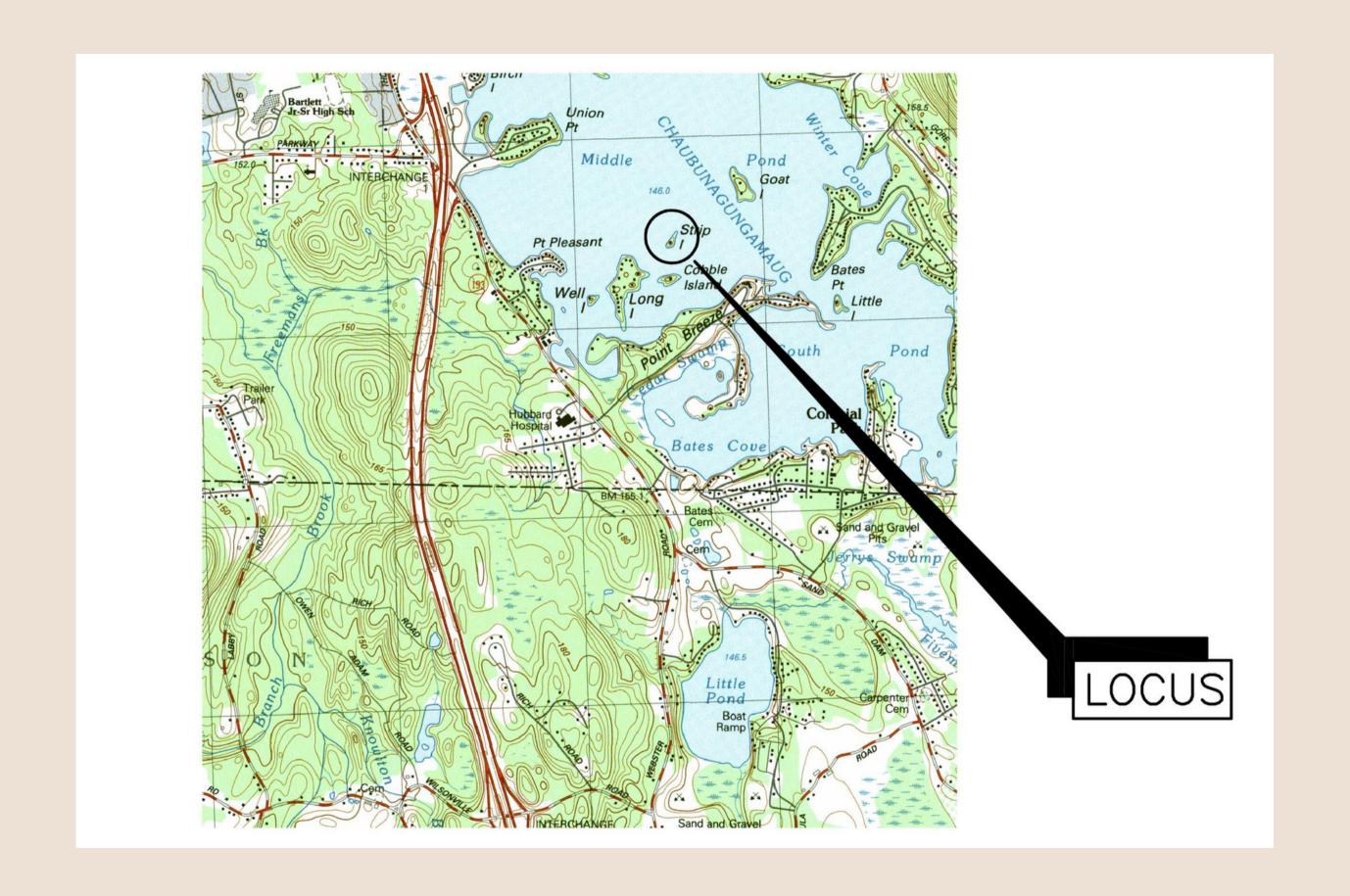
Proper Application of Drip Irrigation Systems: One Tool in the Toolbox

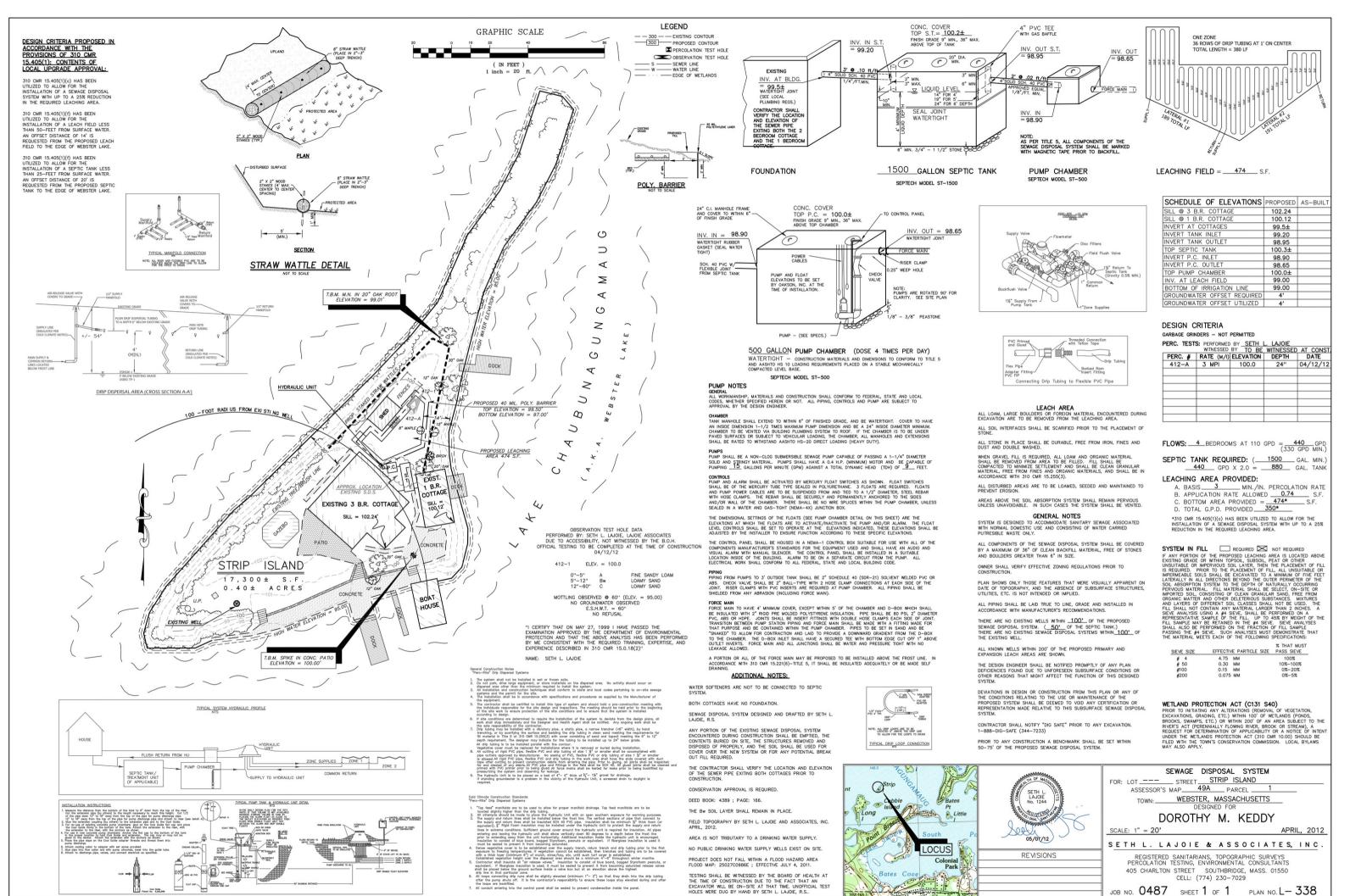
When should a drip irrigation system be considered?

Case Study Number One

Strip Island, Webster, MA



Limited Access for Equipment and Construction Materials Plus Limited Usable Land Area



TESTING SHALL BE WITNESSED BY THE BOARD OF HEALTH AT THE TIME OF CONSTRUCTION DUE TO THE FACT THAT AN EXCAVATOR WILL BE ON-SITE AT THAT TIME. UNOFFICIAL TEST HOLES WERE DUG BY HAND BY SETH L. LAJOLE, R.S..

1-1/2" SOH 40 /COUPLING

PLUSH RETURN ZONE 1 SUPPLY

REGISTERED SANITARIANS, TOPOGRAPHIC SURVEYS PERCOLATION TESTING, ENVIRONMENTAL CONSULTANTS 405 CHARLTON STREET SOUTHBRIDGE, MASS. 01550 CELL: (774) 230-7029 JOB NO. 0487 SHEET 1 OF 1 PLAN NO. L-338



Pro's of the site:

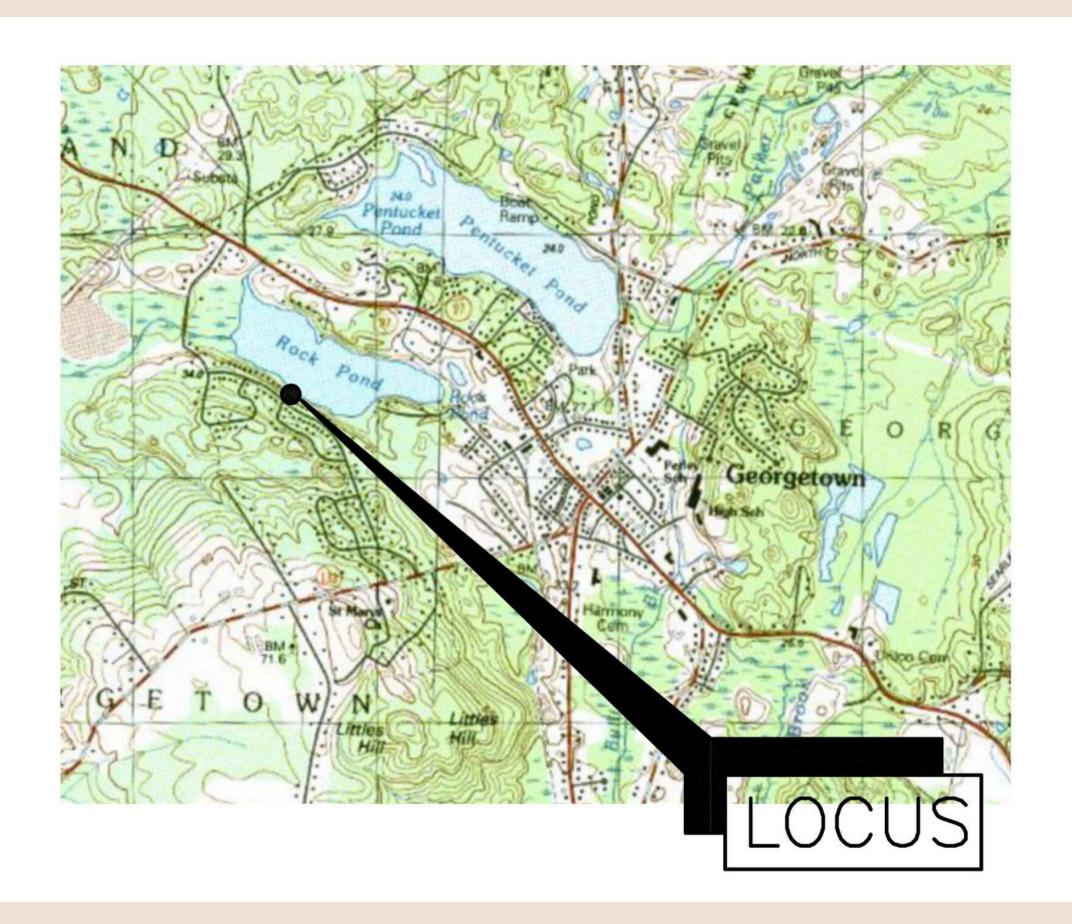
- 1) It's Pretty
- 2) Gravely Soils = Good Percolation Rate
- 3) Easy Property Line Determination
- 4) Seasonal Application Allowing for the System to Rest.

Con's of the site:

- 1) Logistical Nightmare
- 2) Relatively High Water Table
- 3) Water, Water Everywhere

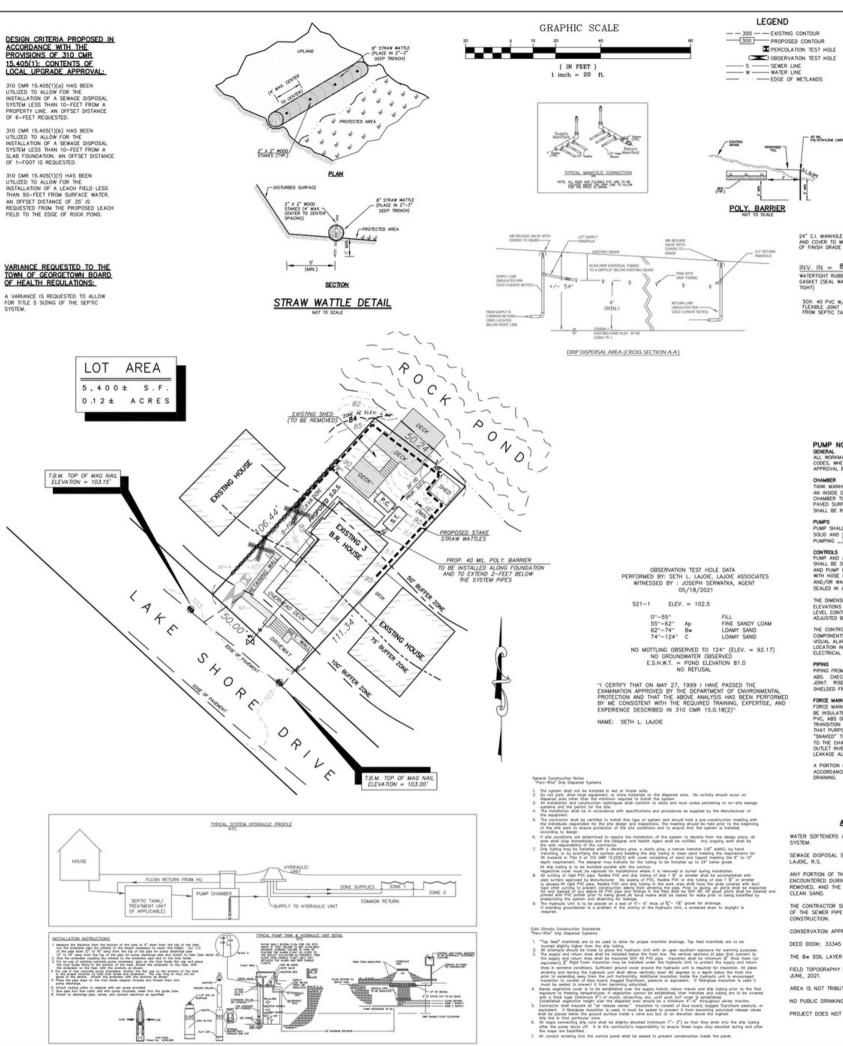
Case Study Number Two

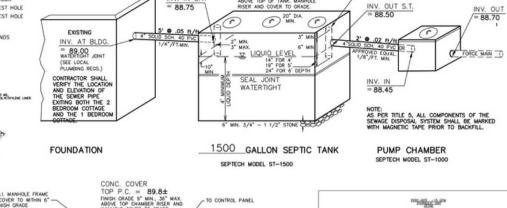
105 Lakeshore Drive, Georgetown, MA



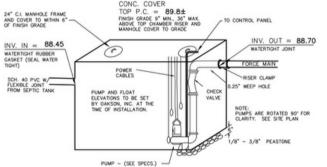
Limited Usable Land Area

Difficult Access for Equipment





CONC. COVER TOP S.T.= 89.8±



1000 GALLON PUMP CHAMBER (DOSE 4 TIMES PER DAY) WATERTIGHT — CONSTRUCTION MATERIALS AND DIMENSIONS TO CONFORM TO TITLE 5
AND AASHTO HS TO LOADING REQUIREMENTS PLACED ON A STABLE MECHANICALLY
COMPACTED LEVEL BASE.

SEPTECH MODEL ST-1000

PUMP NOTES

CONTRAL
ALL MORRAMASHIP, MATERIALS AND CONSTRUCTION SHALL CONFORM TO FEDERAL, STATE AND LOCAL
CODES, WHETHER SPECIFIED HEREIN OR NOT. ALL PIPING, CONTROLS AND PUMP ARE SUBJECT TO
APPROVAL BY THE DESIGN ENGINEER.

PUMPS PUMP SHALL BE A NON-CLOG SUBMERSBLE SEWAGE PUMP CAPABLE OF PASSING A $1-1/4^\circ$ DIAMETER SOLID AND STBINGY MATERIAL. PUMPS SHALL HAVE A 0.4 H.P. (MINIMUM) MOTOR AND BE CAPABLE OF PUMPING __15_ CALLONS PER MINUTE (OPM) AGAINST A TOTAL DYNAMIC HEAD (TDH) OF __9__ FEET.

CONTROLS
PUMP AND ALARM SHALL BE ACTIVATED BY MERCURY FLOAT SWITCHES AS SHOWN. FLOAT SWITCHES
SHALL BE OF THE MERCURY TUBE TYPE SCALED IN POLITIKETHAME. 3 FLOATS ARE REQUIRED. FLOATS
AND PUMP POWER CABLES ARE TO BE SUPPLICED FROM AND THED TO A 1/2" DIMARTER, STEEL REBAR
WITH HOSE CLAMBS. THE REBAR SHALL BE SCHOOL AND THED TO A 1/2" DIMARTER, STEEL REBAR
WITH HOSE CLAMBS. THE REBAR SHALL BE SCHOOL ON WIRE SPLICES WITHIN THE PUMP CHAMBER, UNLESS
SCALED IN A WARTER AND CASE-TOOLY (MEMLAN-S) JUNCTION BOX.

THE DIMENSIONAL SETTINGS OF THE FLOATS (SEE PUMP CHAMBER DITAIL ON THIS SHEET) ARE THE ELEVATIONS AT WHICH THE FLOATS ARE TO ACTIVATE/MACTIVATE THE PUMP AND/OR ALARM. THE FLOAT LEVEL CONTROLS SHALL BE ASSET TO OPPERATE AT THE ELEVATIONS WHOLEDE, PIESS ELEVATIONS SHALL B ADJUSTED BY THE INSTANCE TO ENSURE FUNCTION ACCORDING TO THESE SPECIFIC ELEVATIONS.

THE CONTROL PANEL SHALL BE HOUSED IN A NEMA-1 CONTROL BOX SUITABLE FOR USE WITH ALL OF THE COMPONENTS MANUFACTURER'S STANDARDS FOR THE EQUIPMENT USED AND SHALL HAVE AN AUDIO AND VISUAL ALARM WITH MANUAL SELECTER. THE CONTROL PANEL SHALL BE INSTALLED IN A SUITABLE LOCATION INSIDE OF THE BULDING. ALARM TO BE ON A SEPARATE CIRCUIT FROM THE PUMP. ALL ELECTRICAL WORK SHALL GOOWNON TO ALL FEDERINA, STATE AND LOCAL BULDINGS CODE.

PPING
PPING PUMPS TO 3' OUTSIDE TANK SHALL BE 2" SCHEDULE 40 (SDR-21) SOLVENT WELDED PVC OR
ABS. OHECK VALVE SHALL BE 2" BALL-TYPE WITH 2 HOSE CLAMP CONNECTIONS AT EACH SIDE OF THE
JOINT. RISER CLAMPS WITH PVC INSERTS ARE REQUIRED AT PUMP CHAMBER. ALL PIPING SHALL BE
SHELDED FROM ANY ABRASION (INCLUDING FORCE MAIN).

FORCE MAIN
FORCE MAIN TO HAVE 4" MINIMUM COVER, EXCEPT WITHIN 5" OF THE CHAMBER AND D-BOX WHICH SHALL
BE INSULATIO WITH 2" RIGO PRE MICLED POLYSTYRINE INSULATION. PIPE SHALL BE 80 PS, 2" DIAMETER
PIPE, ABS OR HOPE. JOINTS SHALL BE INSERT FITTINGS WITH DOUBLE HOSE CLAMPS EACH SIDE OF JOINT.
TRANSTON BETWEEN PUMP STATION PIPPING AND FORCE MAIN SHALL BE MADE WITH A FITTING MADE FOR
THAT PURPOSE AND BE CONTAINED WITHIN THE PUMP CHAMBER. PIPES TO BE SET IN SAND AND BE
"SHAKED" TO ALLOW FOR CONTRACTION AND LAD TO PROVIDE A DOWNMAND FORDINT FROM THE 0-BOX
TO THE CHAMBER. THE 0-BOX INLET SHALL HAVE A SECURED TEE WITH BOTTOM EDGE CUT OFF 1" ABOVE
OUTLET INNERS. FORCE MAIN AND ALL JUNCTIONS SHALL BE WATER AND PRESSURE TIGHT WITH NO
LEAKAGE ALLOWED.

A PORTION OR ALL OF THE FORCE MAIN MAY BE PROPOSED TO BE INSTALLED ABOVE THE FROST LINE. IN ACCORDANCE WITH 310 CMR 15.221(6)—TITLE 5, IT SHALL BE INSULATED ADEQUATELY OR BE MADE SELF

ADDITIONAL NOTES:

WATER SOFTENERS ARE NOT TO BE CONNECTED TO SEPTIC SYSTEM.

SEWAGE DISPOSAL SYSTEM DESIGNED AND DRAFTED BY SETH L. LAJOIE, R.S.

ANY PORTION OF THE EXISTING SEWAGE DISPOSAL SYSTEM ENCOUNTERED DURING CONSTRUCTION SHALL BE PUMPED OUT REMOVED, AND THE EXCAVATION SHALL BE BACKFILLED WITH CLEAN SAND.

THE CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF THE SEWER PIPE EXITING THE BUILDING PRIOR TO

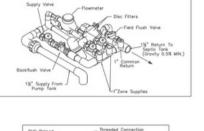
CONSERVATION APPROVAL IS REQUIRED.

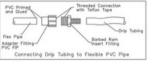
THE BW SOIL LAYER SHALL REMAIN IN PLACE. FIELD TOPOGRAPHY BY SETH L. LAJOIE AND ASSOCIATES, INC. JUNE, 2021.

NO PUBLIC DRINKING WATER SUPPLY WELLS EXIST ON SITE.

PROJECT DOES NOT FALL WITHIN A FLOOD HAZARD AREA







LEACH AREA
ALL LOAM, LARGE BOULDERS OR FOREION MATERIAL ENCOUNTERED DURING EXCAVATION ARE TO BE REMOVED FROM THE LEACHING AREA. ALL SOIL INTERFACES SHALL BE SCARIFIED PRIOR TO THE PLACEMENT OF

ALL STONE IN PLACE SHALL BE DURABLE, FREE FROM IRON, FINES AND DUST AND DOUBLE WASHED.

WHEN GRAVEL FILL IS REQUIRED, ALL LOAM AND ORGANIC MATERIAL SHALL BE REMOVED FROM AREA TO BE FILLED. FILL SHALL BE COMPACTED TO MINMAREZ STEILEMENT AND SHALL BE CLEAN GRANULAR MATERIAL, FREE FROM FINES AND ORGANIC MATERIALS, AND SHALL BE IN ACCORDANCE WITH 310 CMR 15,255(3).

ALL DISTURBED AREAS ARE TO BE LOAMED, SEEDED AND MAINTAINED TO PREVENT EROSION.

AREAS ABOVE THE SOIL ABSORPTION SYSTEM SHALL REMAIN PERVIOUS UNLESS UNAVOIDABLE. IN SUCH CASES THE SYSTEM SHALL BE VENTED.

GENERAL NOTES

SYSTEM IS DESIGNED TO ACCOMMODATE SANITARY SEWAGE ASSOCIATED WITH NORMAL DOWESTIC USE AND CONSISTING OF WATER CARRIED PUTRESIBLE WASTE ONLY.

ALL COMPONENTS OF THE SEWAGE DISPOSAL SYSTEM SHALL BE COVERED BY A MAXIMUM OF 36° OF CLEAN BACKFILL MATERIAL, FREE OF STONES AND BOULDERS GREATER THAN 6° IN SIZE.

OWNER SHALL VERIFY EFFECTIVE ZONING REGULATIONS PRIOR TO CONSTRUCTION.

PLAN SHOWS ONLY THOSE FEATURES THAT WERE VISUALLY APPARENT ON DATE OF TOPOGRAPHY, AND THE ABSENCE OF SUBSURFACE STRUCTURES, UTILITIES, ETC. IS NOT INTENDED OR IMPLIED.

ALL PIPING SHALL BE LAID TRUE TO LINE, GRADE AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

THERE ARE NO EXISTING WELLS WITHIN __100'_ OF THE PROPOSED SEWAGE DISPOSAL SYSTEM. (50' OF THE SEPTIC TANK.)
THERE ARE NO EXISTING SEWAGE DISPOSAL SYSTEMS WITHIN N/A OF
THE EXISTING WELL.

TOWN WATER PROVIDED

TOWN WATER PROVIDED.

ALL KNOWN WELLS WITHIN 200' OF THE PROPOSED PRIMARY AND EXPANSION LEACH AREAS ARE SHOWN.

THE DESIGN ENGINEER SHALL BE NOTIFIED PROMPTLY OF ANY PLAN DEFICIENCIES FOUND DUE TO UNFORESEEN SUBSURFACE CONDITIONS OR OTHER REASONS THAT MIGHT AFFECT THE FUNCTION OF THIS DESIGNED SYSTEM.

DEVIATIONS IN DESIGN OR CONSTRUCTION FROM THIS PLAN OR ANY OF THE CONDITIONS RELATING TO THE USE OR MAINTENANCE OF THE PROPOSED SYSTEM SHALL BE DEEMED TO YOU DANY CERTIFICATION OR REPRESENTATION MADE RELATIVE TO THIS SUBSURFACE SEWAGE DISPOSAL SYSTEM.

CONTRACTOR SHALL NOTIFY "DIG SAFE" PRIOR TO ANY EXCAVATION. 1-888-DIG-SAFE (344-7233)

PRIOR TO ANY CONSTRUCTION A BENCHMARK SHALL BE SET WITHIN 50-75' OF THE PROPOSED SEWAGE DISPOSAL SYSTEM.



DESIGN CRITERIA

GARBAGE GRINDERS - NOT PERMITTED

LEACHING FIELD = 453 S.F.

 PERC. TESTS:
 PERFORMED BY WINESSED BY JOSEPH SERWATKA

 PERC. ₱ RATE (M/) ELEVATION DEPTH DATE

 521-A
 3 MPI 102.5 72" 05/18/2

8 ROWS OF DRIP TUBING AT 1.6' ON CENTER

89.8± 88.45

89.8± 96.00

FLOWS: 3 BEDROOMS AT 165 GPD = 495 GPD (330 GPD MIN.)

SEPTIC TANK REQUIRED: (____1500___ GAL. MIN.)

LEACHING AREA PROVIDED:

A. BASIS 3 MIN. /IN. PERCOLATION RATE B. APPLICATION RATE ALLOWED 0.74 S.F.
C. BOTTOM AREA PROVIDED = 453 S.F.
D. TOTAL G.P.D. PROVIDED 335

SIEVE SIZE	EFFECTIVE PARTICLE S	ZE PASS SIEVE
# 4	4.75 MM	100%
# 50	0.30 MM	10%-100%
#100	0.15 MM	0%-20%
#200	0.075 MM	0%-5%

WETLAND PROTECTION ACT (C131 S40)

WELLAND PROTECTION ACT (CIST) 3-90')
PRIOR TO INITIATING ANY ALTERATIONS (REMOVAL OF VEGETATION,
EXCAVATIONS, GRADING, ETC.) WITHIN 100' OF WETLANDS (PONDS,
BROCKS, SWAMPS, ETC.) OR WITHIN 200' OF AN AREA SUBJECT TO THE
RIVER'S ACT (PERENNALLY FLOWING BIVER, BROCK OR STREAM), A
ROQUEST FOR DETERMINATION OF A PPULCABILITY OR A NOTICE OF INTEI
UNDER THE WETLANDS PROTECTION ACT (310 CMR 10.00) SHOULD BE
FILED WITH THE TOWN'S CONSERVATION COMMISSION. LOCAL BYLAWS
MAY ALSO APPLY.



SEWAGE DISPOSAL SYSTEM

FOR: LOT --- STREET 105 LAKE SHORE DRIVE
ASSESSOR'S MAP 21 PARCEL 9

TOWN: GEORGETOWN, MASSACHUSETTS
DESIGNED FOR

JUSTIN P. McCARTHY

SETH L. LAJOIE & ASSOCIATES, INC.

REGISTERED SANITARIANS, TOPOGRAPHIC SURVEYS PERCOLATION TESTING, ENVIRONMENTAL CONSULTANTS REET SALEM, MA 01970 CELL: (774) 230-7029

JOB NO. 0989 SHEET 1 OF 1 PLAN NO. L-768



10/25/21 - ORIGINAL ENDORSEMENT 01/20/22 - POLY BARRIER ADDED CHANGED TO TITLE 5 SIZIN

Pro's of the site:

- 1) Gravely Soils = Good Percolation Rate
- 2) The house is on the water in
- Georgetown. (It's a high-value property)

Con's of the site:

- 1) Logistical Nightmare
- 2) Unknown amount of fill
- 3) Neighbors

Thank You for Your Time and Attention.

Questions?