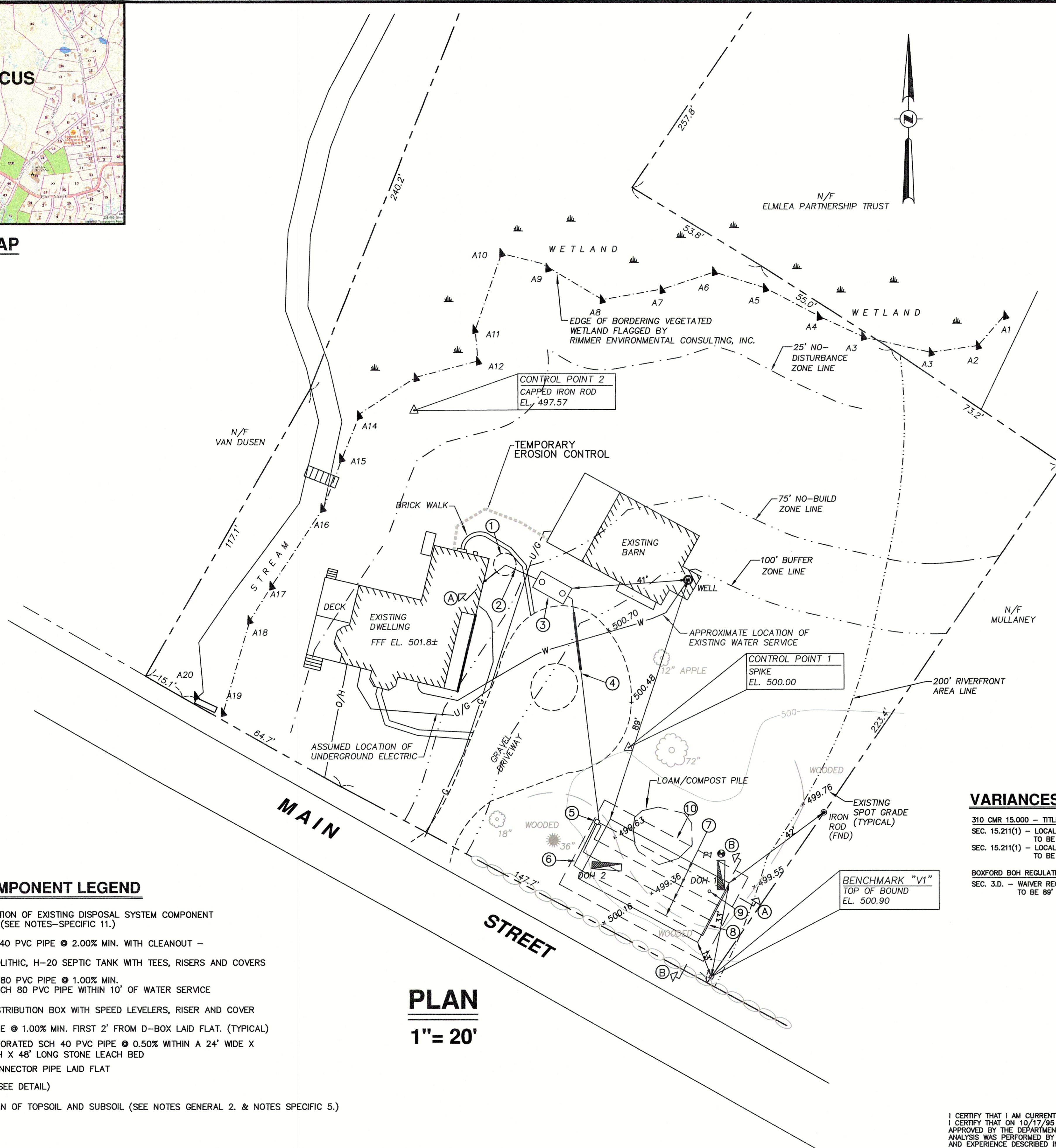


LOCUS MAP
1"=1000±



PLAN
1"= 20'

SYSTEM COMPONENT LEGEND

- ① APPROXIMATE LOCATION OF EXISTING DISPOSAL SYSTEM COMPONENT TO BE ABANDONED (SEE NOTES-SPECIFIC 11.)
- ② 21 L.F. OF 4" SCH 40 PVC PIPE @ 2.00% MIN. WITH CLEANOUT -
- ③ 2000 GALLON MONOLITHIC, H-20 SEPTIC TANK WITH TEES, RISERS AND COVERS
- ④ 80 L.F. OF 4" SCH 80 PVC PIPE @ 1.00% MIN. SLEEVE WITHIN 6" SCH 80 PVC PIPE WITHIN 10' OF WATER SERVICE
- ⑤ 6 OUTLET H-20 DISTRIBUTION BOX WITH SPEED LEVELERS, RISER AND COVER
- ⑥ 4" SCH 40 PVC PIPE @ 1.00% MIN. FIRST 2' FROM D-BOX LAID FLAT. (TYPICAL)
- ⑦ 48 L.F. OF 4" PERFORATED SCH 40 PVC PIPE @ 0.50% WITHIN A 24' WIDE X 6" EFFECTIVE DEPTH X 48' LONG STONE LEACH BED
- ⑧ 4" SCH 40 PVC CONNECTOR PIPE LAID FLAT
- ⑨ INSPECTION PORT (SEE DETAIL)
- ⑩ LIMIT OF EXCAVATION OF TOPSOIL AND SUBSOIL (SEE NOTES GENERAL 2. & NOTES SPECIFIC 5.)

VARIANCES

310 CMR 15.000 - TITLE 5
 SEC. 15.211(1) - LOCAL UPGRADE APPROVAL TO ALLOW THE LEACH FIELD TO BE 89' FROM THE WELL, 100' REQUIRED
 SEC. 15.211(1) - LOCAL UPGRADE APPROVAL TO ALLOW THE SEPTIC TANK TO BE 41' FROM THE WELL, 50' REQUIRED
 BOXFORD BOH REGULATION 2-94
 SEC. 3.D. - WAIVER REQUEST TO ALLOW THE LEACH FIELD TO BE 89' FROM THE WELL, 150' REQUIRED

SIGNATURE _____ DATE _____

NOTES - SPECIFIC

1. OWNER AND APPLICANT: MARY L. VAN DUSEN TRUST OF 2008
77 MAIN STREET
BOXFORD, MA 01921
2. LOT BOUNDARIES DEPICTED HEREON ARE THE RESULT OF A BOUNDARY SURVEY AND DETERMINATION BY DONOHOE SURVEY, INC. SEE PLAN BOOK 472, PLAN 17.
3. ASSESSORS DESIGNATION: PART OF MAP 28, BLOCK 1, LOT 2
AREA = 3.773 ACRES.
4. TOPOGRAPHY SHOWN AS OF JULY, 2019. VERTICAL DATUM IS ASSUMED.
5. SOIL TESTS CONDUCTED ON AUGUST 1, 2019 BY GERARD McDONALD, P.E. OF H. L. GRAHAM ASSOCIATES, INC. AND WITNESSED BY HEALTH AGENT KENDELL LONGO.

DEEP OBSERVATION HOLE (EL. 499.5)

TEST HOLE NO.	DOH 1		
TOTAL DEPTH:	96"		
DEPTH TO LEDGE:	NONE		
DEPTH TO GROUNDWATER:	NONE		
ESTIMATED GROUNDWATER:	88"		
SOIL STRATA:			
DEPTH	HORIZON	TEXTURE	MUNSELL COLOR
0"-10"	A	SANDY LOAM	10YR 3/2
10"-24"	B	LOAMY SAND	10YR 5/6
24"-96"	C	SAND	10YR 4/4

PERCOLATION TEST

TEST HOLE NO.	P1
TOTAL DEPTH:	48"
PRESOAK TIME:	15 MINUTES
OBSERVED PERC RATE:	< 2 MINUTES PER INCH
DESIGN PERC RATE:	< 2 MINUTES PER INCH

DEEP OBSERVATION HOLE (EL. 499.5)

TEST HOLE NO.	DOH 2		
TOTAL DEPTH:	96"		
DEPTH TO LEDGE:	NONE		
DEPTH TO GROUNDWATER:	NONE		
ESTIMATED GROUNDWATER:	NONE		
SOIL STRATA:			
DEPTH	HORIZON	TEXTURE	MUNSELL COLOR
0"-10"	A	SANDY LOAM	10YR 3/2
10"-24"	B	LOAMY SAND	10YR 5/6
24"-96"	C	SAND	10YR 4/4

6. DESIGN DATA:
 - PERCOLATION RATE: 1" IN 5 MINUTES
 - BEDROOMS: 5 EXISTING
 - DAILY SEWAGE FLOW: 5 BEDRMS. @ 165 GPD
5 x 165 = 825 GPD
 - SIZE SEPTIC TANK: 200% OF 825 GPD = 1,650 GPD
USE 2,000 GALLON TANK

CALCULATE LEACHING AREA REQUIREMENT
 L.T.A.R. (CLASS 1 SOIL) = 0.74 GPD PER SQUARE FT.
 825 GPD / 0.74 GPD PER SQUARE FT. = 1,115 SQUARE FT.
 LEACHING AREA PROVIDED:
 PROPOSED LEACH BED 24' WIDE X 48' LONG
 AREA = 1,152 S.F. > 1,115 S.F.

BUOYANCY CALCULATIONS:

GROUNDWATER ESTIMATED DEPTH	SEPTIC TANK
7.3'	7.3'
BOTTOM OF TANK DEPTH	6.5'
DEPTH OF WATER DISPLACED	0'
BUOYANCY NOT A DESIGN CONCERN	

7. MINIMUM EARTHEN COVER OVER LEACHING BED IS 12 INCHES. MINIMUM COVER OVER SEPTIC TANK IS 9 INCHES. MAXIMUM COVER IS 36 INCHES.
8. THE SEPTIC TANK SHALL BE MONOLITHIC 2,000 GALLON H-20 TANK AS MANUFACTURED BY SHEA CONCRETE PRODUCTS, INC. RISERS AND COVERS SHALL BE INSTALLED TO GRADE. A ZABEL MODEL A-1800 EFFLUENT FILTER OR APPROVED EQUAL SHALL BE INSTALLED IN THE OUTLET TEE.
9. POLYVINYL CHLORIDE PIPING SHALL MEET THE FOLLOWING SPECIFICATIONS: SCH 40 - HEAVY DUTY SEWER PIPE (ASTM D 1785), OR DRAIN, WASTE, AND VENT PIPE (ASTM D 2685). ALL PIPE JOINTS SHALL BE MADE WATERTIGHT AND PROTECTED AGAINST DAMAGE BY ROOTS.
10. AGGREGATE USED IN THE SOIL ABSORPTION AREA SHALL MEET THE FOLLOWING REQUIREMENTS:

LEACHING STONE	PERCENT PASSING	FILTER STONE	PERCENT PASSING
2.0 INCH	100	3/4 INCH	100
3/4 INCH	>80	3/8 INCH	>80
#200 SIEVE	<0.2	#200 SIEVE	<0.2
11. ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC MARKING TAPE OR COMPARABLE MEANS PRIOR TO BACKFILLING.

SUBSURFACE SEWAGE DISPOSAL SYSTEM REPAIR PLAN
 prepared for
MARY L. VAN DUSEN

77 MAIN STREET BOXFORD, MA

GRAHAM ASSOCIATES, INC.
 CIVIL ENGINEERS
 TWO CENTRAL STREET, IPSWICH, MA 01938 (978) 356-2756

DRAWN BY: JC/GMM CHECKED BY: HLG/GMM PROJECT NO.:19-1919
 DATE: AUG. 23, 2019 SCALE: AS SHOWN SHEET 1 OF 2

I CERTIFY THAT I AM CURRENTLY CERTIFIED AS A SOIL EVALUATOR IN MASSACHUSETTS AND I CERTIFY THAT ON 10/17/95 I HAVE PASSED THE SOIL EVALUATOR EXAMINATION APPROVED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION AND THAT THE ABOVE ANALYSIS WAS PERFORMED BY ME CONSISTENT WITH THE REQUIRED TRAINING, EXPERTISE AND EXPERIENCE DESCRIBED IN 310 CMR 15.017.