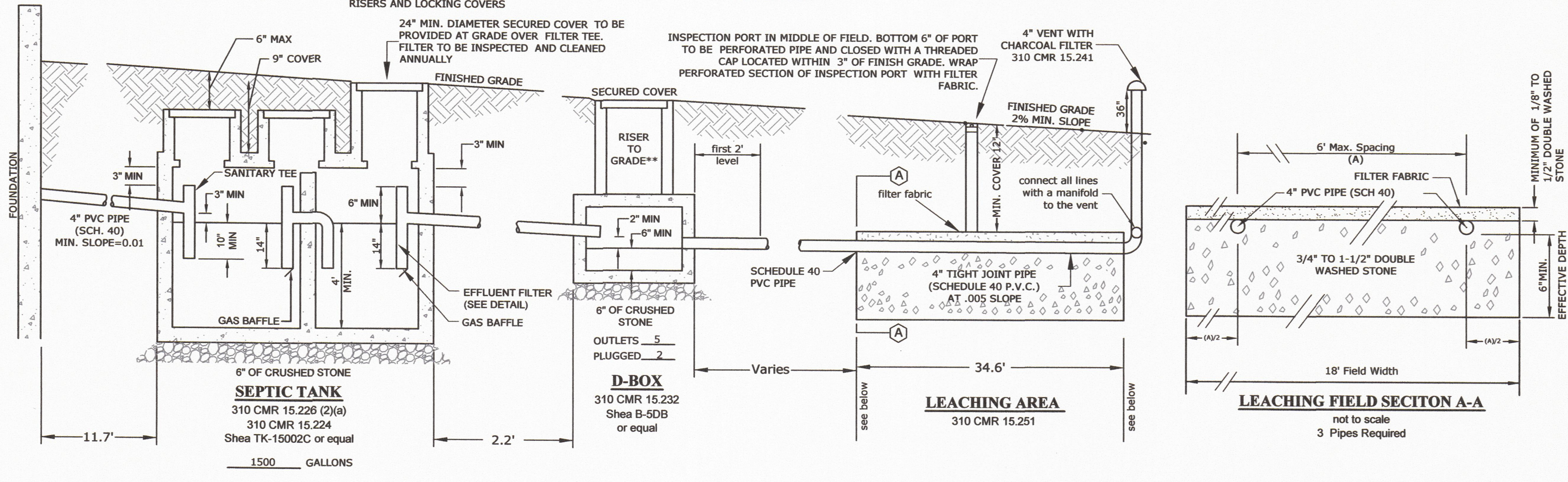


*NOTE SIGN REQUIRED FOR EFFLUENT TEE AND TIES TO TEE FROM TWO PERMANENT MARKERS

**NOTE IF MORE THAN 9" OF COVER IS USED ON THE TANK AND/OR DISTRIBUTION BOX, THAN ALL MANHOLES ARE TO BE BROUGHT TO GRADE WITH RISERS AND LOCKING COVERS

***NOTE: HYDRAULIC CEMENT IS REQUIRED TO SEAL ALL CONNECTIONS AT THE SEPTIC TANK & D-BOX

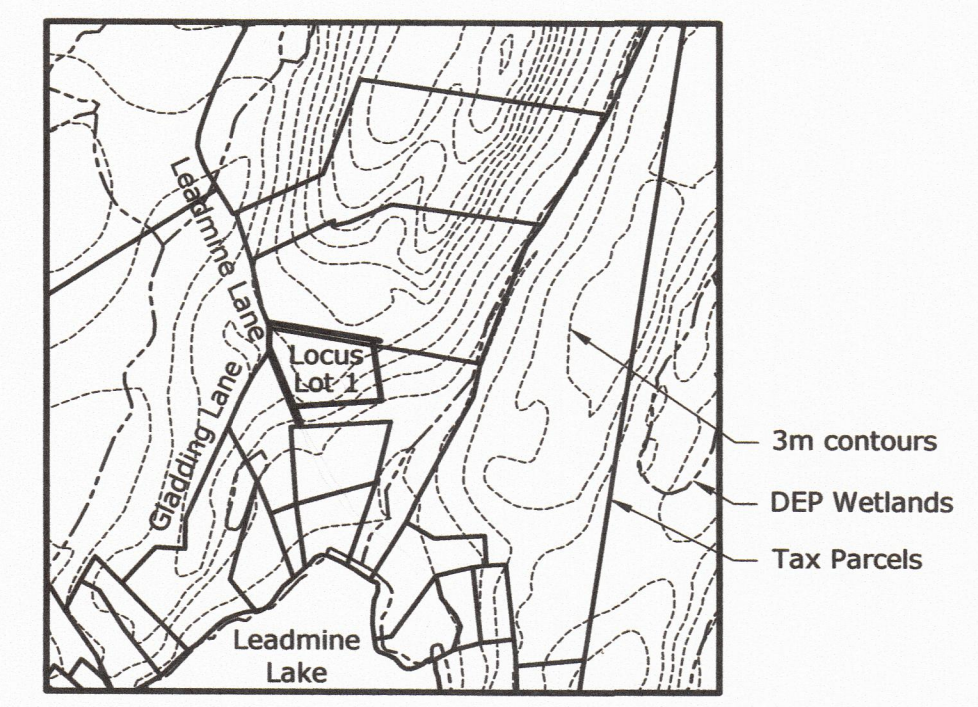


SYSTEM PROFILE
not to scale

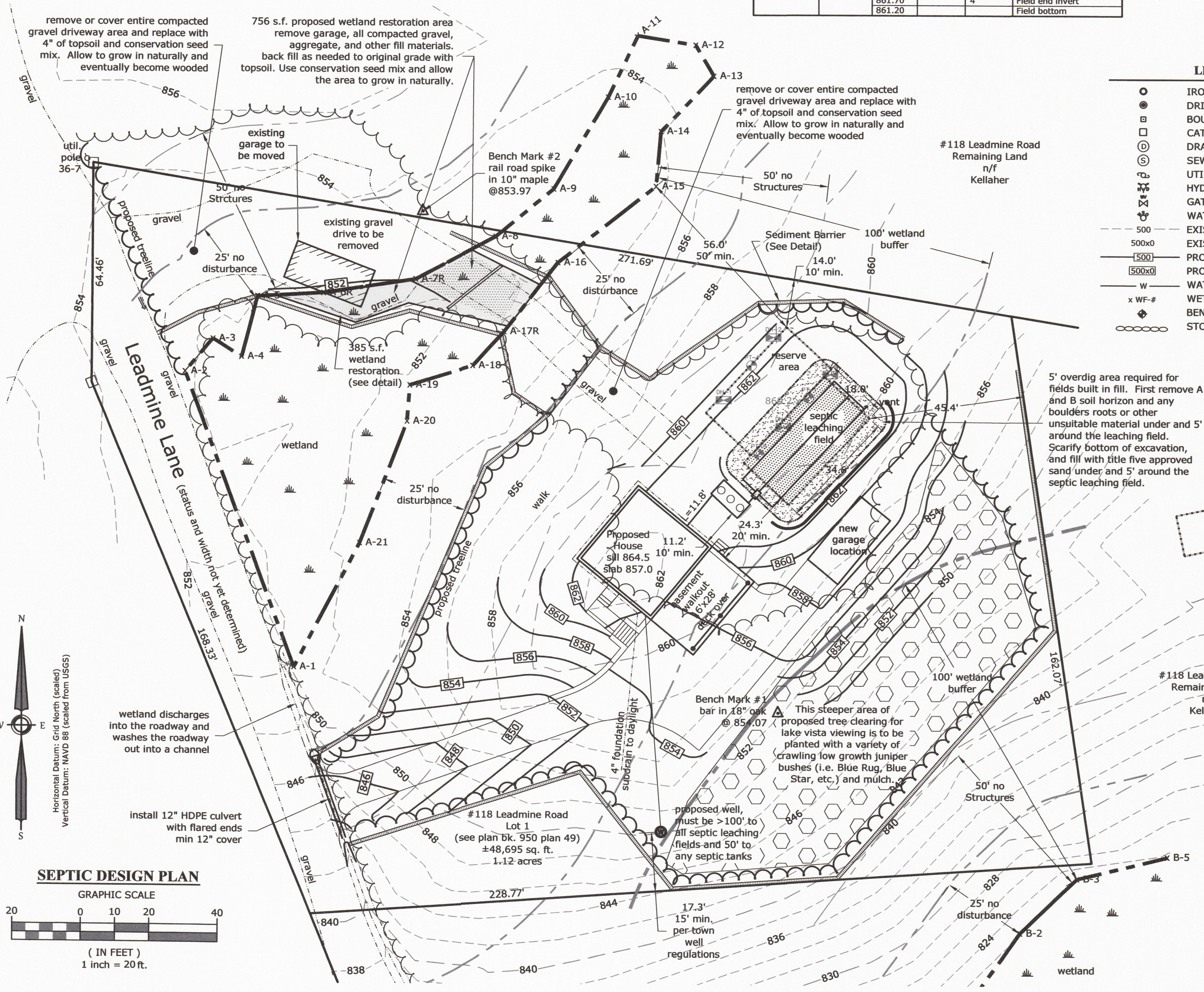
Schedule of Elevations				
Component	Model	Elevation	Asbuilt	Description
Foundation		862.65		
Septic Tank	TK-15002C	862.43	4"	Septic tank inlet invert
		862.18	4"	Septic tank outlet invert
D-Box	DB-5	862.12	4"	D-box inlet invert
		861.95	4"	D-box outlet invert
Leaching field		861.90	4"	Field top
		861.87	4"	Field beginning invert
		861.70	4"	Field end invert
		861.20		Field bottom

TEE FILTER DETAIL
not to scale

SEDIMENT BARRIER DETAIL
(not to scale)



LOCUS MAP
scale 1"=500'
from MassGIS oliver data layers
to be considered approximate



SEPTIC DESIGN PLAN
GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.

LEGEND

- IRON PIN FOUND
- DRILL HOLE FOUND
- ⊙ BOUND FOUND
- CATCH BASIN
- ⊖ DRAIN MANHOLE
- ⊕ SEWER MANHOLE
- ⊗ UTILITY POLE
- ⊘ HYDRANT
- ⊙ GATE VALVE
- ⊖ WATER SHUT OFF
- 500' EXISTING CONTOUR
- 500x0' PROPOSED CONTOUR
- 500x0' PROPOSED SPOT GRADE
- W WATER LINE
- x WF-# WETLAND FLAG
- ⊕ BENCHMARK
- ⊖ STONEWALL

SOIL TEST DATA					
DEEP HOLE OBSERVATION LOG					
PERFORMED BY: Norman G. Hill SE #1065			DATE: 11-14-19		
WITNESS BY: Ken Lacey Sturbridge B.O.H.			EXCAVATOR: Adam Kellaheer		
TEST HOLE	DEPTH (In.)	SOIL HORIZON	SOIL TEXTURE (USDA)	SOIL COLOR (Munsell)	SOIL MOTTLING
1,2,3 & 4	0-4	A	SANDY LOAM	7.5YR 3/2	
	4-10	B	SANDY LOAM	7.5YR 4/3	
	10-72	C	SANDY LOAM	7.5YR 5/8	@ 36"

HIGH GROUNDWATER DETERMINATION			PERC TEST DATA		
N/A	STANDING WATER	PERC #	P-3		
N/A	MOTTLES	DATE	7/23/20		
N/A	WEEPING WATER	OBS. HOLE	DH-1/ DH-2		
N/A	GROUNDWATER ADJUSTMENT	DEPTH OF PERC.	18-32"		
@ 3'	GROUNDWATER FOR DESIGN	PERC RATE	17 MPI		

Design Flow Calculation:
Type of facility: Single family residence
Number of bedrooms: 3
Daily flow rate: 110 gpd/bedroom
Design flow: 330 gpd

Required Leaching Area Calculation:
Soil class: Class II
Percolation rate: 17 min/inch (use 20 MPI)
Effluent loading: 0.53 gpd/ft²
Required leaching area: 330 gpd ÷ 0.53 gpd/ft² = 622.64 s.f.
Leaching area provided = 18' W x 34.6' L = 622.8 s.f.

Septic Tank Requirements:
200% of design flow
(2)(330 gpd)=660 gallons
660 gal. < 1,500 gal.
Use 1,500 gallon dual compartment tank

Erosion & Sediment Control Notes:

- The contractor and all sub-contractors are to be made aware that this project is subject to an order of conditions from the Conservation Commission and its regulations applicable to this project. A copy of this Order is to be readily available on site at all times.
- Sediment barriers are to be installed where shown on this plan. The contractor and the owner are responsible for the proper maintenance of the sediment barriers and to identify and correct all sources of erosion. Extra sediment barrier materials are to be stored on site in order to quickly repair erosion prone areas. Periodic maintenance of the erosion control structures is required in order to insure the proper protection of the resource areas.
- Stockpiled material that is subject to erosion shall be protected at its base on the down-slope side with a silt fence.
- Temporary stabilization of disturbed areas is required to limit erosion toward abutting properties and public ways. All graded slopes are to be stabilized on a daily basis with special care taken to avoid routing rainfall through gullies toward the resource areas. Areas of erosion are to be repaired on a daily basis.
- The contractor is to use proper judgment relative to construction practices during adverse weather conditions or periods of high groundwater. No work is to be performed near the wetland areas during periods of heavy rainfall. Inspection is required after more than 1/2" of rainfall in 24 hours.
- All graded areas are to be loamed and seeded as soon as possible in order to insure the rapid stabilization of the erosion prone areas. A grass seed mixture of 20% Red Top, 60% Chewings Fescue and 20% Kentucky Bluegrass is recommended. "Hydroseed" with high fiber content.
- The sediment barriers shall remain in place until all upgradient areas have been stabilized.
- During periods of heavy rainfall, it will be expected to experience erosion of the unstabilized slopes. Immediate attention to the maintenance of these eroded areas will further insure the successful stabilization of the exposed slopes while limiting the impacts to nearby resource areas.
- Periodic inspections of the entire construction site are to be performed by a competent representative who will insure the adherence to the regulations as set forth in 310 CMR 10.00. No unauthorized individuals are to enter the construction area without the expressed consent of the owner.
- The Applicant is to notify the Conservation Commission once the jurisdictional work has been completed and the entire site has been properly stabilized. Upon approval of the work subject to the Order of Conditions, the applicant is to receive a Certificate of Compliance.

General Septic Design Notes

- All elevations refer to assumed NAVD 88. See plan for benchmark locations.
- All construction shall conform to 310 CMR 15.00, Title 5.
- This plan does not warrant or imply any subsurface soil conditions other than those observed at the immediate test pit locations. If unsuitable material is encountered, all construction shall cease, and the design engineer shall be contacted immediately.
- Septic Tank and Distribution Box shall be set level and true to grade on a mechanically compacted stable base of 6" of 3/4" stone.
- Areas disturbed during construction shall be stabilized to minimize erosion and control sedimentation. The area over the system shall be graded to a minimum of 2% slope to provide positive surface drainage. Place 4" Loam and seed all disturbed areas of the project not otherwise improved.
- This plan shall not be used for the reproduction of property lines, nor shall it be used as a mortgage plot plan or title survey. Conformance to local bylaws shall be determined by the owner prior to construction.
- For proper performance, the septic tank should be pumped on an as needed basis, but in no event shall the septic tank be pumped greater than every two years.
- Any alterations must be reported to the design engineer prior to proceeding with construction.
- The system must be inspected by the Board of Health or its agent and be certified by the design engineer.
- Conservation Commission approval is not required.
- See 310 CMR 15.255 for fill specifications. See 310 CMR 15.247 for aggregate specifications.
- All system components shall be marked with magnetic marking tape.
- All trenches for utilities to be backfilled and compacted with granular materials free of rocks larger than 2".
- All underground utility locations shown are based on field evidence and records provided to Land Planning, Inc. These locations should be considered approximate. Other utilities may exist which are not evident or for which record information was not found. The contractor must contact all utility companies and "Dig Safe" (888-DIG-SAFE) before excavation begins. We assume no responsibility for damages incurred as a result of utilities omitted or inaccurately shown.
- It is the responsibility of the contractor to review all of the drawings and specifications associated with this project work and project scope prior to the initiation of construction. Should the contractor find a conflict with the documents, relative to the specifications or applicable codes, it is the contractor's responsibility to notify the project engineer of record in writing prior to the start of construction. Failure by the contractor to notify the project engineer shall constitute acceptance of full responsibility by the contractor to complete the scope of work as defined by the drawings and in full conformance with local regulations and codes.
- Contractor is responsible for all excavation to be performed in accordance with current O.S.H.A. standards, as well as additional provisions to assure stability of contiguous structures, as field conditions dictate.
- Construction of permanent structures upon the disposal system or the reserve area is prohibited.

Project Specific Notes

- Garbage disposal units are prohibited.
- All interior plumbing, with the exception of water filtration, conditioning systems, and the backwash or byproducts of from such, shall discharge to the proposed septic system.
- All wetlands as defined by the Wetlands Protection Act are located within 200 feet of the projects limit of work/ disturbance.
- The proposed septic system is not located within a Zone II Approved Wellhead Protection Area.
- All known wells located within 200 feet of the proposed system have been shown on the plan.
- All known septic systems within 150' of the proposed well have been shown on the plan.
- This lot is not located within a special flood hazard zone per FEMA FIRMetta Map #25027C1008E dated 7/4/2011
- The site is located in the Agricultural (A) zoning district.

Designer Requirements

- Leaching area to be staked in the field by Land Planning, Inc. prior to construction.
- Land Planning, Inc. to be contacted to perform a bottom inspection once trench area and 5' over dig are excavated.
- Any changes to the layout of the septic design must be brought to the attention of Land Planning, Inc. for approval.
- After all components are installed and before the system is back filled, Land Planning, Inc. is to be contacted to perform a septic system asbuilt to verify the system components are installed per design.
- Land Planning, Inc. to receive a copy of the Title Five sand certification.
- Once system is backfilled and final grading is complete Land Planning, Inc. is to be contacted to perform a final grading asbuilt.
- Installer assumes full responsibility for the septic system if these Designer Requirements are not complied with.

On-Site Sewage Disposal System

for
New Construction
of a 3 bedroom house

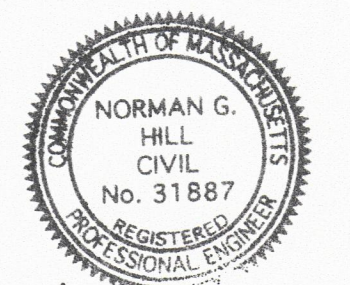
Located at
118 Leadmine Lane (Lot 1)
Sturbridge, MA
new Lot 1 see
Plan Book 950 Plan 49

Owned By
Gary F. Kellaheer
118 Leadmine Lane
Sturbridge, MA 01518

Applicant
Adam Kellaheer
P.O. Box 261
East Brookfield, MA 01515

Soil Evaluator Note:
I certify that I am currently approved by the Department of Environmental Protection to conduct soil evaluations and that the above analysis has been performed by me consistent with the required training, expertise, and experience described in 310 CMR 15.018(2).

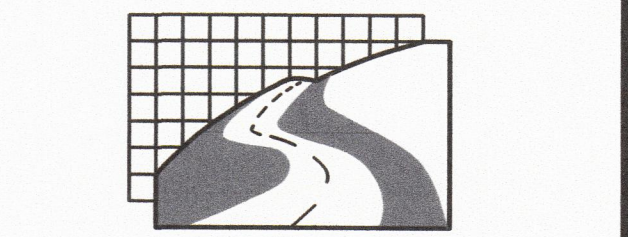
Norman G. Hill, PE
Soil Evaluator, SE #1065
Date: 8-27-2020



Norman G. Hill, PE
Date: 8-27-2020
PE #31887

REVISIONS			
No.	Date	Design	Checked
1			
2			
3			
4			

Field By: SB/JL 11/21/19
Designed By: SB 12/3/19
Drawn By: SB 12/3/19
Checked By: NGH



Land Planning, Inc.
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Environmental Consultants

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