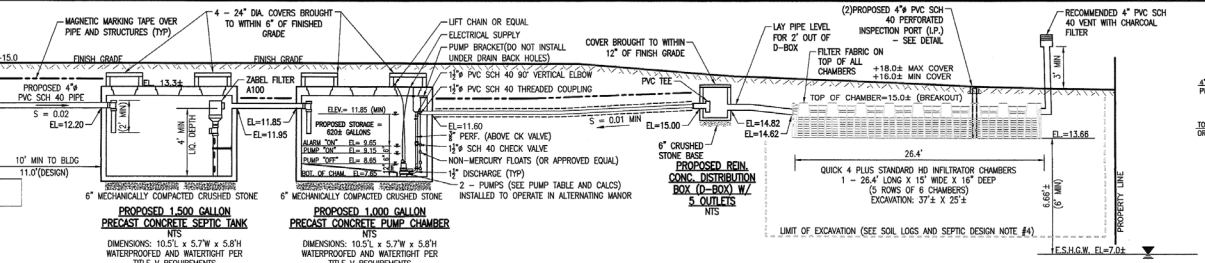


**RECORD OWNER:**  
 ASSESSORS PARCEL ID#125-02-15  
 #49 ALLENS LANE  
 GEORGE J. PREBOLA  
 P.O. BOX 1028  
 DUXBURY, MA 02531  
 DEED BOOK 4644 PAGE 472  
 LOT 8, PLAN BOOK 9 PAGE 870

- NOTES:**
1. TOPOGRAPHIC AND DETAIL INFORMATION SHOWN HEREON IS BASED UPON AN ON THE GROUND SURVEY PERFORMED BY MERRILL ENGINEERS AND LAND SURVEYORS DURING SEPTEMBER OF 2022.
  2. ELEVATIONS ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988.
  3. WETLAND RESOURCE AREAS SHOWN ON THIS PLAN WERE DELINEATED BY ENVIRONMENTAL CONSULTING AND RESTORATION, LLC DURING SEPTEMBER OF 2022 AND FIELD LOCATED BY MERRILL ENGINEERS AND LAND SURVEYORS.
  4. SUBJECT SITE IS IN THE "R" RESIDENTIAL COMPATIBILITY DISTRICT AS DEPICTED ON THE TOWN OF DUXBURY ZONING MAP.
  5. EXISTING UTILITIES, WHERE SHOWN, HAVE BEEN COMPILED BASED ON OBSERVED ABOVE GROUND EVIDENCE AND AVAILABLE RECORD PLANS AND ARE TO BE CONSIDERED APPROXIMATE. MERRILL ENGINEERS AND LAND SURVEYORS DOES NOT GUARANTEE THE LOCATION OF THE UNDERGROUND UTILITIES SHOWN OR THAT ALL EXISTING UTILITIES AND/OR SUBSURFACE STRUCTURES ARE SHOWN.
  6. EXISTING SEPTIC SYSTEM COMPONENTS SHOWN HEREON BASED ON ABOVE GROUND, FIELD LOCATED STRUCTURES. RECORD AS-BUILT PLAN ON FILE WITH THE DUXBURY BOARD OF HEALTH DOES NOT APPEAR TO BE ACCURATE.
  7. THIS PLAN IS INTENDED TO BE USED FOR A SEPTIC SYSTEM UPGRADE AND ASSOCIATED PERMITTING ONLY. IT IS NOT INTENDED TO BE USED FOR THE DETERMINATION OF OWNERSHIP AND/OR CONVEYANCE OF LAND.

- ENVIRONMENTAL NOTES:**
1. SITE IS NOT WITHIN AN A.C.E.C. (AREA OF CRITICAL ENVIRONMENTAL CONCERN).
  2. SITE IS NOT WITHIN AN AREA OF ESTIMATED HABITAT OF RARE WILDLIFE PER WHESS MAP AUGUST 1, 2021 "ESTIMATED HABITATS OF RARE WILDLIFE" FOR USE WITH THE MA WETLANDS PROTECTION ACT REGULATIONS (310 CMR 10.0).
  3. SITE DOES NOT CONTAIN A CERTIFIED VERNAL POOL PER WHESS MAP AUGUST 1, 2021 "CERTIFIED VERNAL POOLS." A VERNAL POOL IS DELINEATED AND SHOWN ON THE PROPERTY ACROSS ALLENS LANE.
  4. SITE IS NOT WITHIN A PRIORITY HABITAT PER WHESS MAP AUGUST 1, 2021 "PRIORITY HABITATS OF RARE SPECIES" FOR SPECIES UNDER THE MASSACHUSETTS ENDANGERED SPECIES ACT, REGULATIONS (321 CMR10).
  5. SITE IS NOT LOCATED WITHIN A STATE APPROVED ZONE II GROUND WATER RECHARGE PROTECTION AREA.

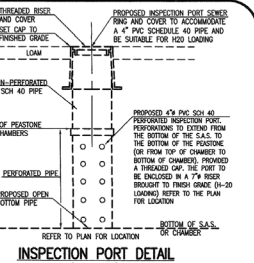
- SEPTIC CONSTRUCTION NOTES**
1. THIS SEPTIC SYSTEM IS NOT DESIGNED FOR A GARBAGE GRINDER.
  2. THE INSTALLATION OF THE SEPTIC SYSTEM MUST BE PERFORMED BY A LICENSED CONTRACTOR THAT HAS A WORKING KNOWLEDGE OF THE STATE ENVIRONMENTAL CODE TITLE V AND THE LOCAL. THE CONTRACTOR IS REFERRED TO TITLE V AND THE LOCAL BOARD OF HEALTH REGULATIONS, REGULATIONS FOR ANY REQUIREMENTS THAT IS NOT SPECIFICALLY MENTIONED ON THE PLANS.
  3. THE TOP OF ALL SYSTEM COMPONENTS, INCLUDING THE SEPTIC TANK, PUMP CHAMBER, DISTRIBUTION BOX OR DOSING CHAMBER AND SOIL ABSORPTION SYSTEM, SHALL BE INSTALLED NO MORE THAN 36" BELOW FINISH GRADE. THE ENTIRE STRUCTURE MAY REQUIRE A BEER OVER THE METERS TO REDUCE THE DEPTH OF COVER OVER THE TOP OF THE CHAMBER.
  4. ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC TAPE OR A COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED.
  5. ALL TREE STUMPS & DEBRIS SHALL BE DISPOSED OF OFF SITE AT AN APPROVED FACILITY. THE BOARD OF HEALTH MAY REQUIRE PROOF OF DISPOSAL.
  6. ALL AREAS DISTURBED BY CONSTRUCTION AND NOT TO BE PAVED OR OTHERWISE TREATED AS NOTED ON PLAN, SHALL BE GRADED WITH 4" OF SCREENED LOAM AND SEEDED. TRY MATCH TO BE USED FOR EROSION CONTROL, AS NECESSARY.
  7. A FINAL GRADING INSPECTION IS NEEDED BY THE ENGINEER AND SHALL BE SHOWN ON THE AS-BUILT PLAN.
  8. WETLANDS WITHIN 100 FEET FOR THE PROPOSED SEPTIC SYSTEM.
  9. NO POTABLE WELLS WITHIN 150 FEET OF THE PROPOSED SEPTIC SYSTEM.
  10. NO IRRIGATION WELLS WITHIN 100 FEET OF THE PROPOSED SEPTIC SYSTEM.
  11. LOCUS IS NOT LOCATED WITHIN A ZONE II OF THE AQUIFER PROTECTION DISTRICT.
  12. A WARRANTY TO THE DUXBURY RULES AND REGULATIONS IS REQUESTED.
  13. SEPTIC SYSTEM WITHIN 150 FEET TO A BORDERING VEGETATED WETLAND, REQUEST TO REDUCE THE REQUIRED SETBACK TO 88" (SECTION 1.10(1)(2)).
  14. SEPTIC SYSTEM DESIGNED FOR A FOUR (4) BEDROOM DWELLING, NO INCREASE IN FLOW FROM EXISTING CONDITIONS IS PROPOSED.
  15. RESERVE AREA WOULD BE REPLACEMENT OF THE EXISTING SYSTEM.
- SEPTIC SYSTEM INSPECTIONS**
1. PRIOR TO CONSTRUCTION, THE CONTRACTOR MUST LOCATE THE WATER SERVICE AND NOTIFY THE ENGINEER OF ITS LOCATION AND RELOCATE TO A MINIMUM OF 10' FROM ANY SEPTIC COMPONENT.
  2. THE CONTRACTOR WILL PROVIDE A 48 HOUR ADVANCED NOTICE TO THE BOARD OF HEALTH AND MERRILL ENGINEERS AND LAND SURVEYORS PRIOR TO NEEDING INSPECTIONS.
  3. AN EXCAVATION INSPECTOR FOR BOTH FIELD AND SEPTIC TANKS IS REQUIRED BY THE BOARD OF HEALTH AND ENGINEER PRIOR TO PROCEEDING WITH THE INSTALLATION.
  4. NOTIFY BOARD OF HEALTH AND MERRILL PRIOR TO BACKFILLING OF SYSTEM. THE CONTRACTOR IS NOT ALLOWED TO BACKFILL ANY COMPONENT OF THE SYSTEM UNTIL MERRILL ENGINEERS AND LAND SURVEYORS HAS VERIFIED THE SYSTEM LOCATION & ELEVATION.
  5. NOTIFY THE BOARD OF HEALTH AND MERRILL ENGINEERS AND LAND SURVEYORS AFTER THE SEPTIC SYSTEM HAS BEEN BACKFILLED FOR FINAL GRADING INSPECTION.



**PROPOSED 1,500 GALLON PRECAST CONCRETE SEPTIC TANK**  
 DIMENSIONS: 10.5'L x 5.7'W x 5.8'H  
 WATERPROOFED AND WATERIGHT PER TITLE V REQUIREMENTS  
 PROVIDE LABEL FILTER MODEL A100 OR APPROVED EQUAL.

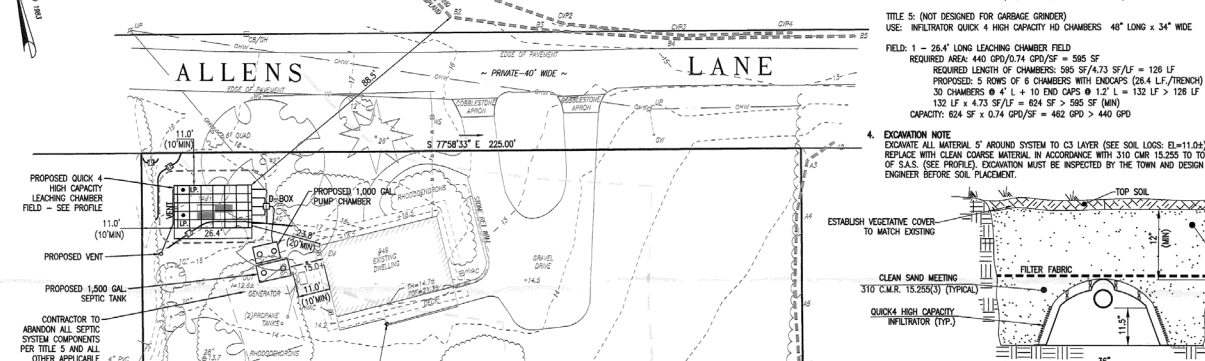
**PROPOSED 1,000 GALLON PRECAST CONCRETE PUMP CHAMBER**  
 DIMENSIONS: 10.5'L x 5.7'W x 5.8'H  
 WATERPROOFED AND WATERIGHT PER TITLE V REQUIREMENTS

**QUICK4 PLUS STANDARD HD INFILTRATOR CHAMBERS**  
 1 - 26.4' LONG X 15' WIDE X 10" DEEP  
 (5 ROWS OF 8 CHAMBERS)  
 EXCAVATION: 37.5' X 25.4'



**INSPECTION PORT DETAIL**  
 (NOT TO SCALE)

**SOIL LOGS**  
 PERFORMED BY: PAUL BROGAN, P.E.  
 WITNESSED BY: TRACY WATTS, R.S.  
 DATE: 08/22/2022  
 T.H. 22-01  
 DATE: 08/22/22  
 EL. 17.50



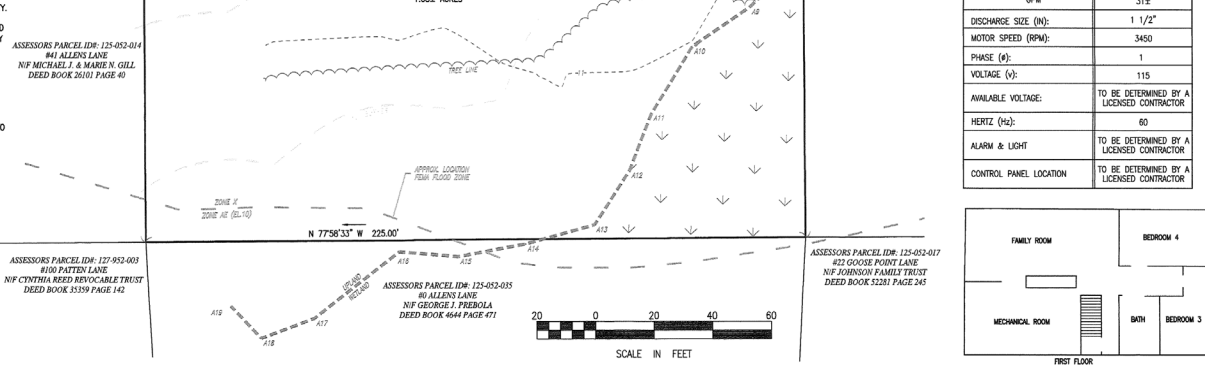
**SEPTIC DESIGN** (NOT DESIGNED FOR GARBAGE GRINDER)

1. DESIGN DAILY FLOW: 310 CMR 15.203 (1); SYSTEM SEWAGE FLOW DESIGN CRITERIA  
 SINGLE FAMILY PARAMETER DAILY FLOW FOR TRANSMIT DESIGN DAILY FLOW  
 4 BEDROOMS 110 G.P.D. PER BED 440 G.P.D.
2. DESIGN SEPTIC TANK (310 CMR 15.223 TO 15.228)  
 SEPTIC TANK (DWELLING): 48 HRS 440 GPD x 200% = 880 GALLONS MINIMUM REQUIRED PROPOSED 1,500 GALLONS
3. DESIGN SOIL ABSORPTION SYSTEM  
 LEACHING FIELD: P.R. = <math>C\_2 \text{ MIN/IN, CLASS I, E.L.R.} = 0.74 \text{ GPD/SF}</math>  
 (NOT DESIGNED FOR GARBAGE GRINDER)  
 USE: INFILTRATOR QUICK 4 HIGH CAPACITY HD CHAMBERS 48" LONG X 34" WIDE  
 FIELD: 1 - 26.4' LONG LEACHING CHAMBER FIELD  
 REQUIRED AREA: 440 GPD/0.74 GPD/SF = 595 SF  
 REQUIRED LENGTH OF CHAMBERS: 595 SF/4.73 SF/LF = 126 LF  
 PROPOSED: 5 ROWS OF 8 CHAMBERS WITH ENDCAPS (28.4 LF/TRENCH)  
 30 CHAMBERS @ 4' L + 10 END CAPS @ 1.2' L = 132 LF > 126 LF  
 132 LF x 4.73 SF/LF = 624 SF > 595 SF (MIN)  
 CAPACITY: 624 SF x 0.74 GPD/SF = 462 GPD > 440 GPD
4. EXCAVATION NOTE  
 EXCAVATE ALL MATERIAL 5' AROUND SYSTEM TO C3 LAYER (SEE SOIL LOGS: EL=11.02').  
 REPLACE WITH CLEAN COMPOSE MATERIAL IN ACCORDANCE WITH 310 CMR 15.255 TO TOP OF S.A.S. (SEE PROFILE). EXCAVATION MUST BE INSPECTED BY THE TOWN AND DESIGN ENGINEER BEFORE SOIL PLACEMENT.

**REMOVE AND REPLACE**

| HORIZON                         | DEPTH (FT) | PERCENT SAND | PERCENT CLAY | PERCENT SILT | PERCENT ORGANIC |
|---------------------------------|------------|--------------|--------------|--------------|-----------------|
| 0-8" A HORIZON SANDY LOAM       | 10/9 3/3   | 16.8         |              |              |                 |
| 8-16" B HORIZON LOAMY SAND      | 10/9 5/6   | 16.2         |              |              |                 |
| 16-24" C1 HORIZON F. LOAMY SAND | 2/5 6/4    | 15.5         |              |              |                 |
| 24-32" C2 HORIZON F. LOAMY SAND | 2/5 6/4    | 11.0         |              |              |                 |
| 32-40" D HORIZON SAND           | 2/5 6/4    | 5.5          |              |              |                 |
| 40-48" E HORIZON SAND           | 2/5 6/4    | 5.5          |              |              |                 |

**RECEIVED**  
 OCT 12 2022  
 BOARD OF HEALTH  
 DUXBURY, MA 02532



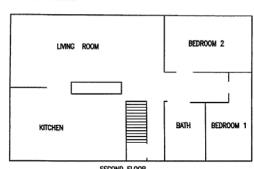
**SCALE IN FEET**  
 0 20 40 60

**QUICK4 HIGH CAPACITY HD CHAMBER TRENCH**  
 (NOT TO SCALE)

**PUMP SPECIFICATION TABLE**

| PUMP MODEL:            | LIBERTY 250 (OR APPROVED EQUAL)           |
|------------------------|---|
| PUMP SERIES:           | 250 SERIES                                |
| HORSE POWER:           | 1/3                                       |
| PUMP RATING: T1H (FT)  | 13 1/2                                    |
| GPM                    | 31 1/2                                    |
| DISCHARGE SIZE (IN):   | 1 1/2"                                    |
| MOTOR SPEED (RPM):     | 3450                                      |
| PHASE (Φ):             | 1   |
| VOLTAGE (V):           | 115                                       |
| AVAILABLE VOLTAGE:     | TO BE DETERMINED BY A LICENSED CONTRACTOR |
| HERTZ (Hz):            | 60  |
| ALARM & LIGHT          | TO BE DETERMINED BY A LICENSED CONTRACTOR |
| CONTROL PANEL LOCATION | TO BE DETERMINED BY A LICENSED CONTRACTOR |

**PUMP NOTES**  
 CONTRACTOR IS REFERRED TO TITLE V 310 CMR 15.231-7, 8 & 9.  
 CONTRACTOR TO VERIFY POWER SUPPLIED BY ELECTRIC COMPANY PRIOR TO CONFIRMING PUMP.  
 CONTROL PANEL SHALL HAVE THE FOLLOWING: HAND/OFF/AUTOMATIC SELECTOR SWITCH, PUMP RUN LIGHT, PUMP RUNNING TIME HOUR METERS FOR PUMP.  
 A THERMOSTATICALLY (ADJUSTABLE) CONTROLLED CONDENSATE HEATER AND LIGHTING PROTECTION. PROVIDE PANEL MOUNTED LIGHTS FOR INDICATION OF EACH OF THE FOLLOWING: LOW WATER LEVEL, HIGH WATER LEVEL.  
 THE CONTROL PANEL SHALL BE OF "NEW" 4 STAINLESS STEEL DESIGNED FOR OUTDOOR MOUNTING OR APPROVED EQUAL.  
 PUMPS MUST BE INSTALLED BY A LICENSED ELECTRICAL CONTRACTOR.  
 CONTRACTOR TO VERIFY JUNCTION BOX LOCATION WITH ELECTRICAL INSPECTOR AND BOARD OF HEALTH. ALL ELECTRICAL CONNECTIONS SHALL BE OUTSIDE THE TANK.  
 ALL PUMPS COMPONENTS TO BE EASILY MAINTAINED & ACCESSIBLE FOR REPAIRS TO MINIMIZE THE NEED FOR CONFINED SPACE ACCESS.  
 CONTRACTOR MUST CHECK PUMP STARTING & RUNNING AMPS VS. PUMP SPECIFICATIONS.



**FLOOR PLANS**  
 (NOT TO SCALE)

**REVISIONS**

| NO. | DATE | DESCRIPTION |
|-----|------|-------------|
|     |      |             |

**Merrill Engineers and Land Surveyors**  
 427 COLUMBIA ROAD, HANOVER, MA 02339 / T: (781) 826-9200  
 26 UNION STREET, PLYMOUTH MA 02360 / T: (508) 746-6060  
 WWW.MERRILLINC.COM

**SEPTIC SYSTEM REPAIR PLAN**  
 #49 ALLENS LANE  
 DUXBURY, MASSACHUSETTS  
 APPLICANT: GEORGE PREBOLA  
 P.O. BOX 1028  
 DUXBURY, MA 02531

**REVISIONS**

DRAWN BY: JG  
 DESIGNED BY: JG  
 CHECKED BY: PAB

OCTOBER 10, 2022  
 SCALE: 1" = 20'  
 JOB NO. 22-576  
 LATEST REVISION:

SHEET 1 OF 1