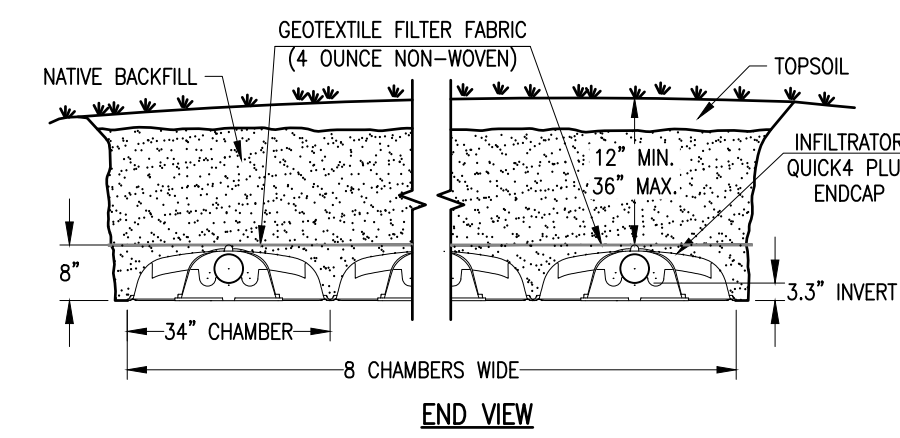
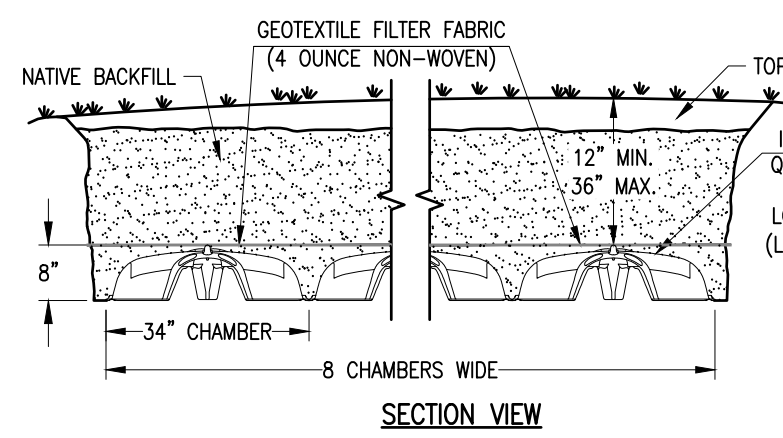


SUBSURFACE SEWAGE DISPOSAL SYSTEM
(NOT TO SCALE)



TYPICAL FIELD VIEW
(NOT TO SCALE)

SEPTIC NOTES:

- TEST HOLES PERFORMED BY ALAN EWING, P.E. AND WITNESSED BY PATRICIA FOWLE FROM THE FAIRHAVEN BOARD OF HEALTH ON AUGUST 20, 2015.
- ENGINEER SHALL SET BENCHMARK WITHIN 50' OF SYSTEM PRIOR TO START OF CONSTRUCTION.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL STANDARDS AND REGULATIONS.
- ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC MARKING TAPE OR A COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED.
- SOIL TESTING PERFORMED IN ACCORDANCE WITH THE INSTRUCTIONS OF MASSACHUSETTS ENVIRONMENTAL CODE, TITLE 5.
- THERE ARE NO KNOWN SURFACE WATER SUPPLIES OR WETLANDS BORDERING SURFACE WATER SUPPLIES OR PUBLIC WELLS WITHIN 200' OF SITE.
- THERE ARE NO KNOWN PRIVATE WELLS WITHIN 200' OF SITE.
- THERE ARE NO KNOWN BORDERING VEGETATED WETLANDS, INLAND BANKS, OR SURFACE WATERS WITHIN 100' OF LEACHING AREA.
- THERE ARE NO KNOWN SURFACE OR SUBSURFACE DRAINS WHICH ARE USED TO LOWER THE GROUND WATER ON THE SITE.
- THERE ARE NO KNOWN VERNAL POOLS WITHIN 100' OF SITE.
- SITE IS WITHIN 100 YEAR FLOOD PLAIN. SEE GENERAL NOTE 4 BELOW.
- EFFLUENT BEING DISCHARGED TO THE SYSTEM CAN BE ASSOCIATED WITH NORMAL STRENGTH DOMESTIC USE ONLY.
- FOR PROPER PERFORMANCE, THE SEPTIC TANK SHOULD BE PUMPED ANNUALLY.
- ANY ALTERATIONS MUST BE APPROVED IN WRITING BY THE DESIGN ENGINEER. ANY CONDITIONS ENCOUNTERED DURING CONSTRUCTION DIFFERING FROM THOSE SHOWN HEREON OR REPORTED HEREIN SHALL BE REPORTED TO THE DESIGN ENGINEER BEFORE CONSTRUCTION CONTINUES.
- TEST HOLE INFORMATION SHOWN HEREON IS LIMITED TO SOIL CONDITIONS FOUND AT THAT PARTICULAR TEST HOLE LOCATION AND IS NOT TO BE CONSIDERED AN IMPLIED OR EXPRESSED WARRANTY OF SOIL CONDITIONS BEYOND THE LIMITS OF SUCH TEST HOLES.
- SYSTEM CAN NOT BE BACKFILLED OR CONCEALED UNTIL DESIGN FIRM AND BOARD OF HEALTH HAVE INSPECTED THE SYSTEM AND PERMISSION TO BACKFILL HAS BEEN GIVEN.
- WHERE WATER LINES CROSS BELOW SEWER LINES OR LIE LESS THAN 10 FEET FROM ANY SEPTIC COMPONENT THE WATER LINE SHALL BE ENCASED IN A MINIMUM OF 6 INCHES OF CONCRETE.
- DESIGN FIRM MUST PREPARE AND SUBMIT "AS BUILT" PLAN TO BOARD OF HEALTH. THIS PLAN MUST CERTIFY THAT THE SYSTEM WAS INSTALLED IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS AND THAT IT COMPLIES WITH PROPOSED PLAN. THEREFORE, THE CONTRACTOR MUST NOTIFY FARLAND CORP. IN ADVANCE FOR PERIODIC INSPECTIONS OF THE CONSTRUCTION AT THE FOLLOWING MINIMUM POINTS:
 - SEPTIC TANK EXCAVATION WITH STONE PRIOR TO SEPTIC TANK PLACEMENT.
 - LEACHING FIELD EXCAVATION PRIOR TO BACK FILLING WITH "SEWER SAND".
 - "SEWER SAND" BACKFILL - MUST PASS SIEVE TEST.
 - ALL PIPING AND CHAMBER ELEVATIONS PRIOR TO BACKFILL.
 - FINAL GRADING OVER ENTIRE SYSTEM.

PUMP NOTES:

- CONTRACTOR IS REFERRED TO TITLE V 310 CMR 15.231: (7, 8 & 9).
- CONTRACTOR IS REFERRED TO DEP: "GUIDELINES FOR THE CONSTRUCTION, OPERATION AND MAINTENANCE OF SMALL SEWAGE TREATMENT FACILITIES WITH LAND DISPOSAL" PAGE 54 TO 57 DATED: JAN. 1988.
- CONTRACTOR TO VERIFY POWER SUPPLIED BY ELECTRIC COMPANY PRIOR TO CONFIGURING PUMPS. A STEP TRANSFORMER AND/OR ROTOPHASE MAYBE NECESSARY.
- ELECTRICAL PERMITS WILL BE REQUIRED FOR INSTALLATION OF ELECTRIC SYSTEMS.
- PUMPS MUST BE INSTALLED BY A LICENSED ELECTRICAL CONTRACTOR.
- PROVIDE EXPLOSION PROOF FITTINGS & JUNCTION BOXES FOR ALL PUMP COMPONENTS PER TITLE V SPECIFICATIONS.
- CONTRACTOR TO VERIFY JUNCTION BOX LOCATION WITH ELECTRICAL INSPECTOR.
- HIGH WATER ALARM REQUIRED.
- CONTRACTOR MUST CHECK PUMPS STARTING & RUNNING AMPS VS. PUMP SPECIFICATIONS.
- ALARMS: TO BE ON SEPARATE CIRCUIT FROM PUMPS, TO HAVE BACKUP POWER IN CASE OF ELECTRIC FAILURE, TO BE AUDIO & PLACED IN A COMMON AREA & TO INDICATE WHICH PUMP CAUSED THE ALARM.
- GENERATOR: TO BE AVAILABLE IN CASE OF ELECTRIC FAILURE (RECOMMENDED).
- THE MOTOR CONTROL CENTER SHALL BE LOCATED OUTSIDE OF THE WET WELL AND PROTECTED BY A CONDUIT SEAL OR OTHER APPROPRIATE SEALING METHOD MEETING THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE FOR CLASS I, DIVISION 2 LOCATIONS.
- THE PUMP MOTOR SHALL MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE FOR CLASS I, DIVISION 2 LOCATIONS.
- ALL PUMP COMPONENTS TO BE EASILY MAINTAINED & ACCESSIBLE FOR REPAIRS TO MINIMIZE THE NEED FOR CONFINED SPACE ACCESS.

SEPTIC DESIGN: (NOT DESIGNED FOR GARBAGE GRINDER)

- DESIGN DAILY FLOW: 4 BR. x 110 GPD = 440 GPD (MIN)
- SEPTIC TANK: 440 GPD x 2 = 880 GAL. USE: 1,500 GALLON TANK
- DESIGN PERCOLATION RATE = 10 MIN/IN, CLASS II, ELR = 0.60 GPD/SF
- LEACHING FIELD:
 - REQUIDED AREA: 440 GPD/(0.60 GPD/SF) = 734 SF (MIN)
 - PROPOSED AREA: 7 CHAMBERS LONG BY 6 CHAMBERS WIDE (28.0'L x 17.0'W)
 - 7 CHAMBERS LONG x 4 LF/CHAMBER x 6 CHAMBERS WIDE = 168 LF
 - 168 LF x 4.73 SF/LF = 794 SF
 - CAPACITY: 794 SF x 0.60 GPD/SF = 476 GPD > 440 GPD
 - USE: 42 INFILTRATOR QUICK4 PLUS STANDARD LOW PROFILE (LP) CHAMBERS WITH 3.3-INCH INVERT
 - 12 INFILTRATOR QUICK4 PLUS ENDCAPS

BUOYANCY CALCULATION:
MAXIMUM SEASONAL HIGH GROUNDWATER ELEVATION = 7.0
1,500 GAL. SEPTIC TANK:

- EXTERIOR BOTTOM OF TANK = 0.17
- BUOYANCE FORCE ON EMPTY TANK:
VOLUME DISPLACED BY TANK = 11.00' x 5.83' x (7.0' - 0.17') = 438 C.F.
WEIGHT OF DISPLACED WATER = 438 C.F. x 62.4 LB./C.F. = 27,332 LB.
- WEIGHT OF EMPTY TANK:
SHEA CONCRETE 1,500 GAL. MONOLITHIC 4" WALL = 12,715 LB.
- WEIGHT OF SOIL ABOVE TANK:
VOLUME = 1.0' x 11.00' x 5.83' = 64.13 C.F.
WEIGHT = 64.13 C.F. x 110 LB./C.F. = 7,054 LB.
- SUM OF FORCES: (12,715 LB. + 7,054 LB.) - 27,332 LB. = -7,563 LB. (BALLAST REQUIRED)
- WEIGHT OF CONCRETE BALLAST OVER TANK (10") = 11.00' x 5.83' x 0.83' x 150 LB./CU.F.T. = 7,984 LB.
- TOTAL DOWNWARD FORCE = 12,715 LB. + 7,054 LB. + 7,984 LB. = 27,753 LB. >> 27,332 LB.

BUOYANCY CALCULATION:
MAXIMUM SEASONAL HIGH GROUNDWATER ELEVATION = 7.0
1,000 GAL. PUMP CHAMBER:

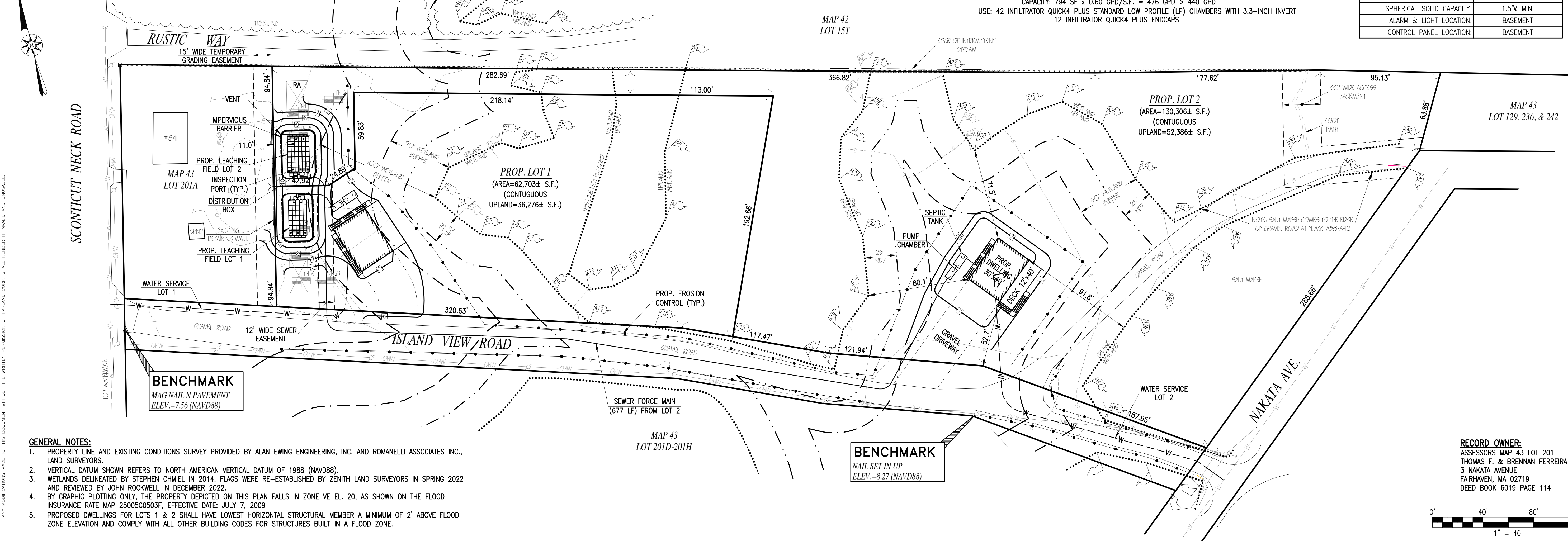
- EXTERIOR BOTTOM OF TANK = -0.34
- BUOYANCE FORCE ON EMPTY TANK:
VOLUME DISPLACED BY TANK = 9.67' x 5.00' x (7.0' - (-0.34')) = 354 C.F.
WEIGHT OF DISPLACED WATER = 354 C.F. x 62.4 LB./C.F. = 22,089 LB.
- WEIGHT OF EMPTY TANK:
SHEA CONCRETE 1,000 GAL. MONOLITHIC 5" WALL W/10" TOP = 17,210 LB.
- WEIGHT OF SOIL ABOVE TANK:
VOLUME = 1.08' x 9.67' x 5.0' = 52.22 C.F.
WEIGHT = 52.22 C.F. x 110 LB./C.F. = 5,744 LB.
- SUM OF FORCES: (17,210 LB. + 5,744 LB.) - 22,089 LB. = 865 LB. (NO BALLAST REQUIRED)

SOIL LOGS

TH-1 ELEV.=5.7± 08/20/15	TH-2 ELEV.=5.4± 08/20/15	TH-3 ELEV.=5.9± 08/20/15	TH-4 ELEV.=5.9± 08/20/15
0'-9" A HORIZON LOAMY SAND 10YR 2/1	0'-9" A HORIZON LOAMY SAND 10YR 2/1	0'-10" A HORIZON LOAMY SAND 10YR 2/1	0'-10" A HORIZON LOAMY SAND 10YR 2/1
4.9	4.7	5.1	5.1
10'-30" B HORIZON LOAMY SAND 10YR 5/6	9'-18" B HORIZON LOAMY SAND 10YR 5/6	10'-27" B HORIZON LOAMY SAND 10YR 5/8	10'-18" B HORIZON LOAMY SAND 10YR 5/8
3.2	3.9	3.7	4.4
PERC @ 30"-48" PR=10 MIN/IN	30'-90" C1 HORIZON LOAMY SAND 2.5Y 6/3	27'-96" C HORIZON SAND 2.5Y 6/4	18'-38" C1 HORIZON LOAMY SAND 2.5Y 6/3
-1.8	2.0	-2.1	2.8
REDOX @ 30" ELEV.=3.2±	40'-96" C2 HORIZON LOAMY SAND 2.5Y 6/4	38'-96" C2 HORIZON LOAMY SAND 2.5Y 6/4	REDOX @ 25" ELEV.=3.8±
	-2.7	-2.1	

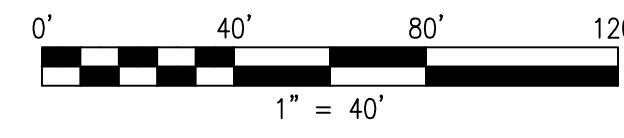
PUMP SPECIFICATION TABLE

PUMP BRAND:	LIBERTY PUMPS
PUMP SERIES:	LE50
HORSE POWER:	5/10
PUMP RATING: TDH (FT) (115%)	20.0±
PUMP RATING: GPM	30±
DISCHARGE SIZE (IN):	2
PHASE (Ø):	1
VOLTAGE (V):	115
AVAILABLE VOLTAGE:	TO BE DETERMINED BY A LICENSED CONTRACTOR
HERTZ (Hz):	60
SPHERICAL SOLID CAPACITY:	1.5" MIN.
ALARM & LIGHT LOCATION:	BASEMENT
CONTROL PANEL LOCATION:	BASEMENT



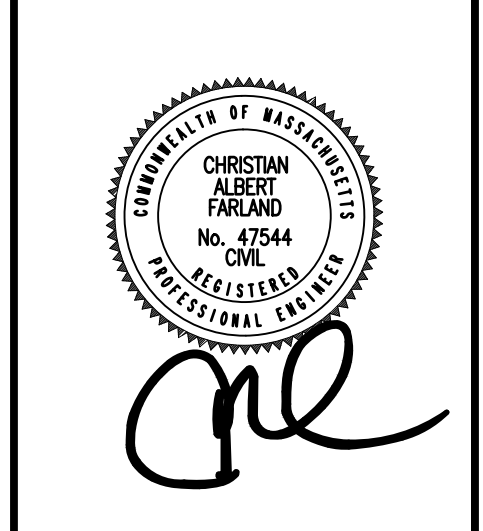
- GENERAL NOTES:**
- PROPERTY LINE AND EXISTING CONDITIONS SURVEY PROVIDED BY ALAN EWING ENGINEERING, INC. AND ROMANELLI ASSOCIATES INC., LAND SURVEYORS.
 - VERTICAL DATUM SHOWN REFERS TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
 - WETLANDS DELINEATED BY STEPHEN CHMIEL IN 2014. FLAGS WERE RE-ESTABLISHED BY ZENITH LAND SURVEYORS IN SPRING 2022 AND REVIEWED BY JOHN ROCKWELL IN DECEMBER 2022.
 - BY GRAPHIC PLOTTING ONLY. THE PROPERTY DEPICTED ON THIS PLAN FALLS IN ZONE VE EL. 20, AS SHOWN ON THE FLOOD INSURANCE RATE MAP 2500C0503F, EFFECTIVE DATE: JULY 7, 2009.
 - PROPOSED DWELLINGS FOR LOTS 1 & 2 SHALL HAVE LOWEST HORIZONTAL STRUCTURAL MEMBER A MINIMUM OF 2' ABOVE FLOOD ZONE ELEVATION AND COMPLY WITH ALL OTHER BUILDING CODES FOR STRUCTURES BUILT IN A FLOOD ZONE.

RECORD OWNER:
ASSESSORS MAP 43 LOT 201
THOMAS F. & BRENNAN FERREIRA
3 NAKATA AVENUE
FAIRHAVEN, MA 02719
DEED BOOK 6019 PAGE 114



REVISIONS

1	03/31/23	SWAP GAS WITH RESERVE
2	05/01/23	REVISED GRADING
3	12/12/23	REVISED GRADING



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154 HUTTLESTON AVENUE
FAIRHAVEN, MA 02719
P.508.717.3479
• ENGINEERING
• SITEWORK
• LAND SURVEYING
• DEVELOPMENT

DRAWN BY: NPD
DESIGNED BY: NPD
CHECKED BY: CAF

SUBSURFACE SEWAGE DISPOSAL SYSTEM
LOT 2 ISLAND VIEW ROAD
PORTION OF ASSESSORS MAP 43 LOT 201
FAIRHAVEN, MASSACHUSETTS
PREPARED FOR:
PETER ARMANETTI
23 MATTAPOISETT ROAD
ROCHESTER, MA 02770

JANUARY 20, 2023
SCALE: 1"=40'
JOB NO. 22-572
LATEST REVISION:
DECEMBER 13, 2023