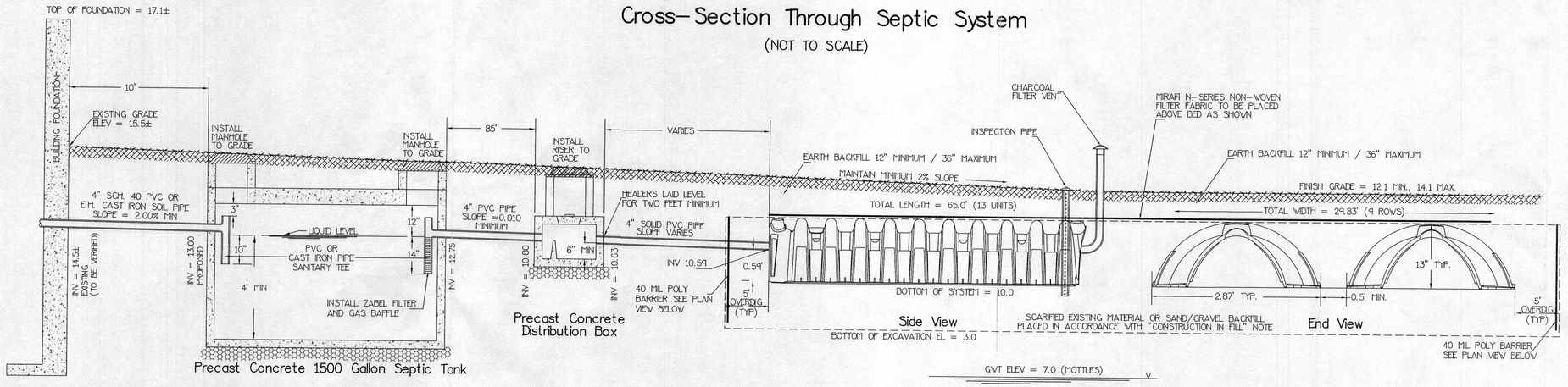
Cross–Section Through Septic System

(NOT TO SCALE)



Precast Concrete 1500 Gallon Septic Tank

Precast Concrete Distribution Box

Side View

End View

GWT ELEV = 7.0 (MOTTLES)

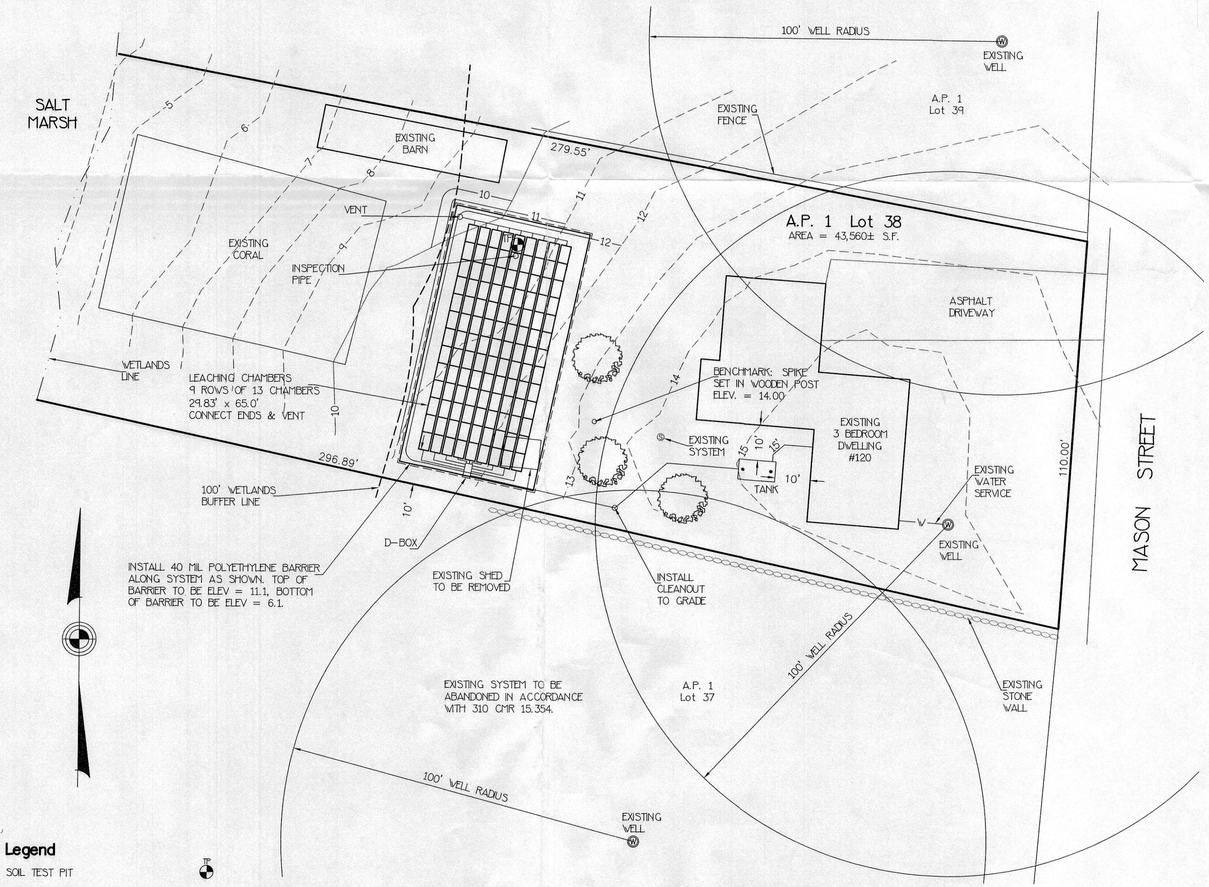
MOTTLES @ 42", NO WEEPING, NO WATER, BOTTOM OF HOLE @ 108"

Typical Open Bottom Leaching Chambers

NOTE: EXISTING INVERT ELEVATION WAS DETERMINED FROM BEST AVAILABLE DATA. EXISTING ELEVATIONS TO BE VERIFIED IN FIELD BY CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.

NOTE: SEPTIC TANK AND D–BOX TO BE INSTALLED ON MINIMUM 6" COMPACTED CRUSHED STONE BASE.

NOTE: DISCHARGE FROM A WATER TREATMENT SYSTEM (SOFTENER) IS NOT ALLOWED INTO THIS SEPTIC SYSTEM.



Legend

SOIL TEST PIT TP

EXISTING CONTOUR ——99——

PROPOSED CONTOUR ——100——

STONE WALL

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

Requested Variances

1. REDUCTION IN VERTICAL SEPARATION FROM BASE OF LEACHING FIELD TO SEASONAL HIGH WATER TABLE FROM 4' TO 3' IN ACCORDANCE WITH 310 CMR 15.405 (1) (h).

2. USE SIEVE ANALYSIS IN LIEU OF PERCOLATION TESTING TO DETERMINE RATE DUE TO SATURATED SOIL IN ACCORDANCE WITH 310 CMR 15.405 (1) (i).

S.W.COLE ENGINEERING, INC.

Report of Title V Hydrometer

ASTM D422-63 (07)

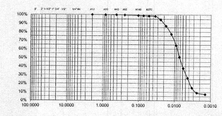
Project Name:	Title V Lab Testing	Project Number:	20-0385
Project Location:	120 Mason St Rehoboth, MA	Lab ID:	27177
Client:	Pro Line Engineering	Date Received:	8/12/2020
Material Description:	Test Pit Sample	Date Completed:	8/13/2020
Material Source:	On Site	Tested By:	RHB

Sieve Analysis

Sieve Size	Standard Designation (mm)	Percent Passing (%)	Specification (mm)
No. 10	2	100	
No. 20	0.85	100	
No. 40	0.425	100	
No. 60	0.25	100	
No. 140	0.105	99	
No. 200	0.075	99	
No. 270	0.053	98.8	

Hydrometer Analysis

Particle Size (mm)	Percent Passing (%)
0.0328	86.3
0.0240	84.5
0.0245	84.5
0.0184	80.9
0.0147	77.5
0.0111	64.2
0.0138	51.5
0.0079	37.8
0.0059	26.5
0.0031	15.3
0.0041	9.4
0.0013	7.6



Particle Distribution: Sand (No. 10 - No. 270) 1.5% Silt (0.05 - 0.002) 89.9% Clay (<0.002) 8.7%

Comments:

Reviewed By:

1484 Winthrop Street, Taunton, MA 02780 • P: 508-822-0714 • E: info@swcolecorp.com

Geotechnical Engineering Construction Materials Testing and Special Inspections Civil/Environmental Services

FORM 11–SOIL EVALUATOR FORM

MAP #: LOT #38
120 MASON STREET
REHOBOTH, MA 02769

PAGE 2 OF 4

Location Address or Lot No.

On–site Review

Deep Hole Number: 1 Date: 8/12/20 Time: 9:00 AM Weather: SUNNY

Location (identify on site plan): YES

Land Use: RESIDENTIAL Slope (%): 0–3% Surface Stones: NONE

Vegetation: LAWN

Landform: FLAT

Position on landscape (sketch on the back):

Distances from:

Open Water Body: >100 feet Drainage Way: >100 feet

Possible Wet Area: >100 feet Property Line: >25 feet

Drinking Water Well: >100 feet Other: N/A

DEEP OBSERVATION HOLE LOG*

Depth from Surface (Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Grave)
0"–18"	A	LOAM	10YR3	NONE	FRIABLE
18"–36"	B	SANDY LOAM	10YR4	NONE	FRIABLE
36"–108"	C	SILTY LOAM	2.5Y5	NONE	FINE NO STONE

MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic): GLACIAL OUTWASH Depth to Bedrock: N/A

Depth to Groundwater: Standing Water in the Hole: NONE

Weeping from Pit Face: NONE

Estimated Seasonal High Ground Water: 42" MOTTLES

FORM 12–PERCOLATION TEST

MAP #: LOT #38
120 MASON STREET
REHOBOTH, MA 02769

PAGE 3 OF 4

Location Address or Lot No.

COMMONWEALTH OF MASSACHUSETTS

REHOBOTH, MASSACHUSETTS

Percolation Test*

Date: AUGUST 12, 2020 Time: 9:00 AM

Observation Hole #	1	
Depth of Perc	UNABLE TO	
Start Pre–soak	PERC DUE TO	
End Pre–soak	DEPTH AND	
Time at 12"	DAMPNESS	
Time at 9"	OBTAINED	
Time at 6"	SIEVE SAMPLE	
Time (9"–6")	@ 3'	
Rate Min./Inch		

*Minimum of 1 percolation test must be performed in both the primary area AND reserve area.

Site Passed ☐ Site Failed ☐ REPAIR

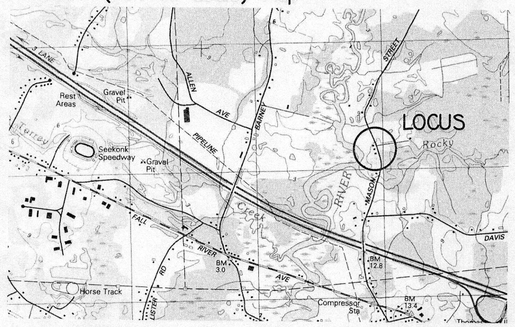
Performed By: ROBERT M. BERUBE, P.E.

Witnessed By: KARL BROWN, AGENT

Comments: NONE

Soil Report & Test Data

Location (not to scale) Map



Notes & Specifications

THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF 310 CMR 15 (TITLE 5) OF THE COMMONWEALTH OF MASSACHUSETTS AND THOSE OF THE TOWN OF REHOBOTH BOARD OF HEALTH.

THE REQUIRED INSPECTION SCHEDULE DURING THE PROCESS OF CONSTRUCTION SHALL BE ARRANGED BY THE CONTRACTOR WITH THE BOARD OF HEALTH & DESIGN ENGINEER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

1500 GALLON SEPTIC TANK AND 9 OUTLET DISTRIBUTION BOX SHALL BE STANDARD DUTY DESIGN AS MANUFACTURED BY BRISTOL COUNTY PRECAST, INC. OR APPROVED EQUAL.

OPEN BOTTOM LEACHING CHAMBERS SHALL BE STANDARD DUTY DESIGN BY ADS, INFILTRATOR CULTEC, OR APPROVED EQUAL.

ALL PIPING SHALL BE 4" DIA. SCHD. 40 NSF PVC, WITH ALL JOINTS SEALED WATERTIGHT.

THIS SYSTEM IS NOT DESIGNED TO ACCOMMODATE A GARBAGE DISPOSAL OR OTHER HIGH WATER USE UNITS.

THE PROPOSED SEPTIC SYSTEM IS NOT LOCATED WITHIN THE CONE OF INFLUENCE OF ANY MUNICIPAL WELL NOR ARE THERE ANY PRIVATE WELLS LOCATED WITHIN 100 FEET (RADIALLY) OF THE PROPOSED SYSTEM.

EXCAVATE ALL TOP, SUB AND ANY OTHER SOILS ENCOUNTERED DOWN INTO THE FINE SILT LAYER, ELEVATION = 3.0 AND FOR A HORIZONTAL DISTANCE OF 5' ON ALL SIDES OF THE PROPOSED SYSTEM. BACKFILL TO ELEVATION = 11.1 WITH SELECT ON–SITE OR IMPORTED SOIL MATERIAL CONSISTING OF CLEAN GRANULAR SAND, FREE OF ORGANIC MATTER OR OTHER DELETERIOUS SUBSTANCES AND MEETING THE SIEVE SIZE REQUIREMENTS OF 310 CMR 15.255(3) & (5) [CONSTRUCTION IN FILL].

ELEVATIONS SHOWN ON THIS PLAN ARE BASED ON NAVD 1988 DATUM.

MAGNETIC LOCATION TAPE TO BE PLACED OVER SEPTIC SYSTEM COMPONENTS IN ACCORDANCE WITH 310 CMR 15.221 (12).

SOIL ABSORPTION SYSTEM SHALL HAVE A MINIMUM OF ONE (1) INSPECTION PORT CONSISTING OF A PERFORATED FOUR (4) INCH PIPE PLACED VERTICALLY DOWN INTO THE STONE TO THE NATURALLY OCCURRING SOIL OR SAND FILL BELOW THE STONE. THE PIPE SHALL BE CAPPED WITH A SCREW TYPE CAP AND ACCESSIBLE TO WITHIN THREE (3) INCHES OF FINISH GRADE IN ACCORDANCE WITH 310 CMR 15.240 (13).

CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO THE CONTINUATION OF CONSTRUCTION.

Design Data

Average Daily Sewage Flow (gallons)

EXISTING 3 BEDROOM DWELLING @ 110 GPD PER BEDROOM = 330 GPD

Septic Tank Sizing (gallons)

200% AVERAGE DAILY FLOW = 2 (330) = 660 GALLONS
3 BEDROOM HOME REQUIRES 1500 GALLON TANK (MINIMUM)

Leaching Area Calculation

SOIL CLASS: CLASS III (SILT)

UNABLE TO PERC DUE TO DEPTH AND DAMPNESS
DESIGN FOR 60 MPI PER SIEVE ANALYSIS

Required Minimum Leaching Area:

ADF = 330 GPD / 0.15 GPD / SF = 2200 SF X 1.25 BOH REGS = 2750 SF MINIMUM
TRY: OPEN BOTTOM LEACHING CHAMBERS
2750 SF / 4.80 SF/LF OF CHAMBER = 573 LF OF CHAMBERS
9 ROWS OF 13 CHAMBERS @ 5.0 LF EACH = 585 LF OF CHAMBERS

DESIGN = 585 LF > REQUIRED = 573 LF OK

Septic System Repair Plan

A.P. 1 Lot 38

120 Mason Street, Rehoboth, Massachusetts

PREPARED FOR

Suzy Ferreira

120 Mason Street, Rehoboth, Massachusetts 02769

PREPARED BY

Pro–Line Engineering, Inc.

Civil/Environmental Engineering & Land Surveying
140 GARDNERS NECK ROAD, SWANSEA, MA 02777
PHONE: 508/672–3137 FAX: 508/672–3307
EMAIL: PROLINEENG@COMCAST.NET

RECEIVED SEP 15 2020 Board of Health

COMMONWEALTH OF MASSACHUSETTS ROBERT M. BERUBE CIVIL NO. 35909 REGISTERED PROFESSIONAL ENGINEER

Date: September 4, 2020 Scale: 1" = 20'

28–0785