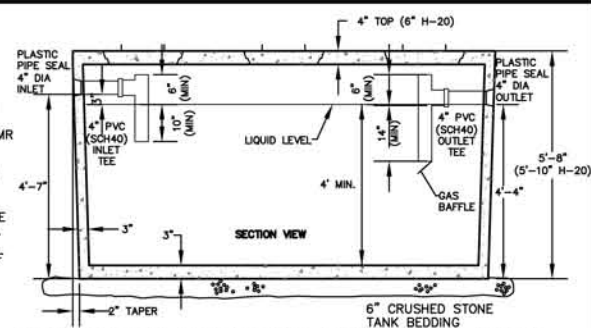
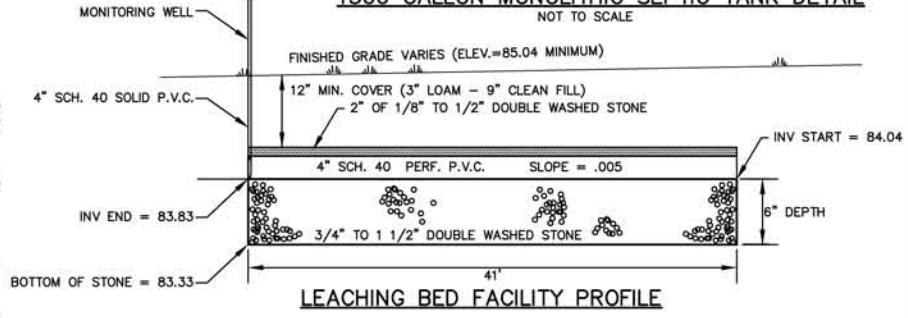


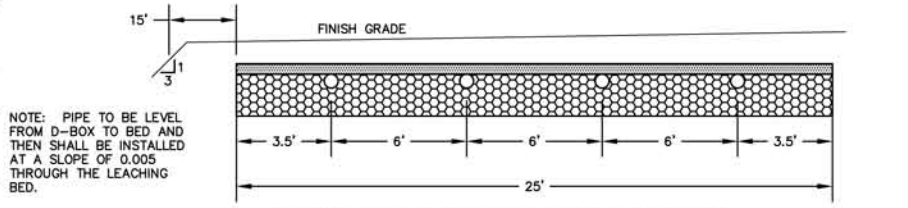
- SEPTIC TANK NOTES :**
1. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS
 2. DESIGN CONFORMS WITH 310 CMR 15.00, DEP TITLE 5 REGS, FOR SEPTIC TANKS.
 3. ALL REINFORCEMENT PER ASTM C1227-93.
 4. TEES AND GAS BAFFLE SOLD SEPARATELY 5. TONGUE & GROOVE JOINT SEALED WITH BUTYL RESIN.
 5. A ZABEL FILTER SHALL BE INSTALLED ON THE OUTLET TEE OF THE TANK.
 6. ALSO AVAILABLE IN H-20 LOADING



1500 GALLON MONOLITHIC SEPTIC TANK DETAIL
NOT TO SCALE



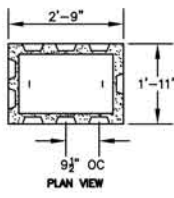
LEACHING BED FACILITY PROFILE



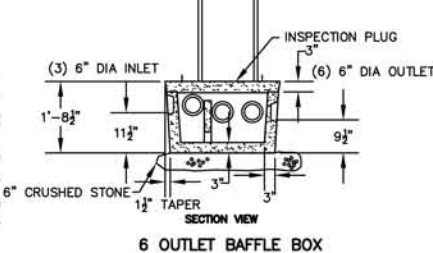
LEACHING BED FACILITY CROSS-SECTION

DESIGN DATA

1. BUILDING TYPE: RESIDENTIAL
2. NO. OF BEDROOMS: PROPOSED 5 (11 TOTAL ROOMS)
3. DESIGN FLOW: (LOCAL CODE 150 GPD/BEDROOM)
5 x 150 GPD/Bedroom = 750 GPD (GALLONS PER DAY)
4. DESIGN PERCOLATION RATE: 9 min/inch
5. GARBAGE DISPOSAL: NO
6. SEPTIC TANK DESIGN REQUIREMENT: 200% DESIGN FLOW
750 x 2 = 1,500 GAL. (USE 1,500 GAL. MIN. PER TITLE 5)
7. LEACH AREA REQUIREMENTS GALLONS/SQ. FT. (CLASS I SOIL RATE)
BOTTOM: 0.74 GAL./SQ. FT.
8. TOTAL LEACH AREA REQUIRED:
LOCAL CODE: 150 GPD BEDROOM x 5 BEDROOMS = 750 GPD
750 GPD / 0.74 GPD/S.F. = 1,014 S.F.
TITLE 5:
110 GPD BEDROOM x 5 BEDROOMS = 550 GPD
550 GPD / 0.74 GPD/S.F. = 743 S.F.
PROVIDED: BOTTOM: 41'x25' = 1,025 S.F.
9. LEACHING FACILITY: LEACHING BED: 41' x 25'



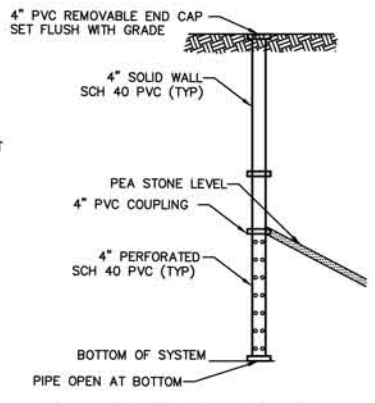
DISTRIBUTION BOX



6 OUTLET BAFFLE BOX

- D-BOX NOTES :**
1. UNUSED OUTLETS SHALL BE MORTARED WITH HYDRAULIC CEMENT.
 2. CONCRETE: 4,000 PSI MINIMUM AFTER 28 DAYS.
 3. DESIGN CONFORMS WITH 310 CMR 15.000, DEP TITLE 5 REGULATIONS, FOR DISTRIBUTION BOXES.

DISTRIBUTION BOX



MONITORING WELL DETAIL
NOT TO SCALE

GENERAL NOTES

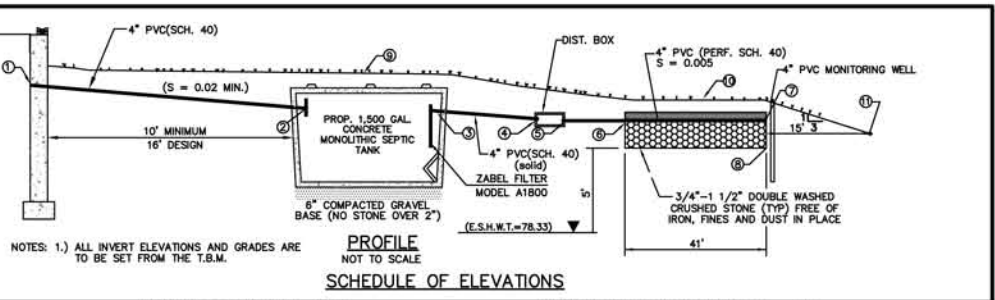
1. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO MASS ENVIRONMENTAL CODE (310 CMR 15.00, TITLE 5), AND THE MIDDLETON BOARD OF HEALTH.
2. THERE SHALL BE NO CHANGES MADE IN THIS PLAN WITHOUT THE WRITTEN PERMISSION OF THE MIDDLETON BOARD OF HEALTH.
3. ALL ERRORS, OMISSIONS, AND CHANGE OF CONDITIONS AT THE SITE SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PERFORMING THE RELATED WORK.
4. THIS PLAN HAS BEEN PREPARED SPECIFICALLY AS A SEPTIC SYSTEM DESIGN AND IS NOT TO BE USED TO ESTABLISH PROPERTY LINES OR BUILDING SETBACKS. PROPERTY LINES AND BUILDING LOCATIONS ARE GRAPHIC ONLY. PROPERTY LINES NOT HAVING BEEN VERIFIED, NO REPRESENTATION OR CERTIFICATION AS TO THE ACCURACY OF THOSE SHOWN IS IMPLIED OR INTENDED.
5. ALL DISTURBED AREAS ARE TO BE LOAMED, SEEDED AND MAINTAINED TO PREVENT EROSION.
6. FOR PROPER PERFORMANCE, SEPTIC TANK SHOULD BE INSPECTED AT LEAST ONCE A YEAR AND WHEN THE TOTAL DEPTH OF SCUM AND SOLIDS EXCEEDS 1/3 THE LIQUID DEPTH OF THE TANK, THE TANK SHOULD BE PUMPED.
7. THIS SYSTEM HAS BEEN DESIGNED FROM DATA REVIEWED AND ACKNOWLEDGED BY THE MASS. D.E.P. AND THE MIDDLETON BOARD OF HEALTH; AND CONFORMS WITH THE REQUIREMENTS OF TITLE 5 OF THE MASS. SANITARY CODE. NO GUARANTEE OF PERFORMANCE IS EXPRESSED OR IMPLIED.
8. TEST HOLE INFORMATION SHOWN HEREON IS LIMITED TO SOIL CONDITIONS FOUND AT THAT PARTICULAR TEST HOLE LOCATIONS AND IS NOT CONSIDERED AN IMPLIED OR EXPRESSED WARRANTY OF SOIL CONDITIONS BEYOND LIMITS OF SUCH TEST HOLES.
9. ALL STONE MUST BE DOUBLE WASHED AND FREE FROM FINES AND ANY ORGANIC MATERIAL AND MUST HAVE LESS THAN 0.2 PERCENT MATERIAL FINER THAN A NUMBER 200 SIEVE.
10. THE DESIGNER HAS NOT BEEN RETAINED BY THE CLIENT TO CONSTRUCT OR SUPERVISE THE CONSTRUCTION OF THE SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR MAKING ARRANGEMENTS FOR INSPECTION OF INSTALLATION OF THE SYSTEM WITH THE MIDDLETON BOARD OF HEALTH.
11. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL HORIZONTAL AND VERTICAL CONTROL OF ALL SYSTEM COMPONENTS.
12. TIGHT JOINT PIPING TO CONSIST OF POLYVINYL CHLORIDE (P.V.C.) SCHEDULE 40, UNLESS OTHERWISE NOTED.
13. WITH A WELL LOCATED ON SITE, THE PROPOSED SEPTIC SYSTEM IS LOCATED WITHIN A NITROGEN SENSITIVE AREA. THE SUBDIVISION HAS ASSOCIATED OPEN SPACE WITH RESTRICTIONS LIMITING ITS USE TO CONSERVATION LAND. THIS AREA IS UTILIZED UNDER 310CMR15.216(2) AS AGGREGATE AREA FOR DETERMINATIONS OF FLOWS AND NITROGEN LOADING.

SOIL TEST DATA

SOIL TESTING AND EVALUATION BY: GARY SCOLA
SOIL TESTING WITNESSED BY: LEO CORMIER, MIDDLETON B.O.H., 5/11/04

DEEP OBSERVATION HOLES

TP#04-A LOT 11; APPROX. GRADE = 89.0±	TP#04-B LOT 11; APPROX. GRADE = 87.0±																								
<table border="1"> <tr><th>D</th><th>HORIZON</th><th>THICKNESS</th></tr> <tr><td>0"</td><td>A HORIZON FINE SANDY LOAM 10YR 3/2</td><td>6"</td></tr> <tr><td>6"</td><td>Bw HORIZON FINE SANDY LOAM 10YR 5/8</td><td>24"</td></tr> <tr><td>30"</td><td>C1 HORIZON SANDY LOAM 2.5Y 4/2</td><td>125"</td></tr> </table>	D	HORIZON	THICKNESS	0"	A HORIZON FINE SANDY LOAM 10YR 3/2	6"	6"	Bw HORIZON FINE SANDY LOAM 10YR 5/8	24"	30"	C1 HORIZON SANDY LOAM 2.5Y 4/2	125"	<table border="1"> <tr><th>D</th><th>HORIZON</th><th>THICKNESS</th></tr> <tr><td>0"</td><td>A HORIZON FINE SANDY LOAM 10YR 3/2</td><td>10"</td></tr> <tr><td>10"</td><td>Bw HORIZON FINE SANDY LOAM 10YR 5/8 & 10YR 6/8</td><td>38"</td></tr> <tr><td>48"</td><td>C1 HORIZON LOAMY SAND 2.5Y 4/3</td><td>142"</td></tr> </table>	D	HORIZON	THICKNESS	0"	A HORIZON FINE SANDY LOAM 10YR 3/2	10"	10"	Bw HORIZON FINE SANDY LOAM 10YR 5/8 & 10YR 6/8	38"	48"	C1 HORIZON LOAMY SAND 2.5Y 4/3	142"
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(G.W. EL. = 78.33)	(G.W. EL. = 76.67)																								
WEeping OBSERVED: NONE STANDING WATER: NONE ROOTS OBSERVED TO 71" MOTTLES OBSERVED: NONE PERC. RATE: <1 MPI @ 98" DEPTH	WEeping OBSERVED: NONE STANDING WATER: NONE ROOTS OBSERVED TO 124" MOTTLES OBSERVED: NONE PERC. RATE: 5 MPI @ 78" DEPTH																								



SCHEDULE OF ELEVATIONS

1. PIPE INV. AT FOUNDATION = 86.47	7. INV. OF PIPE AT END OF LEACHING BED = 83.83
2. INV. OF PIPE AT SEPTIC TANK INLET = 86.15	8. ELEV. OF BOTTOM OF STONE = 83.33
3. INV. OF PIPE AT SEPTIC TANK OUTLET = 85.90	9. FINISHED GRADE AT SEPTIC TANK = 88.4±
4. INV. OF PIPE AT DIST. BOX INLET = 84.25	10. FINISHED GRADE OVER LEACHING FACILITY = 85.77
5. INV. OF PIPE AT DIST. BOX OUTLET = 84.04	11. FINISHED GRADE OVER LEACHING FACILITY = 86.27
6. INV. OF PIPE AT START OF LEACHING BED = 84.04	11. BREAK-OUT ELEVATION = 84.54

LEGEND

EXISTING	PROPOSED	CONTOUR ELEVATION
○	○	55
○	○	100
○	○	+89.7± G. SPOT GRADE
○	○	DRAIN MANHOLE (DMH)
○	○	CATCH BASIN (CB)
○	○	HYDRANT (HYD)
○	○	UTILITY POLE (UP)
○	○	LIGHT
○	○	WATER GATE (WG)
○	○	WATER SERVICE (WS)

GRAPHIC SCALE
(IN FEET)
1 inch = 40 ft.



Mill Street Extension

DATE	DESCRIPTION OF REVISION
07/12/04	PER BOARD OF HEALTH COMMENTS

PROJECT:
Lot 11, Mill Street Extension
Middleton, MA 01949

PROJECT #: 04-9001-11
SCALE: As Noted
DESIGN BY: Gary Scola

DATE: June 16, 2004
DWG FILE NAME: Septic_Main.dwg
CHECKED BY: Erik D. Heyland, P.E.

PREPARED BY:
Engineering Alliance, Inc.
Land Planning Consultants
196 Central Street Phone (781) 231-1349
Saugus, MA 01906 Fax (781) 417-0020

OWNER/APPLICANT:
Bay Custom Homes
Wildwood Farm, LLC
5 Devonshire Road
Middleton, MA 01949

DRAWING TITLE:
Septic Design Plan

DWG. NO.
1 of 1