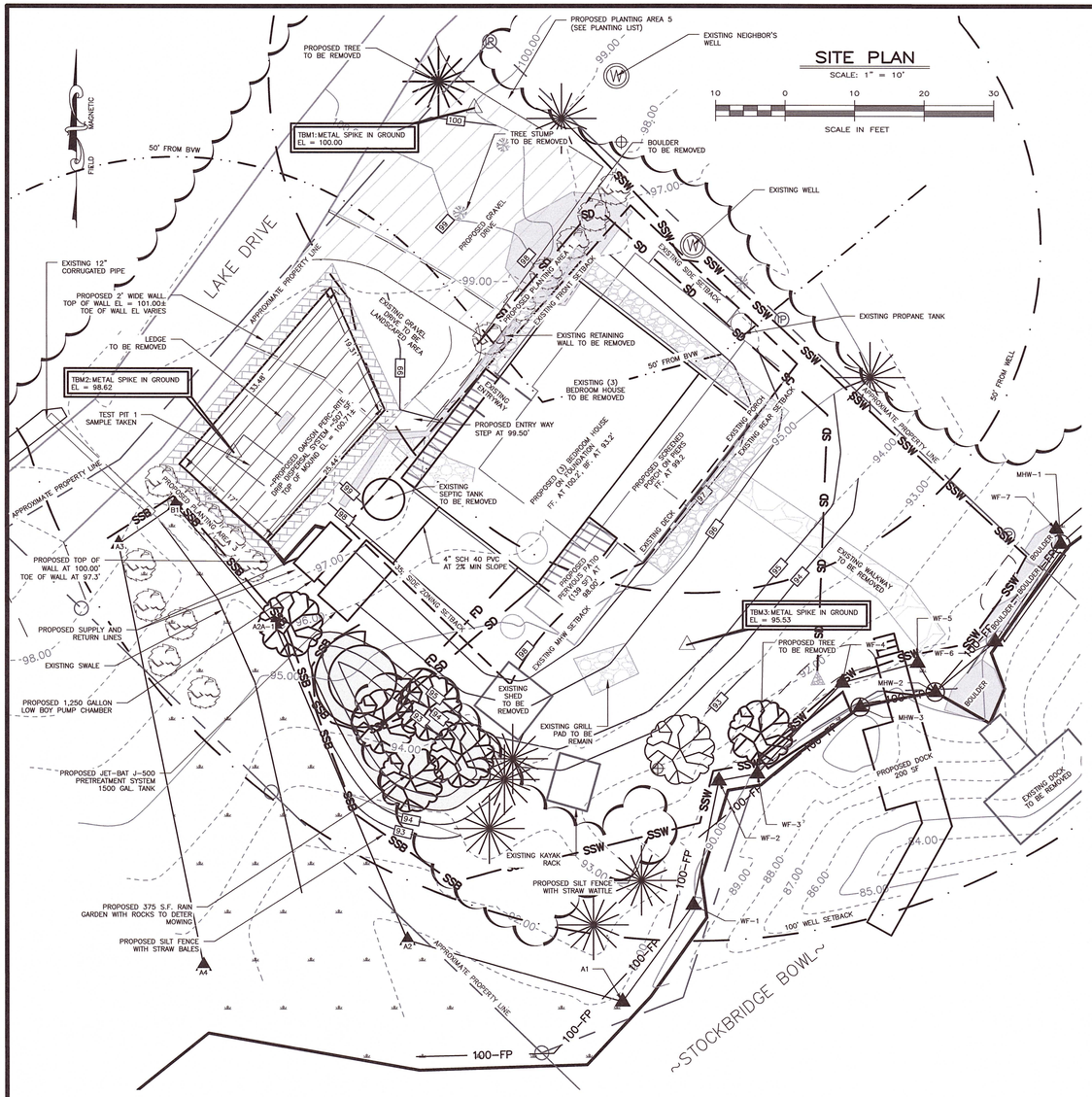
SITE PLAN

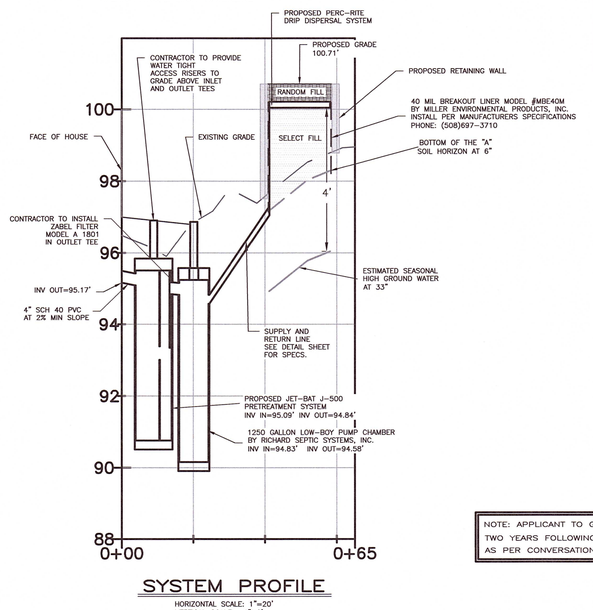
SCALE: 1" = 10'

SCALE IN FEET



LEGEND

- EXISTING CONTOURS
- PROPOSED CONTOURS
- APPROXIMATE PROPERTY LINE
- EDGE OF TREELINE(CANOPY)
- EXISTING GRAVEL ROAD
- EDGE OF PAVED ROAD
- PROPOSED STRUCTURES ON FOUNDATION
- PROPOSED STRUCTURES ON PIERS
- EXISTING STRUCTURES ON FOUNDATION
- EXISTING STRUCTURE ON PIERS
- WELL SETBACKS
- BUFFER ZONE
- ZONING SETBACKS
- OVER HEAD WIRES
- LIMIT OF BORDERING VEGETATED WETLAND
- SILT FENCE W/STAKED STRAW BALES
- SILT FENCE W/STAKED STRAW WATTLES
- SANITARY SEWER
- PROPOSED STORM WATER DRAIN PIPE
- 40 MIL BREAKOUT LINER
- MEAN ANNUAL HIGH WATERLINE
- TEST PIT LOCATION
- EXISTING WELL
- IRON PIPE
- WETLAND FLAG
- MEAN ANNUAL HIGH WATERLINE FLAG
- UTILITY POLE
- DECIDUOUS TREE
- CONIFEROUS TREE
- PROPOSED TREE TO BE REMOVED
- TREE STUMP
- BORDERING VEGETATED WETLAND
- PROPOSED RAIN GARDEN
- PROPOSED DRIP EDGE



SYSTEM PROFILE

HORIZONTAL SCALE: 1"=20'
VERTICAL SCALE: 1"=2'

NOTE: APPLICANT TO GET WELL TEST PERIODICALLY FOR TWO YEARS FOLLOWING INSTALLATION OF PROPOSED WELL, AS PER CONVERSATION WITH TRI-TOWN HEALTH

KEY MAP

LOCUS MAP

DESIGN DATA

DAILY DESIGN FLOW:
(3) BEDROOMS @ 110 GPD = 330 GPD
PERCOLATION DESIGN RATE: SOIL SAMPLE

SOIL CLASS: II
LONG TERM ACCEPTANCE RATE: 0.33 GPD/SF
330 GPD/.33 GPD PER SQFT=1000 SQFT REQ'D

1000 S.F. / 2 = 500 S.F.

USE OAKSON PERC-RITE DRIP DISPERSAL SYSTEM CUSTOM DESIGN

50% REDUCTION GIVEN FOR JET-BAT TANK PER SYSTEM DESIGNED FOLOWING GUIDELINES SET FORTH BY THE DESIGN MANUAL, BY OAKSON INC.

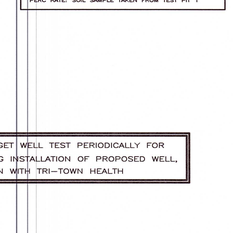
SOIL EVALUATION

PERFORMED BY: AARON J. BIASIN SEI-4367
WHITE ENGINEERING, INC.

DATE: 10/25/2021
WITNESSED BY: JAMES WILUSZ
AGENT FOR: TRI-TOWN BOARD OF HEALTH

TEST PIT #1

HORIZON



ESTIMATED SEASONAL HIGH GROUND WATER 33"
MOTTLING 33"
DEPTH TO REFUSAL: 54"+

PERC TEST #1

DEPTH OF PERC: N/A
PERC RATE: SOIL SAMPLE TAKEN FROM TEST PIT 1

GENERAL NOTES:

CONTOUR INTERVAL IS 1' REFERENCED TO A LOCAL ARBITRARY DATUM.

CONTRACTOR IS TO NOTIFY ENGINEER BEFORE PROCEEDING IF SUBSURFACE CONDITIONS DIFFER FROM THOSE INDICATED ON THIS PLAN.

ALL UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR SHALL NOTIFY DIG SAFE AT LEAST 72 HOURS PRIOR TO COMMENCEMENT OF WORK.

THE PROPOSED WORK MAY FALL UNDER THE JURISDICTION OF THE WETLANDS PROTECTION ACT. CONTRACTOR AND/OR OWNER IS RESPONSIBLE TO OBTAIN ALL REQUIRED PERMITS PRIOR TO CONSTRUCTION.

ALL PROPOSED WORK SHALL BE IN COMPLIANCE WITH MASSACHUSETTS PLUMBING, BUILDING, AND FIRE CODE REQUIREMENTS. LOW VOLUME PLUMBING FIXTURES ARE TO BE USED. NO GARBAGE DISPOSALS ARE ALLOWED. NO BACKWASH OF WATER PURIFICATION OR FILTRATION DEVICES SHALL DISCHARGED INTO THE PROPOSED SYSTEM.

ALL DISTURBED AREAS ARE TO BE SEEDED AND MULCHED.

CONTRACTOR SHALL TRANSFER BENCHMARK TO A PERMANENT SUITABLE LOCATION AWAY FROM POSSIBLE DISTURBANCE UPON COMMENCEMENT OF CONSTRUCTION.

PROPERTY LINES AS SHOWN WERE ESTABLISHED FROM "SURVEY OF LAND IN STOCKBRIDGE, MASSACHUSETTS, PREPARED FOR MICHAEL & REBECCA R. BELLORA," PREPARED BY PATRICK M. McCOLGAN OF TACONIC LAND SURVEYORS DATED ON SEMTEMBER 27, 2021 TO BE REVISED BASED RECENT PROPERTY LINE AGREEMENT WITH NORTHEAST ABUTTER. THE AGREEMENT ADJUSTS PROPERTY SQUARE FOOTAGE TO 10,703 S.F. FROM PREVIOUS 10,848 S.F. AND FROM MONUMENTATION FOUND IN THE FIELD AND ARE REPRESENTED AS APPROXIMATE ONLY.

TOPOGRAPHIC SURVEY PERFORMED BY WHITE ENGINEERING, INC. ON DECEMBER 10, 2021

WETLAND DELINEATION PERFORMED BY WHITE ENGINEERING, INC. ON SEPTEMBER 27, 2021

APPROVAL OF THIS PLAN AND APPLICATION BY A BOARD OF HEALTH DOES NOT IMPLY OR CONSTITUTE APPROVAL BY ANY OTHER BOARD OF AGENCY.

SUBSURFACE DISPOSAL SYSTEM CONSTRUCTION NOTES:

THE CONTRACTOR IS TO INSURE THAT CONSTRUCTION AND MATERIALS ARE IN STRICT COMPLIANCE WITH TITLE V REQUIREMENTS.

ALL PVC LINES AND FITTINGS SHALL BE TYPE PSM PVC SDR 35 AND SHALL CONFORM TO ASTM 3034 UNLESS OTHERWISE SPECIFIED. DISTRIBUTION LATERALS SHALL BE SET LEVEL. FINISH GRADE ABOVE THE LEACHING AREA SHALL HAVE A MINIMUM SLOPE OF 2% TO PREVENT COLLECTION OF SURFACE WATER.

ALL TANKS SHALL BE SET ON A LEVEL STABLE BASE THAT HAS BEEN MECHANICALLY COMPACTED TO ENSURE STABILITY AND PREVENT SETTLING. TANK ACCESS PORTS SHALL BE PLACED AT THE CENTER AND OVER EACH INLET AND OUTLET TEE FOR PUMPING AND MAINTENANCE. PROVIDE 20" MINIMUM DIAMETER POLYETHYLENE RISERS WITH COVER OVER ACCESS PORTS TO WITHIN 6" OF FINAL GRADE.

INLET AND OUTLET TEES SHALL BE OF CAST IRON, SCHEDULE 40 PVC OR CAST IN PLACE CONCRETE. TEES SHALL EXTEND A MINIMUM OF 6" ABOVE THE FLOW LINE OF THE SEPTIC TANK. TEES SHALL BE LOCATED ON THE OUTLET OF THE TANK DIRECTLY UNDER THE CLEANOUT MANHOLES. PROVIDE 3" MINIMUM AIRSPACE BETWEEN TOPS OF TEES AND TANK COVER. TOP OF TEES SHALL BE OPEN TO PROVIDE VENTILATION OR SEPARATE VENTILATION SHALL BE PROVIDED. THE INLET TEE SHALL EXTEND A MINIMUM OF 10" BELOW THE FLOW LINE. BAFFLES ARE NOT ACCEPTABLE. PROVIDE OUTLET WITH TEE AND GAS BAFFLE EXTENDING BELOW THE FLOW LINE IN ACCORDANCE WITH THE FOLLOWING TABLE:

LIQUID DEPTH IN TANK	DEPTH OF TEE (BELOW FLOW LINE)
4'	14"
5'	19"
6'	24"
7'	29"
8'	34"

FILL SYSTEM NOTES

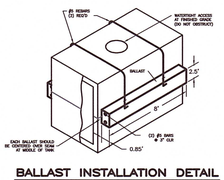
GENERAL REQUIREMENTS: THE "A" HORIZON SHALL BE STRIPPED UNDER THE AREA PLUS 5' MEASURED HORIZONTALLY UNDER THE PROPOSED SOIL ABSORPTION SYSTEM (SAS). THIS AREA IS TO BE REPLACED WITH THE SPECIFIED "SELECT FILL" AS DESCRIBED BELOW. THE FINISHED SIDE SLOPES OF A MOUNDED SYSTEM SHALL NOT EXCEED 3:1 UNLESS OTHERWISE NOTED.

RANDOM FILL: A MINIMUM OF 9" OF SOIL SHALL BE PLACED OVER THE SYSTEM IN RANDOM FILL: LIFTS. THE FILL SHALL BE SUFFICIENTLY COMPACTED TO PREVENT DEPRESSIONS DUE TO SETTLING WHICH MAY INTERCEPT OR COLLECT SURFACE WATER RUNOFF ABOVE THE SYSTEM. BACK FILL MUST BE CLEAN AND FREE OF STONES GREATER THAN 6" DIAMETER. TAILINGS, CLAY OR SIMILAR MATERIALS ARE PROHIBITED.

SELECT FILL: MATERIAL SHALL BE LOCATED AT THE BED (OR TRENCH) SELECT FILL: LEVEL AND BELOW AS SHOWN ON THE SYSTEM PROFILE. SELECT FILL MATERIAL FOUND ON SITE OR IMPORTED SHALL CONSIST OF CLEAN GRANULAR SAND OR OTHER GRANULAR MATERIAL, FREE OF ORGANIC MATTER OR OTHER DELETERIOUS SUBSTANCES.

SELECT FILL SHALL CONFORM TO STANDARDS AS DESCRIBED IN 310 CRM 15.255(3). A SIEVE ANALYSIS SHALL BE PROVIDED TO THE ENGINEER SHOWING A REPRESENTATIVE SAMPLE OF SELECT FILL. THIS ANALYSIS SHALL DEMONSTRATE THAT THE MATERIAL MEETS THE FOLLOWING SPECIFICATIONS; NO MATERIAL IS LARGER THAN 2", UP TO 45% BY WEIGHT OF THE SAMPLE MAY BE RETAINED ON THE #4 SIEVE AND THE FRACTION OF THE FILL SAMPLE PASSING SHALL MEET THE FOLLOWING CRITERIA

SIEVE SIZE	EFFECTIVE PARTICALE SIZE	% PASSING
# 4	4.75 mm	100
# 50	0.30 mm	10-100
#100	0.15 mm	0-20
#200	0.075 mm	0-5



BALLAST INSTALLATION DETAIL

NTS

BUOYANCY CALCULATIONS

NOTE: THE REQUIRED BALLAST CALCULATIONS AS SHOWN WERE COMPUTED FOR THE SPECIFIED TANK ONLY-IF ANY OTHER TANK IS INSTALLED, NEW CALCULATIONS FOR THE REQUIRED BALLAST WILL BE NECESSARY

1250 GALLON PUMP CHAMBER, MODEL POLE BY RICHARDS SEPTIC SYSTEMS
EXTERIOR DIMENSIONS: 4.67' x 8.5' x 5.67'

UPLIFT FORCE

4.67 x 8.5 x 5.67 = 225 CU.FT. x 62.4 lbs./CU.FT. = 14,040 lbs.

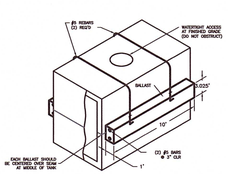
UPLIFT FORCE (WEIGHT OF TANK)

WEIGHT OF TANK = 8,423 lbs.
(UPLIFT FORCE) 14,040 lbs. - (WEIGHT OF TANK) 8,423 lbs. = 5,617 LBS.
NEED BALLAST = 5,617 lbs.

BALLAST NEEDED FOR FOR PUMP CHAMBER

REQUIRED FOR BALLAST = 5,617 lbs.
5,617 lbs. x 150 lbs./CU.FT. = 37.5 CU.FT. CONCRETE REQUIRED (1.44 CU.YDS.)

PROVIDE 16 LIN.FT. X 2.5 CU.FT./LN.FT. = 40 CU.FT. OF CONCRETE
PROVIDE (2) BALLASTS (ONE ON EACH SIDE) AT 8' LG x 1' WD x 2.5' TALL
40 CU.FT. X 150 lbs./CU.FT. = 6000 lbs.



BALLAST INSTALLATION DETAIL

NTS

BUOYANCY CALCULATIONS

NOTE: THE REQUIRED BALLAST CALCULATIONS AS SHOWN WERE COMPUTED FOR THE SPECIFIED TANK ONLY-IF ANY OTHER TANK IS INSTALLED, NEW CALCULATIONS FOR THE REQUIRED BALLAST WILL BE NECESSARY

1500 GALLON SEPTIC TANK, MODEL STS1DB BY RICHARDS SEPTIC SYSTEMS
EXTERIOR DIMENSIONS: 5.67' x 10.5' x 5.33'

UPLIFT FORCE

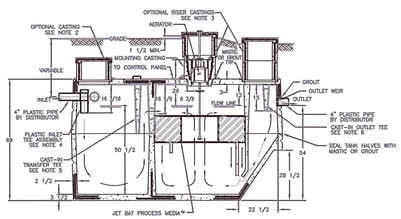
5.67'x10.5'x5.33' = 317 CU.F. x 62.4LB/C.F. = 19800lbf

DOWNWARD FORCE

WEIGHT OF TANK = 12750lbf
DIFFERENCE NEEDED = 6050lbf

BALLAST NEEDED FOR SEPTIC TANK

PROVIDE 10 LF X 3.035 SQ.F. = 60.5 C.F. OF CONCRETE
60.5 C.F. x 150LBS. = 9075lbf



SECTION A-A

JET-BAT MODEL J-500

ALTERNATIVE TECHNOLOGY NOTES:

1.) THIS DESIGN EMPLOYS A 50% REDUCTION IN SIZE OF S.A.S. AS ENTITLED BY RIGHT UNDER THE JET BAT REMEDIAL APPROVAL BY THE DEPT. OF ENVIRONMENTAL PROTECTION.

2.) JET BAT UNIT IS TO BE INSTALLED PER MANUFACTURES AND DISTRIBUTORS INSTRUCTIONS.

3.) OWNER IS TO PROVIDE COPY OF JET-BAT OPERATION AND MAINTENANCE AGREEMENT TO THE TRI TOWN HEALTH DEPARTMENT UPON EXECUTION OF CONTRACT.

PER 310 CMR 15.404(3)[d]:(LOCAL UPGRADE APPROVAL)—
APPLICANT REQUESTS 50% REDUCTION IN REQUIRED SUBSURFACE DISPOSAL AREA DESIGN REQUIREMENTS. PER JET-BAT DESIGN MANUAL FOR NITROGEN REDUCING TANKS

LOCAL UPGRADE APPROVALS:

PER 310 CMR 15.405(1)[h]:(LOCAL UPGRADE APPROVAL)—
APPLICANT REQUESTS 50' REDUCTION IN REQUIRED 100' SETBACK FROM A S.A.S. TO A PRIVATE WATER SUPPLY WELL. ACTUAL DISTANCE PROVIDED IS 50'.

PER 310 CMR 15.405(1)[b]:(LOCAL UPGRADE APPROVAL)—
APPLICANT REQUESTS 10' REDUCTION IN REQUIRED 20' SETBACK FROM A S.A.S. TO A CELLAR WALL. ACTUAL DISTANCE PROVIDED IS 10'.

PER 310 CMR 15.405(1)[f]:(LOCAL UPGRADE APPROVAL)—
APPLICANT REQUESTS 17' REDUCTION IN REQUIRED 25' SETBACK FROM A SEPTIC TANK TO A BORDERING VEGETATED WETLAND. ACTUAL DISTANCE PROVIDED IS 8'.

PER 310 CMR 15.405(1)[f]:(LOCAL UPGRADE APPROVAL)—
APPLICANT REQUESTS 21' REDUCTION IN REQUIRED 25' SETBACK FROM A S.A.S. TO A BORDERING VEGETATED WETLAND. ACTUAL DISTANCE PROVIDED IS 4'. (25' SETBACK PER JET-BAT)

PER 310 CMR 15.405(1)[g]:(LOCAL UPGRADE APPROVAL)—
APPLICANT REQUESTS 5' REDUCTION IN REQUIRED 10' SETBACK FROM A S.A.S. TO A PROPERTY LINE. ACTUAL DISTANCE PROVIDED IS 5'.

BRENDA M. WHITE CIVIL NO. 47888 REGISTERED PROFESSIONAL ENGINEER

TITLE:

PROPOSED SEPTIC SYSTEM PLAN
for
MICHAEL & REBECCA BELLORA

38 LAKE DRIVE — TAX MAP #101 LOT #26 — STOCKBRIDGE, MA

NO:	REVISION:	BY:	DATE:
2	ADDED NEW HOUSE FOOTPRINT, REMOVED PLANTING AREA, ADJUSTED CURTAIN DRAIN	AJB	8/3/2022
	REMOVED 5' BUFFER STRIP PLANTINGS, ADDED 100 YEAR FLOODPLAIN		
1	MOVED SOIL ABSORPTION SYSTEM OUTSIDE 50' WELL SETBACK, WELL TEST NOTE	AJB	6/14/2022

WHITE ENGINEERING INC.
CIVIL & ENVIRONMENTAL
55 SOUTH MERRIAM STREET, PITTSFIELD, MA 01201
PHONE: (413) 443-8011 WEB: WHITEENG.COM FAX: (413) 443-8012
LICENSED IN CONNECTICUT, MASSACHUSETTS, NEW YORK AND VERMONT

DATE:	DRN:	APVD:	DWG NO:
MAY 10, 2022	AJB	BMW	21-06-04B
DSGN: BMW	CKD: BMW	SCALE: AS NOTED	SHEET 2 OF 3

P:\Projects\21-06-04 BELLORA\21-06-04B.dwg, 8/3/2022 3:25:06 PM, \\wkrec-fs1\Civil 12-32000 Plotter