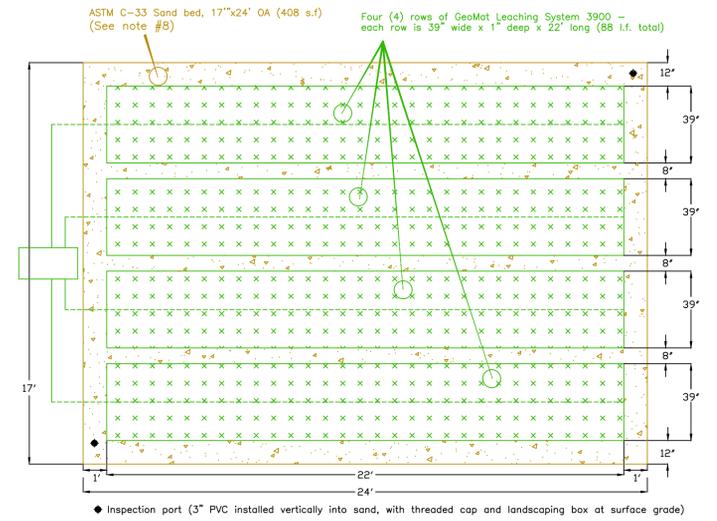


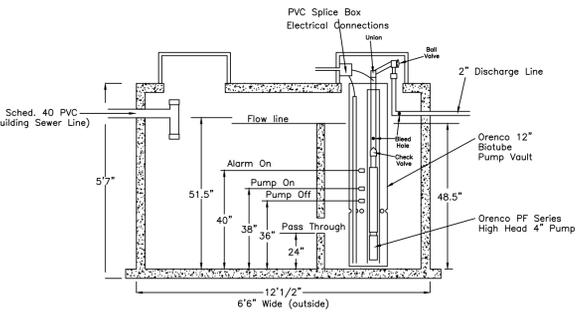
- VARIANCES/DIVERGENCES REQUESTED:
- Town of Hingham, Section VII.E., SDS to wetland setback
Proposed: 68' Required: 100'
 - Town of Hingham, Section VII.J., Thickness of naturally occurring soils under SAS
Proposed: 0' Required: 6.0'
 - Town of Hingham, Section VII.M., Construction in fill thickness of naturally occurring, unsaturated, soils under SAS
Proposed: 0' Required: 6.0'



Soil Logs

Observation Hole #1					
Elevation (Feet)	Perk Rate = <2 mpi @ 32"-50"	Depth (Inches)	Soil Horizon	Soil Texture	Soil Color
32.3		0-10	A	Sandy Loam	10 YR 3/3
31.5		10-20	B	Sandy Loam	10 YR 5/6
30.6		20-92	C1	Fine Sand	2.5 Y 5/3
28.8		92-120	C2	Fine Sand	2.5 Y 6/2
24.6					
22.3					

Observation Hole #2					
Elevation (Feet)	Perk Rate =	Depth (Inches)	Soil Horizon	Soil Texture	Soil Color
32.4		0-20	Fill		
30.7		20-32	A	Sandy Loam	10 YR 3/3
29.7		32-53	B	Sandy Loam	10 YR 5/6
28.0		53-60	C1	Fine Sand	2.5 Y 5/3
27.4		60-120	C2	Fine Sand	2.5 Y 6/2
22.4					



- Notes:
- On 9/16/2024 soil tests were made, as shown here, by Terence McSweeney, a Massachusetts Department of Environmental Protection (DEP) approved Soils Evaluator, with P. Brennan observing for the Board of Health. The logs of these tests are as follows, with location as #1 and #2 on this plan.
 - 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.
 - The existing SAS is to be abandoned and disposed of to the satisfaction of the health authority.
 - 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.
 - No part of the proposed system shall be buried greater than 3' below the surface of the ground.
 - All work to conform to these plans, Title 5 of the Environmental Code (310 CMR 15.00 et. seq.) and supplementary regulations of the Hingham Board of Health.
 - House plumbing to be set to the grades specified on this plan, as necessary, with a pipe slope minimum of 0.01.
 - GeoMat Leaching System to be placed on 6" bed of ASTM C-33 sand. These materials must meet the following sieve specifications:
 - 3/8" sieve 100% passing
 - #4 sieve 95 - 100% passing
 - #8 sieve 85 - 100% passing
 - #16 sieve 50 - 85% passing
 - #30 sieve 25 - 60% passing
 - #50 sieve 10 - 30% passing
 - #100 sieve 2-10% passing
 - Results of sieve analysis submitted to Board of Health for approval prior to installation.
 - Property line information as depicted on this plan is to be used for Title V purposes only.

Calculations:

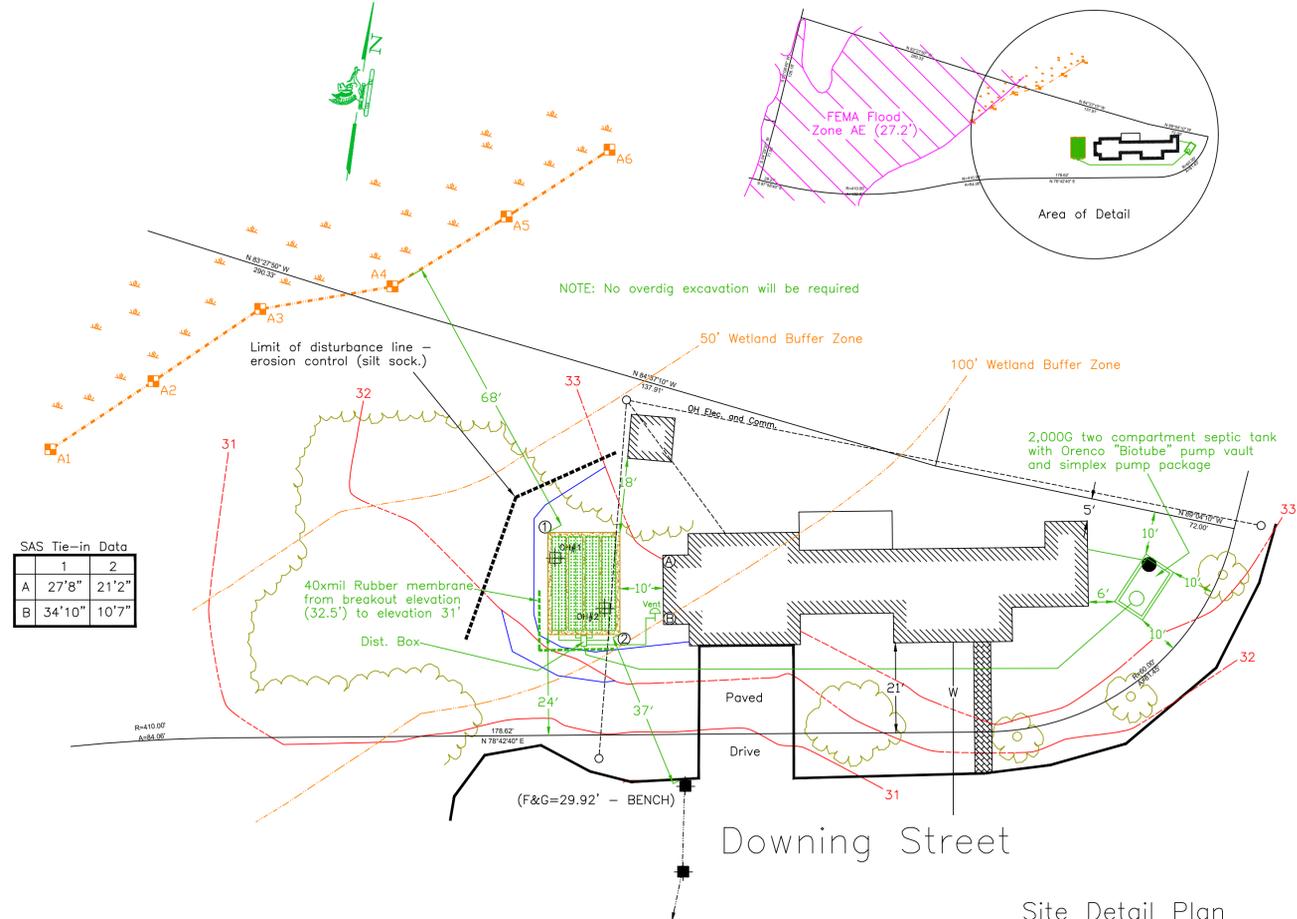
- 4 bedrooms, no disposal
- Est. Day Flow (EDF) = # B.R. x 110 G/Day
EDF = 440 Gallons per day
- Perk rate = <2 min/mch, Class I soil (see soil logs)
GeoMat loading rate with 6" ASTM C33 sand under, Class I soil, <2 m.p.i. perk rate = 1.50 G/D/SF
- Septic Tank - 2 X EDF with 1,500 G minimum
440 X 2 = 880 Gallons - 1,500 Gallon (minimum allowable)
- Soil Absorption System (SAS)
GeoMat size required = EDF/Loading rate
(440 G)/(1.50 G/d.s.f.) = 293 s.f.
GeoMat Leaching System 3900 (1"Dx39"W) = 3.42 s.f./l.f.
293 s.f./3.42 s.f./l.f. = 86 l.f. (required)
use four rows, each 17' x 39' x 22' (88 l.f. provided)
Minimum sand bed - 440 G/D, with perk rate of <2 m.p.i. Class I soils = 400 s.f. (required)
Use sand bed 17' x 24' (408 s.f. provided)

Proposed:

- 2,000 gallon, two compartment tank (waterproofed, extended base)
- Orenco Biotube pump vault system (including Biotube filter) and simplex effluent pump package
- Distribution box
- 408 s.f. sand bed (ASTM C-33 sand) - 17'w x 24' x 6'd
88 l.f. GeoMat Leaching System 3900, four (4) rows each 39'w x 1'd x 22'l

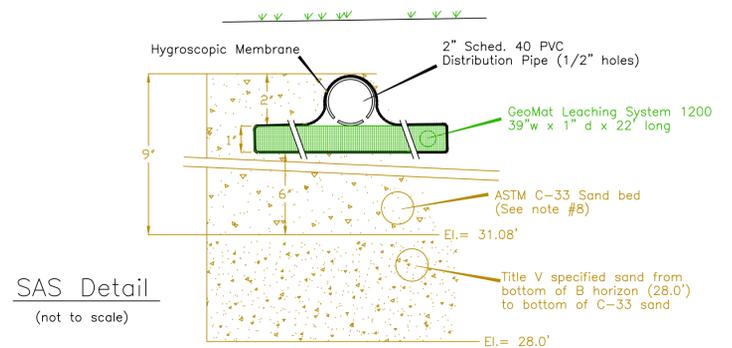
Pump Chamber Calculations:

- 2,000 gallon tank with 48.5 working area = 41.2 G/inch
- Dose volume:
Pump-on to pump-off elevation drop = 2" at 41.2 G/inch, 2" = 82 G
- Alarm-on to tank-in invert elevation increase equals 11.5". At 41.2 G/inch
11.5" = 474 G (minimum of 440 G required)



Site Detail Plan
(1" = 20')

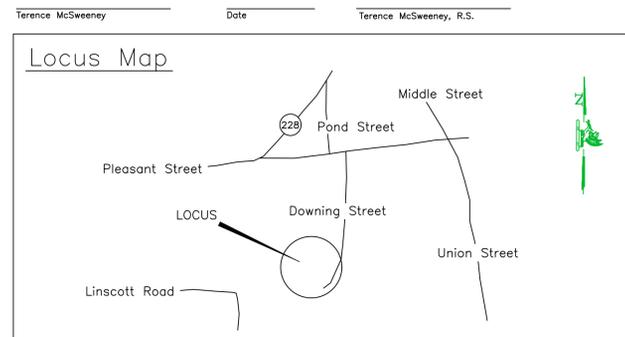
- 33 — Proposed topographic line, with elevation
- 33 - - - Existing topographic line, with elevation
- OH #1 ⊕ = Observation hole, location and designation
- = Existing disposal system
- A1 ⊕ = Wetland flag, McSweeney Associates, Inc., 9/2024
- ▲ = Wetland Resource Area (BW)
- = Surface drainage structure



SAS Detail
(not to scale)

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).

I certify that there are no wells known to me, or reported to be within 500 feet of this proposed SAS, other than those shown on this plan. Public water supply wells in the area, location and distance from locus, are shown herein.



Lot Data: 5059/89 - 9/25/1981
Hingham Assessors Map 100/52 - 62,154 s.f.
Reference Plan: L. W. Perkins and Sons, 4/24/1968
B: 14 P: 902, Plymouth County RoD

Revisions:	

 McS Environmental Engineering	Proposed Septic System 39 Downing Street Hingham, Massachusetts 745 Winter Street, Hanson, MA 02341 Thomas F. McSweeney 1894-1977 Brian McSweeney 1923-2015 Terence K. McSweeney 781-826-4571 Colin T. McSweeney 781-570-9381	Job Reference: Downing 39 Scale: As Noted Date: 10/2/2024 Drawn By: T McS Checked By: C McS
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