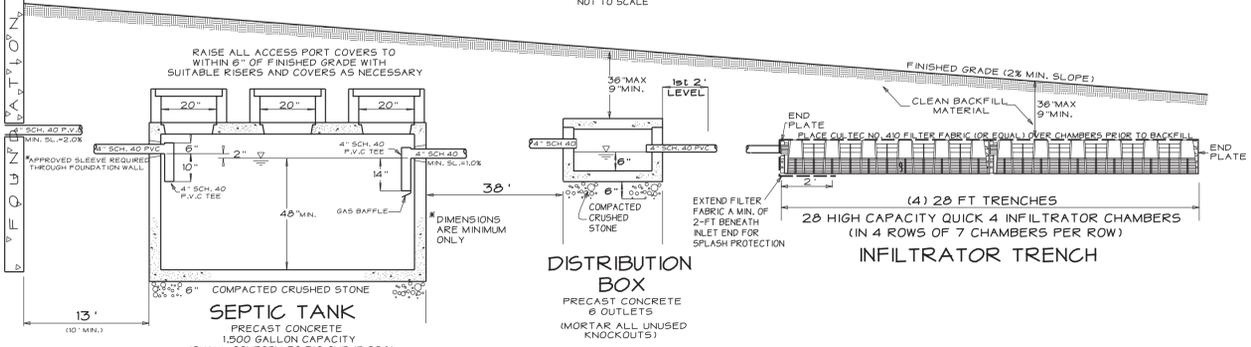


SEWAGE DISPOSAL SYSTEM PROFILE & DETAILS

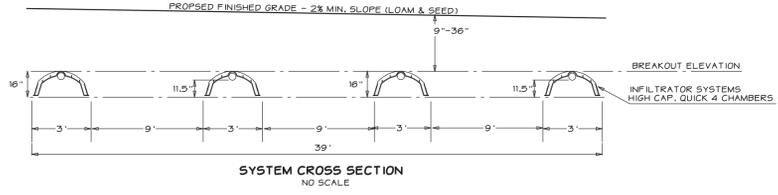
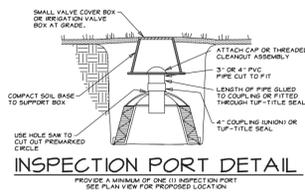


SEPTIC TANK
 PRECAST CONCRETE
 1,500 GALLON CAPACITY
 (SHALL CONFORM TO 310 CMR 15.226)
 (SHEA CONCRETE PRODUCTS, INC. OR APPROVED EQUIVALENT)

1. INLET AND OUTLET TEES MUST BE SCHED. 40
2. ACCESS COVER MUST BE AT LEAST 20".
3. SEPTIC TANK MUST BE INSPECTED AND MAINTAINED IN ACCORDANCE WITH 310 CMR 15.300.
4. TANK SHALL HAVE AN AIR SPACE A MIN. OF 3 INCHES ABOVE TEES AND 9 INCHES ABOVE FLOW LINE.

DISTRIBUTION BOX
 PRECAST CONCRETE
 6 OUTLETS
 (MORTAR ALL UNUSED KNOCKOUTS)

INFILTRATOR TRENCH
 (4) 20 FT TRENCHES
 20 HIGH CAPACITY QUICK 4 INFILTRATOR CHAMBERS
 (IN 4 ROWS OF 7 CHAMBERS PER ROW)



SYSTEM CROSS SECTION
 NO SCALE

DESIGN CALCULATIONS

1. SEWAGE DISPOSAL SYSTEM IS NOT DESIGNED FOR USE WITH A GARBAGE GRINDER.
2. SEPTIC TANK: A VOLUME EQUAL TO TWICE THE DAILY DESIGN FLOW IS REQUIRED WITH A MINIMUM VOLUME OF 1,500 GALLONS. A 1,500 GALLON TANK IS PROPOSED.
3. DESIGN CRITERIA:
 NUMBER OF BEDROOMS: 4
 DESIGN FLOW: 440
 SOIL TEXTURAL CLASS: 1
 PERCOLATION RATE: 3 MP1
 APPLICATION RATE: 0.74 GPD/SF
 DESIGN GROUNDWATER ELEVATION: 100.9
 GROUNDWATER OFFSET: 5'
4. LEACHING FACILITY SIZING:
 AREA REQUIRED IS EQUAL TO THE DESIGN FLOW DIVIDED BY THE APPLICATION RATE:
 $\frac{440 \text{ GPD}}{0.74 \text{ GPD/S.F.}} = 595 \text{ S.F.}^*$
 * ACTON B.O.H. REGULATIONS REQUIRE A MINIMUM OF 800 S.F. OF LEACHING AREA FOR 4 BEDROOMS
 LEACHING AREA PROVIDED:
 LEACHING AREA FOR QUICK 4 HIGH CAPACITY IN TRENCH CONFIGURATION IS 7.93 S.F./L.F.
 20' TRENCHES X 4 X 7.93 S.F. = 634 S.F.
 HYDRAULIC LOADING CAPACITY:
 634 S.F. X 0.74 GPD/S.F. = 469 GPD

GENERAL NOTES

1. THIS PLAN IS FOR THE CONSTRUCTION OF THE PROPOSED SEWAGE DISPOSAL SYSTEM ONLY. OTHER LOCAL REGULATIONS MAY BE APPLICABLE TO THE PROJECT (I.E. ZONING, WETLANDS, ETC.).
2. CONTRACTOR SHALL REPORT ANY DISCREPANCIES BETWEEN OBSERVED FIELD CONDITIONS AND THIS DESIGN PLAN PRIOR TO INITIATING CONSTRUCTION.
3. PROPERTY LINES AND TOPOGRAPHY BASED ON FIELD SURVEY BY FORESITE ENGINEERING WITH REFERENCE TO MIDDLESEX REGISTRY OF DEEDS BOOK 52502 PAGE 594 & PLAN 99 OF 1956
4. THE SYSTEM IS NOT DESIGNED FOR USE WITH A GARBAGE GRINDER.
5. THE SEPTIC TANK SHALL BE PUMPED WHEN THE SLUDGE DEPTH EXCEEDS 1/3 OF THE LIQUID CAPACITY OF THE SEPTIC TANK (ABOUT ONCE EVERY 2 YEARS) OR AS REQUIRED BY THE LOCAL BOARD OF HEALTH.
6. ANY PROPOSED WORK WITHIN 100 FEET OF A BORDERING VEGETATED WETLAND OR OTHER PROTECTED RESOURCE AREA IS UNDER THE JURISDICTION OF THE WETLANDS PROTECTION ACT AND THE LOCAL CONSERVATION COMMISSION.
7. WATER SUPPLY IS FROM MUNICIPAL WATER SYSTEM.
8. ALL KNOWN DRINKING WATER WELLS WITHIN 200 FEET OF THE PROPOSED SEWAGE DISPOSAL SYSTEM ARE SHOWN OR INDICATED.
9. SITE IS NOT WITHIN A DEP DESIGNATED NITROGEN SENSITIVE AREA (ZONE II OR IWPA).
10. PROPOSED SYSTEM IS WITHIN TOWN OF ACTON GROUNDWATER PROTECTION DISTRICT ZONE 4.

CONSTRUCTION NOTES

1. CONTRACTOR SHALL CONTACT 'DIGSAFE' AT 1-800-344-7233 AT LEAST 72 HOURS BEFORE EXCAVATING ON PUBLIC OR PRIVATE PROPERTY.
2. CONSTRUCTION MATERIALS AND CONSTRUCTION METHODOLOGY SHALL CONFORM TO THIS PLAN, TITLE 5, AND THE REQUIREMENTS OF THE BOARD OF HEALTH.
3. ANY DEVIATION IN CONSTRUCTION FROM THIS PLAN SHALL VOID ANY CERTIFICATION MADE RELATIVE TO THE SYSTEM UNLESS APPROVED IN WRITING BY THE LOCAL APPROVING AUTHORITY AND FORESITE ENGINEERING ASSOCIATES, INC.
4. ALL TANKS INCLUDING SEPTIC TANKS, DISTRIBUTION BOXES, DOSING CHAMBERS AND GREASE TRAPS, SHALL EITHER BE WATER TIGHT BY MANUFACTURER'S SPECIFICATIONS AND WARRANTY OR MADE WATER TIGHT WITH ASPHALT OR POLYMER SEALER.
5. ALL PRECAST CONCRETE TANKS AND DISTRIBUTION BOXES SHALL BE SET ON A MINIMUM OF SIX INCHES OF WELL COMPACTED CRUSHED STONE AND SHALL BE MADE WATER TIGHT.
6. DISTRIBUTION BOX OUTLET PIPES SHALL BE LAID LEVEL FOR THE FIRST TWO FEET OUT OF THE DISTRIBUTION BOX.
7. DISTRIBUTION BOX SHALL BE SET ON A FIRM BASE OF EITHER SIX INCHES OF COMPACTED CRUSHED STONE OR A SIX-INCH THICK CONCRETE PAD WITH AN AREA 1.5 TIMES THE BOTTOM AREA OF THE DISTRIBUTION BOX.
8. AN INLET TEE SHALL BE INSTALLED IN THE DISTRIBUTION BOX WHEN THE SYSTEM IS A PUMP SYSTEM OR WHEN THE SLOPE OF THE INLET PIPE EXCEEDS 0.5%.
9. SYSTEM SHALL BE VENTED THROUGH THE BUILDING PLUMBING OR AS SHOWN ON THE SYSTEM PROFILE.
10. ALL SURFACES SHALL BE SCARIFIED PRIOR TO THE PLACEMENT OF FILL.
11. ALL UNSUITABLE MATERIAL ENCOUNTERED IN THE EXCAVATION SHALL BE REMOVED.
12. ALL CRUSHED STONE USED IN THE CONSTRUCTION OF THE SEWAGE DISPOSAL SYSTEM SHALL BE THE SIZE SPECIFIED, DURABLE AND DOUBLE WASHED.
13. WHEN GRAVEL FILL IS REQUIRED, ALL ORGANIC MATERIAL WITHIN 5 FEET OF THE PROPOSED LEACHING FACILITY SHALL BE REMOVED AND REPLACED WITH WELL COMPACTED GRANULAR FILL MEETING THE REQUIREMENTS OF 310 CMR 15.255.
14. ALL BACKFILL AND BREAKOUT FILL REQUIRED SHALL BE CLEAN EARTHEN MATERIAL FREE OF CONSTRUCTION DEBRIS, STUMPS, BOULDERS AND FROZEN EARTH. FILL MATERIAL SHALL BE PLACED IN A MANNER THAT WILL ENSURE RUNOFF AND PREVENT EROSION.
15. SEWAGE DISPOSAL SYSTEM CORNERS SHALL BE STAKED AND FLAGGED BY A PROFESSIONAL ENGINEER OR PROFESSIONAL LAND SURVEYOR PRIOR TO THE START OF CONSTRUCTION.
16. ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC MARKING TAPE OR A COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED.

ELEVATION SCHEDULE

INVERTS & OTHER ELEVATIONS	ELEVATION
TOP OF FOUNDATION	199.00
AT FOUNDATION	196.50
AT SEPTIC TANK INLET	196.05
AT SEPTIC TANK OUTLET	195.80
AT D-BOX INLET	195.23
AT D-BOX OUTLET	195.06
AT TRENCH INLET	194.96
AT TRENCH BOTTOM	194.00
BREAKOUT ELEVATION	195.33
RESERVE ELEVATIONS	
RESERVE INLET	194.96
RESERVE TRENCH BOTTOM	194.00
RESERVE BREAKOUT ELEV.	195.33

DEEP OBSERVATION HOLE LOGS

TEST HOLE: 715-1	DATE: 12/01/09	SOIL EVALUATOR: SCOTT HAYES, PE	B.O.H. AGENT: EVAN CARLONI			
SURFACE ELL: 196.2						
DEPTH	HORIZON	TEXTURE	COLOR	MOTTLING	REMARKS	
0-6"	A	SL	10YR3/2	NONE	WEAK, FRIBLE	
6-18"	Bw	LS	10YR5/0	NONE	WEAK, MASSIVE	
18-120"	C	LS	2.5Y5/4	NONE	WEAK TO MOD. FIRM SOME GRAVEL FEW COB.	
DEPTH TO: BEDROCK: NONE ENCOUNTERED STANDING WATER: NONE ENCOUNTERED SEEPAGE: NONE ENCOUNTERED ESTIMATED SEASONAL HIGH GROUNDWATER: >120" (<186.2)						
TEST HOLE: 715-2				DATE: 12/01/09	SOIL EVALUATOR: SCOTT HAYES, PE	B.O.H. AGENT: EVAN CARLONI
SURFACE ELL: 196.4						
DEPTH	HORIZON	TEXTURE	COLOR	MOTTLING	REMARKS	
0-12"	A	SL	10YR3/2	NONE	WEAK, FRIBLE	
12-20"	Bw	LS	10YR5/0	NONE	WEAK, MASSIVE	
20-120"	C	LS	2.5Y5/4	NONE	WEAK, MASSIVE FINE LOAMY SAND	
DEPTH TO: BEDROCK: NONE ENCOUNTERED STANDING WATER: NONE ENCOUNTERED SEEPAGE: NONE ENCOUNTERED ESTIMATED SEASONAL HIGH GROUNDWATER: >120" (<186.4)						
TEST HOLE: 715-3				DATE: 12/01/09	SOIL EVALUATOR: SCOTT HAYES, PE	B.O.H. AGENT: EVAN CARLONI
SURFACE ELL: 195.9						
DEPTH	HORIZON	TEXTURE	COLOR	MOTTLING	REMARKS	
0-17"	A	SL	10YR3/2	NONE	WEAK, FRIBLE	
17-26"	Bw	LS	10YR5/0	NONE	WEAK, MASSIVE	
26-120"	C	LS	2.5Y5/4	NONE	WEAK TO MOD. FIRM SOME GRAVEL FEW COB.	
DEPTH TO: BEDROCK: NONE ENCOUNTERED STANDING WATER: NONE ENCOUNTERED SEEPAGE: NONE ENCOUNTERED ESTIMATED SEASONAL HIGH GROUNDWATER: >120" (<185.9)						
TEST HOLE: 715-4				DATE: 12/01/09	SOIL EVALUATOR: SCOTT HAYES, PE	B.O.H. AGENT: EVAN CARLONI
SURFACE ELL: 195.7						
DEPTH	HORIZON	TEXTURE	COLOR	MOTTLING	REMARKS	
0-12"	A	SL	10YR3/2	NONE	WEAK, FRIBLE	
12-8"	Bw	SL	10YR5/6	NONE	WEAK, MASSIVE	
18-120"	C	SL	2.5Y6/3	10YR5/0	WEAK TO MOD. FIRM SOME GRAVEL FEW COB.	
DEPTH TO: BEDROCK: NONE ENCOUNTERED STANDING WATER: NONE ENCOUNTERED SEEPAGE: NONE ENCOUNTERED ESTIMATED SEASONAL HIGH GROUNDWATER: 82" (<188.9)						



LEGEND

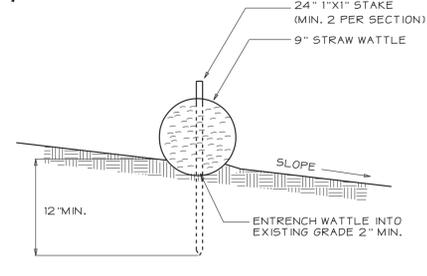
- S.T. 1500 PRECAST CONCRETE SEPTIC TANK
- D-BOX 6-OUTLET PRECAST CONCRETE DISTRIBUTION BOX
- TP DEEP TEST HOLE
- P PERCOLATION TEST
- 196X0 PROPOSED SPOT ELEVATION
- ...196... EXISTING CONTOUR (TYP.)
- 196--- PROPOSED CONTOURS (TYP.)
- TW--- PROPOSED WATER SERVICE PER ACTON WATER DISTRICT SPECIFICATIONS
- E.T.C.--- PROPOSED UNDERGROUND ELECTRIC, TELEPHONE & CABLE UTILITIES
- G--- PROPOSED GAS SERVICE

PERCOLATION TESTS

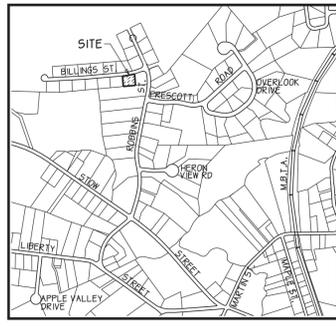
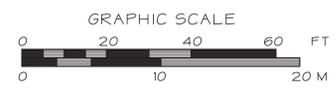
SOIL EVALUATOR: SCOTT HAYES, PE
 B.O.H. AGENT: EVAN CARLONI - ACTON HEALTH DEPT.

	PT-A	PT-B
DATE	7/6/15	7/6/15
DEPTH	52"	54"
RATE	<2 MP1	3 MP1

STAKED STRAW WATTLE EROSION CONTROL BARRIER DETAIL



NOT TO SCALE



LOCUS MAP
 NO SCALE

SEWAGE DISPOSAL SYSTEM DESIGN PLAN

LOCATION: **#19 BILLINGS STREET**
 ACTON, MASSACHUSETTS
 ASSESSORS MAP H-2 PARCEL 13

PREPARED FOR:
ASSABET PROPERTIES, INC.
 100 POWDER MILL ROAD #221
 ACTON, MASSACHUSETTS 01720

DATE: JULY 20, 2015 SCALE: 1 INCH = 20 FEET

ENGINEERING SURVEYING PLANNING

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