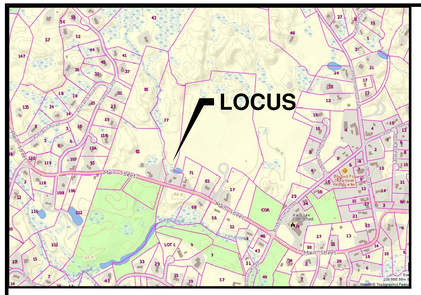
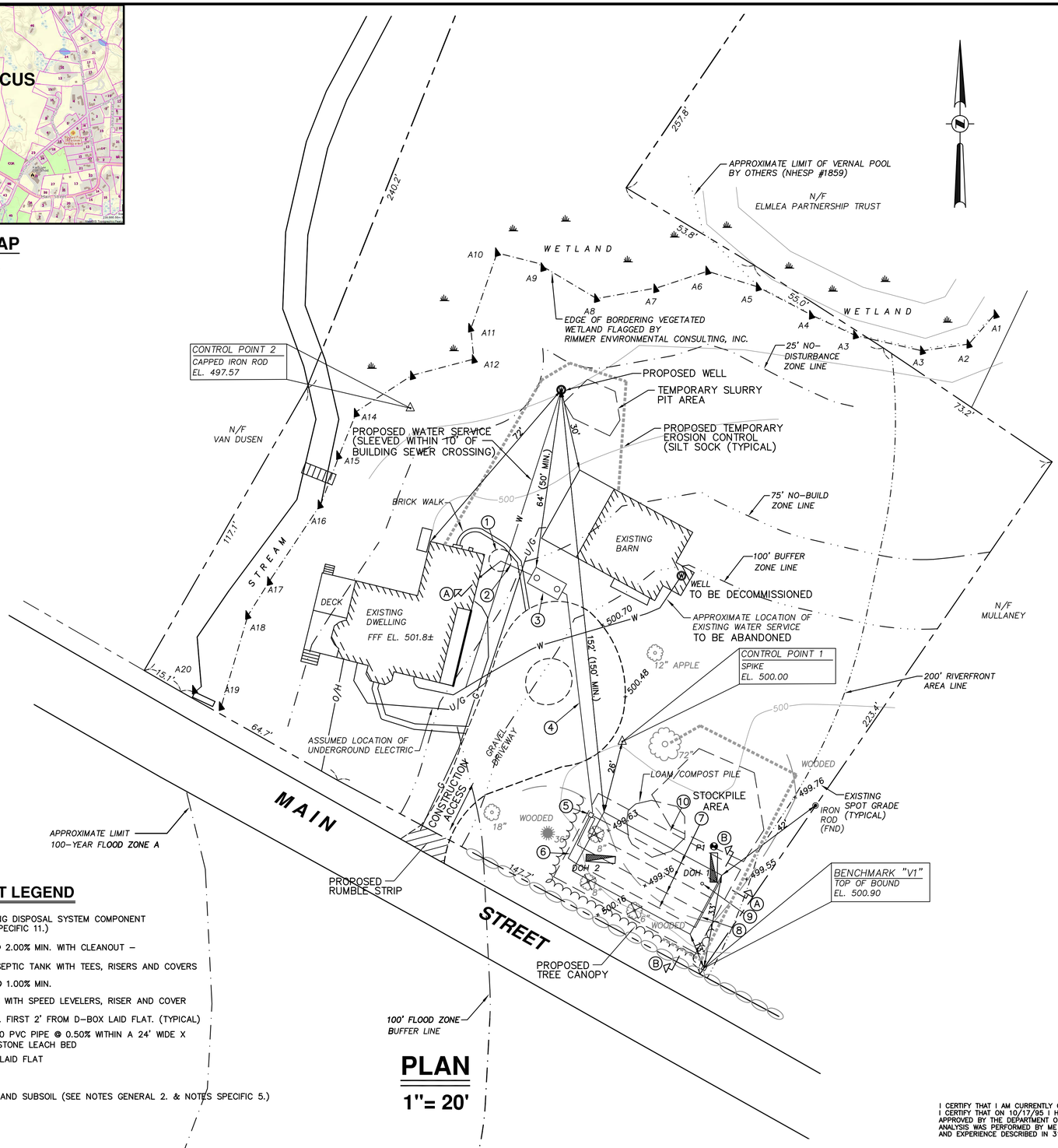


LOCUS MAP
1"=1000'±



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.

(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.)

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 I SOIL) = 0.74 GPD PER SQUARE FT.

   $\frac{825 \text{ GPD}}{0.74 \text{ GPD PER SQUARE FT.}}$ = 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:

	SEPTIC TANK
GROUNDWATER ESTIMATED DEPTH	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 2665). 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		FILTER STONE	
SIEVE SIZE	PERCENT PASSING	SIEVE SIZE	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.

12. THE ENTIRE LOCUS FALLS WITHIN NHESP RARE SPECIES HABITAT NUMBER EH 1323.

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.

SIGNATURE _____ DATE _____

REVISION NO. 2: OCT. 30, 2019 – ADDED VERNAL POOL DELINEATION, NHESP NOTE
REVISION NO. 1: OCT. 22, 2019 – PER CONSERVATION AGENT'S REVIEW, ADDED WELL

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