

Permit No. 2019100

Date Issued: 9/9/2019

## Hopewell Township Health Department

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

### PERMIT

Applicant: Alan Wood

Block: 45.00

Lot: 2.00

To: INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM ALTERATION

Location: 12 Old Mill Road

Fee: \$625.00

24 Hour Inspection Notification Required

This permit is NOT transferrable

Authorized By:

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](http://www.hopewelltp.org)



**Public Health**  
Prevent. Promote. Protect.

9/9/2019

Alan Wood  
12 Old Mill Road  
Pennington NJ 08534  
RE: Block: 45.00 Lot: 2.00 – 12 Old Mill 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.

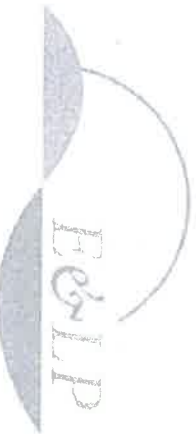
7. No excavating machinery shall be permitted in the excavation during construction. A track-hoe or back-hoe must be used to dig the excavation. Sand must be available at the start of construction to cover the bottom and to protect open fractures etc.
8. All trees within 10 feet of a conventional disposal 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,



Robert B. English  
Health Officer



740 West 3rd Street  
Hightstown, NJ 08520  
www.nj.gov

2016/05

625-8124118-13

OK FOR RECORDING  
AND 8.30.2019

APPLICATION FOR PERMIT TO CONSTRUCT/ALTER  
AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM

Municipality: Hopewell Township Block: 45 Lot: 2

Form 1

1 Name of Applicant (print): Alan Wood

2 Applicant's Present Address: 12 Old Mill Road, Pennington, NJ 08534

3 Applicant's Phone Number: Day: \_\_\_\_\_

BUILDING LOCATION MUST BE STAKED DATE STAKED \_\_\_\_\_

4 Type of permit (Check ALL applicable categories)

☐ a. New Construction

☐ c. Alteration/Expansion or Change in Use

☒ e. Repair (in-kind replacement)/Malfunctioning System

☒ g. Deviation from Standards

☒ b. Alteration / No expansion or change of Use

☒ d. Alteration / Malfunctioning System

☐ i. Repair (in-kind replacement) System is not malfunctioning

☐ h. New system installed (existing structure)

5 Location of Project: 12 Old Mill Road, Pennington, NJ Zip Code 08534  
(street/development)

6 Type of Facility:

☒ Residential - Number of Bedrooms 3

☐ Commercial / Institutional - Specify Type of Establishment \_\_\_\_\_

Expansion Attic: \_\_\_\_\_ Yes ☒ No

7 Type of Waste to be Discharged:

☒ Sanitary Sewage \_\_\_\_\_ Industrial Waste \_\_\_\_\_ Other (Specify) \_\_\_\_\_

8 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 onto the surface of the ground

\_\_\_\_\_ Seepage of sanitary sewage or effluent into portions of building below ground

\_\_\_\_\_ Back-up of sanitary sewage into the building served, 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: Existing system is at the end of its useful life

9 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 upgraded as part of a real property transfer

\_\_\_\_\_ A cesspool has been identified during a real property transfer and a conforming system must be installed

\_\_\_\_\_ A malfunctioning cesspool has been identified and a conforming system must be installed

10 Other Approvals / Certifications / Waivers / Exemptions (Attach to Application)

\_\_\_\_\_ U.S. Army Corps of Engineers

\_\_\_\_\_ N.J.D.E.P. - Bureau of Inland Regulation

\_\_\_\_\_ N.J.D.E.P. - Bureau of Nonpoint Pollution Control

\_\_\_\_\_ N.J.D.E.P. - Bureau of Flood Plain Management

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

Signature of Applicant: \_\_\_\_\_

Date: 29 Aug 2019

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 limited to, NJDEP permits to conduct activities in freshwater wetlands, freshwater wetland transition areas, or flood plain jurisdiction. Failure to obtain these permits prior to conducting regulated activities within these areas may result in removal of the system or the assessment of significant civil penalties.

FOR HEALTH DEPARTMENT USE ONLY

Application Denied - Reason for Denial / Citation of Rules Violated: \_\_\_\_\_

☒ Application Approved

Application Approved Subject to Approval by NJDEP

Date of Action Signature of Agent: \_\_\_\_\_

Name and Title: Robert English

EXPIRATION DATE: 8.30.2019



140 West Main Street  
High Bridge, NJ 08829  
www.eip-inc.com

APPLICATION FOR PERMIT TO CONSTRUCT/ALTER  
AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM

Municipality: Hopewell Township Block: 45 Lot: 2

Form 2a - General Site Evaluation Data Evaluation Date: 8/7/19

1 Name of Site Evaluator (Print): Jacob Rlesser

Address of Site Evaluator: 140 West Main St., High Bridge, NJ 08829

Telephone Number: 908-238-0544

2 Special Site Limitations Identified (Check All applicable categories):

☒ Flood Plains ☐ Bedrock Outcrops ☐ Disturbed Ground ☐ Steep Slopes  
☐ Wetlands ☐ Excessively Stony ☐ Sink Holes ☐ Sand Dunes  
☐ Other (specify) \_\_\_\_\_

3 Soil Logs - Enter on form 2b - Use one form for each soil log

4 Considerations Relating to Disturbed Ground:

Type of Disturbance:

☐ Filled Area ☐ Excavated Area ☐ Regraded Area ☐ Subsurface Drains  
☐ Other (specify) \_\_\_\_\_

Pre-existing Natural Ground Surface: \_\_\_\_\_

Elevation Relative to Existing Ground Surface: \_\_\_\_\_

Method of Identification \_\_\_\_\_

Suitability of Disturbed Ground: \_\_\_\_\_

☐ Unsuitable: Objects subject to disintegration or change in volume

☐ Excessively Coarse \_\_\_\_\_

☐ Proctor Test Performed - % Standard Proctor Density \_\_\_\_\_

5 Hydraulic Head Test:

Hydraulically restrictive horizon depth top to bottom: \_\_\_\_\_

☐ Piezometer A depth to bottom \_\_\_\_\_ Depth of water level (24hrs.) \_\_\_\_\_

☐ Piezometer B depth to bottom \_\_\_\_\_ Depth of water level (24hrs.) \_\_\_\_\_

Witnessed by \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_\_

6 Attachments (Check items included)

☒ Site Plan

☒ Key map showing location of site on a U.S.G.S. quadrangle or other accurate map.

☒ Key map showing location of site on a U.S.D.A. soil survey map.

☐ Other (specify) \_\_\_\_\_

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 Site Evaluator JR Date 8/19/19

Signature and Seal of Professional Engineer JR

License # 24GB04258200 Date 8/19/19



140 West Main Street  
High Bridge, NJ 08529  
www.ealp-inc.com

APPLICATION FOR PERMIT TO CONSTRUCT/ALTER  
AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM

Municipality: Hopewell Township Block: 45 Lot: 2

Form 2b - Soil Log and Interpretation

1 Soil Log #: SL-1 Date of Soil Log: 8/7/19 Method: Test Pit  
2 Log:

| Depth<br>(inches) | Munsell Color Name & Symbol; Estimated Textural Class; Estimated Volume % Coarse<br>Fragments; Structure; Consistence; Mottling Abundance, Size and Contrast   |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 0 - 12"           | Topsoli;                                                                                                                                                       |
| 12 - 50"          | 7.5YR4/4; Clay Loam; 10% Gravel; SAB, Moist, Friable;                                                                                                          |
| 50 - 89"          | 7.5YR3/4; Clay Loam; 30% Gravel, 10% Cobble; Common, Medium, Distinct<br>Mottling, 10YR7/1 in color, 67 - 89" in depth; SAB, Moist, Friable;                   |
| 89 - 132"         | 2.5YR2.5/3; Clay Loam, 30% Gravel, 20% Cobble, 10% Stone; Common, Medium, Distinct<br>Mottling, 10YR7/1 in color, 89 - 132" in depth; SAB, Saturated, Friable; |
| 132 - 148"        | 2.5YR2.5/3; Clay Loam, 20% Gravel, 20% Cobble, 30% Stone; Common, Medium, Distinct<br>Mottling, 10YR7/1 in color, 132 - 136" in depth; SAB, Saturated, Friable |

3 Ground Water Observations:

Seepage Observed - Depth (inches): \_\_\_\_\_  
X Pit Flooded - Depth (inches): 97.5" after 24 hours of observation

4 Soil Limiting Zones (Check ALL applicable categories):

|          |                                                                |
|----------|----------------------------------------------------------------|
| <u>X</u> | Fractured Rock Substratum - Depth to Top: <u>89"</u>           |
| _____    | 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: _____        |
| <u>X</u> | Regional Zone of Saturation - Depth to Top: <u>67"</u>         |

5 Soil Suitability Classification: I

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 Site Evaluator: [Signature] Date: 8/19/19  
Signature and Seal of Professional Engineer: [Signature]  
License #: 24GB04258200 Date: 8/19/19



Municipality: Hopewell Township Block: 45 Lot: 2

Municipality: Hopewell Township Block: 45 Lot: 2

1 Soil Log #: SL-2 Date of Soil Log: 8/7/19 Method: Test Pit  
2 Log: \_\_\_\_\_

1 Soil Log #: SL-2 Date of Soil Log: 8/7/19 Method: Test Pit  
2 Log: \_\_\_\_\_

0 - 13" Topsoil;

7.5YR3/4; Clay Loam; 30% Gravel, 10% Cobble; Common, Medium, Distinct Mottling, 10YR7/1 in color, 60 - 93" in depth; SAB, Moist, Friable

| Soil Limiting Zones (Check ALL applicable categories): |                                                                |
|--------------------------------------------------------|----------------------------------------------------------------|
| X                                                      | Fractured Rock Substratum - Depth to Top: 93"                  |
|                                                        | 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: _____        |
| X                                                      | Regional Zone of Saturation - Depth to Top: 60"                |

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 Site Evaluator: \_\_\_\_\_ Date: 8/19/19

Signature and Seal of Professional Engineer: \_\_\_\_\_ WJ

License #: 24GB04258200 Date: 8/19/19



140 West Main Street  
High Bridge, NJ 08879  
www.ealp-inc.com

APPLICATION FOR PERMIT TO CONSTRUCT/ALTER  
AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM

Municipality: Hopewell Township Block: 45 Lot: 2

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.

1 Data Summary - Use one line for each test replicate.

| Type of Test | Test # | Replicate (letter) | Depth (inches) | Result*      |
|--------------|--------|--------------------|----------------|--------------|
| Pit Bail     | PB-1   |                    | 141"           | K=0.89 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 after second filling, negative otherwise.

2 Design Permeability / Percolation Rate:

☒ Select Fill 6 - 20 in. / hr. or          min./in.  
Test #         

         Average of Test Replicates          Single Replicate          Slowest of Replicates

3 Type of limiting zone identified during permeability testing:

         None ☒ Specify Type          Frac. Rock          Test Number PB-1  
         ☒ Specify Type E.S.H.W.T. Test Number PB-1

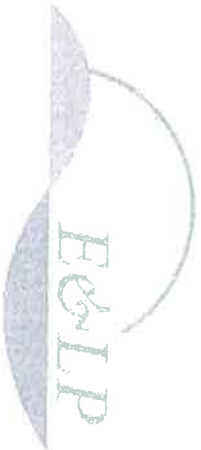
4 Attachment

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

5 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          Date 8/19/19  
Signature and Seal of Professional Engineer           
License # 24GB04258200 Date 8/19/19





140 West Main Street  
High Bridge, NJ 08839  
T 908.238.0544 F 908.238.9572  
  
206 American Metro Blvd  
Suite 124  
Hammonton, NJ 08619  
T 856.451.5432 F 856.238.9572  
  
1001 3rd Street / Philadelphia, PA 19106

APPLICATION FOR PERMIT TO CONSTRUCT/ALTER  
AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM

Municipality: Hopewell Township Block: 45 Lot: 2  
Form 3f - Pit-Baling Test Data (2 Pages) - Continued Reference Soil Log SL-1

5 Record the following data:

Final Depth of pit (ft),  $D_{pit}$ : 11.75

Depth to impermeable stratum (ft)  $D_{stratum}$ : 11.75

(If no impermeable stratum is encountered assume  $D_{stratum} = D_{pit}$ )

Height of standpipe above reference level (ft),  $h_{pipe}$ : 0.00

Depth to water level after 24 hour stabilization period (ft),  $D_{water}$ : 8.13

(Take measurement from top of standpipe. Subtract  $h_{pipe}$ )

Height of static water level above impermeable stratum (ft), H: 3.63

( $H = D_{stratum} - D_{water}$ )

Average height of water level above impermeable stratum (ft),  $h$ : 0.81

(Take average of dn from beginning and end of last time interval recorded in section 4, convert this to feet, subtract from  $d_{stratum}$ )

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

$K = [h_{rise} / T] \times [A_{av} / 2.27(H^2 - h^2)] \times 60 \text{ min/hr}$

$= [3.50 / 60] \times [7.19 / 2.27(13.14^2 - 0.66^2)] \times 60 \text{ min/hr} = \underline{0.89 \text{ in/hr}}$

7 I hereby certify that the information furnished on Form 3f 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: [Signature] Date: 8/14/14

Signature and Seal of Professional Engineer: [Signature]

License #: 24GB04258200 Date: 8/14/14



140 West Main Street  
High Bridge, NJ 08929  
www.ealp-inc.com

### APPLICATION FOR PERMIT TO CONSTRUCT/ALTER

#### AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM

Municipality:

Hopewell Township

Block:

45

Lot:

2

#### Form 4 - General Design Data

1 Volume of Sanitary Sewage (gallons) 500

☒ Residential - Number of Dwelling Units 1

Total Number of Bedrooms 3

☐ Commercial / Industrial - Indicate type of establishment \_\_\_\_\_

Show method of calculation \_\_\_\_\_

If estimate is based on water meter data: \_\_\_\_\_

Indicate source of data \_\_\_\_\_

Frequency of readings \_\_\_\_\_ Average daily flow \_\_\_\_\_ Maximum daily flow \_\_\_\_\_

#### 2 Alterations:

Reason for alteration (check ALL applicable categories):

☐ Expansion or change in use

☐ Upgrade existing facilities

☒ Real estate transaction

☒ Correct malfunctioning system

☐ Other (specify) \_\_\_\_\_

Describe nature of alteration (scope of work):

Install new ATU tank, pump tank and disposal field.

#### 3 System Components

Grease trap \_\_\_\_\_ New \_\_\_\_\_ Existing \_\_\_\_\_ Total capacity (gallons) \_\_\_\_\_

Show calculation \_\_\_\_\_

Septic Tank ☒ New \_\_\_\_\_ Existing \_\_\_\_\_ Total capacity (gallons) 1,320 Gal. Tanks

1st Compartment 400 2nd Compartment 715 3rd Compartment 205

Effluent Distribution: \_\_\_\_\_ gravity flow ☐ gravity dosing ☒ pressure dosing \_\_\_\_\_

Dosing tank: ☒ New \_\_\_\_\_ Existing \_\_\_\_\_ Total capacity (gallons) 1,000

Dose Volume \_\_\_\_\_ Existing \_\_\_\_\_ Reserve Capacity 610 Gal.

Laterals number 12 total length (ft) 198 diameter (in.) 1" spacing (ft) 3'

Connecting pipe (from septic tank): diameter (in) 2" length (ft) 60'

Distribution: \_\_\_\_\_ D-box ☒ Manifold (diameter) 2" length (ft) 15'

Disposal field: Type of installation (i.e. C, SRB, SRE, M, MSR) \_\_\_\_\_ SRE \_\_\_\_\_

Design Permeability / Percolation Rate 6 - 20 in./hr

☒ Disposal Bed: Dimensions (ft) 18' x 37' Total disposal area (ft<sup>2</sup>) 666 S.F.

Disposal Trenches: Total Length (ft) \_\_\_\_\_ Width (ft) \_\_\_\_\_

Seepage Pits: Design percolation rate (min/in) \_\_\_\_\_ Number of Pits \_\_\_\_\_

Total percolating area provided (ft<sup>2</sup>) \_\_\_\_\_

#### 4 Attachments

☒ General plan of system showing location of all system components

☒ Cross-Section of each system component

☒ Pump performance curve

\_\_\_\_\_  
Other (specify) \_\_\_\_\_

5 I hereby certify that the information furnished on Form 4 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 and Seal of Professional Engineer

License #

24GB04258200

Date

8/19/19



140 West Main Street  
High Bridge, NJ 08829  
www.e&lp-inc.com

APPLICATION FOR PERMIT TO CONSTRUCT/ALTER  
AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM

Municipality: Hopewell Township Block: 45 Lot: 2  
Form 5 - Design of Pressure Dosing System

1 Configuration of Distribution Network:

Type of manifold: end ☒ central

Distribution laterals:

number 12 length (ft) 16.5 diameter (in) 1" total lateral volume (gal),  $V_l$  8.1  
hole diameter (in) 1/4" hole spacing 36" lateral spacing (ft) 3'

2 Lateral Discharge Rate:

Design pressure head at distal end of laterals (ft),  $H_p$  2.5'

Hole discharge rate (gpm) 1.18

# of holes per lateral,  $n$  4

Lateral discharge rate (gpm): 4.7

3 Manifold: length (ft) 15' diameter (in) 2" total manifold volume (gal),  $V_m$  2.45

4 System Discharge Rate (gpm): 56.8

5 Dose Volume:

Daily volume of sewage (gal/day),  $Q$  500

Design permeability (in./hr.) 6-20 or percolation rate (min./in.)         

Total Volume of delivery pipe (gal),  $V_p$  9.8

Internal volume of distribution network (gal),  $V = V_p + V_m + V_l$  20.3

Dose Volume (gal),  $V_d$  140

6a Pump Selection:

Delivery pipe: diameter (in) 2" length (ft) 60'

Friction loss in delivery pipe (ft),  $H_f$  3.6

Elevation head (ft),  $H_e$  3.3

Total operating head (ft),  $H_t = H_p + H_f + H_e =$  9.4

Pump Model: Goulds: WS0311B Rated Horsepower 1/3

Pump discharge rate at total operating head (gpm) 85

Calculation of distance of pump-on switch above pump off switch:

$d$  (inches) =  $(V_d + V_{op} + V_{pd}) \times (1 \text{ ft}^3 / 7.48 \text{ gal}) \times (12 \text{ in} / 1 \text{ ft}) / (A)$

= (125 + 20.3 + 3) x (1 ft<sup>3</sup> / 7.48 gal) x (12 in / 1 ft) / (50) = ~ 4.50 inches

6b Siphon Elevation:

Diameter of delivery pipe (in)          Length of delivery pipe (ft)         

Friction loss in delivery pipe (ft),  $H_f$           Velocity head (ft),  $H_v$          

Total operating head (ft),  $H_t = H_p + H_f + H_v =$          

Elevation of lateral invert          Elevation of siphon invert         

7 I hereby certify that the information furnished on Form 5 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 and Seal of Professional Engineer

License # 24GB04258200

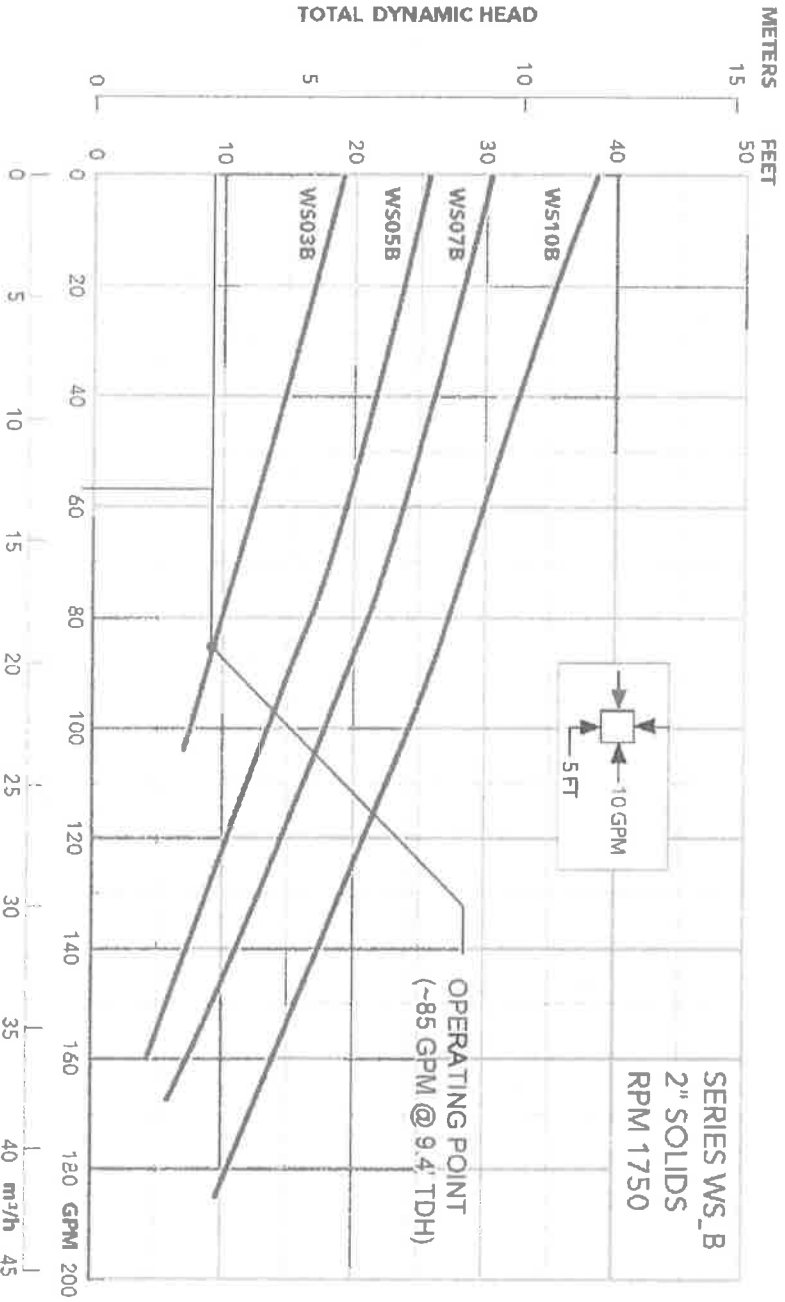
Date 8/19/19

# Goulds Water Technology

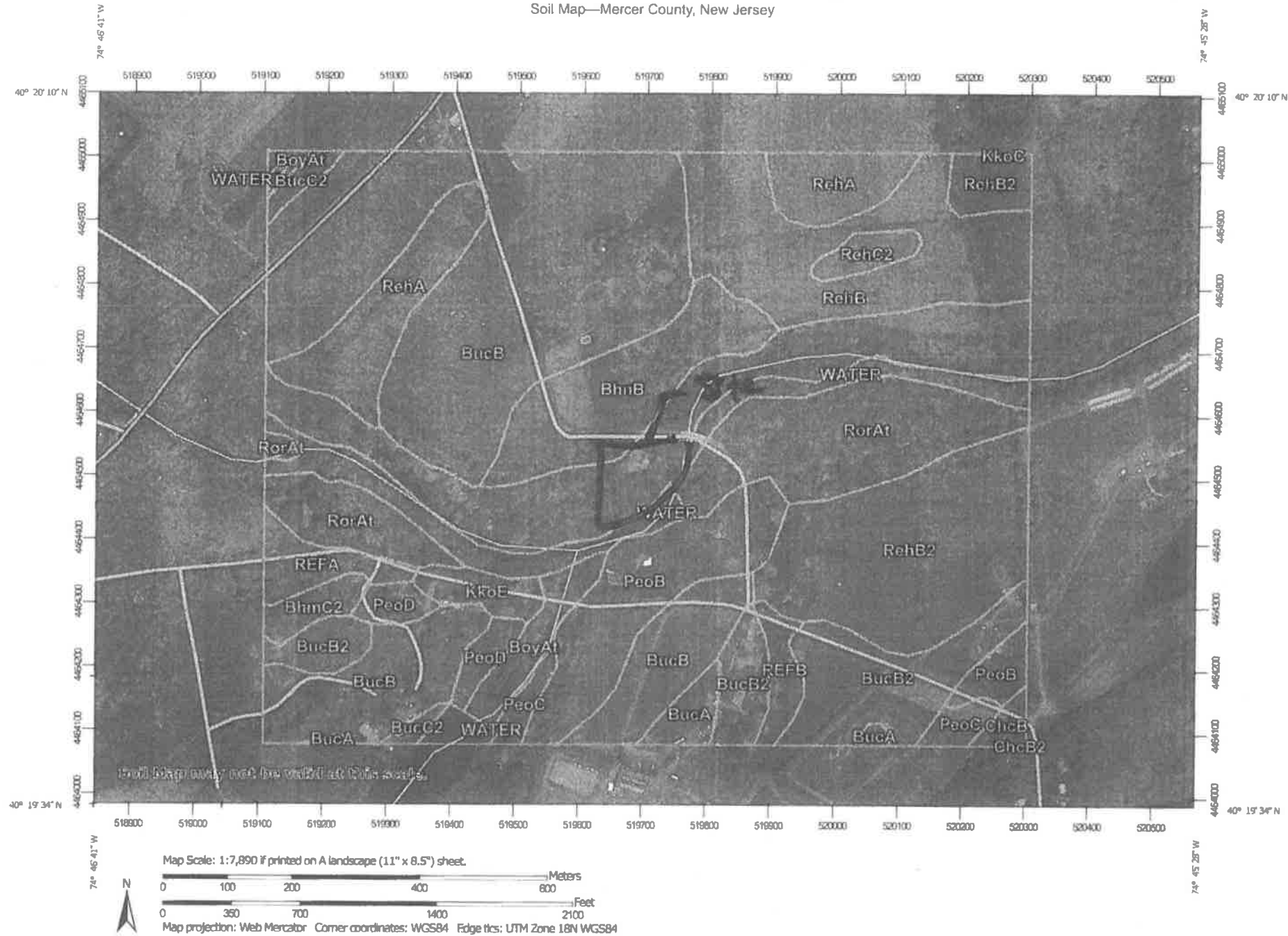
Wastewater

## MODELS

| Order Number | HP   | Phase | Volts | RPM  | Impeller Dia. (In.) | Max. Amps | LRA  | KVA Code | Full Load Motor Eff. | Resistance Start | Line-Line | Wt. (Lbs.) |
|--------------|------|-------|-------|------|---------------------|-----------|------|----------|----------------------|------------------|-----------|------------|
| WS0311B      |      |       | 115   | *    |                     | 10.7      | 30.0 | M        | 54                   | 11.9             | 1.7       |            |
| WS0318B      | 0.33 |       | 206   |      | 4.69                | 6.8       | 19.5 | K        | 51                   | 9.1              | 4.2       | 63         |
| WS0312B      | *    | *     | 230   |      |                     | 4.9       | 14.1 | I        | 53                   | 14.5             | 8.0       |            |
| WS0511B      |      |       | 115   |      |                     | 14.5      | 31.1 | J        | 55                   | 9.3              | 1.4       |            |
| WS0518B      |      |       | 208   |      |                     | 8.0       | 19.5 | K        | 51                   | 9.1              | 4.2       |            |
| WS0512B      |      |       | 230   |      |                     | 7.3       | 16.5 | J        | 54                   | 11.7             | 5.6       |            |
| WS0538B      | 0.5  |       | 200   |      | 5.00                | 3.8       | 12.3 | K        | 75                   | NA               | 6.7       | 65         |
| WS0532B      |      |       | 230   |      |                     | 3.3       | 9.7  | K        | 75                   | NA               | 9.9       |            |
| WS0534B      |      | 3     | 460   |      |                     | 1.7       | 4.9  | K        | 75                   | NA               | 39.4      |            |
| WS0537B      |      |       | 575   |      |                     | 1.4       | 4.3  | K        | 68                   | NA               | 47.8      |            |
| WS0718B      |      | 1     | 208   | 1750 |                     | 11.0      | 39.0 | K        | 65                   | 2.6              | 1.4       |            |
| WS0712B      |      |       | 230   |      |                     | 9.4       | 24.8 | J        | 57                   | 4.8              | 2.3       |            |
| WS0738B      | 0.75 |       | 200   |      | 5.38                | 4.1       | 21.2 | H        | 74                   | NA               | 4.3       |            |
| WS0732B      |      |       | 230   |      |                     | 3.6       | 17.3 | J        | 76                   | NA               | 5.6       |            |
| WS0734B      |      | 3     | 460   |      |                     | 1.8       | 8.9  | J        | 76                   | NA               | 22.4      |            |
| WS0737B      |      |       | 575   |      |                     | 1.5       | 7.3  | J        | 71                   | NA               | 29.2      | 85         |
| WS1018B      |      | 1     | 208   |      |                     | 14.0      | 39.0 | K        | 65                   | 2.6              | 1.4       |            |
| WS1012B      |      |       | 230   |      |                     | 12.3      | 30.5 | H        | 60                   | 4.3              | 1.8       |            |
| WS1038B      |      |       | 200   |      | 5.75                | 6.0       | 21.2 | H        | 74                   | NA               | 4.3       |            |
| WS1032B      | 1    |       | 230   |      |                     | 5.8       | 17.3 | J        | 76                   | NA               | 5.6       |            |
| WS1034B      |      | 3     | 460   |      |                     | 2.9       | 8.9  | J        | 76                   | NA               | 22.4      |            |
| WS1037B      |      |       | 575   |      |                     | 2.4       | 7.3  | J        | 71                   | NA               | 29.2      |            |



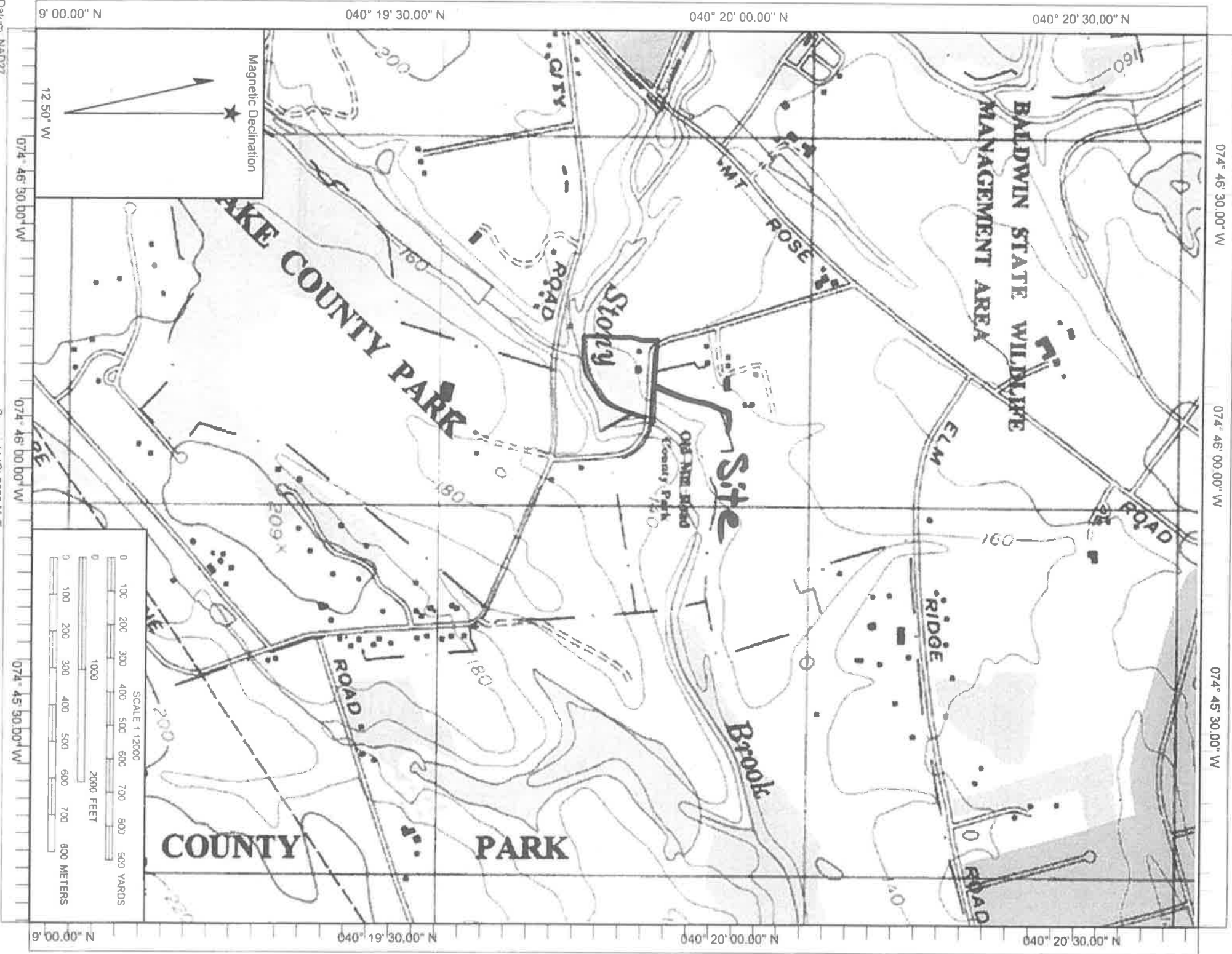
# Soil Map—Mercer County, New Jersey



Natural Resources  
Conservation Service

Web Soil Survey  
National Cooperative Soil Survey

8/15/2019  
Page 1 of 4





# TOWNSHIP of HOPEWELL

MERCER COUNTY

## DEPARTMENT OF HEALTH

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

Phone: 609.737.0120 Fax: 609.737-6836 [www.hopewelltp.org](http://www.hopewelltp.org)



**Public Health**  
Prevent. Promote. Protect.

### Septic System Inspection Notes

Bloc 45.00 Lot 2.00 - 12 Old Mill Road

Installer:

*Tomaro*

Select Fill Source:

*Phoenix*

Notes:

*9-18-2019 Bottom of hole, some Seepage  
Soil consistent with Soil testing OK PE*

*09-26-2019 TDR of Sand OK PE*

*09-27-2019 Tanks, connecting line, Stone, P.P.  
fabric Dosing, old tank pumped & crushed. OK PE*

*10-8-2019 Pump & Plocats OK*

12 Old Mill Rd.

45/2

8/7-8/8/2019  
EIP Pass

Creek

136

13 1/4" Deep



SL Seepage 107"

nothing.

60"

24hr 97 1/2

1135

6

W

141"

1140

16

30

139

1145

26

36

135

1150

28

30

134

1155

29

30

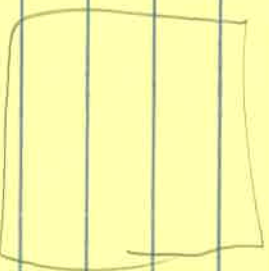
133 1/2

1205

31

30

133



11240

**SURVEY REFERENCE:**  
PLAN REFERENCES THE  
TOPOGRAPHIC SURVEY  
PREPARED BY E&LP DATED  
AUGUST 2019.



**NOTES:**  
(22'X41' W/ BUFFER)  
NO FOUNDATION DRAINS EXIST OR ARE PROPOSED.  
NO KNOWN UNDERGROUND STORAGE TANKS ARE PRESENT ON THE PROPERTY.  
THERE ARE NO OFFSITE WELLS WITHIN 200' OF THE PROPOSED DISPOSAL FIELD. THERE ARE NO DISPOSAL FIELDS WITHIN 200' OF THE PROPOSED DISPOSAL FIELD.  
ALL TREES WITHIN 10' OF THE DISPOSAL FIELD TO BE REMOVED.  
PRIOR DISPOSAL SYSTEM TO BE ABANDONED IN PLACE IN ACCORDANCE WITH HEALTH DEPARTMENT STANDARDS.  
THE SEPTIC SYSTEM HAS BEEN DESIGNED IN A MANNER THAT WILL PREVENT ANY INCREASE IN STORMWATER RUNOFF TO OR PONDING ON ADJOINING PROPERTIES AS A RESULT OF THE INSTALLATION OF THE SYSTEM.  
GARBAGE DISPOSALS, SUMP PUMPS, AND EJECTOR PUMPS CANNOT BE USED WITH THIS SEPTIC SYSTEM.  
SEPTIC SYSTEM AND ENTIRE PROPERTY IS LOCATED WITHIN FLOOD HAZARD AREA. PROJECT COMPLIES WITH A PERMIT-BY-RULE FOR REPAIR OF AN EXISTING FEATURE WITH NO CHANGE IN FINISHED GRADE ELEVATION.

**DESIGN**  
**APPROVED**  
**HOPEWELL TOWNSHIP HEALTH DEPT**  
**DATE: 8.19.19**

TITLE:

WOOD RESIDENCE  
INDIVIDUAL SEWAGE DISPOSAL SYSTEM  
HOPEWELL TOWNSHIP, MERCER COUNTY, NJ



140 WEST MAIN STREET, HIGH BRIDGE, NJ 08629  
(908) 238-0544 FAX: (908) 238-9572  
C.O.A. #: 24GA28021500  
A PROFESSIONAL ASSOCIATION

LOCATION:

12 OLD MILL ROAD  
BLOCK 45 LOT 2  
HOPEWELL TOWNSHIP  
MERCER COUNTY, NJ

DATE: 8/17/19

PROJECT NO.: 0119275

FILENAME: SITE.DWG

WAYNE INGRAM, P.E. LICENSE #24G904258200 DATE 8/19/19  
PROFESSIONAL ENGINEER

DESIGNED BY: TB

CHECKED BY: WJI

NO.

REVISION

BY

DATE

SCALE: 1" = 50'

SHEET NO.: 1 OF 6

GENERAL NOTES

1. ALL CONSTRUCTION PRACTICES AND PROCEDURES SHALL BE IN COMPLIANCE WITH N.J.A.C. 7:9A.
2. ALL CONSTRUCTION PRACTICES AND PROCEDURES SHALL BE IN COMPLIANCE WITH THE MERCER COUNTY (AND/OR HOPEWELL TOWNSHIP) BOARD OF HEALTH.
3. THE DESIGN HAS BEEN BASED UPON THE RESULTS OF SOIL TESTING IN THE LOCATIONS SHOWN ON THE PLAN. THE ENGINEER OR CONTRACTOR SHALL NOT BE RESPONSIBLE FOR ALTERATIONS REQUIRED DUE TO CONDITIONS NOT VISIBLE OR IDENTIFIED DURING SOIL TESTING.

EXCAVATION

1. EXCAVATION FOR THE DISPOSAL FIELD SHALL BE IN ACCORDANCE WITH THE FOLLOWING PROCEDURES:
  - a. ADEQUATE MEASURES SHALL BE USED TO INSURE THAT THE BOTTOM OF THE PIT IS LEVEL.
  - b. IN SOIL TEXTURES OTHER THAN SANDS OR LOAMY SANDS, EXCAVATION WHICH EXPOSES THE INFILTRATIVE SURFACE OF THE DISPOSAL FIELD SHALL NOT BE CARRIED OUT WHEN THE SOIL MOISTURE CONTENT IS ABOVE THE LOWER PLASTIC LIMIT. THIS MEANS THAT WHEN A SMALL LUMP OF SOIL, TAKEN FROM THE DEPTH OF THE PROPOSED EXCAVATION, CAN BE ROLLED OUT WITH THE FINGERS TO FORM A WIRE OR ROD, ONE-EIGHTH OF AN INCH IN THICKNESS, AND DOES NOT CRUMBLE WHEN HANDLED, THE SOIL IS TOO WET TO PROCEED WITH THE EXCAVATION.
  - c. EXCAVATION SHALL BE CARRIED OUT IN A MANNER THAT WILL AVOID UNNECESSARY COMPACTION OF THE SEEPAGE PIT BOTTOM AND SIDE WALLS. HEAVY EQUIPMENT SUCH AS BALLODZERS OR FRONT-END LOADERS SHALL NOT BE DRIVEN OVER THE EXPOSED INFILTRATIVE SURFACE OF THE SEEPAGE PIT. EXCAVATION SHOULD BE CARRIED OUT WITH A BACKHOE OPERATING FROM OUTSIDE THE PERIMETER OF PREVIOUSLY EXCAVATED PORTIONS OF THE PIT.
  - d. ANY SWEPT OR COMPACTED SOIL SURFACES WHICH HAVE BEEN PRODUCED ON THE BOTTOM OR SIDEWALLS OF THE EXCAVATION SHALL BE REMOVED TO EXPOSE A FRESH SOIL SURFACE WHICH IS ROUGH AND UNEVEN.
  - e. WORK SHOULD BE SCHEDULED SO THAT THE BOTTOM AND SIDEWALLS OF THE EXCAVATION WILL NOT BE EXPOSED TO RAINFALL OR WIND-BLOWN SILT BETWEEN THE TIME OF EXCAVATION AND THE TIME OF FINAL INSPECTION AND BACKFILLING. ANY LOOSE SOIL OR DEBRIS WHICH IS WASHED INTO OR OTHERWISE DEPOSITED WITHIN THE EXCAVATION AS A RESULT OF THE EXCAVATION REMAINING OPEN TO THE ELEMENTS SHALL BE CAREFULLY REMOVED PRIOR TO BACKFILLING.

CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LINES, ELEVATIONS, AND MEASUREMENTS, EXERCISING PRECAUTION TO VERIFY ALL DIMENSIONS SHOWN ON DRAWING.
  2. THESE DRAWINGS DO NOT INCLUDE THE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. THE CONTRACTOR SHALL BE RESPONSIBLE TO INSURE "ON THE JOB" SAFETY FOR HIS EMPLOYEES, EMPLOYEES OF THE OWNER AND ALL OTHER PERSONS HAVING AUTHORIZED OR UNAUTHORIZED ACCESS TO THE WORK AND THE PUBLIC. CONTRACTOR SHALL PERFORM HIS WORK IN A SAFE MANNER AND IN COMPLIANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.
  3. THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER AS PRESCRIBED IN N.J.A.C. 7:9A OR WHENEVER CONSULTATION, CLARIFICATION OR INSPECTIONS ARE REQUIRED. THE CONTRACTOR SHALL CONTACT THE ENGINEER PRIOR TO EXCAVATION TO DISCUSS SPECIFIC REQUIREMENTS RELATIVE TO EXCAVATION, PLACEMENT AND CERTIFICATION OF FILL, ETC.
  4. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGN ENGINEER SHOULD DEPARTURES FROM THE APPROVED DESIGN BECOME NECESSARY DUE TO CIRCUMSTANCES WHICH ARISE DURING CONSTRUCTION.
  5. DRAINAGE FROM BASEMENT FLOORS, FOOTINGS OR ROOFS SHALL NOT ENTER THE DISPOSAL SYSTEM AND SHALL BE DIVERTED AWAY FROM THE AREA OF THE DISPOSAL FIELD. BACKWASH FROM WATER SORTERS SHALL NOT BE DISPOSED OF WITHIN THE DISPOSAL SYSTEM.
  6. THIS SET OF PLANS HAS BEEN PREPARED FOR THE PURPOSES OF MUNICIPAL, AND AGENCY REVIEW AND APPROVAL. THIS SET OF PLANS SHALL NOT BE UTILIZED AS CONSTRUCTION DOCUMENTS UNTIL ALL CONDITIONS OF APPROVAL HAVE BEEN SATISFIED ON THE DRAWING AND EACH DRAWING HAS BEEN REVISED TO INDICATE "ISSUED FOR CONSTRUCTION."
  7. BEFORE EXCAVATING IN THE PROJECT AREA, THE CONTRACTOR IS TO VERIFY THE LOCATION OF ANY UNDERGROUND UTILITIES (GAS MAINS, ELECTRICAL LINES, TELEPHONE LINES, WATER AND SEWER MAINS, ETC.) THAT INTERFERE WITH CONSTRUCTION. SHOULD UNDERGROUND STRUCTURES OR FACILITIES INTERFERE WITH PROJECT CONSTRUCTION, THE ENGINEER SHALL BE NOTIFIED BEFORE PROCEEDING WITH WORK. THE CONTRACTOR SHALL NOTIFY ALL UNDERGROUND UTILITY COMPANIES 3 DAYS PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION FOR ACCURATE FIELD LOCATIONS. FOR UTILITY MARKOUT, CALL 1-800-272-1000.
  8. THE CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE ALL INSPECTIONS AS REQUIRED BY THE ENGINEER AND THE BOARD OF HEALTH, AND ALL OTHER TOWNSHIP AGENCIES OF JURISDICTION.
  9. THE ENGINEER IS TO BE NOTIFIED IF ANY CONDITIONS ARE ENCOUNTERED THAT WOULD RENDER THIS PLAN UNCONSTRUCTABLE. THE ENGINEER SHALL ALSO BE NOTIFIED OF ANY DEVIATIONS FROM THE PLANS DURING CONSTRUCTION.
- FILTER MATERIAL AND DRAINAGE FABRIC NOTES**
- FILTER MATERIAL SHALL MEET THE FOLLOWING REQUIREMENTS:
1. FILTER MATERIAL SHALL COVER THE DISTRIBUTION LINES AND EXTEND THE FULL WIDTH OF THE TRENCH OR BED, SHALL EXTEND BETWEEN 12 AND 18 INCHES DEEP BENEATH THE BOTTOM OF THE DISTRIBUTION LINES AND SHALL EXTEND AT LEAST TWO INCHES ABOVE THE TOP OF THE LINES.
  2. THE FILTER MATERIAL SHALL BE WASHED GRAVEL OR CRUSHED STONE, FREE OF FINES, DUST, ASHES OR CLAY. REFER TO THE NEW JERSEY DEPARTMENT OF TRANSPORTATION STANDARD SIZES FOR COARSE AGGREGATES AS SHOWN IN FIGURE 26 OF APPENDIX A OF N.J.A.C. 7:9A. THE FILTER MATERIAL SHALL CONFORM IN SIZE AND GRADATION TO SIZE NUMBER 24, SIZE NUMBER THREE OR SIZE NUMBER FOUR.
  3. THE FILTER MATERIAL SHALL BE COVERED WITH DRAINAGE FABRIC AS THE LAYING OF THE DISTRIBUTION LINES PROGRESSES. THE FOLLOWING REQUIREMENTS SHALL BE MET:
    - i. EDGES OF ADJACENT SHEETS SHALL BE OVERLAPPED BY A MINIMUM OF SIX INCHES.
    - ii. DRAINAGE FABRIC SHALL BE SPECIFIED IN THE ENGINEERING DESIGN AND SHALL BE ADEQUATELY TENSILE STRENGTH TO PREVENT RIPPING UNDER INSTALLATION AND BACKFILLING. ADEQUATELY REMARKED TO ALLOW PROPER PASSAGE OF GASES, AND ADEQUATE PARTICLE RETENTION TO PREVENT DOWNWARD MIGRATION OF SOIL PARTICLES INTO THE FILTER MATERIAL.
    - iii. USE OF WATERPROOF PAPER IS PROHIBITED.
  4. THE FILTER MATERIAL MAY BE Laid INTO THE EXCAVATION USING A BACKHOE, FRONT-END LOADER OR BACK TRUCK PROVIDED THAT THIS OPERATION IS PERFORMED WITHOUT STRESS OR TENSION BEING APPLIED TO THE FABRIC. ONCE THE EXPOSED DISPOSAL FIELD INFILTRATIVE SURFACE IN THE CASE OF LARGE BEDS, TRACKED EQUIPMENT MAY BE OPERATED WITHIN THE DISPOSAL BED, PROVIDED THAT THE EQUIPMENT DOES NOT EXERT A GROUND PRESSURE IN EXCESS OF EIGHT POUNDS PER SQUARE INCH AND PROVIDED THAT THE FILTER MATERIAL IS PUSHED OUT IN FRONT OF THE VEHICLE WHILE MAINTAINING A MINIMUM THICKNESS OF ONE FOOT OF FILTER MATERIAL BELOW THE VEHICLE TRACKS AT ALL TIMES.

SEPTIC AND DRAINAGE TASK

1. THE MINIMUM COMPRESSIVE STRENGTH FOR ALL CONCRETE SECTIONS SHALL BE 4000 P.S.I.

DISTRIBUTION NETWORK

1. ALL JOINTS TO BE WATERTIGHT.
2. CONNECTING PIPES AND DELIVERY PIPES SHALL BE Laid ON A FIRM FOUNDATION SATISFACTORY TO THE ADMINISTRATIVE AUTHORITY, AND IN ACCORDANCE WITH PLAN DETAILS.
3. SLOPE OF DISTRIBUTION LATERALS TO BE NO GREATER THAN 2" PER 100 FT.

BACKFILL AND FINAL GRADING

1. NO COMPONENT OF THE SEPTIC SYSTEM SHALL BE BACKFILLED UNTIL A FINAL INSPECTION HAS BEEN CONDUCTED BY THE ADMINISTRATIVE AUTHORITY OR ITS AUTHORIZED AGENT.
2. BACKFILL AND FINAL GRADING SHALL BE COMPLETED AS FOLLOWS:
  - a. BACKFILL MATERIAL SHALL BE OF EARTH SIMILAR TO THAT FOUND AT THE SITE AND FREE OF LARGE TO ESTABLISH A GOOD VEGETATIVE COVER AND TO PROTECT STUMPS, TREE STUMPS, BROKEN MASONRY OR OTHER WASTE CONSTRUCTION MATERIAL.
  - b. IN NO CASE SHALL BACKFILL MATERIAL BE MORE PERMEABLE THAN THE SURROUNDING SOIL.
  - c. BACKFILL SHALL COMPLETELY COVER THE ENTIRE SEEPAGE PIT AND SHALL BE GRADED SMOOTHLY.
3. AFTER COMPLETION OF BACKFILL AND FINAL GRADING, THE BACKFILLED AREA SHALL BE SEEDED, OR SOODED, INTO THE SURROUNDING TOPOGRAPHY ON ALL SIDES.

FILL

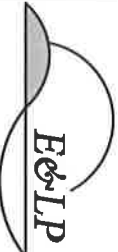
1. FILL STANDARDS: (PER N.J.A.C. 7:9A-CHAPTER 10 REVISED APRIL 2, 2012) FILL USED IN THE ZONE OF TREATMENT AND/OR THE ZONE OF DISPOSAL SHALL MEET THE FOLLOWING REQUIREMENTS:
  1. ASTM C-136 TEST METHOD FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES MUST BE USED FOR CHARACTERIZING THE SELECT FILL.
  2. THE FILL SHALL MEET THE FOLLOWING REQUIREMENTS:
    - a. SPECIFICATION FOR CONCRETE AGGREGATES OR
    - b. THE MATERIAL SHALL MEET THE FOLLOWING REQUIREMENTS:
      - A. COURSE FRAGMENT CONTENT (GREATER THAN THE NO.8 SIEVE) LESS THAN 15% BY VOLUME OR LESS THAN 20% BY WEIGHT.
      - B. TEXTURAL ANALYSIS (COMPOSITION, WEIGHT, OF SIZE FRACTION PASSING THE PARTICULAR SIEVE AS STATED):
        - i. 100% MUST PASS A 3/8" SIEVE;
        - ii. BETWEEN 60% AND 100% MUST PASS THE No. 8 SIEVE (2.36mm);
        - iii. BETWEEN 50% AND 60% MUST PASS THE No. 16 SIEVE (1.18mm);
        - iv. BETWEEN 25% AND 60% MUST PASS THE No. 30 SIEVE (0.6mm);
        - v. BETWEEN 10% AND 30% MUST PASS THE No. 50 SIEVE (0.3mm);
        - vi. BETWEEN 2% AND 10% MUST PASS THE No. 100 SIEVE (0.15mm).
      - c. PERMEABILITY FOR THESE MATERIALS IS ESTABLISHED WITHIN THE RANGE OF 6 - 20 IN/Hr.
    3. SELECT FILL SHALL BE TESTED FOR FINE AND VERY FINE SAND, AND BE 25% OR LESS BY WEIGHT.
    4. COMPACTION OF SELECT FILL MUST BE PERFORMED IN 1' (MAX. ) LIFTS.

ADVANCED WASTEWATER PRETREATMENT NOTES

1. HOOT PRETREATMENT DEVICES SHALL HAVE OBTAINED AN NSF STANDARD 40 AND/OR STANDARD 245 CERTIFICATION AND MUST BEAR THE MARK OF NSF.
2. HOOT PRETREATMENT DEVICES SHALL INCLUDE IN THEIR DESIGN A TELEMETRY PROVIDED, CAPABLE OF TRANSMITTING TO AN INTERNET-BASED SERVICE PROVIDER, THE FOLLOWING INFORMATION:
  - a. THE ADVANCED WASTEWATER PRETREATMENT DEVICE OR AN APPROVED EQUIVALENT SYSTEM TO NOTIFY AUTHORIZED SERVICE PROVIDER OF ALARM CONDITIONS.
  - b. HOOT PRETREATMENT DEVICES MUST BE WATERTIGHT AND DESIGNED IN A MANNER THAT CONSIDERS ALL STRUCTURAL EFFECTS ON THE TREATMENT UNIT FOR THE INTENDED INSTALLATION.
  - c. AN AUTHORIZED INSTALLER SHALL BE PHYSICALLY PRESENT AT ALL TIMES DURING THE INSTALLATION OF A HOOT PRETREATMENT DEVICE.
  - d. THE AUTHORIZED INSTALLER SHALL ENSURE THAT THE PROPERTY OWNER HAS BEEN PROVIDED WITH A COPY OF THE SERVICE CONTRACT AND AGREES TO COMPLY WITH THE REQUIREMENTS PRIOR TO INSTALLATION.
  - e. HOOT PRETREATMENT DEVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE SERVICE MANUFACTURER'S INSTALLATION MANUAL.
  - f. THE AUTHORIZED INSTALLER SHALL BE IN POSSESSION OF ALL NECESSARY PERMITS, APPROVALS AND LICENSES BEFORE ATTEMPTING ANY PORTION OF THE INSTALLATION. ALL DOCUMENTATION MUST BE LOCATED ON-SITE FOR THE DURATION OF THE INSTALLATION.
  - g. ALL TANKS SPECIFIED IN THE DESIGN MUST BE TESTED FOR WATERTIGHTNESS ON-SITE. AFTER THE TANK HAS BEEN INSTALLED, FOLLOWING INSTALLATION, THE AUTHORIZED SERVICE PROVIDER SHALL INSPECT THE SYSTEM, COMPLETE A MANUFACTURER'S SYSTEM START-UP CHECKLIST, AND PROVIDE THE COMPLETED CHECKLIST TO THE ADMINISTRATIVE AUTHORITY. THE AUTHORIZED SERVICE PROVIDER SHALL BE PRESENT AT THE TIME OF HOOT PRETREATMENT SERVICE.
  - h. HOOT PRETREATMENT DEVICES SHALL BE MAINTAINED IN ACCORDANCE WITH N.J.A.C. 7:9A-12.2.
  - i. THE OWNER OF A SYSTEM THAT INCLUDES A HOOT PRETREATMENT DEVICE SHALL HAVE IN PLACE A SERVICE CONTRACT THROUGHOUT THE LIFE OF THE SYSTEM, WITH AN AUTHORIZED SERVICE PROVIDER, IN ACCORDANCE WITH N.J.A.C. 7:9A-12.3.
  - j. HOOT PRETREATMENT DEVICES SHALL BE INSPECTED BY AN AUTHORIZED SERVICE PROVIDER ON THE FOLLOWING SCHEDULE AT A MINIMUM:
    - i. ONCE WITHIN 30 DAYS FOLLOWING THE SYSTEM START-UP;
    - ii. SUBSEQUENT TO INITIAL INSPECTION ABOVE, TWICE PER YEAR FOR THE FIRST TWO YEARS OF SYSTEM OPERATION, ONCE PER YEAR THEREAFTER, AT THE TIME OF TRANSFER OF THE PROPERTY WITH THE NEW SYSTEM OWNER; AND
    - iii. INSPECTIONS SHALL BE CONDUCTED ON A MORE FREQUENT BASIS IF REQUIRED BY THE MANUFACTURER OR SYSTEM INTEGRATOR, AS APPLICABLE.
  - k. ROTO AIR BLOWER MUST BE LOCATED NO MORE THAN 50 FEET FROM HOOT PRETREATMENT DEVICE AND MUST BE DEDICATED TO A 110 30 AMP CIRCUIT.

TITLE:

WOOD RESIDENCE  
INDIVIDUAL SEWAGE DISPOSAL SYSTEM  
HOPEWELL TOWNSHIP, MERCER COUNTY, NJ



140 WEST MAIN STREET, HIGH BRIDGE, NJ 08829  
(908) 238-0544 FAX: (908) 238-9572  
C.O.A. #: 24G62B021500

A PROFESSIONAL ASSOCIATION

LOCATION:

12 OLD MILL ROAD  
BLOCK 45 LOT 2  
HOPEWELL TOWNSHIP  
MERCER COUNTY, NJ

DATE: 8/17/19

8/19/19

WAYNE INGRAM, P.E. LICENSE #24G804258200 DATE

PROFESSIONAL ENGINEER

PROJECT NO.: 0119275

DESIGNED BY: TB CHECKED BY: WJL

FILENAME: NOTES.DWG

SCALE: N.T.S. SHEET NO.: 2 OF 6

NO. REVISION BY DATE

GENERAL CONTRACTOR NOTES:

ALL INSTALLERS OF SYSTEMS THAT INCLUDE COMPONENTS THAT ARE NOT TRADITIONAL "STONE AND PIPE" SYSTEMS, INCLUDING GRAVEL, ALTERNATIVE PRODUCTS, ADVANCED WASTEWATER PRETREATMENT UNITS, AND DRIP DISPOSAL SYSTEMS ARE REQUIRED TO HAVE AN AUTHORIZATION FORM THE MANUFACTURER OF THOSE PRODUCTS, BUT ALSO A CREDENTIAL FROM THE NATIONAL ENVIRONMENTAL HEALTH ASSOCIATION (NEHA). NEHA'S CERTIFIED ONSITE INSTALLER OF WASTEWATER TREATMENT SYSTEMS (COWTS) AT THE ADVANCED LEVEL.

CONTRACTOR TO OBTAIN ALL REQUIRED PERMITS PRIOR TO START OF CONSTRUCTION.

CONTRACTOR SHALL CONTACT ENGINEERING AND LAND PLANNING ASSOCIATES, INC. (E&LP) AT LEAST 48 HOURS PRIOR TO START OF THE CONSTRUCTION FOR SCHEDULING INSPECTIONS.

CONTRACTOR SHALL CONTACT E&LP FOR THE INSPECTION OF THE FOLLOWING STAGES OF CONSTRUCTION AT LEAST 24 HOURS IN ADVANCE (IF APPLICABLE):

- BOTTOM OF DISPOSAL BED EXCAVATION
- SELECT FILL SAMPLE
- TOP OF SELECT FILL EMPLACEMENT IN DISPOSAL BED
- TOP OF STONE AND LATERAL EMPLACEMENT
- ATU/PUMP TANK INSTALLATION
- PUMP PERFORMANCE/ALARM
- BACK FILL AND FINAL GRADE

CONTRACTOR MUST PROVIDE SAMPLE AND A QUARRY CERTIFICATE FOR SUITABLE FILL MATERIAL.

CONTRACTOR SHALL COORDINATE ANY CHANGES FROM THE PLAN WITH E&LP.

E&LP WILL STAKE OUT DISPOSAL BED AT CONTRACTOR'S REQUEST AND PER THE AGREEMENT WITH THE APPLICANT. CONTRACTOR MUST REQUEST DISPOSAL BED TAKEOUT AT LEAST 10 BUSINESS DAYS PRIOR TO START OF CONSTRUCTION.

SYSTEM NOTES:

E&LP CERTIFIES THAT THEY ARE SUFFICIENTLY KNOWLEDGEABLE OF THE HOOT AEROBIC SYSTEMS, INC. TECHNOLOGY AND THAT THEY ARE CERTIFIED DESIGNERS OF THE SYSTEM.

E&LP HAS DESIGNED SYSTEMS THAT INCLUDE HOOT AEROBIC SYSTEMS, INC. PRETREATMENT DEVICES IN A MANNER WHICH MEETS ALL MANUFACTURER'S MINIMUM SPECIFICATIONS AND/OR RECOMMENDATIONS.

E&LP HAS DESIGNED HOOT AEROBIC SYSTEMS, INC. PRETREATMENT DEVICES SO THAT THE RAW WASTEWATER CANNOT BE DISCHARGED WITHOUT FIRST BEING PROPERLY TREATED BY THE HOOT UNIT AS IT WAS DESIGNED.

E&LP HAS UTILIZED THE HOOT AEROBIC SYSTEMS, INC. RECOMMENDATION FOR SIZING OF THE UNIT WHENEVER A DISCREPANCY OCCURS BETWEEN THE ESTIMATED VOLUME OF SANITARY SEWAGE CALCULATED IN ACCORDANCE WITH N.J.A.C. 7:9A-7.4 AND THE MANUFACTURER'S RECOMMENDED SIZING OF THE ADVANCED WASTEWATER PRETREATMENT DEVICE.

MAINTENANCE NOTES:

THE INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM SHALL BE MAINTAINED IN ACCORDANCE WITH N.J.A.C. 7:9A, THE HOPEWELL TOWNSHIP HEALTH DEPARTMENT, AND ANY APPLICABLE MANDATORY MAINTENANCE PROGRAM.

MAINTENANCE ACTIVITIES SHALL INCLUDE, BUT NOT LIMITED TO, INSPECTION OF THE ATU TANK, PUMP TANK, CONNECTING PIPES, AND THE DISPOSAL FIELD. THE ATU TANK SHALL BE PUMPED OUT AT REGULAR INTERVALS. ATU TANK SHALL BE MAINTAINED IN SUCH A WAY TO PREVENT SOLIDS, SCUM, OR FLOATABLES FROM ENTERING THE EFFLUENT DISTRIBUTION NETWORK AND DISPOSAL FIELD.

NOTES:

NO FOUNDATION DRAINS EXIST OR ARE PROPOSED.

NO UNDERGROUND STORAGE TANKS ARE PRESENT ON THE PROPERTY (PER OWNER).

THERE ARE NO NEIGHBORING WELLS WITHIN 100' OF THE PROPOSED DISPOSAL FIELD. THERE ARE DISPOSAL FIELDS WITHIN 50' OF THE PROPOSED DISPOSAL FIELD.

ALL TREES WITHIN 10' OF THE DISPOSAL FIELD SHALL BE REMOVED.

PRIOR SEPTIC TANK(S) TO BE PUMPED, CRUSHED, AND ABANDONED IN ACCORDANCE WITH HEALTH DEPARTMENT STANDARDS.

PRIOR DISPOSAL SYSTEM TO BE ABANDONED IN PLACE IN ACCORDANCE WITH HEALTH DEPARTMENT STANDARDS OR SPOILS BURIED ONSITE.

TANKS SHALL BE TESTED INFIELD FOR WATER TIGHTNESS BY TANK MANUFACTURER.

THE PROPOSED SEPTIC SYSTEM HAS BEEN DESIGNED IN A MANNER THAT WILL PREVENT ANY INCREASE IN STORMWATER RUNOFF TO OR PONDING ON ADJOINING PROPERTIES AS A RESULT OF THE INSTALLATION OF THE SYSTEM.

CONTRACTOR RESPONSIBLE FOR INSPECTION OF SITE CONDITIONS PRIOR TO CONSTRUCTION.

SITE SPECIFIC NOTES

1. GARBAGE DISPOSALS AND SUMP PUMPS CANNOT BE USED WITH THIS SEPTIC SYSTEM.
2. EXISTING SEPTIC TANK(S) TO BE PUMPED, CRUSHED, AND ABANDONED IN ACCORDANCE WITH HEALTH DEPARTMENT STANDARDS.
3. PRIOR DISPOSAL SYSTEM TO BE ABANDONED IN ACCORDANCE WITH HEALTH DEPARTMENT STANDARDS.
4. THERE ARE NO KNOWN UNDERGROUND STORAGE TANKS PRESENT ON SITE (PER OWNER).
5. THERE ARE SEPTIC SYSTEMS WITHIN 50' OF THE PROPOSED SYSTEM.
6. THERE ARE NO NEIGHBORING WELLS WITHIN 100' OF THE PROPOSED SYSTEM.
7. THIS SEPTIC SYSTEM IS NOT DESIGNED TO ACCOMMODATE A SEWAGE EJECTOR PUMP.

TITLE:

WOOD RESIDENCE  
INDIVIDUAL SEWAGE DISPOSAL SYSTEM  
HOPEWELL TOWNSHIP, MERCER COUNTY, NJ



140 WEST MAIN STREET, HIGH BRIDGE, NJ 08829  
(908) 238-0544 FAX: (908) 238-9672  
C.O.A. #: 24GA28021500  
A PROFESSIONAL ASSOCIATION

LOCATION:

12 OLD MILL ROAD  
BLOCK 45 LOT 2  
HOPEWELL TOWNSHIP  
MERCER COUNTY, NJ

DATE: 8/17/19

8/19/19

PROJECT NO.: 01192275

DESIGNED BY: TB

CHECKED BY: WJI

FILENAME: NOTES.DWG

SCALE:

N.T.S.

SHEET NO.: 3 OF 6

NO.

REVISION

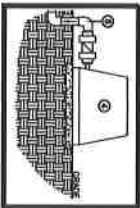
BY

DATE



THE H-SERIES HOOT  
AEROBIC TREATMENT SYSTEM

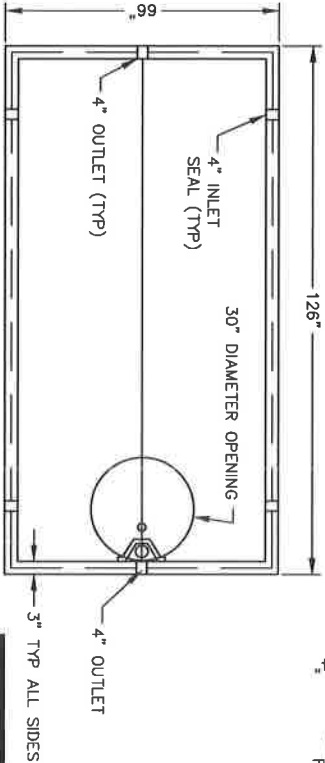
- 1) PRETREATMENT TANK- WHERE ANAEROBIC DIGESTION OCCURS AND STORAGE FOR NON-BIODEGRADABLE MATERIALS.
- 2) AERATION CHAMBER- WHERE AIR IS INTRODUCED INTO SEWAGE FOR DIGESTION.
- 3) CLARIFIER- A STILL CHAMBER WHERE SOLIDS SETTLE OUT AND THE CLEAR EFFLUENT RISES.
- 4) TROY AIR LINEAR AIR BLOWER- LONG LIFE, EFFICIENT LINEAR BLADES COMPRESSED THROUGHEND AIR AND UNDER PRESSURE DELIVERED TO THE TANK. MAY BE REMOTELY MOUNTED UP TO 50' FROM SYSTEM. MUST MAINTAIN 1/8" SLOPE TOWARDS TANK FOR DRAINAGE.
- 5) AIR MANIFOLD- DELIVERS THE AIR FROM THE LINE TO THE STONES FOR DIFFUSION INTO THE SEWAGE.
- 6) AERATION LINE- DELIVERS THE AIR FROM THE PUMP TO THE MANIFOLD. CHECK VALVE INCLUDED.
- 7) AERATION STONE- AIR IS FINELY DIFFUSED FROM THE STONE INTO THE AERATION CHAMBER.
- 8) 15" COVERS- PROVIDE ASSEMBLY PORT ACCESS INSIDE OF THE SYSTEM. (NOT REQUIRED FOR REGULAR SERVICE)
- 9) SAMPLING PORT- USED BY SERVICE PERSONNEL TO INSPECT EFFLUENT QUALITY.



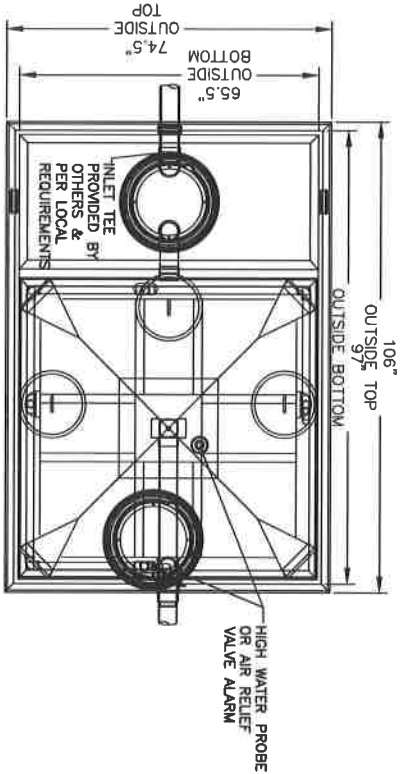
TROY AIR BLOWER

TROY AIR BLOWER MUST BE  
LOCATED AT LEAST 10 FEET  
FROM HOOT PRETREATMENT  
DEVICE AND MUST BE DEDICATED  
TO A 110 30 AMP CIRCUIT.

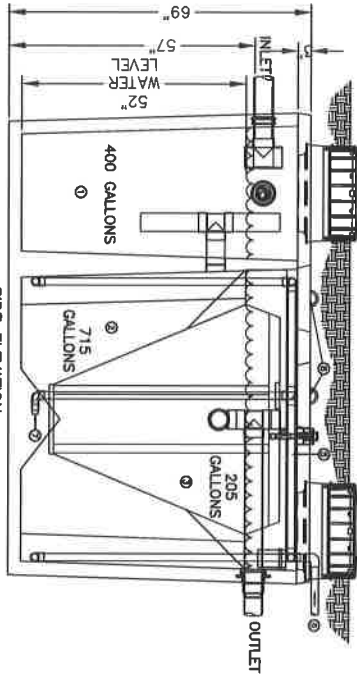
1,000 NJ GAL. PUMP TANK  
AS MANUFACTURED BY  
FLEMINGTON PRECAST  
FLEMINGTON, NJ  
908-762-3246 OR  
APPROVED EQUAL.



1,000 GAL PUMP TANK  
(N.T.S.)  
(WITH PUMP SYSTEM)

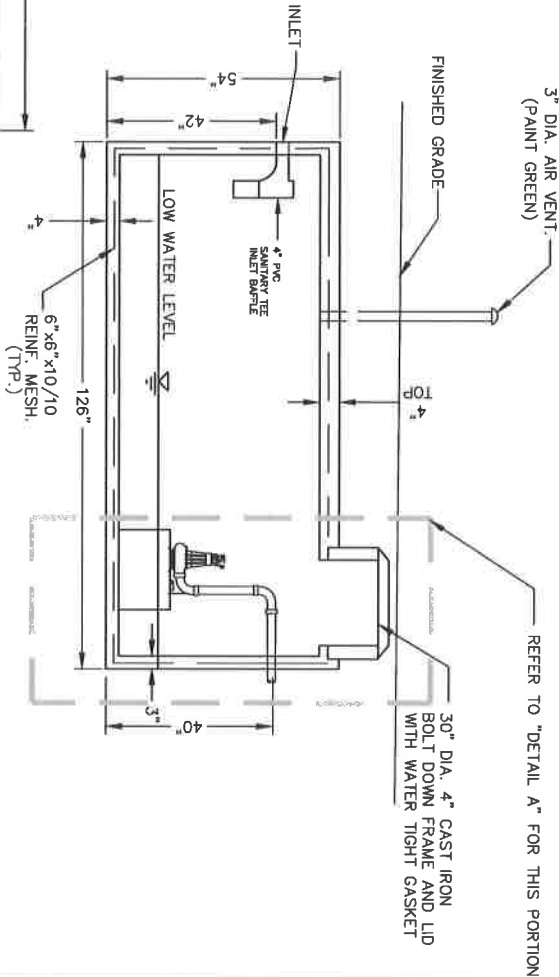


PLAN VIEW



SIDE ELEVATION

HOOT H-500A ATU TANK  
(N.T.S.)



REFER TO "DETAIL A" FOR THIS PORTION

TITLE:

WOOD RESIDENCE  
INDIVIDUAL SEWAGE DISPOSAL SYSTEM  
HOPEWELL TOWNSHIP, MERCER COUNTY, NJ



140 WEST MAIN STREET, HIGH BRIDGE, NJ 08829  
(908) 238-0544 FAX: (908) 238-9572  
C.O.A. #: 246A28021500  
A PROFESSIONAL ASSOCIATION

LOCATION:

12 OLD MILL ROAD  
BLOCK 45 LOT 2  
HOPEWELL TOWNSHIP  
MERCER COUNTY, NJ

DATE: 8/17/19

PROJECT NO.: 0119275

FILENAME: DETAILS.DWG

WAYNE INGRAM, P.E. LICENSE #24G904258200  
PROFESSIONAL ENGINEER

8/19/19

DESIGNED BY: TB

CHECKED BY: WJI

SCALE: N.T.S.

SHEET NO.: 5 OF 6

NO.

REVISION

BY

DATE

1. ALL ELECTRIC WORK TO CONFORM TO NEX AND LOCAL ELECTRICAL CODES FOR MERCER COUNTY (HOPEWELL TOWNSHIP).
2. ALL FITTINGS ARE SCHEDULE 80 SOLVENT WELDED FOR PRESSURE CONDITIONS.
3. SHOP DRAWINGS ARE TO BE SUBMITTED FOR ALL PUMP STATIONS, VALVE CHAMBERS, AND CONTROL BUILDING COMPONENTS.
4. ALL SWITCHES MUST BE CORROSION & HUMIDITY PROOF.
5. ALL ELECT. MATERIALS & WORK SHALL CONFORM TO NA. ELECT. CODE INPA 70-CURRENT ED. AND LOCAL CODES.

PUMP MOTOR SHALL BE PROVIDED WITH A CIRCUIT BREAKER AND A HP RATE CONTACTOR. THE CONTROL CIRCUIT SHALL BE PROVIDED WITH A CONTROL CIRCUIT BREAKER AND OPERATE ON 115 V 1 PHASE. THREE PUMP MOTOR STARTING CAPACITOR, RUN CAPACITOR AND RELAY SHALL BE MOUNTED IN CONTROL PANEL.

ALL POWER AND CONTROL WIRING SHALL BE INSTALLED IN ELECTRICAL CONDUIT IN ACCORDANCE WITH CODE.

PROVIDE FLOW LEVEL CONTROL SYSTEM TO AUTOMATICALLY CONTROL THE OPERATION OF THE PUMP AS REQUIRED BY INFLUENT FLOW. FLOAT SWITCHES ARE TO SENSE THE PUMP OFF, PUMP ON, AND HIGH WATER ALARM CONDITION. FLOAT LEVEL SENSORS SHALL BE GOLD PUMP MODEL NO. 12-2-5 WITH SUFFICIENT CABLE AS REQUIRED FOR INSTALLATION.

EACH PANEL SHALL BE PROVIDED WITH HAND/OFF/AUTOMATIC SELECTOR SWITCH PUMP RUN LIGHT AND COUNTER.

PANEL SHALL INCLUDE EXTERNAL ALARM LIGHT AND ALARM HORN.

THE CONTROL PANEL SHALL BE AS MANUFACTURED BY GOULDS PUMPS INC., PROVIDED BY PUMPING SERVICES INC. AND BE SUITABLE FOR USE WITH THE 1/3 HP SEWAGE PUMP AND OPERATE ON 115 VOLT, 1 PHASE 3 WIRE 60 HZ ELECTRIC POWER. PART NO. S10020.



N.T.S.

- (A) 4" STATIC WATER LEVEL (PUMP OFF) = 125 GALS.
- (B) 6" SEPARATION BETWEEN PUMP OFF LEVEL & PUMP INTAKE
- (C) 4.5" SEPARATION BETWEEN PUMP ON & PUMP OFF LEVEL, YIELDING A DOSE VOLUME OF 140 GALS.
- (D) 4" SEPARATION BETWEEN AUTO PUMP ON & HIGH WATER LEVEL
- (E) 19.5" RESERVE STORAGE CAPACITY, IN CASE OF PUMP OR POWER FAILURE, EQUAL TO 610 GALS.

INDIVIDUAL SEWAGE DISPOSAL SYSTEM  
HOPEWELL TOWNSHIP, MERCER COUNTY, NJ



**PUMP SPECIFICATIONS**

ELECTRIC SUBMERSIBLE PUMP  
GOULDS MODEL 3886-WS0311B  
DESIGN POINT ~85 GPM @ 9.4' TDH, 1/3 HP 2"  
DISCHARGE, 1 PHASE ELECTRIC POWER, PUMP  
SHALL BE AS MANUFACTURED BY GOULDS  
PUMP INC., SENECA FALLS, NY AND  
DISTRIBUTED BY PUMPING SERVICES INC.  
MIDDLESEX, NJ (732) 469-4540.

|     |              |             |                                                                                                                                                          |        |
|-----|--------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
|     | LOCATION:    |             | 12 OLD MILL ROAD<br>BLOCK 45 LOT 2<br>HOPEWELL TOWNSHIP<br>MERCER COUNTY, NJ                                                                             |        |
|     | DATE:        | 8/17/19     | <br>WAYNE INGRAM, P.E. LICENSE #24GB04258200<br>PROFESSIONAL ENGINEER |        |
|     | PROJECT NO.: | 0119275     | DESIGNED BY:                                                                                                                                             | TB     |
|     | FILENAME:    | DETAILS.DWG | SCALE:                                                                                                                                                   | N.T.S. |
|     |              |             | CHECKED BY:                                                                                                                                              | WJL    |
|     |              |             | SHEET NO.:                                                                                                                                               | 6 OF 6 |
| NO. | REVISION     | BY          | DATE                                                                                                                                                     |        |