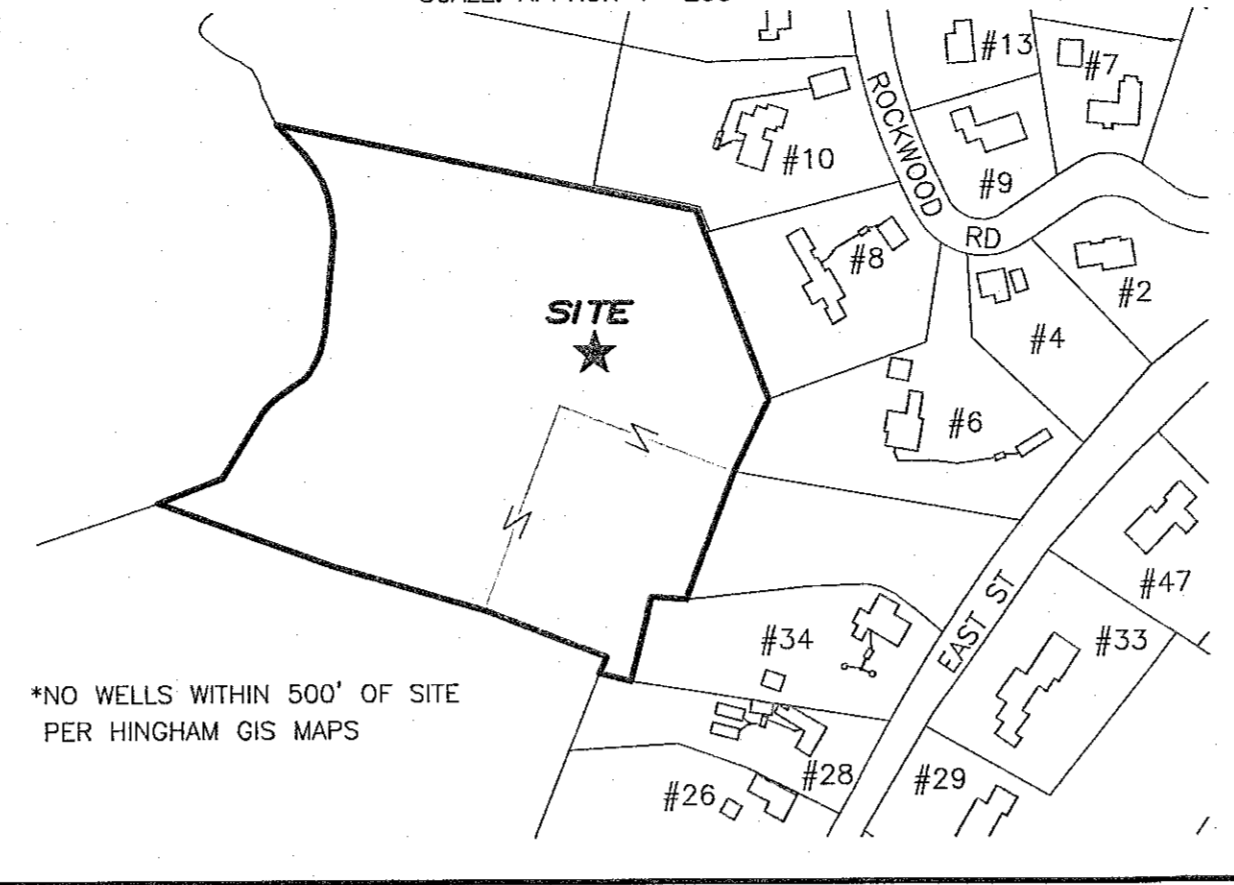


SOIL TEST DATA

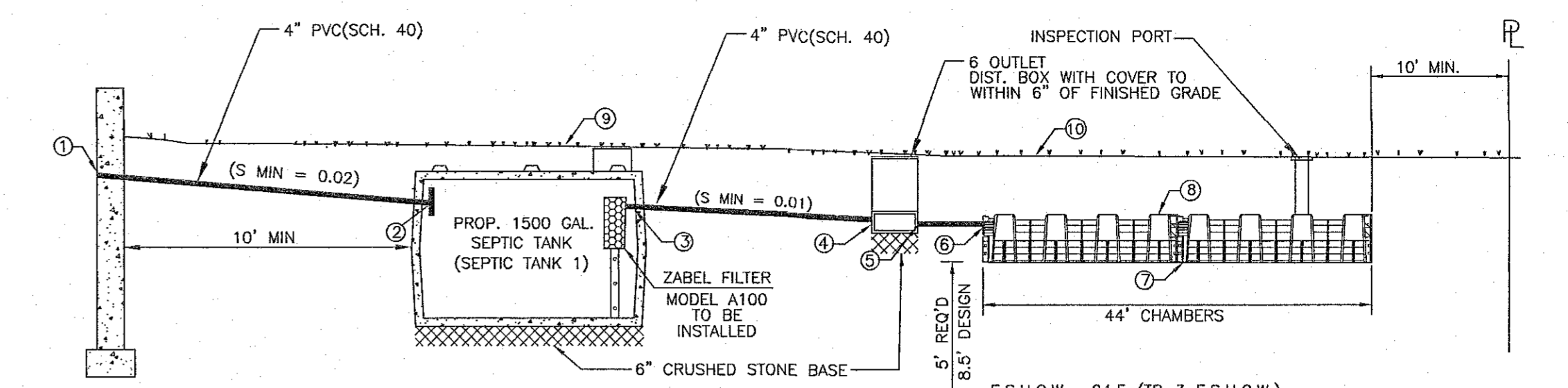
SOIL TESTING AND EVALUATION BY: JAMES GARFIELD, DEP SE#14162
 SOIL TESTING WITNESSED BY: JOHN CHESIA, PE
 DATE: OCTOBER 2, 2020

TP-1	APPROX. GRADE EL. 41.0	TP-2	APPROX. GRADE EL. 38.5
EL. 40.1	A HORIZON LOAMY SAND 10YR 3/2 11"	EL. 37.8	A HORIZON LOAMY SAND 10YR 3/2 8"
EL. 38.8	B HORIZON LOAMY SAND 10YR 6/4 27"	EL. 36.7	B HORIZON LOAMY SAND 10YR 6/4 22"
EL. 31.5	C HORIZON FINE/MEDIUM SAND 2.5Y 5/4 114"	EL. 28.5	C HORIZON FINE/MEDIUM SAND 2.5Y 5/4 120"
WEPPING OBSERVED: NONE MOTTILING OBSERVED: NONE PERC. RATE: <2 MPI @ 34"-52" ESHGW: >114" (EL. 31.5)		WEPPING OBSERVED: NONE MOTTILING OBSERVED: NONE PERC. RATE: <2 MPI @ 22"-40" ESHGW: >120" (EL. 28.5)	
TP-3	APPROX. GRADE EL. 33.5	TP-4	APPROX. GRADE EL. 33.5
EL. 32.8	A HORIZON LOAMY SAND 10YR 3/2 8"	EL. 33.2	A HORIZON LOAMY SAND 10YR 3/2 4"
EL. 32.1	B HORIZON LOAMY SAND 10YR 6/4 17"	EL. 32.8	B HORIZON LOAMY SAND 10YR 6/4 8"
EL. 24.5	C HORIZON FINE/MEDIUM SAND 2.5Y 5/4 108"	EL. 23.5	C HORIZON FINE/MEDIUM SAND 2.5Y 5/4 120"
WEPPING OBSERVED: NONE MOTTILING OBSERVED: NONE PERC. RATE: <2 MPI @ 21"-39" ESHGW: >108" (EL. 24.5)		WEPPING OBSERVED: NONE MOTTILING OBSERVED: NONE PERC. RATE: <2 MPI @ 16"-34" ESHGW: >120" (EL. 23.5)	

ABUTTING SEPTIC SYSTEMS & WELLS

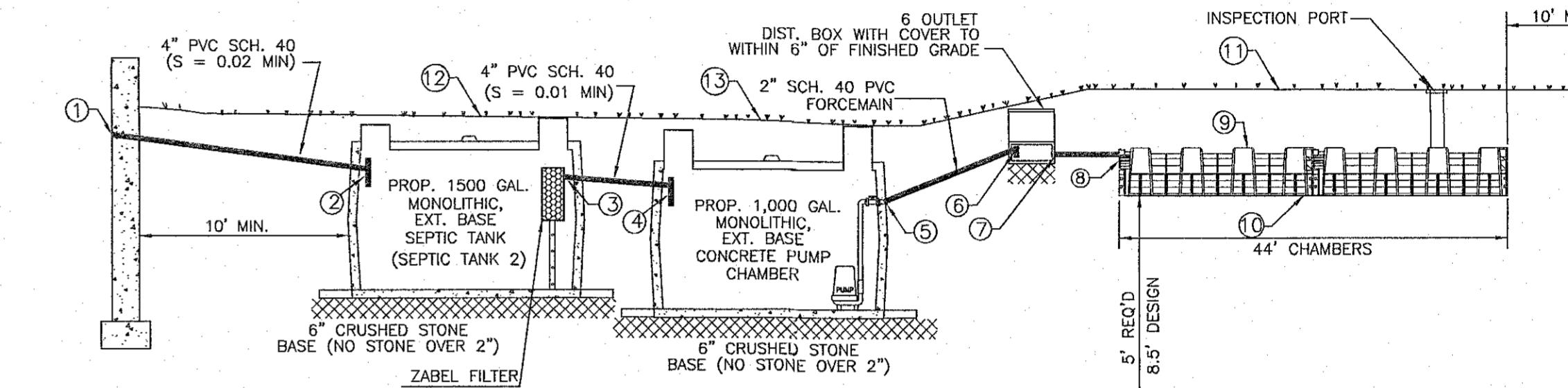


*NO WELLS WITHIN 500' OF SITE PER HINGHAM GIS MAPS



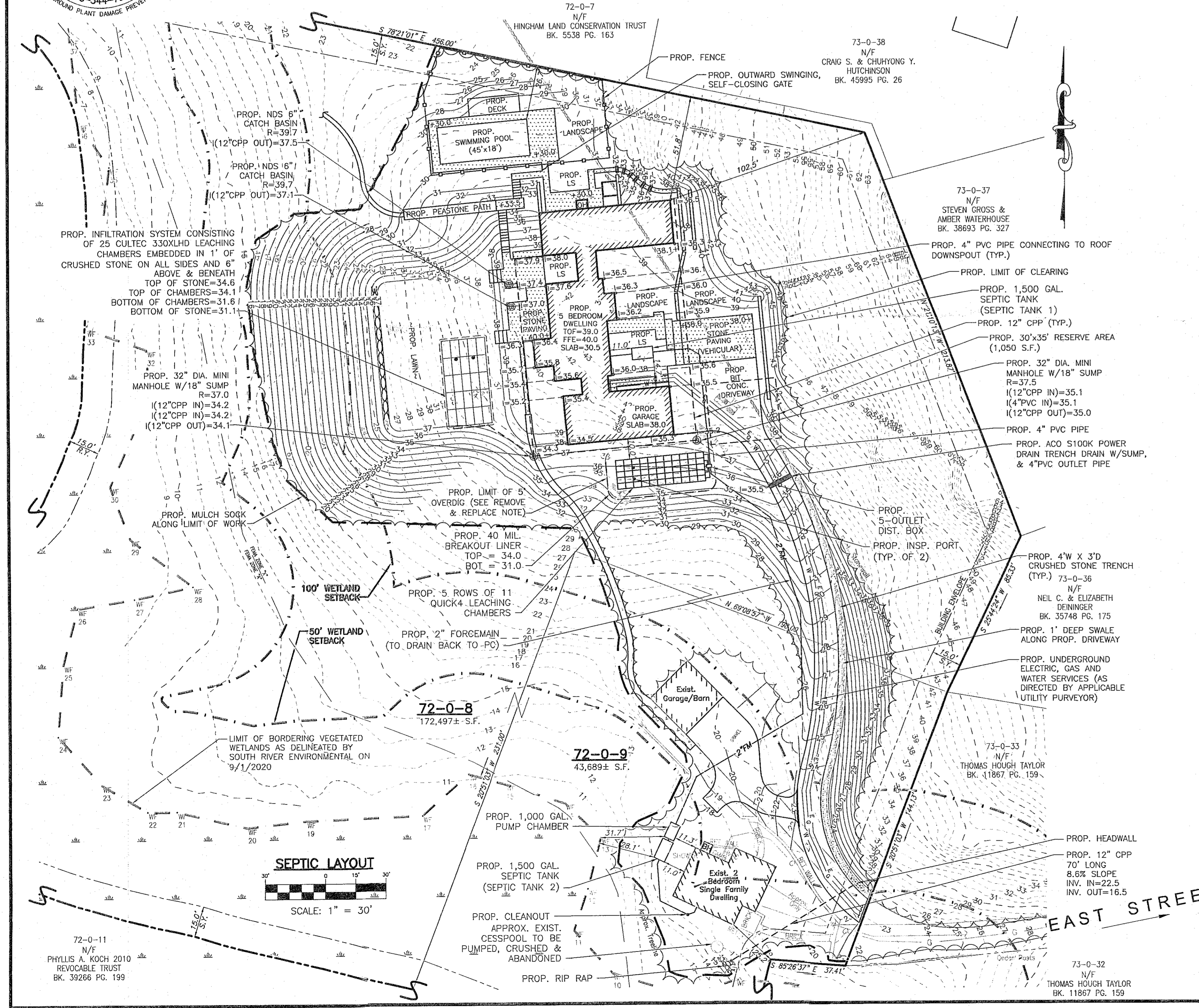
SCHEDULE OF ELEVATIONS FROM PROPOSED 5 BEDROOM DWELLING

1. INV. OF PIPE AT FOUNDATION = 36.6± (MIN.) (CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION)	6. INV. OF 4" PIPE AT CHAMBER INLET = 33.67
2. INV. OF PIPE AT SEPTIC TANK INLET = 36.25	7. BOTTOM OF CHAMBER = 33.00
3. INV. OF PIPE AT SEPTIC TANK OUTLET = 36.00	8. TOP OF CHAMBER (BREAKOUT) = 34.00
4. INV. OF PIPE AT DIST. BOX INLET = 33.90	9. FINISHED GRADE OVER SEPTIC TANK = 38.0 (MIN) - 40.3(MAX)
5. INV. OF PIPE AT DIST. BOX OUTLET = 33.73	10. FINISHED GRADE OVER LEACHING CHAMBERS = 35.0(MIN) - 37.0(MAX)



SCHEDULE OF ELEVATIONS FROM EXISTING 2 BEDROOM DWELLING

1. INV. OF PIPE AT FOUNDATION = 16.2± (CONTRACTOR TO VERIFY PRIOR TO CONSTRUCTION)	8. INV. OF 4" PIPE @ CHAMBER INLET = 33.67
2. INV. OF PIPE AT SEPTIC TANK INLET = 13.25	9. TOP OF CHAMBER (BREAKOUT) = 34.00
3. INV. OF PIPE AT SEPTIC TANK OUTLET = 13.00	10. BOTTOM OF CHAMBER = 33.00
4. INV. OF PIPE AT PUMP CHAMBER INLET = 12.95	11. FINISHED GRADE OVER LEACHING CHAMBERS = 35.0(MIN.) - 37.0(MAX.)
5. INV. OF PIPE AT PUMP CHAMBER OUTLET = 13.20	12. FINISHED GRADE OVER SEPTIC TANK = 15.0(MIN.) - 17.3(MAX.)
6. INV. OF 2" FORCEMAIN AT DIST. BOX INLET = 33.90	13. FINISHED GRADE OVER PUMP CHAMBER = 15.0(MIN.) - 17.2(MAX.)
7. INV. OF 4" PIPE AT DIST. BOX OUTLET = 33.73	



GENERAL NOTES

- SEPTIC SYSTEM INSTALLATION CONTRACTORS SHALL BE LICENSED BY THE BOARD OF HEALTH AND MUST COMPLY WITH ALL REQUIREMENTS OF THE BOARD OF HEALTH DISPOSAL WORKS CONSTRUCTION PERMIT AND ANY CONDITIONS, IF ISSUED BY THE CONSERVATION COMMISSION.
- ALL CONSTRUCTION MUST COMPLY WITH TITLE 5 OF THE STATE ENVIRONMENTAL CODE 310 CMR 15 & THE ANY LOCAL BOARD OF HEALTH SUPPLEMENTAL REGULATIONS.
- THERE SHALL BE NO CHANGES MADE IN THIS PLAN WITHOUT THE WRITTEN PERMISSION OF THE BOARD OF HEALTH AND DESIGN ENGINEER.
- ANY CHANGE IN SITE CONDITIONS, DISCREPANCIES, ERRORS OR OMISSIONS SHALL BE BROUGHT TO THE ATTENTION OF MORSE ENGINEERING PRIOR TO THE COMMENCEMENT OF WORK.
- THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH TITLE 5 (310 CMR 15) AND THE LOCAL BOARD OF HEALTH REQUIREMENTS TO THE FULLEST EXTENT PRACTICABLE. NO GUARANTEE TO THE SYSTEMS PERFORMANCE IS EXPRESSED OR IMPLIED.
- SOIL TEST DATA SHOWN IS LIMITED TO THE CONDITIONS EXISTING AT THE SUBJECT TEST PIT LOCATION ONLY. IF DIFFERENT SOIL CONDITIONS ARE FOUND IN THE AREA OF THE PROPOSED SOIL ABSORPTION SYSTEM THEY SHALL BE BROUGHT TO THE ATTENTION OF MORSE ENGINEERING IMMEDIATELY.
- THE CONTRACTOR SHALL NOTIFY DIGSAFE PRIOR TO ANY EXCAVATION AT THE SUBJECT PROPERTY. IT IS SPECIFICALLY CAUTIONED THAT THE SUBSURFACE UTILITIES SHOWN ARE APPROXIMATE ONLY AND HAVE BEEN COMPILED FROM AVAILABLE RECORDS AND OBSERVABLE SITE FEATURES. UTILITIES OTHER THAN THOSE SHOWN MAY BE PRESENT AT THIS LOCATION.
- THIS PLAN HAS BEEN PREPARED SPECIFICALLY AS A SEPTIC SYSTEM DESIGN AND IS NOT TO BE USED TO ESTABLISH PROPERTY LINES OR BUILDING SETBACKS. PROPERTY LINES AND BUILDING LOCATIONS ARE GRAPHIC ONLY, PROPERTY LINES NOT HAVING BEEN VERIFIED. NO REPRESENTATION OR CERTIFICATION AS TO THE ACCURACY OF THOSE SHOWN IS IMPLIED.
- CONTRACTOR TO VERIFY AND ENSURE THAT ALL INTERIOR PLUMBING IS DIRECTED INTO PROPOSED SEPTIC SYSTEM. ANY VARIATIONS FROM THE DESIGN AS SHOWN SHALL BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER.

ZONING TABLE

CRITERIA	REQUIRED
LOT AREA	20,000 S.F.
FRONTAGE	125'
FRONT YARD	25'
SIDE YARD	15'
REAR YARD	15'
HEIGHT	35'
STORIES	2.5

REMOVE & REPLACE NOTE

CONTRACTOR TO EXCAVATE ALL UNSUITABLE MATERIAL TO A DEPTH OF C HORIZON (17") DIRECTLY UNDER & WITHIN 5' OF PROPOSED LEACHING AREA AND REPLACE CLEAN TITLE 5 PERC SAND TO TOP OF CHAMBER ELEVATION.
 (VOL. OF SAND = (24.15'w x 54'L x (34.0-32.1)D) x 1.2) / 27 = 110± C.Y.

DESIGN DATA

- BUILDING TYPE: RESIDENTIAL
- NO. OF BEDROOMS: 5 (PROP. SINGLE FAMILY DWELLING)
- DESIGN FLOW: 5 BEDROOMS x 110 G.P.D./BED = 550 G.P.D.
2 BEDROOMS x 110 G.P.D./BED = 220 G.P.D.
TOTAL = 550 + 220 = 770 G.P.D.
- DESIGN PERCOLATION RATE: <2 MPI (TP-3 & 4)
- GARBAGE DISPOSAL: NO
- SEPTIC TANK DESIGN REQUIREMENT: 200% DESIGN FLOW
550 X 2 = 1100 GAL. (USE 1500 GAL. SEPTIC TANK)
220 X 2 = 440 GAL. (USE 1500 GAL. SEPTIC TANK)
- LEACH AREA REQUIREMENTS GALLONS/SQ. FT. (CLASS I SOILS)
BOTTOM: 0.74 GAL./S.F. SIDE: 0.74 GAL./S.F.
TOTAL LEACH AREA REQUIRED:
TITLE 5: 770 GPD / (0.74 GPD/S.F.) = 1040.5 S.F.
PROVIDED: 5 ROWS OF 11 QUICK4 LEACHING CHAMBERS
EFFECTIVE AREA (55 CHAMBERS x 4.00'L x 4.73 S.F./L.F.) = 1040.6 S.F.
CAPACITY = 1040.6 S.F. x 0.74 GPD/S.F. = 770.0 GPD
*EFFECTIVE AREA PER GENERAL USE CERTIFICATION ISSUED BY DEP

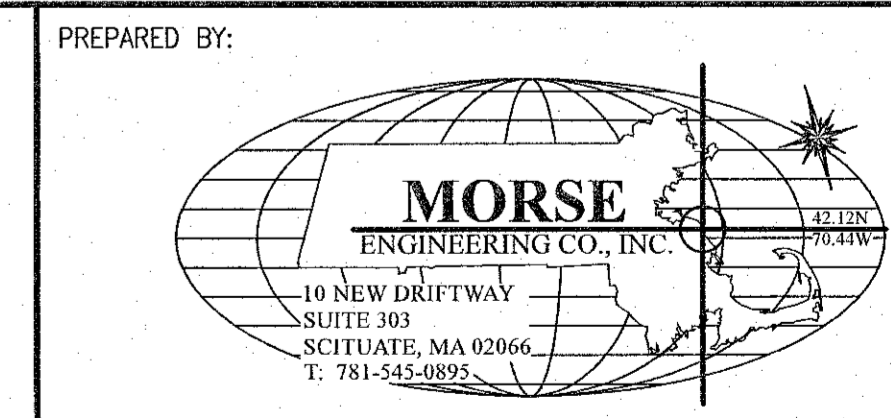
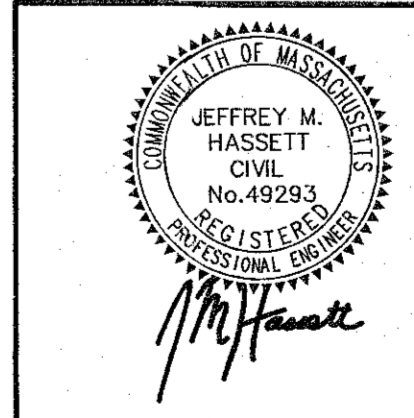
CONSTRUCTION NOTES

- CONTRACTOR SHALL COORDINATE INSPECTION TIMES WITH THE LOCAL BOARD OF HEALTH AND DESIGN ENGINEER 24-HOURS IN ADVANCE OF THE FOLLOWING INSPECTIONS:
1. AFTER EXCAVATION OF ALL UNSUITABLE MATERIAL FROM SOIL ABSORPTION AREA.
2. PRIOR TO COVERING THE CONSTRUCTED SYSTEM.
3. AFTER SYSTEM BACKFILL AND FINAL GRADING.
- ALL CONSTRUCTION MUST COMPLY WITH TITLE 5 OF THE STATE ENVIRONMENTAL CODE 310 CMR 15 & THE ANY LOCAL BOARD OF HEALTH SUPPLEMENTAL REGULATIONS.
- ALL TIGHT-JOINT PLUMBING SHALL BE CONSTRUCTED OF SCH. 40 PVC PIPE WITH CLEANED AND CEMENTED FITTINGS, UNLESS OTHERWISE NOTED.
- ALL PRECAST PIPE CONSTRUCTION JOINTS AND FITTINGS SHALL BE MADE WATERTIGHT BY PARING WITH HYDRAULIC CEMENT.
- THE CONTRACTOR SHALL PROVIDE A SIEVE ANALYSIS OF THE TITLE 5 PERC SAND UTILIZED FOR FILL TO VERIFY THAT IT MEETS THE REQUIREMENTS OF 310 CMR 15.255(5). TITLE 5 SAND FILL SHALL COMPLY WITH THE FOLLOWING:

SIEVE SIZE	PARTICLE SIZE
#4	4.75 mm
#10	0.30 mm
#20	0.15 mm
#40	0.075 mm
- THE CONTRACTOR SHALL PREVENT ANY HEAVY CONSTRUCTION MACHINERY AND/OR TRUCKS FROM DRIVING OVER THE PROPOSED SOIL ABSORPTION SYSTEM LOCATION UNTIL FINISHED GRADE IS ESTABLISHED.
- THE CONTRACTOR SHALL INSTALL MAGNETIC TAPE OVER SYSTEM PIPING & COMPONENTS
- THE DESIGN ENGINEER SHALL CERTIFY AND PREPARE AN "AS-BUILT" PLAN FOR SUBMITTAL TO THE BOARD OF HEALTH UPON SEPTIC SYSTEM COMPLETION.
- ALL DISTURBED AREAS SHALL BE RESTORED WITH 4" LOAM & SEED POST CONSTRUCTION.
- ALL SEPTIC SYSTEM COMPONENTS TO BE STAKED OUT BY PROFESSIONAL LAND SURVEYOR PRIOR TO SYSTEM INSTALLATION.
- CONTRACTOR SHALL ABANDON EXISTING SEPTIC COMPONENTS IN ACCORDANCE WITH 310 CMR SEC. 15.554 OF TITLE 5 AND LOCAL REGULATIONS BY PUMPING DRY, CRUSHING AND ABANDONING

SITE NOTES

- LOCUS DOES NOT LIE WITHIN A DEP DESIGNATED ZONE II AREA.
- ALL KNOWN WETLANDS WITHIN 100 FEET OF THE PROPOSED PROJECT ARE SHOWN.
- PROPERTY LINE DATA WAS OBTAINED FROM RECORDED DEED (BK. 53940 PG. 99) AND RECORDED PLANS ON FILE AT THE PLYMOUTH COUNTY REGISTRY OF DEEDS
- ALL RECORDED WELLS OBSERVED WITHIN 500'-FT. OF THE PROPOSED SYSTEM ARE SHOWN.
- LOCUS LIES IN FEMA FLOOD ZONE "X" AND ZONE "A" AS SHOWN ON FEMA COMMUNITY MAP PANEL 25023C 0082J DATED JULY 17, 2012.
- ALL KNOWN EASEMENTS ON THE SUBJECT PROPERTY ARE SHOWN.
- ALL KNOWN ABUTTING SEPTIC SYSTEMS TO THE PROPOSED SYSTEM ARE SHOWN.



PROJECT:	0 R ROCKWOOD ROAD & 36 EAST STREET	DESIGN:	JDG
	ASSESSOR'S PARCELS: 72-0-8 & 72-0-9	CHECK:	JMH
	HINGHAM, MASSACHUSETTS	JOB NO.:	20-305
APPLICANT:	CHRISTINE & GREGORY FLETCHER	DATE:	10/8/21
	346 CONGRESS STREET, UNIT 602	REV.:	
	BOSTON, MA 02210	SHEET:	1
PLAN TITLE:	SITE & SEPTIC DESIGN PLAN		