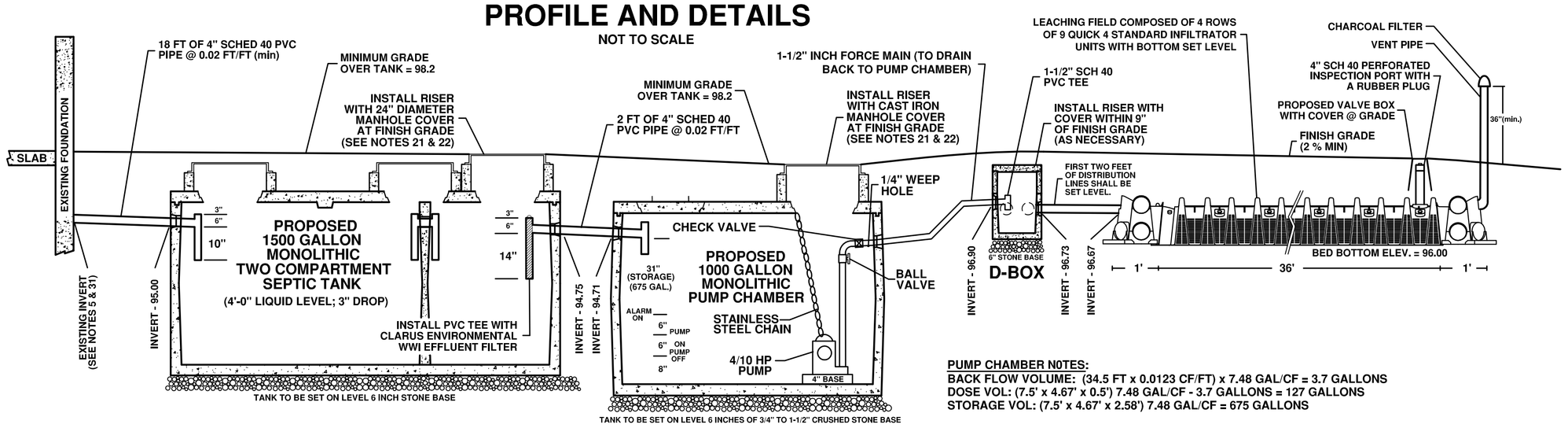
# PROFILE AND DETAILS

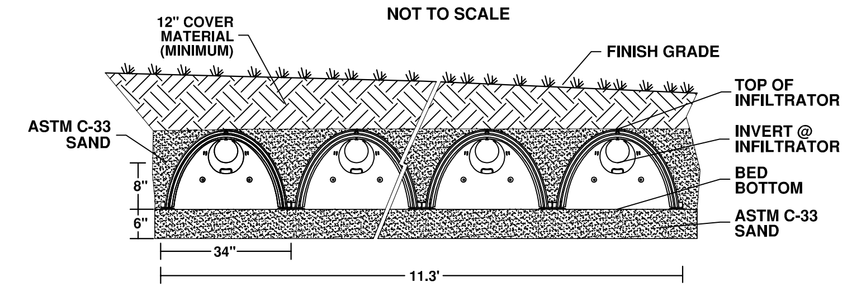
NOT TO SCALE




**PUMP CHAMBER NOTES:**
BACK FLOW VOLUME: (34.5 FT x 0.0123 CF/FT) x 7.48 GAL/CF = 3.7 GALLONS
DOSE VOL: (7.5' x 4.67' x 0.5') 7.48 GAL/CF - 3.7 GALLONS = 127 GALLONS
STORAGE VOL: (7.5' x 4.67' x 2.58') 7.48 GAL/CF = 675 GALLONS

# CROSS SECTION

NOT TO SCALE




INSTALL 4 ROWS OF 9 QUICK 4 STANDARD INFILTRATORS IN A BED CONFIGURATION

| SCHEDULE OF ELEVATIONS | | | |
|---|---|---|---|
| OUT OF FOUNDATION | EXISTING | | |
| MEET EXISTING PIPE | EXISTING | INFILTRATOR SYSTEM | |
| IN SEPTIC TANK | 95.00 | FINISH GRADE | 98.00 |
| OUT SEPTIC TANK | 94.75 | TOP OF INFILTRATOR | 97.00 |
| IN PUMP CHAMBER | 94.71 | INVERT @ INFILTRATOR | 96.67 |
| IN DISTRIBUTION BOX | 96.90 | BED BOTTOM | 96.00 |
| OUT DISTRIBUTION BOX | 96.73 | | |

# SOIL PROFILE DATA

TESTHOLE No. 1

| DEPTH | | ELEV. |
|---|---|---|
| 0" | | 95.14 |
| SANDY LOAM 10YR3/2 | A | (to be removed) |
| 12" | | 94.14 |
| SANDY LOAM 10YR5/8 | B | (to be removed) |
| 24" | | 93.14 |
| 48" | | 91.14(ESHW) |
| SANDY LOAM 2.5Y7/2 | $C_1$ | |
| 84" | | 88.14(ObsGW) |
| 126" | | 84.64 |

DATE: 5/07/2014
ENG: K. RITCHIE, C.S.I.
AGENT: E. CARLONI, ACTON BOH

TESTHOLE No. 2

| DEPTH | | ELEV. |
|---|---|---|
| 0" | | 94.20 |
| SANDY LOAM 10YR3/2 | A | (to be removed) |
| 12" | | 93.20 |
| SANDY LOAM 10YR5/8 | B | (to be removed) |
| 26" | | 93.14 |
| 42" | | 90.70(ESHW) |
| SANDY LOAM 2.5Y7/2 | $C_1$ | |
| 84" | | 87.20(ObsGW) |
| 120" | | 84.20 |

DATE: 5/07/2014
ENG: K. RITCHIE, C.S.I.
AGENT: E. CARLONI, ACTON BOH

THE SOIL EVALUATOR FOR THIS SITE IS KEVIN RITCHIE.
HE PASSED THE MA SOIL EVALUATOR EXAM SPRING 1995.

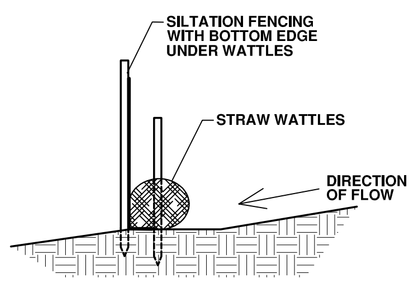
# PERCOLATION TEST DATA

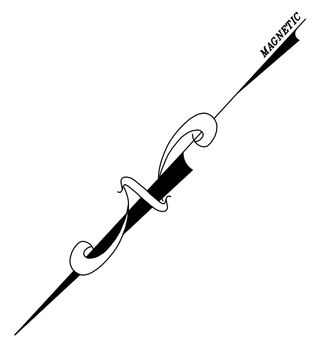
| PERC No. | DATE | DEPTH | RATE |
|---|---|---|---|
| P-A | 5/07/2014 | 48 INCHES | 13 MPI |
| | | | |

PERCOLATION TEST(S) PERFORMED BY: KEVIN RITCHIE, CSI
WITNESSED BY: EVAN CARLONI, ACTON BOH

# SEDIMENT AND EROSION CONTROL DETAIL

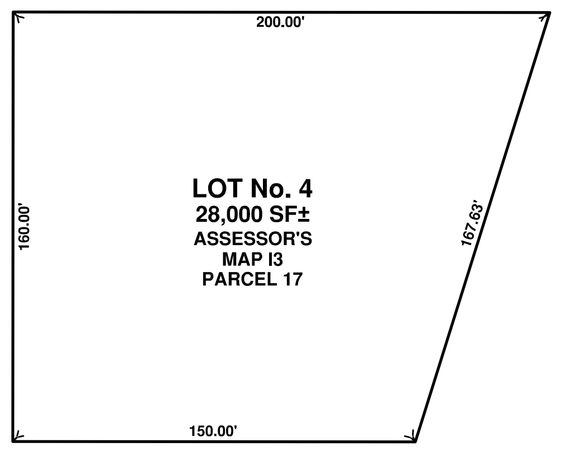
NOT TO SCALE

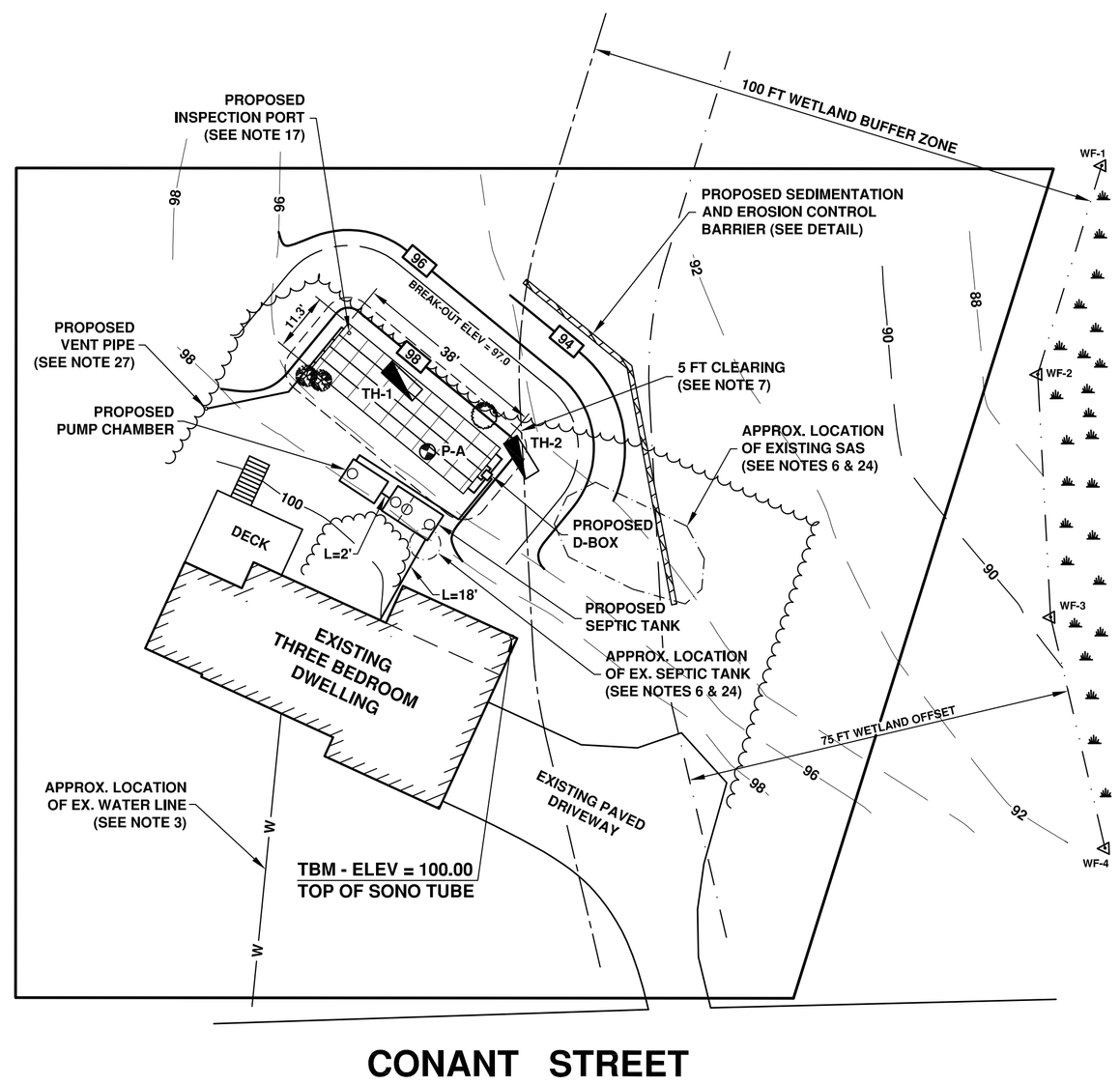


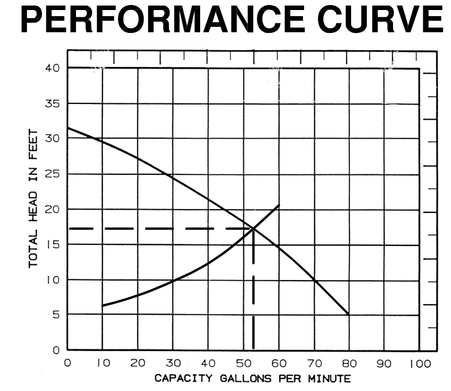

# PLOT PLAN

1" = 40'




# PERFORMANCE CURVE



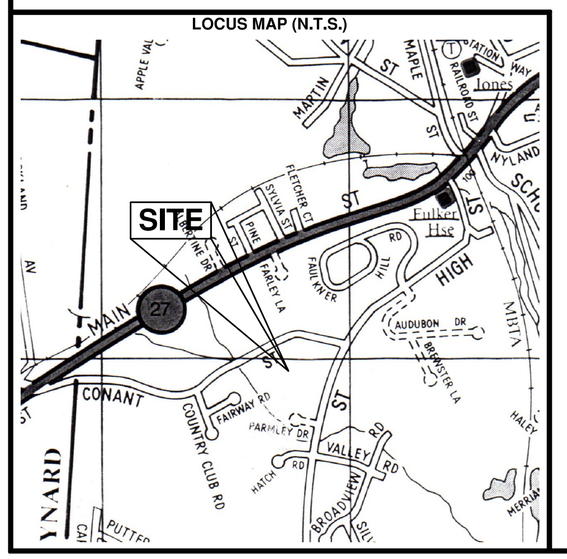

# NOTES AND SPECIFICATIONS

1. BOUNDARY LINE INFORMATION AND DWELLING LOCATION TAKEN FROM A "PLAN OF LAND IN ACTON, MASS." BY ACTON SURVEY AND ENGINEERING, INC., DATED JUNE 30, 1969, RECORDED IN THE M.S.D.R.D. AS PLAN No. 325 OF 1971.
2. TOPOGRAPHICAL INFORMATION TAKEN FROM A FIELD SURVEY PERFORMED BY THIS OFFICE.
3. CONTRACTOR SHALL NOTIFY DIGSAFE (888) 344-7233 AT LEAST 72 HOURS PRIOR TO INITIATING WORK. IT SHALL BE THE RESPONSIBILTY OF THE CONTRACTOR TO LOCATE ANY UTILITIES NOT DELINEATED BY DIGSAFE.
4. CONTRACTOR SHALL NOTIFY THIS OFFICE 24 TO 48 HOURS PRIOR TO REQUIRED CONSTRUCTION INSPECTIONS.
5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL EXISTING SITE CONDITIONS AND ELEVATIONS PRIOR TO INITIATING CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO THE ENGINEER OF RECORD PRIOR TO THE ONSET OF CONSTRUCTION.
6. CONTAMINATED SOIL WITHIN THE VICINITY OF THE PROPOSED LEACHING AREA SHOULD BE REMOVED BY THE CONTRACTOR. LOCATION OF EXISTING LEACHING AREA SHOWN HEREON IS APPROXIMATE.
7. WHERE FILL IS REQUIRED TO REPLACE UNSUITABLE OR IMPERVIOUS MATERIAL, THE EXCAVATION OF THE UNSUITABLE MATERIAL SHALL EXTEND A MINIMUM OF 5 FEET LATERALLY IN ALL DIRECTIONS BEYOND THE OUTER PERIMETER OF THE SOIL ABSORPTION SYSTEM TO A DEPTH OF NATURALLY OCCURRING PERVIOUS MATERIAL.
8. FILL MATERIAL SHALL MEET THE SPECIFICATIONS ESTABLISHED IN 310 CMR 15.255.
9. EXISTING DWELLING IS SERVICED BY A MUNICIPAL WATER SUPPLY.
10. THIS SYSTEM IS NOT DESIGNED TO ACCOMMODATE GARBAGE DISPOSAL UNITS.
11. RETURN WATER FROM HOME WATER FILTRATION SYSTEM SHALL NOT BE PIPED INTO THE SEPTIC SYSTEM.
12. TANKS AND DISTRIBUTION BOX SHOWN HEREON ARE GRAPHICAL REPRESENTATIONS OF THE CONCRETE STRUCTURES REQUIRED, AND SHOULD NOT BE CONSIDERED CONSTRUCTION DRAWINGS. MANUFACTURER OF TANKS AND BOXES SHALL BE APPROVED BY THE ENGINEER OF RECORD AND THE BOARD OF HEALTH.
13. ANY ALTERATION OF WETLANDS OR DISTURBANCE WITHIN THE 100 FOOT BUFFER ZONE SHALL REQUIRE A FILING WITH THE LOCAL CONSERVATION COMMISSION AND THE DEPARTMENT OF ENVIRONMENTAL PROTECTION. THIS DESIGN REQUIRES SUCH A FILING. EDGE OF WETLAND SHOWN HEREON WAS DELINEATED BY OTHERS.
14. THIS PLAN MAY ONLY BE REVISED WITH THE CONSENT OF THE LOCAL BOARD OF HEALTH AND THE ENGINEER OF RECORD.
15. BASED ON AVAILABLE RECORD INFORMATION AND A VISUAL SITE INSPECTION, ALL WELLS WITHIN 150 FEET OF THE PROPOSED LEACHING SYSTEM SHOWN HEREON.
16. THIS PLAN WAS CREATED FOR THE PURPOSES OF SHOWING A PROPOSED SEWAGE DISPOSAL SYSTEM AND IS NOT INTENDED TO BE USED FOR THE REPRODUCTION OF PROPERTY LINES.
17. A FOUR INCH SCHEDULE 40 SOLID PVC PIPE INSPECTION PORT IS TO BE INSTALLED IN THE LEACHING FIELD. PIPE SHALL EXTEND INTO THE TOP OF ONE OF THE INFILTRATORS AND BE FITTED WITH A RUBBER PLUG IN TOP. INSPECTION PORT SHALL BE LOCATED WITHIN A VALVE BOX WITH THE COVER SET AT FINISH GRADE. IT IS RECOMMENDED THAT A PIECE OF #3 REBAR IS TO BE TAPED TO THE SIDE OF THE INSPECTION PORT AND SET FLUSH WITH THE TOP OF THE THREADED CAP IN ORDER TO LOCATE IT ONCE BURIED.
18. ALL SYSTEM COMPONENTS SHALL BE MARKED WITH MAGNETIC MARKING TAPE OR A COMPARABLE MEANS IN ORDER TO LOCATE THEM ONCE BURIED.
19. THE OUTLET TEE OF THE SEPTIC TANK SHALL BE EQUIPPED WITH A CLARUS ENVIRONMENTAL WW EFFLUENT FILTER AVAILABLE FROM ZOELLER 1-800-928-7867 OR EQUIVALENT.
20. THE DEPARTMENT OF ENVIRONMENTAL PROTECTION REQUIRES THAT THE EFFLUENT FILTER IN THE OUTLET TEE OF THE SEPTIC TANK BE SERVICED AT LEAST ONCE PER YEAR. THIS OFFICE RECOMMENDS THAT THE EFFLUENT FILTER BE CHECKED AND CLEANED A MINIUM OF EVERY 6 MONTHS.
21. COVERS OVER THE INLET AND OUTLET OF THE SEPTIC TANK SHALL BE MARKED TO INDICATE THAT AN EFFLUENT FILTER HAS BEEN INSTALLED IN THE OUTLET TEE.
22. MANHOLE COVERS ARE REQUIRED TO BE CAST IRON. PLASTIC COVERS SHALL NOT BE ALLOWED.
23. THE SUBJECT PROPERTY IS NOT LOCATED IN A NITROGEN SENSITIVE AREA AS SHOWN ON THE MASS GIS WEBSITE "DEP TITLE 5 SETBACK AREA." TOWN OF ACTON.
24. EXISTING LEACHING AREA SHALL BE ABANDONED IN ACCORDANCE WITH 310 CMR 15.354 OR REMOVED AS NECESSARY.
25. PUMP IS TO BE MANUFACTURED BY MYERS, MODEL ME40, 4/10 HP, 1600 RPM, SINGLE PHASE 115 VOLT ANY SUBSTITUTION SHALL BE APPROVED BY THE ENGINEER PRIOR TO CONSTRUCTION. PUMP SHALL PROVIDE 53 GAL/MIN AT A TDH OF 17 FEET.
26. PUMP ALARM SHALL BE ON AN ELECTRICAL CIRCUIT SEPARATE FROM THE CIRCUIT SERVING THE PUMP.
27. THE LOCATION OF THE PROPOSED VENT PIPE IS VARIABLE. HOMEOWNER SHOULD DISCUSS THE LOCATION OF THE PROPOSED VENT PIPE PRIOR TO THE ONSET OF CONSTRUCTION.
28. SUBJECT PROPERTY IS LOCATED IN THE AQUIFER PROTECTION AREA (ZONE 3) AS DEPICTED ON THE "GROUNDWATER PROTECTION DISTRICT MAP OF THE TOWN OF ACTON, JANUARY 1989."
29. SEPTIC TANK SHALL HAVE ITS CONTENTS PUMPED OUT A MINIMUM OF ONCE EVERY TWO YEARS BY A SEPTAGE HAULER LICENSED BY THE TOWN OF ACTON.
30. A MINIMUM SIX INCH LAYER OF ASTM C-33 SAND IS TO BE PLACED UNDER THE FIELD OF INFILTRATORS. IN ADDITION, INFILTRATORS SHALL BE BACKFILLED TO THEIR TOPS WITH ASTM C-33 SAND.
31. THE EXISTING INVERT OUT OF THE DWELLING HAS NOT BEEN DETERMINED DUE TO ITS LOCATION BELOW THE BASEMENT SLAB. CONTRACTOR SHALL VERIFY THE LOCATION AND ELEVATION OF THE BUILDING SEWER AT AT THE ONSET OF CONSTRUCTION FOR COMPLIANCE WITH THIS DESIGN. ANY DESCREPANCIES SHALL BE REPORTED TO THIS OFFICE.

# VARIANCES

1. THERE ARE NO KNOWN VARIANCES REQUIRED.

LOCUS MAP (N.T.S.)




# LEGEND

- EXISTING TREE
- UTILITY POLE
- EXISTING SPOT GRADE
- PROPOSED SPOT GRADE
- SOIL PROFILE TEST
- PERCOLATION TEST
- EXISTING CONTOUR
- PROPOSED CONTOUR
- WATER LINE
- GAS LINE
- BRUSHLINE/TREELINE
- FENCE LINE
- STONE WALL

SCALE: 1" = 20'
0 20 40 60

# SYSTEM CALCULATIONS

TITLE 5 DESIGN CAPACITY PROVIDED:
3 BEDROOMS X 110 GAL/BEDROOM = 330 GAL/DAY

PROVIDED:
PERCOLATION RATE: 13 MINUTES/INCH
APPLICATION RATE: 0.56 GAL/SF

TOTAL LEACHING AREA: 4 X 38'L X 2.83'W = 430 SF
EFFECTIVE LEACHING AREA = 430 SF X 1.67 = 718 SF

TOTAL VOL APPLIED/DAY: 718 SF X 0.56 GAL/SF = 402 GAL

APPROVED CAPACITY: 3 BEDROOM

SEPTIC TANK(S) SIZING:
200% X 330 GPD = 660 GALLONS
USE NEW 1500 GALLON TWO COMPARTMENT SEPTIC TANK

# SEWAGE DISPOSAL SYSTEM PLAN

## 4 CONANT STREET
## ACTON, MASSACHUSETTS

MAY 23, 2014

ASSESSOR'S MAP I3, PARCEL 17


CIVIL SOLUTIONS, INC.
P.O. BOX 107, 285 LITTLETON ROAD, UNIT 2, WESTFORD, MA
PHONE: (978) 692-5000 FAX: (978) 692-0386
E-MAIL: civilsolutions@verizon.net
WEBSITE: www.civil-solutions.net


DESIGN: KCF
DRAWN: KCF
CHECK: KJR

| SHEET | SCALE | JOB NO. | DWG. NO. |
|---|---|---|---|
| 1 OF 1 | 1"=20' | 14-021 | 14-021P |

OWNER OF RECORD:
STEPHEN & IDELL STEIN
4 CONANT STREET
ACTON, MA 01720

PLAN PREPARED FOR:
STEPHEN & IDELL STEIN
4 CONANT STREET
ACTON, MA 01720

| # | DATE | REVISION | BY |
|---|---|---|---|
| 1 | 6/4/2014 | CHANGE TO INFILTRATORS | KCF |