

**PERCOLATION TEST AND SOIL LOGS**

Soil Evaluator: Gregory P. Bernard  
Observed By: Kendall Longo  
Date of Tests: December 20, 2012

#1 Rate = 25 minutes/inch at 5.5" Deep

0-7"	A	SL	10YR2/1	Granular, Friable	150.1
7-24"	Dr	SL	10YR4/6	Blocky, Friable	148.59
24-84"	C1	SL	2.5Y5/6	Blocky, Friable	148.10
84-114"	C2	WFS	2.5Y6/8	Massive, Friable	146.60

No Refusal  
No Observed Groundwater  
Redox Features at 57" 7.5YR4/6 and 2.5Y6/3  
ESHWI at 57"..... 145.35

OH4

0-7"	A	SL	10YR2/1	Granular, Friable	148.5
7-20"	Dr	SL	10YR4/6	Blocky, Friable	148.83
20-47"	C1	SL	2.5Y5/6	Blocky, Friable	145.59
47-70"	C2	LS	10YR4/6	Single Grained, Slight Firm	143.67
70-108"	C3	Gr, WFS	2.5Y6/8	Single Grained, Loose	143.50

No Refusal  
No Observed Groundwater  
Redox Features at 63" 7.5YR4/6 and 2.5Y6/3  
ESHWI at 63"..... 144.25

#5 Rate = 6 minutes/inch at 6.3" Deep

OH5

0-5"	A	SL	10YR2/1	Granular, Friable	150.1
5-19"	Dr	SL	10YR4/6	Blocky, Friable	148.68
19-53"	C1	SL	2.5Y5/6	Blocky, Friable	145.89
53-110"	C2	Gr, WFS	2.5Y6/8	Single Grained, Loose	143.83

No Refusal  
No Observed Groundwater  
Redox Features at 58" 7.5YR4/6 and 2.5Y6/3  
ESHWI at 58"..... 145.27

OH6

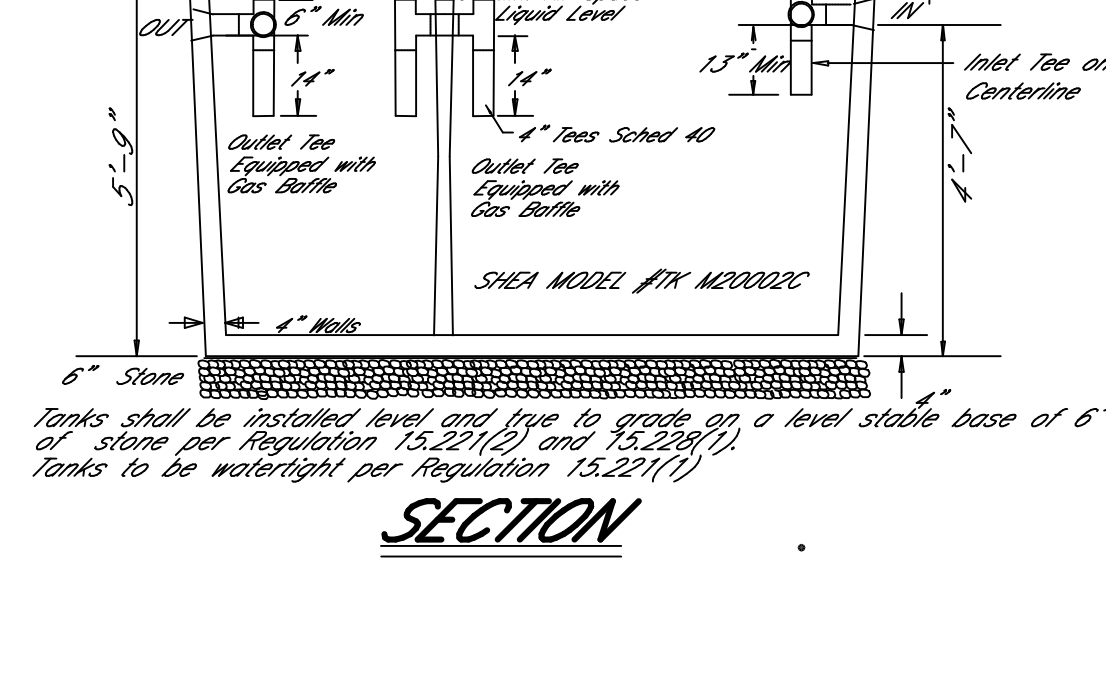
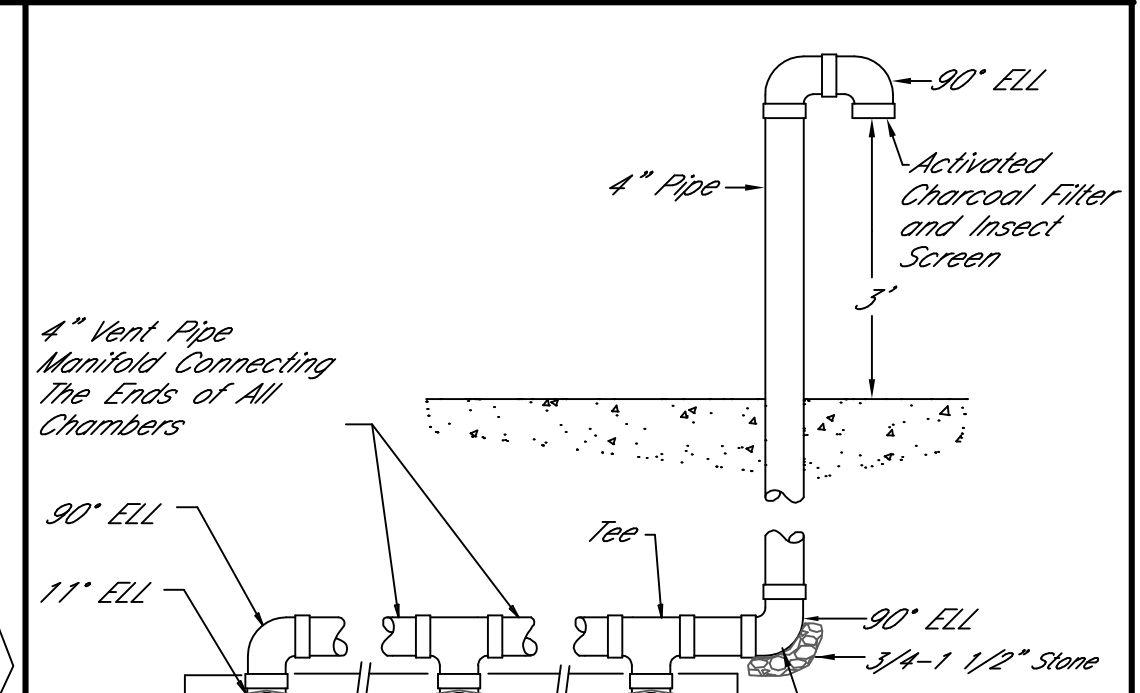
0-5"	A	SL	10YR2/1	Granular, Friable	150.1
5-22"	Dr	SL	10YR4/6	Blocky, Friable	148.89
22-58"	C1	SL	2.5Y5/6	Blocky, Friable	145.47
58-110"	C2	Gr, WFS	2.5Y6/8	Single Grained, Loose	141.13

No Refusal  
No Observed Groundwater  
Redox Features at 59" 7.5YR4/6 and 2.5Y6/3  
ESHWI at 59"..... 145.38

I certify that I am currently approved by the Department of Environmental Protection pursuant to 310 CMR 15.017 to conduct soil evaluations and that the above analysis has been performed by me consistently with the required training, expertise, and experience described in 310 CMR 15.017. I further certify that the results of my soil evaluations, as indicated on the included soil evaluation form, are accurate and in accordance with 310 CMR 15.100 through 15.107.

Gregory P. Bernard  
Approval No. 1523882  
Exam date: November 9, 2004

- NOTES**
- All work to comply with the Commonwealth of Massachusetts Department of Environmental Protection State Sanitary Code, Title V and Local Board of Health Supervisory Regulations.
  - This plan is to show the design of the Subsurface Sewage Disposal System only, and is not to be used for any other purpose.
  - Excavation must be inspected by the Health Agent prior to installing Leaching System.
  - Tanks shall be installed level and open to grade on a level stable base of 6" of stone per Regulation 15.221(1) and 15.221(2).
  - Tanks to be watertight per Regulation 15.221(1).
  - There are no wells or Bartering Vegetated Wetlands within 100' of the proposed Leaching Area.
  - No part of the proposed septic system lies within an area noted by the DEP as an Estimated Subback Area for Title V.
  - All system components shall be marked with magnetic marking tape or a comparable means in order to locate them once buried.



**SEWAGE FLOW DESIGN**

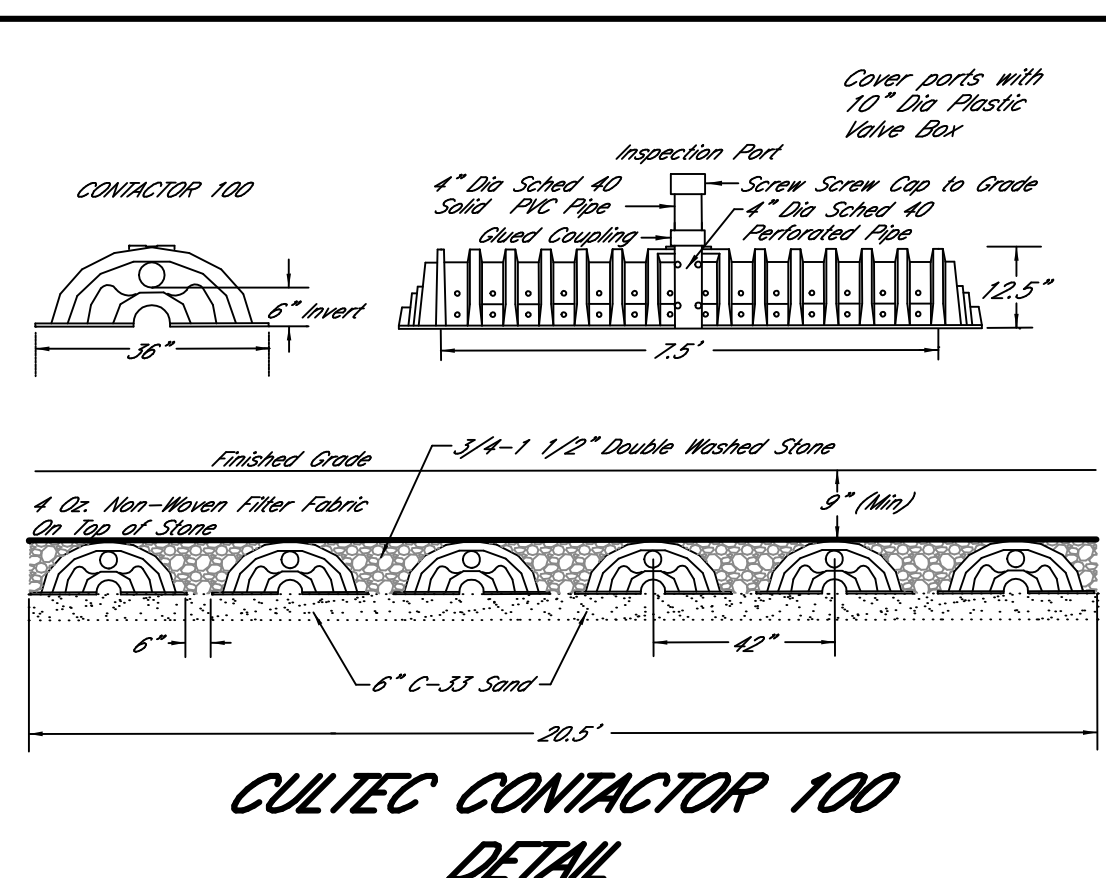
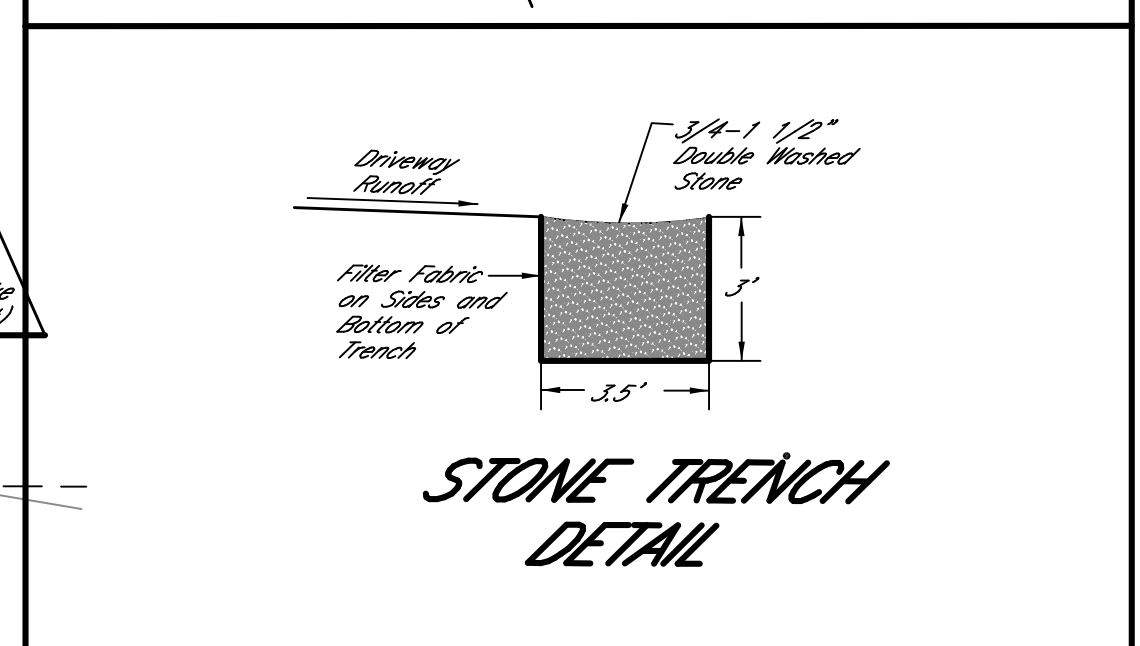
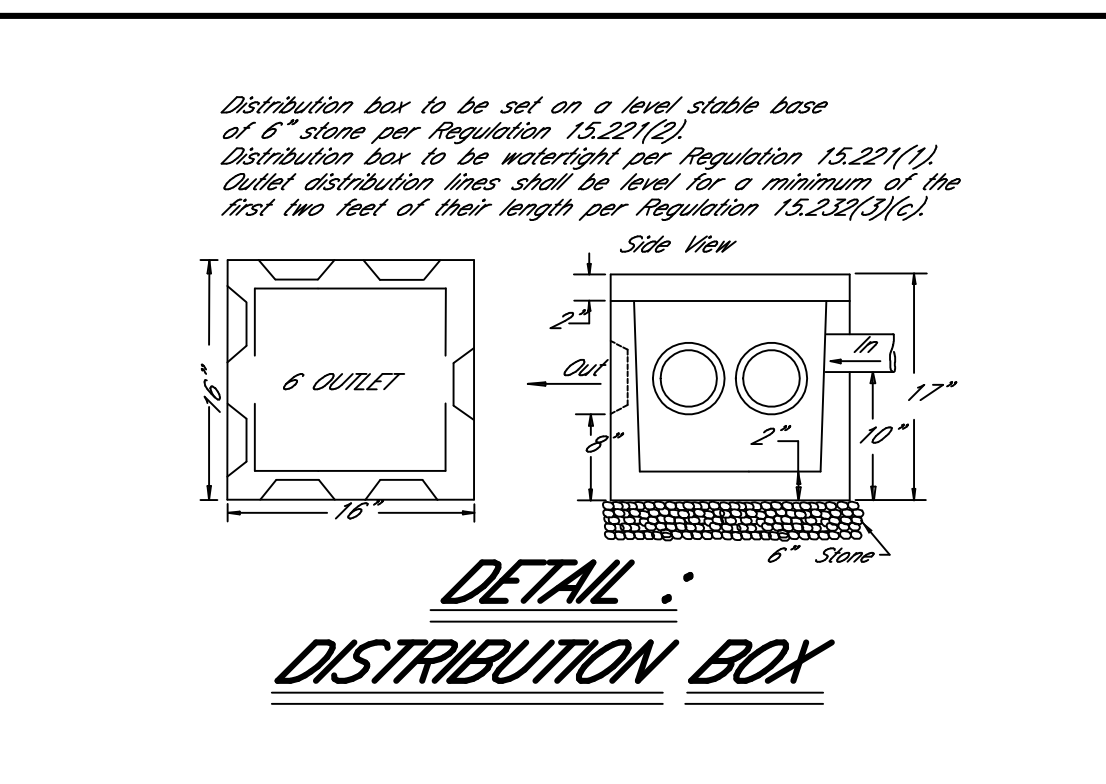
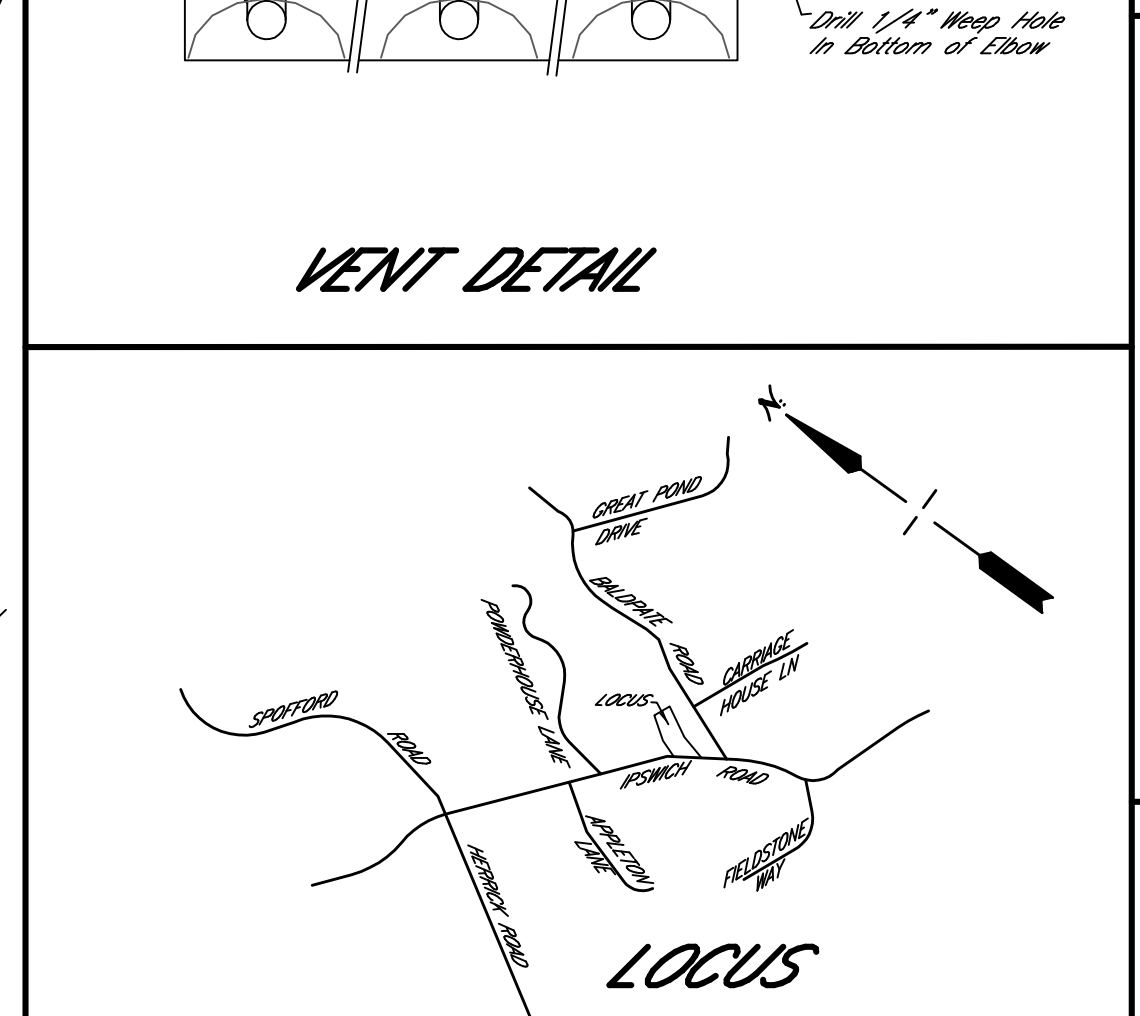
**DESIGN FLOW (ACTIVE AREA)**

165 Gals. per Bedroom per Day x 4 = 660 GPD  
.40 Gals. per square foot  
Required Area = 660/.40 = 1650 sf (Standard Field)

State Allowance for CULTEC Contactor 100 = 5 sf/ft  
Linear Feet of System Required = 1650/.5 = 330 ft  
Number of Chambers Provided = 45  
Number of Chambers Needed = 330/7.5 = 44  
Provided Flow = 45 x 7.5 x 5 x .40 = 675 GPD  
6 Rows, 7.5 Chambers/Row (20.5' W x 56.25' L)  
Use 2000 Gallon 2 Compartment Monolithic Septic Tank

**DESIGN FLOW (RESERVE AREA)**

165 Gals. per Bedroom per Day x 4 = 660 GPD  
.40 Gals. per square foot (25 Minutes/Inch)  
Required Area = 660/.40 = 1650 sf  
Leaching Field 30' x 55' = 1650 sf



**SEWAGE DISPOSAL SYSTEM**

LOT 2 (Portion of Map 19-J-23 and 19-J-24)  
IPSWICH ROAD BOWFORD, MA  
For: Estate of Elizabeth C. Brewer  
c/o Caryl Mansell  
96 High Street  
Ipswich, MA 01938  
Date: July 17, 2015  
Rev: 10/15/15 Increased Driveway Width to 12 feet)  
4/1/16 (Added Electrical Line from Pole 136)

By: Gregory P. Bernard  
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