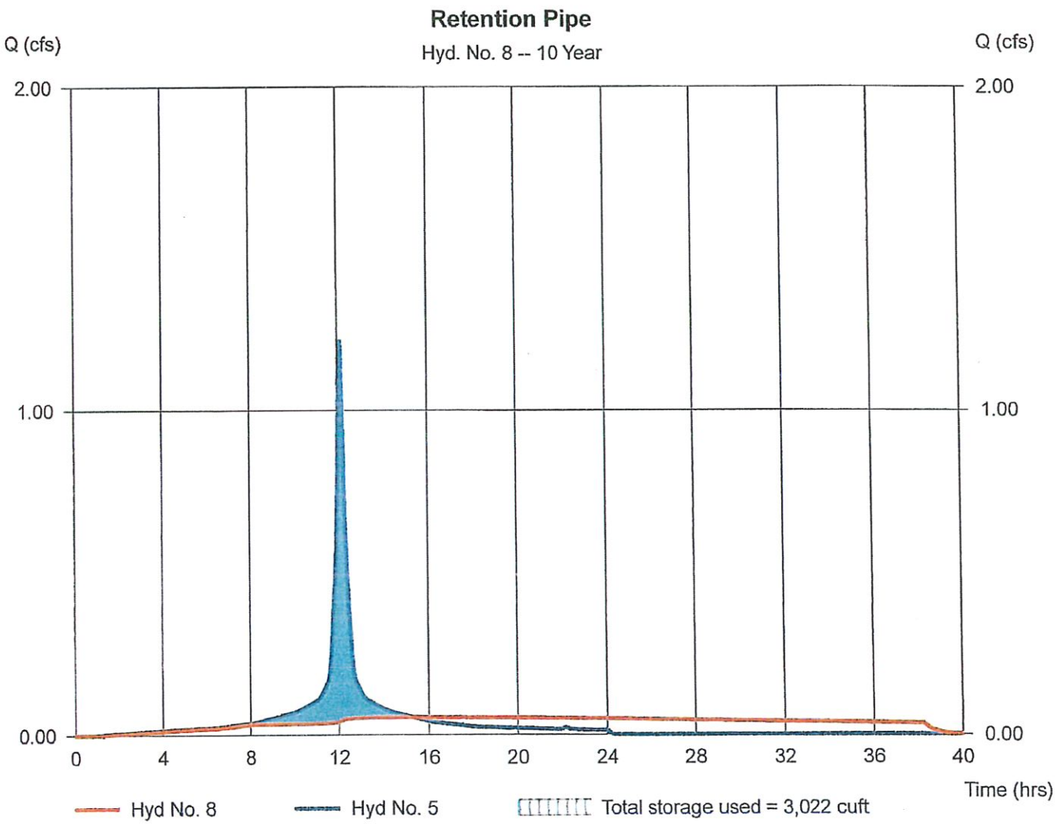
Hydraflow Hydrographs by Intelisolve v9.2 — Friday, Jun 23, 2017

Hyd. No. 8

Retention Pipe

Hydrograph type	= Reservoir	Peak discharge	= 0.055 cfs
Storm frequency	= 10 yrs	Time to peak	= 918 min
Time interval	= 2 min	Hyd. volume	= 5,277 cuft
Inflow hyd. No.	= 5 - Congregation Beth Abraham - Additio	Max. Elevation	= 110.47 ft
Reservoir name	= Retention Pipe	Max. Storage	= 3,022 cuft

Storage Indication method used. Outflow includes exfiltration.



Hydrograph Report

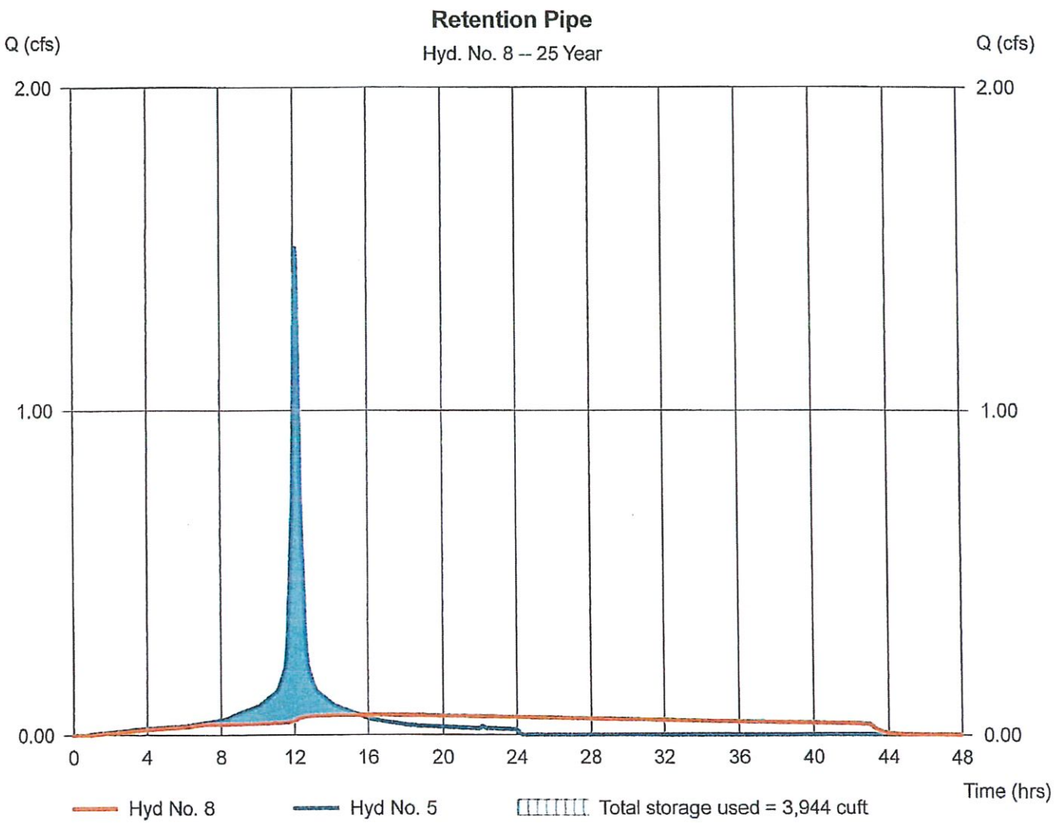
Hydraflow Hydrographs by Intelisolve v9.2 — Friday, Jun 23, 2017

Hyd. No. 8

Retention Pipe

Hydrograph type	= Reservoir	Peak discharge	= 0.062 cfs
Storm frequency	= 25 yrs	Time to peak	= 934 min
Time interval	= 2 min	Hyd. volume	= 6,579 cuft
Inflow hyd. No.	= 5 - Congregation Beth Abraham - Additio	Max. Elevation	= 111.58 ft
Reservoir name	= Retention Pipe	Max. Storage	= 3,944 cuft

Storage Indication method used. Outflow includes exfiltration.



Hydrograph Report

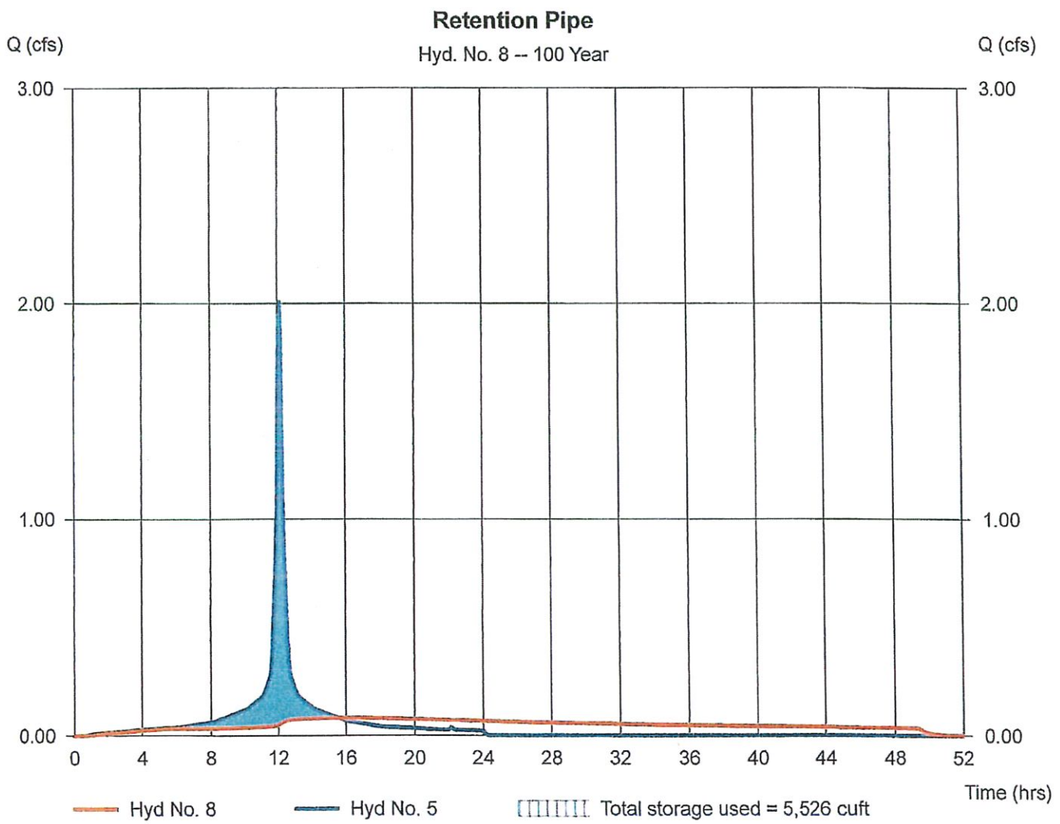
Hydraflow Hydrographs by Intelisolve v9.2 — Friday, Jun 23, 2017

Hyd. No. 8

Retention Pipe

Hydrograph type	= Reservoir	Peak discharge	= 0.082 cfs
Storm frequency	= 100 yrs	Time to peak	= 936 min
Time interval	= 2 min	Hyd. volume	= 8,857 cuft
Inflow hyd. No.	= 5 - Congregation Beth Abraham - Additio	Max. Elevation	= 114.63 ft
Reservoir name	= Retention Pipe	Max. Storage	= 5,526 cuft

Storage Indication method used. Outflow includes exfiltration.



CONGREGATION BETH ABRAHAM
DRAIN PIPES

Manning's n for PVC n = 0.011

	L	Dia	Invert Elevation		Slope	V	q
			Start	End		Full	Full
	ft	ft	ft	ft	ft/ft	ft/s	cfs
100-year runoff = 5.39 cfs		1.00			0.020	7.60	5.97
100-year runoff = 5.39 cfs		1.00			0.030	9.31	7.31
100-year runoff = 5.39 cfs		1.00			0.040	10.75	8.44
Outlet Manhole to Ex CB	30	1.00	115.00	114.64	0.012	5.89	4.62

Hydrograph Report

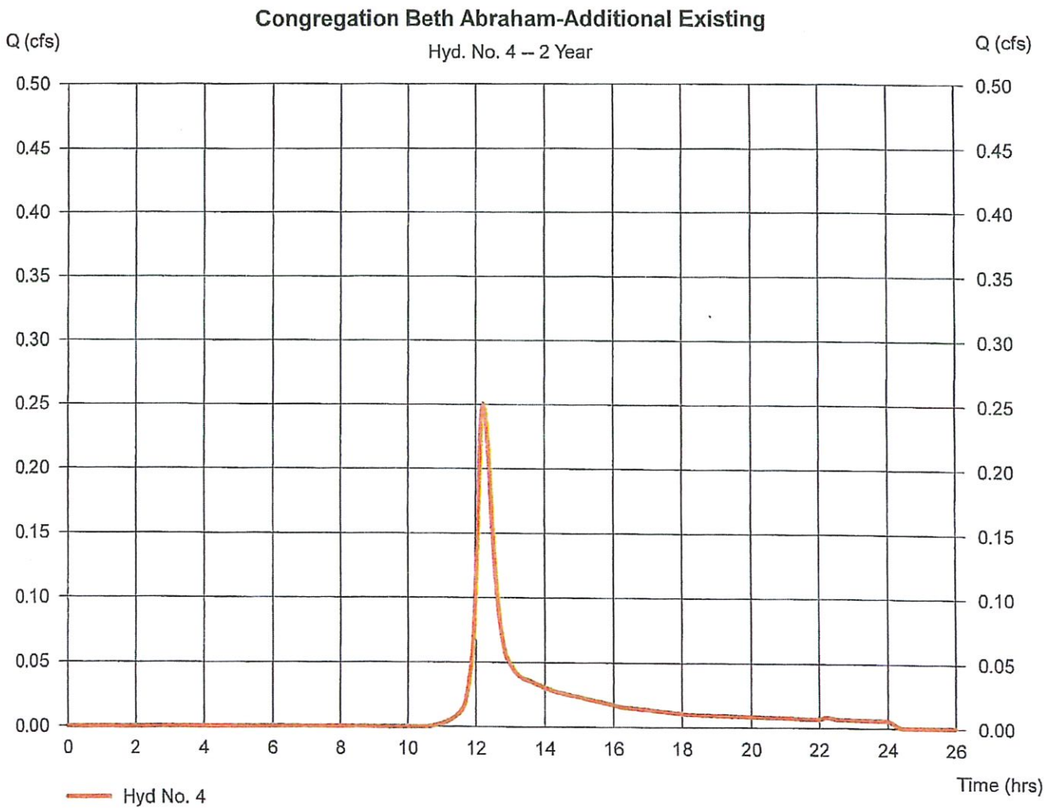
Hydraflow Hydrographs by Intelisolve v9.2 — Thursday, Nov 30, 2017

Hyd. No. 4

Congregation Beth Abraham-Additional Existing

Hydrograph type	= SCS Runoff	Peak discharge	= 0.251 cfs
Storm frequency	= 2 yrs	Time to peak	= 734 min
Time interval	= 2 min	Hyd. volume	= 1,162 cuft
Drainage area	= 0.290 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 20.10 min
Total precip.	= 3.30 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.290 x 74)] / 0.290



Hydrograph Report

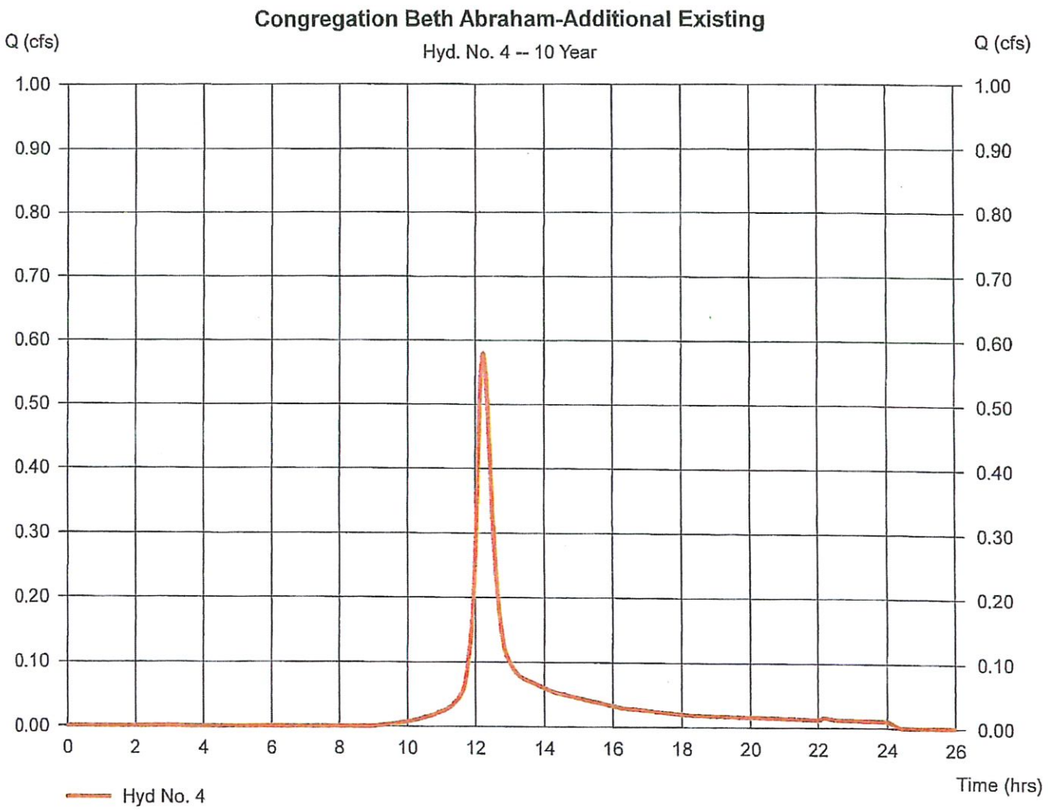
Hydraflow Hydrographs by Intelisolve v9.2 — Thursday, Nov 30, 2017

Hyd. No. 4

Congregation Beth Abraham-Additional Existing

Hydrograph type	= SCS Runoff	Peak discharge	= 0.580 cfs
Storm frequency	= 10 yrs	Time to peak	= 734 min
Time interval	= 2 min	Hyd. volume	= 2,573 cuft
Drainage area	= 0.290 ac	Curve number	= 74*
Basin Slope	= 0.0 %	Hydraulic length	= 0 ft
Tc method	= USER	Time of conc. (Tc)	= 20.10 min
Total precip.	= 5.10 in	Distribution	= Type III
Storm duration	= 24 hrs	Shape factor	= 484

* Composite (Area/CN) = [(0.290 x 74)] / 0.290



Pond Report

Hydraflow Hydrographs by Intelisolve v9.2 — Thursday, Nov 30, 2017

Pond No. 4 - Detention

Pond Data

UG Chambers - Invert elev. = 107.00 ft, Rise x Span = 5.00 x 5.00 ft, Barrel Len = 140.00 ft, No. Barrels = 1, Slope = 0.00%, Headers = No
Encasement - Invert elev. = 107.00 ft, Width = 10.00 ft, Height = 8.00 ft, Voids = 35.00%

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	107.00	n/a	0	0
0.80	107.80	n/a	577	577
1.60	108.60	n/a	701	1,278
2.40	109.40	n/a	747	2,025
3.20	110.20	n/a	752	2,777
4.00	111.00	n/a	717	3,493
4.80	111.80	n/a	622	4,116
5.60	112.60	n/a	416	4,532
6.40	113.40	n/a	392	4,924
7.20	114.20	n/a	392	5,316
8.00	115.00	n/a	392	5,708

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 12.00	0.00	0.00	0.00
Span (in)	= 12.00	0.00	0.00	0.00
No. Barrels	= 1	0	0	0
Invert El. (ft)	= 111.00	0.00	0.00	0.00
Length (ft)	= 1.00	0.00	0.00	0.00
Slope (%)	= 0.00	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	No	No	No

Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)
TW Elev. (ft) = 0.00

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).

Stage / Storage / Discharge Table

Stage ft	Storage cuft	Elevation ft	Clv A cfs	Clv B cfs	Clv C cfs	PrfRsr cfs	Wr A cfs	Wr B cfs	Wr C cfs	Wr D cfs	Exfil cfs	User cfs	Total cfs
0.00	0	107.00	0.00	---	---	---	---	---	---	---	---	---	0.000
0.80	577	107.80	0.00	---	---	---	---	---	---	---	---	---	0.000
1.60	1,278	108.60	0.00	---	---	---	---	---	---	---	---	---	0.000
2.40	2,025	109.40	0.00	---	---	---	---	---	---	---	---	---	0.000
3.20	2,777	110.20	0.00	---	---	---	---	---	---	---	---	---	0.000
4.00	3,493	111.00	0.00	---	---	---	---	---	---	---	---	---	0.000
4.80	4,116	111.80	2.05 ic	---	---	---	---	---	---	---	---	---	2.052
5.60	4,532	112.60	3.95 oc	---	---	---	---	---	---	---	---	---	3.945
6.40	4,924	113.40	5.21 ic	---	---	---	---	---	---	---	---	---	5.212
7.20	5,316	114.20	6.21 ic	---	---	---	---	---	---	---	---	---	6.213
8.00	5,708	115.00	7.07 ic	---	---	---	---	---	---	---	---	---	7.074

Hydrograph Report

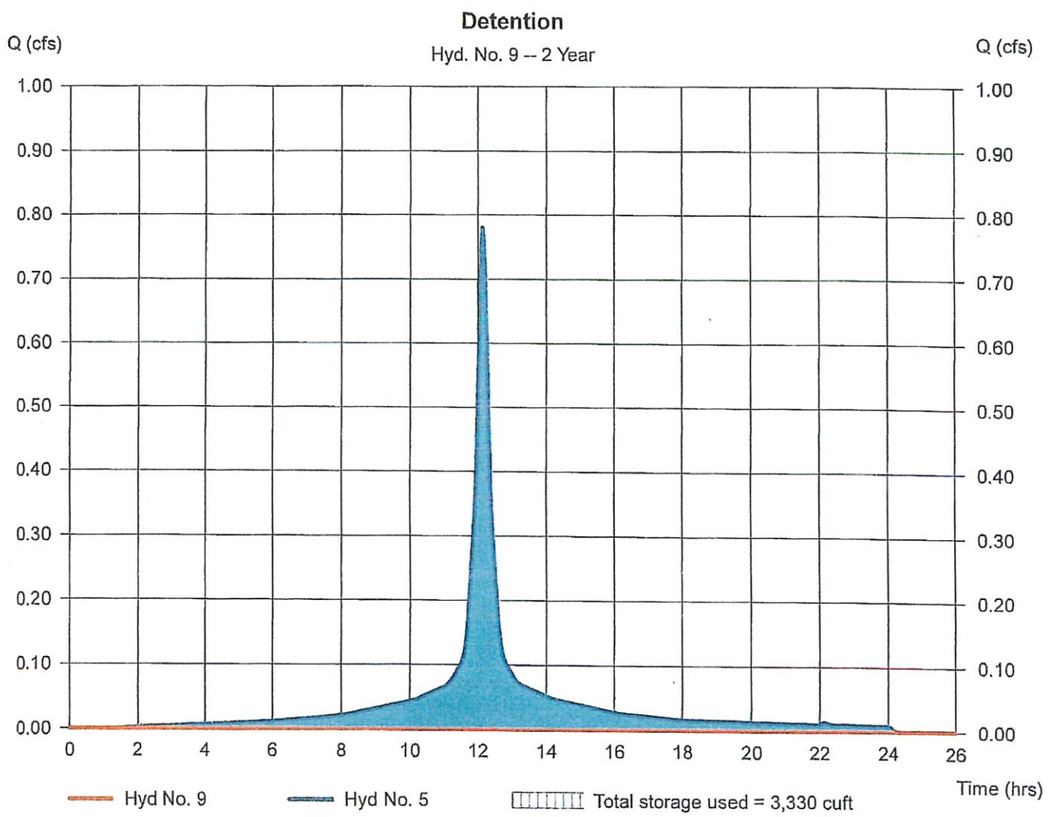
Hydraflow Hydrographs by Intelisolve v9.2 — Thursday, Nov 30, 2017

Hyd. No. 9

Detention

Hydrograph type	= Reservoir	Peak discharge	= 0.000 cfs
Storm frequency	= 2 yrs	Time to peak	= n/a
Time interval	= 2 min	Hyd. volume	= 0 cuft
Inflow hyd. No.	= 5 - Congregation Beth Abraham - Addition	Max. Elevation	= 110.82 ft
Reservoir name	= Detention	Max. Storage	= 3,330 cuft

Storage Indication method used.



Hydrograph Report

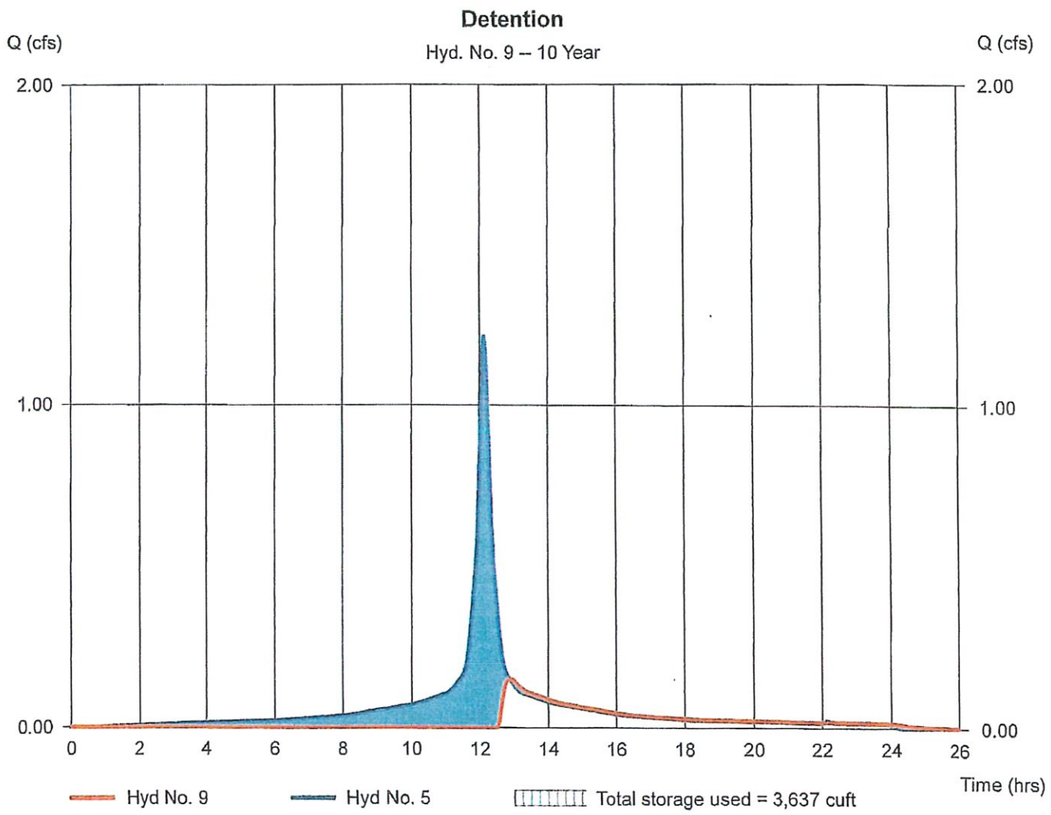
Hydraflow Hydrographs by Intelisolve v9.2 — Thursday, Nov 30, 2017

Hyd. No. 9

Detention

Hydrograph type	= Reservoir	Peak discharge	= 0.151 cfs
Storm frequency	= 10 yrs	Time to peak	= 772 min
Time interval	= 2 min	Hyd. volume	= 1,784 cuft
Inflow hyd. No.	= 5 - Congregation Beth Abraham - Addition	Max. Elevation	= 111.19 ft
Reservoir name	= Detention	Max. Storage	= 3,637 cuft

Storage Indication method used.



JOHNSON SOILS COMPANY

66 Glen Avenue
Glen Rock, NJ 07452
Telephone: 201-301-1045
Fax: 201-857-8002
Email: info@johnsonsoils.com

June 9, 2017

SNS Architects & Engineers, PC
One Paragon Drive
Montvale, NJ

Attn: Steven Napolitano, PE

Re: Geotechnical Engineering Report
Proposed Building Addition
Congregation Beth Abraham
396 New Bridge Road
Lot 16, 17, 18 & 21, Block 302
Bergenfield, NJ
JSC Job # 17-215

Johnson Soils Company, Inc. (JSC) has been retained by **SNS Architects & Engineers, PC** to perform a geotechnical investigation at the above referenced location as per our proposal dated February 27, 2017. It includes JSC's findings, conclusions and recommendations related to the construction of the proposed building addition with basement.

The site is located on the south side of New Bridge Road, west of Westminster Avenue and north of Thames Boulevard in Bergenfield, New Jersey. The property is currently occupied with some 2 story buildings surrounded by Grass, Asphalt and Gravel. The proposed features are shown on the plan entitled "Boring Location Plan," adapted from SNS Architects & Engineers PC, "Existing Conditions Plan" dated 5-10-17, dwg. No. Y-1 and which was provided by **SNS Architects & Engineers, PC.**

Proposed Building Addition
Congregation Beth Abraham
396 New Bridge Road
Lot 16, 17, 18 & 21, Block 302
Bergenfield, NJ
JSC Job # 17-215

INVESTIGATION

Seven (7) Borings were completed between May 23 & 25, 2017. Five (5) borings were performed for the proposed addition and two (2) borings were performed in the storm water management areas. The Borings were advanced using truck mounted and portable drilling equipment in accordance with the procedures of the Standard Penetration Test (ASTM-1586). For this test, a standard split barrel sampler of two (2) inches outside diameter, one and three eighth (1 3/8) inches inside diameter is advanced into the soil using a one hundred and forty (140) pound weight hammer falling thirty (30) inches. Standard Penetration Tests were taken continuously from zero (0) to twelve (12) feet and at five (5) feet intervals thereafter.

The boring location plan and record sheet for each boring are attached to this report.

FINDINGS

Subsurface Conditions: The explorations for this study indicate that the site is underlain by fairly uniform subsurface conditions. The strata are listed below in order of increasing depth. Detailed descriptions of the subsurface conditions are shown on the individual logs of Borings, Plates 3A through 3G.

1. Gravel: A layer of Gravel was encountered from the surface in Boring 5 to a depth of one foot six inches (1'6") below the existing surface grade.

2. Fill: A layer of Fill was encountered from the surface in Boring 7 to a depth one (1) foot below the existing surface grade.

3. Topsoil: A layer of Topsoil was encountered from the surface in Borings 1 & 6 to a depth of one (1) foot below the existing surface grade.

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Bergenfield, NJ
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4. Silty Sand (SM): A layer of Silty Sand was encountered below the Fill in Boring 7, Below the Gravel in Boring 5, below the Topsoil in Borings 1 & 6 and from the surface in Borings 2, 3, & 4 to depths ranging from six to ten (6-10) feet below the existing surface grade.

5. Silty Sand & Gravel (SM-GM): A layer of Silty Sand & Gravel was encountered below the Silty Sand in all Borings to refusal depths ranging from eight feet two inches to sixteen feet one inch (8'2"-16'1") below the existing surface grade.

	B-1	B-2	B-3	B-4	B-5	B-6	B-7
Est. Existing Grade	119.5	118	118	119	116.5	116	116
Proposed Basement Elevation	106.84	106.84	106.84	106.84	106.84	106.84	106.84
Refusal Depth	-	16'1"	15'10"	8'2"	8'1"	12'9"	11'1"
Est. Refusal Elevation	-	101.92	102.17	110.83	108.42	103.25	104.92

No ground water was observed at the time of the investigation. It should be noted that the water level conditions might vary due to variations in seasons, rainfall, temperature, and other factors.

Proposed Building Addition
Congregation Beth Abraham
396 New Bridge Road
Lot 16, 17, 18 & 21, Block 302
Bergenfield, NJ
JSC Job # 17-215

COMMENTS AND CONCLUSIONS

As seen from the table above the Sandstone rock was encountered above the proposed finished basement floor elevation in Borings 4 & 5. The other borings showed the rock depth to be below the proposed basement floor elevation. The Sandstone rock was augured to the refusal depth in all borings except borings 1 & 5, which were performed for the storm-water management systems. The Sandstone is found to be fairly rippable with rock teeth attached to a large excavator, but there can be some instances where a rock hammer might be necessary to remove the rock below the floor elevation and for installation of footings.

The Silty Sand encountered in all the Borings was found in a loose to medium dense condition and is not recommended for placement of footings on this material. JSC recommends excavating into the dense to very dense Silty Sand & Gravel for placement of all footings. If rock is encountered, we recommend a layer of crushed stone (3/4") for at least three (3) inches to act as a cushion.

See recommendations section for additional information.

In the instance where groundwater or surface runoff that may enter the proposed excavations may be effectively controlled by sump pits placed within or adjacent to the proposed excavations. It should be noted that the water level conditions might vary due to variations in rainfall, temperature and other factors at the time of construction.

Proposed Building Addition
Congregation Beth Abraham
396 New Bridge Road
Lot 16, 17, 18 & 21, Block 302
Bergenfield, NJ
JSC Job # 17-215

RECOMMENDATIONS

The following geotechnical design and construction recommendations are offered:

1. Foundation:
    a. Remove any misc. Fill down to the dense to very dense Silty Sand & Gravel.
        i. All interior piers will also need to be excavated to the dense to very dense Silty Sand & Gravel
        ii. Excavation shall be a minimum of three (3) feet outside the proposed building dimension.
        iii. If rock (Sandstone) is encountered, JSC recommends to place a cushion of a minimum of three (3) inches of crushed stone.
            A. Placing footings on both soil and rock can have differential settlement at the intersection of the two mediums and is NOT recommended.
    b. Place with crushed stone (3/4" or 1 ½") up to the bottom of proposed footing elevation.
        i. A minimum of one (1) foot outside the proposed footing dimension.
    c. Use an allowable bearing capacity of four thousand (4,000) pounds per square foot (PSF) on Crushed Stone on Silty Sand & Gravel.
    d. Maximum settlement is less than one (1) in.
    e. Estimated differential settlement is less than point five (0.5) in.
    f. Minimum depth for frost protection is three feet (3') below the final exterior grade.
    g. All concrete footings should be kept dry a minimum of 48 hours after the footings are poured, for proper curing.
    h. Concrete blankets (or equivalent) are required if the temperature drops below 32 degrees, to prevent the concrete from freezing.

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JSC Job # 17-215

2. Slab on Grade:
    a. Proof roll area with a minimum of four passes of heavy vibratory compactor with a minimum static drum weight of twelve thousand (12,000) pounds or equal.
        i. Any areas, which are observed to be soft or unstable, should be removed and replaced with controlled fill and compacted as per recommendations # 8 & #9
    b. Where compaction is performed, use a Modulus of Subgrade Reaction (k) of one hundred fifty (150) pounds per cubic inch (pci) for slab design.
    c. A minimum of six (6) inches of (¾)" crushed stone should be placed under all slabs on grades.
    d. A 6 mil. Vapor barrier should be placed on the crushed stone.

3. Parking & Driveway areas:
    a. Proof roll area with a minimum of four (4) passes with a heavy vibratory compactor with a minimum static drum weight of twelve thousand (12,000) pounds or equal
    b. Any areas, which are observed to be soft or unstable, should be removed and replaced with controlled fill and compacted as per recommendations # 8 & #9.
    c. Subbase: Quarry Process Stone – 6"
    d. Base Course – I-2 – 4"
    e. Surface Course – I-5 – 2"

4. Soil Classification "C" as per OSHA 1926 Subpart P App A with maximum allowable slopes (H:V) of 1 ½:1 as per OSHA 1926 Subpart P App B Table B-1.
    a. This is for short term maximum allowable slopes less than twelve (12) feet.
    b. Sloping or benching for excavations greater than twenty (20) feet deep shall be designed by a Professional Engineer licensed in the State of New Jersey.

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JSC Job # 17-215

5. The Seismic Site Classification is "C" in terms of the International Building Code (IBC). Also the profile is considered not to be susceptible to liquefaction.
   a. $S_S = 0.282$ g
   b. $S_1 = 0.073$ g
   c. $S_{MS} = 0.338$ g
   d. $S_{M1} = 0.124$ g
   e. $S_{DS} = 0.225$ g
   f. $S_{D1} = 0.082$ g

6. Storm water Management:
   a. Boring 1 @ 8' is 0.5 in/hour
   b. Boring 5 @ 8' is 2 in/hour

7. Retaining Wall Design Information:
   a. Silty Sand (SM)
      i. $\gamma = 120$ PCF
      ii. $\phi = 30^\circ$
      iii. C = 25 PSF
   b. Silty Sand & Gravel (SM)
      i. $\gamma = 128$ PCF
      ii. $\phi = 32^\circ$
      iii. C = 20 PSF

8. Controlled Fill:
   a. Crushed Stone – ¾" or 1 ½" with no fines
   b. Sand and Gravel with less than 20% passing the #200 sieve.
   c. Quarry Process Stone (QP) with less than 20% passing the #200 sieve
   d. The existing Silty Sand or Silty Sand & Gravel can be used as backfill or controlled fill when placed within +/- 2% moisture content and approved by a geotechnical engineer licensed in the State of New Jersey at the time of use.

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9. Controlled and compacted Fill Requirements:
    a. A geotechnical engineer licensed in the state of New Jersey to inspect all earthwork operations.
    b. The contractor and/or owner shall notify the geotechnical engineer in writing a minimum of 5 days prior to the start of all work on the project. The notification shall include all sources of fill, equipment to be used and estimated dates of the work and the proposed onsite supervisor.
    c. In areas where an old basement will be filled to the proposed subgrade elevation. The existing concrete slab shall be removed and the area proof rolled to check for soft or loose material.
    d. All misc. Fill and Topsoil shall be graded prior to the start of all earthwork operations.
    e. All fill areas shall be proof rolled prior to the placement of any new fill. All proof rolling shall be performed in the presence of the geotechnical engineer. If soft areas are found during the proof rolling process, the area shall be removed and replaced with compacted controlled fill as per the direction of the geotechnical engineer.
    f. Any proposed fill area shall be leveled before placement of any fill. The area shall be free from ruts, hummocks or other uneven surfaces that would prevent uniform compaction.
    g. Use any of the material stated in the types of controlled fill section or other material approved by the geotechnical engineer.
    h. A 50-lb bag of material shall be submitted to the geotechnical engineer for approval and testing a minimum of 5 days prior to the start of work. No fill material shall be placed until the geotechnical engineer has approved the material for use in the project.
    i. All controlled fill should be placed in horizontal layers of eight to twelve (8-12) inches in loose thickness and be uniformly compacted to achieve a density of at least ninety-five (95) percent of the maximum dry density as determined by the laboratory when tested in accordance with the most recent ASTM D1557 Standard.
    j. Backfill within confined areas should be placed in layers of six to eight (6-8) inches in loose thickness and compacted to the same 95% of maximum dry density using portable compaction equipment.

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k. No fill material shall be placed, spread, or compacted when the ground or fill is frozen or thawing or during unfavorable weather conditions. When work is interrupted by heavy rain or frost, operations shall not be resumed unless the moisture content and density of the fill are acceptable to the geotechnical engineer.
l. A sufficient number of passes shall be approved by the geotechnical engineer in order to achieve the acceptable specified density above. A minimum of 3 passes of the approved compactor shall be required over all areas of each lift.
m. Field density tests shall be made by the geotechnical engineer to determine the in place field density in each layer placed. No fill shall be placed over any layer that has not been previously approved by the geotechnical engineer. Should any of the tests find insufficient density; additional compaction will be required until the required density is obtained.

10. The following construction tasks should be inspected by a geotechnical engineer using appropriate laboratory and field testing support:
    a. Confirmation bottom of excavated area for footings.
    b. Approve all types of controlled fill soils to be used in footings and slabs.
    c. Compaction of all controlled fill for footings and slab areas.

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The recommendations above are based on the data obtained from soil borings performed at the indicated specific locations and from other identified information. This report does not reflect any variations which may occur across the site apart from the borings. The nature and extent of such variations may not become evident until construction. If variations appear evident, it will be necessary to re-evaluate the recommendations of this report.

This report has been prepared for the specific application to the project noted. In the event that there are changes in the nature, design or locations of the proposed structures, the conclusions and recommendations contained herein are not valid unless the changes are reviewed and the recommendations modified in writing by JSC.

The information and opinions rendered in our report are exclusively for use by **SNS Architects & Engineers PC** and JSC will not distribute or publish this report without written consent except as required by law or court order. The information and opinions expressed in this report are given in response to a limited assignment and should be considered and implemented only in light of that assignment. The services provided by JSC in completing this project were consistent with normal standards of the profession. No warranty, expressed or implied, is made.

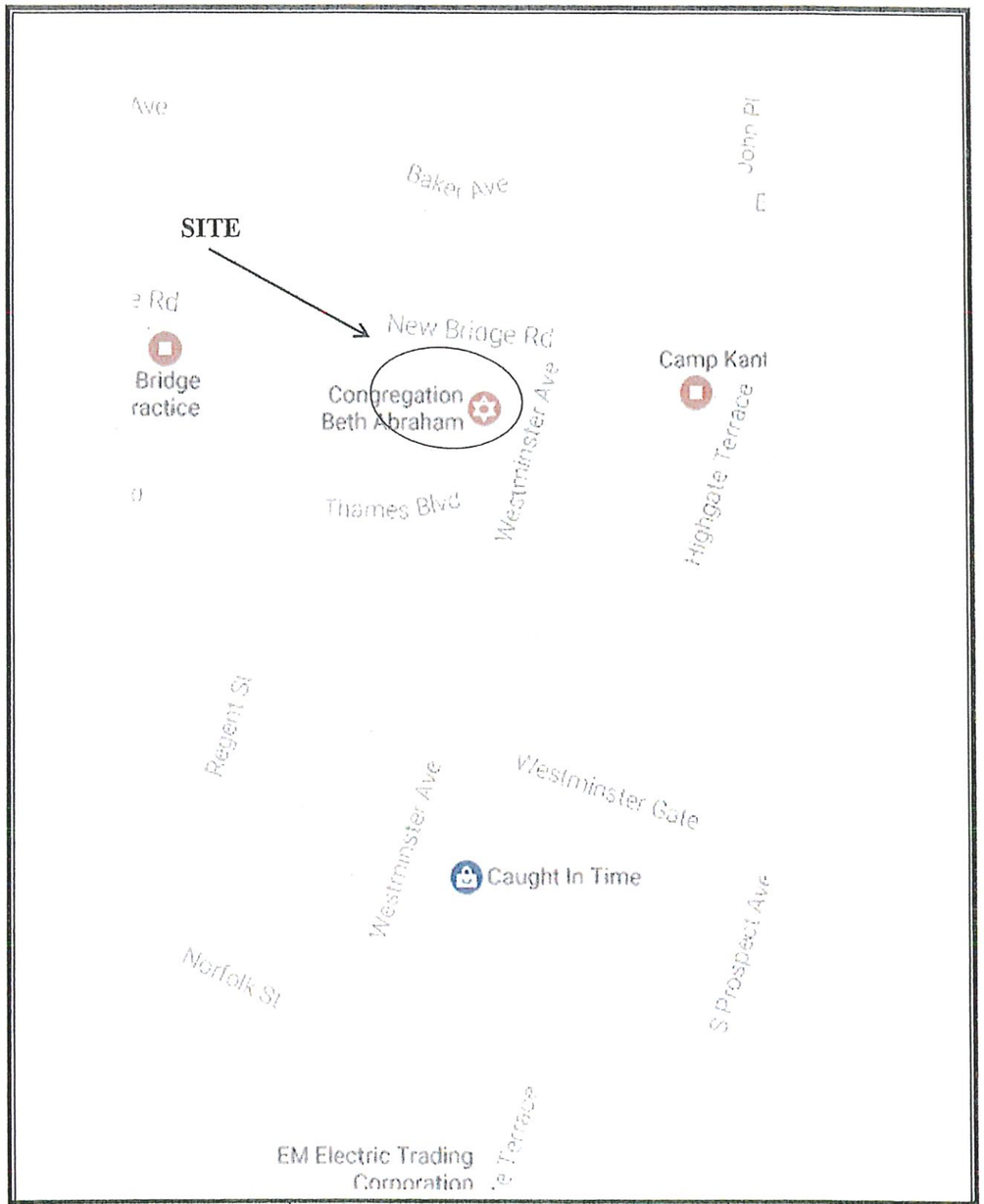
The following Plates are attached to this report:

Plate 1 -	Site Location Map
Plate 2 -	Boring Location Plan
Plate 3A through 3G -	Logs of Borings
Plate 4 -	Unified Soil Classification System

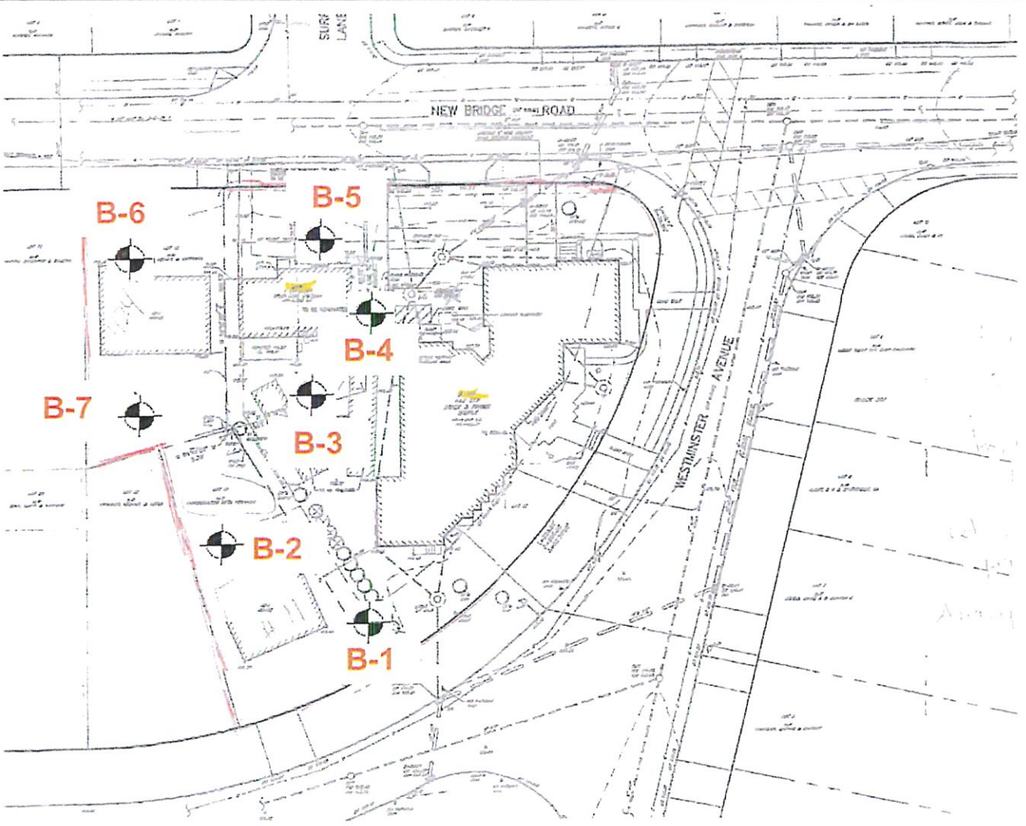
Very truly yours,
JOHNSON SOILS COMPANY

Lisa V. Mahle-Greco

Engineering Manager
Lisa V. Mahle-Greco, P.E.
NJ Lic. No. 43197



JOHNSON SOILS COMPANY	**Site Location Plan**	JSC #17-215
	396-426 New Bridge Road, Bergenfield, NJ	PLATE 1



Scale: N.T.S.

JOHNSON SOILS COMPANY	Boring Location Plan	JSC #17-215
	396-426 New Bridge Road, Bergenfield, NJ	PLATE 2

JOHNSON SOILS COMPANY

LOG OF BORING
B-1

Sheet 1 of 1
JSC #17-215
Completed: 5/23/17
Water Level: Dry

Depth (Feet)	Sample #	Depth (Feet)	Sample/Spoon Blows/6"	Symbol USCS	Depth	Description
0	1	0-2	1-1-3-2		0-1'	Fill- Topsoil, Sand, Gravel
-				SM	1'-7'	Brown Fine to Medium Sand, Little Silt (Medium Dense to Dense)
-	2	2-4	2-7-9-8			
-						
-	3	4-6	8-9-10-11			
5						
-	4	6-8	8-8-16-18			
-				SM-GM	7'-10'	Red Brown Fine to Coarse Sand and Gravel, Little Silt (Very Dense)
-	5	8-10	33-39-45-39			
-						
10						
-						
-						
-						
-						
15						
-						
-						
-						
-						
20						
-						
-						
-						
-						
25						
-						
-						
-						
-						
30						
-						
-						
-						
-						
35						

Remarks: Boring 1 completed at 10' on 5/23/2017

Client: SNS Architects & Engineer, PC

Site: 396-426 New Bridge Road

Driller: RV Drilling

[ ] Hollow Stem Auger
[X] Portable
[ ] Mud Rotary

PLATE 3A

JOHNSON SOILS COMPANY

LOG OF BORING
B-2

Sheet 1 of 1
JSC #17-215
Completed: 5/23/17
Water Level: Dry

Depth (Feet)	Sample #	Depth (Feet)	Sample/Spoon Blows/6"	Symbol USCS	Depth	Description
0	1	0-2	2-2-2-1	SM	0-10'	Brown Fine Sand, Litle Silt (Very Loose to Loose)
5	2	2-4	2-2-3-2			
	3	4-6	2-2-2-4			
	4	6-8	5-5-2-3			
	5	8-10	5-5-2-3			
10	6	10-12	12-87-100/1/2"	SM-GM	10'-16'1"	Red Brown Fine to Coarse Sand and Gravel, Little Silt
15	7	15-17	22-47-100/1"			
20						
25						
30						
35						

Remarks: Boring 2 refusal at 16'1" on 5/23/2017

Client: SNS Architects & Engineer, PC

Site: 396-426 New Bridge Road

Driller: RV Drilling

[ ] Hollow Stem Auger
[X] Portable
[ ] Mud Rotary

PLATE 3B

JOHNSON SOILS COMPANY

LOG OF BORING
B-3

Sheet 1 of 1
JSC #17-215
Completed: 5/23/17
Water Level: Dry

Depth (Feet)	Sample #	Depth (Feet)	Sample/Spoon Blows/6"	Symbol USCS	Depth	Description
0	1	0-2	1-1-1-2	SM	0-8'	Brown Fine Sand, Some Silt (Very Loose to Medium Dense)
5	2	2-4	2-2-2-3			
	3	4-6	4-5-5-5			
	4	6-8	5-5-7-10			
10	5	8-10	15-16-19-25	SM-GM	8'-15'6"	Red Brown Fine to Coarse Sand and Gravel, Little Silt (Very Dense)
	6	10-12	15-18-10-8			
15	7	15-17	25-100/4"		15'6"-15'10"	Red Brown Sandstone
20						
25						
30						
35						

Remarks: Boring 3 refusal at 15'10" on 5/23/2017

Client: SNS Architects & Engineer, PC

Site: 396-426 New Bridge Road

Driller: RV Drilling

[ ] Hollow Stem Auger
[X] Portable
[ ] Mud Rotary

PLATE 3C

JOHNSON SOILS COMPANY

LOG OF BORING
B-4

Sheet 1 of 1
JSC #17-215
Completed: 5/25/17
Water Level: Dry

Depth (Feet)	Sample #	Depth (Feet)	Sample/Spoon Blows/6"	Symbol USCS	Depth	Description
0	1	0-2	1-1-1-1	SM	0-7'	Brown Fine Sand Some Silt (Grading Very Loose to Very Dense)
5	2	2-4	1-2-2-2			
	3	4-6	3-3-4-5			
	4	6-8	5-5-12-55			
	5	8-10	100/2"	SM-GM	7'-8'2"	Red Brown Fine to Coarse Sand and Gravel, Little Silt
10						
15						
20						
25						
30						
35						

Remarks: 2nd attempt augered to 9' Boring 4 refusal at 8'2" on 5/25/2017

Client: SNS Architects & Engineer, PC

Site: 396-426 New Bridge Road

Driller: RV Drilling

[ ] Hollow Stem Auger
[X] Portable
[ ] Mud Rotary

PLATE 3D

JOHNSON SOILS COMPANY

LOG OF BORING
B-5

Sheet 1 of 1
JSC #17-215
Completed: 5/25/17
Water Level: Dry

Depth (Feet)	Sample #	Depth (Feet)	Sample/Spoon Blows/6"	Symbol USCS	Depth	Description
0	1	0-2	1-1-1-1		0-1'6"	Gravel
-				SM	1'6"-6'	Brown Fine Sand, Some Silt (Grading Loose to Medium Dense)
-	2	2-4	2-2-4-7			
-						
-	3	4-6	5-6-6-12			
5						
-	4	6-8	47-92-100/1"	SM-GM	6'-7'6"	Red Brown Fine to Coarse Sand and Gravel Little Silt
-					7'6"-8'1"	Red Brown Sandstone (Augered to Refusal)
-						
-						
10						
-						
-						
-						
-						
15						
-						
-						
-						
-						
20						
-						
-						
-						
-						
25						
-						
-						
-						
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30						
-						
-						
-						
-						
35						

Remarks: Boring 5 auger refused at 8' on 5/25/2017

Client: SNS Architects & Engineer, PC

Site: 396-426 New Bridge Road

Driller: RV Drilling

[ ] Hollow Stem Auger

[X] Portable

[ ] Mud Rotary

PLATE 3E

JOHNSON SOILS COMPANY

LOG OF BORING
B-6

Sheet 1 of 1
JSC #17-215
Completed: 5/25/17
Water Level: Dry

Depth (Feet)	Sample #	Depth (Feet)	Sample/Spoon Blows/6"	Symbol USCS	Depth	Description
0	1	0-2	1-1-1-2		0-1'	Topsoil
-				SM	1'-8'6"	Brown Fine Sand, Some Silt (Grading Very Loose to Very Dense)
-	2	2-4	1-1-1-2			
-						
-	3	4-6	2-2-2-7			
5						
-	4	6-8	6-6-5-6			
-						
-	5	8-10	8-11-12-13			
-						
10	6	10-12	8-8-15-50	SM-GM	8'6"-12'6"	Red Brown Fine to Coarse Sand and Gravel, Little Silt
-						
-	7	12-14	17-100/3"			
-					12'6"-12'9"	Red Brown Sandstone
-						
15						
-						
-						
-						
-						
20						
-						
-						
-						
-						
25						
-						
-						
-						
-						
30						
-						
-						
-						
-						
35						

Remarks: Boring 6 auger refusal at 12'9" on 5/25/2017

Client: SNS Architects & Engineer, PC

Site: 396-426 New Bridge Road

Driller: RV Drilling

[ ] Hollow Stem Auger
[X] Portable
[ ] Mud Rotary

PLATE 3F

JOHNSON SOILS COMPANY

LOG OF BORING
B-7

Sheet 1 of 1
JSC #17-215
Completed: 5/23/17
Water Level: 7'

Depth (Feet)	Sample #	Depth (Feet)	Sample/Spoon Blows/6"	Symbol USCS	Depth	Description
0	1	0-2	4-4-4-4		0-1'	Fill- Topsoil, Sand, Gravel
-				SM	1'-8'6"	Brown Fine Sand, Some Silt (Grading Very Loose to Medium Dense)
-	2	2-4	3-2-2-2			
-						
-	3	4-6	5-7-8-9			
5						
-	4	6-8	9-9-6-5			
-						
-	5	8-10	8-11-12-22			
-						
10	6	10-12	29-95-100/1"	SM-GM	8'6"-11'1"	Red Brown Fine to Coarse Sand and Gravel Little Silt
-						
-						
-						
15						
-						
-						
-						
20						
-						
-						
-						
25						
-						
-						
-						
-						
30						
-						
-						
-						
-						
35						

Remarks: Boring 7 refusal at 11'1" on 5/23/2017

Client: SNS Architects & Engineer, PC

Site: 396-426 New Bridge Road

Driller: RV Drilling

[ ] Hollow Stem Auger

[X] Portable

[ ] Mud Rotary

PLATE 3G

JOHNSON SOILS COMPANY

66 Glen Avenue
Glen Rock, NJ 07452
Telephone: 201-301-1045
Fax: 201-857-8002
Email: Johnsonsoils@gmail.com

UNIFIED SOIL CLASSIFICATION SYSTEM

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)	GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COURSE FRACTION RETAINED ON NO. 4 SIEVE		GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SAND (LITTLE OR NO FINES)	SW	WELL-GRADED SANDS, GRAVELLY-SANDS LITTLE OR NO FINES
			SP	POORLY-GRADED SANDS, GRAVELLY SANDS LITTLE OR NO FINES
	MORE THAN 50% OF COURSE FRACTION PASSING NO.4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)	SM	SILTY SANDS, SAND-SILT MIXTURES
			SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50	ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDS CLAYS. SILTY CLAYS. LEAN CLAYS
			OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50	MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS.

GRADUATION*

% FINER BY WEIGHT

TRACE.....0% TO 10%
LITTLE.....10% TO 20%
SOME.....20% TO 35%
AND.....35% TO 50%

VALUES ARE FROM LABORATORY OR FIELD TEST DATA WHERE APPLICABLE WHEN NO TESTING WAS PERFORMED, VALUES ARE ESTIMATED.

COMPACTNESS*
SAND AND/OR GRAVEL

RELATIVE DENSITY

LOOSE.....0% TO 40%
MEDIUM DENSE.....40% TO 70%
DENSE.....70% TO 90%
VERY DENSE.....90% TO 100%

CONSISTENCY*
CLAY AND/OR SILT

RANGE OF SHEARING STRENGTH
IN POUND PER SQUARE FOOT

VERY SOFT.....LESS THAN 250
SOFT.....250 TO 500
MEDIUM.....500 TO 1000
STIFF.....1000 TO 2000
VERY STIFF.....2000 TO 4000
HARD.....GREATER THAN 4000

PLATE -4

CONGREGATION BETH ABRAHAM
BLOCK 302, LOT 16, 17, 18, 19, 21
STORMWATER MANAGEMENT
MAINTENANCE AND REPAIR PLAN

SAFETY WARNING

Only persons certified for Confined Space Entry are allowed to enter any manhole, catch basin, detention pipe, or other type of underground structures; provided such persons are equipped with the required safety equipment and follow safety requirements for confined space entry.

Other persons should never thrust their heads or any part of their bodies into a manhole or other type of confined spaces. When looking into a manhole or catch basin, stand above it and use a flashlight to see inside the structure. Use a pole or broom handle that is long enough when checking sediment depths in confined spaces. No part of the body should break the plane of the open hole.

1. Contact Person

The name of the contact person for the preventive and corrective maintenance is:

Jonathan Landa, Member of
Congregation Beth Abraham
396 New Bridge Road
Bergenfield, New Jersey

2. Project Components

The stormwater components are:

- Drain pipes
- Catch basins
- Underground detention pipes
- Detention outlet structures
- Water Quality Manholes
- Landscaped areas.

The procedure for the inspection, maintenance and repair for each component is described below:

3. Drain Pipes

Sediments, Debris and Vegetation

Conditions to Check for
Accumulated sediment should not exceed 20% of the diameter of the pipe. Vegetation should not reduce free movement of water through pipes. Dents should not significantly impede flow. Pipe should not have major cracks or tears allowing water to leak out.

Action
Clean out pipes of all sediment and debris. Remove all vegetation so that water flows freely through pipes. Repair or replace pipe, if necessary.

4. Catch Basins

4.1 Flo-Gard Inserts

Please see attached maintenance manual from manufacturer.

4.2 Sediments

Conditions to Check for
Accumulated sediment should not exceed 20% of the diameter of outgoing pipe. Use a long stick or broom handle to poke into sediment and determine depth. Vegetation should not reduce free movement of water through pipes.

Action
Clean out the catch basin of sediment and debris.

4.3 Structural Damage

Conditions to Check for
Inspect the walls of the catch basin for cracks wider than 0.25" and longer than 2 feet. Also check for evidence of sediment entering the catch basin through the cracks. Determine whether or not the structure is sound.

Action
Repair or replace the basin. Contact a professional engineer for evaluation.

4.4 Pollution and Fire Hazard

Conditions to Check for
There should be no chemicals such as natural gas, oil, and gasoline in the catch basin. Check for obnoxious color, odor, or oily sludge.

Action
Clean out catch basin. Contact Township if color, odor, or oily sludge is detected.

5. Catch Basin Grate and Frame

5.1 After Major Storms (any storm event either exceeding 1 inch of rainfall in 1 hour or 3 inches in 24 hours)

Conditions to Check for
Trash or debris accumulating in front of the grate openings and not allowing waters to flow in.

Action
Remove blocking trash or debris with a rake and clean off the grate.

5.2 Vegetation

Conditions to Check for
Vegetation is growing across and blocking more than 10% of the grate opening.

Action
Remove vegetation.

5.3 Structural Damage (Grate)

Conditions to Check for
The grate should not have any cracks longer than 2". There should not be multiple cracks. There should be no crack wider than 7/8".

Action
Replace the grate.

5.4 Structural Damage (Frame)

Conditions to Check for
Ensure that the frame is sitting flush on top of the structure top slab. A separation of more than ¾" between the frame and the slab should be corrected.

Action
Repair or replace the frame so that it is flush with the slab.

6. Underground Detention Pipe

6.1 Debris and Sediment

Conditions to Check for
Inspect inside of the detention pipe by entering through the outlet structure manhole **(To be performed by persons certified for confined space entry)**. Accumulated sediment should not exceed 25% of the diameter of detention pipe.

Action
Remove all sediments and debris from the detention pipe.

6.2 Structural Damage

Conditions to Check for
Check if any part of the detention pipe is noticeably bent out of shape.

Action
Repair or replace the pipe. Contact a professional engineer for evaluation.

7. Detention Outlet Structure

7.1 Sediments

Conditions to Check for
Accumulated sediment should not exceed 20% of the height of the bottom orifice. Use a long stick or broom handle to poke into sediment and determine depth. Vegetation should not reduce free movement of water through the orifice.

Action
Clean out the structure of sediment and debris.

7.2 Structural Damage

Conditions to Check for
Inspect the walls of the structure for cracks wider than 0.25" and longer than 2 feet. Also check for evidence of sediment entering the structure through the cracks. Determine whether or not the structure is sound.

Action
Repair or replace the structure. Contact a professional engineer for evaluation.

7.3 Pollution and Fire Hazard

Conditions to Check for

There should be no chemicals such as natural gas, oil, and gasoline in the structure. Check for obnoxious color, odor, or oily sludge.

Action

Clean out structure. Contact Township if color, odor, or oily sludge is detected.

7.4 Missing/Unsafe Manhole Cover

Conditions to Check for

Check to ensure that the manhole cover is securely in place.

Action

If the cover is only partially in place, try to slide it into a secure position. If a cover is missing, replace it with a new one.

8. Water Quality Manholes

Please see attached maintenance manual from manufacturer.

9. Landscaped Areas

9.1 Weeds

Conditions to Check for

Weeds growing out of control in landscaped area.

Action

Pull weeds by hand, if possible, to avoid using chemical weed controls.

9.2 Poisonous Plants and Insects

Conditions to Check for

Check for any presence of poison ivy or any other poisonous vegetation or insect nests.

Action

Remove any vegetation or insect nests that are present in landscaped areas.

9.3 Litter

Conditions to Check for

There should not be any litter or yard waste in the landscaped areas.

Action

Remove and dispose off the property.

9.4 Erosion

Conditions to Check for
Noticeable rills are seen in the landscaped areas.

Action
Identify the cause of erosion and take steps to slow down or disperse the water. Fill in contour and re-seed the area.

10. Inspection Schedule

The stormwater components will be inspected according to the following schedule:

- Catch basins annually and after major storms.
- Landscaped areas annually and after major storms.
- Underground detention pipe every three years.
- Flo-Gard Inserts and Quality Control Manholes as recommended by manufacturers.
- Other components annually.

GENERAL SPECIFICATIONS FOR MAINTENANCE OF *FLO-GARD+PLUS®* CATCH BASIN INSERT FILTERS

SCOPE:

Federal, State and Local Clean Water Act regulations and those of insurance carriers require that stormwater filtration systems be maintained and serviced on a recurring basis. The intent of the regulations is to ensure that the systems, on a continuing basis, efficiently remove pollutants from stormwater runoff thereby preventing pollution of the nation's water resources. These specifications apply to the FloGard+Plus® Catch Basin Insert Filter.

RECOMMENDED FREQUENCY OF SERVICE:

Drainage Protection Systems (DPS) recommends that installed Flo-Gard+Plus® Catch Basin Insert Filters be serviced on a recurring basis. Ultimately, the frequency depends on the amount of runoff, pollutant loading and interference from debris (leaves, vegetation, cans, paper, etc.); however, it is recommended that each installation be serviced a minimum of three times per year, with a change of filter medium once per year. DPS technicians are available to do an on-site evaluation, upon request.

RECOMMENDED TIMING OF SERVICE:

DPS guidelines for the timing of service are as follows:

1. For areas with a definite rainy season: Prior to, during and following the rainy season.
2. For areas subject to year-round rainfall: On a recurring basis (at least three times per year).
3. For areas with winter snow and summer rain: Prior to and just after the snow season and during the summer rain season.
4. For installed devices not subject to the elements (washracks, parking garages, etc.): On a recurring basis (no less than three times per years).

SERVICE PROCEDURES:

1. The catch basin grate shall be removed and set to one side. The catch basin shall be visually inspected for defects and possible illegal dumping. If illegal dumping has occurred, the proper authorities and property owner representative shall be notified as soon as practicable.
2. Using an industrial vacuum, the collected materials shall be removed from the liner. (Note: DPS uses a truck-mounted vacuum for servicing Flo-Gard+Plus® catch basin inserts.)
3. When all of the collected materials have been removed, the filter medium pouches shall be removed by unsnapping the tether from the D-ring and set to one side. The filter liner, gaskets, stainless steel frame and mounting brackets, etc. shall be inspected for continued serviceability. Minor damage or defects found shall be corrected on-the-spot and a notation made on the Maintenance Record. More extensive deficiencies that affect the efficiency of the filter (torn liner, etc.), if approved by the customer representative, will be corrected and an invoice submitted to the representative along with the Maintenance Record.
4. The filter medium pouches shall be inspected for defects and continued serviceability and replaced as necessary and the pouch tethers re-attached to the liner's D-ring. See below.
5. The grate shall be replaced.

REPLACEMENT AND DISPOSAL OF EXPOSED FILTER MEDIUM AND COLLECTED DEBRIS

The frequency of filter medium pouch exchange will be in accordance with the existing DPS-Customer Maintenance Contract. DPS recommends that the medium be changed at least once per year. During the appropriate service, or if so determined by the service technician during a non-scheduled service, the filter medium pouches will be replaced with new pouches. Once the exposed pouches and debris have been removed, DPS has possession and must dispose of it in accordance with local, state and federal agency requirements.

DPS also has the capability of servicing all manner of catch basin inserts and catch basins without inserts, underground oil/water separators, stormwater interceptors and other such devices. All DPS personnel are highly qualified technicians and are confined space trained and certified. Call us at (888) 950-8826 for further information and assistance.

OPERATIONS AND MAINTENANCE GUIDELINES

CDS Stormwater Treatment Unit

INTRODUCTION

The CDS unit is an important and effective component of your storm water management program and proper operation and maintenance of the unit are essential to demonstrate your compliance with local, state and federal water pollution control requirements.

The CDS technology features a patented non-blocking, indirect screening technique developed in Australia to treat water runoff. The unit is highly effective in the capture of suspended solids, fine sands and larger particles. Because of its non-blocking screening capacity, the CDS unit is un-matched in its ability to capture and retain gross pollutants such as trash and debris. In short, CDS units capture a very wide range of organic and in-organic solids and pollutants that typically result in tons of captured solids each year such as: Total suspended solids (TSS) and other sedimentitious materials, oil and greases, trash, and other debris (including floatables, neutrally buoyant, and negatively buoyant debris). These pollutants will be captured even under very high flow rate conditions.

CDS units are equipped with conventional oil baffles to capture and retain oil and grease. Laboratory evaluations show that the CDS units are capable of capturing up to 70% of the free oil and grease from storm water. CDS units can also accommodate the addition of oil sorbents within their separation chambers. The addition of the oil sorbents can ensure the permanent removal of 80% to 90% of the free oil and grease from the storm water runoff.

OPERATIONS

The CDS unit is a non-mechanical self-operating system and will function any time there is flow in the storm drainage system. The unit will continue to effectively capture pollutants in flows up to the design capacity even during extreme rainfall events when the design capacity may be exceeded. Pollutants captured in the CDS unit's separation chamber and sump will be retained even when the units design capacity is exceeded.

CDS UNIT INSPECTION

Access to the CDS unit is typically achieved through two manhole access covers – one allows inspection (and clean out) of the separation chamber (screen/cylinder) & sump and another allows inspection (and cleanout) of sediment captured and retained behind the screen.

The unit should be periodically inspected to determine the amount of accumulated pollutants and to ensure that the cleanout frequency is adequate to handle the predicted pollutant load being processed by the CDS unit. The unit should be periodically inspected for indications of vector infestation, as well. The recommended cleanout of

solids within the CDS unit's sump should occur at 75% to 85% of the sump capacity. However, the sump may be completely full with no impact to the CDS unit's performance.

CONTECH Stormwater Solutions (previously CDS Technologies) recommends the following inspection guidelines: For new initial operation, check the condition of the unit after every runoff event for the first 30 days. For ongoing operations, the unit should be inspected after the first six inches of rainfall at the beginning of the rainfall season and at approximately 30-day intervals. The visual inspection should ascertain that the unit is functioning properly (no blockages or obstructions to inlet and/or separation screen), evidence of vector infestation, and to measure the amount of solid materials that have accumulated in the sump, fine sediment accumulated behind the screen, and floating trash and debris in the separation chamber. This can be done with a calibrated dipstick, tape measure or other measuring instrument so that the depth of deposition in the sump can be tracked.

CDS UNIT CLEANOUT

The frequency of cleaning the CDS unit will depend upon the generation of trash and debris and sediments in your application. Cleanout and preventive maintenance schedules will be determined based on operating experience unless precise pollutant loadings have been determined.

Access to the CDS unit is typically achieved through two manhole access covers – one allows cleanout of the separation chamber (screen/cylinder) & sump and another allows cleanout of sediment captured and retained behind the screen. For units possessing a sizable depth below grade (depth to pipe), a single manhole access point would allow both sump cleanout and access behind the screen.

CONTECH Stormwater Solutions Recommends The Following:

NEW INSTALLATIONS: Check the condition of the unit after every runoff event for the first 30 days. The visual inspection should ascertain that the unit is functioning properly (no blockages or obstructions to inlet and/or separation screen), measuring the amount of solid materials that have accumulated in the sump, the amount of fine sediment accumulated behind the screen, and determining the amount of floating trash and debris in the separation chamber. This can be done with a calibrated "dip stick" so that the depth of deposition can be tracked. Refer to the "Cleanout Schematic" **(Appendix B)** for allowable deposition depths and critical distances. Schedules for inspections and cleanout should be based on storm events and pollutant accumulation.

ONGOING OPERATION: During the rainfall season, the unit should be inspected at least once every 30 days. The floatables should be removed and the sump cleaned when the sump is 75-85% full. If floatables accumulate more rapidly than the settleable solids, the floatables should be removed using a vactor truck or dip net before the layer thickness exceeds approximately one foot.

Cleanout of the CDS unit at the end of a rainfall season is recommended because of the nature of pollutants collected and the potential for odor generation

from the decomposition of ma terial collected and retai ned. This end of season cleanout will assist in preventing the discharge of pore water from the CDS ® unit during summer months.

USE OF SORBENTS –The addition of sorbents is **not a requirement** for CDS units to effectively control oil and grease from storm water. The conventional oil baffle within a unit assures satisfactory oil and grease removal. However, the addition of sorbents is a unique enhancement capability unique to CDS units, enabling increased oil and grease capture efficiencies beyond that obtainable by conventional oil baffle systems.

Under normal operations, CDS units will provide effluent concentrations of oil and grease that are less than 15 parts per million (ppm) for all dry weather spills where the volume is less than or equal to the spill capture volume of the CDS unit. During wet weather flows, the oil baffle system can be expected to remove between 40 and 70% of the free oil and grease from the storm water runoff.

CONTECH Stormwater Solutions only recommends the addition of sorbents to the separation chamber if there are specific land use activities in the catchment watershed that could produce exceptionally large concentrations of oil and grease in the runoff, concentration levels well above typical amounts. If site evaluations merit an increased control of free oil and grease then oil sorbents can be added to the CDS unit to thoroughly address these particular pollutants of concern.

Recommended Oil Sorbents

Rubberizer® Particulate 8-4 mesh or OARS ™ Particulate for Filtration, HPT4100 or equal. Rubberizer is supplied by Haz-Mat Response Technologies, Inc. 4626 Santa Fe Street, San Diego, CA 92109 (800) 542-3036. OARS is supplied by AbTech Industries, 4110 N. Scottsdale Road, Suite 235, Scottsdale, AZ 85251 (800) 545-8999.

The amount of sorbent to be added to the CDS separation chamber can be determined if sufficient information is known about the concentration of oil and grease in the runoff. Frequently the actual concentrations of oil and grease are too variable and the amount to be added and frequency of cleaning will be determined by periodic observation of the sorbent. As an initial application, CDS recommends that approximately 4 to 8 pounds of sorbent material be added to the separation chamber of the CDS units per acre of parking lot or road surface per year. Typically this amount of sorbent results in a ½ inch to one (1") inch depth of sorbent material on the liquid surface of the separation chamber. The oil and grease loading of the sorbent material should be observed after major storm events. Oil Sorbent material may also be furnished in pillow or boom configurations.

The sorbent material should be replaced when it is fully discolored by skimming the sorbent from the surface. The sorbent may require disposal as a special or hazardous waste, but will depend on local and state regulatory requirements.

CLEANOUT AND DISPOSAL

A vactor truck is recommended for cleanout of the CDS unit and can be easily accomplished in less than 30-40 minutes fo r most installations. Standard vactor operations should be employed in the cleanout of the CDS unit. Disposal of material from the CDS unit should be in accordance with the local municipalit y's requirements. Disposal of the decant material to a POTW is recommended. Field decanting to th e storm drainage system is not recommended. Solids can be disposed of in a similar fashion as those materials collected from street sweeping operations and catch-basin cleanouts.

MAINTENANCE

The CDS unit should be pumped down at least once a year and a thorough inspection of the separation chamber (inlet/cylinder and separation screen) and oil baffle performed. The unit's inter nal components should not show any signs of damage or any loosening of the bolts used to fasten the various components to the manhole structure and to each other. Ideally, the screen should be power washed for the inspection. If any of the internal components is damaged or if any fasteners appear to be damaged or missing, please contact CONTECH at 800.338.2211 to make arrangements to have the damaged items repaired or replaced.

The screen assembly is fabricated from Type 316 stainless steel and fastened with Type 316 stainless steel fasteners that are easily removed and/or replaced with conventional hand tools. The damaged screen assembly should be replaced with the new screen assembly placed in the same orientation as the one that was removed.

CONFINED SPACE

The CDS unit is a confined space environ ment and only properly trained personn el possessing the neces sary safety equipment s hould enter the unit to perform particular maintenance and/or inspection activities beyond normal procedure. Inspections of the internal components can, in most cases, be accomplished by observations from the ground surface.

VECTOR CONTROL

Most CDS units do not readily facilitate vector infestation. However, for CDS units that may experience extended periods of non-operation (stagnant flow conditions for more than approximately one week) ther e may be the potential for vector infestation. In the event that these conditions exist, the CDS unit may be designed to minimize potential vector habitation through the use of physical barriers (such as seals, plugs and/or netting) to seal out potential vectors. The CDS unit may also be configured to allow drain-down under favorable soil conditions where infiltration of storm water runoff is permissible. For standard CDS units that show evidence of mosquito infestation, the

application of larvicide is one control strategy that is recommended. Typical larvicide applications are as follows:

SOLID B.t.i. LARVICIDE: ½ to 1 briquet (typically treats 50-100 sq. ft.) one time per month (30-days) or as directed by manufacturer.

SOLID METHOPRENE LARVICIDE (not recommended for some locations): ½ to 1 briquet (typically treats 50-100 sq. ft.) one time per month (30-days) to once every 4-½ to 5-months (150-days) or as directed by manufacturer.

RECORDS OF OPERATION AND MAINTENANCE

CONTECH Stormwater Solutions recommends that the owner maintain annual records of the operation and maintenance of the CDS unit to document the effective maintenance of this important component of your storm water management program. The attached **Annual Record of Operations and Maintenance** form (see **Appendix A**) is suggested and should be retained for a minimum period of three years.

APPENDIX A

ANNUAL RECORDS OF OPERATIONS & MAINTENANCE AND INSPECTION CHECKLISTS

ANNUAL RECORD OF
OPERATION AND MAINTENANCE

OWNER _____
ADDRESS _____
OWNER REPRESENTATIVE _____ **PHONE** _____

INSTALLATION:
MODEL DESIGNATION _____ DATE _____
SITE LOCATION _____

INSPECTIONS:

DATE/ INSPECTOR	SCREEN/INLET INTEGRITY	FLOATABLES DEPTH	DEPTH TO SEDIMENT (Inches)	SEDIMENT VOLUME* (CUYDS)	SORBENT DISCOLORATION

DEPTH FROM COVER TO BOTTOM OF SUMP (SUMP INVERT) _____
DEPTH FROM COVER TO SUMP @ 75% FULL _____
VOLUME OF SUMP @ 75% FULL = _____CUYD
VOLUME/INCH DEPTH _____CUFT/IN OF SUMP
VOLUME/FOOT DEPTH _____CUYD/FT OF SUMP

***Calculate Sediment Volume = (Depth to Sump Invert – Depth to Sediment)*(Volume/Inch)**
OBSERVATIONS OF FUNCTION: _____
_____
_____

CLEANOUT:

DATE	VOLUME FLOATABLES	VOLUME SEDIMENTS	METHOD OF DISPOSAL OF FLOATABLES, SEDIMENTS, DECANT AND SORBENTS

OBSERVATIONS:
_____
_____
_____
_____

SCREEN MAINTENANCE:
DATE OF POWER WASHING, INSPECTION AND OBSERVATIONS:
_____
_____

CERTIFICATION: _____ **TITLE:** _____ **DATE:** _____

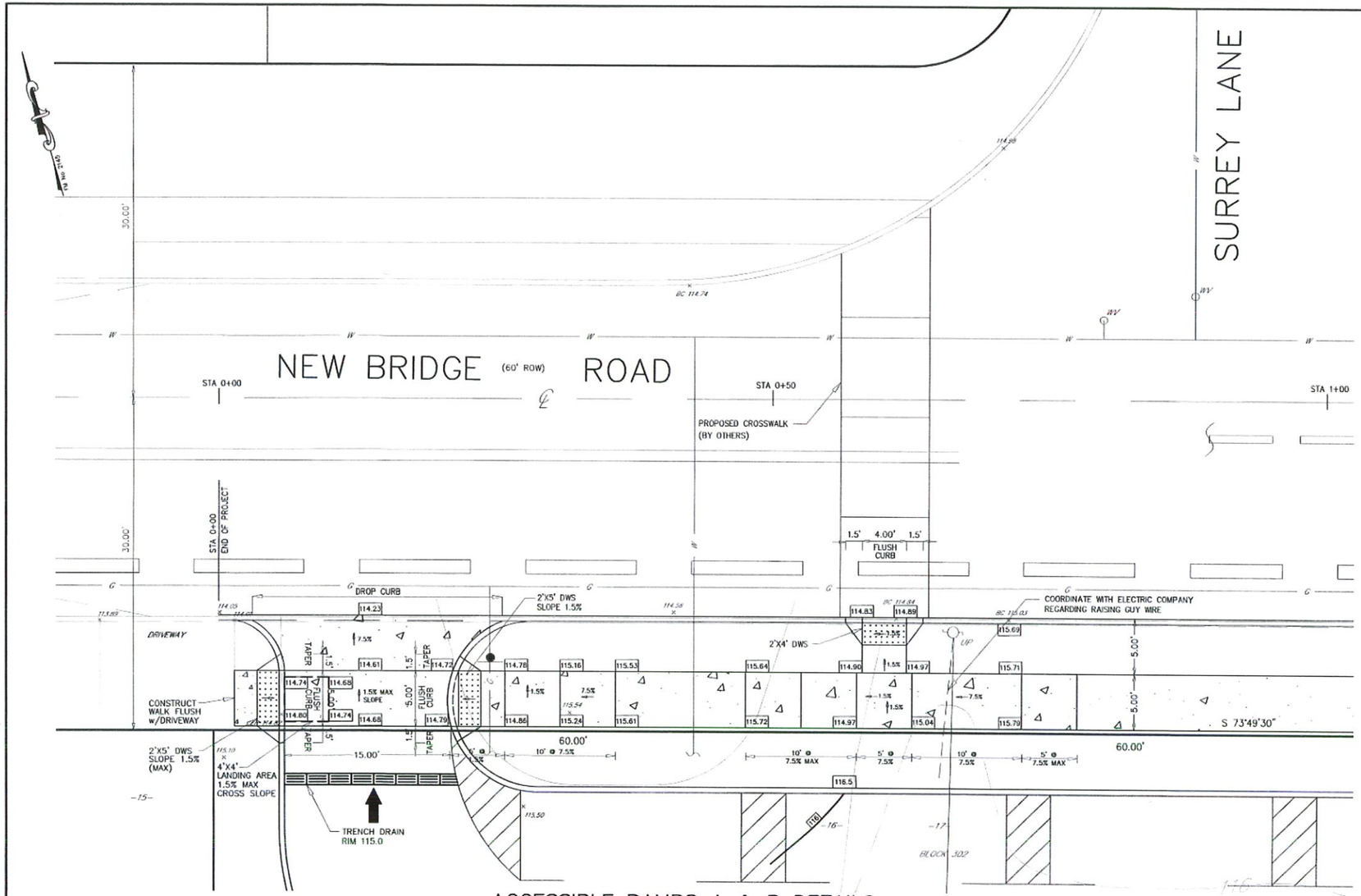
INSPECTION CHECKLIST

1. During the rainfall season, inspect and check condition of unit at east once every 30 days ☐
2. Ascertain that the unit is funcioning properly (no blockages or obstructions to inlet and/or separation screen) ☐
3. Measure amount of solid material s that have accumulated in the sump (Unit should be cleaned when the sump is 75-85% full) ☐
4. Measure amount of fine sediment accumulated behind the screen ☐
5. Measure amount of floating trash and debris in the separation chamber ☐

MAINTENANCE CHECKLIST

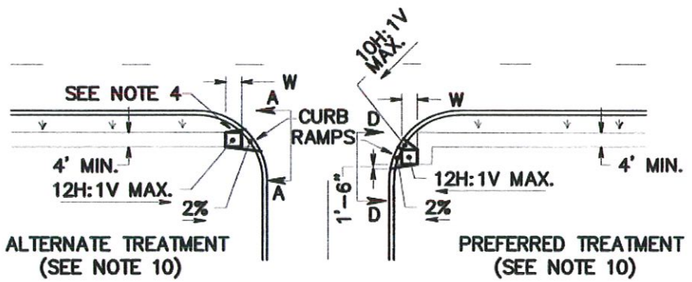
1. Cleanout unit at the end and beginning of the rainfall season ☐
2. Pump down unit (at least once a year) and thoroughly inspect separation chamber, separation screen and oil baffle ☐
3. No visible signs of damage or loosening of bolts to internal components observed * ☐

*** If there is any damage to the internal components or any fasteners are damaged or missing please contact CONTECH (800.338.1122).**



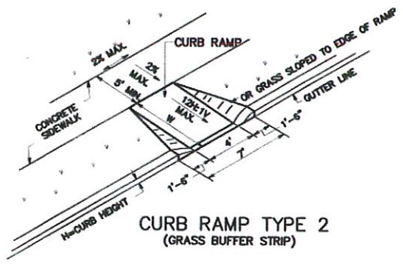
ACCESSIBLE RAMPS A & B DETAILS

SCALE: 1"=5'



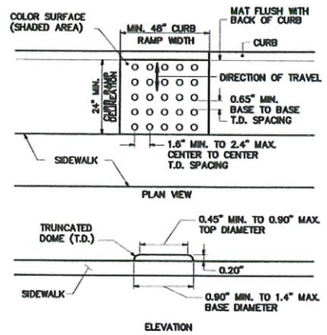
CURB RAMP TYPE 5
(CROSSING PARALLEL TO HIGHWAY ONLY)

CURB RAMP TYPE 2, 5 OR 6	
H INCHES	W FEET
3	3
4	4
5	5
6	6
7	7
8	8
9	9

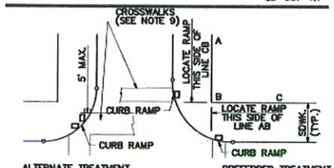


CURB RAMP TYPE 2
(GRASS BUFFER STRIP)

GENERAL NOTES:
1. LANDING AREA, APPROACH SIDEWALK TRANSITIONS, AND CURB RAMP SHALL BE KEPT CLEAR OF OBSTRUCTIONS.
2. DIMENSIONS SHOWN IN TABLES ARE FOR RELATIVELY FLAT SIDEWALK AREAS. CARE SHOULD BE TAKEN WHEN DETERMINING CURB RAMP SIZE BASED ON CURB HEIGHT (H) WHERE ELEVATION OF CURB AND SIDEWALK VARY DRASTICALLY IN AREA OF PROPOSED CURB RAMP.
3. CURB (DROPPED CURB) GUTTERLINE TO BE FLUSH WITH ROADWAY PAVEMENT A MINIMUM OF 4 FEET AT ALL CURB RAMPS.
4. FOR CURB RAMP TYPES 5 AND 6, IF A GRASS BUFFER DOES NOT EXIST, SLOPE CURB TO EQUAL SLOPE OF ADJACENT CURB RAMP.
5. SIDEWALK AND CURB RAMP WITHIN AREA ENCLOSED BY HEAVY LINES TO BE PAID FOR AS CONCRETE SIDEWALK OF THE APPROPRIATE ADJACENT THICKNESS.
6. CURB AND HEADER WITHIN AREA ENCLOSED BY HEAVY LINES TO BE PAID FOR AS VERTICAL CURB OR SLOPING CURB OF THE APPROPRIATE ADJACENT SIZE AND KIND.
7. WHERE THE DISTANCE FROM THE GUTTER LINE TO THE OUTSIDE EDGE OF SIDEWALK IS 6 FEET OR LESS, CURB RAMP TYPE 7 SHOULD BE USED, INSTEAD OF CURB RAMP TYPE 1 THROUGH 4.
8. THE PUBLIC SIDEWALK CURB RAMP, DETECTABLE WARNING SURFACE (SHADED AREA) SHALL BE SAFETY RED COLOR ON CONCRETE OR 70% COLOR CONTRAST FOR OTHER SURFACE SUCH AS BRICK.
9. CROSSWALKS AND STOP LINES MAY BE MARKED OR UNMARKED, SEE PLANS.
10. PREFERRED TREATMENT SHOULD ALWAYS BE USED UNLESS APPROVAL IS GIVEN BY ENGINEER FOR USE OF ALTERNATE TREATMENT.
11. DIMENSIONS SHOWN IN TABLES ARE FOR 3 INCH TO 9 INCH CURB HEIGHTS. WHERE THE CURB HEIGHTS ARE OTHER THAN WHAT IS PROVIDED IN THE TABLES, THE DIMENSIONS OF THE RAMPS WILL HAVE TO BE CALCULATED BASED ON CROSS SLOPES SHOWN.
12. THESE STANDARD CONSTRUCTION DETAILS ARE REQUIRED TO BE INCORPORATED INTO SITE SPECIFIC CONSTRUCTION DETAILS FOR EACH RAMP LOCATION, DESIGNED BY A PROFESSIONAL ENGINEER, AND INCLUDE THE FOLLOWING: SPOT ELEVATIONS AT ALL KEY LOCATIONS WITHIN THE RAMPS, SLOPES OF ALL SURFACES WITHIN AND ADJACENT TO THE RAMPS, DIMENSIONS OF ALL RAMP COMPONENTS, AND DRAWN AT A SCALE ACCEPTABLE TO BERGEN COUNTY.
13. ALL INSTALLED CURB RAMPS WILL BE CHECKED WITH AN ELECTRONIC SMART LEVEL FOR STRICT COMPLIANCE WITH REQUIRED SLOPES. PAYMENT WILL NOT BE MADE FOR RAMPS NOT IN COMPLIANCE.

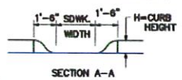


DETECTABLE WARNING SURFACE
CD-607-1.1



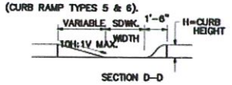
ALTERNATE TREATMENT (SEE NOTE 10) — PREFERRED TREATMENT (SEE NOTE 10)

LOCATION OF CURB RAMP TYPES 1, 2, 3, 4 & 7 FOR CROSSING PARALLEL AND PERPENDICULAR TO HIGHWAY

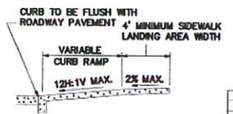


SECTION A–A

NOTE:
CURB RAMP OPENING TO BE FLUSH WITH ROADWAY PAVEMENT (CURB RAMP TYPES 5 & 6).



SECTION D–D



SECTION THROUGH CURB RAMPS 1 THROUGH 6

NO.	REVISIONS	DATE	BY	CHKD
1	PER T&M EMAIL, DATED 2-5-2019	2-5-19	Y.R.	MJH

SIDEWALK CURB RAMP PLAN

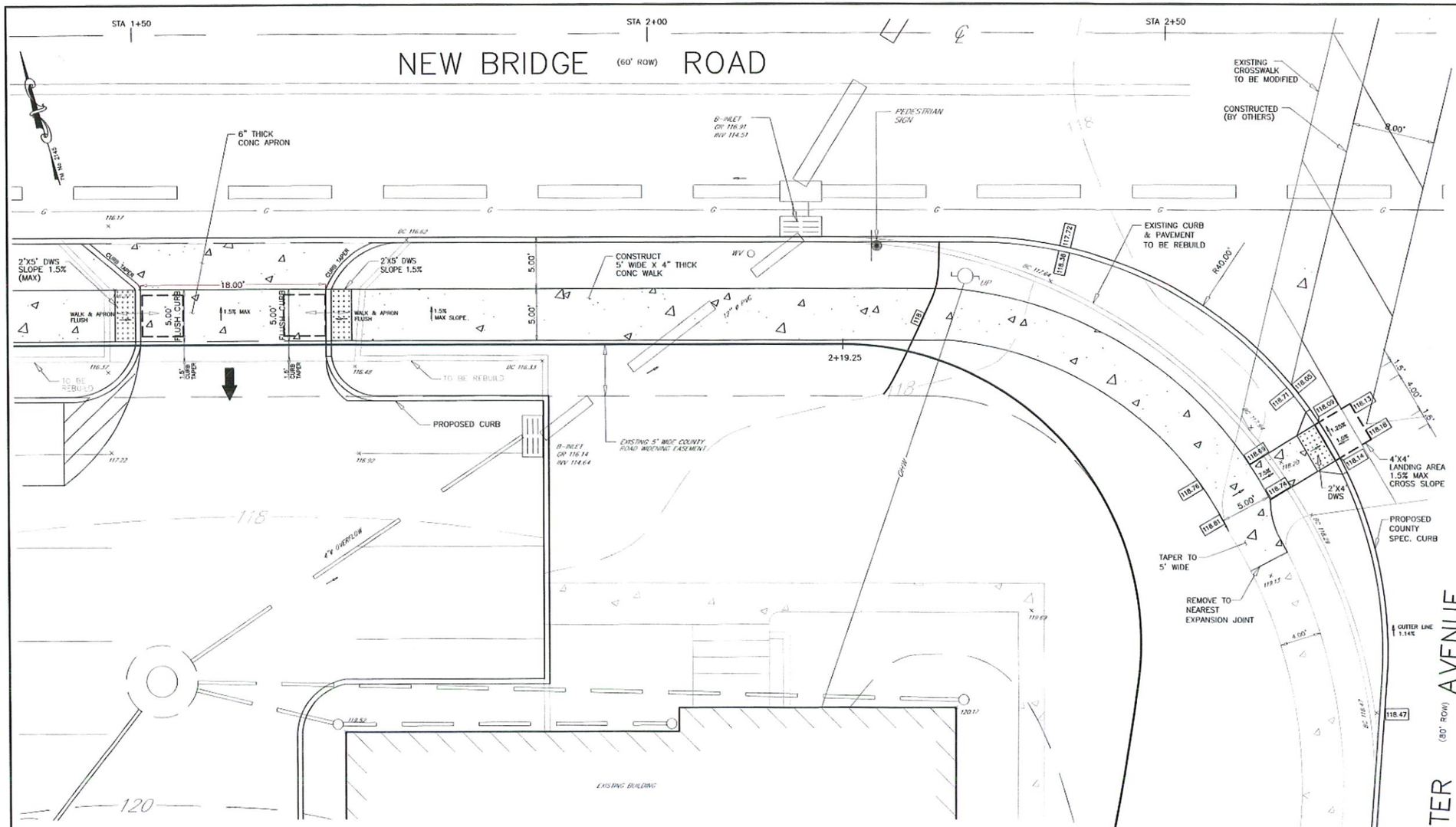
LOTS 16, 17 & 18 **PROPOSED ADDITION** BLOCK 302
CONGREGATION BETH ABRAHAM
BOROUGH OF BERGENFIELD BERGEN COUNTY NEW JERSEY

APPLICANT/ OWNER: CONGREGATION BETH ABRAHAM OF BERGENFIELD, N.J.
396 NEW BRIDGE ROAD
BERGENFIELD, NEW JERSEY
07621

MICHAEL J. HUBSCHMAN P.E., P.P.
PROFESSIONAL ENGINEER AND PLANNER
N.J.P.E. NO. 29497 N.J.P.P. NO. 3200
11-1-18
DATE

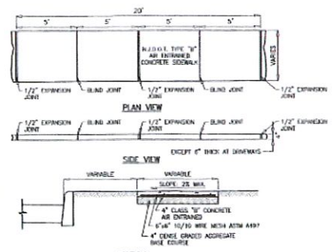
HUBSCHMAN ENGINEERING, P.A.
ENGINEERS – PLANNERS – SURVEYORS
263A S. WASHINGTON AVE., BERGENFIELD, NJ 07621
201-384-5666

DRAWN BY: Y.R.
CHKD BY MJH
SCALE: 1"=5'
DRAWING NO. 2348.1-1 REV. 1
1 OF 2



ACCESSIBLE RAMP C DETAIL

SCALE: 1"=5'



SIDEWALK DETAIL

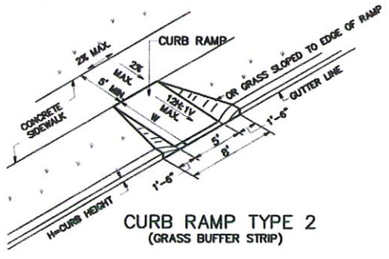
NTS

SIDEWALK GENERAL NOTES

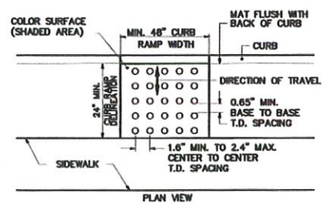
1) SUBGRADE IS TO BE IN A MANNER SUITABLE TO THE MUNICIPAL ENGINEER.
2) EXPANSION JOINTS ARE TO BE 1/2" WIDE AND FILLED WITH PRE-FORMED HOT MIX ASPHALT TYPE JOINT FILLER. THE TOP OF ALL JOINT FILLER SHALL BE 1/8" BELOW THE TOP OF THE SURFACE. EXPANSION JOINT SHALL BE LOCATED 10' ON CENTER.
3) BLIND JOINTS ARE TO BE SURFACE GROOVES CUT INTO SIDEWALK 1/2" DEEP AND SHALL BE LOCATED 10' ON CENTER.
4) CONTRACTOR SHALL COMPLY WITH SECTION 607.06 OF THE NJDOT SPECIFICATION.
5) FOR SIDEWALK SECTIONS WHICH SLOPE 5% THE APPLICANT SHALL PROVIDE THE MUNICIPAL ENGINEER WITH A DETAIL SHOWING JOINT PATTERN (BOTH BLIND AND EXPANSION JOINTS) FOR APPROVAL.
6) ALL EDGES SHALL BE FINISHED AND ROUNDED WITH AN EDGING TOOL HAVE A RADIUS OF 1/4 INCH.
7) THE SURFACE OF THE CONCRETE SHALL BE SO FINISHED AS TO DRAIN COMPLETELY AT ALL TIMES.
8) CONCRETE SHALL BE STRUCK OFF WITH A TRANSVERSE TEMPLATE AND FINISHED WITH FLOATS AND STRAIGHT EDGES UNTIL A SMOOTH SURFACE HAS BEEN OBTAINED.
9) ALL CONCRETE SURFACES SHALL BE TREATED WITH A CONCRETE CURING AND SEALING COMPOUND CONFORMING WITH SECTION 909.03 CURING MATERIALS, NJDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2001.

GENERAL NOTES:

1. LANDING AREA, APPROACH SIDEWALK TRANSITIONS, AND CURB RAMP SHALL BE KEPT CLEAR OF OBSTRUCTIONS.
2. DIMENSIONS SHOWN IN TABLES ARE FOR RELATIVELY FLAT SIDEWALK AREAS. CARE SHOULD BE TAKEN WHEN DETERMINING CURB RAMP SIZE BASED ON CURB HEIGHT (H) WHERE ELEVATION OF CURB AND SIDEWALK VARY DRASTICALLY IN AREA OF PROPOSED CURB RAMP.
3. CURB (DROPPED CURB) GUTTERLINE TO BE FLUSH WITH ROADWAY PAVEMENT A MINIMUM OF 4 FEET AT ALL CURB RAMPS.
4. FOR CURB RAMP TYPES 5 AND 6, IF A GRASS BUFFER DOES NOT EXIST, SLOPE CURB TO EQUAL SLOPE OF ADJACENT CURB RAMP.
5. SIDEWALK AND CURB RAMP WITHIN AREA ENCLOSED BY HEAVY LINES TO BE PAID FOR AS CONCRETE SIDEWALK OF THE APPROPRIATE ADJACENT THICKNESS.
6. CURB AND HEADER WITHIN AREA ENCLOSED BY HEAVY LINES TO BE PAID FOR AS VERTICAL CURB OR SLOPING CURB OF THE APPROPRIATE ADJACENT SIZE AND KIND.
7. WHERE THE DISTANCE FROM THE GUTTER LINE TO THE OUTSIDE EDGE OF SIDEWALK IS 6 FEET OR LESS, CURB RAMP TYPE 7 SHOULD BE USED, INSTEAD OF CURB RAMP TYPE 1 THROUGH 4.
8. THE PUBLIC SIDEWALK CURB RAMP, DETECTABLE WARNING SURFACE (SHADED AREA) SHALL BE SAFETY RED COLOR ON CONCRETE OR 70% COLOR CONTRAST FOR OTHER SURFACE SUCH AS BRICK.
9. CROSSWALKS AND STOP LINES MAY BE MARKED OR UNMARKED, SEE PLANS.
10. PREFERRED TREATMENT SHOULD ALWAYS BE USED UNLESS APPROVAL IS GIVEN BY ENGINEER FOR USE OF ALTERNATE TREATMENT.
11. DIMENSIONS SHOWN IN TABLES ARE FOR 3 INCH TO 9 INCH CURB HEIGHTS. WHERE THE CURB HEIGHTS ARE OTHER THAN WHAT IS PROVIDED IN THE TABLES, THE DIMENSIONS OF THE RAMPS WILL HAVE TO BE CALCULATED BASED ON CROSS SLOPES SHOWN.
12. THESE STANDARD CONSTRUCTION DETAILS ARE REQUIRED TO BE INCORPORATED INTO SITE SPECIFIC CONSTRUCTION DETAILS FOR EACH RAMP LOCATION, DESIGNED BY A PROFESSIONAL ENGINEER, AND INCLUDE THE FOLLOWING: SPOT ELEVATIONS AT ALL KEY LOCATIONS WITHIN THE RAMPS, SLOPES OF ALL SURFACES WITHIN AND ADJACENT TO THE RAMPS, DIMENSIONS OF ALL RAMP COMPONENTS, AND DRAWN AT A SCALE ACCEPTABLE TO BERGEN COUNTY.
13. ALL INSTALLED CURB RAMPS WILL BE CHECKED WITH AN ELECTRONIC SMART LEVEL FOR STRICT COMPLIANCE WITH REQUIRED SLOPES. PAYMENT WILL NOT BE MADE FOR RAMPS NOT IN COMPLIANCE.

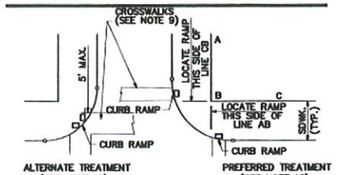


CURB RAMP TYPE 2
(GRASS BUFFER STRIP)

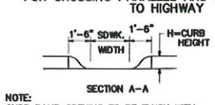


DETECTABLE WARNING SURFACE

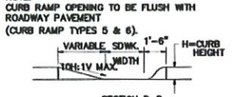
CD-607-1.1



LOCATION OF CURB RAMP TYPES 1, 2, 3, 4 & 7 FOR CROSSING PARALLEL AND PERPENDICULAR TO HIGHWAY



NOTE:
CURB RAMP OPENING TO BE FLUSH WITH ROADWAY PAVEMENT (CURB RAMP TYPES 5 & 6).



SECTION THROUGH CURB RAMPS 1 THROUGH 6

CURB RAMP TYPE 2, 5 OR 6	
H INCHES	W FEET
3	3
4	4
5	5
6	6
7	7
8	8
9	9

NO.	REVISIONS	DATE	BY	CHKD
1	PER T&M EMAIL, DATED 2-5-2019	2-5-19	Y.R.	MJH

SIDEWALK CURB RAMP PLAN

LOTS 16, 17 & 18 PROPOSED ADDITION TO CONGREGATION BETH ABRAHAM — BLOCK 302

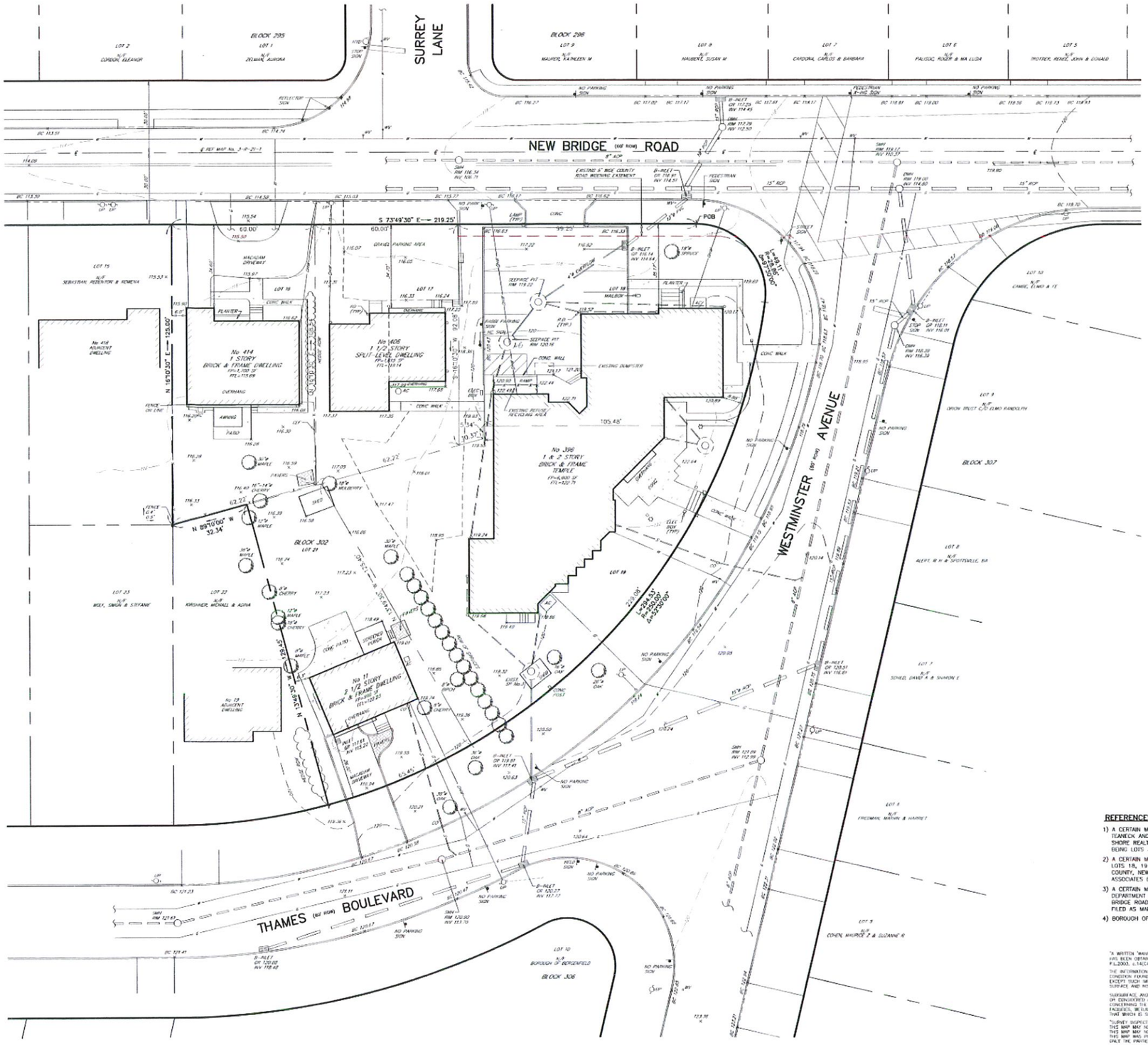
BOROUGH OF BERGENFIELD — BERGEN COUNTY — NEW JERSEY

APPLICANT/OWNER: CONGREGATION BETH ABRAHAM OF BERGENFIELD, N.J.
396 NEW BRIDGE ROAD
BERGENFIELD, NEW JERSEY
07621

MICHAEL J. HUBSCHMAN P.E., P.P.
PROFESSIONAL ENGINEER AND PLANNER
N.J.P.E. NO. 29497 N.J.P.P. NO. 3200
11-1-18
DATE

HUBSCHMAN ENGINEERING, P.A.
ENGINEERS – PLANNERS – SURVEYORS
263A S. WASHINGTON AVE., BERGENFIELD, NJ 07621
201-384-5666

DRAWN BY: Y.R.
CHKD BY MJH
SCALE: 1"=5'
DRAWING NO. 2348.1-2
2 of 2
REV. 1



REFERENCES

1) A CERTAIN MAP ENTITLED "WEST ENGLEWOOD PARK, TEANECK AND BERGENFIELD, NEW JERSEY, HUDSON WEST SHORE REALTY CORP." FILED IN THE BCCO AS MAP No. 2145 BEING LOTS 37–44 IN BLK "B" ON SAID MAP.
2) A CERTAIN MAP ENTITLED "MINOR SUBDIVISION, BLOCK 302, LOTS 18, 19 & 20, BOROUGH OF BERGENFIELD, BERGEN COUNTY, NEW JERSEY" PREPARED BY CANGER ENGINEERING ASSOCIATES DATED SEPT. 1999.
3) A CERTAIN MAP ENTITLED "BERGEN COUNTY ENGINEERING DEPARTMENT PLAN FOR PROPOSED WIDENING OF NEW BRIDGE ROAD, BOROS. OF BERGENFIELD & NEW MILFORD FILED AS MAP No. 3-R-21-1 IN THE BCDE.
4) BOROUGH OF BERGENFIELD TAX MAPS.

"A WRITTEN 'WAIVER AND DIRECTION NOT TO SET CORNER MARKERS' HAS BEEN OBTAINED FROM THE ULTIMATE USER PURSUANT TO P.L.2003, c.14(C45:8-36.3) AND N.J.A.C. 13:40-5.1(d).

THE INFORMATION SHOWN HEREON CORRECTLY REPRESENTS THE CONDITION FOUND AT, AND AS OF DATE OF THE FIELD SURVEY, EXCEPT SUCH IMPROVEMENTS OR EASEMENTS, IF ANY, BELOW THE SURFACE AND NOT VISIBLE.

SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AS A PART OF THIS SURVEY. NO STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND OR OVERHEAD FACILITIES, WETLANDS OR ENVIRONMENTAL RESTRICTIONS OTHER THAN THAT WHICH IS SHOWN.

"SURVEY INSPECTIONS" OR "UPDATES" OF THIS MAP ARE PROHIBITED.
THIS MAP MAY NOT BE COPIED IN WHOLE OR IN PART.
THIS MAP MAY NOT BE USED FOR OTHER PURPOSES OR TRANSACTIONS. THIS MAP WAS PREPARED FOR A SPECIFIC TRANSACTION INVOLVING ONLY THE PARTIES "CERTIFIED TO" ON THIS MAP.

ONLY COPIES OF THIS MAP BEARING THE EMBOSSED SEAL OF ROBERT J. MUELLER ARE VALID. CERTIFICATIONS ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.

0 20 40
SCALE: 1"=20'

TAX LOTS 16, 17, 18, 19 & 21 IN BLOCK 302

TOPOGRAPHIC SURVEY

BOROUGH OF BERGENFIELD
BERGEN COUNTY, NEW JERSEY

HUBSCHMAN ENGINEERING
ENGINEERS LAND SURVEYORS PLANNERS
263A S. WASHINGTON AVE., BERGENFIELD
NEW JERSEY 07621 (201) 384-5666

ROBERT J. MUELLER, P.L.S.
PROFESSIONAL LAND SURVEYOR
N.J. LIC. 37206

REV.			
9-22-17	DWN. A.J.	5-8-17	JOB No.
5-18-17	CHK'D. RJM	SCALE: 1"=20'	2348.1

Expansion for

Congregation Beth Abraham of Bergenfield, NJ

396 New Bridge Road
Bergenfield, NJ 07621

AT

Congregation Beth Abraham of Bergenfield, NJ

APPLICANT:
CONGREGATION BETH ABRAHAM OF BERGENFIELD
396 NEW BRIDGE ROAD
BERGENFIELD, NJ 07621

RECORD OWNER:
CONGREGATION BETH ABRAHAM OF BERGENFIELD
396 NEW BRIDGE ROAD
BERGENFIELD, NJ 07621

REFERENCE NOTES:

PROPERTY KNOWN AS BLOCK 302, LOTS 16, 17, 18, 19 & 21 IN THE BOROUGH OF BERGENFIELD; IN THE COUNTY OF BERGEN; STATE OF NEW JERSEY.
TOPOGRAPHIC & BOUNDARY INFORMATION PERTAINING TO SAID SITE WAS OBTAINED FROM DRAWING "TOPOGRAPHIC SURVEY" PREPARED THE HUSSCHIAN ENGINEERING, 263A S. WASHINGTON AVE, BERGENFIELD, N.J. 07621, 201-384-5668, SIGNED BY ROBERT J. MUELLER, PLS, PROFESSIONAL LAND SURVEYOR, N.J. NO. 37206, DATED 5/8/17.
ELEVATION BASED ON NGVD 1929.

GENERAL NOTES:

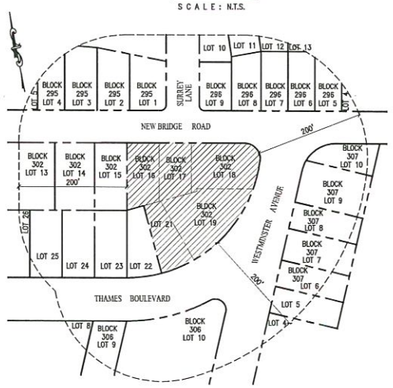
1. CONTRACTORS SHALL VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS, LOCATIONS, SIZES & DEPTH, FOR ALL UTILITIES WITH THE BOROUGH ENGINEER AND UTILITY COMPANIES, PRIOR TO COMMENCING WORK.
2. CONTRACTORS SHALL CONTACT THE BOROUGH ENGINEER PRIOR TO START OF WORK.
3. CONTRACTOR SHALL CONTACT THE BOROUGH ENGINEER, AND UTILITY COMPANIES TO ARRANGE FOR PROPER REMOVAL, RELOCATION AND OR REPAIRS OF ANY UNDERGROUND UTILITIES AND OTHER SERVICES WHICH MAY INTERFERE THROUGHOUT THE COURSE OF CONSTRUCTION.
4. ALL NEW R.C.P. SHOWN ON THIS DRAWING SHALL BE CLASS V, " B " AND SHALL CONFORM TO A.S.T.M. SPEC. C76-57T. PIPE TO BE BEDDED ON A SELECT IMPORTED GRANULAR MATERIAL, CLEAN SAND OR WASHED STONE OR GRAVEL.
5. ALL CONCRETE SHALL ATTAIN A MINIMUM ULTIMATE COMPRESSIVE STRENGTH OF 4,500 psi AT 28 DAYS AND SHALL CONTAIN AN ADMIXTURE TO ACHIEVE 5%-7% AIR-ENTRAINMENT
6. ALL WATERMAINS MUST BE LAID ON A BED OF 3/4 INCH CLEAN STONE WHICH EXTENDS FROM A POINT 4 INCHES BELOW THE PIPE UP TO THE "SPRING LINE".
7. CONTRACTOR SHALL REPLACE AND OR REPAIR ANY EXISTING DRIVEWAY MATERIALS THAT ARE DAMAGED DURING CONSTRUCTION.
8. ALL NEW PAVEMENT ADJACENT TO EXISTING PAVEMENT SHALL TAPER FLUSH TO MATCH EXISTING.
9. REINFORCING BARS ARE TO BE OF NEW BILLET STEEL, INTERMEDIATE GRADE ASTM, A615 GRADE 60 AND SHALL HAVE DEFORMATION IN ACCORDANCE WITH ASTM A305.
10. CONTRACTOR SHALL MAKE PROVISIONS TO CONTROL GROUND WATER AS REQUIRED FOR EXCAVATION AND FILL OPERATION.
11. ALL DIMENSIONS, EXISTING AND NEW, TO BE VERIFIED BY CONTRACTOR IN THE FIELD BEFORE PROCEEDING WITH CONSTRUCTION.
12. ALL EMBEDMENTS, INCLUDING ANCHOR BOLTS AND ELECTRICAL CONDUITS, SHALL BE IN PLACE PRIOR TO POURING CONCRETE.
13. CONTRACTOR SHALL ADEQUATELY PROTECT WALLS, PIERS, ETC. FROM DAMAGE DUE TO BACKFILLING.
14. CONTRACTOR SHALL PROVIDE ALL HIGH CHAIRS, SPACERS, SUPPORTS, ETC. NECESSARY FOR PROPER PLACEMENT OF REINFORCING STEEL. SUPPORTS SHALL BE TIED TO REINFORCING STEEL.
15. ALL GROUT TO BE USED UNDER BEARING DEVICES, BASE PLATES, ETC. IS TO BE NON-METALLIC, NON-SHRINK, PRE-MIXED GROUT, AND SHALL COMPLY WITH THE REQUIREMENTS OF ASTM C827.
16. DESIGN, MIX, MANUFACTURE, AND PLACING OF CONCRETE SHALL CONFORM TO CURRENT ACI SPECIFICATIONS.
17. CONTRACTOR SHALL ASCERTAIN EXISTENCE OF UNDERGROUND UTILITY LINES BEFORE EXCAVATION IS BEGUN AND SHALL PROVIDE PROTECTION FOR SAME.
18. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
19. UNLESS OTHERWISE NOTED THE MINIMUM CONCRETE PROTECTION FOR REINFORCEMENT SHALL BE AS FOLLOWS:
    3"-FOR CONCRETE AGAINST GROUND
    2"-FOR FORMED CONCRETE IN CONTACT WITH THE GROUND
20. DO NOT BACKFILL AGAINST WALLS AND BEAMS UNTIL ALL OF THE PERMANENT STRUCTURAL SUPPORTS AND BRACING MEMBERS ARE IN PLACE OR UNTIL ADEQUATE SHORING HAS BEEN ERECTED TO PREVENT DISPLACEMENT AND DEFLECTION OF THE WALLS AND BEAMS UNDER HORIZONTAL LOAD. EXCERCISE CARE IN PLACING AND COMPACTING BACKFILL SO AS NOT TO DAMAGE THE STRUCTURE IN ANY WAY.
21. LENGTH OF REINFORCING SPLICES SHALL CONFORM TO ACI BUILDING CODE REQUIREMENTS, BUT IN NO CASE SHALL BE LESS THAN 30 BAR DIAMETERS OR AS OTHERWISE APPROVED BY ENGINEER.
22. CONCRETE SHALL BE PLACED IN ACCORDANCE WITH ACI 304, LATEST EDITION. CONCRETE SHALL NOT BE SUBJECT TO DROPS IN EXCESS OF FIVE (5) FEET.
23. ALL FILL SHALL BE COMPACTED LAYER BY LAYER TO NOT LESS THAN 95% OF THE MAXIMUM DENSITY WHEN TESTED IN ACCORDANCE WITH ASTM D1557.
24. PROTECTION OF EXISTING STRUCTURES DURING THE COURSE OF CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR.
25. PROJECT SHALL BE EXECUTED IN ACCORDANCE WITH THE RULES & REGULATIONS OF THE NEW JERSEY STATE BUILDING CODE, IN CONJUNCTION WITH THE LOCAL CODES.
26. CONTRACTOR SHALL PROVIDE ADEQUATE BRACING, SHEETING, AND SHORING TO PREVENT EXCAVATION WALLS FROM COLLAPSING. PROTECTIVE MEASURES SHALL REMAIN IN PLACE UNTIL ALL WORK IS COMPLETED AND PERSONNEL HAVE LEFT THE EXCAVATED SITE.
27. CONTRACTOR SHALL MAINTAIN HIS AREA CLEAN AT ALL TIMES AND SHALL CLEAN UP AFTER COMPLETION OF HIS WORK.
28. CONTRACTOR SHALL PROVIDE ALL REQUIRED PUMPING CAPACITY TO KEEP ALL EXCAVATIONS DRY DURING HIS OPERATION.
29. CONTRACTOR SHALL PROVIDE BARRICADES, SHEETING, SHEET PILING, AND OTHER NECESSARY MEASURES TO PROTECT PERSONNEL FROM EXCAVATED AREAS.
30. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO ANY UNDERGROUND UTILITIES OR TO THE BUILDINGS.
31. CONTRACTOR SHALL STRIP TOPSOIL AND STOCKPILE ON SITE FOR LATER DISTRIBUTION UNDER LAWNS AND LANDSCAPED AREAS.
32. CONTRACTOR SHALL SLOPE PAVEMENT 1" AT ALL CATCH BASINS, 3.0' AROUND SUCH THAT PAVEMENT TAPERS FLUSH WITH TOP OF GRATE.
33. ALL EXCAVATIONS ON THIS SITE SHALL BE PERFORMED IN ACCORDANCE WITH THE CURRENT "OSHA EXCAVATIONS REGULATIONS" AND ANY APPLICABLE STATE, LOCAL OR FEDERAL REQUIREMENTS.
34. AT THE COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL PROVIDE AS BUILT CONDITIONS PLANS FOR THE OWNER USING THE LATEST VERSION OF CLIENT APPROVED COMPUTER AIDED DESIGN (CAD) SOFTWARE.
35. CONTRACTOR TO CALL "CALL BEFORE YOU DIG" NUMBER 1-800-272-1000 PRIOR TO ANY EXCAVATION.
36. CONTRACTOR SHALL INCLUDE IN THEIR BID PRICE, TO OBTAIN THE SERVICES OF A LICENSED SURVEYOR IN THE STATE OF NEW JERSEY TO PROVIDE ALL CONSTRUCTION STAKINGS/LAYOUTS NECESSARY FOR CONSTRUCTION AS WELL AS TO VERIFY ALL EXISTING UTILITIES, ABOVE GROUND AND BELOW GROUND, PRIOR TO CONSTRUCTION. FURTHERMORE CONTRACTOR SHALL FURNISH THIS SURVEY TO THE ARCHITECT/ENGINEER AND OWNER FOR THEIR USE.
37. ALL INSPECTIONS REQUIRED BY THE LATEST BUILDING CODES AND THAT OF THE LOCAL BUILDING DEPARTMENT SHALL BE PERFORMED BY AN INDEPENDENT INSPECTION FIRM RETAINED BY THE OWNER.
38. SHEATING/SHORING DESIGN SHALL BE PERFORMED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF NEW JERSEY. ENGINEER SHALL PROVIDE SIGNED & SEALED DRAWINGS AS REQUIRED.
39. SHORING SHALL BE DESIGNED BY NJ PROFESSIONAL ENGINEER IF REQUIRED PER CONSTRUCTION UNDER CONTRACT TO CONTRACTOR, IF REQUIRED.

SPECIAL INSPECTIONS

1. ALL NEW STEEL, CONCRETE, MASONRY CONSTRUCTION SHALL BE INSPECTED AS OUTLINED IN 2015 IBC-NEW JERSEY CHAPTER 17 "SPECIAL INSPECTIONS AND TEST".
2. PROJECT OWNER SHALL HIRE A TESTING LAB TO PERFORM REQUIRED INSPECTIONS.

Know what's below. Call before you dig. 811
1-800-272-1000

LOCATION PLAN
SCALE: N.T.S.



KEY PLAN
SCALE: 1"=100'

LIMITING SCHEDULE				
BOROUGH OF BERGENFIELD – BLOCK 302, LOT 16, 17, 18, 19 & 21				
R-6 RESIDENTIAL ZONE				
	AS PER ZONING	EXISTING (*)	PREVIOUSLY APPROVED	PROPOSED
MIN. LOT AREA	10,000 SQ FT (0.23 AC)	42,633.7 SQ FT (0.97 AC)	NO CHANGE	NO CHANGE
MIN. LOT WIDTH	100 FT	490 FT	NO CHANGE	NO CHANGE
MAX. IMPROVED LOT COVERAGE	35%	50.5% (21,530 SF) (5)	76.1% (32,444 SF)	74.54% (31,780 SF) (6)
MAX. LOT COVERAGE	30%	26.3%	43.9%	42.25% (7)
MAX. BUILDING HEIGHT MAX. STORIES	30 FEET 2 STORIES	45.67 FT (1) 2 STORY	48.17 FT 2 STORY	43.84 FT (8)(**) – NEW ADDITION 2 STORY
MIN. FRONT YARD	25 FT	8.88 FT (2)	NO CHANGE	NO CHANGE
MIN. SIDE YARD ONE AGGREGATE OF 2 SIDES	 15 FT 30 FT	 6 FT (3) N/A	 15 FT N/A	 15 FT N/A
MIN. REAR YARD	25 FT	32.4 FT	18.5 FT	26.3 FT
PARKING REQUIREMENTS	198 SPACES AUDITORIUM/ASSEMBLY HALL (SIMILAR USE) 1 SPACE FOR EVERY 3 SEATS (§ 186-49A(6))	15 SPACES (4)	16 SPACES	16 SPACES (9)

NOTES:
(1) EXISTING NON-CONFORMING CONDITIONS – BUILDING HEIGHT – 45.67 FT>28 FT PERMITTED (§ 186-SCHEDULE B)
(2) EXISTING NON-CONFORMING CONDITIONS – EXISTING FRONT YARD – 8.88 FT<25 FT REQUIRED (§ 186-SCHEDULE B)
(3) EXISTING NON-CONFORMING CONDITIONS – EXISTING SIDE YARD ONE – 6 FT<15 FT REQUIRED (§ 186-SCHEDULE B)
(4) EXISTING NON-CONFORMING CONDITIONS – EXISTING PARKING SPACES 15<117 SPACES REQUIRED (350 SEATS) (§ 186-49A.)
(5) EXISTING NON-CONFORMING CONDITIONS – EXISTING IMPROVED LOT COVERAGE 50.5%>35% PERMITTED (§ 186-SCHEDULE B)
(6) PROPOSED IMPROVED LOT COVERAGE 74.54%>35%; WHICH IS <76.1% (PREVIOUSLY APPROVED)
(7) LOT COVERAGE PROPOSED 42.25%>30%; WHICH IS <43.9% (PREVIOUSLY APPROVED)
(8) BUILDING HEIGHT PROPOSED 43.84 FT (TO TOP OF MECH. ROOF SCREEN) >30 FT; WHICH IS <48.17 FT (PREVIOUSLY APPROVED)
(9) PARKING SPACES PROPOSED 16<198**; WHICH IS = 16 (PREVIOUSLY APPROVED)

(*) THIS LIMITING SCHEDULE TABLES ASSUMES THAT LOTS 16, 17, 18, 19 & 21 AS CONSOLIDATED TO ONE (FUTURE) LOT
(**) EXISTING AVERAGE GRADE = 118.0'
(***) EXIST. SEATS = 350 + PROPOSED SEATS = 232 : 350+232=582/3=198 REQUIRED

ELEVATION BASED ON NGVD 1929.

DRAWING LIST:

APPROVED BY THE COUNTY PLANNING BOARD
COUNTY OF BERGEN, NEW JERSEY

ATTESTED TO BY:.....DATE.....

TITLE: *Department Director*, Department of Planning & Economic Development

APPROVED AT A REGULAR MEETING OF THE PLANNING BOARD
HELD ON THE DAY OF_____

BOARD CHAIRMAN

SECRETARY

ENGINEER

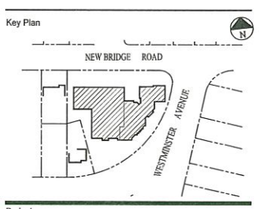
Revisions

Date	Issue	Description
03-23-21	A	FOR INITIAL ZONING BOARD FILING
03-25-21	B	FOR BERGEN COUNTY PLANNING BOARD FILING AND APPROVAL
04-22-21	C	FOR ZONING BOARD FILING AND APPROVAL

MEP Consultants

LEA
LINWOOD ENGINEERING ASSOCIATES, P.A.
CONSULTING ENGINEERS
955 Lincoln Avenue
Glen Rock, New Jersey 07452
TELEPHONE (201) 857-3998
FAX: (201) 857-3994

Key Plan



Project

Expansion for
Congregation Beth Abraham
of Bergenfield, NJ
396 New Bridge Road
Bergenfield, NJ 07621
Block 302; Lots: 16, 17, 18, 19 & 21

Client

Congregation Beth Abraham
of Bergenfield, NJ

SNS Architects & Engineers, PC
1 PARAGON DRIVE . MONTVALE . NEW JERSEY. 07645
TEL: 201.573.1787 FAX: 201.573.1788 www.sns-arch-eng.com

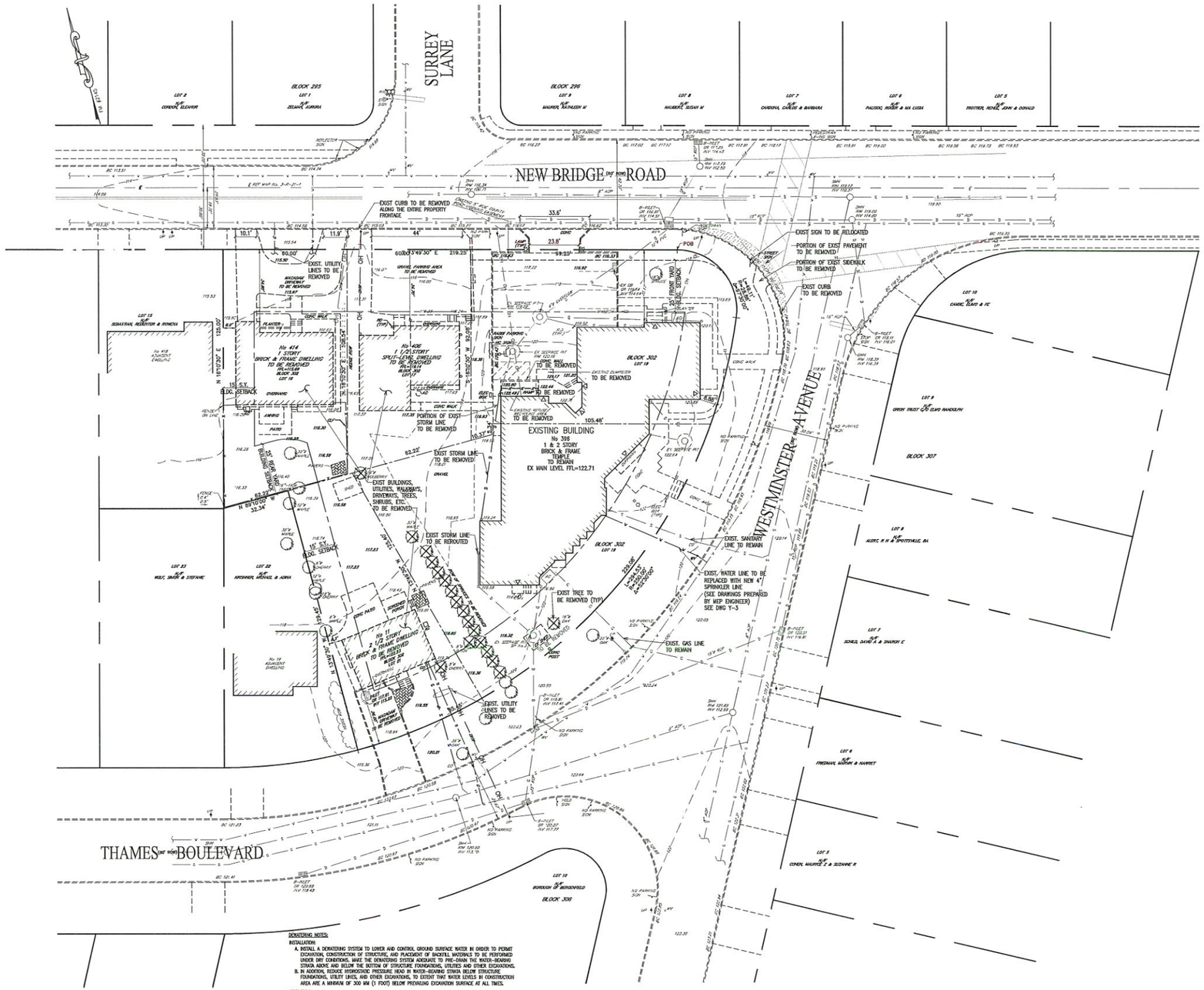
John M. Lignos, AIA
Lorin J. Sonenshine, AIA
Steven Napolitano, PE
Robert G. Nocella, AIA

Cert./Lic. No. 41999

Date	03-23-21	Scale	AS NOTED
Drawn By	AS	Checked By	

Dwg. Title
SITE PLAN
TITLE SHEET

Work Order No. 5389.01
Dwg. No. Y-0



DEWATERING NOTES:

INSTALLATION:

A. INSTALL A DEWATERING SYSTEM TO LOWER AND CONTROL GROUND SURFACE WATER IN ORDER TO PERMIT EXCAVATION, CONSTRUCTION OF STRUCTURE, AND PLACEMENT OF BACKFILL MATERIALS TO BE PERFORMED UNDER DRY CONDITIONS. MAKE THE DEWATERING SYSTEM ADEQUATE TO PRE-DRAIN THE WATER-BEARING STRATA ABOVE AND BELOW THE BOTTOM OF STRUCTURE FOUNDATIONS, UTILITIES AND OTHER EXCAVATIONS.

B. IN ADDITION, REDUCE HYDROSTATIC PRESSURE HEAD IN WATER-BEARING STRATA BELOW STRUCTURE FOUNDATIONS, UTILITY LINES, AND OTHER EXCAVATIONS, TO EXTENT THAT WATER LEVELS IN CONSTRUCTION AREA ARE A MINIMUM OF 300 MM (1 FOOT) BELOW PREVAILING EXCAVATION SURFACE AT ALL TIMES.

OPERATION:

A. PRIOR TO ANY EXCAVATION BELOW THE GROUND WATER TABLE, PLACE SYSTEM INTO OPERATION TO LOWER WATER TABLE AS REQUIRED AND OPERATE IT CONTINUOUSLY 24 HOURS A DAY, 7 DAYS A WEEK UNTIL UTILITIES AND STRUCTURES HAVE BEEN SATISFACTORILY CONSTRUCTED, WHICH INCLUDES THE PLACEMENT OF BACKFILL MATERIALS AND DEWATERING IS NO LONGER REQUIRED.

B. PLACE AN ADEQUATE WEIGHT OF BACKFILL MATERIAL TO PREVENT BUOYANCY PRIOR TO DISCONTINUING OPERATION OF THE SYSTEM.

EXCAVATION DEWATERING:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FACILITIES REQUIRED TO DIVERT, COLLECT, CONTROL, AND REMOVE WATER FROM ALL CONSTRUCTION WORK AREAS AND EXCAVATIONS.
2. DRAINAGE FEATURES SHALL HAVE SUFFICIENT CAPACITY TO AVOID FLOODING OF WORK AREAS.
3. DRAINAGE FEATURES SHALL BE SO ARRANGED AND ALTERED AS REQUIRED TO AVOID DEGRADATION OF THE FINAL EXCAVATED SURFACE(S).
4. THE CONTRACTOR SHALL UTILIZE ALL NECESSARY EROSION AND SEDIMENT CONTROL MEASURES AS DESCRIBED HEREIN TO AVOID CONSTRUCTION RELATED DEGRADATION OF THE NATURAL WATER QUALITY.

C. DEWATERING EQUIPMENT SHALL BE PROVIDED TO REMOVE AND DISPOSE OF ALL SURFACE AND GROUND WATER ENTERING EXCAVATIONS, TRENCHES, OR OTHER PARTS OF THE WORK DURING CONSTRUCTION. EACH EXCAVATION SHALL BE KEPT DRY DURING SUBGRADE PREPARATION AND CONTINUALLY THEREAFTER UNTIL THE STRUCTURE TO BE BUILT, OR THE PIPE TO BE INSTALLED THEREIN, IS COMPLETED TO THE EXTENT THAT NO DAMAGE FROM HYDROSTATIC PRESSURE, FLOTATION, OR OTHER CAUSE WILL RESULT.

STANDBY EQUIPMENT:

PROVIDE COMPLETE STANDBY EQUIPMENT, INSTALLED AND AVAILABLE FOR IMMEDIATE OPERATION, AS MAY BE REQUIRED TO ADEQUATELY MAINTAIN DE-WATERING ON A CONTINUOUS BASIS AND IN THE EVENT THAT ALL OR ANY PART OF THE SYSTEM MAY BECOME INADEQUATE OR FAIL.

CONTRACTOR SHALL PROVIDE UNIT COST FOR ALL DEWATERING ACTIVITIES THAT WILL BE REQUIRED

SITE PLAN
SCALE: 1"=20'

SHEATING/SHORING DESIGN SHALL BE PERFORMED BY A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF NEW JERSEY. ENGINEER SHALL PROVIDE SIGNED & SEALED DRAWINGS AS REQUIRED.

20 0 20 40
GRAPHIC SCALE
SCALE: 1" = 20'

ELEVATION BASED ON NGVD 1929.

Know what's below. Call before you dig. 811
1-800-272-1000

LEGEND

	EXISTING	PROPOSED
PROPERTY LINE		
BUILDING SETBACK		
DRAINAGE PIPE	D	
CATCH BASIN		
DRAINAGE M.H.		
SANITARY SEWER LINE	S	S
SANITARY SEWER M.H.	S	S
WATER MAIN LINE	W	W
FIRE LINE	F	F
IRRIGATION MAIN	I	I
TELEPHONE LINE	T	T
ELECTRIC LINE	E	E
TEL. & ELEC. LINE	T-E	T-E
GAS MAIN LINE	G	G
SPRINKLER		
FIRE HYDRANT		
WATER VALVE		
PAVEMENT		
CONCRETE CURB		
SPOT ELEVATION	+10.0'	+10.0'
LIGHT POLE		
INV	INVERT ELEVATION	INVERT ELEVATION
RIM	TOP OF GRATE	TOP OF GRATE

Revisions

Date	Issue	Description
03-23-21	A	FOR INITIAL ZONING BOARD FILING
03-25-21	B	FOR BERGEN COUNTY PLANNING BOARD FILING AND APPROVAL
04-22-21	C	FOR ZONING BOARD FILING AND APPROVAL

MEP Consultants

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CONSULTING ENGINEERS
955 Lincoln Avenue
Glen Rock, New Jersey 07452
TELEPHONE (201) 857-3998
FAX: (201) 857-3994

Key Plan

Project

Expansion for
Congregation Beth Abraham
of Bergenfield, NJ

396 New Bridge Road
Bergenfield, NJ 07621
Block 302; Lots: 16, 17, 18, 19 & 21

Client

Congregation Beth Abraham
of Bergenfield, NJ

SNS Architects & Engineers, PC
1 PARAGON DRIVE . MONTVALE . NEW JERSEY. 07645
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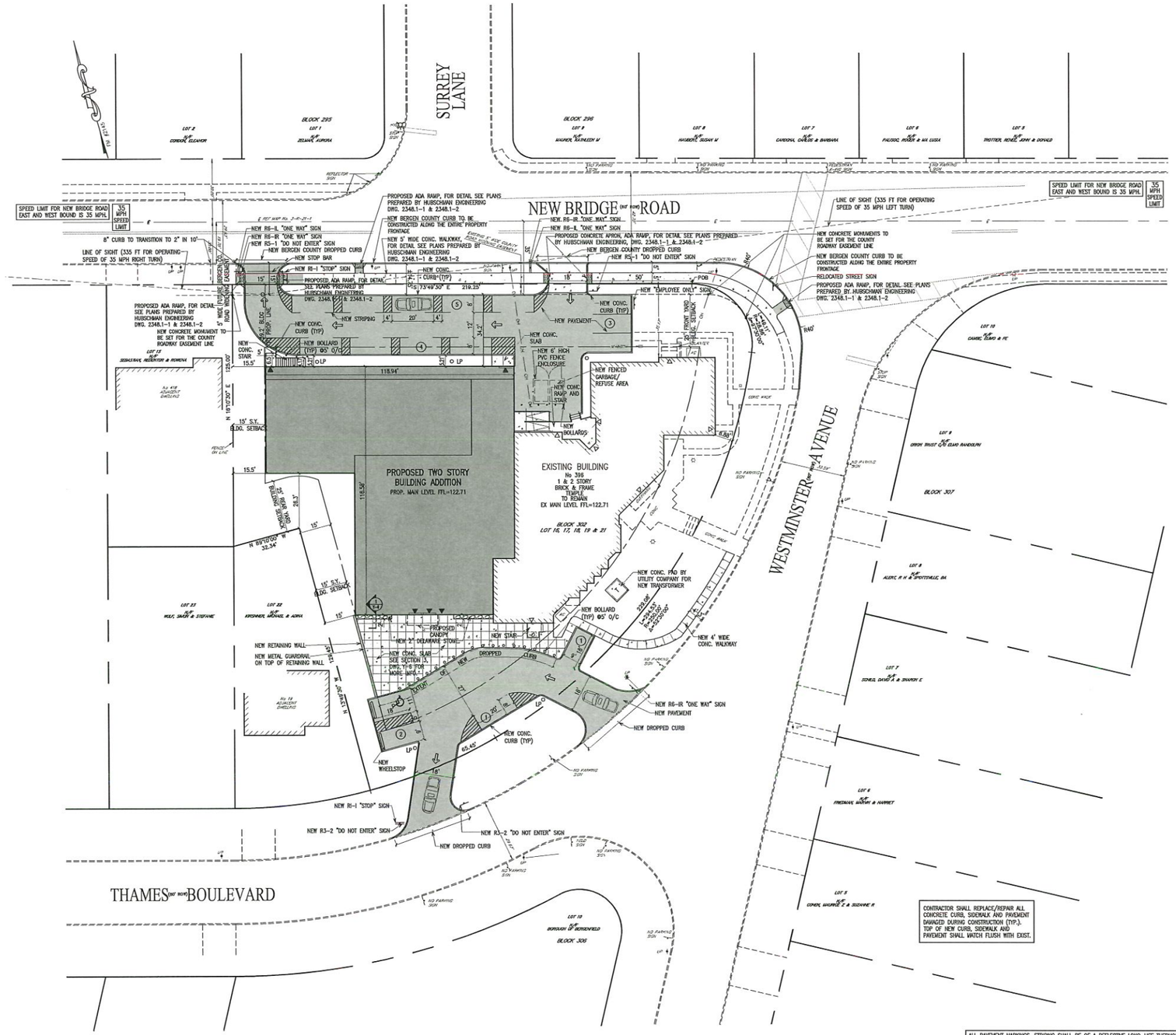
Robert G. Nocella, AIA

Cert/Lic. No. 41969

Date	03-23-21	Scale	AS NOTED
Drawn By	AS	Checked By	

Dwg. Title
SITE PLAN
EXISTING CONDITIONS/DEMO

Work Order No. 5389.01 Dwg. No. Y-1



CONTRACTOR SHALL REPLACE/REPAIR ALL CONCRETE CURBS, SIDEWALK AND PAVEMENT DAMAGED DURING CONSTRUCTION (TYP.). TOP OF NEW CURB, SIDEWALK AND PAVEMENT SHALL MATCH FLUSH WITH EXIST.

ALL PAVEMENT MARKINGS, STRIPING SHALL BE OF A REFLECTIVE LONG-LIFE THERMOPLASTIC MATERIAL, MINIMUM 90 MIL THICKNESS, APPLIED IN ACCORDANCE WITH BERGEN COUNTY DESIGN STANDARDS AND THE MANUFACTURER'S SPECIFICATIONS FOR APPLICATION.

LEGEND

	EXISTING	PROPOSED
PROPERTY LINE		
BUILDING SETBACK		
DRAINAGE PIPE	D	
CATCH BASIN		
DRAINAGE M.H.		
SANITARY SEWER LINE	S	S
SANITARY SEWER M.H.		
WATER MAIN LINE	W	W
FIRE LINE	F	F
IRRIGATION MAIN	I	I
TELEPHONE LINE	T	T
ELECTRIC LINE	E	E
TEL. & ELEC. LINE	T-E	T-E
GAS MAIN LINE	G	G
SPRINKLER		
FIRE HYDRANT		
WATER VALVE		
PAVEMENT		
CONCRETE CURB		
SPOT ELEVATION	+10.0'	+10.0'
LIGHT POLE		
INV	INVERT ELEVATION	INVERT ELEVATION
RIM	TOP OF GRATE	TOP OF GRATE

DATUM: TOP OF EXIST FIRST FLOOR ELEV. 0.00=122.71'

GRAPHIC SCALE
SCALE: 1" = 20'

SITE PLAN
SCALE: 1"=20'

APPROVED BY THE COUNTY PLANNING BOARD
COUNTY OF BERGEN, NEW JERSEY

ATTESTED TO BY:.....DATE:.....

TITLE: Department Director, Department of Planning & Economic Development

Revisions

Date	Issue	Description
03-23-21	A	FOR INITIAL ZONING BOARD FILING
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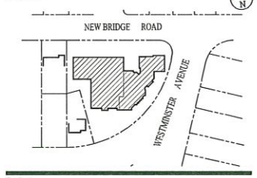
Key Plan



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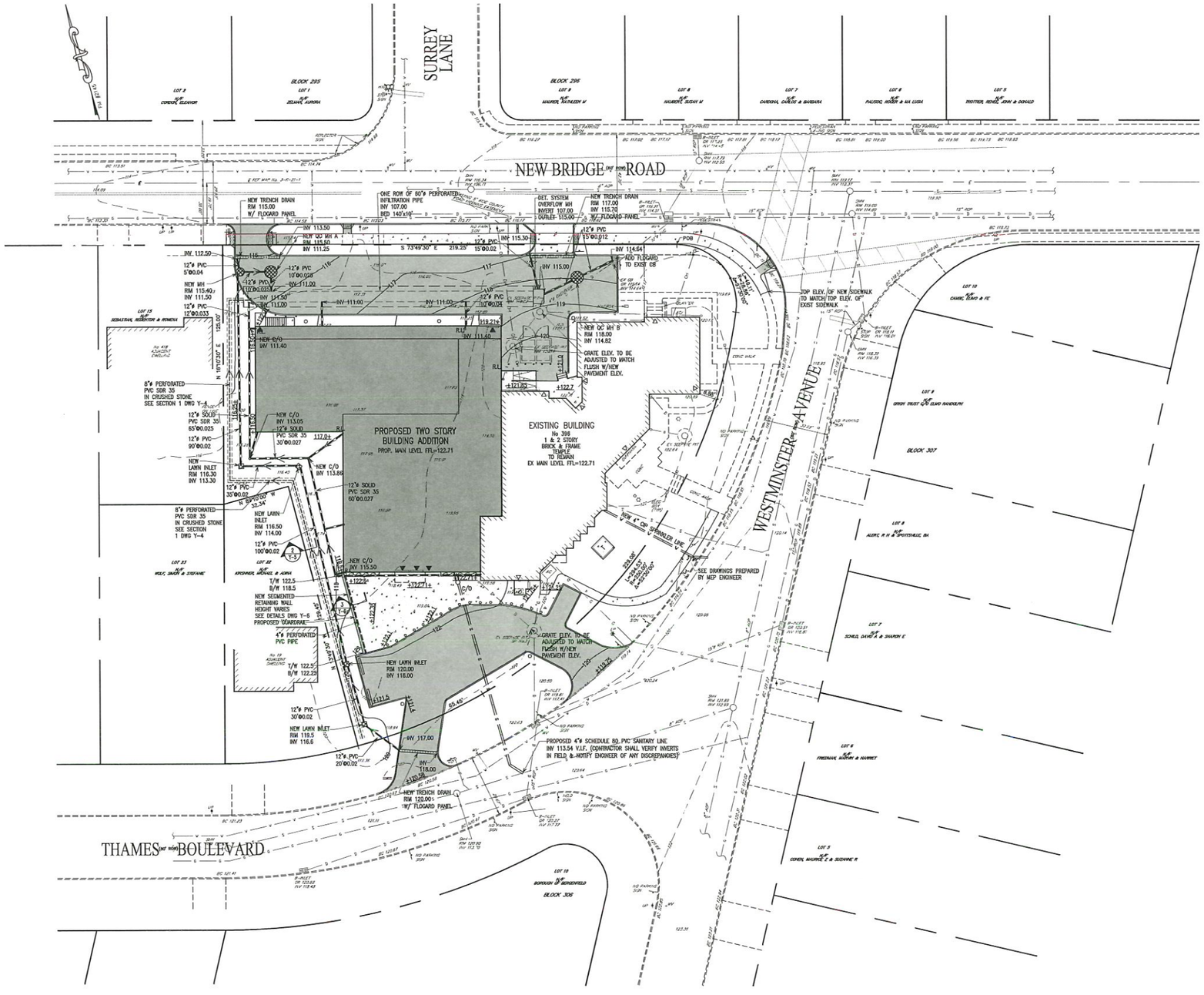
Cert./Lic. No. 41980

Date	03-01-21	Scale	AS NOTED
Drawn By	AS	Checked By	

Dwg. Title
SITE PLAN
HORIZONTAL ALIGNMENT

Work Order No. 5389.01
Dwg. No. Y-2



SITE PLAN
SCALE: 1"=20'

CONTRACTOR SHALL COORDINATE ALL GAS, WATER, SANITARY & ELEC. UTILITIES REQUIREMENTS WITH RESPECTIVE UTILITY CO. PRIOR TO CONSTRUCTION & SHALL INCLUDE ALL NECESSARY WORK IN THEIR CONSTRUCTION BID.

CONTRACTOR SHALL REPAIR/REPLACE ANY PAVEMENT/CURBS/SIDEWALKS DAMAGED DURING CONSTRUCTION

GRAPHIC SCALE
SCALE: 1" = 20'
20 0 20 40

ELEVATION BASED ON NGVD 1929.

DATUM: TOP OF EXIST FIRST FLOOR ELEV. 0.00=122.71'

Know what's below. Call before you dig. 811
1-800-272-1000

LEGEND

	EXISTING	PROPOSED
PROPERTY LINE		
BUILDING SETBACK		
DRAINAGE PIPE	D	
CATCH BASIN		
DRAINAGE M.H.		
SANITARY SEWER LINE	S	S
SANITARY SEWER M.H.	S	
WATER MAIN LINE	W	W
FIRE LINE	F	F
IRRIGATION MAIN	I	I
TELEPHONE LINE	T	T
ELECTRIC LINE	E	E
TEL. & ELEC. LINE	T-E	T-E
GAS MAIN LINE	G	G
SPRINKLER		
FIRE HYDRANT		
WATER VALVE		
PAVEMENT		
CONCRETE CURB		
SPOT ELEVATION	+10.0'	+10.0'
LIGHT POLE		
INV	INVERT ELEVATION	INVERT ELEVATION
RIM	TOP OF GRATE	TOP OF GRATE

APPROVED BY THE COUNTY PLANNING BOARD
COUNTY OF BERGEN, NEW JERSEY

ATTESTED TO BY:.....DATE.....

TITLE: Department Director, Department of Planning & Economic Development

Revisions

Date	Issue	Description
03-22-21	A	FOR BERGEN COUNTY SOIL CONSERVATION DISTRICT RE-CERTIFICATION
03-23-21	B	FOR INITIAL ZONING BOARD FILING
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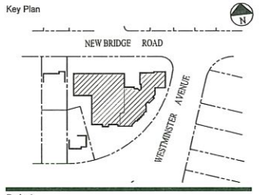

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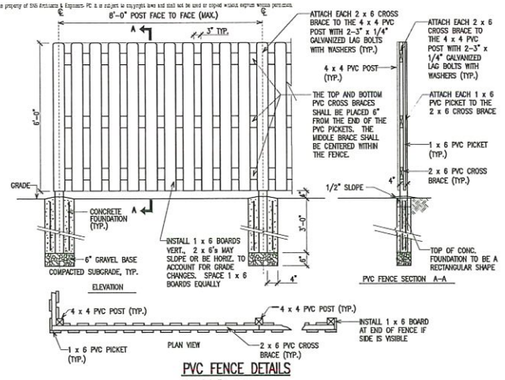
Robert G. Nocella, AIA

Cert./Lic. No. 41909

Date	05-01-21	Scale	AS NOTED
Drawn By	AS	Checked By	

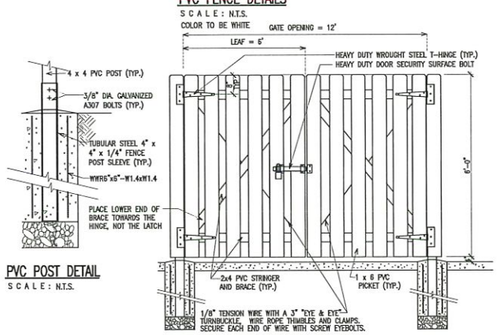
Dwg. Title
SITE PLAN
VERTICAL ALIGNMENT

Work Order No. 5389.01
Dwg. No. Y-3



PVC FENCE DETAILS

SCALE: N.T.S.
COLOR TO BE WHITE

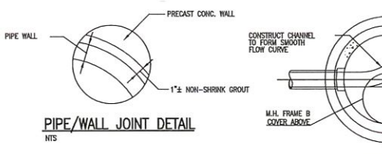


PVC POST DETAIL

SCALE: N.T.S.

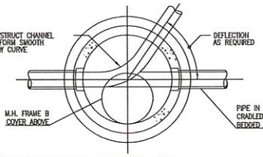
PVC GATE DETAIL

SCALE: N.T.S.
COLOR TO BE WHITE



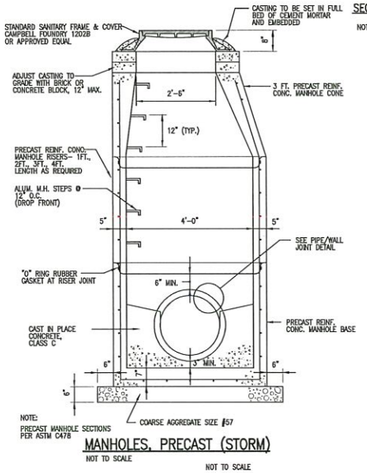
PIPE/WALL JOINT DETAIL

NTS



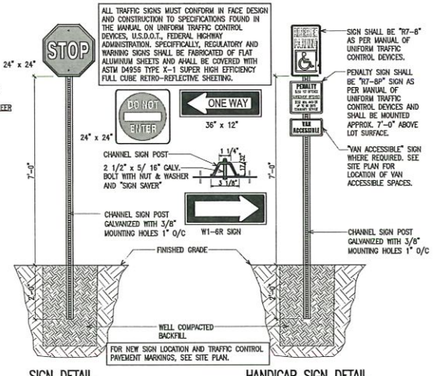
SECTIONAL PLAN

NOT TO SCALE



MANHOLES, PRECAST (STORM)

NOT TO SCALE

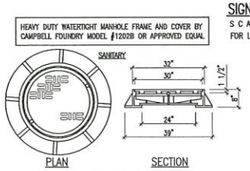


SIGN DETAIL

SCALE: 1/2"=1'-0"
FOR LOCATION SEE SITE PLAN

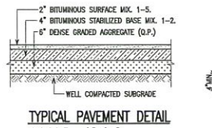
HANDICAP SIGN DETAIL

SCALE: 1/2"=1'-0"
FOR LOCATION SEE SITE PLAN



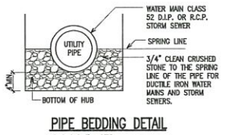
MANHOLE FRAME & COVER HEAVY DUTY WATER TIGHT

SCALE: 1/2"=1'-0"



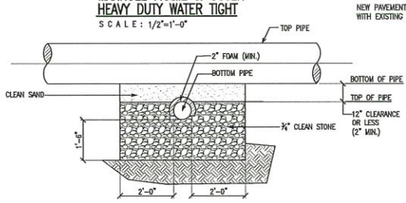
TYPICAL PAVEMENT DETAIL

SCALE: 1/2"=1'-0"
NEW PAVEMENT SHALL MATCH FLUSH WITH EXISTING CONCRETE/BITUMINOUS PAVEMENT



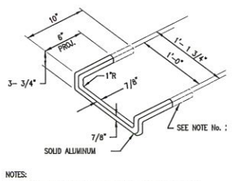
PIPE BEDDING DETAIL

SCALE: NTS

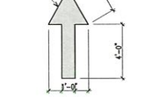


UTILITY CROSSING DETAIL

SCALE 1/2"=1'-0"
WHERE APPLICABLE



NOTES:
1. ALUMINUM STEPS SHALL BE EXTRUDED ALUMINUM 6061-T6 ALLOY DROP FRONT DESIGN OR APPROVED EQUAL.
2. THE PORTION TO BE IMBEDDED IN THE CONCRETE SHALL BE COATED WITH COAL TAR PITCH OR OTHER APPROVED MATERIAL AND SHALL BE IN ACCORDANCE WITH THE LATEST O.S.H.A. STANDARDS (3" MINIMUM IMBEDMENT)
3. ALL MANHOLE STEPS TO MEET OR EXCEED ASTM AND O.S.H.A. REQUIREMENTS.



PAVEMENT MARKING DETAIL

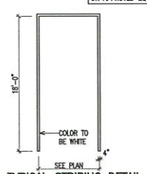
SCALE: 1/4"=1'-0"

CONCRETE CURB DETAIL

SCALE: N.T.S.

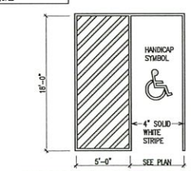
NOTE:
PROVIDE 1/2" PREMOLDED ASPHALT IMPREGNATED EXPANSION JOINT @ 20' o/c MAX.

ALL PARKING STRIPING SHALL BE 4" WIDE, SETFAST ACRYLIC WATER BORNE TRAFFIC PAINT BY BENJAMIN MOORE OR APPROVED EQUAL.



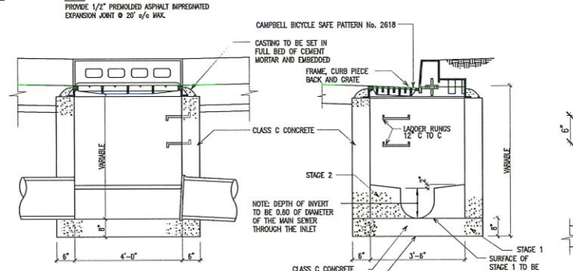
TYPICAL STRIPING DETAIL

SCALE: 1/8"=1'-0"

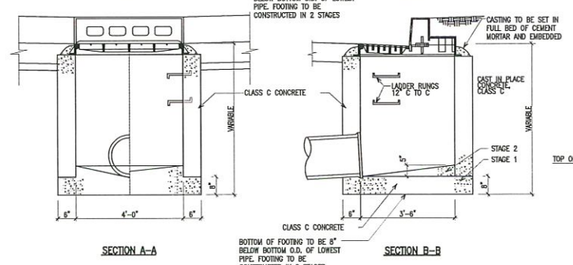


HANDICAP PARKING STRIPING DETAIL

SCALE: 1/8"=1'-0"



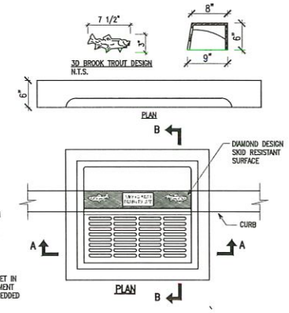
SECTION A-A — SECTION B-B

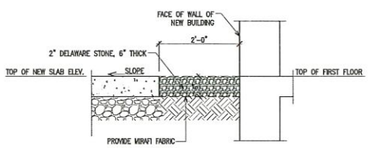


SECTION A-A — SECTION B-B

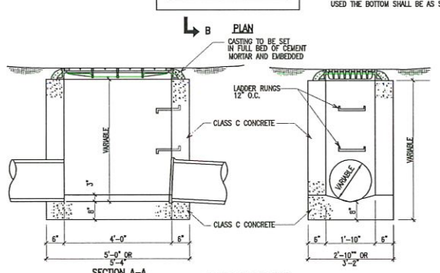
HEAVY DUTY CURB SIDE INLET

SCALE: NOT TO SCALE





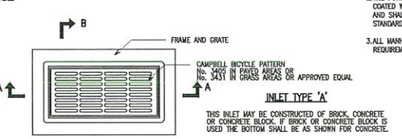
1/Y-2 SECTION
SCALE: 3/4"=1'-0"



SECTION A-A — SECTION B-B

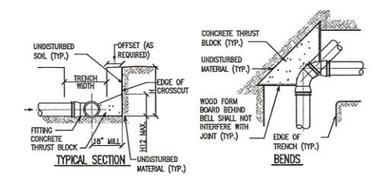
INLET TYPE "A"

SCALE: NOT TO SCALE



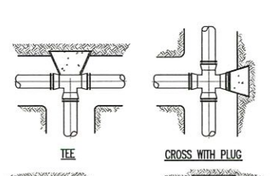
INLET TYPE 'A'

THIS INLET MAY BE CONSTRUCTED OF BRICK, CONCRETE OR CONCRETE BLOCK. IF BRICK OR CONCRETE BLOCK IS USED THE BOTTOM SHALL BE AS SHOWN FOR CONCRETE.



TYPICAL SECTION

BENDS



THRUST BLOCK DETAILS

THRUST BLOCK NOTES:

1. THRUST BLOCK BEARING AREAS SHALL BE POURED AGAINST UNDISTURBED MATERIAL. WHERE TRENCH HAS BEEN DISTURBED, EXCAVATE ALL LOOSE MATERIAL AND EXTEND TO UNDISTURBED MATERIAL.
2. ROUGH BLOCKING FORMS SHALL BE USED ALONG SIDES OF THRUST BLOCKS.
3. THRUST BLOCKS SHALL BE USED IN COMBINATION, AS REQUIRED, TO SUIT THE SPECIFIC FITTING ARRANGEMENT.
4. ALTERNATE DESIGNED RESTRAINING SYSTEMS SHALL BE PROVIDED WHERE STANDARD THRUST BLOCKING BLOCKING IS NOT SUITABLE.
5. ALL WOOD BLOCKING SHALL BE PRESSURE TREATED WITH PRESERVATIVE.

Revisions

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03-23-21	A	FOR INITIAL ZONING BOARD FILING
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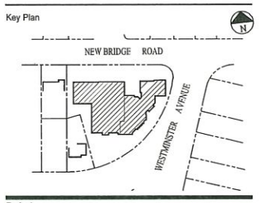

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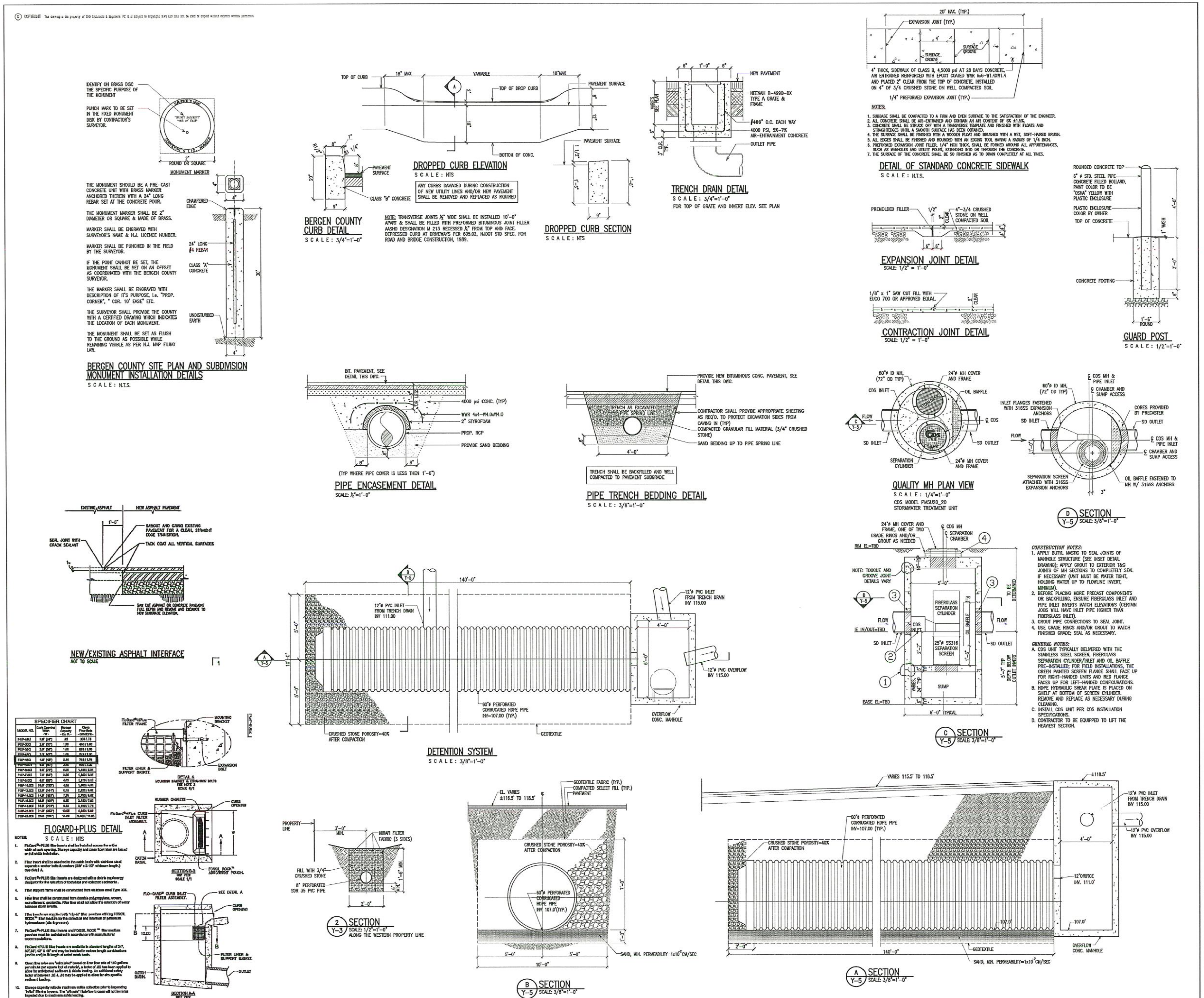
Cert./Lic. No. 41989

Date	03-01-21	Scale	AS NOTED
Drawn By	AS	Checked By	

Dwg. Title

SITE PLAN DETAILS AND SECTIONS

Work Order No. 5389.01
Dwg. No. Y-4


BERGEN COUNTY SITE PLAN AND SUBDIVISION MONUMENT INSTALLATION DETAILS
SCALE: N.T.S.
IDENTIFY ON BRASS DISC THE SPECIFIC PURPOSE OF THE MONUMENT
PUNCH MARK TO BE SET IN THE FIXED MONUMENT DISK BY CONTRACTOR'S SURVEYOR.
2" ROUND OR SQUARE
MONUMENT MARKER
THE MONUMENT SHOULD BE A PRE-CAST CONCRETE UNIT WITH BRASS MARKER ANCHORED THEREIN WITH A 24" LONG REBAR SET AT THE CONCRETE POUR.
THE MONUMENT MARKER SHALL BE 2" DIAMETER OR SQUARE & MADE OF BRASS.
MARKER SHALL BE ENGRAVED WITH SURVEYOR'S NAME & N.J. LICENCE NUMBER.
MARKER SHALL BE PUNCHED IN THE FIELD BY THE SURVEYOR.
IF THE POINT CANNOT BE SET, THE MONUMENT SHALL BE SET ON AN OFFSET AS COORDINATED WITH THE BERGEN COUNTY SURVEYOR.
THE MARKER SHALL BE ENGRAVED WITH DESCRIPTION OF IT'S PURPOSE, i.e. "PROP. CORNER", " COR. 10' EASE" ETC.
THE SURVEYOR SHALL PROVIDE THE COUNTY WITH A CERTIFIED DRAWING WHICH INDICATES THE LOCATION OF EACH MONUMENT.
THE MONUMENT SHALL BE SET AS FLUSH TO THE GROUND AS POSSIBLE WHILE REMAINING VISIBLE AS PER N.J. MAP FILING LAW.
CHAMFERED EDGE
24" LONG #4 REBAR
CLASS "A" CONCRETE
UNDISTURBED EARTH
BERGEN COUNTY CURB DETAIL
SCALE: 3/4"=1'-0"
DROPPED CURB ELEVATION
SCALE: NTS
ANY CURBS DAMAGED DURING CONSTRUCTION OF NEW UTILITY LINES AND/OR NEW PAVEMENT SHALL BE REMOVED AND REPLACED AS REQUIRED
DROPPED CURB SECTION
SCALE: NTS
TRENCH DRAIN DETAIL
SCALE: 3/4"=1'-0"
FOR TOP OF GRATE AND INVERT ELEV. SEE PLAN
DETAIL OF STANDARD CONCRETE SIDEWALK
SCALE: N.T.S.
20' MAX. (TYP.)
EXPANSION JOINT (TYP.)
SURFACE GROOVE
4" THICK, SIDEWALK OF CLASS B, 4,5000 psi AT 28 DAYS CONCRETE, AIR ENTRAINED REINFORCED WITH EPOXY COATED WWR 6x6-W1.4XW1.4 AND PLACED 2" CLEAR FROM THE TOP OF CONCRETE, INSTALLED ON 4" OF 3/4 CRUSHED STONE ON WELL COMPACTED SOIL
1/4" PREFORMED EXPANSION JOINT (TYP.)
NOTES:
1. SUBBASE SHALL BE COMPACTED TO A FIRM AND EVEN SURFACE TO THE SATISFACTION OF THE ENGINEER.
2. ALL CONCRETE SHALL BE AIR-ENTRAINED AND CONTAIN AN AIR CONTENT OF 6% ±1.5%.
3. CONCRETE SHALL BE STRUCK OFF WITH A TRANSVERSE TEMPLATE AND FINISHED WITH FLOATS AND STRAIGHTEDGES UNTIL A SMOOTH SURFACE HAS BEEN OBTAINED.
4. THE SURFACE SHALL BE FINISHED WITH A WOODEN FLOAT AND BRUSHED WITH A WET, SOFT-HAIRED BRUSH.
5. ALL EDGES SHALL BE FINISHED AND ROUNDED WITH AN EDGING TOOL HAVING A RADIUS OF 1/4 INCH.
6. PREFORMED EXPANSION JOINT FILLER, 1/4" INCH THICK, SHALL BE FORMED AROUND ALL APPURTENANCES, SUCH AS MANHOLES AND UTILITY POLES, EXTENDING INTO OR THROUGH THE CONCRETE.
7. THE SURFACE OF THE CONCRETE SHALL BE SO FINISHED AS TO DRAIN COMPLETELY AT ALL TIMES.
EXPANSION JOINT DETAIL
SCALE: 1/2" = 1'-0"
CONTRACTION JOINT DETAIL
SCALE: 1/2" = 1'-0"
GUARD POST
SCALE: 1/2"=1'-0"
PIPE ENCASEMENT DETAIL
SCALE: 3/4"=1'-0"
PIPE TRENCH BEDDING DETAIL
SCALE: 3/8"=1'-0"
TRENCH SHALL BE BACKFILLED AND WELL COMPACTED TO PAVEMENT SUBGRADE
NEW/EXISTING ASPHALT INTERFACE
NOT TO SCALE
QUALITY MH PLAN VIEW
SCALE: 1/4"=1'-0"
CDS MODEL PMSU20_20
STORMWATER TREATMENT UNIT
D SECTION Y-5 SCALE: 3/8"=1'-0"
CONSTRUCTION NOTES:
1. APPLY BUTYL MASTIC TO SEAL JOINTS OF MANHOLE STRUCTURE (SEE INSET DETAIL DRAWING); APPLY GROUT TO EXTERIOR T&G JOINTS OF MH SECTIONS TO COMPLETELY SEAL IF NECESSARY (UNIT MUST BE WATER TIGHT, HOLDING WATER UP TO FLOWLINE INVERT, MINIMUM).
2. BEFORE PLACING MORE PRECAST COMPONENTS OR BACKFILLING, ENSURE FIBERGLASS INLET AND PIPE INLET INVERTS MATCH ELEVATIONS (CERTAIN JOBS WILL HAVE INLET PIPE HIGHER THAN FIBERGLASS INLET).
3. GROUT PIPE CONNECTIONS TO SEAL JOINT.
4. USE GRADE RINGS AND/OR GROUT TO MATCH FINISHED GRADE; SEAL AS NECESSARY.
GENERAL NOTES:
A. CDS UNIT TYPICALLY DELIVERED WITH THE STAINLESS STEEL SCREEN, FIBERGLASS SEPARATION CYLINDER/INLET AND OIL BAFFLE PRE-INSTALLED; FOR FIELD INSTALLATIONS, THE GREEN PAINTED SCREEN FLANGE SHALL FACE UP FOR RIGHT-HANDED UNITS AND RED FLANGE FACES UP FOR LEFT-HANDED CONFIGURATIONS.
B. HDPE HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING CLEANING.
C. INSTALL CDS UNIT PER CDS INSTALLATION SPECIFICATIONS.
D. CONTRACTOR TO BE EQUIPPED TO LIFT THE HEAVIEST SECTION.
C SECTION Y-5 SCALE: 3/8"=1'-0"
DETENTION SYSTEM
SCALE: 3/8"=1'-0"
140'-0"
60"Ø PERFORATED CORRUGATED HDPE PIPE INV=107.00 (TYP.)
CRUSHED STONE POROSITY=40% AFTER COMPACTION
GEOTEXTILE
OVERFLOW CONC. MANHOLE
FLOGARD+PLUS DETAIL
SCALE: NTS
SPECIFIER CHART
2 SECTION Y-3 SCALE: 1/2"=1'-0" ALONG THE WESTERN PROPERTY LINE
B SECTION Y-5 SCALE: 3/8"=1'-0"
A SECTION Y-5 SCALE: 3/8"=1'-0"
SAND, MIN. PERMEABILITY=1x10^-5 CM/SEC

Revisions

Date	Issue	Description
03-22-21	A	FOR BERGEN COUNTY SOIL CONSERVATION DISTRICT RE-CERTIFICATION
03-23-21	B	FOR INITIAL ZONING BOARD FILING
03-25-21	C	FOR BERGEN COUNTY PLANNING BOARD FILING AND APPROVAL
04-22-21	D	FOR ZONING BOARD FILING AND APPROVAL

MEP Consultants

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Glen Rock, New Jersey 07452
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Key Plan

NEW BRIDGE ROAD
WESTMINSTER AVENUE

Project

Expansion for

Congregation Beth Abraham of Bergenfield, NJ

396 New Bridge Road
Bergenfield, NJ 07621
Block 302; Lots: 16, 17, 18, 19 & 21

Client

Congregation Beth Abraham of Bergenfield, NJ

SNS Architects & Engineers, PC
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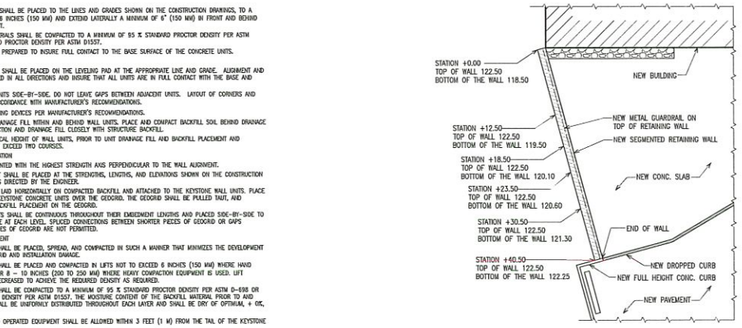
Robert G. Nocella, AIA

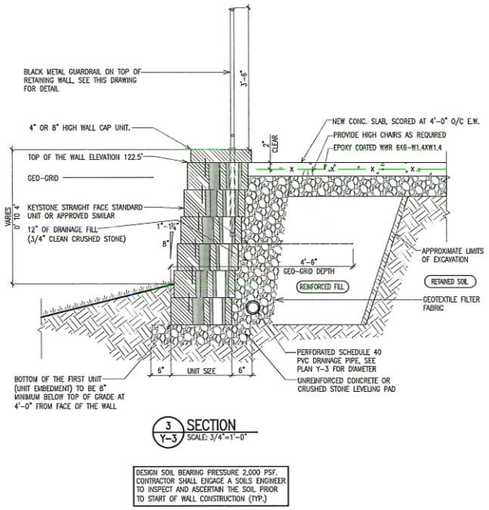
Cert./Lic. No. 41969

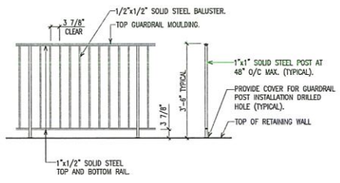
Date	09-01-21	Scale	AS NOTED
Drawn By	AS	Checked By	

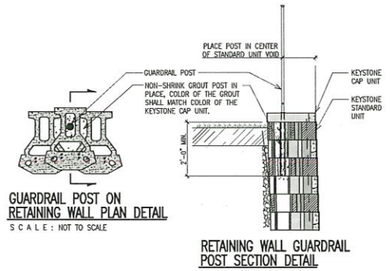
Dwg. Title
SITE PLAN
DETAILS AND SECTIONS

Work Order No. 5389.01
Dwg. No. Y-5









KEYSTONE STANDARD SPECIFICATION
KEYSTONE CONCRETE RETAINING WALL

PART 1: GENERAL

1.01 DESCRIPTION

A. WORK SHALL CONSIST OF DESIGNING, FURNISHING AND CONSTRUCTION OF A KEYSTONE STANDARD UNIT RETAINING WALL SYSTEM IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN REASONABLY CLOSE CONFORMITY WITH THE LINES, GRADES, DESIGN, AND DIMENSIONS SHOWN ON THE PLANS. NO ALTERNATE WALL SYSTEMS WILL BE CONSIDERED.

B. WORK INCLUDES PREPARING FOUNDATION SOIL, FURNISHING AND INSTALLING LEVELING PAD, UNIT DRAINAGE FILL AND BACKFILL TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS.

C. WORK INCLUDES FURNISHING AND INSTALLING GEOGRID SOIL REINFORCEMENT OF THE TYPE, SIZE, LOCATION, AND LENGTHS DESIGNATED ON THE CONSTRUCTION DRAWINGS.

1.02 RELATED SECTIONS

A. SECTION D2300 (31 00 00) – EARTHWORK

1.03 REFERENCE DOCUMENTS

A. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
1. ASTM C140 SAMPLING AND TESTING CONCRETE MASONRY UNITS
2. ASTM C1372SPECIFICATION FOR DRY-CAST SEGMENTAL RETAINING WALL UNITS
3. ASTM D422 PARTICLE-SIZE ANALYSIS OF SOILS
4. ASTM D698 LABORATORY COMPACTION CHARACTERISTICS OF SOIL -STANDARD EFFORT
5. ASTM D1557LABORATORY COMPACTION CHARACTERISTICS OF SOIL -MODIFIED EFFORT
6. ASTM D3034POLYVINYL CHLORIDE PIPE (PVC)
7. ASTM D4318LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS
8. ASTM D4475HORIZONTAL SHEAR STRENGTH OF PULTRUDED REINFORCED PLASTIC RODS
9. ASTM D4476FLEXURAL PROPERTIES OF FIBER REINFORCED PULTRUDED PLASTIC RODS
10. ASTM D4595TENSILE PROPERTIES OF GEOTEXTILES – WIDE WIDTH STRIP
11. ASTM D5262UNCONFINED TENSION CREEP BEHAVIOR OF GEOSYNTHETICS
12. ASTM D5818EVALUATE INSTALLATION DAMAGE OF GEOSYNTHETICS
13. ASTM D6637TENSILE PROPERTIES OF GEOGRIDS – SINGLE OR MULTI-RIB
14. ASTM D6638CONNECTION STRENGTH – REINFORCEMENT/SEGMENTAL UNITS
15. ASTM D6706GEOSYNTHETIC PULLOUT RESISTANCE IN SOIL
16. ASTM D6916SHEAR STRENGTH BETWEEN SEGMENTAL CONCRETE UNITS

B. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)
1. AASHTO M 252 CORRUGATED POLYETHYLENE DRAINAGE PIPE

C. GEOSYNTHETIC RESEARCH INSTITUTE (GRI)
1. GRI-GG4 DETERMINATION OF LONG TERM DESIGN STRENGTH OF GEOGRIDS
2. GRI-GG5 DETERMINATION OF GEOGRID (SOIL) PULLOUT

D. NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA)
1. NCMA SRWU-1 TEST METHOD FOR DETERMINING CONNECTION STRENGTH OF SRW
2. NCMA SRWU-2 TEST METHOD FOR DETERMINING SHEAR STRENGTH OF SRW

1.04 SUBMITTALS/CERTIFICATION

A. CONTRACTOR SHALL SUBMIT A MANUFACTURER'S CERTIFICATION, PRIOR TO START OF WORK, THAT THE RETAINING WALL SYSTEM COMPONENTS MEET THE REQUIREMENTS OF THIS SPECIFICATION AND THE STRUCTURE DESIGN.

B. CONTRACTOR SHALL SUBMIT CONSTRUCTION DRAWINGS AND DESIGN CALCULATIONS FOR THE RETAINING WALL SYSTEM PREPARED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT. THE ENGINEERING DESIGNS, TECHNIQUES, AND MATERIAL EVALUATIONS SHALL BE IN ACCORDANCE WITH THE KEYSTONE DESIGN MANUAL.

1.05 QUALITY ASSURANCE

A. CONTRACTOR SHALL SUBMIT A LIST OF FIVE (5) PREVIOUSLY CONSTRUCTED PROJECTS OF SIMILAR SIZE AND MAGNITUDE BY THE WALL INSTALLER WHERE THE SPECIFIC RETAINING WALL SYSTEM HAS BEEN CONSTRUCTED SUCCESSFULLY. CONTACT NAMES AND TELEPHONE NUMBERS SHALL BE LISTED FOR EACH PROJECT.

B. OWNER SHALL/MAY PROVIDE SOIL TESTING AND QUALITY ASSURANCE INSPECTION DURING EARTHWORK AND WALL CONSTRUCTION OPERATIONS. CONTRACTOR SHALL PROVIDE ANY QUALITY CONTROL TESTING OR INSPECTION NOT PROVIDED BY THE OWNER. OWNER'S QUALITY ASSURANCE PROGRAM DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR QUALITY CONTROL AND WALL PERFORMANCE.

1.06 DELIVERY, STORAGE AND HANDLING

A. CONTRACTOR SHALL CHECK ALL MATERIALS UPON DELIVERY TO ASSURE THAT THE PROPER TYPE, GRADE, COLOR, AND CERTIFICATION HAVE BEEN RECEIVED.

B. CONTRACTOR SHALL PROTECT ALL MATERIALS FROM DAMAGE DUE TO JOBSITE CONDITIONS AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. DAMAGED MATERIALS SHALL NOT BE INCORPORATED INTO THE WORK.

PART 2: PRODUCTS

2.01 DEFINITIONS

A. KEYSTONE UNIT – A CONCRETE RETAINING WALL ELEMENT MACHINE MADE FROM PORTLAND CEMENT, WATER, AND AGGREGATES.

B. STRUCTURAL GEOGRID – A STRUCTURAL ELEMENT FORMED BY A REGULAR NETWORK OF INTEGRALLY CONNECTED TENSILE ELEMENTS WITH APERTURES OF SUFFICIENT SIZE TO ALLOW INTERLOCKING WITH SURROUNDING SOIL, ROCK, OR EARTH AND FUNCTION PRIMARILY AS REINFORCEMENT.

C. UNIT DRAINAGE FILL – DRAINAGE AGGREGATE THAT IS PLACED WITHIN AND IMMEDIATELY BEHIND THE KEYSTONE CONCRETE UNITS.

D. REINFORCED BACKFILL – COMPACTED SOIL THAT IS PLACED WITHIN THE REINFORCED SOIL VOLUME AS OUTLINED ON THE PLANS.

2.02 KEYSTONE CONCRETE RETAINING WALL UNITS

A. KEYSTONE CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING ARCHITECTURAL REQUIREMENTS:
1. FACE COLOR – CONCRETE GRAY, UNLESS OTHERWISE SPECIFIED. THE OWNER MAY SPECIFY STANDARD MANUFACTURERS' COLOR.
2. FACE FINISH – SCULPTURED ROCK FACE IN ANGULAR TRI-PLANER CONFIGURATION. OTHER FACE FINISHES WILL NOT BE ALLOWED WITHOUT WRITTEN APPROVAL OF OWNER.
3. BOND CONFIGURATION – RUNNING WITH BONDS NOMINALLY LOCATED AT MIDPOINT VERTICALLY ADJACENT UNITS, IN BOTH STRAIGHT AND CURVED ALIGNMENTS.
4. EXPOSED SURFACES OF UNITS SHALL BE FREE OF CHIPS, CRACKS OR OTHER IMPERFECTIONS WHEN VIEWED FROM A DISTANCE OF 10 FEET UNDER DIFFUSED LIGHTING.

B. KEYSTONE CONCRETE MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C1372 – STANDARD SPECIFICATIONS FOR SEGMENTAL RETAINING WALL UNITS.

C. KEYSTONE CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING STRUCTURAL AND GEOMETRIC REQUIREMENTS MEASURED IN ACCORDANCE WITH ASTM C140 SAMPLING AND TESTING CONCRETE MASONRY UNITS:
1. COMPRESSIVE STRENGTH: 3000 PSI (21 MPA);
2. ABSORPTION: 8 % (6% IN NORTHERN STATES) FOR STANDARD WEIGHT AGGREGATES;
3. DIMENSIONAL TOLERANCES: ± 1/8" (3 MM) FROM NOMINAL UNIT DIMENSIONS NOT INCLUDING ROUGH SPLIT FACE, ±1/16" (1.5 MM) UNIT HEIGHT – TOP AND BOTTOM PLANES;
4. UNIT SIZE: 8" (203 MM) (H) X 18" (457 MM)(W) X 18" (457 MM)(D) MINIMUM;
5. UNIT WEIGHT: 100-LBS/UNIT (45 KG/UNIT) MINIMUM FOR STANDARD WEIGHT AGGREGATES.

D. KEYSTONE CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING PERFORMANCE TESTING:
1. INTER_UNIT SHEAR STRENGTH IN ACCORDANCE WITH ASTM D6916 (NCMA SRWU-2): 1500-PLF (21 KN/M) MINIMUM AT 2-PSI (13 KPA) NORMAL PRESSURE;
2. GEOGRID/UNIT PEAK CONNECTION STRENGTH IN ACCORDANCE WITH ASTM D6638 (NCMA SRWU-1): 900-PLF (13 KN/M) MINIMUM AT 2-PSI (13 KPA) NORMAL FORCE.

E. KEYSTONE CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING CONSTRUCTABILITY REQUIREMENTS:
1. VERTICAL SETBACK: 1/8" (3 MM) ± PER COURSE (NEAR VERTICAL) OR 1" (25 MM) + PER COURSE PER THE DESIGN;
2. ALIGNMENT AND GRID POSITIONING MECHANISM: FIBERGLASS PINS, TWO PER UNIT MINIMUM;
3. HORIZONTAL GAP BETWEEN ERECTED UNITS SHALL BE 1/2 INCH (13 MM).

2.03 SHEAR CONNECTORS

A. SHEAR CONNECTORS SHALL BE 1/2-INCH (12 MM) DIAMETER THERMOSET ISOPTHALIC POLYESTER RESIN_PULTRUDED FIBERGLASS REINFORCEMENT RODS TO PROVIDE CONNECTION BETWEEN VERTICALLY AND HORIZONTALLY ADJACENT UNITS WITH THE FOLLOWING REQUIREMENTS:
1. FLEXURAL STRENGTH IN ACCORDANCE WITH ASTM D4476: 128,000 PSI (882 MPA) MINIMUM;
2. SHORT BEAM SHEAR IN ACCORDANCE WITH ASTM D4475: 6,400 PSI (44 MPA) MINIMUM.

B. SHEAR CONNECTORS SHALL BE CAPABLE OF HOLDING THE GEOGRID IN THE PROPER DESIGN POSITION DURING GRID PRE-TENSIONING AND BACKFILLING.

2.04 BASE LEVELING PAD MATERIAL

A. MATERIAL SHALL CONSIST OF A COMPACTED CRUSHED STONE BASE OR NON-REINFORCED CONCRETE AS SHOWN ON THE CONSTRUCTION DRAWINGS.

2.05 UNIT DRAINAGE FILL

A. UNIT DRAINAGE FILL SHALL CONSIST OF CLEAN 1" (25 MM) MINUS CRUSHED STONE OR CRUSHED GRAVEL MEETING THE FOLLOWING GRADATION TESTED IN ACCORDANCE WITH ASTM D-422:

SIEVE SIZE	PERCENT PASSING
1 INCH (25 MM)	100
3/4-INCH (19 MM)	75-100
NO. 4 (4.75 MM)	0-10
NO. 50 (300UM)	0-5

B. DRAINAGE FILL SHALL BE PLACED WITHIN THE CORES OF, BETWEEN, AND BEHIND THE UNITS AS INDICATED ON THE DESIGN DRAWINGS. NOT LESS THAN ONE CUBIC FOOT (0.028 M3), OF DRAINAGE FILL SHALL BE USED FOR EACH SQUARE FOOT (0.093 M2) OF WALL FACE UNLESS OTHERWISE SPECIFIED.

2.06 REINFORCED BACKFILL

A. REINFORCED BACKFILL SHALL BE FREE OF DEBRIS AND MEET THE FOLLOWING GRADATION TESTED IN ACCORDANCE WITH ASTM D-422:

SIEVE SIZE	PERCENT PASSING
2 INCH (50 MM)	100
3/4-INCH (19 MM)	100_75
NO. 40 (425 UM)	0_60
NO. 200 (75 UM)	0_35

PLASTICITY INDEX (PI) <15 AND LIQUID LIMIT <40 PER ASTM D-4318.

B. THE MAXIMUM AGGREGATE SIZE SHALL BE LIMITED TO 3/4 INCH (19 MM) UNLESS FIELD TESTS HAVE BEEN PERFORMED TO EVALUATE POTENTIAL STRENGTH REDUCTIONS TO THE GEOGRID DESIGN DUE TO DAMAGE DURING CONSTRUCTION.

C. MATERIAL CAN BE SITE-EXCAVATED SOILS WHERE THE ABOVE REQUIREMENTS CAN BE MET. UNSUITABLE SOILS FOR BACKFILL (HIGH PLASTIC CLAYS OR ORGANIC SOILS) SHALL NOT BE USED IN THE BACKFILL OR IN THE REINFORCED SOIL MASS.

D. CONTRACTOR SHALL SUBMIT REINFORCED FILL SAMPLE AND LABORATORY TEST RESULTS TO THE ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO THE USE OF ANY PROPOSED REINFORCED FILL MATERIAL.

2.07 GEOGRID SOIL REINFORCEMENT

A. GEOSYNTHETIC REINFORCEMENT SHALL CONSIST OF GEOGRIDS MANUFACTURED SPECIFICALLY FOR SOIL REINFORCEMENT APPLICATIONS AND SHALL BE MANUFACTURED FROM HIGH TENACITY POLYESTER YARN OR HIGH DENSITY POLYETHYLENE. POLYESTER GEOGRID SHALL BE KNITTED FROM HIGH TENACITY POLYESTER FILAMENT YARN WITH A MOLECULAR WEIGHT EXCEEDING 25,000 G/M AND A CARBOXYL END GROUP VALUES LESS THAN 30. POLYESTER GEOGRID SHALL BE COATED WITH AN IMPREGNATED PVC COATING THAT RESISTS PEELING, CRACKING, AND STRIPPING.

B. TA, LONG TERM ALLOWABLE TENSILE DESIGN LOAD, OF THE GEOGRID MATERIAL SHALL BE DETERMINED AS FOLLOWS:

TA = TULT / (RFCR*RFD*RFID*FS)

TA SHALL BE EVALUATED BASED ON A 75-YEAR DESIGN LIFE.
1. TULT, SHORT TERM ULTIMATE TENSILE STRENGTH SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D4595 OR ASTM D6637.
   TULT IS BASED ON THE MINIMUM AVERAGE ROLL VALUES (MARV).
2. RFCR, REDUCTION FACTOR FOR LONG TERM TENSION CREEP
   RFCR SHALL BE DETERMINED FROM 10,000-HOUR CREEP TESTING PERFORMED IN ACCORDANCE WITH ASTM D5262. REDUCTION VALUE = 1.45 MINIMUM.
3. RFD, REDUCTION FACTOR FOR DURABILITY
   RFD SHALL BE DETERMINED FROM POLYMER SPECIFIC DURABILITY TESTING COVERING THE RANGE OF EXPECTED SOIL ENVIRONMENTS. RFD = 1.10 MINIMUM.
4. RFID, REDUCTION FACTOR FOR INSTALLATION DAMAGE
   RFID SHALL BE DETERMINED FROM PRODUCT SPECIFIC CONSTRUCTION DAMAGE TESTING PERFORMED IN ACCORDANCE WITH ASTM D5818 (GRI_GG4). TEST RESULTS SHALL BE PROVIDED FOR EACH PRODUCT TO BE USED WITH PROJECT SPECIFIC OR MORE SEVERE SOIL TYPE. RFID = 1.05 MINIMUM.
5. FS, OVERALL DESIGN FACTOR OF SAFETY
   FS SHALL BE 1.5 UNLESS OTHERWISE NOTED FOR THE MAXIMUM ALLOWABLE WORKING STRESS CALCULATION.

C. THE MAXIMUM DESIGN TENSILE LOAD OF THE GEOGRID SHALL NOT EXCEED THE LABORATORY TESTED ULTIMATE STRENGTH OF THE GEOGRID/FACING UNIT CONNECTION DIVIDED BY A FACTOR OF SAFETY OF 1.5. THE CONNECTION STRENGTH TESTING AND COMPUTATION PROCEDURES SHALL BE IN ACCORDANCE WITH ASTM D6638 CONNECTION STRENGTH BETWEEN GEOSYNTHETIC REINFORCEMENT AND SEGMENTAL CONCRETE UNITS (NCMA SRWU-1).

D. SOIL INTERACTION COEFFICIENT, CI

CI VALUES SHALL BE DETERMINED PER ASTM D6706 (GRI:GG5) AT A MAXIMUM 0.75-INCH (19 MM) DISPLACEMENT.

E. MANUFACTURING QUALITY CONTROL

THE GEOGRID MANUFACTURER SHALL HAVE A MANUFACTURING QUALITY CONTROL PROGRAM THAT INCLUDES QC TESTING BY AN INDEPENDENT LABORATORY.

THE QC TESTING SHALL INCLUDE: TENSILE STRENGTH TESTING, MELT FLOW INDEX (HDPE), MOLECULAR WEIGHT (POLYESTER)

2.08 DRAINAGE PIPE

A. IF REQUIRED, THE DRAINAGE PIPE SHALL BE PERFORATED OR SLOTTED PVC PIPE MANUFACTURED IN ACCORDANCE WITH ASTM D-3034 OR CORRUGATED HDPE PIPE MANUFACTURED IN ACCORDANCE WITH AASHTO M252.

2.09 GEOTEXTILE FILTER FABRIC

A. WHEN REQUIRED, GEOTEXTILE FILTER FABRIC SHALL BE 4.0 OZ/SY, POLYPROPYLENE, NEEDLE-PUNCHED NON-WOVEN FABRIC.

PART 3: EXECUTION

3.01 EXCAVATION

A. CONTRACTOR SHALL EXCAVATE TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS. OWNER'S REPRESENTATIVE SHALL INSPECT THE EXCAVATION AND APPROVE PRIOR TO PLACEMENT OF LEVELING MATERIAL OR FILL SOILS. PROOF ROLL FOUNDATION AREA AS DIRECTED TO DETERMINE IF REMEDIAL WORK IS REQUIRED.

B. OVER EXCAVATION AND REPLACEMENT OF UNSUITABLE FOUNDATION SOILS AND REPLACEMENT WITH APPROVED COMPACTED FILL WILL BE COMPENSATED AS AGREED UPON WITH THE OWNER.

3.02 BASE LEVELING PAD

A. LEVELING PAD MATERIAL SHALL BE PLACED TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS, TO A MINIMUM THICKNESS OF 6 INCHES (150 MM) AND EXTEND LATERALLY A MINIMUM OF 6" (150 MM) IN FRONT AND BEHIND THE KEYSTONE WALL UNIT.

B. SOIL LEVELING PAD MATERIALS SHALL BE COMPACTED TO A MINIMUM OF 95 % STANDARD PROCTOR DENSITY PER ASTM D-698 OR 92% MODIFIED PROCTOR DENSITY PER ASTM D1557.

C. LEVELING PAD SHALL BE PREPARED TO INSURE FULL CONTACT TO THE BASE SURFACE OF THE CONCRETE UNITS.

3.03 KEYSTONE UNIT INSTALLATION

A. FIRST COURSE OF UNITS SHALL BE PLACED ON THE LEVELING PAD AT THE APPROPRIATE LINE AND GRADE. ALIGNMENT AND LEVEL SHALL BE CHECKED IN ALL DIRECTIONS AND INSURE THAT ALL UNITS ARE IN FULL CONTACT WITH THE BASE AND PROPERLY SEATED.

B. PLACE THE FRONT OF UNITS SIDE-BY-SIDE. DO NOT LEAVE GAPS BETWEEN ADJACENT UNITS. LAYOUT OF CORNERS AND CURVES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

C. INSTALL SHEAR/CONNECTING DEVICES PER MANUFACTURER'S RECOMMENDATIONS.

D. PLACE AND COMPACT DRAINAGE FILL WITHIN AND BEHIND WALL UNITS. PLACE AND COMPACT BACKFILL SOIL BEHIND DRAINAGE FILL. FOLLOW WALL ERECTION AND DRAINAGE FILL CLOSELY WITH STRUCTURE BACKFILL.

E. MAXIMUM STACKED VERTICAL HEIGHT OF WALL UNITS, PRIOR TO UNIT DRAINAGE FILL AND BACKFILL PLACEMENT AND COMPACTION, SHALL NOT EXCEED TWO COURSES.

3.04 STRUCTURAL GEOGRID INSTALLATION

A. GEOGRID SHALL BE ORIENTED WITH THE HIGHEST STRENGTH AXIS PERPENDICULAR TO THE WALL ALIGNMENT.

B. GEOGRID REINFORCEMENT SHALL BE PLACED AT THE STRENGTHS, LENGTHS, AND ELEVATIONS SHOWN ON THE CONSTRUCTION DESIGN DRAWINGS OR AS DIRECTED BY THE ENGINEER.

C. THE GEOGRID SHALL BE LAID HORIZONTALLY ON COMPACTED BACKFILL AND ATTACHED TO THE KEYSTONE WALL UNITS. PLACE THE NEXT COURSE OF KEYSTONE CONCRETE UNITS OVER THE GEOGRID. THE GEOGRID SHALL BE PULLED TAUT, AND ANCHORED PRIOR TO BACKFILL PLACEMENT ON THE GEOGRID.

D. GEOGRID REINFORCEMENTS SHALL BE CONTINUOUS THROUGHOUT THEIR EMBEDMENT LENGTHS AND PLACED SIDE-BY-SIDE TO PROVIDE 100% COVERAGE AT EACH LEVEL. SPLICED CONNECTIONS BETWEEN SHORTER PIECES OF GEOGRID OR GAPS BETWEEN ADJACENT PIECES OF GEOGRID ARE NOT PERMITTED.

3.05 REINFORCED BACKFILL PLACEMENT

A. REINFORCED BACKFILL SHALL BE PLACED, SPREAD, AND COMPACTED IN SUCH A MANNER THAT MINIMIZES THE DEVELOPMENT OF SLACK IN THE GEOGRID AND INSTALLATION DAMAGE.

B. REINFORCED BACKFILL SHALL BE PLACED AND COMPACTED IN LIFTS NOT TO EXCEED 6 INCHES (150 MM) WHERE HAND COMPACTION IS USED, OR 8 – 10 INCHES (200 TO 250 MM) WHERE HEAVY COMPACTION EQUIPMENT IS USED. LIFT THICKNESS SHALL BE DECREASED TO ACHIEVE THE REQUIRED DENSITY AS REQUIRED.

C. REINFORCED BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 95 % STANDARD PROCTOR DENSITY PER ASTM D-698 OR 92% MODIFIED PROCTOR DENSITY PER ASTM D1557. THE MOISTURE CONTENT OF THE BACKFILL MATERIAL PRIOR TO AND DURING COMPACTION SHALL BE UNIFORMLY DISTRIBUTED THROUGHOUT EACH LAYER AND SHALL BE DRY OF OPTIMUM, + 0%, – 3%.

D. ONLY LIGHTWEIGHT HAND OPERATED EQUIPMENT SHALL BE ALLOWED WITHIN 3 FEET (1 M) FROM THE TAIL OF THE KEYSTONE CONCRETE UNIT.

E. TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY UPON THE GEOGRID REINFORCEMENT. A MINIMUM FILL THICKNESS OF 6 INCHES (150 MM) IS REQUIRED PRIOR TO OPERATION OF TRACKED VEHICLES OVER THE GEOGRID. TRACKED VEHICLE TURNING SHOULD BE KEPT TO A MINIMUM TO PREVENT TRACKS FROM DISPLACING THE FILL AND DAMAGING THE GEOGRID.

F. RUBBER TIRED EQUIPMENT MAY PASS OVER GEOGRID REINFORCEMENT AT SLOW SPEEDS, LESS THAN 10 MPH (15 KPH). SUDDEN BRAKING AND SHARP TURNING SHALL BE AVOIDED.

G. AT THE END OF EACH DAY'S OPERATION, THE CONTRACTOR SHALL SLOPE THE LAST LIFT OF REINFORCED BACKFILL AWAY FROM THE WALL UNITS TO DIRECT RUNOFF AWAY FROM WALL FACE. THE CONTRACTOR SHALL NOT ALLOW SURFACE RUNOFF FROM ADJACENT AREAS TO ENTER THE WALL CONSTRUCTION SITE.

3.06 CAP INSTALLATION

A. CAP UNITS SHALL BE GLUED TO UNDERLYING UNITS WITH AN ALL-WEATHER ADHESIVE RECOMMENDED BY THE MANUFACTURER SUCH AS KEYSTONE KAPSEAL.

3.07 AS-BUILT CONSTRUCTION TOLERANCES

A. VERTICAL ALIGNMENT: ± 1.5" (40 MM) OVER ANY 10' (3 M) DISTANCE.

B. WALL BATTER: WITHIN 2 DEGREES OF DESIGN BATTER.

C. HORIZONTAL ALIGNMENT: ± 1.5" (40 MM) OVER ANY 10' (3 M) DISTANCE.

CORNERS, BENDS & CURVES: ± 1 FOOT (300 MM) TO THEORETICAL LOCATION.

D. MAXIMUM HORIZONTAL GAP BETWEEN ERECTED UNITS SHALL BE 1/2 INCH (13 MM).

3.08 FIELD QUALITY CONTROL

A. QUALITY ASSURANCE – THE OWNER SHALL/MAY ENGAGE INSPECTION AND TESTING SERVICES, INCLUDING INDEPENDENT LABORATORIES, TO PROVIDE QUALITY ASSURANCE AND TESTING SERVICES DURING CONSTRUCTION. THIS DOES NOT RELIEVE THE CONTRACTOR FROM SECURING THE NECESSARY CONSTRUCTION QUALITY CONTROL TESTING.

B. QUALITY ASSURANCE SHOULD INCLUDE FOUNDATION SOIL INSPECTION, VERIFICATION OF GEOTECHNICAL DESIGN PARAMETERS, AND VERIFICATION THAT THE CONTRACTOR'S QUALITY CONTROL TESTING IS ADEQUATE AS A MINIMUM. QUALITY ASSURANCE SHALL ALSO INCLUDE OBSERVATION OF CONSTRUCTION FOR GENERAL COMPLIANCE WITH DESIGN DRAWINGS AND PROJECT SPECIFICATIONS (QUALITY ASSURANCE IS USUALLY BEST PERFORMED BY THE SITE GEOTECHNICAL ENGINEER).

C. QUALITY CONTROL – THE CONTRACTOR SHALL ENGAGE INSPECTION AND TESTING SERVICES TO PERFORM THE MINIMUM QUALITY CONTROL TESTING DESCRIBED IN THE RETAINING WALL DESIGN PLANS AND SPECIFICATIONS. ONLY QUALIFIED AND EXPERIENCED TECHNICIANS AND ENGINEERS SHALL PERFORM TESTING AND INSPECTION SERVICES.

D. QUALITY CONTROL TESTING SHALL INCLUDE SOIL AND BACKFILL TESTING TO VERIFY SOIL TYPES AND COMPACTION AND VERIFICATION THAT THE RETAINING WALL IS BEING CONSTRUCTED IN ACCORDANCE WITH THE DESIGN PLANS AND PROJECT SPECIFICATIONS.

NEW RETAINING WALL PLAN
SCALE: 1"=10'

RETAINING WALL DESIGN INFORMATION:

RETAINING WALL SYSTEM	STANDARD STRAIGHT FACE UNIT 8"(H)x18"(W)x18"(D) WITH 8" HIGH CAP MANUFACTURED BY KEYSTONE
GEOGRID TYPE	MIRAGRID 3XT BY TENCATE
MAX. SLOPE ABOVE WALL	HORIZONTAL
MAX. SLOPE BELOW WALL	TOP OF GRADE 4'-0" AWAY FROM NEW WALL SHALL FOLLOW GRADES SHOWN ON WALL ELEVATIONS
MAX. SURCHARGE ABOVE WALL (PSF)	100 PSF
BATTER OF WALL (DEGREES)	7.12
MAXIMUM HEIGHT (IN)	SEE SECTIONS AND WALL ELEVATIONS
DEPTH OF EMBEDMENT	SEE TYPICAL SEGMENTED RETAINING WALL SECTION

3/Y-3 SECTION
SCALE: 3/4"=1'-0"

DESIGN SOIL BEARING PRESSURE 2,000 PSF.
CONTRACTOR SHALL ENGAGE A SOILS ENGINEER TO INSPECT AND ASCERTAIN THE SOIL PRIOR TO START OF WALL CONSTRUCTION (TYP.)

GUARDRAIL DETAIL ON RETAINING WALL
SCALE: 1/2"=1'-0"
STEEL: CARBON C1010, ASTM A29

GUARDRAIL POST ON RETAINING WALL PLAN DETAIL
SCALE: NOT TO SCALE

RETAINING WALL GUARDRAIL POST SECTION DETAIL
SCALE: NOT TO SCALE

GENERAL NOTES:

1. THE INFORMATION PROVIDED ON THIS SHEET MUST BE USED IN CONJUNCTION WITH THE SPECIFICATIONS.
2. CONTRACTOR SHALL ENGAGE GOETECHNICAL ENGINEER BEFORE AND DURING CONSTRUCTION TO VERIFY ALL ASSUMED GEOTECHNICAL CONDITIONS.
3. THE WALL CONTRACTOR AND GENERAL CONTRACTOR ARE REQUIRED TO HAVE A COMPLETE UNDERSTANDING OF ANY AND ALL OTHER STRUCTURES THAT MAY INTERACT WITH THIS SEGMENTAL RETAINING WALL. THE WALL CONTRACTOR AND GENERAL CONTRACTOR MUST REFER TO A FULL SET OF CIVIL, STRUCTURAL AND ARCHITECTURAL DRAWINGS (AS APPLICABLE) FOR THE PROJECT TO ENSURE SUCCESSFUL CONSTRUCTION AND PERFORMANCE OF THE WALL SYSTEM.
4. SEGMENTAL RETAINING WALL DESIGN ASSUMPTIONS:

A) THE FOUNDATION SOILS WILL PRODUCE ACCEPTABLE TOTAL AND DIFFERENTIAL SETTLEMENT GIVEN THE APPLIED LOAD OF THE SEGMENTAL RETAINING WALL (MAX. 1 INCH TOTAL).

B) THE MAXIMUM GROUNDWATER ELEVATION IS AT LEAST 2/3 X H (HEIGHT) BELOW THE BASE OF THE SEGMENTAL RETAINING WALL.

C) THERE WILL BE NO HYDROSTATIC PRESSURE WITHIN OR BEHIND THE SEGMENTAL RETAINING WALL.

D) THE SURROUNDING STRUCTURES WILL NOT EXERT ANY ADDITIONAL LOADING ON THE SEGMENTAL RETAINING WALL (I.E. AN ADJACENT STRUCTURAL FOUNDATION IS AT OR BELOW PROPOSED LEVELING BASE OR OUTSIDE OF A THEORETICAL ZONE OF INFLUENCE AS DETERMINED BY THE GENERAL REVIEW ENGINEER).

E) THERE ARE NO STRUCTURES (UTILITIES SUCH AS GAS/WATER MAINS, STORM SEWERS, ELECTRICAL/COMMUNICATIONS CABLES, ETC) TO BE PLACED WITHIN OR BELOW THE REINFORCED FILL DURING OR AFTER CONSTRUCTION.

5. THE DESIGN SHALL BE IN ACCORDANCE WITH THE NATIONAL CONCRETE MASONRY ASSOCIATION DESIGN MANUAL FOR SEGMENTAL RETAINING WALL, 2002 SECOND EDITION.
6. SNS ARCHITECTS & ENGINEERS HAS NOT BEEN PROVIDED WITH THE SITE GEOTECHNICAL REPORT. FOR DESIGN PURPOSES, ASSUMED VALUES OF GEOTECHNICAL PARAMETERS WERE USED (SEE SECTIONS, NOTES FOR MORE INFORMATION). UPON EXCAVATION OR FURTHER EXPLORATION IN THE WALL LOCATION(S), THESE DESIGN PARAMETERS MUST BE VERIFIED AS BEING ACCEPTABLE BY THE GOETECHNICAL ENGINEER OR REVISED PARAMETERS MUST BE PROVIDED FOR A REDESIGN. PRIOR TO BIDDING, THE CONTRACTOR MUST SATISFY THEMSELVES BASED ON INFORMATION AVAILABLE AND/OR THEIR OWN INVESTIGATION OF THE GEOTECHNICAL CONDITIONS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ANY ASSUMPTIONS MADE DURING THE BIDDING PROCESS REGARDING SITE CONDITIONS. BOTH THE CONTRACTOR AND THE PRIME CONSULTANT MUST BE ADVISED THAT THE FINAL DESIGN MAY HAVE TO BE ALTERED BASED ON ACTUAL CONDITIONS FOUND ON SITE. ALTERATION OF THE DESIGN MAY RESULT IN ADDITIONAL CONSTRUCTION COSTS AND PROJECT DELAYS. IT IS RECOMMENDED THAT CONTINGENCIES BE ADDRESSED IN THE CONTRACT TO UNDERTAKE THE WALL CONSTRUCTION FOR DEALING WITH THE DISCOVERY OF UNFAVORABLE SOIL CONDITIONS.
7. WALL DESIGN MUST BE CHECKED WITH THE FINAL GRADING PLAN TO VERIFY ACCURACY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THE WALL LAYOUT(S) PROVIDED MATCH THE FINAL SITE GRADING. CONTRACTOR MUST VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO BIDDING / CONSTRUCTION.
8. THE LOCATION OF EXISTING OR PROPOSED UTILITIES MUST BE VERIFIED PRIOR TO CONSTRUCTION. GENERALLY IT IS RECOMMENDED THAT UTILITIES BE OFFSET FROM THE WALL TO A) PREVENT ADDITIONAL LOADING ON THE CONDUIT (I.E. A 1H:1V LINE OF INFLUENCE FROM THE BASE OF THE WALL SHOULD BE ASSUMED) UNLESS ACCOUNTED FOR IN DESIGN OF THE UTILITY B) TO ENSURE FUTURE ACCESS TO THE UTILITY WITHOUT UNDERMINING THE WALL. THE ENGINEERED FILL ABOVE THESE UTILITIES MUST BE COMPACTED TO 98% SPD.

DRAINAGE PROVISIONS:

1. CONTRACTOR MUST VERIFY THAT AREA ABOVE WALL IS NOT USED FOR STORAGE OF SNOW DURING WINTER MONTHS. DRAINAGE SYSTEM AND ASSUMED LOADING CONDITIONS DO NOT ACCOUNT FOR THIS USE.
2. NO IRRIGATION SYSTEMS ARE ALLOWED TO BE USED IMMEDIATELY ABOVE THE REINFORCED ZONE OF THE WALL.
3. DESIGN ASSUMES THAT GROUNDWATER IS BELOW BOTTOM OF WALL. PROVIDED DRAINAGE MEASURES ADDRESS OTHER POTENTIAL SOURCES OF LATERAL GROUNDWATER THAT MAY BE THE RESULTS OF INFILTRATION THROUGH THE SURFACE (I.E. CRACKS IN ASPHALT BEYOND THE REINFORCED ZONE) OR OTHER BELOW GRADE SOURCES.
4. GRADE BEHIND MUST DIRECT WATER AWAY FROM BACK OF WALL.
5. DURING CONSTRUCTION AT ALL TIMES THE CONTRACTOR MUST ENSURE THAT MEASURES SUCH AS TEMPORARY SWALES AND DRAINAGE DITCHES ARE EMPLOYED TO MANAGE SURFACE WATER AND SEEPAGE DURING AND AFTER THE CONSTRUCTION OF THE WALL. IF FINAL GRADING IS NOT PART OF THE CONTRACTORS SCOPE OF WORK, THE AREA AROUND THE WALL MUST STILL BE PROPERLY GRADED TO ENSURE WATER DOES NOT COLLECT BEHIND OR IS DIRECTED TOWARD THE WALL.
6. DRAINAGE MEASURES IN FORM OF TWO 4"ø PERFORATED PVC PIPES BEHIND RETAINING WALL ARE PROVIDED AS AN EXTRA PRECAUTION AGAINST THE POSSIBILITY OF AN UNKNOWN WATER SOURCE THAT MAY OR MAY NOT OCCUR AT SOME POINT DURING THE LIFE OF THE STRUCTURE. IF, UPON EXCAVATION, A SPECIFIC WATER SOURCE IS IDENTIFIED (PERCHED WATER CONDITION, SAND SEAMS, ETC) IN THE CUT OR IS ANTICIPATED, ADDITIONAL DRAINAGE MEASURES WILL BE REQUIRED (I.E. CHIMNEY DRAINS).

SOIL ZONES AND ASSUMED PROPERTIES MUST BE VERIFIED BY GEOTECHNICAL ENGINEER IN FIELD

SOIL REGION	REINFORCED FILL	RETAINED FILL/SOIL**	FOUNDATION SOIL**	LEVELING PAD	DRAINAGE FILL
DESCRIPTION (BY USCS)	GW	UNKNOWN	UNKNOWN	GW	GP
	Well graded gravel Max. 5% fines	NA	NA	Well graded gravel Max. 8% fines	Gap graded, rapid draining gravel
EFFECTIVE INTERNAL FRICTION ANGLE (DEG.)	35°	ASSUMED 28°	ASSUMED 28°	39°	NA
COMPACTION REQUIREMENT (ENG. FILLS ONLY)	95% SPD (+/- 2% opt. moist.)	95% SPD (+1/-3% opt. moist.)	98% SPD (+1/-3% opt. moist.)	98% SPD (+/- 2% opt. moist.)	Dense State
MOIST UNIT WEIGHT (LB/CU.FT)	120	120	120	120	120
EFFECTIVE COHESION (PSF)	NA	UNKNOWN	UNKNOWN	NA	NA
SOIL NOTES	Max. 6"-8" Compaction Lifts	Max. 6" – 8" Compaction Lifts	ASSUMED BEARING CAPACITY 2,000 PSF	Max. 6"-8" Compaction Lifts	Max. 6"-8" Compaction Lifts
FILTRATION GEOTEXTILE AT INTERFACE	INTERFACE: REINFORCED/RETAINED GEOTEXTILE NOT REQ. IF GRADATIONS LISTED BELOW ARE MET. OTHERWISE: TBD		NA	NA	NA
ASSUMED GRADATION FOR FILTRATION REQ.*	D(15) <0.3mm D(50) <1.18mm MAX 5% FINES	D(85) >0.075mm D(15) <0.002mm D(50)>0.05mm	NA	NA	NA

* IF THE ABOVE GRADATION REQUIREMENTS ARE NOT MET, FILTRATION GEOTEXTILE FABRIC WILL BE REQUIRED.

** ENGINEERED FILL IS DEFINED AS CLEAN EARTH FILL PLACED AND COMPACTED IN MAXIMUM LIFT THICKNESSES OF 6" TO AT LEAST 98 PERCENT STANDARD PROCTOR DENSITY FOR FOUNDATION SOILS AND 95 PERCENT STANDARD PROCTOR DENSITY FOR RETAINED SOILS, UNDER THE FULL-TIME INSPECTION AND TESTING OF A GEOTECHNICAL ENGINEERING FIRM WHO PROVIDES WRITTEN CONFIRMATION AND CERTIFICATION OF THE COMPLETED ENGINEERED FILL.

GEOGRID IS TO BE PLACED ON LEVEL BACKFILL AND EXTENDED OVER THE FIBERGLASS PINS. PLACE NEXT UNIT. PULL GRID TAUGHT AND BACKFILL. STAKE AS REQUIRED.

GRID AND PIN CONNECTION DETAIL
SCALE: NOT TO SCALE

LEVELING PAD ELEVATION DETAIL
SCALE: NOT TO SCALE

Revisions

Date	Issue	Description
03-23-21	A	FOR INITIAL ZONING BOARD FILING
03-25-21	B	FOR BERGEN COUNTY PLANNING BOARD FILING AND APPROVAL
04-22-21	C	FOR ZONING BOARD FILING AND APPROVAL

MEP Consultants

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Key Plan

Project

Expansion for
Congregation Beth Abraham of Bergenfield, NJ

396 New Bridge Road
Bergenfield, NJ 07621
Block 302; Lots: 16, 17, 18, 19 & 21

Client

Congregation
Beth Abraham
of Bergenfield, NJ

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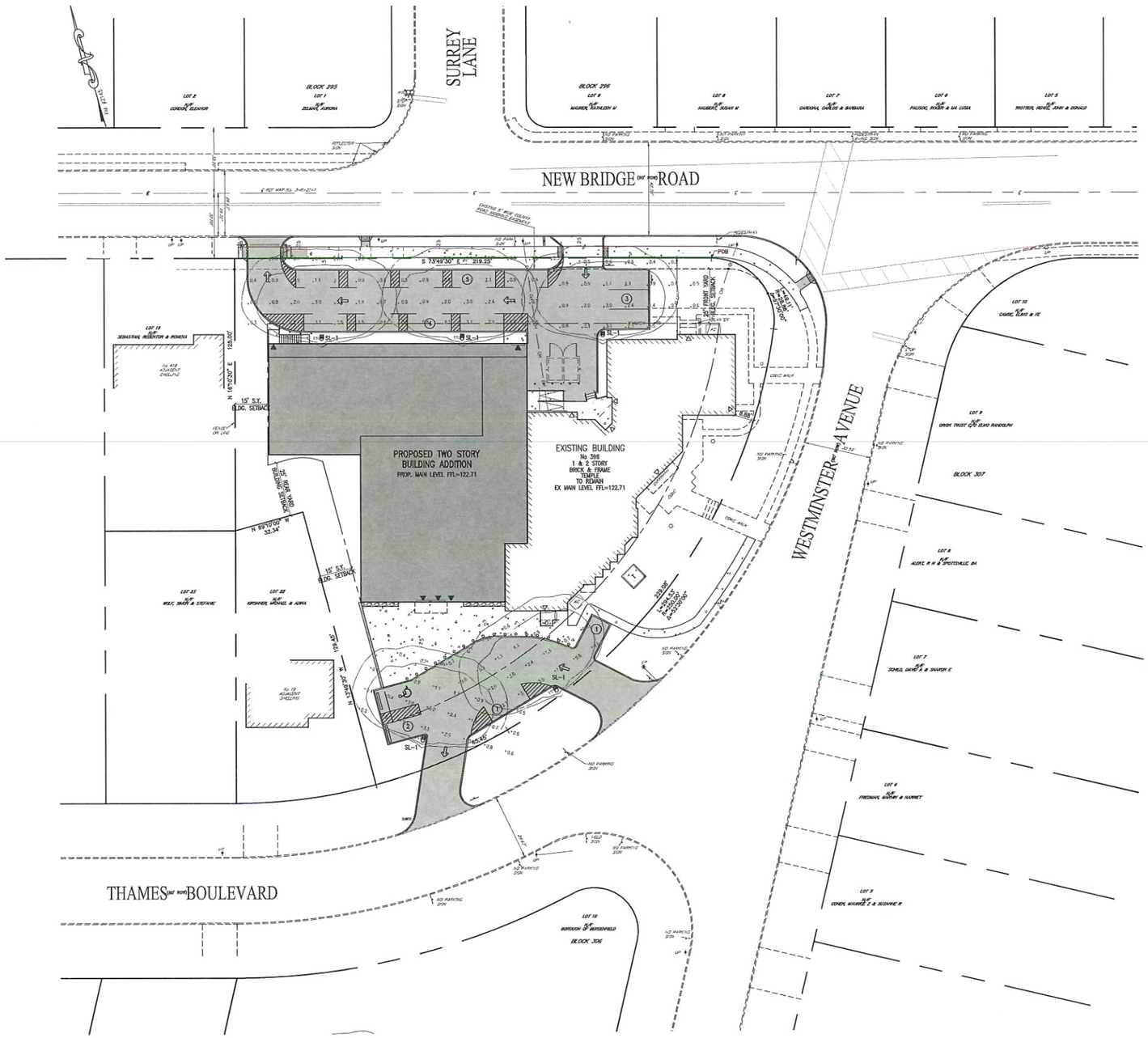
Steven Napolitano

Cert./Lic. No. 41969

Date	03-01-21	Scale	AS NOTED
Drawn By	AS	Checked By	

Dwg. Title
SITE PLAN
DETAILS AND SECTIONS

Work Order No. 5389.01
Dwg. No. Y-6



SITE PLAN
SCALE: 1"=20'

VIPER – SMALL (LED) LIGHT FIXTURE
SCALE: N.T.S.
SEE PLAN FOR LOCATION

LIGHT FIXTURE. REFER TO FIXTURE SCHEDULE FOR SPECS. PROVIDE SIDE & REAR SHIELD INSTALLED WITHIN FIXTURE

4" STRAIGHT SQ. STEEL POLE. MODEL: ZA10-4-3-HS-PC-BC-ABG BY CMT OR APPROVED EQUAL.

WIRING HANDHOLE 2.5" x 5" (MINIMUM)

BASE COVER & ANCHOR BOLTS BY LIGHTING MANUF.

PITCH CONCRETE (TYP.)

#8 AWG BARE GRD.

EXOTHERMIC WELD

PVC CONDUITS

3/4"x10'-0" LG. GRD. ROD

8-#6 VERTICAL REINFORCING

#4 TIES @ 12" O/C

6"-3/4" CRUSHED STONE BASE (TYP.) ON WELL COMPACTED SUBGRADE

POLE MOUNTED LIGHT FIXTURE DETAIL
SCALE: 3/8"=1'-0"

SITE LIGHTING INFORMATION

Luminaire Schedule			
Symbol	Qty	Label	Description
⊡	5	SL1	Beacon LED Luminaire #VP-S_22NB-50_BLC_4K Mounted at 12'

20 0 20 40
GRAPHIC SCALE
SCALE: 1" = 20'

LEGEND

	EXISTING	PROPOSED
PROPERTY LINE	——	——
BUILDING SETBACK	— —	— —
DRAINAGE PIPE	—D—	━━
CATCH BASIN	—□—	—■—
DRAINAGE M.H.	—Ⓓ—	—●—
SANITARY SEWER LINE	—S—	═S═
SANITARY SEWER M.H.	—Ⓢ—	═Ⓢ═
WATER MAIN LINE	—W—	═W═
FIRE LINE	—F—	═F═
IRRIGATION MAIN	—I—	═I═
TELEPHONE LINE	—T—	═T═
ELECTRIC LINE	—E—	═E═
TEL. & ELEC. LINE	—T-E—	═T-E═
GAS MAIN LINE	—G—	═G═
SPRINKLER	•	•
FIRE HYDRANT	⧖	⧗
WATER VALVE	—⋈—	═⋈═
PAVEMENT	▭	▨
CONCRETE CURB	═	═
SPOT ELEVATION	+10.0'	+10.0'
LIGHT POLE	○▫	●▪
INV	INVERT ELEVATION	INVERT ELEVATION
RIM	TOP OF GRATE	TOP OF GRATE

Revisions

Date	Issue	Description
03-23-21	A	FOR INITIAL ZONING BOARD FILING
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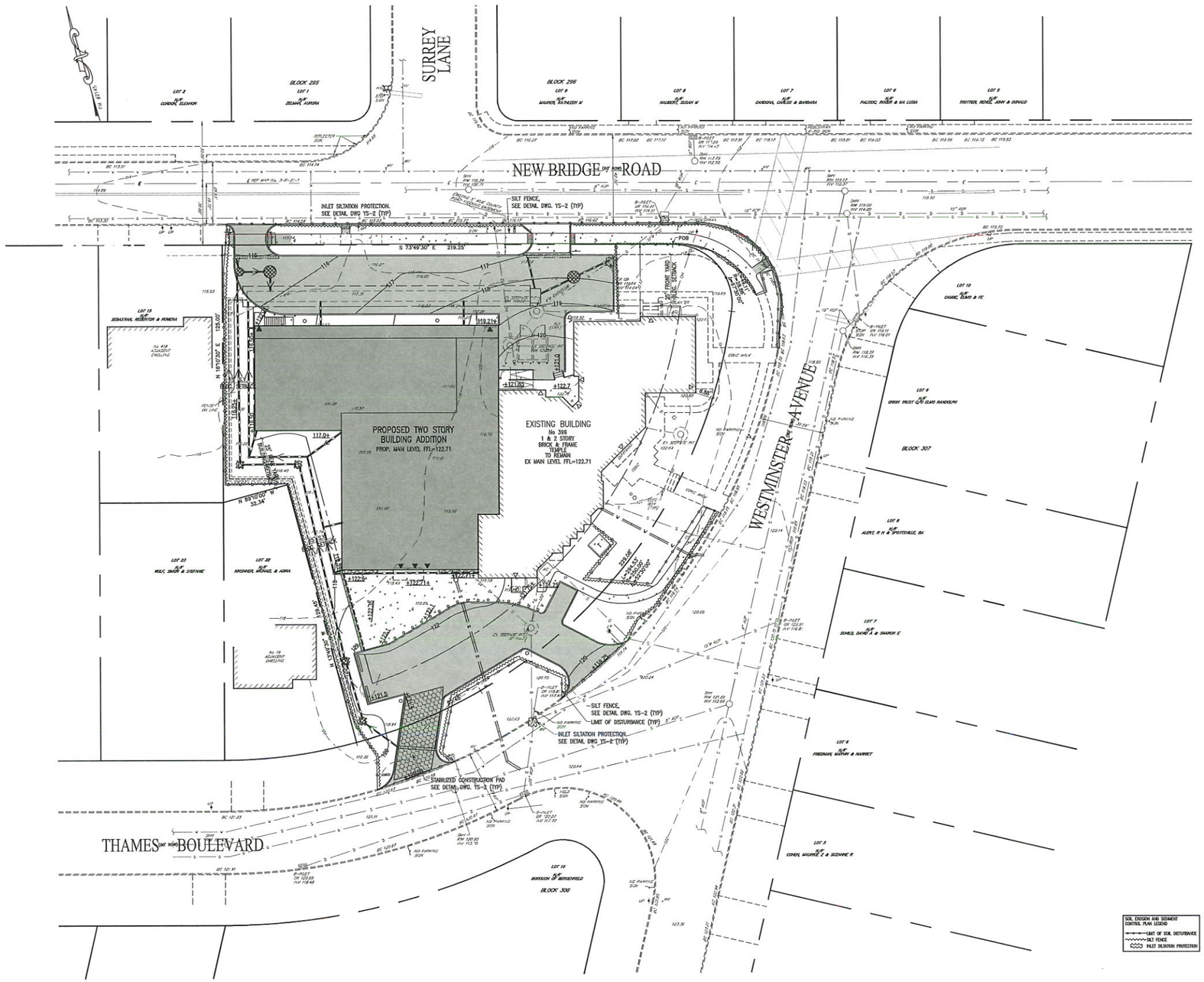
Date	03-01-21	Scale	AS NOTED
Drawn By	AS	Checked By	

Dwg. Title
SITE PLAN
LIGHTING PLAN

Work Order No. 5389.01
Dwg. No. SL-1



SITE PLAN
SCALE: 1"=20'

THIS PROJECT IS EXEMPT FROM SOIL COMPACTION TESTING AND REMEDIATION AS IT IS LOCATED IN AN URBAN REDEVELOPMENT AREA.

GRAPHIC SCALE
SCALE: 1" = 20'

Know what's below. Call before you dig. 811
1-800-272-1000

LEGEND

	EXISTING	PROPOSED
PROPERTY LINE		
BUILDING SETBACK		
DRAINAGE PIPE	D	
CATCH BASIN		
DRAINAGE M.H.		
SANITARY SEWER LINE	S	S
SANITARY SEW. M.H.		
WATER MAIN LINE	W	W
FIRE LINE	F	F
IRRIGATION MAIN	I	I
TELEPHONE LINE	T	T
ELECTRIC LINE	E	E
TEL. & ELEC. LINE	T-E	T-E
GAS MAIN LINE	G	G
SPRINKLER		
FIRE HYDRANT		
WATER VALVE		
PAVEMENT		
CONCRETE CURB		
SPOT ELEVATION	+10.0'	+10.0'
LIGHT POLE		
INV	INVERT ELEVATION	INVERT ELEVATION
RIM	TOP OF GRATE	TOP OF GRATE

Revisions

Date	Issue	Description
03-22-21	A	FOR BERGEN COUNTY SOIL CONSERVATION DISTRICT RE-CERTIFICATION
03-23-21	B	FOR INITIAL ZONING BOARD FILING
03-25-21	C	FOR BERGEN COUNTY PLANNING BOARD FILING AND APPROVAL
04-22-21	C	FOR ZONING BOARD FILING AND APPROVAL

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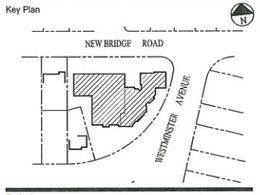
Key Plan



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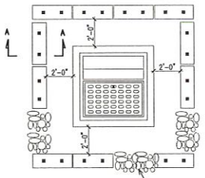
Certi/Lic. No. 41693

Date	03-01-21	Scale	AS NOTED
Drawn By	AS	Checked By	

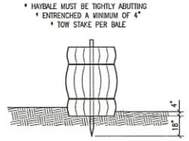
Dwg. Title

SOIL EROSION AND SEDIMENT CONTROL PLAN

Work Order No.	Dwg. No.
5389.01	YS-1



PLAN



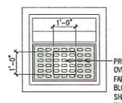
SECTION A–A

(FOR USE IN UNPAVED AREAS ONLY)

HAYBALE INLET FILTER DETAIL

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

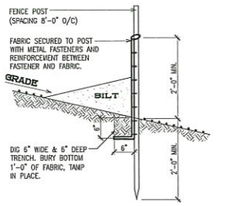
NOTES:
1. IN ALL CASES, INLET PROTECTION SHOULD NOT COMPLETELY CLOSE OFF THE INLET.
2. THE PROTECTION DEVICE WILL BE TO CAPTURE OR FILTER RUNOFF FROM THE 1–YEAR, 24 HOUR STORM EVENT AND SHALL SAFELY CONVEY HIGHER FLOWS DIRECTLY INTO THE STORM SEWER SYSTEM.

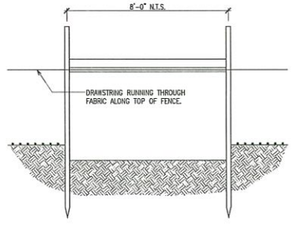


INLET FILTER DETAIL (IF APPLICABLE)

N.T.S.

NOTES:
1. IN ALL CASES, INLET PROTECTION SHOULD NOT COMPLETELY CLOSE OFF THE INLET.
2. THE PROTECTION DEVICE WILL BE TO CAPTURE OR FILTER RUNOFF FROM THE 1–YEAR, 24 HOUR STORM EVENT AND SHALL SAFELY CONVEY HIGHER FLOWS DIRECTLY INTO THE STORM SEWER SYSTEM.





SILT FENCE DETAIL

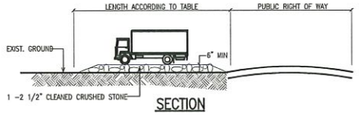
SCALE: 3/4" = 1'-0"

REQUIREMENTS FOR SILT FENCE:

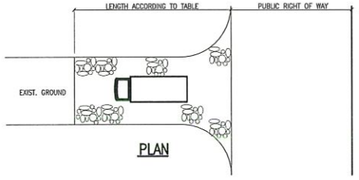
1. FENCE POSTS SHALL BE SPACED 8 FEET CENTER–TO–CENTER OR CLOSER. THEY SHALL EXTEND AT LEAST 2 FEET INTO THE GROUND AND EXTEND AT LEAST 2 FEET ABOVE GROUND. POSTS SHALL BE CONSTRUCTED OF HARDWOOD WITH A MINIMUM DIAMETER THICKNESS OF 1–1/2 INCHES.

2. A METAL FENCE WITH 6 INCH OR SMALLER OPENINGS AND AT LEAST 2 FEET HIGH MAY BE UTILIZED, FASTENED TO THE FENCE POSTS, TO PROVIDE REINFORCEMENT AND SUPPORT TO THE GEOTEXTILE FABRIC WHERE SPACE FOR OTHER PRACTICES IS LIMITED AND HEAVY SEDIMENT LOADING IS EXPECTED.

3. A GEOTEXTILE FABRIC, RECOMMENDED FOR SUCH USE BY THE MANUFACTURER, SHALL BE BURIED AT LEAST 6 INCHES DEEP IN THE GROUND. THE FABRIC SHALL EXTEND AT LEAST 2 FEET ABOVE THE GROUND. THE FABRIC MUST BE SECURELY FASTENED TO THE POSTS USING A SYSTEM CONSISTING OF METAL FASTENERS (NAILS OR STAPLES) AND A HIGH STRENGTH REINFORCEMENT MATERIAL (NYLON WEBBING, GROMMETS, WASHERS, ETC.) PLACED BETWEEN THE FASTENER AND THE GEOTEXTILE FABRIC. THE FASTENING SYSTEM SHALL RESIST TEARING AWAY FROM THE POST. THE FABRIC SHALL INCORPORATE A DRAWSTRING IN THE TOP PORTION OF THE FENCE FOR ADDED STRENGTH.



SECTION



PLAN

PERCENT SLOPE OF ROADWAY	LENGTH OF STONE REQUIRED	
	COARSE GRAINED SOILS	FINE GRAINED SOILS
0 TO 2%	50 FT	100 FT
2 TO 5%	100 FT	200 FT
>5%	ENTIRE SURFACE STABILIZED WITH FABC BASE COURSE	

STABILIZED CONSTRUCTION PAD DETAIL

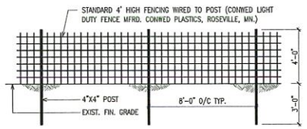
SCALE: 1/16"=1'-0"

FOR CONSTRUCTION PAD LOCATION, SEE DWG. YS–1.

* NOTE: INDIVIDUAL LOT ACCESS POINTS MAY REQUIRE STABILIZATION. THICKNESS SHOWN IS FOR STONE CONSTRUCTION ENTRANCE ONLY. (TYP)

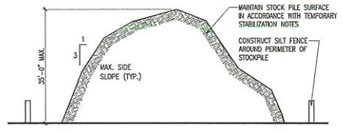
NOTES

1. 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.
2. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–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, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
3. WASHING – WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS–OF–WAY WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
4. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.



CONSTRUCTION LIMIT FENCE

SCALE: 1/4"=1'–0"



TEMPORARY STOCKPILE DETAIL

SCALE: N.T.S.

AGRONOMIC SPECIFICATIONS FOR CONSTRUCTION SITES

1. DISTURB AS LITTLE AREA AS POSSIBLE WHEN EXCAVATING FOR ANY FOUNDATIONS AND STORING TOPSOIL.
2. PLACE TOPSOIL AND EXCAVATION MATERIAL FROM EXIST. STRUCTURE ON DOWNHILL SIDE OF LOT WHENEVER POSSIBLE TO TRAP RUNOFF FROM SCALPED AREAS.
3. ALL DISTURBED AREAS THAT ARE NOT BEING GRADED, UNDER ACTIVE CONSTRUCTION, OR TO BE PERMANENTLY SEEDED WITHIN 30 DAYS MUST BE STABILIZED BY TEMPORARY SEEDING OR MULCHING AS PER SPECIFICATIONS BELOW.
4. ALL EXPOSED AREAS WHICH ARE TO BE PERMANENTLY VEGETATED WILL BE SEEDED WITHIN 10 DAYS OF FINAL GRADING. COMPLETE PERMANENT SEEDING AS PER SPECIFICATIONS BELOW.
5. MULCHING IS REQUIRED ON ALL SEEDINGS. STRAW MULCH OR EQUIVALENT WILL BE APPLIED AT THE RATE OF 1 1/2 TO 2 TONS/ACRE (70 TO 90 LB/1000 S.F.). THE EXISTENCE OF VEGETATION SUFFICIENT TO CONTROL SOIL EROSION SHALL BE DEEMED AS COMPLIANCE WITH THIS MULCHING REQUIREMENT.
6. MULCHING ANCHORING WILL BE ACCOMPLISHED IMMEDIATELY AFTER MULCHING TO MINIMIZE LOSS BY WIND OR WATER. THIS MAY BE DONE BY ONE OF THE METHODS (CRIMPING, LIQUID MULCH BINDERS, NETTINGS, ETC.) IN THE "STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY."

PERMANENT SEEDING

1. SEED, FERTILIZE, AND LIME ALL SCALPED AREAS IMMEDIATELY AFTER FINISHED GRADING IS COMPLETED AND RECOMMENDATIONS ARE ACCORDING TO RESULTS OF SOIL TESTS OR AS FOLLOWS:
   A) LIME TO BE APPLIED AT THE RATE OF 2 TONS/ACRE (GROUND LIMESTONE).
   B) FERTILIZER TO BE APPLIED AT THE RATE OF 500 Lbs. OF 10–20–10 PER ACRE.
   C) SEED IS TO BE INCORPORATED INTO THE SOIL 1/4" TO 1/2" BY RAKING OR DRAGGING.
   D) SEEDING WILL REQUIRE AN APPLICATION OF FERTILIZER SUCH AS 10–10–10 OR EQUIVALENT APPROXIMATELY 6 MONTHS AFTER FIRST APPLICATION.
   E) PROFESSIONAL MIXED SEED MIXTURE ARE RECOMMENDED RATHER THAN MIXING YOURSELF.
   F) IF SEEDINGS ARE GOING TO BE DONE DURING OFF–SEASON (MIDSUMMER) INCREASE MIXTURE

ALL PERMANENT SEEDING SHALL COMPLY WITH THE "STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL" SPECIFICATION SECTION 4, TABLE 4–1, FOR SANDY LOAM, LOAM, SILT LOAM, PLANT HARDINESS ZONE 6B AND WELL TO MODERATELY WELL DRAINED SOIL DRAINAGE CLASS.

PERMANENT SEEDING MIXTURE TO BE APPLIED DURING THE WARM SEASON (85 °F AND ABOVE) SHALL BE:
- HARD FESCUE 120 LBS./ACRE
- PERENNIAL RYEGRASS 30 LBS./ACRE
- KENTUCKY BLUEGRASS (BLEND) 40 LBS./ACRE

PERMANENT SEEDING MIXTURE TO BE APPLIED DURING COOL SEASON (BELOW 85 °F) SHALL BE:
- TALL FESCUE 160 LBS./ACRE
- KENTUCKY BLUEGRASS 20 LBS./ACRE
- PERENNIAL RYEGRASS 20 LBS./ACRE

MULCHING
MULCHING SHALL BE REQUIRED FOR ALL PERMANENT SEEDING. MULCH SHALL BE STRAW, UNROTTED SMALL GRAIN STRAW APPLIED AT THE RATE OF TWO (2) TONS PER ACRE. ALL MULCH SHALL BE ANCHORED BY A STANDARD LIQUID MULCH–BINDER.

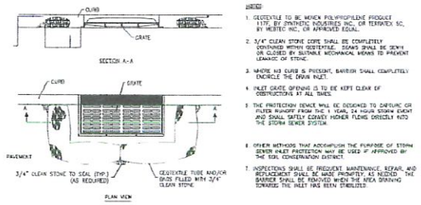
TEMPORARY SEEDING

ALL TEMPORARY SEEDING SHALL COMPLY WITH THE "STANDARDS FOR SOIL EROSION AND SEDIMENT CONTROL" SPECIFICATION SECTION 7, TABLE 7–1, 7–2 FOR SANDY LOAM, LOAM, SILT LOAM, PLANT HARDINESS ZONE 6B AND WELL TO MODERATELY WELL DRAINED SOIL DRAINAGE CLASS.

TEMPORARY SEEDING MIXTURE TO BE APPLIED DURING THE WARM SEASON (85 °F AND ABOVE) SHALL BE PEARL MILLET AT THE RATE OF 20 LBS./ACRE.

TEMPORARY SEEDING MIXTURE TO BE APPLIED DURING COOL SEASON (BELOW 85 °F) SHALL BE pERENNIAL RYEGRASS AT THE RATE OF 100 LBS./ACRE.

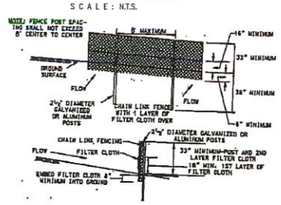
MULCHING
MULCHING SHALL BE REQUIRED FOR ALL TEMPORARY SEEDING. MULCH SHALL BE STRAW, UNROTTED SMALL GRAIN STRAW APPLIED AT THE RATE OF TWO (2) TONS PER ACRE. ALL MULCH SHALL BE ANCHORED BY A STANDARD LIQUID MULCH–BINDER.



NOTES:
1. GEOTEXTILE TO BE MIRAFI POLYPROPYLENE PRODUCT 117N BY SYNTHETIC INDUSTRIES INC., OR TERRATEX SC. BY WEBTEC INC., OR APPROVED EQUAL.
2. 3/4" CLEAN STONE CORE SHALL BE COMPLETELY ENCHANCED WITHIN GEOTEXTILE. SEAMS SHALL BE SEWN OR GLUED BY SUITABLE MECHANICAL MEANS TO PREVENT LEAKAGE OF STONE.
3. WHERE NO CURB IS PRESENT, BARRIER SHALL COMPLETELY ENCIRCLE THE DRAIN INLET.
4. INLET GRATE OPENING IS TO BE KEPT CLEAR OF OBSTRUCTIONS AT ALL TIMES.
5. THE PROTECTION DEVICE WILL BE DESIGNED TO CAPTURE OR FILTER RUNOFF FROM THE 1 YEAR, 24 HOUR STORM EVENT AND SHALL SAFELY CONVEY HIGHER FLOWS DIRECTLY INTO THE STORM SEWER SYSTEM.
6. OTHER METHODS THAT ACCOMPLISH THE PURPOSE OF STORM SEWER INLET PROTECTION MAY BE USED IF APPROVED BY THE SOIL CONSERVATION DISTRICT.
7. INSPECTIONS SHALL BE FREQUENT MAINTENANCE, REPAIR, AND REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED THE BARRIER SHALL BE REMOVED WHEN THE AREA DRAINING TOWARDS THE INLET HAS BEEN STABILIZED

INLET FILTER DETAIL

SCALE: N.T.S.



SUPER SILT FENCE

SCALE: N.T.S.
AS MANUFACTURED BY JMD COMPANY OR APPROVED EQUAL

BERGEN COUNTY SOIL CONSERVATION DISTRICT
SOIL EROSION AND SEDIMENT CONTROL NOTES
1. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS
FOR SOIL EROSION AND SEDIMENT CONTROL IN NEW JERSEY (NJ STANDARDS), AND WILL BE INSTALLED IN PROPER SEQUENCE AND MAINTAINED UNTIL PERMANENT STABILIZATION IS ESTABLISHED.
2. ANY DISTURBED AREA THAT WILL BE LEFT EXPOSED FOR MORE THAN THIRTY (30) DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING AND MULCHING. IF THE SEASON PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREA WILL BE MULCHED WITH UNROTTED STRAW AT A RATE OF 2 TONS PER ACRE ANCHORED BY APPROVED METHODS (I.E. PEG AND TWINE, MULCH NETTING, OR LIQUID MULCH BINDER).
3. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION WILL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AT A RATE OF 2 TONS PER ACRE, ACCORDING TO THE NJ STANDARDS.
4. STABILIZATION SPECIFICATIONS:
A. TEMPORARY SEEDING AND MULCHING:
GROUND LIMESTONE – APPLIED UNIFORMLY ACCORDING TO SOIL TEST RECOMMENDATIONS.
FERTILIZER – APPLY 11LBS. /1,000 SF OF 10–20–10 OR EQUIVALENT WITH
50% WATER INSOLUBLE NITROGEN (UNLESS A SOIL TEST INDICATES OTHERWISE)
WORKED INTO THE SOIL A MINIMUM OF 4".
SEED – PERENNIAL RYEGRASS 100 LBS. /ACRE (2.3 LBS. /1,000 SF) OR OTHER APPROVED
SEED; PLANT BETWEEN MARCH 1 AND MAY 15 OR BETWEEN AUGUST 15 AND OCTOBER 1.
MULCH – UNROTTED STRAW OR HAY AT A RATE OF 70 TO 90 LBS. /1,000 SF APPLIED TO ACHIEVE 95% SOIL SURFACE COVERAGE. MULCH SHALL BE ANCHORED BY APPROVED METHODS (I.E. PEG AND TWINE, MULCH NETTING, OR LIQUID MULCH BINDER).
B. PERMANENT SEEDING AND MULCHING:
TOPSOIL – A UNIFORM APPLICATION TO AN AVERAGE DEPTH OF 5", MINIMUM OF 4"FIRMED IN PLACE IS REQUIRED.
GROUND LIMESTONE – APPLIED UNIFORMLY ACCORDING TO SOIL TEST RECOMMENDATIONS.
FERTILIZER – APPLY 11 LBS. /1,000 SF OF 10–10–10 OR EQUIVALENT WITH
50% WATER INSOLUBLE NITROGEN (UNLESS A SOIL TEST INDICATES OTHERWISE)
WORKED INTO THE SOIL A MINIMUM OF 4".
SEED – TURF TYPE TALL FESCUE (BLEND OF 3 CULTIVARS) 350 LBS. /ACRE (8 LBS. /1,000 SF)
OR OTHER APPROVED SEED; PLANT BETWEEN MARCH 1 AND OCTOBER 1
(SUMMER SEEDING REQUIRES IRRIGATION)
MULCH – UNROTTED STRAW OR HAY AT A RATE OF 70 TO 90 LBS. /1,000 SF APPLIED TO ACHIEVE 95% SOIL SURFACE COVERAGE. MULCH SHALL BE ANCHORED BY APPROVED METHODS (I.E. PEG AND TWINE, MULCH NETTING, OR LIQUID MULCH BINDER).
5. THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SUCH THAT ALL STORMWATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.
6. SOIL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSPECTED AND MAINTAINED ON A REGULAR BASIS, INCLUDING AFTER EVERY STORM EVENT.
7. STOCKPILES ARE NOT TO BE LOCATED WITHIN 50' OF A FLOODPLAIN, SLOPE, ROADWAY OR DRAINAGE FACILITY. THE BASE OF ALL STOCKPILES SHALL BE CONTAINED BY A HAYBALE SEDIMENT BARRIER OR SILT FENCE.
8. A CRUSHED STONE, VEHICLE WHEEL–CLEANING BLANKET WILL BE INSTALLED WHEREVER A CONSTRUCTION ACCESS ROAD INTERSECTS ANY PAVED ROADWAY. SAID BLANKET WILL BE COMPOSED OF 1" – 2½" CRUSHED STONE, 6" THICK, WILL BE AT LEAST 30' X 100' AND SHOULD BE UNDERLAIN WITH A SUITABLE SYNTHETIC SEDIMENT FILTER FABRIC AND MAINTAINED.
9. MAXIMUM SIDE SLOPES OF ALL EXPOSED SURFACES SHALL NOT EXCEED 3:1 UNLESS OTHERWISE APPROVED BY THE DISTRICT.
10. DRIVEWAYS MUST BE STABILIZED WITH 1" – 2½" CRUSHED STONE OR SUBBASE PRIOR TO INDIVIDUAL LOT CONSTRUCTION.
11. ALL SOIL WASHED, DROPPED, SPILLED OR TRACKED OUTSIDE THE LIMIT OF DISTURBANCE OR ONTO PUBLIC RIGHT–OF–WAYS, WILL BE REMOVED IMMEDIATELY. PAVED ROADWAYS MUST BE KEPT CLEAN AT ALL TIMES.
12. CATCH BASIN INLETS WILL BE PROTECTED WITH AN INLET FILTER DESIGNED IN ACCORDANCE WITH SECTION 28 –1 OF THE NJ STANDARDS.
13. STORM DRAINAGE OUTLETS WILL BE STABILIZED, AS REQUIRED, BEFORE THE DISCHARGE POINTS BECOME OPERATIONAL.
14. DEWATERING OPERATIONS MUST DISCHARGE DIRECTLY INTO A SEDIMENT CONTROL BAG OR OTHER APPROVED FILTER IN ACCORDANCE WITH SECTION 14–1 OF THE NJ STANDARDS.
15. DUST SHALL BE CONTROLLED VIA THE APPLICATION OF WATER, CALCIUM CHLORIDE OR OTHER APPROVED METHOD IN ACCORDANCE WITH SECTION 16–1 OF THE NJ STANDARDS.
16. TREES TO REMAIN AFTER CONSTRUCTION ARE TO BE PROTECTED WITH A SUITABLE FENCE INSTALLED AT THE DRIP LINE OR BEYOND IN ACCORDANCE WITH SECTION 9–1 OF THE NJ STANDARDS.
17. THE PROJECT OWNER SHALL BE RESPONSIBLE FOR ANY EROSION OR SEDIMENTATION THAT MAY OCCUR BELOW STORMWATER OUTFALLS OR OFF–SITE AS A RESULT OF CONSTRUCTION OF THE PROJECT.
18. ANY REVISION TO THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN MUST BE SUBMITTED TO THE DISTRICT FOR REVIEW AND APPROVAL PRIOR TO IMPLEMENTATION IN THE FIELD.
19. A COPY OF THE CERTIFIED SOIL EROSION AND SEDIMENT CONTROL PLAN MUST BE AVAILABLE AT THE PROJECT SITE THROUGHOUT CONSTRUCTION.
20. THE BERGEN COUNTY SOIL CONSERVATION DISTRICT MUST BE NOTIFIED, IN WRITING, AT LEAST 48 HOURS PRIOR TO ANY LAND DISTURBANCE: BERGEN COUNTY SCD, 700 KINDERKAMACK ROAD, SUITE 106, ORADELL, NJ 07649. TEL: 201–261–4407; FAX 201–261–7373.
21. THE BERGEN COUNTY SOIL CONSERVATION DISTRICT MAY REQUEST ADDITIONAL MEASURES TO MINIMIZE ON OR OFF–SITE EROSION PROBLEMS DURING CONSTRUCTION.
22. THE OWNER MUST OBTAIN A DISTRICT ISSUED REPORT OF COMPLIANCE PRIOR TO THE ISSUANCE OF ANY CERTIFICATE OF OCCUPANCY. THE DISTRICT REQUIRES AT LEAST ONE WEEK'S NOTICE TO FACILITATE THE SCHEDULING OF ALL REPORT OF COMPLIANCE INSPECTIONS. ALL SITE WORK MUST BE COMPLETED, INCLUDING TEMPORARY/PERMANENT STABILIZATION OF ALL EXPOSED AREAS, PRIOR TO THE ISSUANCE OF A REPORT OF COMPLIANCE BY THE DISTRICT.
REVISED 12/1/17

PROPOSED SEQUENCE OF DEVELOPMENT

1. CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE AS PER DETAILS ON THIS DRAWING.
2. INSTALL SILT FENCE AT LIMITS OF CONSTRUCTION & EQUIPMENT BARRIER FENCING.
3. GENERAL CLEARING AND REMOVAL OF EXISTING UNSUITABLE VEGETATION AND/OR DEBRIS, IN AREAS WHERE NECESSARY. ANY VEGETATION THAT REMAINS SHALL BE PROPERLY PROTECTED AND KEPT IN ITS NATURAL STATE.
4. STRIP AND STOCKPIKE TOPSOIL, SURROUND WITH SILT FENCE.
5. PRELIMINARY SUB–GRADING OF AREAS TO BE DEVELOPED.
6. LAYOUT AND LOCATION OF PROPOSED PARKING AREAS, BUILDING, ROADWAY, DRAINAGE FACILITIES AND UTILITIES.
7. CONSTRUCTION OF PROPOSED DRAINAGE AND UNDERGROUND UTILITIES AND INSTALLATION OF ALL SEDIMENT AND EROSION CONTROL DEVICES WHICH ARE AFFECTED (SUCH AS INLET PROTECTION DEVICES).
8. PREPARATION OF SUB–GRADE SHALL BE PERFORMED IMMEDIATELY FOLLOWING PRELIMINARY GRADING IN ORDER TO STABILIZE PAVEMENT AREAS.
9. CONSTRUCTION OF THE BUILDING.
10. CONSTRUCTION OF ALL PROPOSED CURBING
11. INSTALLATION OF BASE–COURSE FOR PAVEMENT AREAS, IF WEATHER PERMITS.
12. REMOVAL OF ALL SEDIMENT CONTROL DEVICES PERTAINING TO INLET PROTECTION.
13. CONSTRUCTION OF ALL FINAL SURFACE PAVEMENT, IF WEATHER PERMITS. PERMANENT VEGETATIVE STABILIZATION OF ALL EXPOSED AREAS.
14. UNIFORMLY APPLY TOPSOIL TO AN AVERAGE DEPTH OF 5", MINIMUM OF 4", FIRMED IN PLACE.
15. REMOVAL OF ALL TEMPORARY EROSION CONTROL MEASURES.

Revisions

Date	Issue	Description
03–22–21	A	FOR BERGEN COUNTY SOIL CONSERVATION DISTRICT RE–CERTIFICATION
03–23–21	B	FOR INITIAL ZONING BOARD FILING
03–25–21	C	FOR BERGEN COUNTY PLANNING BOARD FILING AND APPROVAL
04–22–21	D	FOR ZONING BOARD FILING AND APPROVAL

MEP Consultants

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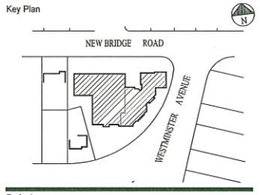
955 Lincoln Avenue
Glen Rock, New Jersey 07452
TELEPHONE (201) 857–3998
FAX: (201) 857–3994

Key Plan



Project

Expansion for Congregation Beth Abraham of Bergenfield, NJ

396 New Bridge Road
Bergenfield, NJ 07621
Block 302; Lots: 16, 17, 18, 19 & 21

Client

Congregation Beth Abraham of Bergenfield, NJ

SNS Architects & Engineers, PC
1 PARAGON DRIVE . MONTVALE . NEW JERSEY. 07645
TEL: 201.573.1717 FAX: 201.573.0008 www.sns–arch–eng.com

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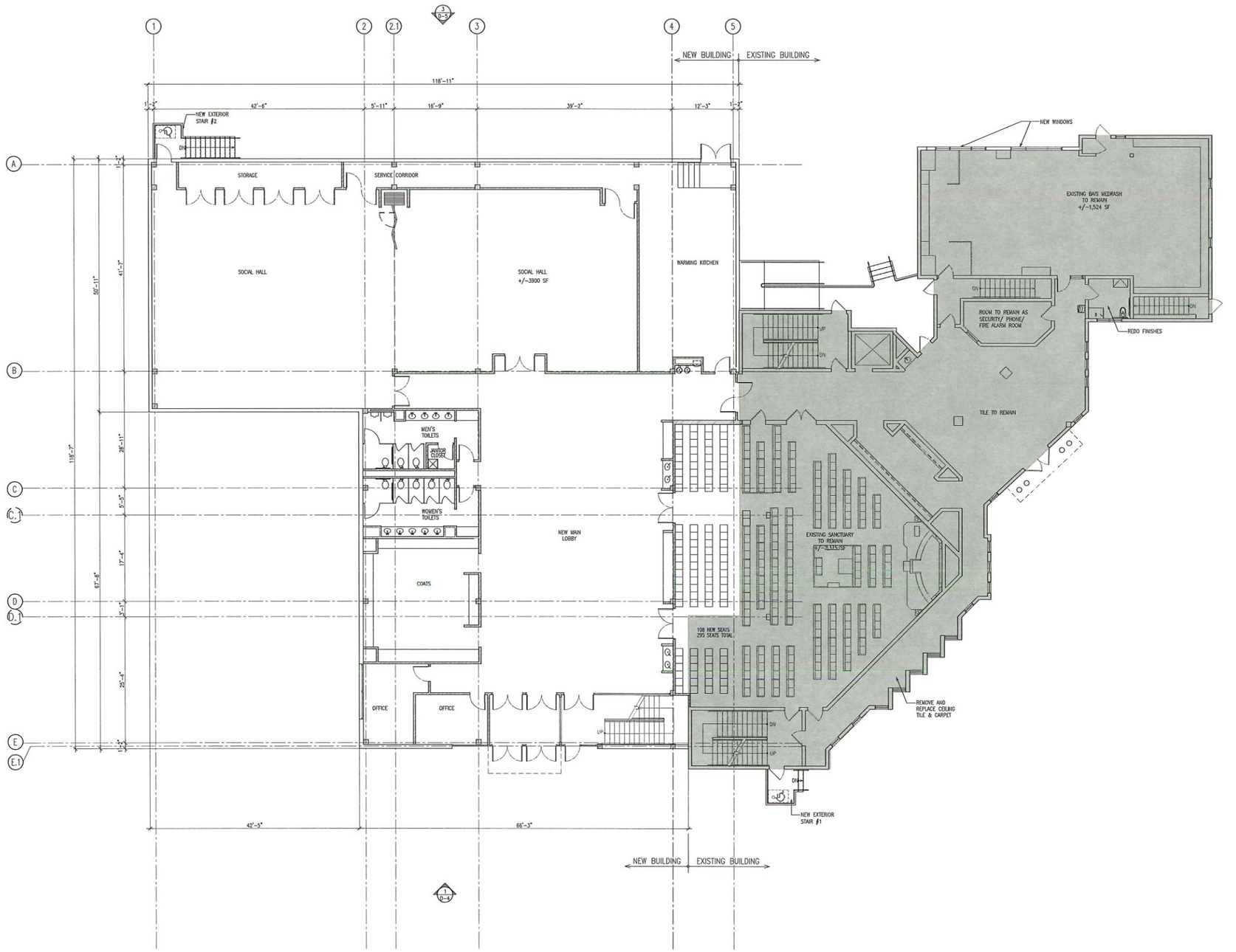
Steven Napolitano, PE ●
Robert G. Nocella, AIA ○

Cert./Lic. No. 41999

Date 03–21–21	Scale AS NOTED
Drawn By AS	Checked By

Dwg. Title
SOIL EROSION AND SEDIMENT CONTROL PLAN DETAILS & NOTES

Work Order No.	Dwg. No.
5389.01	YS–2



GRAPHIC SCALE
SCALE: 1/8" = 1'

Revisions

Date	Issue	Description
02-25-21	A	FOR CLIENT REVIEW
03-09-21	B	FOR CLIENT REVIEW
03-29-21	C	REVISED PER COMMENTS OF 3/23/21 MEETING
04-08-21	D	REVISED
04-15-21	E	FINAL SCHEMATIC DESIGN DRAWINGS REVISED PER COMMENTS OF 4/14/21 MEETING
04-22-21	F	FOR ZONING BOARD FILING AND APPROVAL

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Key Plan

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Cert./Lic. No. AI 107990

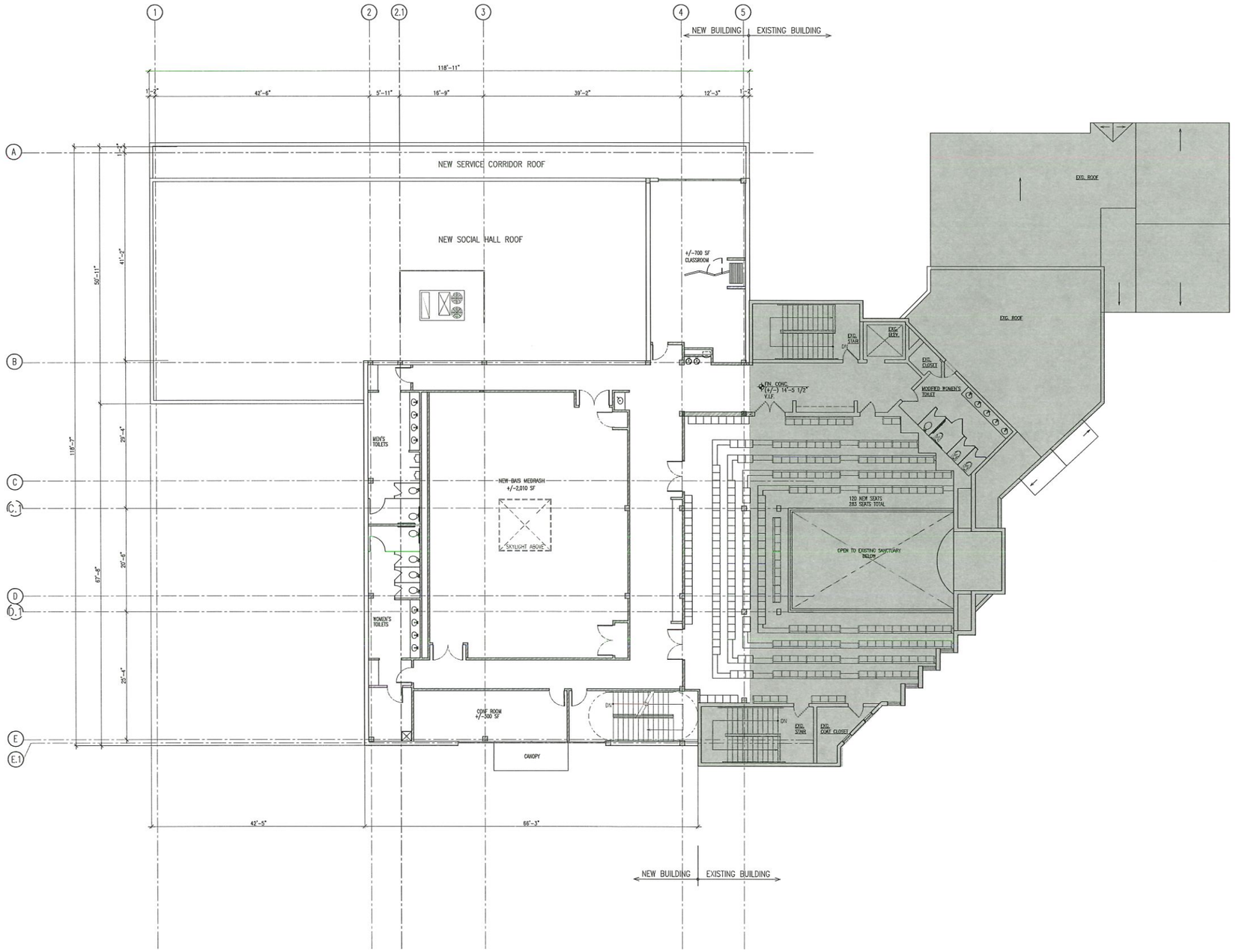
Date	03-22-21	Scale	1/8"=1'-0"
Drawn By	AC/DDP	Checked By	JL

Dwg. Title

PROPOSED FIRST FLOOR

Work Order No. 5389.01

Dwg. No. D-1



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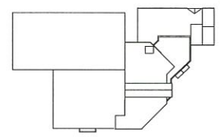

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Robert G. Nocella, AIA ○

Cert./Lic. No. AI 107980

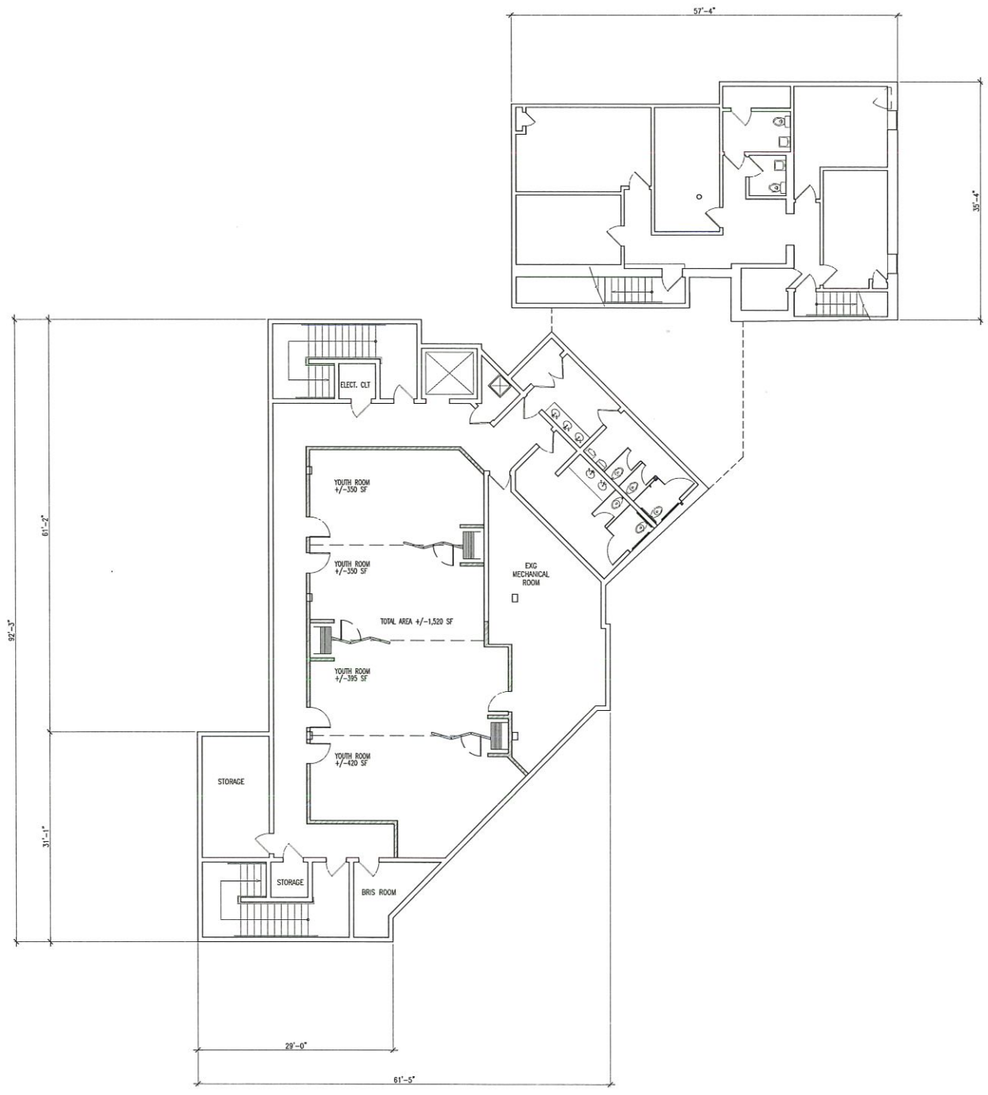
Date	04-08-21	Scale	1/8"=1'-0"
Drawn By	AC/GPD	Checked By	JL

Dwg. Title

PROPOSED SECOND FLOOR

Work Order No. 5389.01

Dwg. No. D-2



1 BASEMENT FLOOR PLAN
SCALE: 1/8" = 1'-0"

8' 0 8' 16'
GRAPHIC SCALE
SCALE: 1/8" = 1'

Revisions

Date	Issue	Description
02-25-21	A	FOR CLIENT REVIEW
03-09-21	B	FOR CLIENT REVIEW
03-29-21	C	REVISED PER COMMENTS OF 3/23/21 MEETING
04-08-21	D	REVISED
04-15-21	E	FINAL SCHEMATIC DESIGN DRAWINGS REVISED PER COMMENTS OF 4/14/21 MEETING
04-22-21	F	FOR ZONING BOARD FILING AND APPROVAL

MEP Consultants

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955 Lincoln Avenue
Glen Rock, New Jersey 07452
TELEPHONE (201) 857-3998
FAX: (201) 857-3994

Key Plan

Project

Expansion for
Congregation
Beth Abraham
of Bergenfield, NJ

396 New Bridge Road
Bergenfield, NJ 07621
Block 302; Lots: 16, 17, 18, 19 & 21

Client

Congregation
Beth Abraham
of Bergenfield, NJ

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1 PARAGON DRIVE . MONTVALE . NEW JERSEY. 07645
tel: 201.573.1767 fax:201.573.0808 www.sns-arch-eng.com

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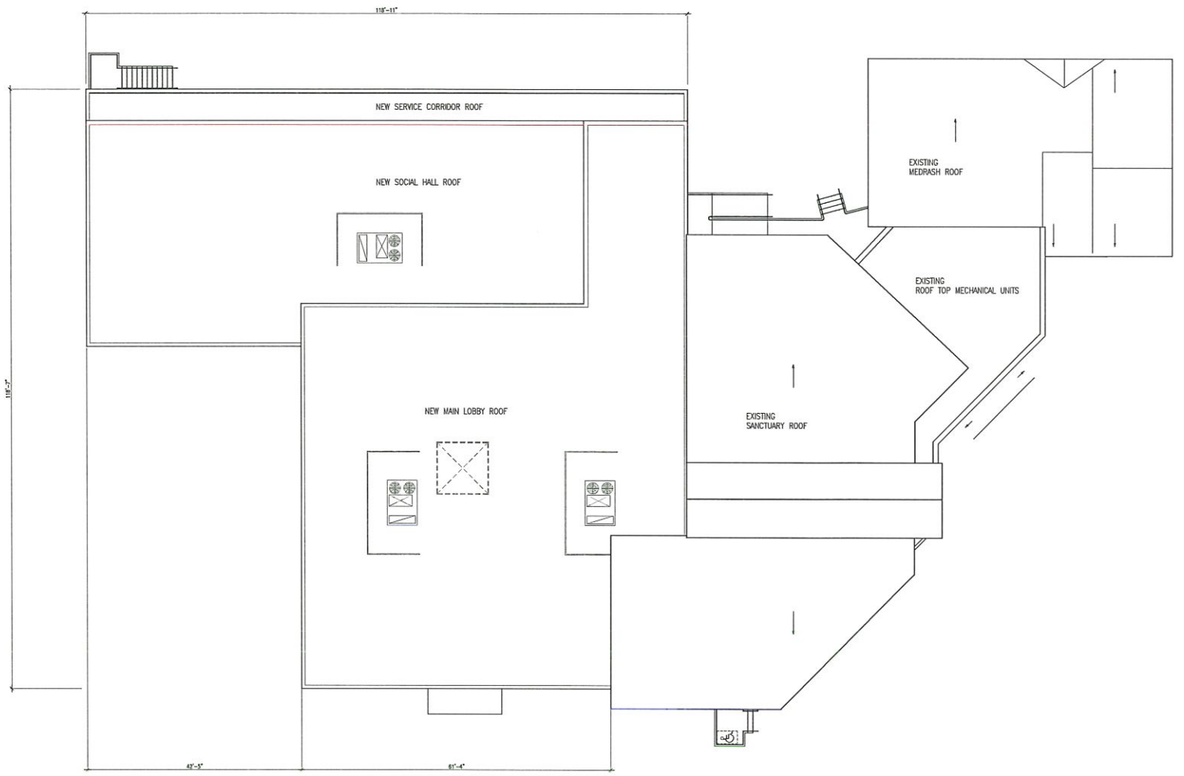
Robert G. Nocella, AIA ○

Cert./Lic. No. AI 107980

Date	03-22-21	Scale	AS NOTED
Drawn By	AC/GDP	Checked By	
Dwg. Title			

BASEMENT FLOOR PLAN

Work Order No. 5389.01
Dwg. No. D-3



8' 0 8' 16'

GRAPHIC SCALE
SCALE: 1/8" = 1'

Revisions

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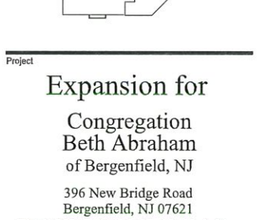
Key Plan



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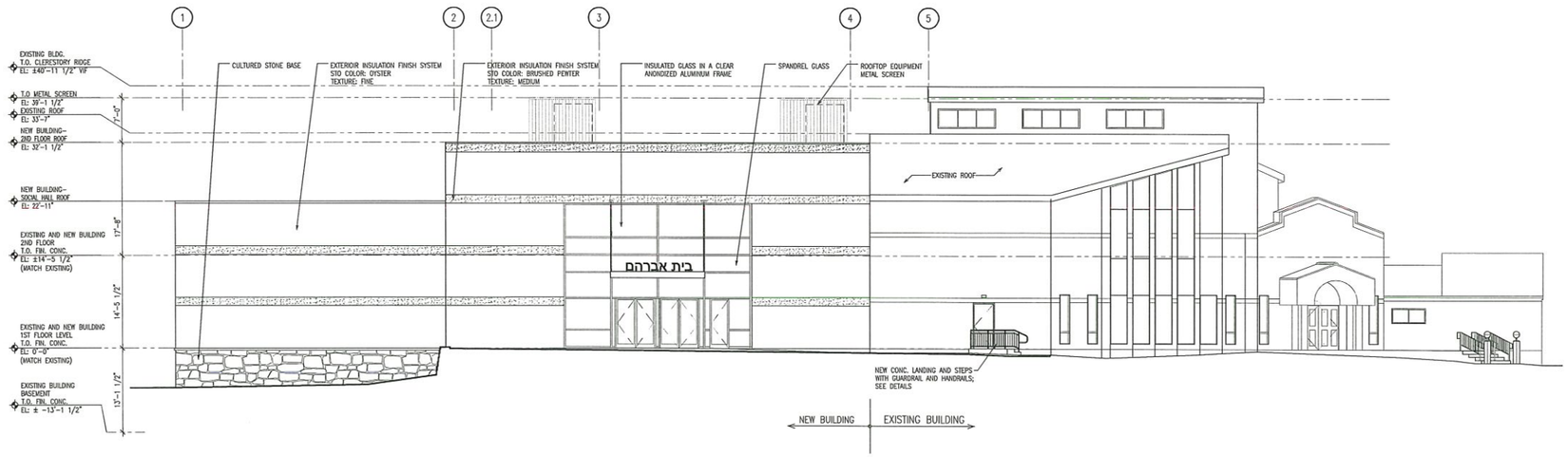
Date	02-24-21	Scale	3/32"=1'-0"
Drawn By	AC/GDP	Checked By	JL

Dwg. Title

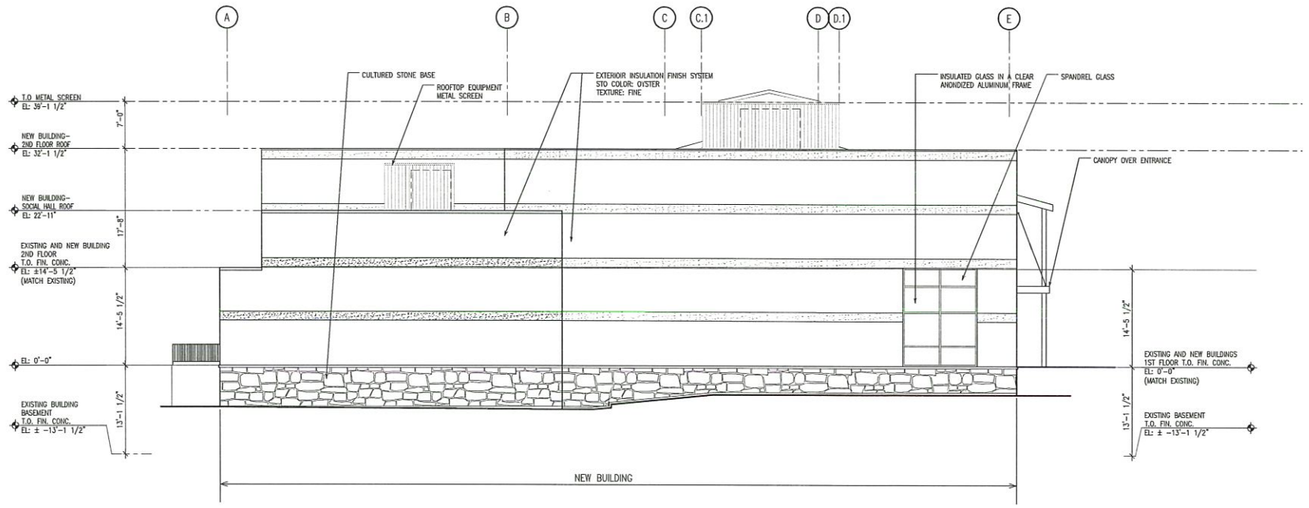
PROPOSED ROOF PLAN

Work Order No. 5389.01

Dwg. No. D-4



1 SOUTH BUILDING ELEVATION
SCALE: 1/8" = 1'-0"



2 WEST BUILDING ELEVATION
SCALE: 1/8" = 1'-0"

8' 0 8' 16'
GRAPHIC SCALE
SCALE: 1/8" = 1'

Revisions

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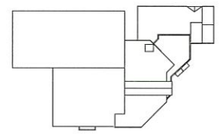

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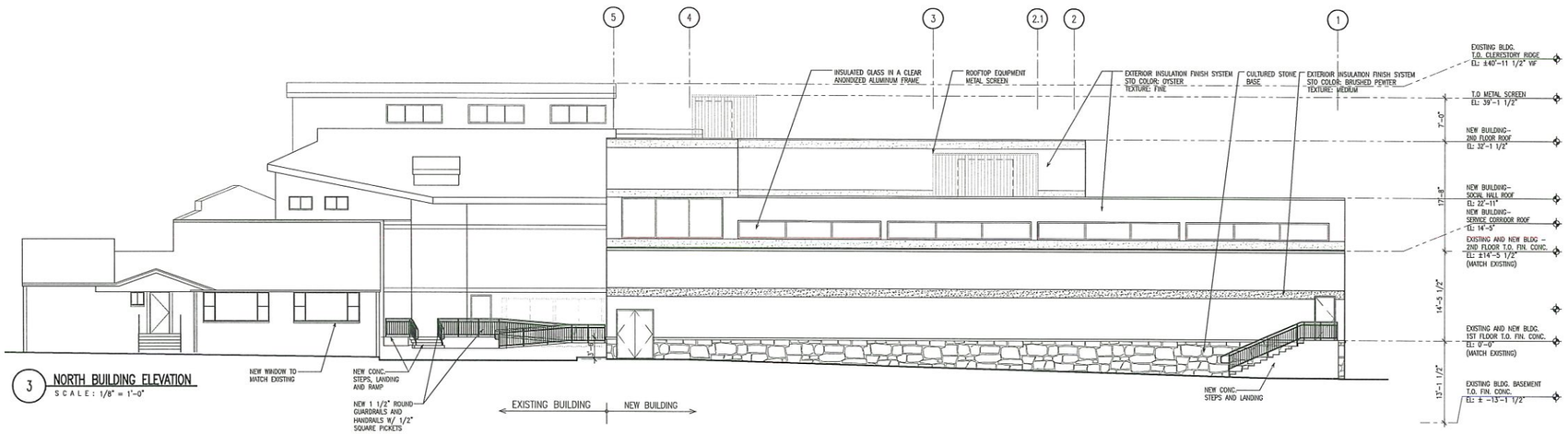
Date	02-24-21	Scale	AS NOTED
Drawn By	CDP/AC	Checked By	JL

Dwg. Title

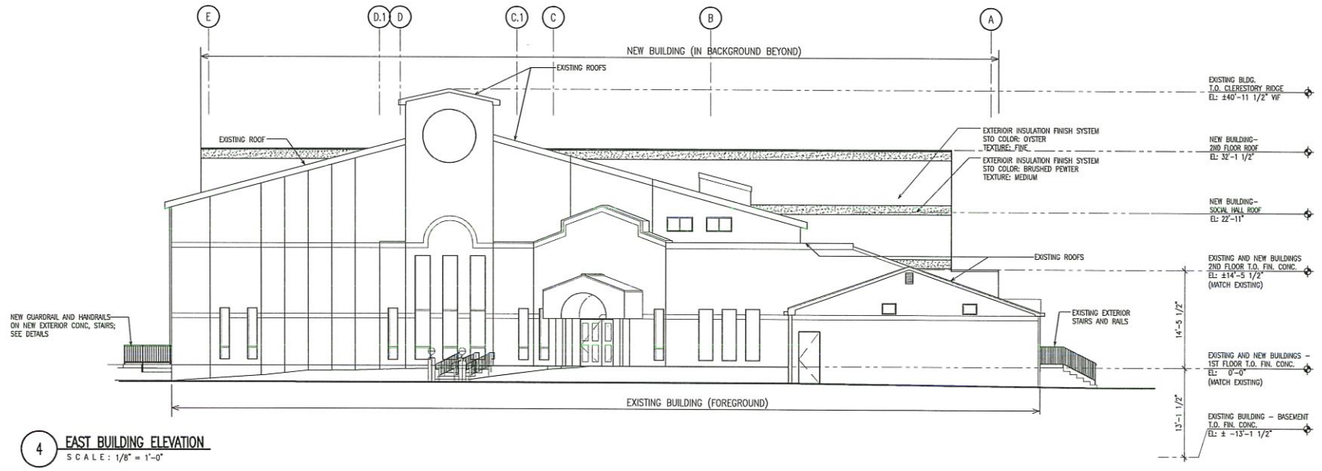
BUILDING ELEVATIONS

Work Order No. 5389.01

Dwg. No. D-5



3 **NORTH BUILDING ELEVATION**
SCALE: 1/8" = 1'-0"



4 **EAST BUILDING ELEVATION**
SCALE: 1/8" = 1'-0"

8' 0 8' 16'
GRAPHIC SCALE
SCALE: 1/8" = 1'

Revisions

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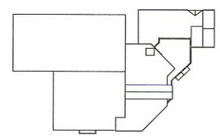

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Cert/Lic. No. AI 107980

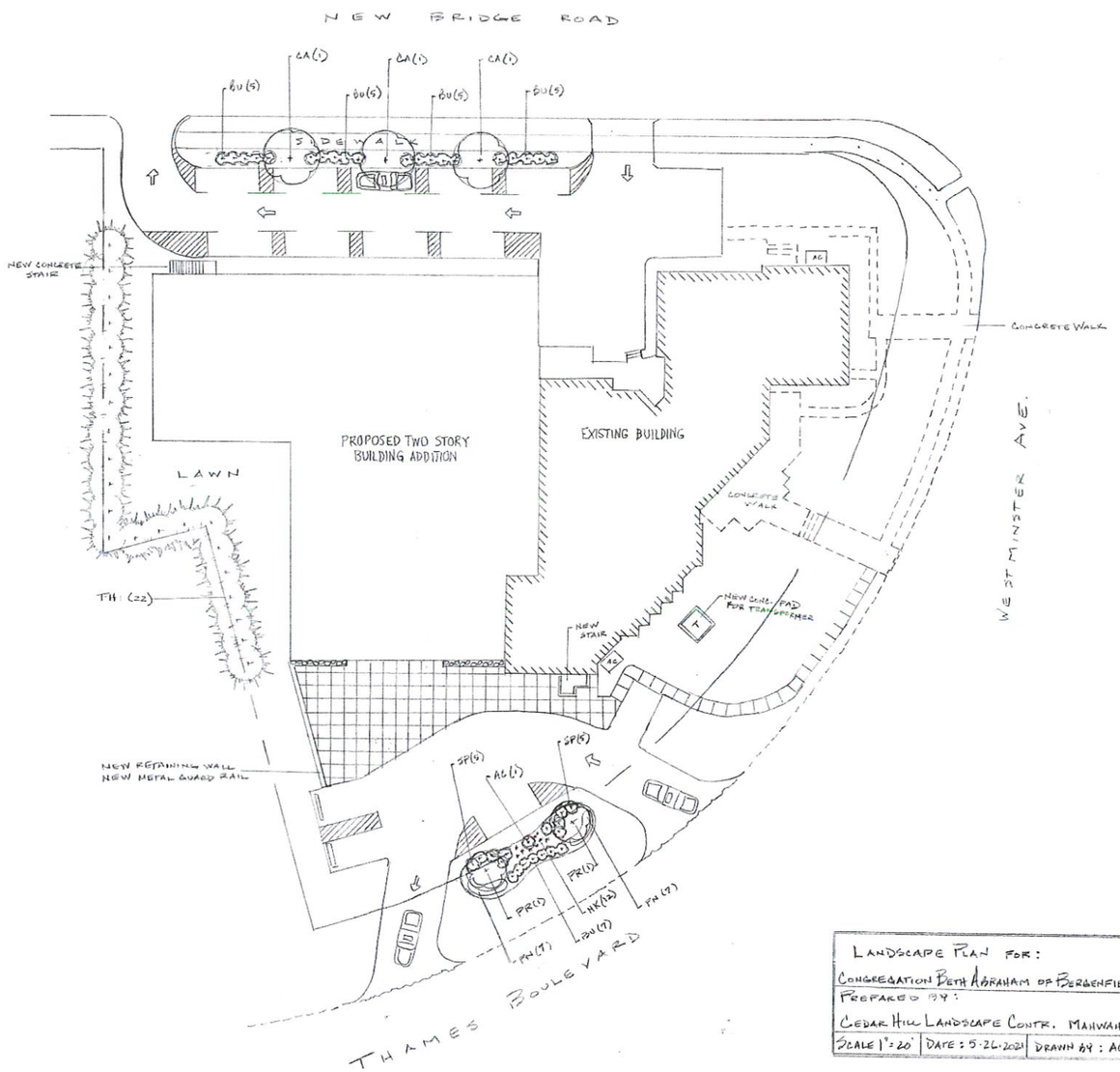
Date	02-24-21	Scale	AS NOTED
Drawn By	GDP/AC	Checked By	JL

Dwg. Title

BUILDING ELEVATIONS

Work Order No. 5389.01
Dwg. No. D-6

CODE	QUAN.	BOTANICAL NAME	COMMON NAME	SIZE
AC	1	ACER PALM. 'CRIM. QUEEN'	LACELEAF MAPLE	SPEC.
BD	27	BUXUS MICRO. 'WINTER GEM'	WINTER GEM BOXWOOD	18"
CA	3	CARPINUS BET. 'FASTIGIATA'	FASTIGIATA HORNBEAM	2"-2½"
HK	12	HAKENOCHLOA	JAPANESE FOREST GRASS	1g
PN	14	PERENNIAL - NEPETA	CATMINT	1g
PR	2	PRUNUS SUB. 'AUTUMNALIS'	ROSEBUD CHERRY	2"-2½"
SP	10	SPIREA JAP. 'GOLDMOUND'	GOLDMOUND SPIREA	3g
TH	22	THUJA 'GREEN GIANT'	GREEN GIANT ARB.	7'-8'



LANDSCAPE PLAN FOR:
CONGREGATION BETH ABRAHAM OF BERGENFIELD, NJ
PREPARED BY:
CEDAR HILL LANDSCAPE CONTR. MAHWAH NJ
SCALE 1"=20' | DATE: 5-26-2021 | DRAWN BY: ACK