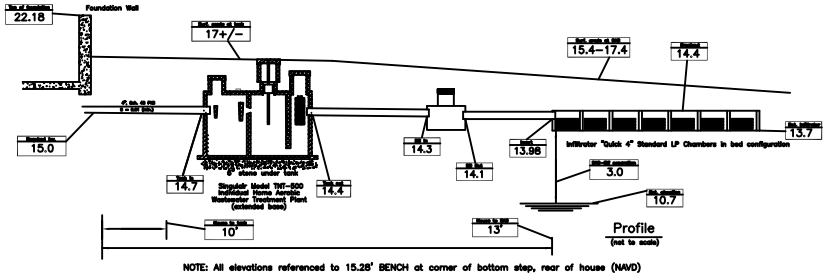
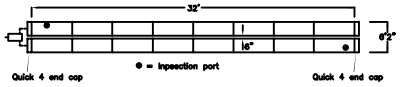


Profile
(not to scale)

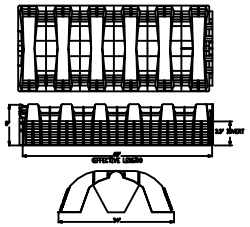
NOTE: All elevations referenced to 15.28' BENCH at corner of bottom step, rear of house (NAVD)

VARIANCES/DIVERGENCES REQUESTED:

1. 310 CMR 15.405(1)(i), Percolation testing
   Allow use of a sieve analysis in lue of percolation testing data
   MaDEP Policy #BRP/DWM/PeP-P00-4



Infiltrator "Quick-4" Standard LP Chamber



SAS Detail
(not to scale)

Soil Logs

Elevation (Feet)	Observation Hole #1					
	Perk Rate =					
14.5	Depth Inches	Soil Horizon	Soil Texture	Soil Color	Soil Mottling	
12.7	0-22	Fill				
12.0	22-30	A	Loamy Sand	10 YR 3/2		
9.7 Mottle	30-58	B	Loamy Sand	10 YR 6/3		
8.7	58-90	C	Silt Loam	2.5 Y 4/2	50%	10Y 6/6
7.0	90	R	On bedrock			

Elevation (Feet)	Observation Hole #2					
	Perk Rate = <2 mpi (per DEP sieve policy)					
13.2	Depth Inches	Soil Horizon	Soil Texture	Soil Color	Soil Mottling	
12.8	0-6	A	Loamy Sand	10 YR 3/2		
10.7 Mottle	6-28	B	Loamy Sand	10 YR 6/3		
11.0	28-78	C1	Silt Loam	2.5 Y 4/2	30%	10Y 6/6
7.0 Water	78-132	C2	Coarse Sand*	2.5 Y 6/6		
6.7						
2.2						

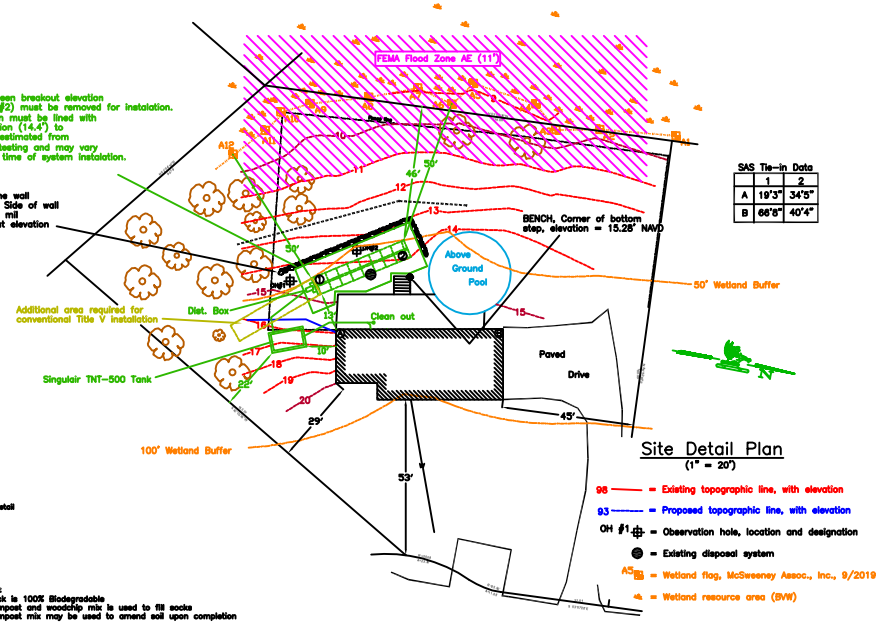
* See attached sieve analysis results

Notes:

1. On 8/14/2019 soil tests were made, as shown here, by T. McSweeney, a Massachusetts Department of Environmental Protection (DEP) approved Soils Evaluator, with R. Cole, also a DEP approved Soils Evaluator, observing for the Board of Health. The logs of these tests are as follows, with location as #1 and #2 on this plan.
2. All stone to be washed free of iron, fines, and dust. All "structures" to be precast concrete. All pipes to be P.V.C. Schedule 40, laid true to line and grade. All "structures" under pavement to be H-20 loading with cast iron covers and frames, set to grade, on all manholes.
3. The existing SAS is to be abandoned and disposed of to the satisfaction of the health authority.
4. It is the responsibility of the home owner to advise the site engineer of the location of all house plumbing prior to construction of the system.
5. No part of the proposed system shall be buried greater than 3' below the surface of the ground.
6. An executed Singulair maintenance agreement must be provided to the Scituate Board of Health prior to obtaining a Certificate of Compliance.
7. All work to conform to these plans, Title 5 of the Environmental Code (310 CMR 15.00 et. seq.) and supplementary regulations of the Scituate Board of Health.
8. House plumbing to be set to the grades specified on this plan, as necessary, with a pipe slope minimum of 0.01.
9. All unsuitable material below breakout elevation of 14.4' is to be removed and replaced with material suitable to the health authority, for 5'around SAS. Fill specifications are as follows ("overdig"):
   1. No material is larger than 2".
   2. Not more than 40% is retained on #4 sieve.
   3. For the material which passes the #4 sieve, the following limits apply:
      #50 sieve 10 – 100% passing
      #100 sieve 0 – 20% passing
      #200 sieve 0 – 5% passing
   4. Results of sieve analysis submitted to Board of Health for approval prior to installation.
10. Property line information as depicted on this plan is to be used for Title V purposes only.
11. A Singulair deed notice must be recorded in the chain of title for the subject property prior to release of the Certificate of Compliance by the Scituate Board of Health (certified copy to be filed with the Board.)
12. Installer must be certified by the manufacturer for the installation of Infiltrator Systems septic system chambers.
13. Infiltrator chambers and Singulair tank must be installed according to MaDEP and manufacturers requirements.
14. All electrical work must be completed by a licensed electrician, who must receive a permit and have work inspected and approved by the Town wiring inspector.
15. A four (4) bedroom deed restriction must be recorded at the Registry of Deeds (copy provided to the Board) due to the reduction in groundwater separation and use of Singulair system.
16. The Singulair treatment system requires an on-going maintenance contract with a licensed treatment plant operator.

Limits of Overdig. All unsuitable material between breakout elevation (14.4') and bottom of C1 horizon (6.7', Hole #2) must be removed for installation. NOTE: Northeastern edges of overdig excavation must be lined with 40 mil rubber membrane from breakout elevation (14.4') to elevation = 13'. Elevations and volumes are estimated from site data obtained at the time of percolation testing and may vary depending upon conditions encountered at the time of system installation.

Dry laid one and two man stone wall top of wall elevation = 14.5'. Side of wall facing SAS to be lined with 40 mil rubber membrane from breakout elevation (14.4') to 12' NAVD.



SAS Tie-in Data		
	1	2
A	19'3"	34'5"
B	66'8"	40'4"

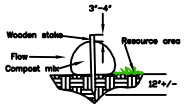
Calculations:

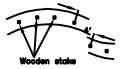
1. 4 bedrooms, no disposal
2. Est. Day Flow (EDF) = # B.R. x 110 G/Day
   EDF = 440 Gallons per day
3. Perk rate = <2 min/inch (Class I soils, see DEP Sieve Policy)
   Effluent Loading (ELR) = 0.74 G/s.f.
4. Septic Tank – 2 X EDF with 1,500 G minimum
   440 X 2 = 880 Gallons, use 1,500 Gallon tank
5. Soil Absorption System (SAS)
   SAS size required = EDF/ELR
   (440 G)/(0.74 G/s.f.) = 595 s.f. Use of the Singulair system allows 50% reduction in SAS size = 298 s.f.
   Infiltrator Quick4 Plus Standard LP Chamber
   in bed configuration = 4.73 s.f./l.f.
   298 s.f./4.73 s.f./l.f. = 63 l.f.
   @ 4 l.f./unit = 16 units
   Use 2 rows of 8 units each (16 units total)

Proposed:

1. Singulair TNT-500 Treatment tank (waterproofed, monolythic, extended base)
2. Distribution box
3. 16 Infiltrator units in bed configuration (2 rows of 8) as illustrated on SAS detail

FILTER SOCK DETAIL





NOTES:
1. Sock is 100% Biodegradable
2. Compost and woodchip mix is used to fill socks
3. Compost mix may be used to amend soil upon completion

Site Detail Plan
(1" = 20')

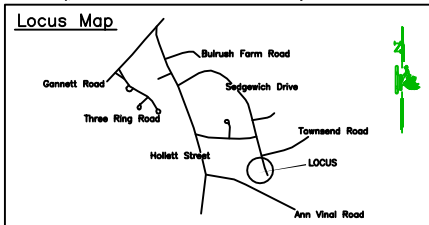
98 ——— = Existing topographic line, with elevation
93 ——— = Proposed topographic line, with elevation
OH #1 = Observation hole, location and designation
● = Existing disposal system
A5 = Wetland flag, McSweeney Assoc., Inc., 9/2019
4A = Wetland resource area (BVW)

I certify that in the fall of 1997 I was approved by the Mass. Department of Environmental Protection as a Soils Evaluator and that the soils analysis contained herein was performed by me consistent with the training, expertise, and experience described in 310 CMR 15.018(2).

Terence McSweeney, R.S. Date Terence McSweeney

I certify that there are no wells known to me, or reported to be within 400 feet (public) or 100' (private) of this proposed SAS, other than those shown on this plan. Public water supply wells in the area, location and distance from house, are shown herein.

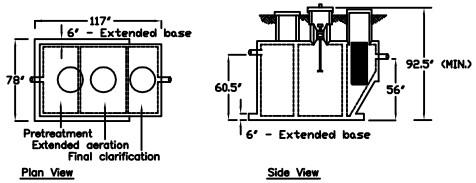
Locus Map



Lot Data:
Owner: James and Theresa Dickey
Deed: 13,263/331 – 11/15/1994
Scituate Assessors Map 21-9-4, 23,330 s.f.
Reference Plan:
E. A. Young, R.L.S., 5/3/1961
B: 12 P:153 (Plymouth County RoD)

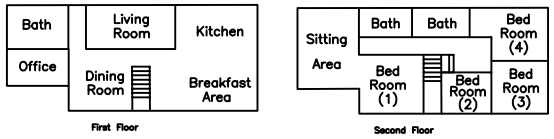
The site is not located in a DEP approved Zone II, nor is it located within a Zone A as defined in 310 CMR 22.00.
As shown hereon, a portion of the site is located within the 100 year flood zone.

Singulair TNT-500
(not to scale)



Plan View Side View

FLoor Plan
(not to scale)



First Floor Second Floor

Revisions:

McSweeney Associates, Inc.
McS
Environmental Engineering

Proposed Septic System
118 Sedgewick Drive
Scituate, Massachusetts

745 Winter Street, Hanson, MA 02341

Thomas F. McSweeney 1969-1997
Brian McSweeney 1969-2015
Terence K. McSweeney 781-826-4571
Colin T. McSweeney 781-570-9381

Job Reference:	Dickey
Scale:	As Noted
Date:	10/1/2019
Drawn By:	T McS
Checked By:	C McS