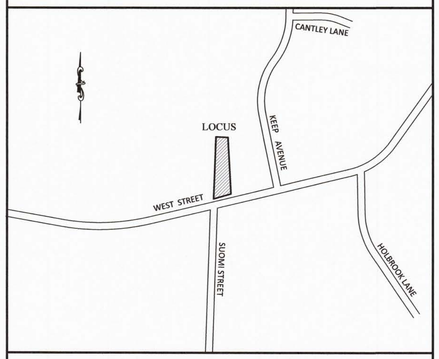
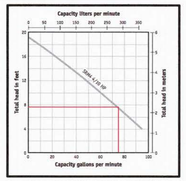
TOWN OF PAXTON



LOCUS MAP - (NOT TO SCALE)

PUMP DESIGN CALCULATIONS	
REQUIRED PIPE LENGTH	24.50'
CHANGE IN ELEVATION (HEAD)	6.50'
TOTAL FRICTION LOSS	1.19'
TOTAL HEAD	7.69'

* USE MYERS SRMM OR EQUIVILENT
PERFORMANCE: 7.69' OF HEAD @ 75 GPM 4/10 HP, 115V, SINGLE PHASE MOTOR CAPIBLE OF PASSING A 2" SOLID



RUNNING AT 75 GPM CAN PUMP 7.69' OF HEAD
55 GALLONS @ 6 CYCLES PER DAY = 330 GALLONS PER DAY
RUN TIME = 0.73 MINUTES PER CYCLE

PUMP CHAMBER RESERVE CAPACITY

EFFLUENT RESERVE CAPACITY
VOLUME BETWEEN ALARM SWITCH AND INVERT
RESERVE CAPACITY = 2.84' x 5.17' x 3' x 7.48=354.97
1.07 DAYS OF STORAGE

BUOYANCY CALCULATIONS

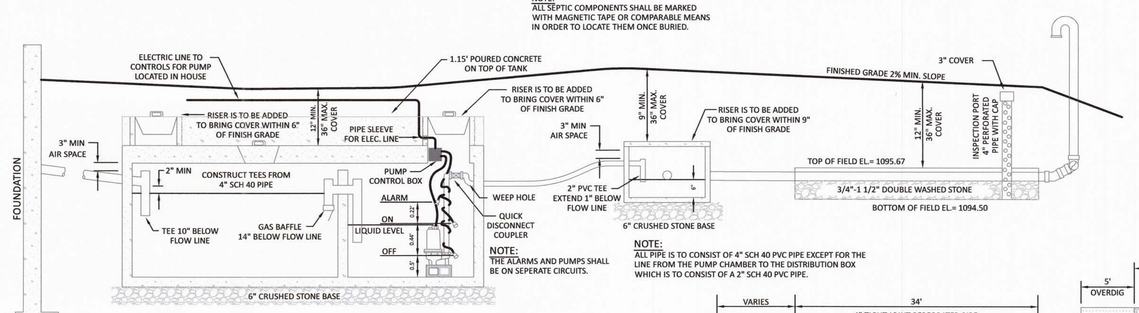
BASED ON GRAVES CONCRETE
1500 GALLON 2-COMPARTMENT H-20 TANK
WEIGHT PER MANUFACTURER = 13,320 LBS.
OUTSIDE DIMENSIONS = 11.00' x 5.83' x 5.83'

UPLIFT PRESSURE:
11.00' x 5.83' x 5.83' x 62.4 LBS/C.F. = 23,330 LBS
(ASSUMING FULL SUBMERSION)

CONCRETE COVER ON TOP OF TANK:
11.00' x 5.83' x 1.15' x 150 LBS/C.F. = 11,062.43 LBS
(13,320 + 11,062.43 = 24,382.43 > 23,330

SUBTRACT WEIGHT FOR RISER AREAS:
π(1.66/2)^2 x 1.15 x 150 = 373.33 lbs PER RISER,
TWO RISERS = 746.66 lbs
(13,320 + 11,062.43 - 746.66 = 23,635.77)
(23,635.77 > 23,330)
*NOT INCLUDING AREA OVER COVERS

NOTE:
ALL SEPTIC COMPONENTS SHALL BE MARKED WITH MAGNETIC TAPE OR COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED.



NOTE:
THE ALARMS AND PUMPS SHALL BE ON SEPERATE CIRCUITS.

NOTE:
ALL PIPE IS TO CONSIST OF 4" SCH 40 PVC PIPE EXCEPT FOR THE LINE FROM THE PUMP CHAMBER TO THE DISTRIBUTION BOX WHICH IS TO CONSIST OF A 2" SCH 40 PVC PIPE.

INVERT AT HOUSE TO BE FIELD VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. DESIGN ENGINEER MUST BE NOTIFIED OF ANY DISCREPANCY.

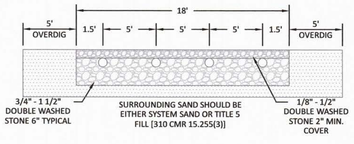
SEPTIC TANK
2 COMPARTMENT H-20
1500 GALLONS PER
310 CMR 15.223 & 15.231

D-BOX
310 CMR 15.232

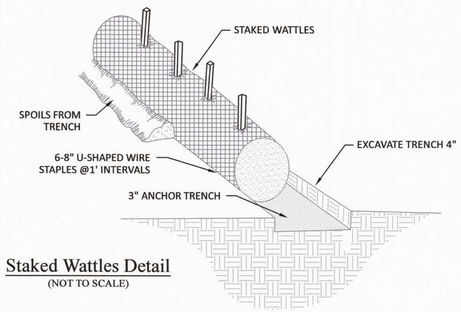
LEACHING FIELD
310 CMR 15.252

SYSTEM PROFILE
(NOT TO SCALE)

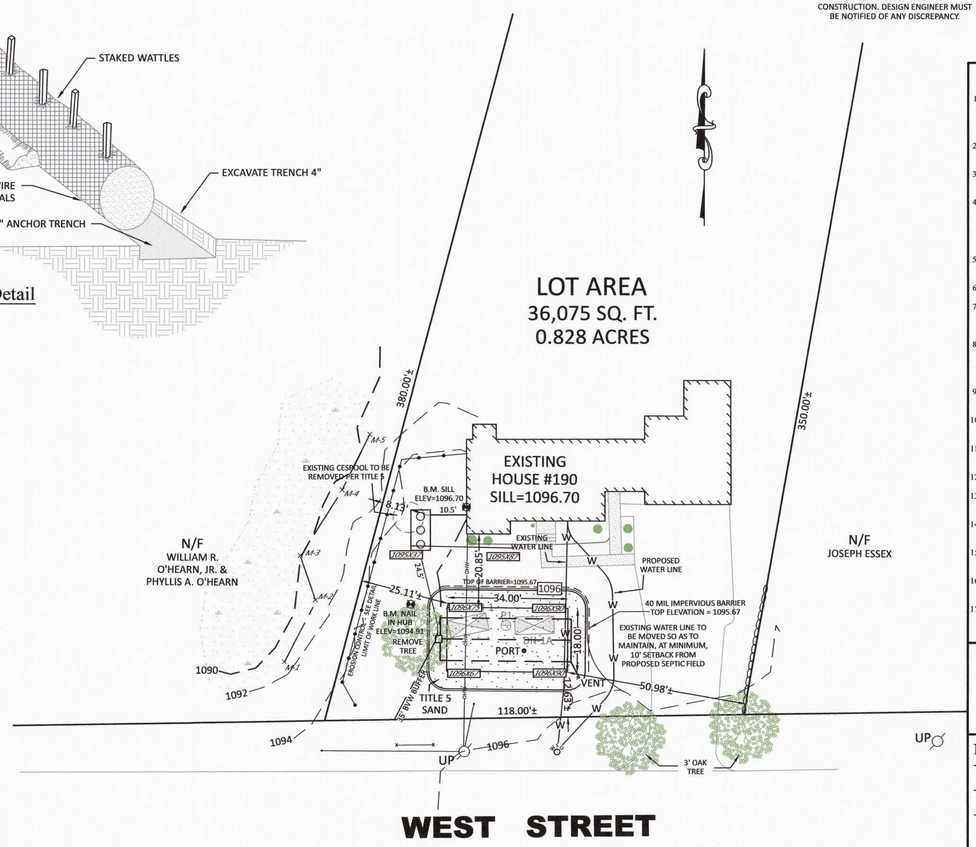
SCHEDULE OF ELEVATIONS	
INVERT @ HOUSE	1093.75
TANK INLET	1092.67
PUMP CHAMBER INLET	1092.42
PUMP OFF SWITCH	1088.92
D-BOX INLET	1095.42
D-BOX OUTLET	1095.25
INV. @ BEGINNING OF FIELD	1095.17
INV. @ END OF FIELD	1095.00
TOP OF FIELD ELEVATION	1095.07
BOTTOM OF FIELD ELEVATION	1094.50
SURFACE ELEVATION	1095.50
E.S.H.G.W. ELEVATION	1090.50
G.W. SEPARATION PROVIDED	4.00'



LEACH FIELD CROSS SECTION
(NOT TO SCALE)



Staked Wattles Detail
(NOT TO SCALE)



LOCAL UPGRADE APPROVAL

310 CMR 15.211(1) REQUIRES 50' SETBACK BETWEEN BVW AND THE SAS AND 25' BETWEEN BVW AND SEPTIC TANK. WE ARE PROPOSING A 37' SETBACK BETWEEN THE BVW AND SAS AND 19' SETBACK BETWEEN THE BVW AND SEPTIC TANK/PUMP CHAMBER.

310 CMR 15.211(1) REQUIRES 10' SETBACK BETWEEN PROPERTY LINE AND SEPTIC TANK/PUMP CHAMBER. WE ARE PROVIDING A 8.13' SETBACK.

LOT IS SERVICED BY TOWN WATER

GENERAL NOTES

1. ALL MODIFICATIONS TO THIS PLAN MUST BE PREAPPROVED IN WRITING BY THE DESIGN ENGINEER AND THE LOCAL BOARD OF HEALTH. ALL MODIFICATIONS MADE WITHOUT APPROVAL FROM THE DESIGN ENGINEER OR THE LOCAL BOARD OF HEALTH ARE THE SOLE RESPONSIBILITY OF THE SITE CONTRACTOR.
2. ALL CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM WITH THE REQUIREMENTS OF THE LOCAL BOARD OF HEALTH AND THE STATE ENVIRONMENTAL CODE TITLE 5.
3. THE CONSTRUCTION OF PERMANENT STRUCTURES UPON THE DISPOSAL SYSTEM OR RESERVE AREA IS NOT ALLOWED.
4. TO OBTAIN A CERTIFICATE OF COMPLIANCE, THREE INSPECTIONS WILL BE REQUIRED BY THE DESIGN ENGINEER.
   1) BOTTOM INSPECTION FOLLOWING THE EXCAVATION OF TOPSOIL & SUBSOIL
   2) FOLLOWING THE INSTALLATION OF THE SYSTEM COMPONENTS PRIOR TO BACKFILL
   3) FINAL GRADING.
5. MACHINERY THAT MAY CRUSH OR DISTURB THE PIPE SHALL NOT BE ALLOWED ON THE DISPOSAL AREA.
6. THIS SYSTEM WAS NOT DESIGNED TO FACILITATE A GARBAGE DISPOSAL.
7. TOPSOIL, SUBSOIL, PEAT, FILL, AND OTHER IMPERVIOUS MATERIALS SHALL BE REMOVED FROM ALL AREAS WITHIN THE LEACHING FACILITY AND FOR A DISTANCE OF 5 FEET IN ALL DIRECTIONS THEREFROM.
8. WHERE A SEWAGE DISPOSAL SYSTEM IS TO BE CONSTRUCTED IN FILL, THE FILL SHALL BE PLACED AND COMPACTED IN NO GREATER THAN 12 INCH LIFTS OR ALLOWED TO SETTLE FOR A MINIMUM OF ONE YEAR. THE FILL MATERIAL MUST CONFORM WITH THE REQUIREMENTS OF THE LOCAL BOARD OF HEALTH AND STATE ENVIRONMENTAL CODE TITLE 5, SECTION 15.255
9. TITLE 5 SAND CERTIFICATE MUST BE SUBMITTED TO THE BOARD OF HEALTH AND THE DESIGN ENGINEER PRIOR TO CONSTRUCTION.
10. THE BASE FOR THE SEPTIC TANK, PUMP CHAMBER, AND DIST. BOX MUST BE COMPACTED BY A VIBRATORY TAMPER.
11. INTERIOR PLUMBING SHALL BE CONNECTED TO THE PROPOSED SEPTIC SYSTEM WITH THE EXCEPTION OF WATER SOFTENERS AND/OR WATER CONDITIONING SYSTEMS.
12. WELLS WITHIN 100' OF THE PROPOSED SEPTIC SYSTEM ARE SHOWN.
13. APPLICABLE STATE AND LOCAL PERMITS SHALL BE ACQUIRED PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION.
14. HYDRAULIC CEMENT IS REQUIRED TO SEAL ALL CONNECTIONS AT THE SEPTIC TANK, PUMP CHAMBER, AND D-BOX.
15. CONSERVATION APPROVAL MAY BE REQUIRED IF ANY PROPOSED ALTERATION IS LOCATED WITHIN 100' OF A RESOURCE AREA.
16. ALL SEPTIC COMPONENTS SHALL BE MARKED WITH MAGNETIC TAPE OR COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED.
17. IT IS RECOMMENDED THAT NEW ENGLAND ENVIRONMENTAL DESIGN, LLC. IS RETAINED TO STAKE OUT THE PROPOSED SUBSURFACE SEWAGE DISPOSAL SYSTEM IN THE PROPOSED LOCATION AND VERIFY THE ELEVATION OF THE PROPOSED DESIGN.

THIS SEPTIC DESIGN IS NOT A GUARANTEE THAT THE SYSTEM WILL FUNCTION AS INTENDED OR THAT IT WILL FUNCTION FOR A DISCLOSED PERIOD OF TIME. NO WARRANTIES ARE IMPLIED BY THIS DESIGN.

TEST HOLE INFORMATION SHOWN REPRESENTS SOILS AT THAT LOCATION ONLY, AND IS NOT TO BE CONSIDERED AN IMPLIED OR EXPRESSED WARRANTY OF THE SOILS BEYOND THE LIMITS OF THE TEST HOLES.

NOTES:
- ALL MATERIALS FOR S.D.S. CONSTRUCTION ARE TO BE INSTALLED IN 6" LIFTS.
- CLEAN TITLE 5 SAND IS REQUIRED.
- TITLE 5 SAND CERTIFICATE MUST BE SUBMITTED TO THE BOARD OF HEALTH AND THE DESIGN ENGINEER PRIOR TO CONSTRUCTION.
- USE CAUTION WHILE BACKFILLING.

SOIL EVALUATION

SOIL EVALUATOR: JULIAN P. VOTRUBA SE# 2519 - WITNESSED BY: WAYNE CURRAN - DATE PERFORMED: 6-3-2021

DEEP HOLE-1 ELEVATION=1095.03

DEPTH FROM SURFACE (INCHES)	SOIL HORIZON	SOIL TEXTURE (USDA)	SOIL COLOR (MUNSELL)	SOIL MOTTLING	OTHER (STRUCTURES, STONES, BOULDERS, CONSISTENCY, & % GRAVEL)
0-30"	FILL				FRIABLE
30-91"	C	FSL	2.5Y 5/4	10YR 6/1 @ 60"	FRIABLE

DEEP HOLE-1A ELEVATION=1095.34

DEPTH FROM SURFACE (INCHES)	SOIL HORIZON	SOIL TEXTURE (USDA)	SOIL COLOR (MUNSELL)	SOIL MOTTLING	OTHER (STRUCTURES, STONES, BOULDERS, CONSISTENCY, & % GRAVEL)
0-30"	FILL				FRIABLE
30-91"	C	FSL	2.5Y 5/4	10YR 6/1 @ 60"	FRIABLE

DEEP HOLE-2 ELEVATION=

DEPTH FROM SURFACE (INCHES)	SOIL HORIZON	SOIL TEXTURE (USDA)	SOIL COLOR (MUNSELL)	SOIL MOTTLING	OTHER (STRUCTURES, STONES, BOULDERS, CONSISTENCY, & % GRAVEL)

DEEP HOLE-2A ELEVATION=

DEPTH FROM SURFACE (INCHES)	SOIL HORIZON	SOIL TEXTURE (USDA)	SOIL COLOR (MUNSELL)	SOIL MOTTLING	OTHER (STRUCTURES, STONES, BOULDERS, CONSISTENCY, & % GRAVEL)

PARENT MATERIAL	GLACIAL TILL
DEPTH TO BEDROCK	>91"
STANDING WATER IN HOLE	N/A
WEEPING FROM PIT FACE	72"
E.S.H.G.W. DEPTH	60" BELOW

PERCOLATION TESTS

TEST #	DEPTH	DATE	PERC. RATE
1	41"	6-3-2021	12.66 MPI
PERC TEST BY	JULIAN P. VOTRUBA		
WITNESED BY	WAYNE CURRAN		

I CERTIFY THAT ON 6/94 I HAVE PASSED THE SOIL EVALUATOR EXAMINATION APPROVED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THAT THE ANALYSIS WAS PERFORMED BY ME CONSISTANT WITH THE REQUIRED TRAINING, EXPERTISE, AND EXPERIENCE DESCRIBED IN 310 CMR 15.017

SIGNATURE Julian P Votruba DATE 6-3-2021

DESIGN DATA

TYPE OF BUILDING: SFH NO. OF BEDROOMS/EMPLOYEES: 3
NO GARBAGE GRINDER (DISPOSAL) ALLOWED
DESIGN PERCOLATION RATE: 15 MPI LTAR: 0.56
DAILY FLOW: 3x110=330

REQUIRED LEACHING AREA
DESIGN FLOW / LTAR: 330/0.56=589.28 S.F.
TOTAL LEACHING AREA = (L x W)
18 x 34 = 612 S.F.
TOTAL DESIGN FLOW = LEACHING AREA x LTAR
612 x 0.56 = - G.P.D.
DESIGN FLOW ≥ DAILY FLOW
342.7 ≥ 330

LOCUS

ASSESSOR'S REFERENCE	MAP 12 PARCEL 53
W.D.R.D. REFERENCE	BOOK 35056 PAGE 381
PLAN REFERENCE	N/A
OWNER OF RECORD	DOROTHY E. LEDERER

ZONING REQUIREMENTS

ZONING DISTRICT	GRB	FRONT SETBACK	30 FEET
MIN. LOT AREA	60,000 S.F.	SIDE SETBACK	25 FEET
MIN. FRONTAGE	100 FEET	REAR SETBACK	30 FEET

THE LOT SHOWN DOES NOT LIE WITHIN A FLOOD PLAIN AS SHOWN ON THE FLOOD INSURANCE RATE MAP (F.I.R.M.)
COMMUNITY PANEL NUMBER 25027C0590E DATED JULY 4, 2011.

REPAIR SUBSURFACE SEWAGE DISPOSAL SYSTEM

CONTRACTOR TO VERIFY ACTUAL LOCATION OF EXISTING UTILITY SERVICES IN THE FIELD PRIOR TO CONSTRUCTION.

811 DigSafe MA·ME·NH·RI·VT

TYPICAL LEGEND

IRON PIPE	○	EXIST. CONT. MAJ.	1000	WELL LOCATION	Ⓦ
CONCRETE BOUND	⊡	EXIST. CONT. MIN.	1002	PERC. TEST	⊖
BOUNDARY LINE		PROP. CONT.	1102	DEEP HOLE	⊠
ABUTTER LINE		WETLAND LINE		BENCHMARK	⊕
EASEMENT LINE		WETLAND BUFFER		DRAINAGE LINE	
SETBACK LINE		EROSION CONTROL		DRAIN MANHOLE	Ⓓ
STONEWALL		PAVEMENT EXIST.		CATCH BASIN	▩
TREE LINE		PAVEMENT PROP.			

GRAPHIC SCALE

20 0 20 40
(IN FEET)
1 INCH = 20 FEET

REVISIONS

REV	DATE	COMMENT	BY
1			
2			
3			
4			

COMMONWEALTH OF MASSACHUSETTS
ZACHARY T. MANN NO. 1419
REGISTERED SANITARIAN
8/31/2021

PREPARED FOR: GARY LEDERER
190 WEST STREET
PAXTON, MA 01612

PROPERTY ADDRESS: 190 WEST STREET
PAXTON, MA 01612

New England Environmental Design, LLC
Environmental Consultants ■ Civil Engineering Consultants ■ Land Surveying Consultants
P.O. Box 378 Rutland, MA 01543 ■ Ph: (508) 829-7222 ■ needllc@hotmail.com

DRAWN BY: ZTM	DATE: 8-31-2021	SCALE: 1"=20'
CHECKED BY: JPV	SHEET: 1 OF 1	JOB#: 1766-21