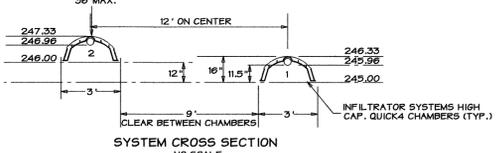
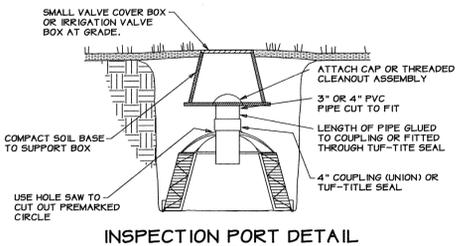
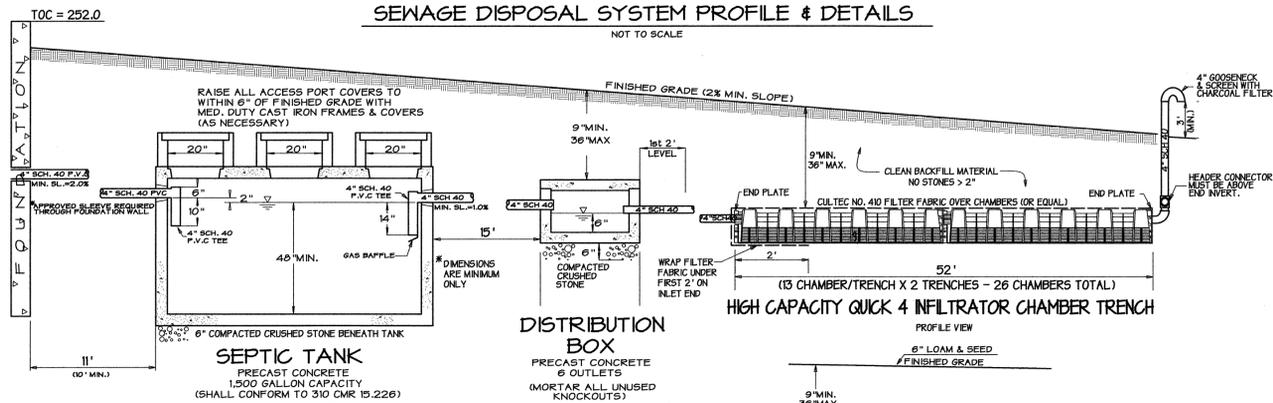


SEWAGE DISPOSAL SYSTEM PROFILE & DETAILS



DEEP OBSERVATION HOLE LOGS

TEST HOLE: 014-17
 DATE: 6/27/14
 SOIL EVALUATOR: SCOTT HAYES, P.E.
 B.O.H. AGENT: EVAN CARLONI, R.S.

SURFACE EL.: 246.5

DEPTH	HORIZON	TEXTURE	COLOR	MOTTLING	REMARKS
0-6"	A	SL	10YR3/2	NONE	WEAK, FRIABLE
6-26"	Bw	SL	10YR5/0	NONE	WEAK, MASSIVE
26-102"	C	SL	2.5Y5/4	>5% # 52"	WEAK TO MOD. FIRM, SOME COB. SOME GRAVEL.

DEPTH TO:
 BEDROCK: 100"
 STANDING WATER: NONE
 SEEPAGE: 10"
 ESTIMATED SEASONAL HIGH GROUNDWATER: 52" (242.2)

TEST HOLE: 014-18
 DATE: 6/27/14
 SOIL EVALUATOR: SCOTT HAYES, P.E.
 B.O.H. AGENT: EVAN CARLONI, R.S.

SURFACE EL.: 246.0

DEPTH	HORIZON	TEXTURE	COLOR	MOTTLING	REMARKS
0-6"	A	SL	10YR3/2	NONE	WEAK, FRIABLE
6-36"	Bw	SL	10YR5/0	NONE	WEAK, MASSIVE
36-102"	C	SL	2.5Y5/4	>5% # 52"	WEAK TO MOD. FIRM, SOME COB. SOME GRAVEL.

DEPTH TO:
 BEDROCK: 102"
 STANDING WATER: NONE
 SEEPAGE: 10"
 ESTIMATED SEASONAL HIGH GROUNDWATER: 52" (241.7)

TEST HOLE: 014-19
 DATE: 6/27/14
 SOIL EVALUATOR: SCOTT HAYES, P.E.
 B.O.H. AGENT: EVAN CARLONI, R.S.

SURFACE EL.: 245.7

DEPTH	HORIZON	TEXTURE	COLOR	MOTTLING	REMARKS
0-6"	A	SL	10YR3/2	NONE	WEAK, FRIABLE
6-32"	Bw	SL	10YR5/0	NONE	WEAK, MASSIVE
32-96"	C	SL	2.5Y5/4	>5% # 52"	WEAK TO MOD. FIRM, SOME COB. SOME GRAVEL.

DEPTH TO:
 BEDROCK: 96"
 STANDING WATER: NONE
 SEEPAGE: NONE
 ESTIMATED SEASONAL HIGH GROUNDWATER: 52" (241.4)

TEST HOLE: 014-20
 DATE: 6/27/14
 SOIL EVALUATOR: SCOTT HAYES, P.E.
 B.O.H. AGENT: EVAN CARLONI, R.S.

SURFACE EL.: 246.3

DEPTH	HORIZON	TEXTURE	COLOR	MOTTLING	REMARKS
0-6"	A	SL	10YR3/2	NONE	WEAK, FRIABLE
6-32"	Bw	SL	10YR5/0	NONE	WEAK, MASSIVE
32-108"	C	SL	2.5Y5/4	>5% # 52"	WEAK TO MOD. FIRM, SOME COB. SOME GRAVEL.

DEPTH TO:
 BEDROCK: 108"
 STANDING WATER: NONE
 SEEPAGE: NONE
 ESTIMATED SEASONAL HIGH GROUNDWATER: 52" (241.8)

PERCOLATION TESTS

SOIL EVALUATOR: SCOTT HAYES, P.E. - FORESITE ENG.
 B.O.H. AGENT: EVAN CARLONI, ACTON HEALTH DEPT.

	PT-1	PT-2
DATE	6/27/14	6/27/14
DEPTH	50"	52"
RATE (MP1)	7 MP1	7 MP1

DESIGN CALCULATIONS

- SEWAGE DISPOSAL SYSTEM IS NOT DESIGNED FOR USE WITH A GARBAGE GRINDER.
- SEPTIC TANK: A VOLUME EQUAL TO TWICE THE DESIGN FLOW OR A MINIMUM VOLUME OF 1,500 GALLONS IS REQUIRED. A 1,500 GALLON TANK IS REQUIRED.
- DESIGN CRITERIA:
 NUMBER OF BEDROOMS: 4
 DESIGN FLOW: 440
 SOIL TEXTURAL CLASS: II
 PERCOLATION RATE: 7 MP1
 APPLICATION RATE: 0.60 GPD/SF
 DESIGN GROUNDWATER DEPTH: 52"
 GROUNDWATER OFFSET: 4-FT
- LEACHING FACILITY SIZING:
 AREA REQUIRED IS EQUAL TO THE DESIGN FLOW DIVIDED BY THE APPLICATION RATE:
 $\frac{440 \text{ GPD}}{0.60 \text{ GPD/S.F.}} = 734 \text{ S.F. (} \approx 800 \text{ S.F. MIN.)}$
 $\frac{440 \text{ GPD}}{0.60 \text{ GPD/S.F.}} = 734 \text{ S.F. (} \approx 800 \text{ S.F. MIN.)}$

UTILIZE HIGH CAPACITY QUICK 4 INFILTRATOR SYSTEMS INC. CHAMBERS IN TRENCH CONFIG. LOADING RATE 7.93 SF/LF (TABLE 2) MIN. LINEAR FOOTAGE REQ'D = $800 / 7.93 = 101 \text{ L.F.}$

PROVIDE 2 ROWS OF 13 HIGH CAP. QUICK4 CHAMBERS PER ROW IN TRENCH CONFIGURATION

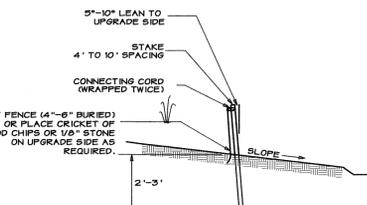
TRENCH SPACING:
 9" ON CENTER; 6" MIN. CLEAR BETWEEN TRENCHES

5. HYDRAULIC LOADING CAPACITY:
 $7.93 \text{ SF/LF} \times 52 \text{ LF} \times 2 \text{ ROWS} \times 0.60 \text{ GPD/SF} = 494 \text{ GPD EFF. LEACHING AREA} = 7.93 \text{ SF/LF} \times 52 \text{ L.F.} \times 2 = 824 \text{ S.F.}$

6. CONVENTIONAL TITLE 5 SYSTEM DESIGN:
 (2) 3' W X 2' D X 58' L CRUSHED STONE TRENCHES
 6" CLEAR SPACING; PROVIDE 012 S.F. LEACHING AREA.

ELEVATION SCHEDULE

TOP OF FOUNDATION	252.00
INVERTS	
AT FOUNDATION	249.00
AT SEPTIC TANK INLET	247.75
AT SEPTIC TANK OUTLET	247.50
AT D-BOX INLET	247.23
AT D-BOX OUTLET	247.06
AT CHAMBER INLET	245.96 246.96
BOTTOM OF CHAMBER	245.00 246.00
TOP OF CHAMBER	246.33 247.33



LEGEND

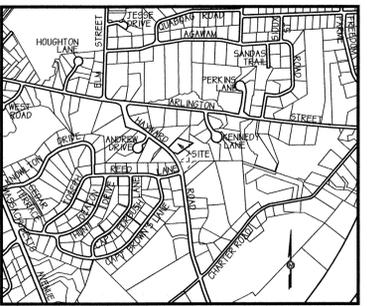
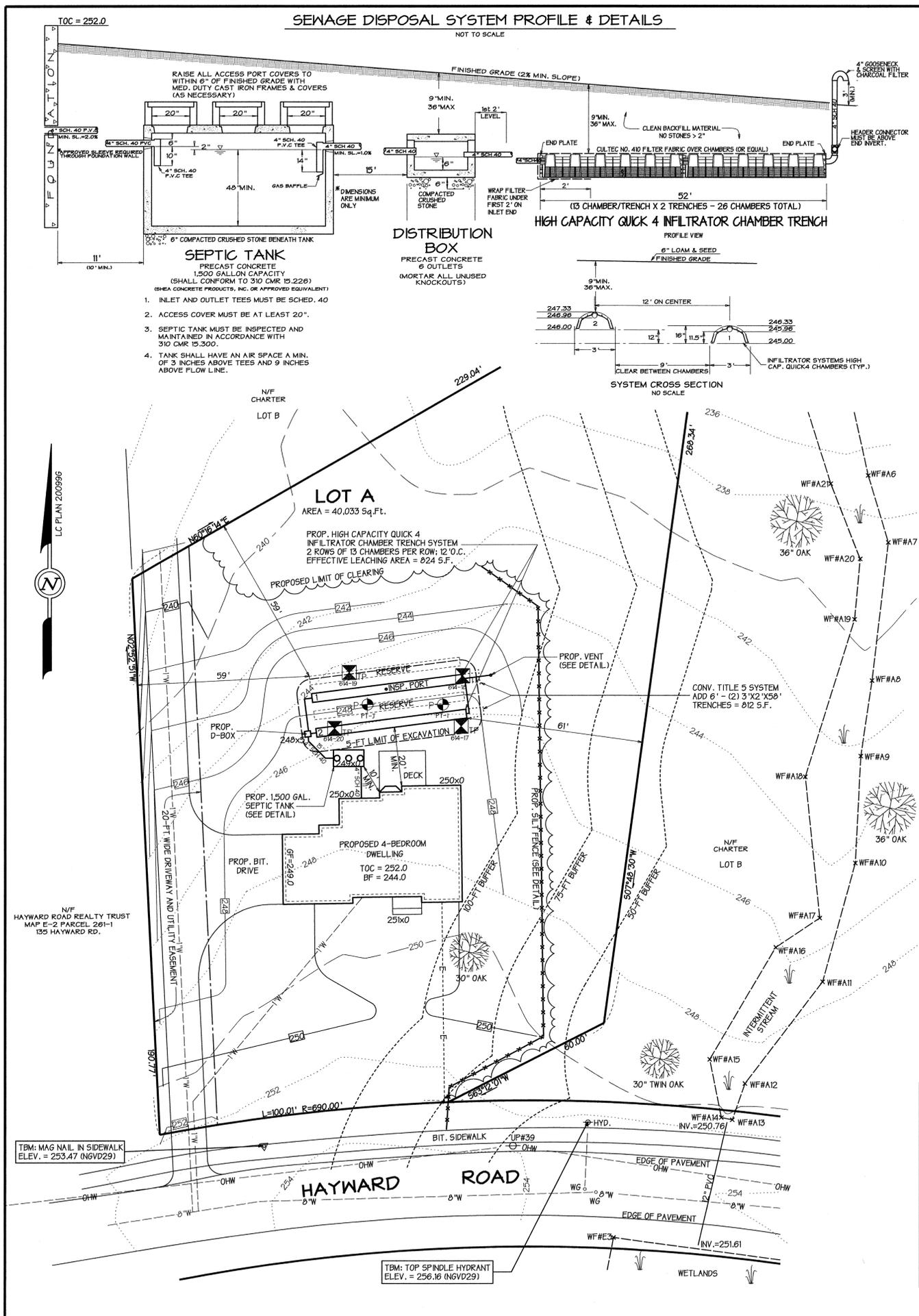
- S.T. PROPOSED 1500 GAL. PRECAST CONCRETE SEPTIC TANK
- D-BOX PROPOSED 8-OUTLET PRECAST CONCRETE DISTRIBUTION BOX
- TP DEEP TEST HOLE
- P PERCOLATION TEST
- 198X2 PROPOSED SPOT ELEVATION (TYP.)
- 200- EXISTING 5-FT CONTOUR (TYP.)
- 201- EXISTING 1-FT CONTOUR (TYP.)
- 202- PROPOSED CONTOUR (TYP.)

GENERAL NOTES

- 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.).
- CONTRACTOR SHALL REPORT ANY DISCREPANCIES BETWEEN OBSERVED FIELD CONDITIONS AND THIS DESIGN PLAN PRIOR TO INITIATING CONSTRUCTION.
- PROPERTY BOUNDARIES SHOWN ARE A PROPOSED SUBDIVISION OF LAND SHOWN ON ACTON ASSESSORS MAP E-2 PARCEL 261 A PORTION OF THE PROPERTY IDENTIFIED AS NO. 121 HAYWARD ROAD.
- THE SYSTEM IS NOT DESIGNED FOR USE WITH A GARBAGE GRINDER.
- 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.
- 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.
- ALL KNOWN DRINKING WATER WELLS WITHIN 200 FEET OF THE PROPOSED SEWAGE DISPOSAL SYSTEM ARE SHOWN OR INDICATED.
- SITE IS WITHIN TOWN OF ACTON GROUNDWATER PROTECTION DISTRICT ZONE 4.
- SITE IS NOT WITHIN A DEP APPROVED INTERIM WELLHEAD PROTECTION AREA (WPA) OR DEP APPROVED ZONE II.

CONSTRUCTION NOTES

- CONTRACTOR SHALL CONTACT 'DIGSAFE' AT 1-888-344-7233 AT LEAST 72 HOURS BEFORE EXCAVATING ON PUBLIC OR PRIVATE PROPERTY.
- CONSTRUCTION MATERIALS AND CONSTRUCTION METHODOLOGY SHALL CONFORM TO THIS PLAN, TITLE 5, AND THE REQUIREMENTS OF THE BOARD OF HEALTH.
- 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.
- ALL TANKS INCLUDING SEPTIC TANKS, DISTRIBUTION BOXES, DOSING CHAMBERS AND GREASE TRAPS, SHALL EITHER BE WATERTIGHT BY MANUFACTURER'S SPECIFICATIONS AND WARRANTY OR MADE WATERTIGHT WITH ASPHALT OR POLYMER SEALER.
- 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.
- DISTRIBUTION BOX OUTLET PIPES SHALL BE LAID LEVEL FOR THE FIRST TWO FEET OUT OF THE BOX.
- 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.
- 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%.
- SYSTEM SHALL BE VENTED THROUGH THE BUILDING PLUMBING OR AS SHOWN ON THE SYSTEM PROFILE.
- ALL SURFACES SHALL BE SCARIFIED PRIOR TO THE PLACEMENT OF FILL.
- ALL UNSUITABLE MATERIAL ENCOUNTERED IN THE EXCAVATION SHALL BE REMOVED.
- ALL CRUSHED STONE USED IN THE CONSTRUCTION OF THE SEWAGE DISPOSAL SYSTEM SHALL BE THE SIZE SPECIFIED, DURABLE AND DOUBLE WASHED.
- 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.
- 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.
- SEWAGE DISPOSAL SYSTEM CORNERS SHALL BE STAKED AND FLAGGED BY A PROFESSIONAL ENGINEER OR PROFESSIONAL LAND SURVEYOR PRIOR TO THE START OF CONSTRUCTION.
- ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC MARKING TAPE OR OTHER COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED.



SEWAGE DISPOSAL SYSTEM DESIGN PLAN

LOT A HAYWARD ROAD
 ACTON, MASSACHUSETTS
 (A SUBDIVISION OF 121 HAYWARD ROAD)

PREPARED FOR:
ACTON MANAGEMENT
 P.O. BOX 2350
 ACTON, MASSACHUSETTS 01720

DATE: JULY 8, 2014 SCALE: 1 INCH = 20 FEET

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