

OCEAN COUNTY HEALTH DEPARTMENT

9/20/01
Date

P.O. BOX 2191
TOMS RIVER, N.J. 08754-2191
(732) 341-9700

No. 020608

BOARD OF HEALTH OF LAKEWOOD

CERTIFICATE OF COMPLIANCE

Issued to IMMANUEL LUTHERN CHURCH
(Owner or Contractor)

THIS IS TO CERTIFY That the

INDIVIDUAL SEWAGE SYSTEM APPROVED

INDIVIDUAL WATER SYSTEM N/A

Installed at Block No. 284

Lot No. 20-21 is in compliance with the

Application for Permit to Locate and Construct or
Alter Such Systems.

No. 020608 dated 11/3/99

The issuance of this certification shall not be construed as a guarantee that the system will function satisfactorily nor shall it in any way restrict the powers or responsibilities of the Board of Health in the enforcement of any law or ordinance relating to public health.

Final

[Signature]

- 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 _____
2. 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 _____
- b) Describe Nature of Alteration or Repairs: _____
3. System Components:
- a) Grease Trap Capacity, gals _____
 Show Calculation Used: _____
- b) Septic Tank Capacities, gals: _____ First (Single) Compartment _____
 _____ Second Compartment _____ Third Compartment _____
- c) Effluent Distribution
 Method: _____ Gravity Flow _____ Gravity Dosing
 _____ Pressure Dosing
 Dosing Device: _____ Pump _____ Siphon
- d) Dosing Tank Capacities, gals: Total Capacity _____ Dose Volume _____
 Reserve Capacity _____
- e) Laterals: Number _____ Total Length _____ Pipe Size _____ Spacing _____
- f) Connecting Pipe: Size _____ Length _____
- g) Manifold: Size _____ Length _____
- h) Disposal Field: Type of Installation _____
 Design Permeability (Percolation Rate) _____
 Trenches: Width _____ Total Length _____ Bed: Area _____
- i) Seepage Pits: Design Percolation Rate _____
 Number of Pits _____ Total Percolating Area Provided _____
4. Attachments (Check items included):
 _____ General Plan of System Showing Location of All System Components
 _____ 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 _____
5. I hereby certify that the information furnished on Form 4 of this application (and 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 Professional Engineer _____ Date _____
- Form 5. Design of Pressure Dosing System
1. Configuration of Distribution Network:
 Type of Manifold: _____ End _____ Central
 Distribution Laterals: Number _____ Length, ft _____ Spacing, ft _____
 Hole Diameter, ins _____ Hole Spacing, ins _____
 Diameter of Laterals, ins _____
2. Lateral Discharge Rate:
 Design Pressure Head at Supply End of Laterals, H_p , ft _____
 Hole Discharge Rate, Q , gpm _____
 Number of Holes per Lateral, n _____
 Lateral Discharge Rate, $(Q \times n)$ gpm _____
3. Manifold Length, ft _____ Manifold Diameter, ins _____
4. System Discharge Rate, gpm _____
- 5a. Pump Selection:
 Diameter of Delivery Pipe _____ Length of Delivery Pipe _____
 Friction Loss in Delivery Pipe, H_f , ft _____
 Elevation of Dosing Tank Low Water Level _____
 Elevation of Lateral Invert _____
 Elevation Head, H_e , ft _____
 Total Operating Head, H_t ($H_p + H_f + H_e$), ft _____
 Pump Model _____ Rated Horsepower _____
 Pump Discharge Rate at Total Operating Head, gpm _____
- 5b. Siphon Elevation:
 Diameter of Delivery Pipe _____ Length of Delivery Pipe _____
 Friction Loss in Delivery Pipe, H_f , ft _____
 Velocity Head, H_v , ft _____
 Total Operating Head, H_t ($H_p + H_f + H_v$), ft _____
 Elevation of Lateral Invert _____
 Elevation of Siphon Invert _____
6. Dose Volume:
 Design Volume of Sewage, gal/day _____
 Design Permeability, in/hr _____ or Percolation Rate, min/in _____
 Internal Volume of Distribution Network _____
 Dose Volume _____
7. I hereby certify that the information furnished on Form 4 of this application (and 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 Professional Engineer _____ Date _____

STANDARD FORMS FOR

CERTIFICATE OF COMPLIANCE

County/Municipality of OCEAN/LAKEWOOD TWP.

INSTRUCTIONS: Part A is to be completely filled in for all Certifications. Only Part B or Part C will be completed. Part B will be completed if the administrative authority relies upon the certification signed and sealed by a New Jersey licensed professional engineer that the system has been located, constructed, installed or altered in compliance with the requirements of N.J.A.C. 7:9A-1 and the Application to Construct/Alter/Repair an Individual Subsurface Sewage Disposal System which was approved by the administrative authority. Part C will be completed if the administrative authority performs the certification.

Part A—General Information

1. Permitted Activities (Check applicable categories):

Permit Number 02-0608

_____ New Construction

☒ Alteration/No Expansion or Change of Use☒ Alteration/Expansion or Change in Use

_____ Alteration/Malfunctioning System

_____ Deviation from Standards

_____ Repairs to Existing System

2. Location of Project:

Municipality LAKEWOODLot 20-21Block 284Street Address 20 MONTERREY CIRCLE3. Name and Present Address of Applicant: IMMANUEL LUTHERAN CHURCHApplicant's Phone Number 732-636-1599LAKEWOOD, NJ 08701

Part B—Professional Engineers Certification

I certify under penalty of law that the subsurface sewage disposal system identified in Part A has been located, constructed, installed or altered in compliance with the requirements of N.J.A.C. 7:9A-1 and the Application to Construct/Alter/Repair an Individual Subsurface Sewage Disposal System which was approved by the administrative authority. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

(Signature)

WILLIAM C. LONGO, P.E.

SEAL

Name (Type or Print), License

Date: 6/3/00# 35284

Part C—Certification by Administrative Authority

I certify under penalty of law that the subsurface sewage disposal system identified in Part A has been located, constructed, installed or altered in compliance with the requirements of N.J.A.C. 7:9A-1 and the Application to Construct/Alter/Repair an Individual Subsurface Sewage Disposal System which was approved by the administrative authority. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Authorized Signature

Type of License Held

Name (Typed or Printed)

License Number

Date: _____

For Agency Use Only

Date Received: _____

Form Determined To Be: _____ Complete _____ Incomplete

Date Returned _____

Date Received _____

Date Certification Approved: _____

Authorized Signature: _____

Amended by R.1993 d.294, effective June 21, 1993.

See: 24 N.J.R. 1987(a), 25 N.J.R. 2704(b).

APPENDIX C

UNIFORM PLACEMENT OF PERCOLATION TESTS

Uniform Placement of Percolation Tests

OCEAN COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH SERVICES

DETAILED DATA SHEET

CONTINUATION SHEET

Establishment Trading Name		Establishment License No.	Date 11-3-99
Signature of Inspecting Official		Municipality	Time - (2400 Hours) Begin
REG. NO.	REMARKS (Please specify area)		
	SEPTIC-WELL PERMIT REVIEW S# 020608		
	BLOCK 284 LOT 2021		
	MUNICIPALITY Lakewood		
	APPROVED WITH STIPULATION(S):		
	ENGINEER MUST CERTIFY BY SIGNATURE AND SEAL USING APPENDIX B, PARTS A AND		
	B, THAT SYSTEM HAS BEEN LOCATED, CONSTRUCTED AND INSTALLED AS PER APPROVED		
	PLAN. AN INSPECTION BY THIS DEPARTMENT IS REQUIRED PRIOR TO BACKFILLING		
	THE SYSTEM.		
	A SATISFACTORY OCEAN COUNTY HEALTH DEPARTMENT ORDINANCE 94-1 WATER ANALYSIS		
	AND WELL HEAD AND TANK INSPECTIONS ARE REQUIRED FOR APPROVAL.		
	THIS DEPARTMENT SHALL BE NOTIFIED 24 HOURS PRIOR TO WELL INSTALLATION FOR		
	WITNESSING PURPOSES.		
	OTHER: ① "old septic" shall be abandoned in accordance with provisions of 7:9A 12.8		
	② Schedule 40 or equivalent to be used for bldg sewer under paved parking area		

(Attach additional sheets if necessary)

OCEAN COUNTY HEALTH DEPARTMENT
P.O. Box 2191, Sunset Avenue
Toms River, NJ 08754-2191

APPLICATION FOR A PERMIT TO INSTALL A SEPTIC SYSTEM
AND/OR A WATER SUPPLY SYSTEM

Comm. Code _____
Official Use Only

Block 284

Lot(s) 2D-21

LAKELAND TOWNSHIP
MUNICIPALITY

- _____ (A) To construct both a septic & water supply system
_____ (B) To construct a water supply system
_____ (C) To replace or alter a water supply system
☒ (D) To construct or alter a septic system
_____ (E) To replace or repair a septic system

Type of Water System

- _____ (A) Potable Non-Public
_____ (B) Potable Public Non-Community
_____ (C) Non-Potable
_____ (D) Public Community System

NO _____
Official Use Only

DATE _____
Fee Paid

(Current address of applicant required. All information must be completed.)

NAME OF APPLICANT IMMANUEL LUTHERAN CHURCH PHONE NO. 636-1599
ADDRESS 20 MONTEREY CIRCLE CITY LAKELAND STATE NJ ZIP 08701

DIRECTIONS TO LOCATION _____

WELL APPLICATION

TYPE OF CASING: Material _____ Diameter _____ Grade _____ Thickness _____
TYPE AND METHODS OF SEALING JOINTS: Type _____ Method _____
METHOD OF INSTALLATION _____ If Rotary or Auger, size of hole _____
GROUTING MATERIAL _____ Depth & Method of grouting: Depth _____
Method _____
STORAGE TANK CAPACITY _____ Model No. _____
WELL DRILLER _____ (Print) _____ Lic. # _____ Driller Phone # _____
DRILLER _____ (Signature) _____ State Well Permit # _____

NOTE: Copy of NUDEP "Permit to Drill Well" must be attached. Hose bibs are prohibited on non-potable well, unless such well is sampled. NUDEP's "Well Record" must be immediately submitted to the Health Department upon installation of well.

SEPTIC APPLICATION

TYPE OF BUILDING TO BE SERVED SEH206 Dwelling Unit: No. of Bedrooms N/A
EXPANSION ATTIC, DEN OR REC. ROOM: Yes _____ No N/A If yes, calculate as additional bedroom N/A
PERCOLATION TEST PERFORMED BY WICKHAM C. LONGO Date 10/17/99 Phone 863-1403
WEATHER CONDITIONS AT TIME OF TEST 75° overcast
ENGINEER'S SIGNATURE AND SEAL [Signature] NUDEP

NOTE: All engineering data relating to soils, percolation & system design must be on engineer's drawing. Engineer's drawings must be signed & sealed by the engineer.

STATEMENT: Submit four (4) complete legible copies of applications, including engineer's & well driller's submissions. Final approval will only be granted after all inspections are completed, "as-built" drawings are submitted (where required) and satisfactory water analysis received, and all fees are paid. Permit is valid for one (1) year from date of issuance.

AGENCY NOTE: The Department is not adopting the forms in proposed Appendix B, as explained in the Summary of Comments. The interest of clarity, proposed Appendix B is not reproduced herein for deletion. The Department is adopting the following Appendix B.

APPENDIX B

STANDARD FORMS FOR SUBMISSION OF SOILS/ENGINEERING DATA

COUNTY/MUNICIPALITY OCEAN/LAKEWOOD

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

Form 1—General Information

1. Type of Permit Needed (Check applicable categories):
- ☐ New Construction
 - ☐ Alteration/No Expansion or Change of Use
 - ☒ Alteration/Expansion or Change in Use
 - ☐ Alteration/Malfunctioning System
 - ☐ Deviation from Standards
 - ☐ Repairs to Existing System

2. Location of Project:

Municipality LAKEWOOD Block No. 284 Lot No. 20-21
Street Address 20 MONTEREY CIRCLE Zip 08701

3. Name of Applicant (print): IMMABEL LUTHERAN CHURCH

Applicant's Present Address: SAME

5. Applicant's Phone Number: 636-1599

Type Of Facility:

- ☐ Residential
- ☒ Commercial/Institutional

Specify Type of Establishment: CHURCH/SCHOOL

7. Type of Wastes to be Discharged:

- ☒ Sanitary Sewage
- ☐ Industrial Wastes
- ☐ Other—Specify Type

11/16 Other Approvals/Certification/Waivers/Exemptions (Attach to Application):

- ☐ Pinelands Commission
- ☐ U.S. Army Corps of Engineers
- ☐ NJDEP—Bureau of Flood Plains Management
- ☐ Other—Specify:

I hereby certify that the information furnished on Form 1 of this application is true. I am aware that false swearing is a crime in this State and subject to prosecution.

Signature of Applicant _____ Date 10/8/99

FOR AGENCY USE ONLY

— Application Denied—Reason for Denial/Citation of Rules Violated: _____

— Application Approved

Application Approved Subject to Approval by NJDEP

Date of Action 11/13/99 Date of Approval 11/13/99

Name and Title Franklin Thompson, Sr.

COUNTY/MUNICIPALITY OCEAN/LAKEWOOD

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

Form 2a—General Site Evaluation Data Loc 20-21 Block 284

1. Name of Site Evaluator (print): WILLIAM C. LONGO

2. Business Address of Site Evaluator: 182 SOUTH ST. FREEHOLD, NJ 07728

3. Business Phone Number of Site Evaluator: 863-1403

Special Site Limitations Identified (Check appropriate Categories):

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

5. Soil Logs—Enter on Form 2b—Use one sheet for each soil log.

6. Considerations Relating to Disturbed Ground:

- 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 = _____

14/14 Hydraulic Head Tests:

- 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 _____

8. Attachments (Check items included):

- ☒ Site Plan
- ☐ Key Map Showing Location of Site On U.S.G.S. Quadrangle or Other Accurate Map
- ☐ Key Map Showing Location of Site on U.S.D.A. Soil Survey Map
- ☒ Other—Specify SOIL PERM. CLASS RATING

9. 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. 14:10A-1 et seq.) and is subject to penalties as prescribed in N.J.A.C. 7:14-3.

Signature of Soil Evaluator William C. Longo Date 10/8/99

Signature of Professional Engineer _____ License 135284

ENVIRONMENTAL PROTECTION

COUNTY/MUNICIPALITY OCEAN/LAKEWOODAPPLICATION FOR PERMIT TO CONSTRUCT/ALTER/REPAIR
AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM

Form 2b—Soil Log and Interpretation

Lot 20-21 Block 284

1. Log Number _____ Method (Check One): _____ Profile Pit _____ Boring _____

2. Soil Log

Depth (inches) _____
Munsell Color Name and Symbol; Estimated Textural Class;
Estimated Volume % Coarse Fragments, If Present; Structure;
Moist or Dry Consistence; Mottling—Abundance, Size and
Contrast, If PresentSEE DESIGN PLAN
FOR SOIL LOGS

3. Ground Water Observations:

None Encountered

— Seepage—Indicate Depth _____

— Pit/Boring Flooded—Depth after _____ Hours _____

4. Soil Limiting Zones (Check Appropriate Categories):

— Fractured Rock Substratum—Depth to Top _____

— Massive Rock Substratum—Depth to Top _____

— Excessively Coarse Horizon—Depth Top to Bottom _____

☒ Excessively Coarse Substratum—Depth to Top 25"

— 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 _____

5. Soil Selliability Classification: II Sc

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 10/8/99Signature of Professional Engineer [Signature] License # 35284COUNTY/MUNICIPALITY OCEAN/LAKEWOODAPPLICATION FOR PERMIT TO CONSTRUCT/ALTER/REPAIR
AN INDIVIDUAL SUBSURFACE SEWAGE DISPOSAL SYSTEM

Form 3a. Soil Permeability Data

Lot 20-21 Block 284

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

Type of Test	Test (number)	Replicate (letter)	Depth (inches)	Result*
PERM CLASS	TPI	A	35-112	12-5
	TPI	B	35-112	12-5
	TPI2	A	34-106	12-5
	TPI	B	34-106	12-5

*For tube permeameter, pit-balling 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.

ADOPTIONS

2. Design Permeability/Percolation Rate: Specify Test Number 12-4
— Average of Test Replicates — Single Replicate (12-4)
— Slowest of Replicates

3. Type of Limiting Zone Identified

Test Number

See 2b.

4. Attachments (Check items included):

— Form 3b—Tube Permeameter Test Data—Number of Sheets _____

☒ Form 3c—Soil Permeability Class Rating Test Data—
Number of Sheets 4

— Form 3d—Percolation Test Data—Number of Sheets _____

— Form 3e—Pit-Balling Test Data—Number of Sheets _____

— Form 3f—Piezometer Test Data—Number of Sheets _____

— 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 Soil Evaluator [Signature] Date 10/8/99Signature of Professional Engineer [Signature] License # 35284

Form 3b. Tube Permeameter Test Data

1. Test Number _____ Replicate (Letter) _____ Date Collected _____

2. Material Tested: _____ Fill _____ Test is Native Soil—Indicate Depth _____

3. Type of Sample: _____ Undisturbed _____ Disturbed

4. Sample Dimensions: Inside Radius of Sample Tube, r , in cm _____Length of Sample, L , in inches _____

5. Bulk Density Determination (Disturbed Samples Only):

Sample Weight (Wt. Tube Containing Sample—Wt. of Empty Tube), grams _____

Sample Volume ($L \times 2.54 \text{ cm/inch} \times 3.14 r^2$), cc _____

Bulk Density (Sample Wt./Sample Volume), grams/cc _____

6. Standpipe Used: _____ No _____ Yes

—Indicate Internal Radius, cm _____

7. Height of Water Level Above Rim of Test Basin, in inches:

At the Beginning of Each Test Interval, H_1 _____At the End of Each Test Interval, H_2 _____

8. Rate of Water Level Drop (Add additional lines if needed):

Time, Start of Test Interval, T_1 Time, End of Test Interval, T_2 Length of Test Interval, T , minutes

Test Number _____ Reference Soil Log _____ Date Tested _____

Depth of Pit, ft _____

Area of Pit, ft² _____

4. Description of Rock Substratum Within Test Zone:

Type of Rock _____

Name of Formation _____

Average Fracture Spacing _____

Type of Fractures (Check Appropriate Category):

_____ Open (Wide), Clean—Width of Openings, mm _____

_____ Open (Wide), Infilled with Fines—Width of Openings, mm _____

_____ Tight (Closed)

Orientation of Fractures:

_____ Horizontal (Parallel to Pit Bottom) Or Nearly So

_____ Inclined

_____ Vertical (Parallel to Sides of Pit) Or Nearly So

Hardness of Rock:

_____ Ripplable with Hand Tools

_____ Not Ripplable with Hand Tools, Ripplable by Machine

_____ Not Ripplable by Machine, Explosives Used

Time of First Basin Flooding _____

Volume of Water Added, Gal _____

Result of First Basin Flooding:

_____ Basin Drained within 24 Hrs.—Indicate Time _____

_____ Basin Not Drained within 24 Hrs.

Time of Second Basin Flooding _____

Volume of Water Added, Gal _____

Result of Second Basin Flooding:

_____ Basin Drained within 24 Hrs.—Indicate Time _____

_____ Basin Not Drained within 24 Hrs.

I hereby certify that the information furnished on Form 3g 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 _____

Signature of Professional Engineer _____ License # _____

Form 4. General Design Data

Volume of Sanitary Sewage, gal _____

Residential: No. of Dwelling Units _____ Total No. of Bedrooms _____

☒ 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. CHURCH FACILITY / SCHOOL

SEE DESIGN PLAN FOR CALCS.

2. 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 _____

b) Describe Nature of Alteration or Repair: NEW FIELD & TANKS

3. System Components

a) Grease Trap Capacity, gals _____

Show Calculation Used: _____

b) Septic Tank Capacities, gals: 1 First (Single) Compartment 1000 GAC

_____ Second Compartment _____ Third Compartment _____

c) Effluent Distribution

Method: _____ Gravity Flow ☒ Gravity Dosing _____

_____ Pressure Dosing

Dosing Device: ☒ Pump _____ Siphon _____

d) Dosing Tank Capacities, gals: Total Capacity 1000 GALLON

Reserve Capacity 670

e) Laterals: Number 5 Total Length 301 Pipe Size 4" Spacing 30' C.

f) Connecting Pipe: Size 2" Length 18'

g) Manifold: Size _____ Length _____

h) Disposal Field: Type of Installation SPE

Design Permeability (Percolation Rate) 12-4

Trenches: Width _____ Total Length _____ Bed: Area 486 sq ft

i) Seepage Pits: Design Percolation Rate _____

Number of Pits _____ Total Percolating Area Provided _____

4. Attachments (Check items included):

☒ General Plan of System Showing Location of All System Components

☒ 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 SOIL PEN. CLASS RATING

5. I hereby certify that the information furnished on Form 4 of this application (and 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 Professional Engineer _____ Date 10/8/99

Form 5. Design of Pressure Dosing System

1. Configuration of Distribution Network:

Type of Manifold: _____ End _____ Central

Distribution Laterals: Number _____ Length, ft _____ Spacing, ft _____

Hole Diameter, in _____ Hole Spacing, in _____

Diameter of Laterals, in _____

2. Lateral Discharge Rate:

Design Pressure Head at Supply End of Laterals, H_p, ft _____

Hole Discharge Rate, Q, gpm _____

Number of Holes per Lateral, n _____

Lateral Discharge Rate, (Q x n) gpm _____

Lortech Engineering

182 South Street, Freehold NJ 07728

Soil Permeability Class Rating

Municipality Lakewood Township Block 284 Lot 20-21

1. Test # 1 Replicate (Letter) A

2. Sample Depth 35-112" Soil Pit / Boring # TP-1 Date Collected 08/17/99

3. Coarse Fragment Content:

Total Weight of Sample, WT., grams	<u>200</u>
Weight of Material on 2mm sieve, WCF, grams	<u>0</u>
Weight % Coarse Fragment (WCF./WT. x 100)	<u>0%</u>

4. Oven Dry Weight (24 hrs., 105c) of 40g Air Dry Sample, grams, Wt. 38.2

5. Hydrometer Calibration, Rc 6.2

6. Hydrometer Reading - 40 seconds, grams, R1 7.2
Temperature of Suspension F 77.0

7. Corrected Hydrometer Readings, grams, R1' 2.8

8. Hydrometer Reading - 2 hours, grams, R2 5.2
Temperature of Suspension F 77.0

9. Corrected Hydrometer Reading, grams, R2' 0.8

10. % Sand = (Wt. - R1')/Wt. X 100 = 93%

11. % Clay = R2' /Wt. x 100 = 2% (Note: 0% represents less than 1%)

12. Sieve Analysis

a. Oven Dry Wt. (2 hrs., 105 C) Total Sand Fraction
(Soil retained in 0.047 mm sieve), grams 23.0

b. Wt. of Fine Plus Very Fine Sand Fraction
(Sand passing 0.025 mm sieve), grams 7.6

c. % Fine Plus Very Fine Sand (b/a) 33%

13. Soil Morphology (Natural Soil Samples Only):

Structure of Soil Horizon Tested SG
Consistence of Soil Horizon Tested: Dry Moist LOOSE

14. Soil Permeability Class Rating

(Based upon average textural analysis of this replicate & other replicate samples) K-5

15. I hereby certify that the information furnished on Form 3C 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 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 08/24/99

Signature of Professional Engineer [Signature] License # 35284

William C. Longo, P.E. Lic. # 35284

Lortech Engineering

182 South Street, Freehold NJ 07728

Soil Permeability Class Rating

Municipality Lakewood Township Block 284 Lot 20-21

1. Test # 1 Replicate (Letter) B

2. Sample Depth 35-112" Soil Pit / Boring # TP 1 Date Collected 08/17/99

3. Coarse Fragment Content:

Total Weight of Sample, WT., grams	<u>200</u>
Weight of Material on 2mm sieve, WCF, grams	<u>0</u>
Weight % Coarse Fragment (WCF./WT. x 100)	<u>0%</u>

4. Oven Dry Weight (24 hrs., 105c) of 40g Air Dry Sample, grams, Wt. 38.2

5. Hydrometer Calibration, Rc 6.2

6. Hydrometer Reading - 40 seconds, grams, R1 7.2
Temperature of Suspension F 77.0

7. Corrected Hydrometer Readings, grams, R1' 2.8

8. Hydrometer Reading - 2 hours, grams, R2 4.8
Temperature of Suspension F 77.0

9. Corrected Hydrometer Reading, grams, R2' 0.4

10. % Sand= (Wt. -R1')/Wt. X 100 = 93%

11. % Clay = R2' /Wt. x 100= 1% (Note: 0% represents less than 1%)

12. Sieve Analysis

a. Oven Dry Wt. (2 hrs., 105 C) Total Sand Fraction
(Soil retained in 0.047 mm sieve), grams 23.2

b. Wt. of Fine Plus Very Fine Sand Fraction
(Sand passing 0.025 mm sieve), grams 7.2

c. % Fine Plus Very Fine Sand (b/a) 31%

13. Soil Morphology (Natural Soil Samples Only):

Structure of Soil Horizon Tested SG
Consistence of Soil Horizon Tested: Dry Moist LOOSE

14. Soil Permeability Class Rating

(Based upon average textural analysis of this replicate & other replicate samples) K-5

15. I hereby certify that the information furnished on Form 3C 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 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 08/24/99

Signature of Professional Engineer [Signature] License # 35284

William C. Longo, P.E. Lic. # 35284

Lortech Engineering

182 South Street, Freehold NJ 07728

Soil Permeability Class Rating

Municipality Lakewood Township Block 284 Lot 20-21

1. Test # 1 Replicate (Letter) A

2. Sample Depth 34-106" Soil Pit / Boring # TP 2 Date Collected 08/17/99

3. Coarse Fragment Content:

Total Weight of Sample, WT., grams 200
Weight of Material on 2mm sieve, WCF, grams 0
Weight % Coarse Fragment (WCF./WT. x 100) 0%

4. Oven Dry Weight (24 hrs., 105c) of 40g Air Dry Sample, grams, Wt. 38.2

5. Hydrometer Calibration, Rc 6.2

6. Hydrometer Reading - 40 seconds, grams, R1 7.7
Temperature of Suspension F 77.0

7. Corrected Hydrometer Readings, grams, R1' 3.3

8. Hydrometer Reading - 2 hours, grams, R2 5.0
Temperature of Suspension F 77.0

9. Corrected Hydrometer Reading, grams, R2' 0.6

10. % Sand = (Wt. - R1')/Wt. X 100 = 91%

11. % Clay = R2' /Wt. x 100= 2% (Note: 0% represents less than 1%)

12. Sieve Analysis

a. Oven-Dry Wt. (2 hrs., 105 C) Total Sand Fraction
(Soil retained in 0.047 mm sieve), grams 23.0

b. Wt. of Fine Plus Very Fine Sand Fraction
(Sand passing 0.025 mm sieve), grams 7.2

c. % Fine Plus Very Fine Sand (b/a) 31%

13. Soil Morphology (Natural Soil Samples Only):

Structure of Soil Horizon Tested SG
Consistence of Soil Horizon Tested: Dry Moist LOOSE

14. Soil Permeability Class Rating

(Based upon average textural analysis of this replicate & other replicate samples) K-5

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Signature of Site Evaluator [Signature] Date 08/24/99

Signature of Professional Engineer [Signature] License # 35284

William C. Longo, P.E. Lic. # 35284

Lortech Engineering

182 South Street, Freehold NJ 07728

Soil Permeability Class Rating

Municipality Lakewood Township Block 284 Lot 20-21

1. Test # 1 Replicate (Letter) B

2. Sample Depth 34-106" Soil Pit / Boring # TP 2 Date Collected 08/17/99

3. Coarse Fragment Content:

Total Weight of Sample, WT., grams	<u>200</u>
Weight of Material on 2mm sieve, WCF, grams	<u>0</u>
Weight % Coarse Fragment (WCF./WT. x 100)	<u>0%</u>

4. Oven Dry Weight (24 hrs., 105c) of 40g Air Dry Sample, grams, Wt. 38.2

5. Hydrometer Calibration, Rc 6.2

6. Hydrometer Reading - 40 seconds, grams, R1 8.2
Temperature of Suspension F 77.0

7. Corrected Hydrometer Readings, grams, R1' 3.8

8. Hydrometer Reading - 2 hours, grams, R2 5.0
Temperature of Suspension F 77.0

9. Corrected Hydrometer Reading, grams, R2' 0.6

10. % Sand = (Wt. - R1')/Wt. X 100 = 90%

11. % Clay = R2' / Wt. x 100 = 2% (Note: 0% represents less than 1%)

12. Sieve Analysis

a. Oven Dry Wt. (2 hrs., 105 C) Total Sand Fraction
(Soil retained in 0.047 mm sieve), grams 23.0

b. Wt. of Fine Plus Very Fine Sand Fraction
(Sand passing 0.025 mm sieve), grams 6.6

c. % Fine Plus Very Fine Sand (b/a) 29%

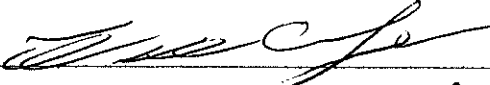
13. Soil Morphology (Natural Soil Samples Only):

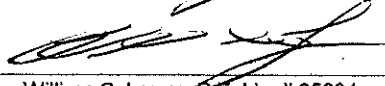
Structure of Soil Horizon Tested SG
Consistence of Soil Horizon Tested: Dry Moist LOOSE

14. Soil Permeability Class Rating

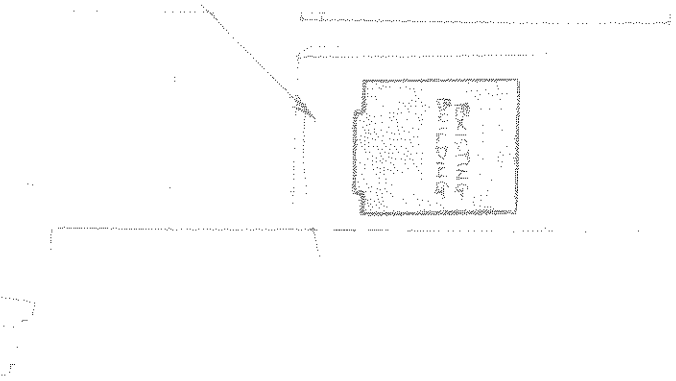
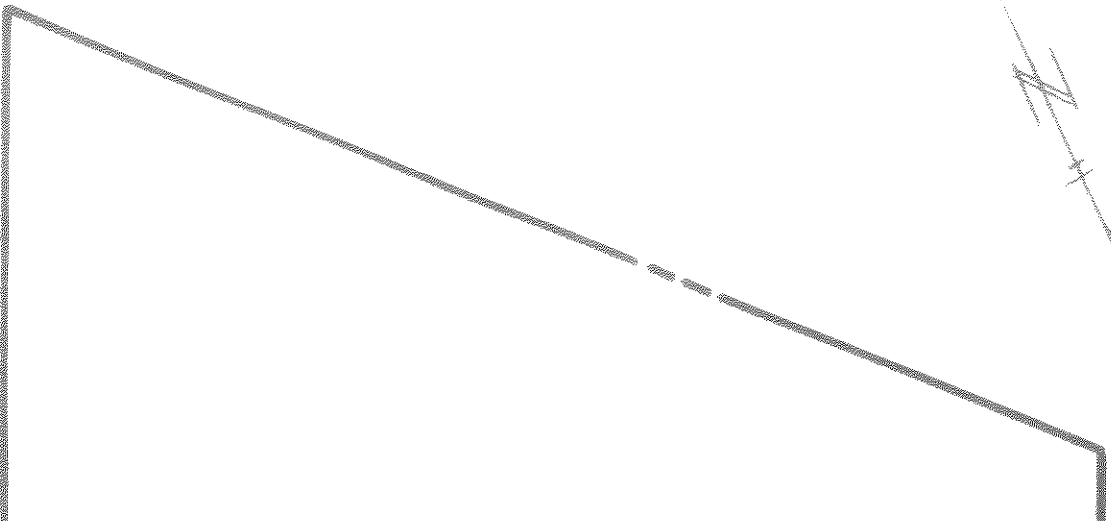
(Based upon average textural analysis of this replicate & other replicate samples) K-5

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Signature of Site Evaluator  Date 08/24/99

Signature of Professional Engineer  License # 35284

William C. Longo, P.E. Lic. # 35284



SCHEDULE 80 PVC PIPE at 38

2/6 R E E G 4-0

1500

Sec. 0. EXISTING GRADE

www.abn.co.uk

11/14/2011

2000

PROPOSED
1000
GALLON
SEPTIC TANK

PROPOSED
1000
GALLON
POST PAID

The image shows three chemical structures of HCH isomers. The top structure is γ -HCH, a chair conformation with three axial chlorine atoms and three equatorial chlorine atoms. The middle structure is δ -HCH, also a chair conformation with two axial and four equatorial chlorine atoms. The bottom structure is α -HCH, a chair conformation with one axial and five equatorial chlorine atoms.

2009

[illegible]

NOTE: QUANTIFICATION OF
METHYLATED AND
HYDROLYZED PROTEIN
TO EXTRACTED DNA

2500

353

3

502

S1071

9^h MIN. 18^h MAX.

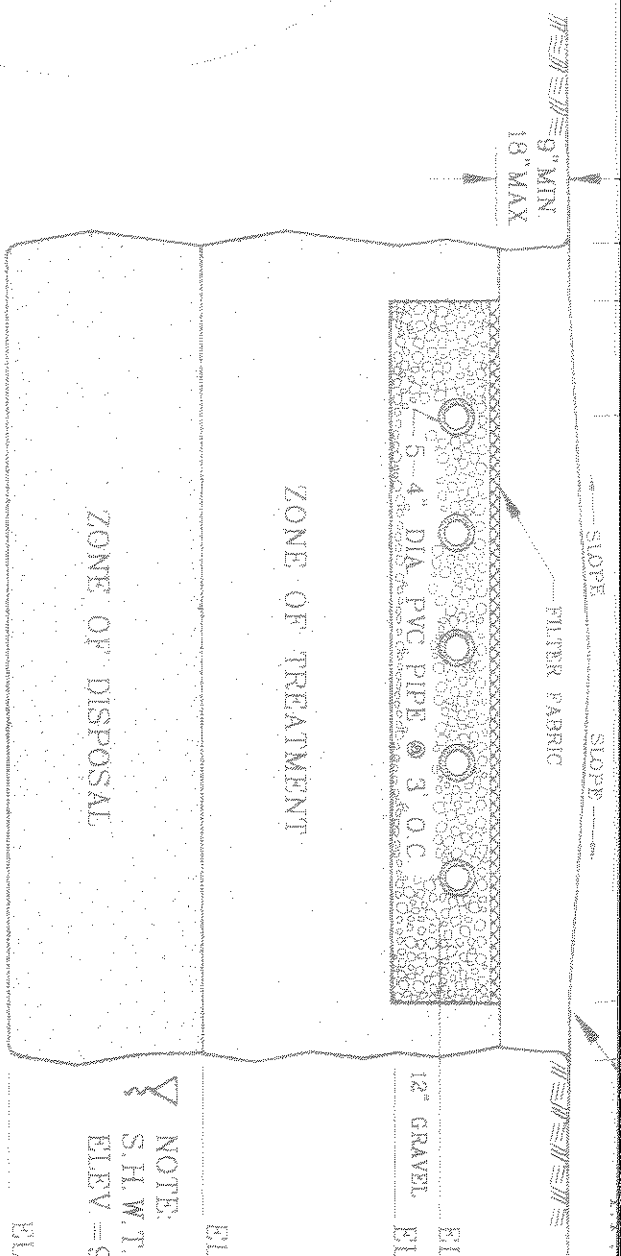
[illegible]

100

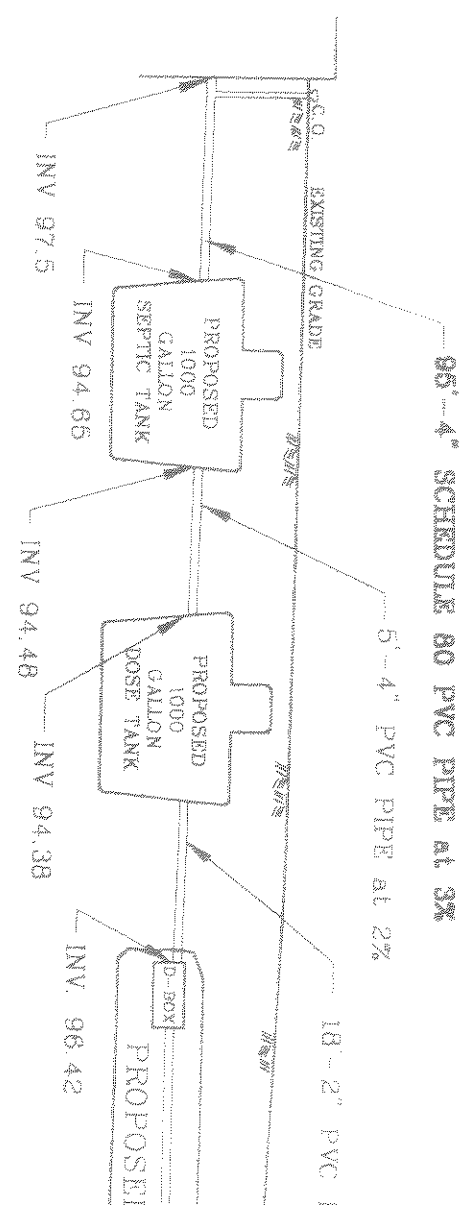
ZONE OF DISORDER

NOTES
T. H. W.

$\frac{d}{dt} \left(\frac{\partial L}{\partial \dot{x}} \right) = \frac{\partial L}{\partial x}$

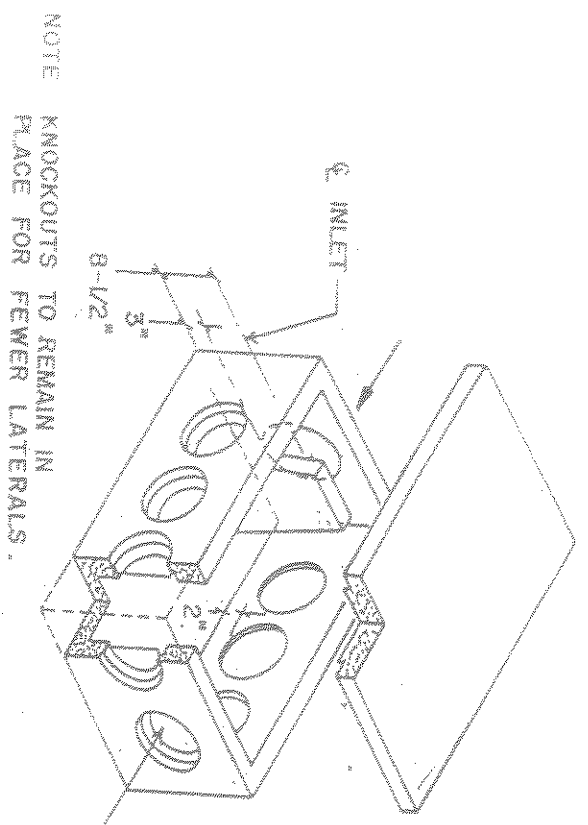


SRE DISPOSAL FIELD DETAIL
N.T.S.



SYSTEM PROFILE
N.T.S.

Site Plan
N.T.S.

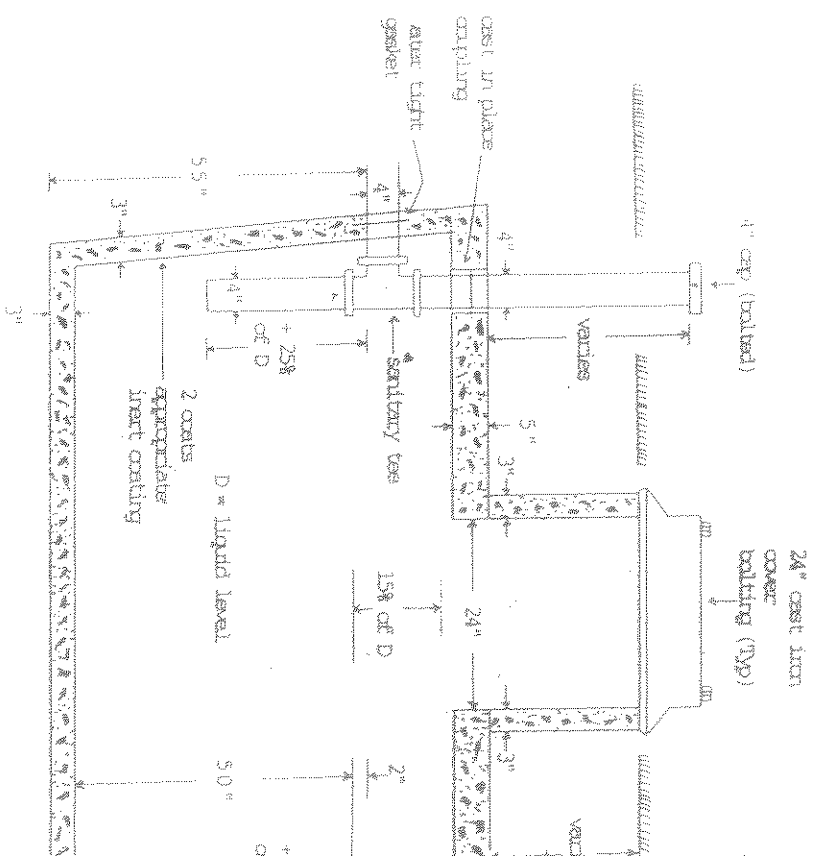


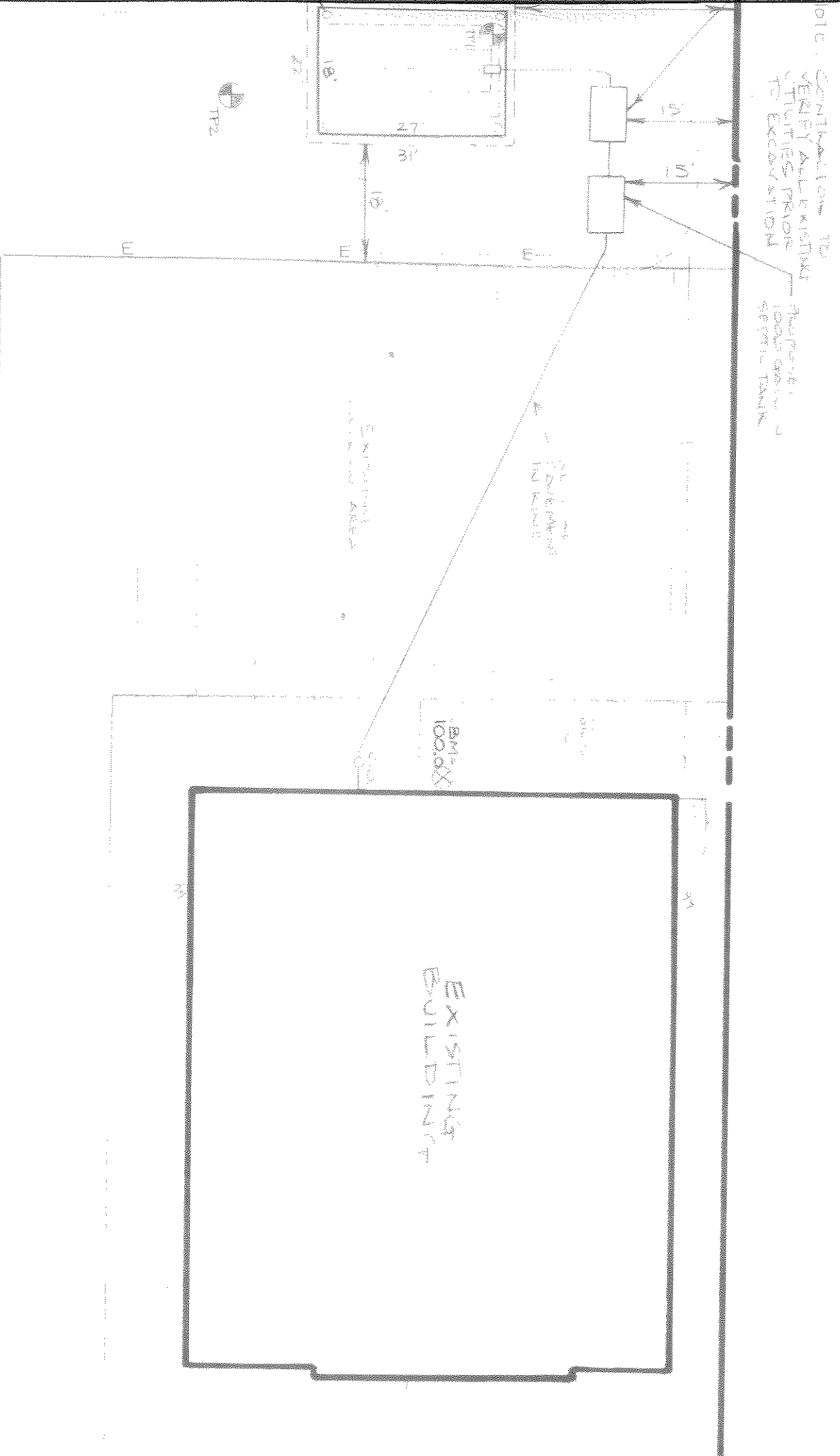
"D"-BOX DETAIL (7-OUTLET)
N.T.S.

TOP, BOTTOM, AND SIDES
ALL 1-1/2" THICK.
OUTLETS ——— 4"
KNOCKOUTS WITH HIGH
DENSITY POLYETHYLENE
SEALS

Unit is: 9'4" in length
4'8" in width
5'7" in height
4'7" to inlet

1000 GALLON SEPTIC
N.T.S.





Detail

Scale: 1" = 20'

T.P. 1 ELEV. = 98.1
T.P. 2 ELEV. = 98.3

12" GRAVEL
ELEV. = 96.3
ELEV. = 95.3

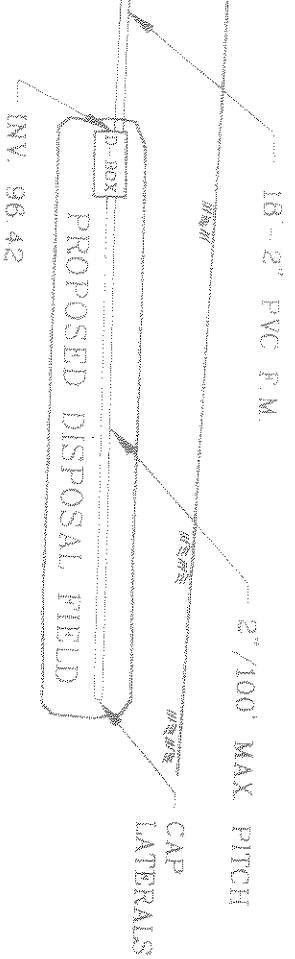
ELEV. = 91.3
NOTE:
S.H.W.T. BELOW
ELEV. = 91.3

ELEV. = 87.3

DETAIL

at 3%

PE at 2%



GRAVITY DOSING SYSTEM

Required dose volume with K-4 fill = .75V min and .25Q max
V = distribution network volume. 18" 2" PVC = 2.9 GAL.
D-box = 15 GAL +/- Therefore V = 17.9 GAL.

75V = 75(17.9) = 13.4 GAL

Q = average daily flow = 300 GAL .25Q = 25(300) = 75 GAL

Min. Dose Volume = 17.9 GAL. Max. Dose Volume = 75 GAL. Use 60 GAL

A 1000 GAL Mershon dose tank has an average interior surface area of 38 SF. Therefore and low float settings is (60 GAL)/(7.48 GAL/CFY)(38 SF) = 0.21 FT.

Total Dynamic Head (TDH) = Elevation head + friction head

Elevation head = D-Box over elev - low water elevation
= 96.75 - 91.05 = 5.7'

Friction head is calculated by method of equivalent pipe lengths.

FITTING TYPE	EQUIVALENT LENGTH OF STRAIGHT PIPE
pump outlet	2.8'
beds	0 ea. @ 8.5' = 51.0'
union	0.5'
D-box inlet	8.5'
2" pipe	18.0'
	80.8' Say 81'

Friction loss per 1,000' of 2" pipe at 40 GPM = 46.8'
Therefore, friction head loss = 46.8/1000' x 80 = 3.7'

Total dynamic head = 5.7' + 3.7' = 9.4' say 10'

Use one (1) single phase, 115V GOULD MODEL 3871 or equivalent pump. Control floats also to be as manufactured by GOULD or approved equal.

MODEL 3871 will pump 45 GPM against a 10' TDH.

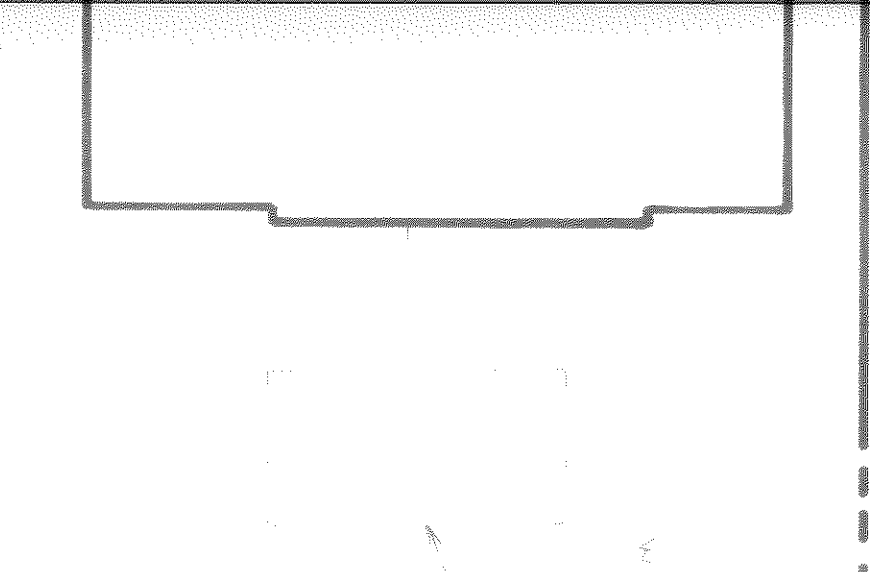
Check pumping time: 60 GAL/43 GPM = 1.33 min < 15 min. OK

Allowing 4" above high water level to high water alarm, the total distance from bottom 12" + 2.5" + 4" = 18.5" < 52" OK

Calculate reserve capacity: 52" - 18.5" = 33.5" = 2.8'

2.8' x 4.0' x 8.0' x 7.48 GAL/CF = 670 Gal > 300 Gal, therefore single p

WATER TIGHT COVER BOLTED OR LOCKED



PLAN OF THE
SEPTIC SYSTEM
OF THE EXISTING
SITE. SEE THE
SITE PLAN.



USGS LAKEWOOD

250 max
9 GAL.

100) = 75 GAL
Time = 75 GAL. Use 60 GAL.

For surface area of 38 SF. Therefore, the distance between high
38 SF) = 0.21 FT.

on head

ation

pipe lengths.

TH OF STRAIGHT PIPE

GENERAL NOTES

1. The purpose of this plan is to specify required septic system repairs. It is not, nor should it be intended for use as a Survey. Metes and bounds information from a plan provided by client.
2. No landscaping, trees, shrubs, etc. to be placed within ten (10') feet of field.
3. When fill material is utilized, the fill shall meet the following requirements:
 - i. Coarse fragment content less than 15 percent by volume or less than 25 percent by weight;
 - ii. Textural analysis (composition, by weight, of size fraction passing the two millimeter sieve): from 85 to 95 percent sand, from five to 15 percent silt plus clay, minimum two percent clay; and
 - iii. Permeability from six to 20 inches per hour or percolation rate from three to 30 minutes per inch.

THE CONTRACTOR SHALL PROVIDE THE DESIGN ENGINEER WITH CERTIFIED PERMEABILITY CLASS RATINGS ON THE IMPORTED FILL PRIOR TO CONSTRUCTION

4. Compaction shall be performed per N.J.A.C. 7:9A 10.4 iii, iv, as follows:

- iii. Fill material shall be spread and compacted in layers one foot or less in thickness.
- iv. Compaction may be accomplished manually or mechanically, by tamping or rolling, or by driving over the filled area in a controlled pattern using tracked or rubber-tired vehicles.

Compaction may also be accomplished by puddling.

5. All materials shall conform to NJAC 7:9A specifications.
6. Tanks and distribution box and septic tank shall be as manufactured by R & E Mershon or approved equal. Any unused outlets on the D-box shall be sealed water tight.
7. Gravel filter shall be NJDOT #3 or #4 WASHED STONE.
8. The installation shall be certified by a N.J. licensed professional engineer.

NOTE: A MINIMUM 72 HOURS NOTICE TO THE ENGINEER IS REQUIRED

9. Any condition found during installation of the system which is not as depicted on this plan shall immediately be brought to the attention of the design engineer.
10. The contractor shall verify underground utility locations prior to excavation.
11. The soil suitability classification for this design is: IIIc.
12. All disturbed areas shall be seeded and mulched to facilitate ground cover.
13. No revisions to this plan will be made unless approved in advance by the design engineer.

(38.5%) = 0.21 ft.
ation head.
ation
pipe lengths.
GTH OF STRAIGHT PIPE

- ii Coarse fragment content less than 75 percent by volume or less than 25 percent by weight.
- iii Textural analysis (composition, by weight, of size fraction passing the two millimeter sieve): from 85 to 95 percent sand, from five to 15 percent silt plus clay, minimum two percent clay, and
- iiii Permeability from six to 20 inches per hour or percolation rate from three to 30 minutes per inch.

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Compaction may also be accomplished by puddling.

5. All materials shall conform to NJAC 7:9A specifications.

6. Tanks and distribution box and septic tank shall be as manufactured by R & E Merston or approved equal. Any unused outlets on the D-box shall be sealed water tight.

7. Gravel filter shall be N/DOT #3 or #4 WASHED STONE.

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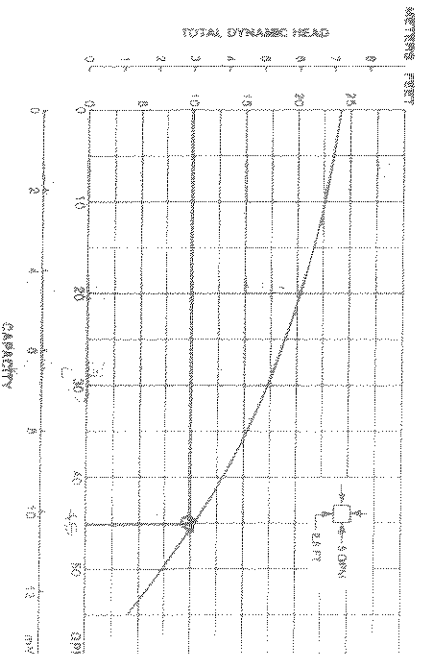
14. A BOLTED CAST IRON COVER MUST BE INSTALLED ON THE SEPTIC TANK AND DOSE TANK. CONCRETE COVERS WILL NOT BE ACCEPTED.

ORCA
SUBMERSIBLE EFFLUENT PUMP

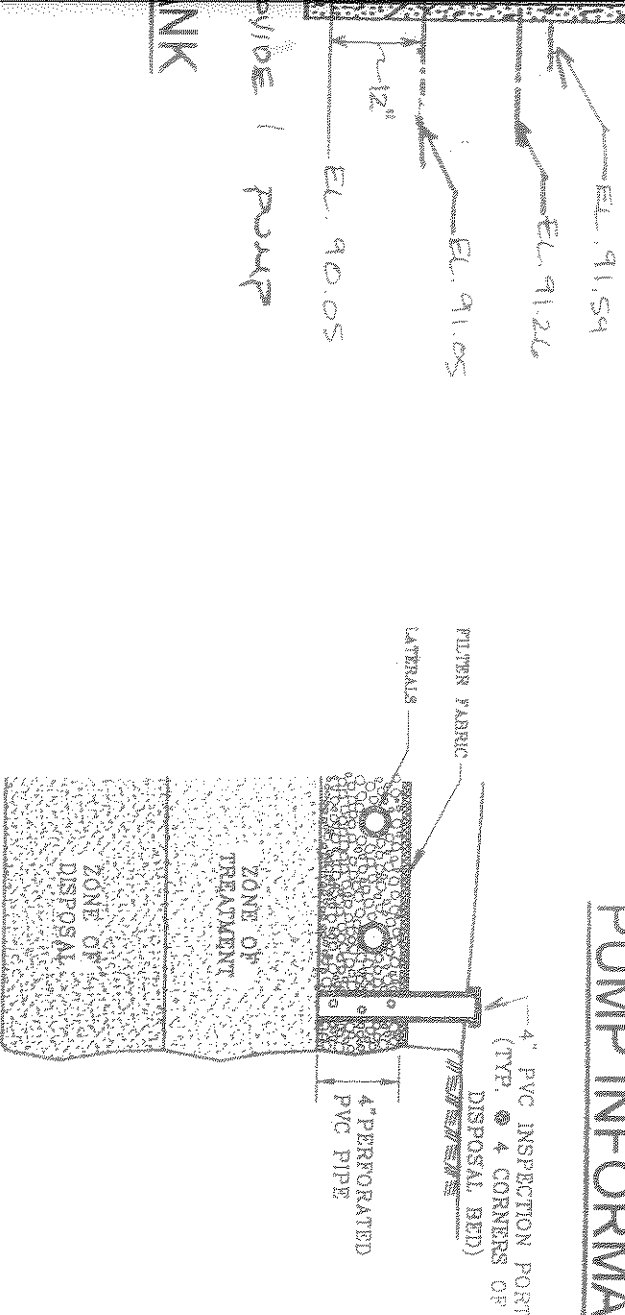
Submersible
Effluent Pump

MODEL

3871



PUMP INFORMATION



INSPECTION PORT DETAIL

N.T.S.

WILLIAM C. LON
N.J. PROFESSIONAL ENGINEER N
N.J. PROFESSIONAL PLANNER N

septic system repairs. It is not, nor should it be information from a plan provided by

thin ten (10') feet of field.

following requirements.

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or percolation rate from three to 30

THE DESIGN ENGINEER WITH CERTIFIED ON THE IMPORTED FILL PRIOR TO CONSTRUCTION

10 4 iii. iv. as follows:

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STONE

professional engineer. THE ENGINEER IS REQUIRED

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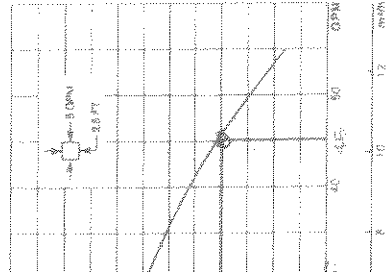
ations prior to excavation.

IIIc

o facilitate ground cover.

oved in advance by the design engineer

BE INSTALLED ON THE SEPTIC TANK AND DOSE BE ACCEPTED.



ION

OWNER/APPLICANT

Immanuel Lutheran Church
Lot 20 & 21 Block 284
Lakewood Township, Ocean Cty, NJ

DESIGN CRITERIA

The existing facility consists of a church with administrative office, and a school for pre-K age children. The church has an existing septic system that will remain in place and the school also has an existing septic system that will remain in place. The purpose of this design is to add a system at the rear of the property to handle an additional handicap bathroom being added to the school. The total daily flow from the existing two (2) systems plus the proposed system will not exceed 2,000 GPD

The proposed system will be sized to accommodate 30 students per day (Actual daily attendance is 20 students 3 days per week for the entire school)

Daily design flow with no showers or cafeteria per NJAC 7:9A-7.4(d):
30 students x 10 gal/day = 300 GPD

Field size required based on K-4 soils: 300 GPD x 1.61 = 483 S.F.
Proposed field size: 18' x 27' = 486 S.F.

Septic tank proposed: 1,000 Gal.

Soil Samples: TP1: 35-112" TP2: 34 - 106"
Soil Permeability class ratings: TP1: K-5 TP2: K-5

SOIL DATA

Date 8/17/99
Weather: Cloudy, 75 degrees
Witnessed by: Not Witnessed

TEST PIT: 1
ELEVATION: 98.1

FROM IN.	TO IN.	FROM ELEV	TO ELEV	"K" RATING	DESCRIPTION
0	12	98.1	97.1		Loose, SG sand, 10YR 3/4
12	35	97.1	95.2		Coarse loamy sand, 0-5% gravel, friable, SAB, 10YR 5/6
35	112	95.2	88.8	K-5	Loose, SG sand, 5YR 5/3, dry.
112	121	88.8	88.0		Coarse, SG sand, 5Y 7/2 dry

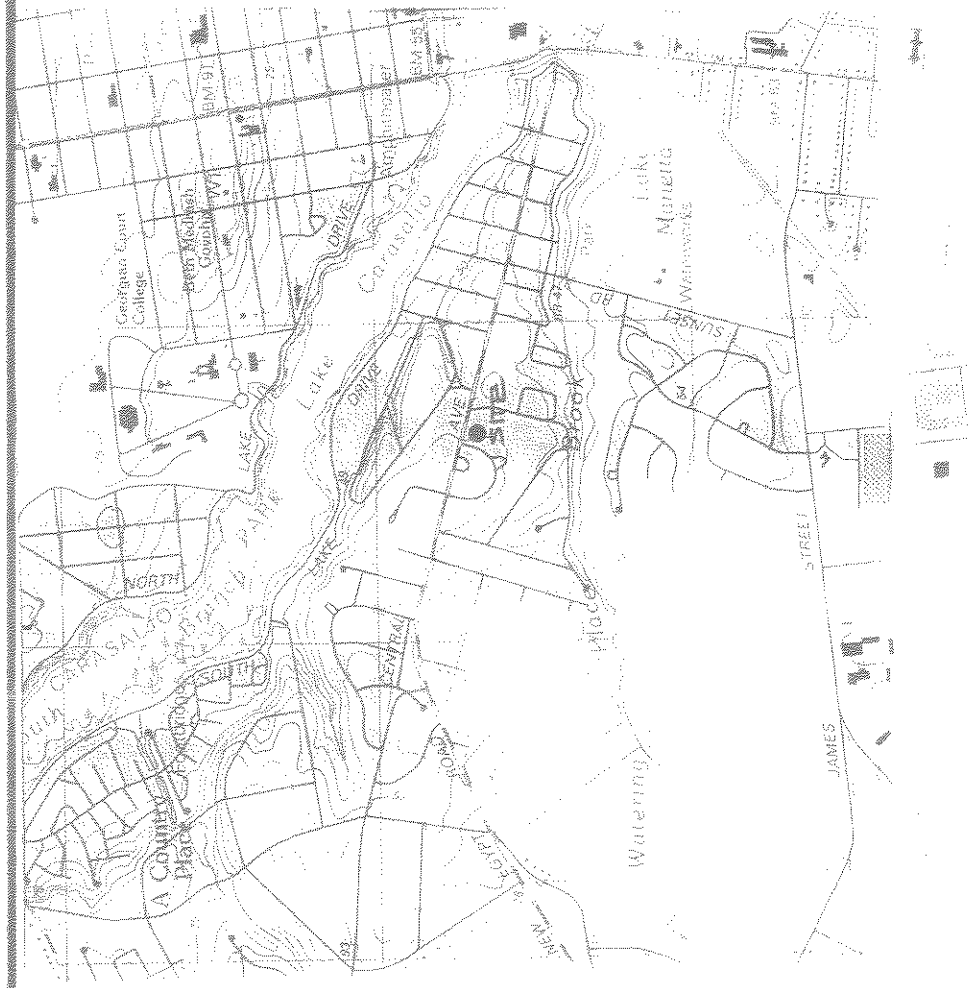
No seepage or mottles to 121" ELEV 88.0

TEST PIT: 2
ELEVATION: 98.3

FROM IN.	TO IN.	FROM ELEV	TO ELEV	"K" RATING	DESCRIPTION
0	3	98.3	98.1		Loamy sand grass mat
3	13	98.1	97.2		Coarse, loamy sand, friable, SAB, 10YR 5/6
13	25	97.2	96.2		Loamy sand, SAB, friable, 10YR 5/6
25	34	96.2	95.5		Loamy sand, SAB, friable, 30-40% gravel, 10YR 5/6
34	106	95.5	89.5	K-5	Loose, SG sand, 5YR 5/3, dry.
106	127	89.5	87.7		Coarse, SG sand, 5Y 7/2 dry

No seepage or mottles to 127" ELEV 87.7

DESIGNER/OWNER	DRAWN BY	APPROVED BY	SEPTIC SYSTEM PLAN
WCL	JWA	WCL	
			
LOT 20-21 BLOCK 284 LAKEWOOD TOWNSHIP OCEAN COUNTY, NEW JERSEY			
LORTECH, INC. 182 South Street Freehold, NJ 07728 PHONE (732) 863-1403 FAX (732) 863-1405			
WILLIAM C. LONGO N.J. PROFESSIONAL ENGINEER No. 35284 N.J. PROFESSIONAL PLANNER No. 4945			
SCALE: 1"=20'			DATE: 09/02/99
			JOB No. 99-193



USGS LAKEWOOD QUAD.

OCEAN CTY. SOIL SURVEY

EvB - Evesboro Series

OWNER/APPLICANT

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Lot 20 & 21 Block 284
Lakewood Township, Ocean Cty, NJ

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The proposed system will be sized to accommodate 30 students per day (Actual daily attendance is 20 students 3 days per week for the entire school)

Daily design flow with no showers or cafeteria per NJAC 7:9A-7.4(d):
30 students x 10 gal/day = 300 GPD

Field size required based on K-4 soils: 300 GPD x 1.61 = 483 S.F.
proposed field size: 18' x 27' = 486 S.F.

Septic tank proposed: 1,000 Gal.

Soil Samples: TP1: 35-112" TP2: 34 - 106"
Soil Permeability class ratings: TP1: K-5 TP2: K-5

SOIL DATA

Date: 8/17/99
Weather: Cloudy, 75 degrees
Witnessed by: Not Witnessed

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