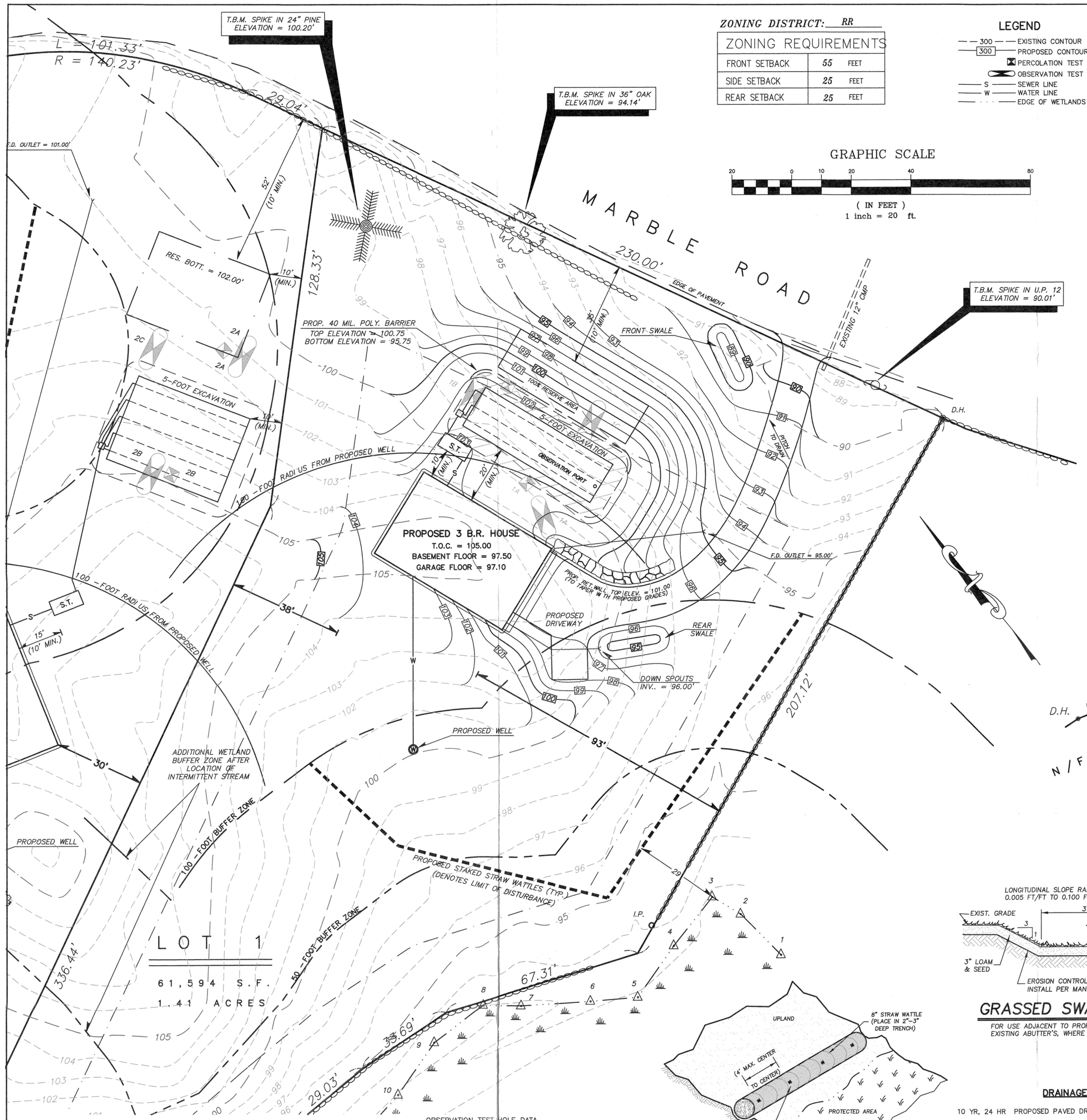


ZONING DISTRICT: RR

ZONING REQUIREMENTS		
FRONT SETBACK	55	FEET
SIDE SETBACK	25	FEET
REAR SETBACK	25	FEET

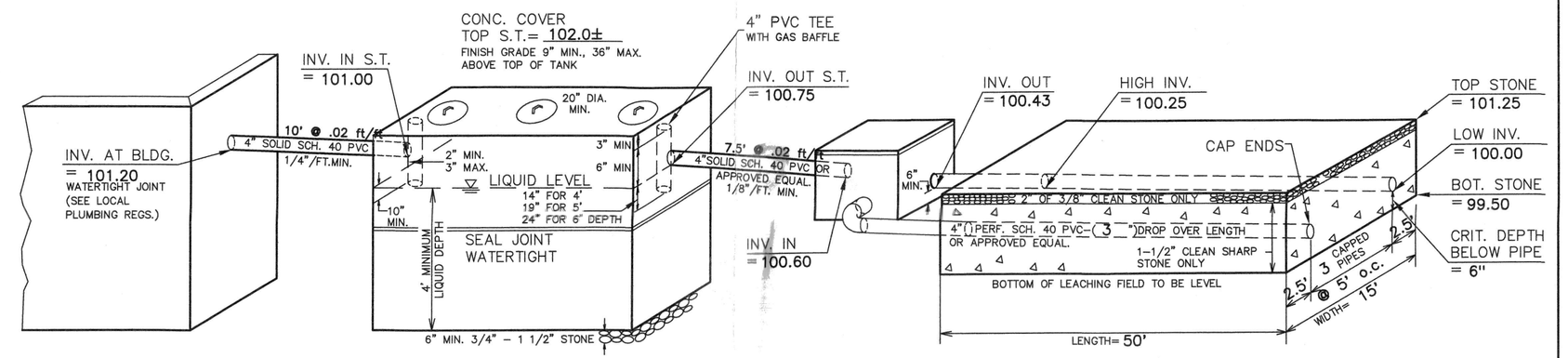
LEGEND

- 300 — EXISTING CONTOUR
- 300 — PROPOSED CONTOUR
- PERCOLATION TEST HOLE
- OBSERVATION TEST HOLE
- S — SEWER LINE
- W — WATER LINE
- EDGE OF WETLANDS

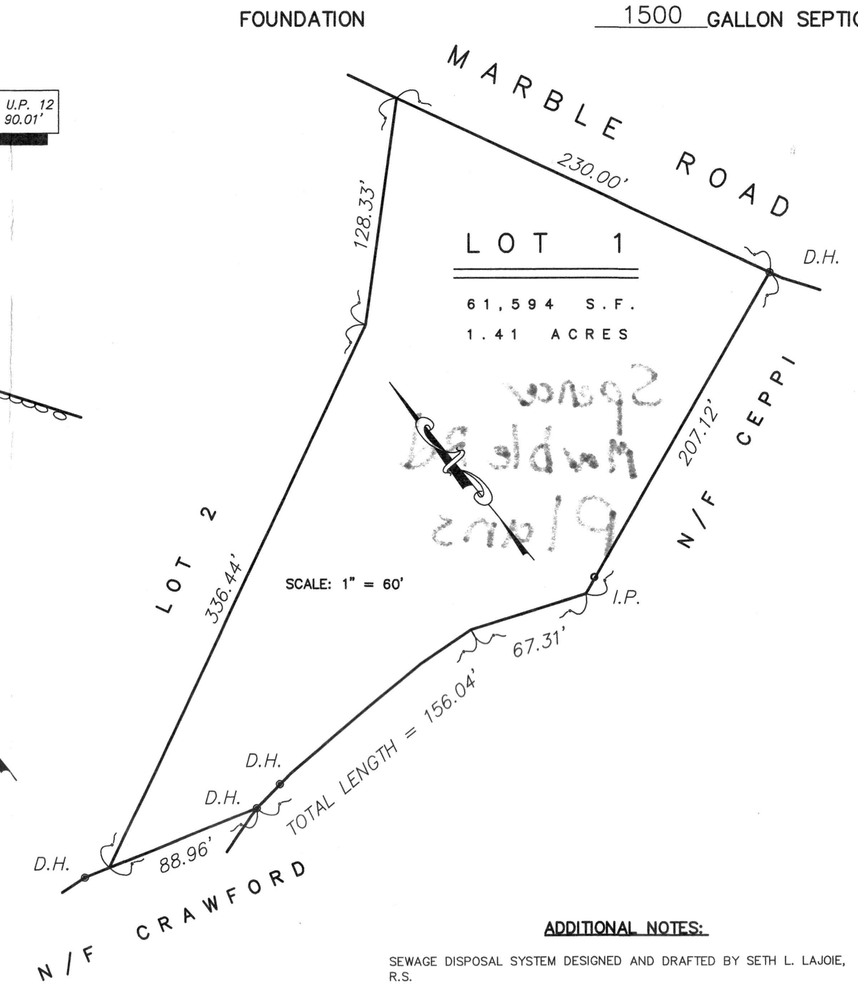
GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.



FOUNDATION — 1500 GALLON SEPTIC TANK — DISTRIBUTION BOX — LEACHING FIELD 50' X 15' = 750 S.F.



Space Marble Plans

SEPTIC TANK

SEPTIC TANK SHALL BE A PRECAST, REINFORCED CONCRETE TANK MADE WATERTIGHT. CONSTRUCTION MATERIALS AND DIMENSIONS SHALL CONFORM TO TITLE 5 AND AASHTO HS 10 REQUIREMENTS AND PLACED ON A STABLE MECHANICALLY COMPACTED LEVEL BASE.

TANK/ SYSTEM TO BE VENTED THROUGH THE BUILDING PLUMBING SYSTEM AS REQUIRED BY BUILDING CODE.

TANK SHOULD BE INSPECTED, MAINTAINED AND BE PUMPED OUT WHEN SLUDGE DEPTH IN THE BOTTOM EXCEEDS ONE FOURTH OF THE TOTAL LIQUID DEPTH.

AT LEAST THREE 20" MANHOLES SHALL BE PROVIDED. AT LEAST ONE OF THE MANHOLES SHALL HAVE AN ACCESS PORT ACCESSIBLE TO WITHIN 6" OF FINISH GRADE.

"D" BOX

"D" BOX TO BE MADE WATERTIGHT. CONSTRUCTION MATERIALS AND DIMENSIONS SHALL CONFORM TO TITLE 5 AND AASHTO HS 10 REQUIREMENTS AND PLACED ON A STABLE MECHANICALLY COMPACTED LEVEL BASE.

"D" BOX OUTLETS SHALL BE INSTALLED LEVEL ("BUILT UP" INVERTS, NOT PERMITTED.

FIRST 2' (MIN.) OF OUTLETS SHALL BE INSTALLED LEVEL TO EQUALIZE FLOW.

THE MINIMUM INSIDE DIMENSIONS OF THE "D" BOX TO BE 12" AND THE MINIMUM WALL THICKNESS TO BE 2".

WHEN INLET PIPE SLOPE EXCEEDS 8%–PVC INLET TEE REQUIRED. CUT LOW END 1" ABOVE OUTLET INVERT.

"D" BOX COVER TO BE SEALED WITH BITUMEN.

LEACH AREA

ALL LOAM, LARGE BOULDERS OR FOREIGN MATERIAL ENCOUNTERED DURING EXCAVATION ARE TO BE REMOVED FROM THE LEACHING AREA.

ALL SOIL INTERFACES SHALL BE SCARIFIED PRIOR TO THE PLACEMENT OF STONE.

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 MINIMIZE SETTLEMENT 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 DOMESTIC 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 100' OF THE PROPOSED WELL.

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 VOID ANY 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.

SCHEDULE OF ELEVATIONS	PROPOSED	AS-BUILT
TOP CONCRETE FOUNDATION	105.00	
INVERT AT FOUNDATION	101.20	
INVERT TANK INLET	101.00	
INVERT TANK OUTLET	100.75	
TOP SEPTIC TANK	102.0±	
INV. "D" BOX INLET	100.60	
INV. "D" BOX OUTLET	100.43	
TOP OF STONE	100.75	
INVERT HIGH END	100.25	
INVERT LOW END	100.00	
BOTTOM OF STONE	99.50	
GROUNDWATER OFFSET REQUIRED	4'	
GROUNDWATER OFFSET UTILIZED	4'	

DESIGN CRITERIA

GARBAGE GRINDERS – NOT PERMITTED

PERC. TESTS: PERFORMED BY RICHARD GOBI
WITNESSED BY LEE JARVIS

PERC. #	RATE (M/I)	ELEVATION	DEPTH	DATE
1A	7 MPI	100.5	40"	6/7/07
1B	7 MPI	97.3	42"	6/7/07

FLOWS: 4 BEDROOMS AT 110 GPD = 440 GPD (330 GPD MIN.)

SEPTIC TANK REQUIRED: (1500 GAL. MIN.)
440 GPD X 2.0 = 880 GAL. TANK

LEACHING AREA PROVIDED:
A. BASIS 10 MIN./IN. PERCOLATION RATE
B. APPLICATION RATE ALLOWED 0.60 S.F.
C. BOTTOM AREA PROVIDED = 750 S.F.
D. TOTAL G.P.D. PROVIDED 450

SYSTEM IN FILL ☒ REQUIRED ☐ NOT REQUIRED

IF ANY PORTION OF THE PROPOSED LEACHING AREA IS LOCATED ABOVE EXISTING GRADE OR WITHIN TOPSOIL, SUBSOIL, PEAT OR OTHER UNSUITABLE OR IMPERVIOUS SOIL LAYER, THEN THE PLACEMENT OF FILL IS REQUIRED. PRIOR TO THE PLACEMENT OF FILL, ALL UNSUITABLE OR IMPERMEABLE SOILS SHALL BE EXCAVATED TO A MINIMUM OF FIVE FEET LATERALLY IN ALL DIRECTIONS BEYOND THE OUTER PERIMETER OF THE SOIL ABSORPTION SYSTEM TO THE DEPTH OF NATURALLY OCCURRING PERVIOUS MATERIAL. FILL MATERIAL SHALL BE SELECT, ON-SITE OR IMPORTED SOIL, CONSISTING OF CLEAN GRANULAR SAND, FREE FROM ORGANIC MATTER AND OTHER DELETERIOUS SUBSTANCES. MIXTURES AND LAYERS OF DIFFERENT SOIL CLASSES SHALL NOT BE USED. THE FILL SHALL NOT CONTAIN ANY MATERIAL LARGER THAN 2 INCHES. A SIEVE ANALYSIS USING A #4 SIEVE, SHALL BE PERFORMED ON A REPRESENTATIVE SAMPLE OF THE FILL. UP TO 45% BY WEIGHT OF THE FILL SAMPLE MAY BE RETAINED IN THE #4 SIEVE. SIEVE ANALYSES SHALL ALSO BE PERFORMED ON THE FRACTION OF FILL SAMPLE PASSING THE #4 SIEVE. SUCH ANALYSES MUST DEMONSTRATE THAT THE MATERIAL MEETS EACH OF THE FOLLOWING SPECIFICATIONS:

SIEVE SIZE	EFFECTIVE PARTICLE SIZE	% THAT MUST 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)

PRIOR TO INITIATING ANY ALTERATIONS (REMOVAL OF VEGETATION, EXCAVATIONS, GRADING, ETC.) WITHIN 100' OF WETLANDS (PONDS, BROOKS, SWAMPS, ETC.) OR WITHIN 200' OF AN AREA SUBJECT TO THE RIVER'S ACT (PERENNIALLY FLOWING RIVER, BROOK OR STREAM), A REQUEST FOR DETERMINATION OF APPLICABILITY OR A NOTICE OF INTENT UNDER THE WETLANDS PROTECTION ACT (310 CMR 10.00) SHOULD BE FILED WITH THE TOWN'S CONSERVATION COMMISSION. LOCAL BYLAWS MAY ALSO APPLY.

ADDITIONAL NOTES:

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

WATER SOFTENERS ARE NOT TO BE CONNECTED TO SEPTIC SYSTEM.

WETLANDS DELINEATED BY SETH L. LAJOIE, R.S.

CONSERVATION COMMISSION FILING IS REQUIRED.

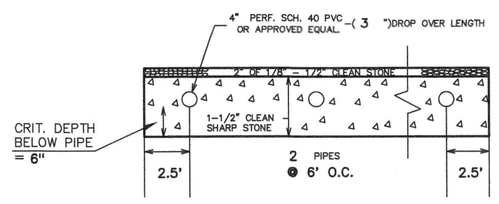
ALL SEPTIC SYSTEMS WITHIN 150 FEET OF THE PROPOSED SEPTIC ARE SHOWN.

AREA IS NOT TRIBUTARY TO A DRINKING WATER SUPPLY.

NO PUBLIC DRINKING WATER SUPPLY WELLS EXIST ON SITE.

DEED REFERENCE – BOOK: 41484 PAGE: 209

DEP FILE # – 293–689 (EXPIRED)



CROSS-SECTION OF LEACHING FIELD (TYP.)
(NOT TO SCALE)

DRAINAGE CALCULATIONS:

10 YR, 24 HR PROPOSED PAVED DRIVEWAY AND PROPOSED HOUSE

PITCH DRIVEWAY TO DRAIN TO FRONT DRAINAGE SWALE, PITCH PARKING AND TURNAROUND AREAS OF DRIVEWAY TO REAR DRAINAGE SWALE, DRAIN ROOF RUNOFF INTO REAR DRAINAGE SWALE.

CALCULATE CONTRIBUTORY AREA FOR FRONT DRAINAGE SWALE (A1)
A1 = 140 X 70 X 0.5 = 4,900 S.F. OR 0.11 Ac.

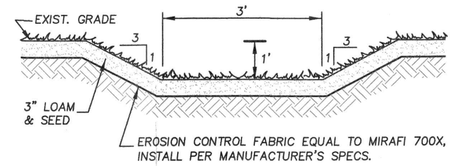
CALCULTE CONTRIBUTORY AREA FOR REAR DRAINAGE SWALE (A2)
A2 = 120 X 80 X 0.5 = 4,800 S.F. OR 0.11 Ac.

CALCULATE RUNOFF COEFFICIENT
C = 0.20(0.80) + 0.30(0.30) = 0.25

CALCULATE INTENSITY
8' ELEVATION DIFFERENCE IN 180' = 5% SLOPE
USING EXHIBIT 8–11; VELOCITY = 1 ft./sec. DURATION = 190 sec.
USING EXHIBIT 8–14; i = 5.7 in./hr.

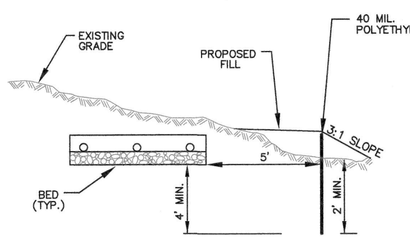
Q = CIA1 = 0.25(5.7)(0.11) = 0.785 cfs
Q = CIA2 = 0.25(5.7)(0.11) = 0.785 cfs

BY ENGINEERING JUDGEMENT, PROVIDE A GRASSED SWALE (FRONT SWALE) AT THE BEGINNING OF THE DRIVEWAY 3'W x 15'L x 1'D AND A GRASSED SWALE (REAR SWALE) AT THE END OF THE DRIVEWAY 3'W x 15'L x 1'D. DOWN SPOUTS FOR ROOF RUNOFF SHALL BE PIPED TO THE GRASSED SWALE AT THE END OF THE DRIVEWAY.



GRASSED SWALE NOT TO SCALE

FOR USE ADJACENT TO PROPERTY LINES OF EXISTING ABUTTER'S, WHERE SHOWN ON SITE PLAN.



POLY. BARRIER
NOT TO SCALE

OBSERVATION TEST HOLE DATA
PERFORMED BY: RICHARD GOBI
WITNESSED BY: LEE JARVIS, AGENT
04/12/01

1A ELEV. = 101.5

0"–4"	A	FINE SANDY LOAM
4"–16"	B	FINE SANDY LOAM
16"–78"	C	SANDY LOAM

MOTTLING OBSERVED @ 56" (ELEV. = 96.83)
NO GROUNDWATER OBSERVED
E.S.H.W.T. = 56"
NO REFUSAL

1B ELEV. = 98.5

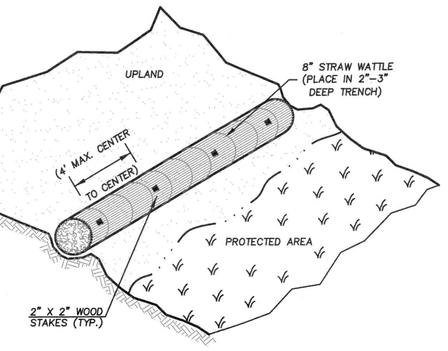
0"–6"	A	FINE SANDY LOAM
6"–18"	B	FINE SANDY LOAM
18"–84"	C	SANDY LOAM

MOTTLING OBSERVED @ 54" (ELEV. = 94.00)
NO GROUNDWATER OBSERVED
E.S.H.W.T. = 54"
NO REFUSAL

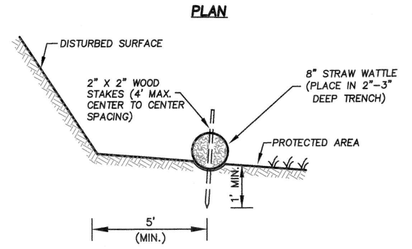
1C ELEV. = 95.0

0"–5"	A	FINE SANDY LOAM
5"–16"	B	FINE SANDY LOAM
16"–82"	C	SANDY LOAM

MOTTLING OBSERVED @ 56" (ELEV. = 90.33)
NO GROUNDWATER OBSERVED
E.S.H.W.T. = 56"
NO REFUSAL

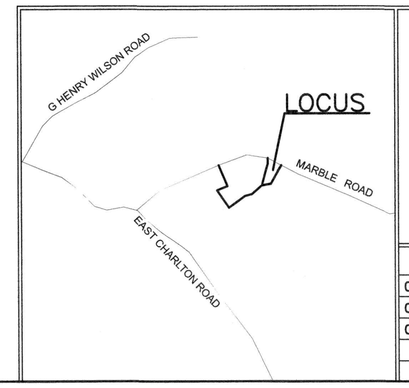


PLAN



SECTION

STRAW WATTLE DETAIL
NOT TO SCALE



COMMONWEALTH OF MASSACHUSETTS
SETH L. LAJOIE
No. 1244
REGISTERED PROFESSIONAL SANITARIAN
03/14/2022

REVISIONS
01/4/08 – ORIGINAL ENDORSEMENT
02/27/08 – DRAINAGE CALCULATIONS ADDED
03/14/22 – RE-SUBMIT WITH 4 B.R. DESIGN

SEWAGE DISPOSAL SYSTEM
FOR: LOT 1 STREET MARBLE ROAD
ASSESSOR'S MAP R14 PARCEL 43
TOWN: SPENCER, MASSACHUSETTS
DESIGNED FOR

C.R. HANSEN CONSTRUCTION

SCALE: 1" = 20' MARCH, 2022

SETH L. LAJOIE & ASSOCIATES, INC.
REGISTERED SANITARIANS, TOPOGRAPHIC SURVEYS
PERCOLATION TESTING, ENVIRONMENTAL CONSULTANTS
27 BECKET STREET SALEM, MA
CELL: (774) 230-7029

JOB NO. 1033 SHEET 1 OF 1 PLAN NO. L– 697