

Permit No. 2022028

Date Issued: 4/18/2022

Hopewell Township Health Department

201 Washington Crossing Pennington Road
Titusville, New Jersey 08560
Tel. (609) 737-0120 Fax (609) 737-6836

PERMIT

Applicant: **Monika Miga**

Block: **86.00**

Lot: **35.00**

To: **INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM ALTERATION**

Location: **28 Diverty Road**

Fee: **\$625.00**

24 Hour Inspection Notification Required

Authorized By:



This permit is NOT transferrable

Hopewell Township Health Department



TOWNSHIP of HOPEWELL
MERCER COUNTY
DEPARTMENT OF HEALTH

201 Washington Crossing Pennington Road
Titusville, New Jersey 08560-1410
Phone: 609.737.0120 Fax: 609-737-6836 www.hopewelltp.org



Public Health
Prevent. Promote. Protect.

4/18/2022

Monika Miga
28 Diverty Road
Pennington NJ 08534

RE: Block: 86.00 Lot: 35.00 – 28 Diverty Road

To Whom It May Concern,

Your application for an alteration to an onsite subsurface sewage disposal system has been approved with the following conditions:

SEWAGE DISPOSAL PERMITS ARE VALID FOR TWO YEARS FROM DATE OF ISSUE.

1. A copy of this letter must be forwarded to your construction contractor and sewage disposal installer prior to installation of said system.
2. The house location must be staked by a licensed surveyor or professional engineer to assure proper location and elevation as represented on the attached plan.
3. The sewage disposal system must be located and staked prior to installation by a licensed surveyor or professional engineer to guarantee the proper alignment of the system in the area of the soil tests, and to insure it will conform to all site restrictions as represented on the attached design.
4. The required elevation of the sewage disposal system should be verified by the licensed professional engineer or surveyor, the builder and the plumbing contractor as it relates to the foundation height, the point where the sewer line exits the dwelling and the height of the septic tank. If this is a gravity system and the minimum height of the sewer line is not maintained, an ejector system will be required after the septic tank.
5. An onsite conference is required with your installer and a representative from this office prior to installation of any part of this system. This should avoid any problem during the installation which can be costly to all parties concerned.
6. The design engineer must be notified at the beginning of the installation. Field measures must be made for the required as-built design, and grading plan certifications. The as-built must show soil test location, distances to the tank and D-box as measured from two fixed points, also, any changes caused by site conditions, construction changes and installation problems. If this is a raised system, the as-built grading plan must be certified by the engineer that it is as designed, showing all inverts and contour lines. The as-built will provide a detailed location of the installed system so it can be located once it is covered.

7. No excavating machinery shall be permitted in the excavation during construction. A track-hoe or back-hoe must be used to dig the excavation. Sand must be available at the start of construction to cover the bottom and to protect open fractures etc.
8. All trees within 10 feet of a conventional disposal system or within the area of the extended clay fill and sloped area of a raised disposal/mound system must be removed.
9. **All phases of construction of the disposal system must be inspected by the Health Department. It is your responsibility (or your contractors) to notify the Health Department by no later than 9:00 a.m. on every day that construction is underway so inspections can be scheduled. Systems will be dug up if not inspected by this office!**
10. A certificate of occupancy will not be issued if the system is not completed and the grades certified. Raised systems must be stabilized. All systems must be seeded or sodded and have established vegetative growth.
11. All septic tanks must comply with new tank requirements and also be provided with locking manhole access lids to final grade as required by N.J.A.C. 7:9A.
12. All sand and clay fill must be stock piled on site and certified by a licensed laboratory and by the design engineer once in place using a perc test.
13. Hopewell Township requires a two compartment septic tank 50% larger than required in NJAC 7:9a wherever a sewer ejector is utilized. This is in addition to the additional 250 gallons required per Twp Ord. 16-1.
14. **DEED AMENDMENT REQUIRED for alternative systems**
15. **Copy of service contract to be provided to Health Department before final approval can be given.**

Effective January 1, 1990, the New Jersey Department of Environmental Protection enacted a law requiring the certification and licensing of sewage disposal systems.

Very Truly Yours,



Peter Enea III

Registered Environmental Health Specialist



TOWNSHIP of HOPEWELL
MERCER COUNTY
DEPARTMENT OF HEALTH

201 Washington Crossing Pennington Road Titusville, New Jersey 08560-1410

Phone: 609.737.0120 Fax: 609-737-6836

SEPTIC SYSTEM APPROVAL
Advanced Treatment Unit (ATU) Requirements

Dear Resident,

The recently approved septic system design for your property includes an advanced treatment unit (ATU). The following requirements shall be met as a condition of the permit:

1. A maintenance contract with a manufacturers authorized representative shall be maintained at all times. A copy of the contract and subsequent renewals shall be furnished to the health dept. to evidence compliance with this requirement.
2. Inspections shall be completed as required and copies of inspection reports shall be submitted to the health dept. to evidence compliance with this requirement. Minimum inspections are required twice annually for the first two years of ATU operation and once annually thereafter.
3. A deed amendment shall be filed including the language provided on page 2 of 2. A copy of the filed deed with language included shall be furnished to the local health dept. to evidence compliance with this requirement.

If you are selling your home, the deed language may be addressed at the time of sale. You will see this language again in the approval letter for the sale.

You may contact this office at (609) 737-0120 with any questions you may have regarding this matter. Our office hours are Monday through Friday, 8:30 - 4:30

Sincerely,

Peter Enea III
Senior REHS

Advanced Wastewater Treatment System Deed Language

The following language must be added to the deed for the property and the amended deed filed with the Mercer County Clerk.

A copy of the sealed / recorded deed amendment must be provided to the health department.

“This property is provided with an Advanced Wastewater Pretreatment Device. It is the responsibility of the property owner to maintain it and provide routine service. An annual service contract with the system manufacturer’s representative must be kept in effect and submitted to the health department per township ordinance.

This statement may not be removed from the deed without the written authorization of the Hopewell Township Health Department.”

Hopewell Township Ordinance 16-12.2 Alternative Onsite Sewage System Standards Sub section 16-12.2 C. Deed Notification, Advisory of Alternative system. When any residential or commercial property is provided with a holding tank, [or] aerobic wastewater treatment system or any other alternative waste water system approved by NJDEP as part of the on-site wastewater disposal plan, the deed for the property shall be amended and filed with the county clerk. It must indicate the utilization of either component and include whatever requirements may have been imposed by the board of health or NJDEP on the owner. This shall be done to alert all future owners. The amendment must clearly state that this provision cannot be removed without the written authorization of the health department



TOWNSHIP OF HOPEWELL

MERCER COUNTY

Department of Community Development
201 Washington Crossing Pennington Road
Titusville, New Jersey 08560-1410
Phone 609-737-0605

TO: Peter Enea III, Senior REHS

FROM: Jim Hutzelmann PE, CME
Director of Community Development/Township Engineer

DATE: March 22, 2022

SUBJECT: Septic Grading Review
Block 86, Lot 35 & 36 (28 Diverty Road)
Hopewell Twp., NJ

Health Dept. Permit Ref: 2021-028

Plan Reference for Grading Review:

Septic System Repair Design of Lot 35 & 36 – Block 86, Situated in Hopewell Township, N.J., prepared by Bayer-Risse Engineering, Inc., dated 3/1/22, containing 9 sheets.

Grading Comments:

- ☒ The noted plans are acceptable for grading
- ☐ Revise and Resubmit

2022-028 PD 15139

Page 1 of 9 Pages

HOPEWELL TOWNSHIP HEALTH DEPARTMENT

Block 86 Lot 35 & 36

APPLICATION FOR PERMIT TO ALTER AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM

Form 1 - General Information:

Monika Miga

Township of Hopewell

I. Name of Applicant (print):

II. Applicant's Present Address:

28 Diverity Road, Pennington, NJ 08534

III. Applicant's Phone Number:

Day: 609-851-6689

Night

MAH 21 2022

BUILDING LOCATION MUST BE STAKED. DATE STAKED

Health Department

IV. Type of Permit Needed (Check applicable categories):

- ☐ a. New Construction
☐ c. Alteration / Expansion or Change in Use
☐ e. Repairs (in-kind replacement) / Malfunctioning System
☒ g. Deviation from Standards: (distance to well)

- ☒ b. Alteration / No Expansion or Change of Use
☐ d. Alteration / Malfunctioning System
☐ f. Repairs (in-kind replacement) / Not Malfunctioning
☐ h. New System Installed (existing structure)

V. Location of Project: Street Address

28 Diverity Road

Zip Code 08534

VI. Type of Facility:

☒ Residential ☐ Commercial / Institutional Specify Type of Establishment: _____

VII. Type of Wastes to be Discharged:

☒ Sanitary Sewage

☐ Industrial Wastes

☐ Other - Specify Type: _____

VIII. If d. or e. in 4. above are checked, indicate the type of malfunction and its cause (check all that apply)

- ☐ Contamination of nearby wells or surface water bodies by sanitary sewage or effluent
☐ Ponding or breakout of sanitary sewage or effluent on to the surface of the ground
☐ Seepage of sanitary sewage or effluent into portions of building below ground
☐ Back-up of sanitary sewage, which is not caused by a physical blockage of the internal plumbing
☐ Any manner of leakage observed from components that are not designed to emit sanitary sewage or effluent
☒ Direct discharges to ground water (no zone of treatment)

Describe the cause of the malfunction: aged/deteriorated disposal system

IX. Please expand on Question #4, above, by checking if any of the following apply:

- ☐ A. privy, outhouse, latrine or pit toilet is present, a system must be installed
☒ A system must be upgraded as part of a real estate property transfer
☒ A cesspool has been identified during a real estate property transfer and a conforming system must be installed
☐ A malfunctioning cesspool has been identified and a conforming system must be installed

X. Other Approvals / Certification / Waivers / Exemptions(attach to application):

☐ US Army Corps of Engineers

☐ NJDEP - Bureau of Flood Plain Management

☐ Other - Specify: _____

XI. I hereby certify that the information furnished on this application is true. I am aware that false swearing is a crime in this state and subject to prosecution

Signature of Applicant

Monika Miga

Date 3-14-22

NOTE: The applicant is responsible for obtaining all other required Federal, State or local approvals prior to the commencement of work under this approval, including but not limited to, NJDEP permits to conduct activities in freshwater wetlands, freshwater wetlands transition areas, or flood plain jurisdictions. Failure to obtain these permits prior to conducting regulated activities within these areas may result in removal of the system and or the assessment of significant civil penalties.

FOR HEALTH DEPARTMENT USE ONLY

Application Denied, see attached letter

☒ Application Approved

Application Approved Subject to Approval of NJDEP

4-17-2022 Date of Action

Signature of Authorized Agent:

Name and Title

Peter Eneath

SREHS

EXPIRATION DATE:

4-17-2024

HOPEWELL TOWNSHIP HEALTH DEPARTMENT

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Block 86 Lot 35 & 36

APPLICATION FOR PERMIT TO ALTER AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM Form 2a General Site Evaluation Data

I. Name of Site Evaluator (print): Mark B. Anderson

II. Business Address of Site Evaluator: Bayer-Risse Engineering, Inc.
78 Route 173 West
Suite 6
Hampton, NJ 08827

III. Business Phone Number of Site Evaluator: (908) 735-2255

IV. Special Site Limitations Identified (Check Appropriate Categories):

- | | | |
|--|---|-------------------------------------|
| ☐ Flood Plains | ☐ Bedrock Outcrops | ☐ Wetlands |
| ☐ Excessively Stony | ☐ Disturbed Ground | ☐ Sink Holes |
| ☐ Sand Dunes | ☐ Steep Slopes | |
| ☐ Other - Specify _____ | | |

V. Soil Logs - Enter on Form 2b - Use one sheet for each soil log.

VI. Considerations Relating to Disturbed Ground: ☒ N/A

- a. Type of Disturbance (Check Appropriate Categories):
☐ Filled Area ☐ Excavated Area ☐ Re-graded Area ☐ Subsurface Drains
☐ Other - Specify: _____

- b. Pre-existing Natural Ground Surface
Elevation Relative to Existing Ground Surface: _____
Method of Identification: _____

- c. Suitability of Disturbed Ground
☐ Unsuitable: Objects Subject to Disintegration or Change in Volume
☐ Excessively Coarse
☐ Proctor Test Performed - % Standard Proctor Density = _____

VII. Hydraulic Head Test: ☒ N/A

- a. Hydraulically Restrictive Horizon: Depth Top to Bottom _____
b. Piezometer A: Depth to Bottom: _____
Depth of Water Level (24 hrs.): _____
c. Piezometer B: Depth to Bottom: _____
Depth of Water Level (24 hrs.): _____

d. Witnessed by: _____
Signature _____ Date: _____

VIII. Attachments (Check items included):

- ☒ Site Plan
☒ Key Map Showing Location of Site on USGS Quadrangle or Other Accurate Map
☒ Key Map Showing Location of Site on USDA Soil Survey Map
☐ Other - Specify: _____

IX. I hereby certify that the information furnished on Form 2a of this application (and the attachments thereto) is true and accurate. I am aware that falsification of data is a violation of the Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and is subject to penalties as prescribed in N.J.A.C. 7:14-8.

Signature of Soil Evaluator Mark B. Anderson Date 03-01-2022
Signature of Professional Engineer [Signature] Date 03-01-2022
N.J. License No. 33806 Seal

Block 86 Lot 35 & 36

APPLICATION FOR PERMIT TO ALTER
AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM
Form 2b Soil Log and Interpretation

1.	Log Number	<u>SL 124-1</u>	Method:	☒ Profile Pit	☐ Boring
2.	Soil Log:	Date Recorded:	<u>01-24-2022</u>		
Depth (Inches) Top - Bottom		Munsell Color Name and Symbol; Estimated Textural Class; Estimated Volume % Coarse Fragment, If Present; Structure; Moist or Dry Consistence; Mottling Abundance, Size and Contrast, If Present			
0-4"	Topsoil.				
4-68"	10YR6/6 Brownish Yellow Silt Loam; subangular blocky, friable; <5% gravel; few, fine, faint mottling (10YR7/2 Light Gray) at 48" and below; no seepage.				
68-120"	Nonsoli; fractured shale with 15% fillings; no mottling; slight seepage at 84" and below (rapid seepage with depth).				
>120"	Stop test. Pit Bail 124-1 performed at 120" (24 hr. SWL = 93"; K = 150.2 in/hr)				

- 2a. If mottling give reason for mottling: Regional water table
3. Ground Water Observations:
☒ Seepage - Indicate Depth: 84"
☒ Pit/Boring Flooded Depth after 24 hours = 93"
4. Soil Limiting Zones:
☒ Fractured Rock Substratum - Depth to Top: 68"
☐ Massive Rock Substratum - Depth to Top: _____
☐ Excessively Coarse Horizon - Depth Top to Bottom: _____
☐ Excessively Coarse Substratum - Depth to Top: _____
☐ Hydraulically Restrictive Horizon - Depth Top to Bottom: _____
☐ Hydraulically Restrictive Substratum - Depth to Top: _____
☐ Perched Zone of Saturation - Depth Top to Bottom: _____
☒ Regional Zone of Saturation - Depth to Top: 48"
5. Soil Suitability Classification: IIWf
6. I hereby certify that the information furnished on Form 2b of this application is true and accurate. I am aware that falsification of data is a violation of the Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and is subject to penalties as prescribed in N.J.A.C. 7:14-8.

Signature of Soil Evaluator	<u></u>	Date	<u>03-01-2022</u>
Signature of Professional Engineer	<u></u>	Date	<u>03-01-2022</u>
N.J. License No. <u>33806</u>	Seal		

HOPEWELL TOWNSHIP HEALTH DEPARTMENT

Block 86 Lot 35 & 36

APPLICATION FOR PERMIT TO ALTER
AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM
Form 2b Soil Log and Interpretation

1.	Log Number	<u>SL 124-2</u>	Method:	☒ Profile Pit	☐ Boring
2.	Soil Log:	Date Recorded:	<u>01-24-2022</u>		
Depth (Inches) Top - Bottom		Munsell Color Name and Symbol; Estimated Textural Class; Estimated Volume % Coarse Fragment, If Present; Structure; Moist or Dry Consistence; Mottling Abundance, Size and Contrast, If Present			
<u>0-4"</u>	<u>Topsoil with fine roots.</u>				
<u>4-72"</u>	<u>10YR6/6 Brownish Yellow Silt Loam; subangular blocky, friable; <5% gravel; few, fine, faint mottling (10YR7/2 Light Gray) at 48" and below; no seepage.</u>				
<u>72-120"</u>	<u>Nonsoil; fractured shale with 15% fillings; no mottling; slight seepage at 84" and below (rapid seepage with depth).</u>				
<u>>120"</u>	<u>Stop test.</u>				

- 2a. If mottling give reason for mottling: Regional water table
3. Ground Water Observations:
☒ Seepage - Indicate Depth: 84"
☐ Pit/Boring Flooded Depth after _____ hours = _____
4. Soil Limiting Zones:
☒ Fractured Rock Substratum - Depth to Top: 72"
☐ Massive Rock Substratum - Depth to Top: _____
☐ Excessively Coarse Horizon - Depth Top to Bottom: _____
☐ Excessively Coarse Substratum - Depth to Top: _____
☐ Hydraulically Restrictive Horizon - Depth Top to Bottom: _____
☐ Hydraulically Restrictive Substratum - Depth to Top: _____
☐ Perched Zone of Saturation - Depth Top to Bottom: _____
☒ Regional Zone of Saturation - Depth to Top: 48"
5. Soil Suitability Classification: IIW
6. I hereby certify that the information furnished on Form 2b of this application is true and accurate. I am aware that falsification of data is a violation of the Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and is subject to penalties as prescribed in N.J.A.C. 7:14-8.

Signature of Soil Evaluator	<u><i>Mark B. Anderson</i></u>	Date	<u>03-01-2022</u>
Signature of Professional Engineer	<u><i>J.</i></u>	Date	<u>03-01-2022</u>
N.J. License No. <u>33806</u>	Seal		

HOPEWELL TOWNSHIP HEALTH DEPARTMENT

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Block 86 Lot 35 & 36

APPLICATION FOR PERMIT TO ALTER AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM Form 3a. Soil Permeability Data

Assign a number for each test and a letter for each test replicate. Show test data and calculations on Form 3b, 3c, 3d, 3e, 3f, or 3g. Use one sheet for each separate test or test replicate.

- Summary of Data - Enter data for each test replicate on a separate line.

Type of Test	Test (Number)	Replicate (Letter)	Depth (Inches)	Result*
Pit Boil	PB 124-1		120"	K = 150.2 in/hr

*For tube permeameter, pit bailing, and piezometer tests, report results in inches per hour. For Soil permeability class rating, give soil permeability class number. For percolation test report result in minutes per inch. For basin flooding test report result as positive if basin drains completely within 24 hours of second filling, negative otherwise.

- Design Permeability/Percolation Rate: Specify Test Number: **PB 124-1**
☐ Average of Test Replicates ☒ Single Replicate
☐ Slowest Replicate
- Type of Limiting Zone Identified Test Number

- Attachments (Check items included):

- ☐ Form 3b - Tube Permeameter Test Data - Number of Sheets: _____
- ☐ Form 3c - Soil Permeability Class Rating Test Data - Number of Sheets: _____
- ☐ Form 3d - Percolation Test Data - Number of Sheets: _____
- ☐ Form 3e - Piezometer Test Data - Number of Sheets: _____
- ☒ Form 3f - Pit Bailing Test Data - Number of Sheets: **2**
- ☐ Form 3g - Basin Flooding Test Data - Number of Sheets: _____

- I hereby certify that the information furnished on Form 3a of this application (and the attachments thereto) is true and accurate. I am aware that falsification of data is a violation of the Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and is subject to penalties as prescribed in N.J.A.C. 7:14-8.

Signature of Site Evaluator

Mark B. [Signature]

Date 03-01-2022

Signature of Professional Engineer

[Signature]

Date 03-01-2022

Seal

N.J. License No. 33806

HOPEWELL TOWNSHIP HEALTH DEPARTMENT

Page 6 of 9 Pages

Block 86 Lot 35 & 36

APPLICATION FOR PERMIT TO ALTER AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM

Form 3f. Pit-Bailing Test Data (1 of 2)

ALL DATA MUST BE IN MEASUREMENT UNITS INDICATED (FEET OR INCHES). ONLY ONE PITBAIL TEST PER SHEET.

1. Test Number PB 124-1 Reference Soil Log #: SL 124-1 Date Tested: 01-24-2022
2. Using the reference level established, measure and record the following:
 - Depth to Bottom of Pit, ft, $D_{pit} = \underline{10}$
 - Depth to Water Level after 24 hr Stabilization Period, ft, $D_{water} = \underline{7.75}$
 - Depth to Impermeable Stratum, ft, $D_{stratum} = \underline{10}$
(If depth is unknown assume it to be 1.5 times D_{pit})
 - Height of Water Level above Impermeable Stratum, ft, $H = \underline{2.25}$
($H = D_{stratum} - D_{water}$)
 - Length of Time Interval, min., $T = \underline{varies}$
3. Record the following data in the table below:
 - Time in minutes, enter actual time interval for each measurement taken, t_n , minutes.
 - Depth of Water Level Below Reference Level in inches, d_a
 - Water Surface Dimensions in feet l & w
4. Calculate the following values and enter in the table below:
 - Water Surface Area, ft^2 , A_a
 - Water Level Rise, in, h_r (Subtract current value of d_a from previous value)
 - Average Water Surface Area, ft^2 , A_{av} (take average of A_a and previous A_a)
 - Average Height of Water Level Above Impermeable Stratum, ft, h
(Take average of d_a and previous d_a , convert to ft., and subtract from $D_{stratum}$)
 - Permeability, in/hr, K_a , (Calculate using formula):
 $K_a = (h_r / T) \times (A_{av} / (2.27 \times (H^2 - h^2)) \times 60 \text{ min/hr}$

Time (h:mm)	t_n (min)	d_n (in)	l (ft)	w (ft)	A_n (sf)	h_{rise} (in)	A_{avg} (sf)	h (ft)	K_a (in/hr)
10:18 AM		112.00	3.33	2.83	9.44				
10:20 AM	2	110.00	3.67	2.83	10.39	2.00	9.92	0.75	58.2
10:21 AM	1	108.00	3.92	2.83	11.10	2.00	10.74	0.92	134.5
10:23 AM	2	106.00	4.17	2.83	11.81	2.00	11.45	1.08	77.8
10:25 AM	2	104.00	4.58	2.83	12.99	2.00	12.40	1.25	93.6
10:27 AM	2	102.00	4.92	2.83	13.93	2.00	13.46	1.42	116.4
10:29 AM	2	100.00	5.33	2.83	15.11	2.00	14.52	1.58	150.2

5. Record the Following Data:

- Final Depth of Pit, ft, $D_{pit} = \underline{10}$
- ☒ Check here if testing was stopped due to machine refusal or machine limitations.
{(See step 6 of Pitbail Test NJAC 7:9A-6.5(c))}
- Final Depth to Impermeable Stratum, ft, $D_{stratum} = \underline{10}$
(If no impermeable stratum is encountered, assume $D_{stratum} = D_{pit}$)
- Height of Standpipe Above Reference Level, ft, $h_{pipe} = \underline{N/A}$
- Depth to Water Level after 24 hr Stabilization Period, ft, $D_{water} = \underline{7.75}$
(Take measurements from top of standpipe. Subtract h_{pipe})
(enter 0 if standpipe not used)
- Height of Static Water Level Above Impermeable Stratum, ft, $H = \underline{2.25}$
($H = D_{stratum} - D_{water}$)
- Average Height of Water Level Above Impermeable Stratum, ft, $h = \underline{1.58}$
- (Take average d_a from beginning and end of last time interval recorded in Section 4, convert to ft., and subtract from final $D_{stratum}$.)

6. Re-calculation of K using data from Section 5 above and from final time interval of Section 4:

$$K = (h_{rise} / t_b) \times (A_{sw} / (2.27 \times (H^2 - h^2))) \times 60 \text{ min/hr}$$

$$K = (\underline{2/2}) \times (\underline{14.52} / (2.27 \times (\underline{2.25^2} - \underline{1.58^2}))) \times 60 \text{ min/hr}$$

$$K = \underline{150.2 \text{ in/hr}}$$

7. I hereby certify that the information furnished on Form 3e of this application is true and accurate. I am aware that falsification of data is a violation of the Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and is subject to penalties as prescribed in N.J.A.C. 7:14-8.

Signature of Site Evaluator

Date 03-01-2022

Signature of Professional Engineer

Date 03-01-2022N.J. License No. 33806

Seal

HOPEWELL TOWNSHIP HEALTH DEPARTMENT

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Block 86Lot 35 & 36APPLICATION FOR PERMIT TO ALTER
AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM

Form 4. General Design Data

I. Volume of Sanitary Sewage, gal. 650☒ Residential: No. of Dwelling Units: 1Total No. of Bedrooms: 4☐ Commercial / Institutional - Indicate type of establishment and show method of calculation. If estimate is based on water meter data, indicate source of data, frequency of readings, average daily flow, and maximum recorded daily reading: _____

II. Alterations or Repairs:

a. Reason for Alteration or Repair (Check appropriate categories):

☐ Expansion or Change in Use☒ Upgrade Existing Facilities☒ Correct Malfunctioning System☐ Other - Specify: _____Describe nature of alteration or repairs: install pressure distribution disposal system

III. System Components:

a. Grease Trap Capacity, gal.: _____

Show Calculation Used: _____

b. Ejector/grinder pump or garbage disposal

Existing ☐ Yes ☐ No ☒Proposed ☐ Yes ☐ No ☒

Note: If marked yes, tank and field must be enlarged by 50%

c. Septic Tank Capacities, gal.: 1,300 (Norweco Singulair Green)☒ Single(First) Compartment: 450☒ Second Compartment: 500☒ Third Compartment: 350

d. Effluent Distribution:

Method: ☐ Gravity Flow☐ Gravity Dosing

Dosing Device:

☒ Pump☒ Pressure Dosing

e. Dosing Tank Capacities, gal.

Total Capacity, gal.: 1300Dose Volume, gal.: 162.50Reserve Capacity, gal.: 846.5

f. Laterals

Number: 6Total Length: 180'Diameter: 1.25"Spacing: 3.75'

g. Connecting Pipe

Diameter: 4"Length: 2'

h. Manifold

Diameter: 3"Length: 18.75'i. Disposal Field - Type of Installation: Soil Replacement, Fill EnclosedDesign Permeability (Percolation Rate): 6-20 in/hr

Trenches - Width: _____ Total Length: _____

Bed - Area: 782 SF

j. Seepage Pits:

Design Percolation Rate: _____

Number of Pits: _____

Total Percolating Area Provided: _____

IV. Attachments (Check items included):

☒ General Plan of System Showing Location of All System Components, No Larger Than 8 ½ Inches x 14 ½ inches, Unless Prior Approval Given.☒ X-Sections of Each System Component Including Grease Trap, Septic Tank, Dosing Tank, Disposal Field, Seepage Pits, and Interceptor Drains.☒ Pump Performance Curve☐ Other - Specify: _____

V.

I hereby certify that the information furnished on Form 4 of this application is true and accurate. I am aware that falsification of data is a violation of the Water Pollution Control Act (N.J.S.A. 58:10A-1 et seq.) and is subject to penalties as prescribed in N.J.A.C. 7:148.

Signature of Professional Engineer

N.J. License No. 33806

Seal

Date 03-01-2022

APPLICATION FOR PERMIT TO ALTER AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM

Form 5. Design of Pressure or Gravity Dose System

- Signature of Professional Engineer
N.J. License No. 33806
- 
- Seal
- Date 03-01-2022



TOWNSHIP of HOPEWELL
MERCER COUNTY
DEPARTMENT of HEALTH

201 Washington Crossing Pennington Road Titusville, New Jersey 08560-1410
Phone: 609.737.0120 Fax: 609-737-6836

Septic System Construction Notes

28 Diverdy Rd.

2022-028

Block: 86 Lot: 35436

Installer: Lv12k1

Select Fill Source: Clayton

Notes:

8-8-2022 Bottom of hole OK
Old tanks crushed OK BE

8-9-2022 Top of sand OK PE

8-16-2022 Stone, Pipe, In Section Ports
tanks set on sand, Tanks & connecting line OK, PE
pump & alarm, old tank crushed

28 Divert
96/135
1/24-1/25/2022
Bayer-Lisse

pass

well

100 ft

913

10 ft

90' sec 13

9324m

not 36-48

36-48 not

10 ft

100 ft

well

2622-028

Septic System Alteration Design

for
Township of Hopewell

Monika Miga

May 21 2022

Block 86, Lot 35 & 36 Health Department

28 Diverly Road

Hopewell Twp., Mercer Co., NJ

March 1, 2022

SHEET INDEX	
Sheet #	Sheet Name
MIG-1	Cover Sheet
MIG-2	Key Maps
MIG-3	Existing & Proposed Conditions
MIG-4	Disposal Field Details
MIG-5	Aerobic Treatment Tank Details
MIG-6	Pump Tank Details
MIG-7	Piping Details
MIG-8	Design Notes
MIG-9	General Notes

DESIGN

APPROVED

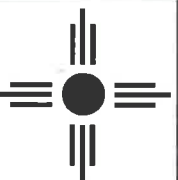
DATE: 4-17-2022

Art Green III

HOPEWELL TOWNSHIP HEALTH DEPT.

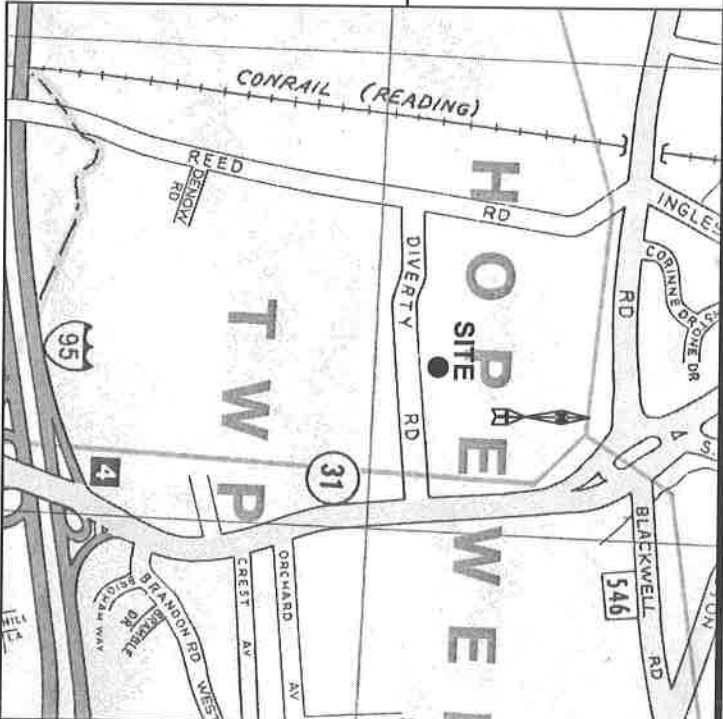
			DWG NO.	BRE JOB #:	DATE:	SHEET:
			M/G-1	22-2449	March 1, 2022	1 of 9
REVISION DESCRIPTION	DATE	APPROVED				

THEODORE H. BAYER, P.E.
 Professional Engineer License No. GEE33806

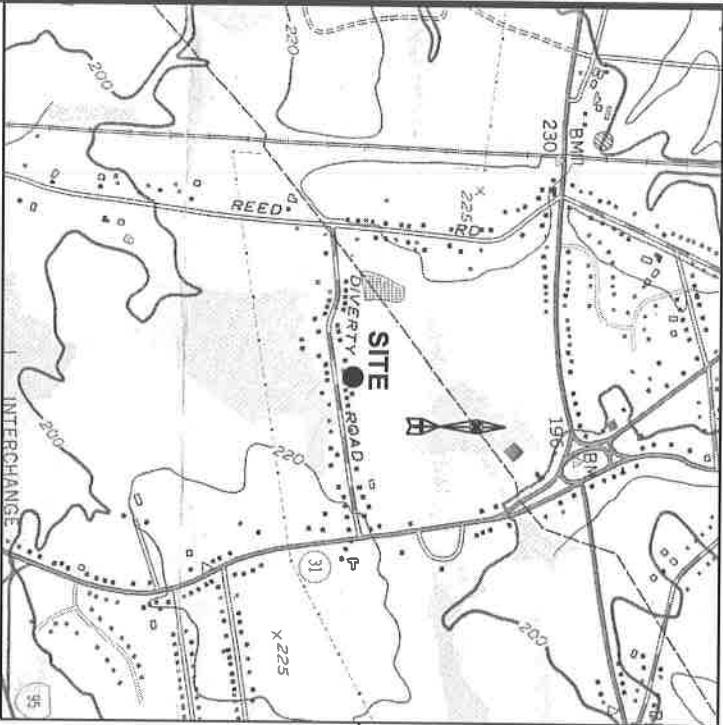


BAYER-RISSE ENGINEERING, INC.
78 ROUTE 173 WEST, SUITE 6
HAMPTON, NEW JERSEY 08827
PHONE 908-735-2255
Certificate of Authorization No. 245G4279-33900

SITE MAP
1:26,000



USGS PENNINGTON, NJ
QUADRANGLE
1:24,000



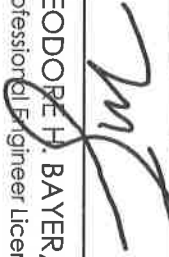
USDA MERCER COUNTY
SOIL SURVEY
1:15,840



Septic System Alteration Design
Key Maps

Monika Miga Block 86, Lot 35 & 36 Hopewell Township, Mercer County, New Jersey 28 Diverty Road

DRAWN BY:	DESIGNED BY:	CHECKED BY:	DWG NO.	BRE JOB#:	SCALE:	DATE:	SHEET:
DA	DA	THB	MIG-2	22-2449	As Noted	March 1, 2022	2 of 9


THEODORE H. BAYER, P.E.
New Jersey Professional Engineer License No. GE33806

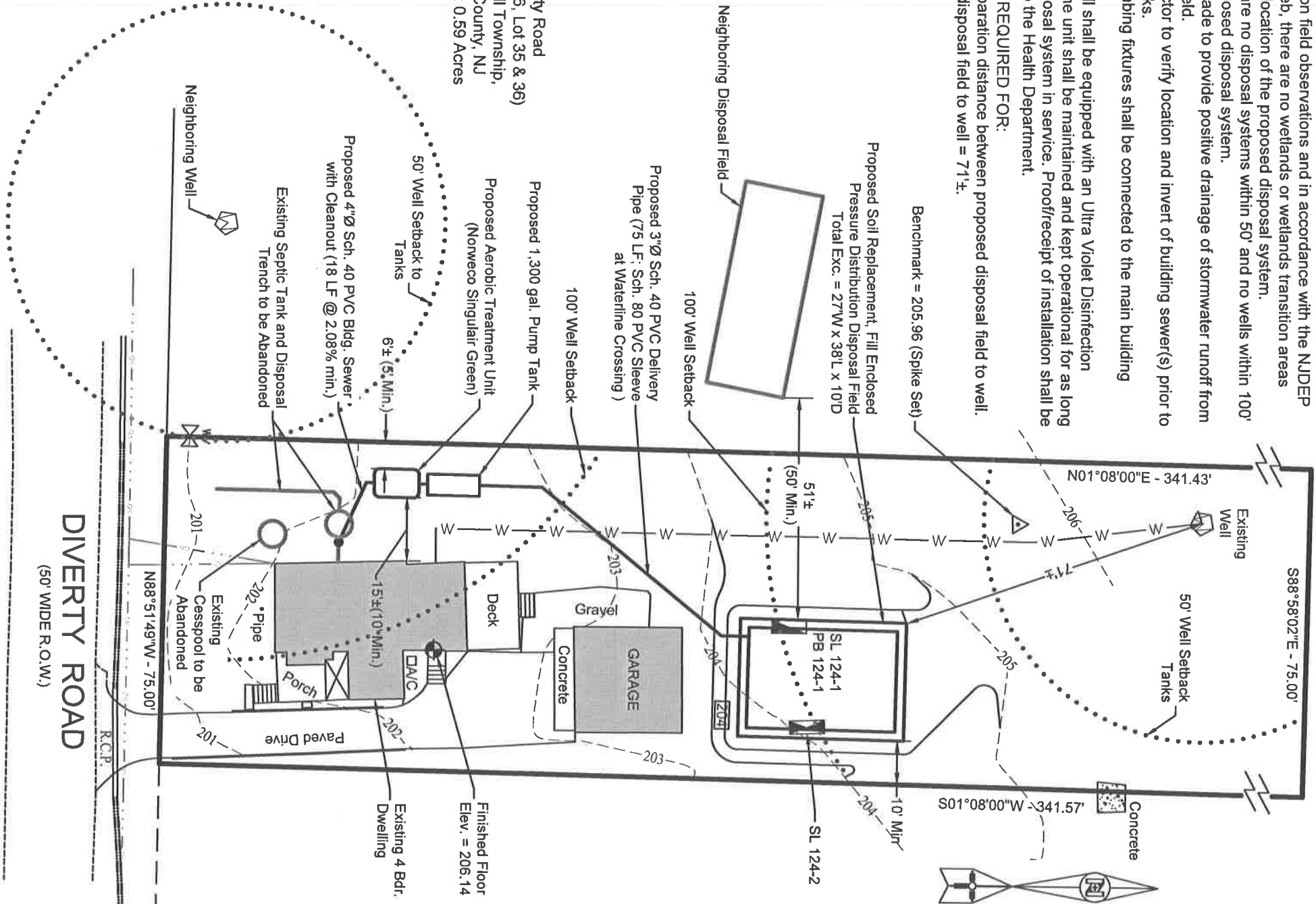

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HAMPTON, NEW JERSEY 08827
PHONE 908-735-2255
Certificate of Authorization No. 24GA27943900

NOTES:

1. Based on field observations and in accordance with the NJDEP N.J-GeoWeb, there are no wetlands or wetlands transition areas within the location of the proposed disposal system.
2. There are no disposal systems within 50' and no wells within 100' of the proposed disposal system.
3. Final grade to provide positive drainage of stormwater runoff from disposal field.
4. Contractor to verify location and invert of building sewer(s) prior to setting tanks.
5. All plumbing fixtures shall be connected to the main building sewer.
6. The well shall be equipped with an Ultra Violet Disinfection System. The unit shall be maintained and kept operational for as long as the disposal system in service. Proof/receipt of installation shall be provided to the Health Department.

WAIVERS REQUIRED FOR:

1. 100' separation distance between proposed disposal field to well.
- Proposed disposal field to well = 71'±.



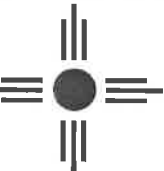
REVISION DESCRIPTION		DATE	APPROVED

Septic System Alteration Design
Existing & Proposed Conditions

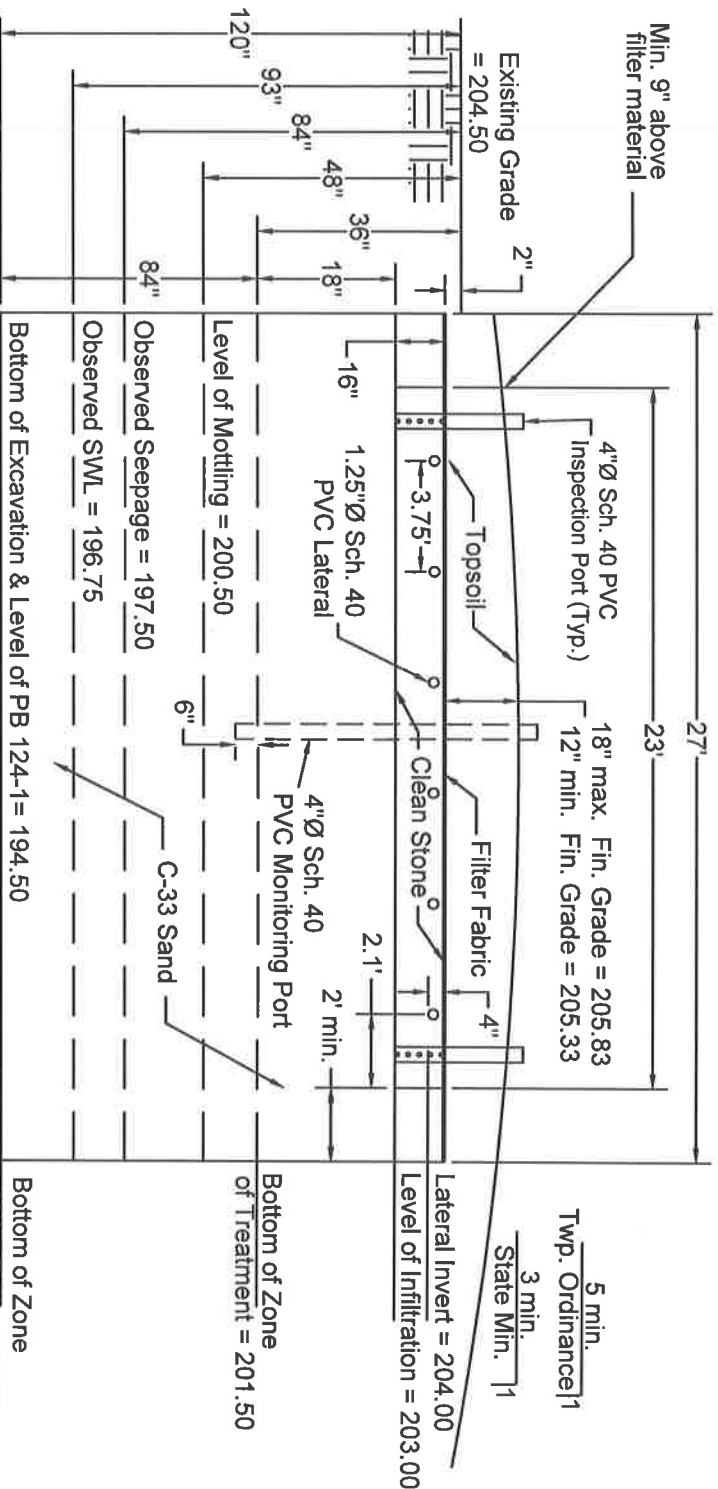
Monika Miga Block 86, Lot 35 & 36 Hopewell Township, Mercer County, New Jersey 28 Diverty Road

DRAWN BY:	DESIGNED BY:	CHECKED BY:	DWG NO.	B/E JOB#:	SCALE:	DATE:	SHEET:
DA	DA	THB	MIG-3	22-2449	As Noted	March 1, 2022	3 of 9

THEODOR H. BAYER, P.E.
New Jersey Professional Engineer License No. GE33806



BAYER-RISSE ENGINEERING, INC.
78 ROUTE 173 WEST, SUITE 6
HAMPTON, NEW JERSEY 08827
PHONE 908-735-2255
Certificate of Authorization No. 24GA27943900

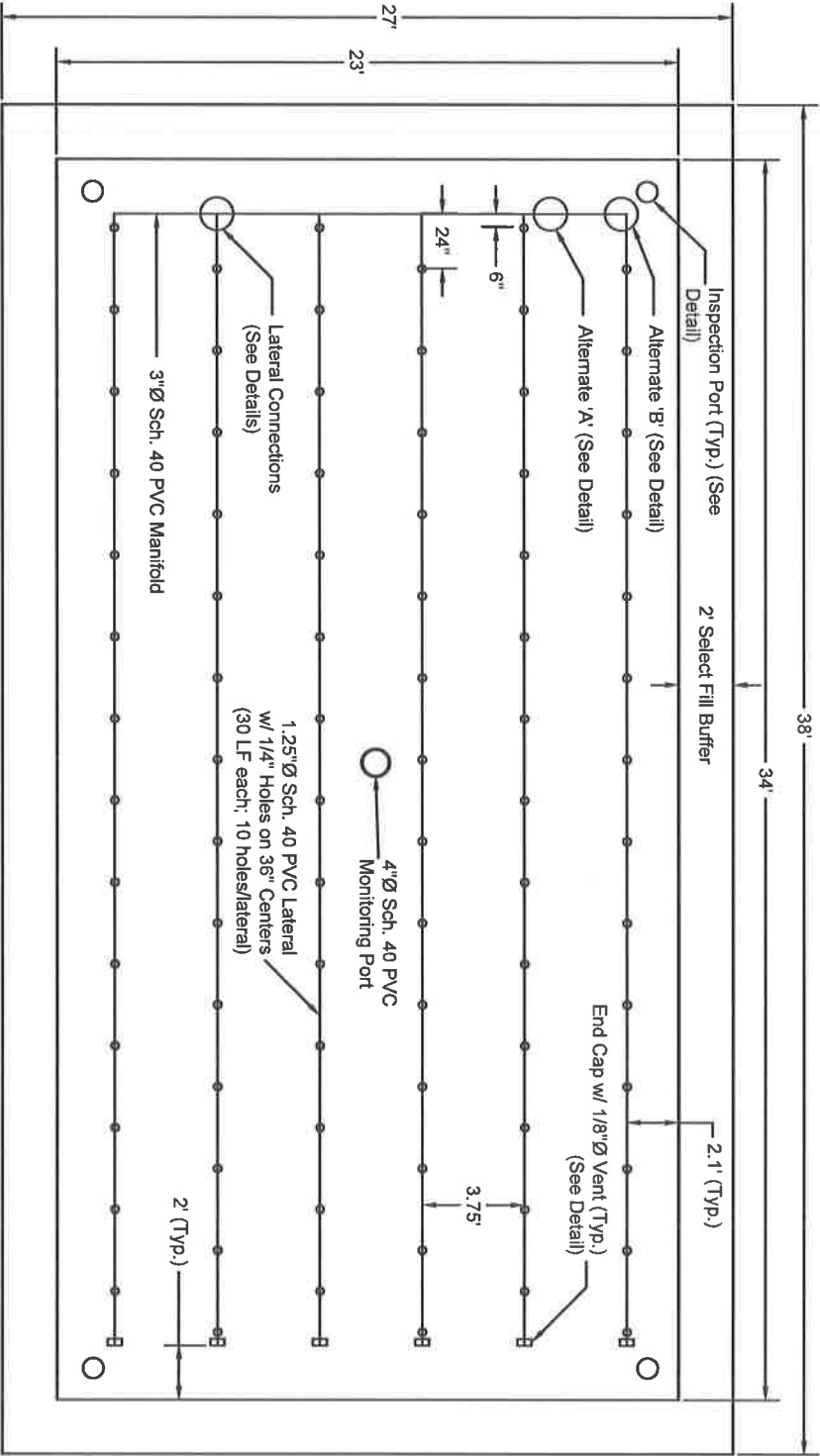


*Filter Fabric shall be a non-woven geotextile product (See General Note #18).

**Clean filter stone shall be NJDOT #3, 4, or 24 (See General Note #22)

DISPOSAL FIELD SECTION VIEW

Not to Scale



Note: Laterals shall be installed approximately level. The maximum slope shall be 2 in. per 100 ft.

DISPOSAL FIELD PLAN VIEW

Not To Scale

REVISION DESCRIPTION		DATE	APPROVED

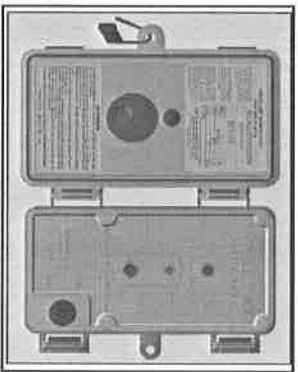
Septic System Alteration Design
Disposal Field Details

Monika Miga		Block 86, Lot 35 & 36			Hopewell Township, Mercer County, New Jersey		28 Diverty Road	
DRAWN BY:	DESIGNED BY:	CHECKED BY:	DWG NO.	BRE JOB#:	SCALE:	DATE:	SHEET:	
DA	DA	THB	MIG-4	22-2449	As Noted	March 1, 2022	4 of 9	

THEODORE H BAYER, P.E.
New Jersey Professional Engineer License No. GE33806



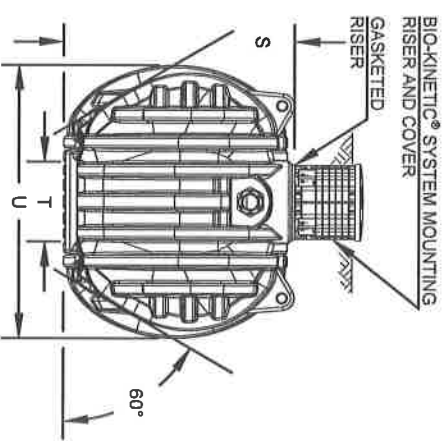
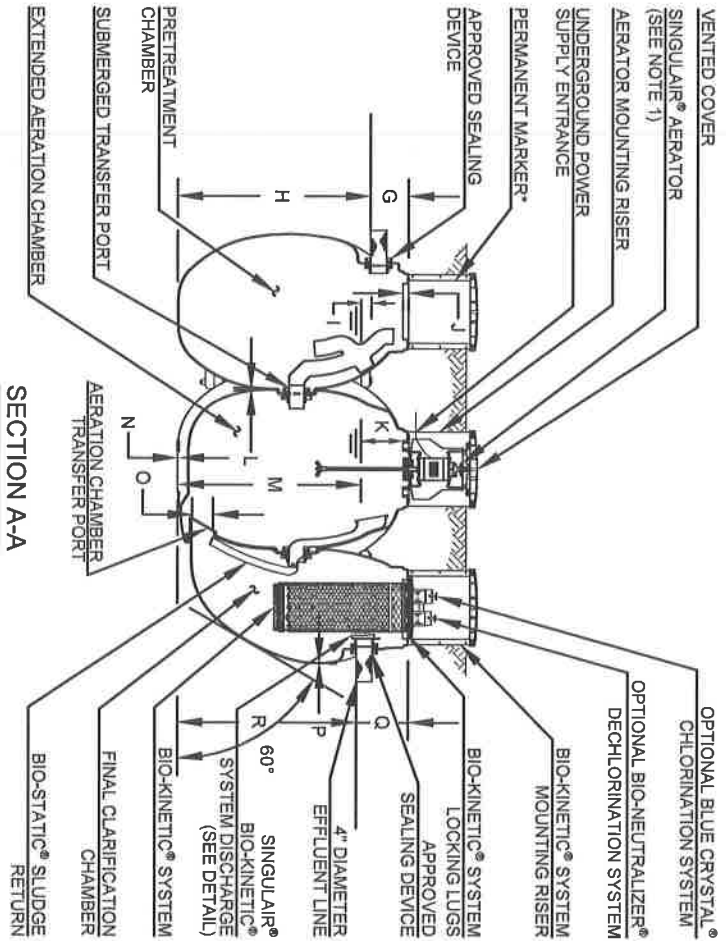
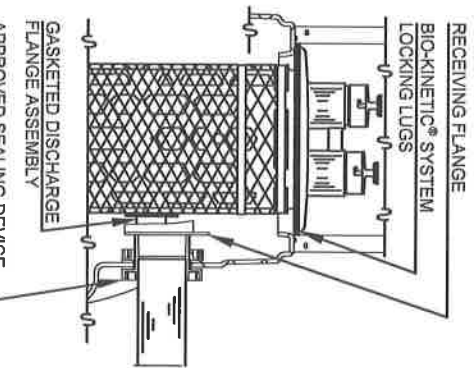
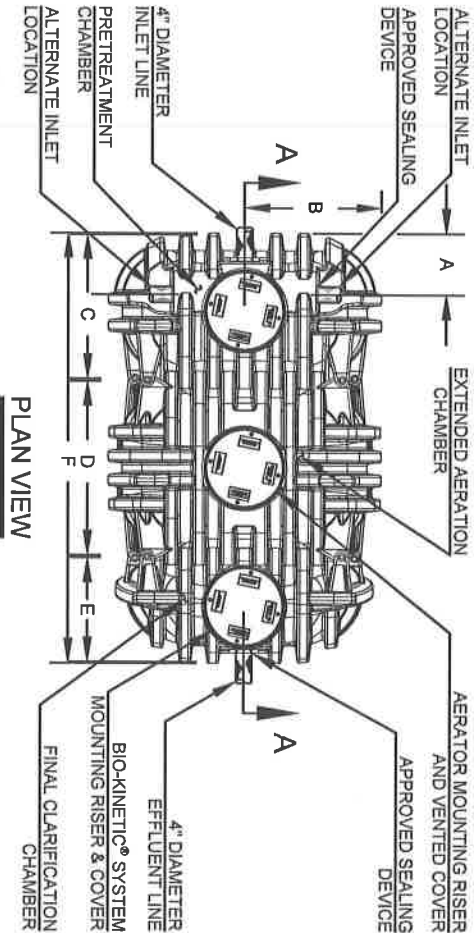
BAYER-RISSE ENGINEERING, INC.
78 ROUTE 173 WEST, SUITE 6
HAMPTON, NEW JERSEY 08827
PHONE 908-735-2255
Certificate of Authorization No. 246427943900



- TANK NOT RATED FOR VEHICULAR TRAFFIC.
- 12" MIN. SAND SHALL BE PLACED ALONG BOTTOM & SIDES OF TANK

SERVICE PRO® CONTROL CENTER
(autodialer/telemetry control as specified by manufacturer)

- GENERAL NOTES:
- SINGULAR® 9 AERATOR, AS TESTED AND ACCEPTED BY NSF.
 - FALL THROUGH SINGULAR PLANT FROM INLET INVERT TO OUTLET INVERT IS FOUR INCHES. INLET INVERT IS TEN AND ONE HALF INCHES BELOW TANK TOP.
 - ON DEEPER INSTALLATIONS, RISERS MUST BE USED TO EXTEND AERATOR MOUNTING RISER AND BIO-KINETIC SYSTEM MOUNTING RISER TO GRADE. INSPECTION COVER ON PRETREATMENT CHAMBER MUST BE DEVELOPED TO WITHIN TWELVE INCHES OF GRADE.
 - REMOVABLE COVERS ON RISERS ARE EACH SECURED TO PREVENT UNAUTHORIZED ACCESS.



NORWECO SINGULAR GREEN AEROBIC TREATMENT UNIT
WITH SERVICE PRO® CONTROL CENTER

Not to Scale

NOTE: TOTAL SYSTEM CAPACITY: 1,300 GALLONS
RATED CAPACITY: 600 GALLONS PER DAY
INLET = 199.00
OUTLET = 198.67

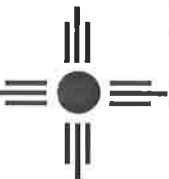
REVISION DESCRIPTION	DATE	APPROVED		

Septic System Alteration Design
Aerobic Treatment Tank Details

Monika Miga Block 86, Lot 35 & 36 Hopewell Township, Mercer County, New Jersey 28 Diverty Road

DRAWN BY: DA	DESIGNED BY: DA	CHECKED BY: THB	DWG NO: MIG-5	BRE JOB#: 22-2449	SCALE: As Noted	DATE: March 1, 2022	SHEET: 5 of 9
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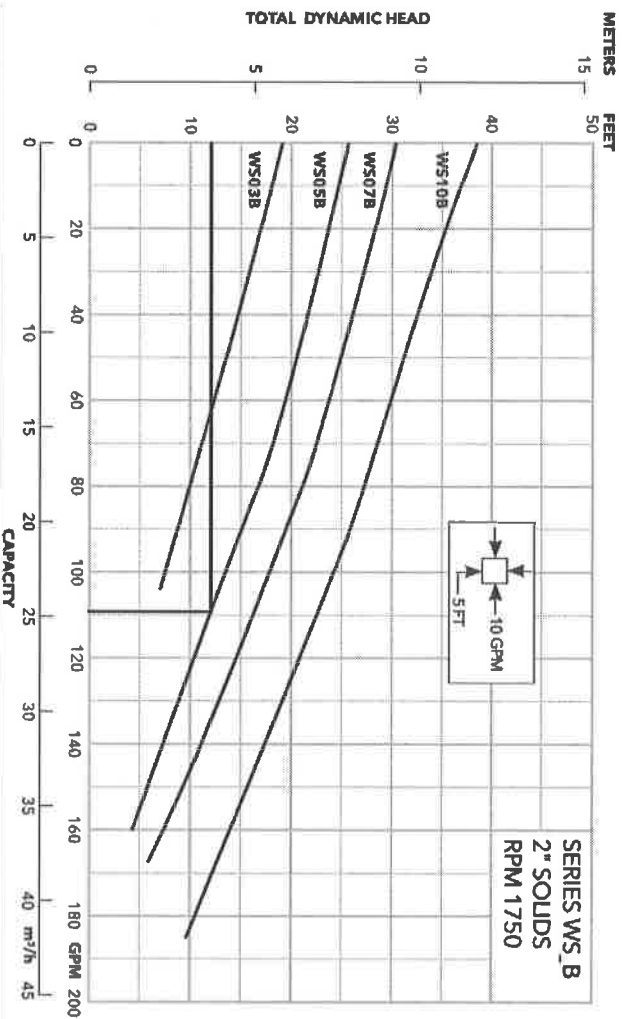
THEODORE H. BAYER, P.E.
New Jersey Professional Engineer License No. GE33806



BAYER-RISSE ENGINEERING, INC.
78 ROUTE 173 WEST, SUITE 6
HAMPTON, NEW JERSEY 08827
PHONE 908-735-2255
Certificate of Authorization No. 246427943000

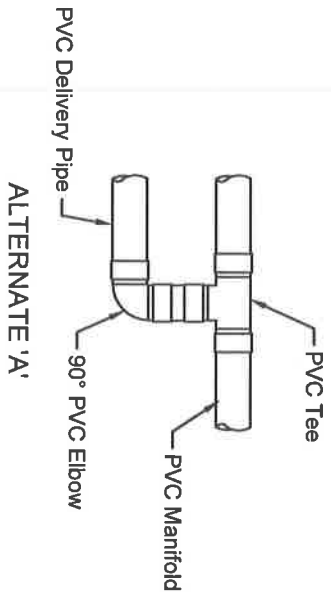
*Note: Contractor to ensure that the Junction Box location and venting requirements conform to local building code requirements, and that all electrical components (i.e. pumps, motor starters, float switches, alarms, wire gages, conduit, junction boxes, etc.) are compatible.

Provide Separate Power & Alarm Conduits to Control Panel in Building. Visual & Audible Alarms Shall be Located on the Panel.

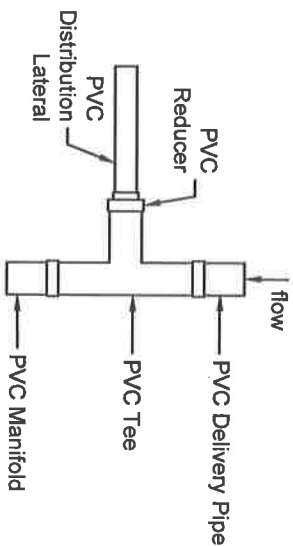


REVISION DESCRIPTION	DATE	APPROVED
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ALTERNATE 'A'

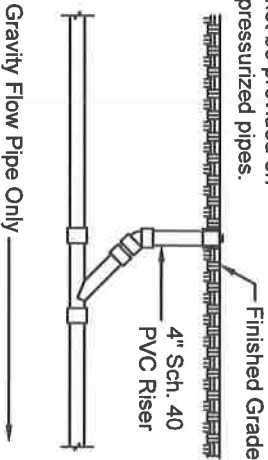


ALTERNATE 'B'

DELIVERY PIPE TO MANIFOLD CONNECTION

Not To Scale

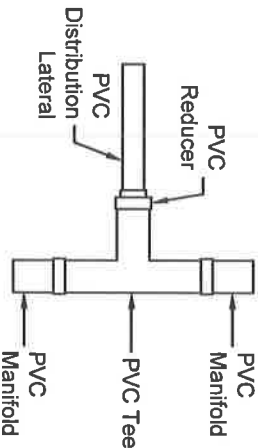
NOTE: Cleanouts shall not be provided on pressurized pipes.



Gravity Flow Pipe Only

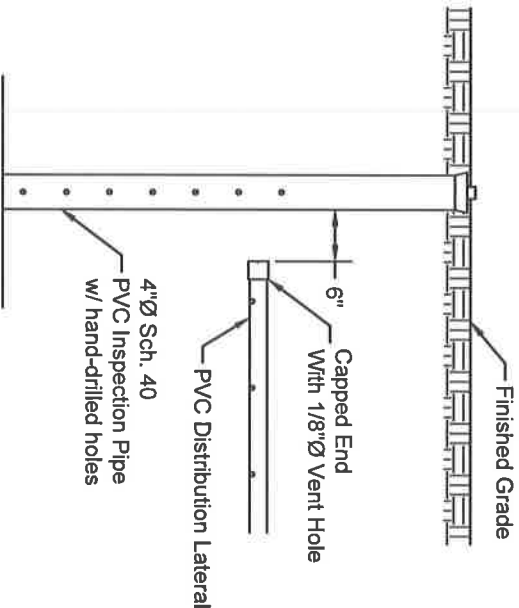
CLEAN OUT DETAIL

Not To Scale



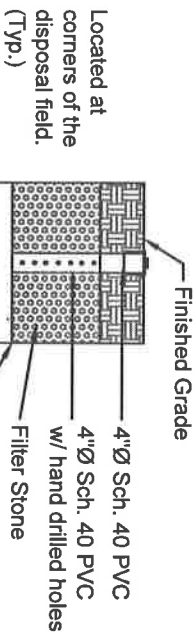
MANIFOLD TO LATERAL CONNECTION

Not to Scale



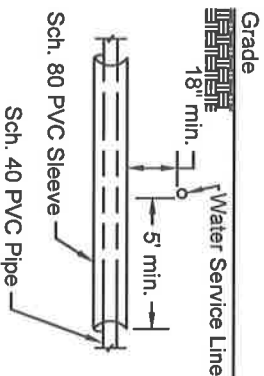
DISTRIBUTION LATERAL DETAIL

Not To Scale



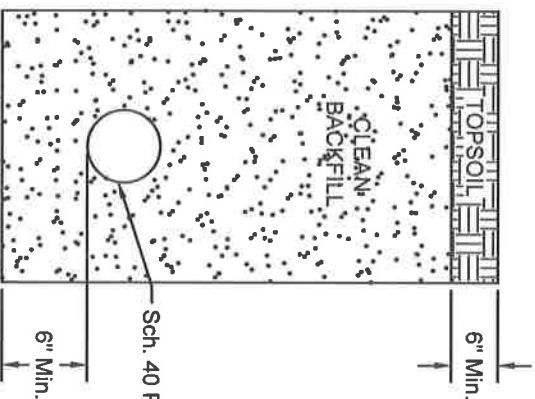
INSPECTION PORT DETAIL

Not To Scale



WATER LINE CROSSING

Not to Scale



Note:
Clean Backfill shall be free of large stone and objectionable material. Clean Backfill shall be compacted in 12" max. lifts.

FORCE MAIN BEDDING DETAIL

Not To Scale

Septic System Alteration Design
Piping Details

Monika Miga		Block 86, Lot 35 & 36		Hopewell Township, Mercer County, New Jersey		28 Diverty Road	
DRAWN BY:	DESIGNED BY:	CHECKED BY:	DWG NO.	BRE JOB#:	SCALE:	DATE:	SHEET:
DA	DA	THB	MIG-7	22-2449	As Noted	March 1, 2022	7 of 9

THEODOR H BAYER, P.E.
New Jersey Professional Engineer License No. GE33806



BAYER-RISSE ENGINEERING, INC.
78 ROUTE 173 WEST, SUITE 6
HAMPTON, NEW JERSEY 08827
PHONE 908-735-2255
Certificate of Authorization No. 246A27943900

SOIL LOGS & DESIGN NOTES

1) SOIL LOGS

SL 124-1	January 24, 2022
0-4"	Topsoil.
4-68"	10YR6/6 Brownish Yellow Silt Loam; subangular blocky, friable; <5% gravel; few, fine, faint mottling (10YR7/2 Light Gray) at 48" and below; no seepage.
68-120"	Nonsoil; fractured shale with 15% fillings; no mottling; slight seepage at 84" and below (rapid seepage with depth).
>120"	Stop test. Pit Bail 124-1 performed at 120" (24 hr. SWL = 93"; K = 150.2 in/hr)

SL 124-2	January 24, 2022
0-4"	Topsoil with fine roots.
4-72"	10YR6/6 Brownish Yellow Silt Loam; subangular blocky, friable; <5% gravel; few, fine, faint mottling (10YR7/2 Light Gray) at 48" and below; no seepage.
72-120"	Nonsoil; fractured shale with 15% fillings; no mottling; slight seepage at 84" and below (rapid seepage with depth).
>120"	Stop test.

2) PERMEABILITY TESTS			
Test Number	Field	Related Soil Log	Depth2
PB 124-1	Primary	SL 124-1	120"
			K = 150.2 in/hr

- 3) DESIGN FLOW
- Existing 4 bedroom dwelling;
 - First Bedroom @ 200 gpd;
 - 3 additional bedroom(s) 150 gpd/bedroom = 450 gpd
 - Total Design flow = 650 gpd

4) DISPOSAL FIELD, SEPTIC TANK, AND DOSING TANK SIZING

- a) The disposal field is a mounded, soil replacement pressure distribution disposal bed system. An aerobic treatment unit shall be provided prior to disposal. N.J.A.C. 7:9A Table 10.2(e) requires a minimum of 0.956 sf/gpd for this type of system. The Hopewell Township Health Department requires a minimum increase of 25% over the design rate. The design permeability for this type of system is 6-20 in/hr.

650 gpd x 0.956 ft²/gpd x 1.25 = 776.75 ft²
Use a 23 ft x 34 ft disposal bed = 782 ft² (27 ft x 38 ft with buffer)

Use one 3" dia. Sch. 40 PVC end manifold system with six (6) 1.25" dia. Sch. 40 PVC laterals, 30' long on 3.75 ft centers (see detail). Laterals shall be hand drilled with 1/4" dia. holes on 3-ft centers. Holes shall be offset by 1.5 ft on adjacent laterals. All holes shall be hand reamed to remove burrs prior to assembly. The pump shall be a Goulds model 3886 (1/2 hp, 115 V, single phase) or approved equal; and shall be capable of delivering a minimum of 70.8 gpm at a total dynamic head of 11.68 ft.

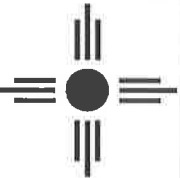
- b) The existing septic tank and cesspool shall be located, pumped and abandoned in place unless otherwise directed by the administrative authority (crushed/demolished or filled with sand). A licensed hauler shall pump the existing tanks. Receipt of septage removed shall be submitted to the local Health Department.
- c) An advanced aerobic treatment unit with a telemetry control panel shall be provided. Per the manufacturer's recommendation, the unit shall be a Norweco Singulair Green. The unit shall be fit with inspection ports and risers flush with grade as necessary. (See Tank Detail)
- d) A 1,300 gallon concrete pump dosing tank with on/off float switches and high level alarm will be provided and will meet all the requirements of N.J.A.C. 7:9A-9.2, 7:9A-8.2e and 7:9A-8.2h. (See Pump Dosing Tank Detail)
- e) Inspection ports shall be placed in the disposal field and shall extend down to the level of infiltration.
- f) A 4" dia. sch. 40 PVC monitoring port with lockable cap shall be placed in the disposal field and shall extend a minimum of six inches (6") below the bottom of the zone of treatment.

REVISION DESCRIPTION	DATE	APPROVED	

Septic System Alteration Design
Design Notes

Monika Miga	Block 86, Lot 35 & 36	Hopewell Township, Mercer County, New Jersey	28 Diverty Road
DRAWN BY: DA	DESIGNED BY: DA	CHECKED BY: THB	DWG NO: MIG-8
			BRE JOB#: 22-2449
			SCALE: As Noted
			DATE: March 1, 2022
			SHEET: 8 of 9

THEODORE H. BAYER, P.E.
New Jersey Professional Engineer License No. GE33806



BAYER-RISSE ENGINEERING, INC.
78 ROUTE 173 WEST, SUITE 6
HAMPTON, NEW JERSEY 08827
PHONE 908-735-2255
Certificate of Authorization No. 24GA27943900

GENERAL NOTES:

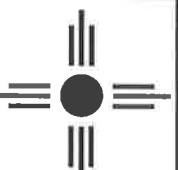
1. This Wastewater disposal system has been designed to be closer in conformance with the requirements of N.J.A.C. 7:9A, Standards for Individual Subsurface Sewage Disposal Systems, and the requirements of the Hopewell Township Health Department. This plan is not a survey and is to be used for construction of the septic system only. It is not intended to be used as a plot plan for construction of any structures or proposed improvements.
2. Property line and topographic information has been obtained from a partial topographic survey prepared by Bohren and Bohren Associates, Inc. dated February 2022 .
3. All soil testing was conducted by Bayer-Risse Engineering, Inc. on January 24, 2022 and witnessed by a representative of Hopewell township.
4. The Engineer and the Health Department shall be notified 48 hours prior to construction so that all inspections may be scheduled. All phases of the construction shall be inspected and approved by the Engineer and Health Department prior to backfilling.
5. Inspection Schedule
 - Stake out and stockpiling of sand
 - Open ditch
 - Sand emplacement, compaction, and percolation rate
 - Stone & Lateral emplacement
 - Tanks and final grading
6. Sand Specifications: C-33 Sand shall have:
 - A coarse fragment content (greater than No. 8 sieve) less than 15% by volume or less than 20% by weight
 - A textural analysis (composition by weight of the size fraction passing the particular sieve as stated):
 - 80%-100% passing No. 8 sieve; 50%-85% passing No. 16 sieve; 25%-60% passing No. 30 sieve; 10%-30% passing No. 50 sieve; 2%-10% passing No. 100 sieve.
 - Permeability from 6 - 20 in./hr. (percolation rate 3-15 min./in.)
7. All sand shall be stockpiled on-site and tested by the Engineer prior to placement into the disposal area.
8. Sand shall be installed in twelve inch (12") maximum lifts and compacted in conformance with N.J.A.C. 7:9A-10.4f(3). After installation and compaction, percolation tests shall be conducted at the level of infiltration in accordance with the number and placement requirements shown in Appendix C of N.J.A.C. 7:9A.
9. No wheeled vehicles are to be driven over any part of the disposal area.
10. The Engineer will inspect the entire installation of the system and provide a Suitable Fill Certification and Record Drawings to the Health Department.
11. Prior to the disposal bed stake out by the Engineer and any construction activities by the installer, the installer shall have all underground utilities located by the responsible utility company(ies). CALL 1-800-272-1000 BEFORE YOU DIG.
12. Construction information is based on topography of plan. Elevations may be modified after final survey.
13. Disposal area shall be graded so that surface runoff is diverted away from the disposal area.
14. The Engineer and the Health Department shall review and approve any deviations or field changes from this design.
15. The installer shall be responsible for obtaining any and all of the required permits prior to construction.
16. After completion of backfilling and final grading, all disturbed areas shall be raked, seeded and mulched to establish a vegetative cover in a manner acceptable to the Administrative Authority.
17. The installer shall ensure that all materials used in the construction of the system are in accordance with N.J.A.C. 7:9A et. seq. and meet the specifications of the design.
18. Filter fabric shall be a non-woven geotextile product (TerraTex SD or approved equal).
19. No trees are to remain within ten feet (10') of the disposal area.
20. Septic tank(s) shall be located a minimum of 10 ft and disposal areas shall be located a minimum of 25 ft from dwellings.
21. Septic tank(s) shall be located a minimum of fifty feet (50'), disposal area(s) shall be located a minimum of one hundred feet (100')**, and building sewer(s) shall be located a minimum of twenty-five feet (25') from a well. **WAIVER REQUIRED
22. Crushed stone filter material shall be NUDOT number 3, 4, or 24 size stone and be free of fines, dust, ashes, or clay.
23. All septic disposal fields shall be constructed at least 25 feet from excavated cuts (drop) greater than 2 feet.
24. There are no off-site wells within 100 ft and no off-site disposal fields within 50 ft of the proposed disposal field.
25. Bayer-Risse Engineering, Inc. makes no representation as to the location and/or adequacy of the internal plumbing and electric service. The limits of this design are from the septic tank to the disposal area.
26. This septic design has been based on the soil conditions and site constraints evident at the time soil testing was performed. If subsurface conditions present at the time of construction vary significantly from those documented during soil testing the contractor shall immediately cease construction and notify the Engineer and the Health Department so that appropriate action may be taken.
27. Garbage disposal units shall not be permitted with this sewage disposal unit. Water softeners shall not discharge into this disposal system.
28. All tanks shall be tested for water tightness upon installation of all tank connections including piping network, manholes and inspection ports as specified by the design.
29. An operation, maintenance and annual monitoring agreement (maintenance contract) shall be secured with an approved contractor provided by the manufacturer's representative of the proposed aerobic treatment unit for as long as the proposed design is installed and operational. All records and agreements shall be provided to the owner and kept with the house and provide a copy of the executed service contract with the administrative authority.
30. The manufacturer and/or the manufacturer's representative of the aerobic treatment unit shall either install or directly oversee the installation of the advanced wastewater pretreatment device.
31. The manufacturer's representative shall provide the aerobic unit with an autodialer or telemetry control device as required.
32. Bayer-Risse Engineering, Inc. is an authorized designer of the aerobic treatment system and is sufficiently knowledgeable of the technology to design the proposed system.
33. A deed notice indicating the required maintenance agreement and technology being utilized shall be filed for the property.

Septic System Alteration Design General Notes

Monika Miga
Block 86, Lot 35 & 36
Hopewell Township, Mercer County, New Jersey
28 Diverty Road

DRAWN BY: <i>DA</i>	DESIGNED BY: <i>DA</i>	CHECKED BY: <i>THB</i>	DWG NO. <i>MIG-9</i>	BRE JOB#: <i>22-2449</i>	SCALE: <i>As Noted</i>	DATE: <i>March 1, 2022</i>	SHEET: <i>9 of 9</i>
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THEODORE H. BAYER, P.E.
New Jersey Professional Engineer License No. GE333806



BAYER-RISSE ENGINEERING, INC.
78 ROUTE 173 WEST, SUITE 6
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