Underground Septic Tanks & Pump Chambers

1.) *Tanks shall be structurally sound and to withstand the super imposed loads.*

2.) *Tanks shall be watertight.*

3.) *Tanks shall be precast concrete.*

4.) *Manufacturers of septic tanks shall implement a quality control/quality assurance program in conformity with ASTM standard C-1227-93. Tanks shall be embossed with a seal stating that this ASTM standard has been met. Tanks not embossed with a seal shall be rejected.*

5.) *Tanks shall be accessible for inspection and maintenance. No structures shall be located directly upon, above, or near the tanks which may interfere with performance, access, inspection, and pumping or repair.*

6.) *Inlet and outlet tees shall be schedule 40 pvc, or approved equal.*

7.) *Septic tanks shall be provided with at least three (3) 20" diameter manholes. Manholes shall be at the center and over each inlet and outlet tee. For compartment tanks, the center manhole shall be the access to the compartment connection. System designs in excess of 1,000 GPD, all manholes shall be made accessible. For system designs of 1,000GPD or less at least one manhole shall be made accessible. If applicable provide watertight access port (risers),precast concrete or equivalent, with steps where appropriate. Manhole covers shall be removable, and of impermeable and durable material. Covers shall be within six inches of finished grade and shall be secured to prevent unauthorized access.*

8.) *INSTALLATION:*

A) Tanks shall be installed true to grade on a level stable base that has been mechanically compacted, and on which six inches of crushed stone has been placed to ensure stability and to prevent settling.
Septic tank shall have a minimum of nine inches of cover.

B) The inlet and outlet tees shall be installed to the grades shown on the drawings. The tees shall extend a minimum of six inches above the flow line of the septic tank and shall be on the center line of the septic tank and located directly under the access manholes.Cross-sectional flow baffles shall not be used as substitutes for inlet or outlet tees.

C) FOR REPAIRS Contractor SHALL when connecting a new septic tank to an existing sewer line. Verify sewer line is Sch. 40 or C.I. in good condition or it shall be replaced. Also that: all out flow pipes from building run thru/to septic tank, and invs. are correct prior to any excavating. All work in conformance with Mass. State Plumbing Code.

DESIGN CRITERIA

9.) *Unless otherwise noted (UON), the design of this system conforms to the requirements of the Commonwealth Of Massachusetts Environmental Code "Title V", and the requirements of the local board of health.*

10.) *The design of this system did not allow for the use of a garbage disposal.*

11.) *The septic tank shall be inspected and cleaned annually.*

12.) *Grease trap; If applicable, shall be inspected every month, and shall be cleaned every 3 months or when the level of grease is 25% of the effective depth of the trap.*

13.) *The design of this system conforms with the following minimum distances from the proposed sanitary system:*

A.) Surface water supply or gravel packed wells.... 125 ft.
B.) Tubular public wells.....250 ft.
C.) Private potable wells.....100 ft.
D.) Other sanitary soil absorbtion system..... 10 ft.
E.) Wetlands..... 65 ft.

14.) *No structures shall be located upon, above, or within 20' of the leaching field area. The reserve area (100% expansion) is considered to be the same as the leaching field area.*

15.) *The top of all system components, including the septic tank, distribution box or dosing chamber and soil absorption system, shall be installed no more than 36" below finish grade.*

Leaching Chambers Area

Installers of this system shall be certified by the company training program prior to installing this system.

16.) *Leaching chambers shall be INFILTRATOR Q-4 LP or engineer approved equal.*

17.) *All installations shall be true to line and grade.*

18.) *All piping shall be PVC SCH. 40*

19.) *Distribution pipe(s) shall have a minimum diameter of 4" and a minimum slope of 0.01.*

20.) *All unsuitable material including top soil and sub soil shall be removed as follows:*
Remove soils to elevation 77.2' ±, and a distance of 5 ft. in all directions of the designated leaching field area. And existing S.A.S. and unsuitable soils.

21.) *Removed soils shall be replaced with clean sand, meeting the requirements of 310 CMR 15.255(3).*

Inspection Schedule

22.) *To obtain the board of health certification, confirmation of the proper installation is required. The installer shall obtain the written approval of the engineer and the local board of health representative at the completion of each of the following stages:*

a.) Excavation of unsuitable material

b.) Placement of the clean backfill

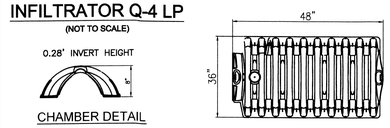
c.) Installation of the system with all components exposed for inspection and preparation of "As Built".

Utility Notes

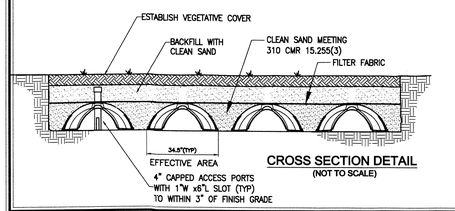
24.) *The location of utilities are approximate only. Dig-Safe and other appropriate authorities shall be notified to verify actual locations, prior to any excavating. Relocate if / as required.*

INFILTRATOR Q-4 LP

(NOT TO SCALE)



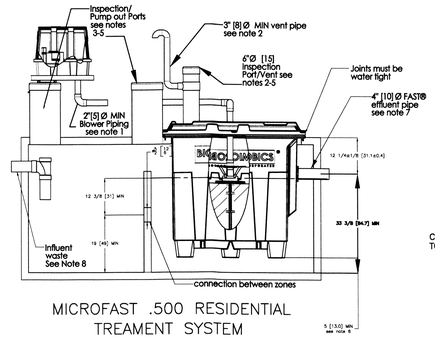
CHAMBER DETAIL
(NOT TO SCALE)



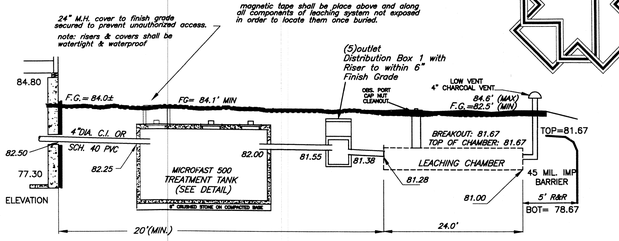
CROSS SECTION DETAIL
(NOT TO SCALE)

MICROFAST NOTES

1. Airline piping to FAST® may not exceed 100 FT [30m] total length and have a maximum of 4 elbows in the piping system. For distances greater than 100 FT [30m] consult factory. Blower must be located above flood levels on a concrete base 26" X 20" X 2" [65 X 50 X 5cm] min.
2. Vent to desired location and cover opening with a vent grate with at least 7 sq in.[45 sq. cm] open surface area. Secure with stainless steel screws. Vent piping must not allow condensate build up or create back pressure. Vent must be above finished grade or higher (see sheet 4 of 4).
3. All appurtenances to FAST® (e.g. tanks, access ports, electrical, etc.) must conform to all applicable country, state, province, and local plumbing and electrical codes. Pump out access shall be adequate to thoroughly clean out both zones.
4. All inspection, viewing and pump out ports must be secured to prevent accidental or unauthorized access.
5. Tank, piping, conduit, etc. are provided by others. Blower control system by Bio-Microbics, Inc. See Installation Manual.
6. If less than the specified minimums are considered necessary, consult factory for guidance.
7. All piping and ancillary equipment installed after FAST must not impede or restrict free flow of effluent.
8. The tank(s) shall be designed to prevent air passage between the settling zone/tank and the treatment zone and preventing an air lock. Examples include a baffle wall sealed to the lid or treatment zone inlet line with a pipe cap. Consult factory for guidance.
9. Installations using a FAST® system lid are capable of withstanding AASHTO H-10 equivalent loads. Any installation in



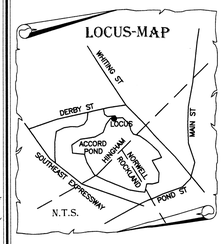
MICROFAST .500 RESIDENTIAL TREAMENT SYSTEM

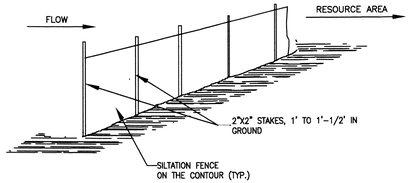


CONTRACTOR TO RAISE INVERT ELEVATION TO ELEVATION 82.50 (MIN)

PROPOSED SECTION THRU SYSTEM

(NOT TO SCALE)



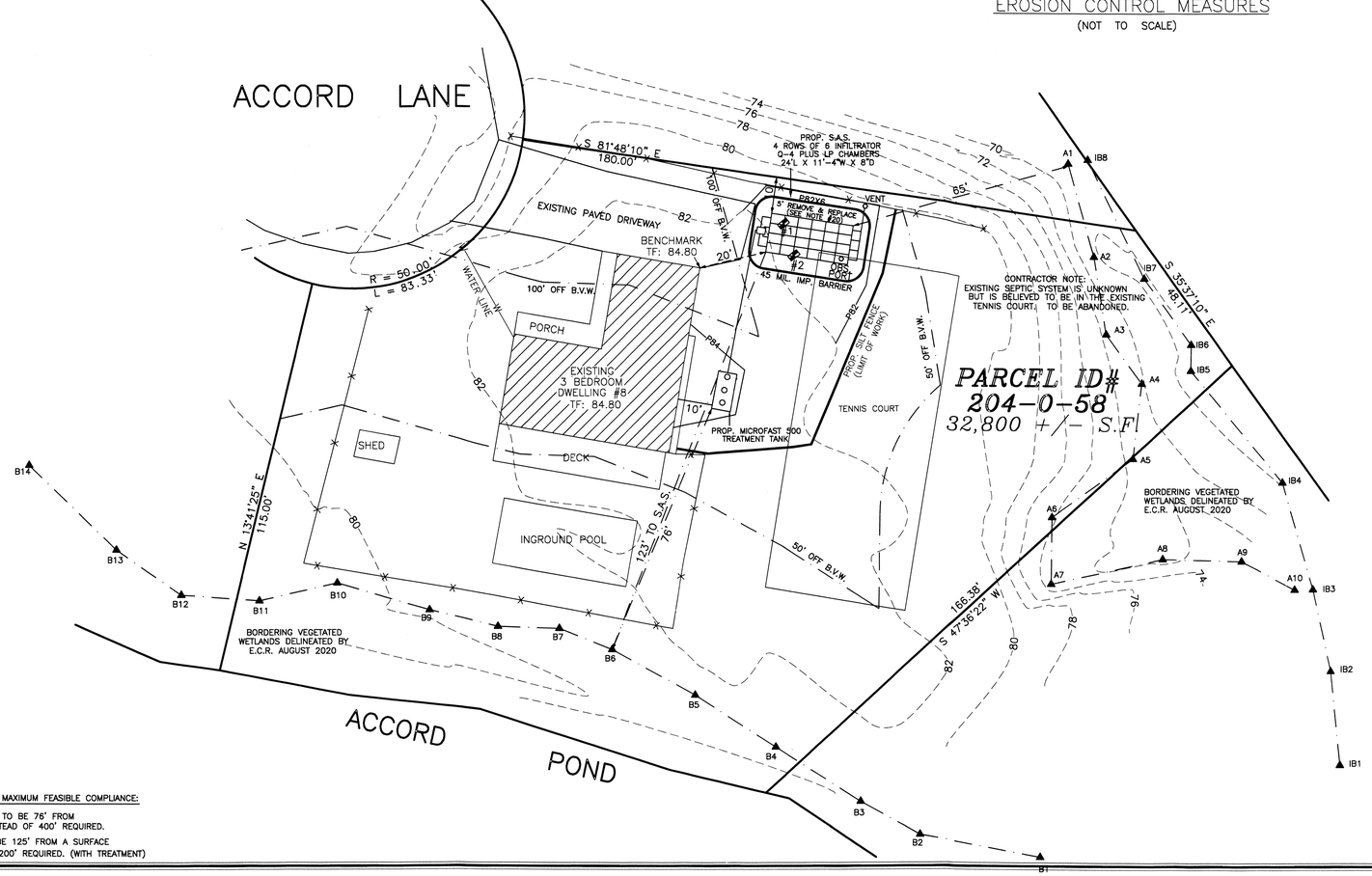


NOTES:
1. EROSION CONTROL DEVICES ARE TO BE PLACED PRIOR TO CONSTRUCTION AND ARE TO REMAIN IN PLACE UNTIL ALL CONSTRUCTION IS COMPLETED AND NEW SLOPES HAVE BEEN STABILIZED.
2. EROSION CONTROL DEVICES SHALL BE PLACED IN A ROW AND EMBEDDED IN THE SOIL A MINIMUM OF 6".
4. SILTATION FENCES SHALL BE SECURELY ANCHORED IN PLACE BY STAKES

SILT FENCE

EROSION CONTROL MEASURES

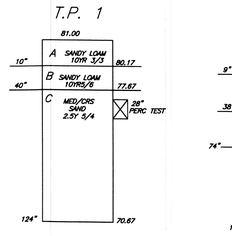
(NOT TO SCALE)

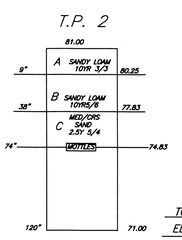


REDUCTIONS REQUESTED UNDER MAXIMUM FEASIBLE COMPLIANCE:

1) ALLOW THE PROP. SEP. TANK TO BE 76' FROM A SURFACE WATER SUPLY INSTEAD OF 400' REQUIRED.
2) ALLOW THE PROP. S.A.S. TO BE 125' FROM A SURFACE WATER SUPPLY, INSTEAD OF 200' REQUIRED. (WITH TREATMENT)

	Proposed Flow Line Grades	" As Built " Grades
INV. AT FOUNDATION	82.50	
INV. INTO TREATMENT TANK	82.25	
INV. OUT OF TREATMENT TANK	82.00	
INV. INTO DIST. BOX	81.55	
INV. OUT OF DIST. BOX	81.38	
INV. INTO CHAMBER	81.28	
BOTTOM OF CHAMBER	81.00	
WATER TABLE	MOTTLES @ 74.83 (TYP.)	





Bench Mark
TOP OF FOUNDATION
ELEV. = 84.80

PROP. S.A.S. SIZING CALCULATIONS
4 ROWS OF 6 INFILTRATOR Q-4 LP CHAMBERS
24 CHAMBER X 4" X 4.7 = 451

SOIL LOGS

PERC. RESULTS: 3 MIN/INCH
Present During Tests On 8/19/20
Soil Evaluator: JOE WEBBY
AGENT BETTY NEE

DESIGN CALCULATIONS

NUMBER OF BEDROOMS = 3 TOTAL
GALLONS/ BEDROOM = 110 gal.
REQUIRED GPD = 330 gal.
REQUIRED LEACHING AREA = 330 / 74 (@ 3 MIN/INCH)= 446 s.f.
LEACHING AREA PROVIDED = 451 s.f. > 446 s.f.
LEACHING CAPACITY = 334 gpd. > 330 gpd.

CONVENTIONAL SYSTEM
20'X24'X1' LEACHING
FIELD = 480 S.F.

Issue	Date	Description	Drawn	Design	Check	Resp. Eng.
#1	9/16/20	REPAIR OF SANITARY SYSTEM				

REPAIR OF Sanitary System

TOWN: HINGHAM PARCEL ID# 204-0-58
LOCATION: 8 ACCORD LANE
PREPARED FOR: ALBI SELKO
SCALE: 1" = 20' (OR AS NOTED) DATE: SEPTEMBER 16, 2020

WEBBY ENGINEERING ASSOCIATES, INC.
Civil Engineers & Land Surveyors
180 County Road – Plympton, MA.
(781) 585-1164

JOSEPH E WEBBY JR. No. 28717 REGISTERED PROFESSIONAL LAND SURVEYOR
Prof. Land Surveyor

RICHARD ROBERT DeBENEDICTIS No. 28318 REGISTERED PROFESSIONAL ENGINEER
9/16/2020
Prof. Engineer

W-6185