

107 HighPoint Dr





COMMONWEALTH OF MASSACHUSETTS  
 EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
 DEPARTMENT OF ENVIRONMENTAL PROTECTION

RECEIVED  
 7/6/05  
*[Signature]*

TITLE V  
 OFFICIAL INSPECTION FORM – NOT FOR VOLUNTARY ASSESSMENTS  
 SUBSURFACE SEWAGE DISPOSAL SYSTEM FORM  
 PART A  
 CERTIFICATION

Property Address: 109 High Point Drive  
 Amherst MA  
 Owner's Name: Clifford & Susan Kurz  
 Owner's Address: same  
 Date of Inspection: 06/29/2005

Name of Inspector: (please print) Nick Toretta  
 Company Name: CLEAN SEPTICS  
 Mailing Address: P.O. BOX 394  
LUDLOW, MA  
 Telephone Number: 583-2138

**CERTIFICATION STATEMENT**

I certify that I have personally inspected the sewage disposal system at this address and that the information reported below is true, accurate and complete as of the time of the inspection. The inspection was performed based on my training and experience in the proper function and maintenance of on site sewage disposal systems. I am a DEP approved system inspector pursuant to Section 15.340 of Title 5 (310 CMR 15.000). The system:

- Passes
- Conditionally Passes
- Needs Further Evaluation by the Local Approving Authority
- Fails

Inspector's Signature: *Nick Toretta* Date: 06/29/2005

The system inspector shall submit a copy of this inspection report to the Approving Authority (Board of Health or DEP) within 30 days of completing this inspection. If the system is a shared system or has a design flow of 10,000 gpd or greater, the inspector and the system owner shall submit the report to the appropriate regional office of the DEP. The original should be sent to the system owner and copies sent to the buyer, if applicable, and the approving authority.

Notes and Comments:

This report only describes conditions at the time of inspection and under the conditions of use at that time. This inspection does not address how the system will perform in the future under the same or different conditions of use.





**OFFICIAL INSPECTION FORM-NOT FOR VOLUNTARY ASSESSEMENTS  
SUBSURFACE SEWAGE DISPOSAL SYSTEM INSPECTION FORM  
PART A  
CERTIFICATION (continued)**

**Property Address: 109 High Point Drive  
Amherst MA**

**Owner's Name: Clifford & Susan Kurz**

**Owner's Address: same**

**Date of Inspection: 06/29/2005**

**Inspection Summary: Check A,B,C,D or E / ALWAYS complete all of Section D**

**A. System Passes:**

X  I have not found any information which indicates that any of the failure criteria described in 310 CMR 15.303 or in 310 CMR 15.304 exist. Any failure criteria not evaluated are indicated below.

**Comments: Pump tank every two years. Recommend outlet filter and bacteria/enzymes.**

**B. System Conditionally Passes:**

\_\_\_\_\_ One or more system components as described in the "Conditional Pass" section need to be replaced or repaired. The system, upon completion of the replacement or repair, as approved by the Board of Health, will pass.

Answer yes, no or not determined (Y,N,ND) in the \_\_\_\_\_ for the following statements. If "not determined" please explain.

\_\_\_\_\_ The septic tank is metal and over 20 years old\* or the septic tank (whether metal or not) is structurally unsound, exhibits substantial infiltration or exfiltration or tank failure is imminent. System will pass inspection if the existing tank is replaced with a complying septic tank as approved by the Board of Health.

\*A metal septic tank will pass inspection if it is structurally sound, not leaking and if a Certificate of Compliance indicating that the tank is less than 20 years old is available.

ND explain:

\_\_\_\_\_ Observation of sewage backup or break out or high static water level in the distribution box due to broken or obstructed pipe(s) or due to a broken, settled or uneven distribution box. System will pass inspection if (with approval of Board of Health):

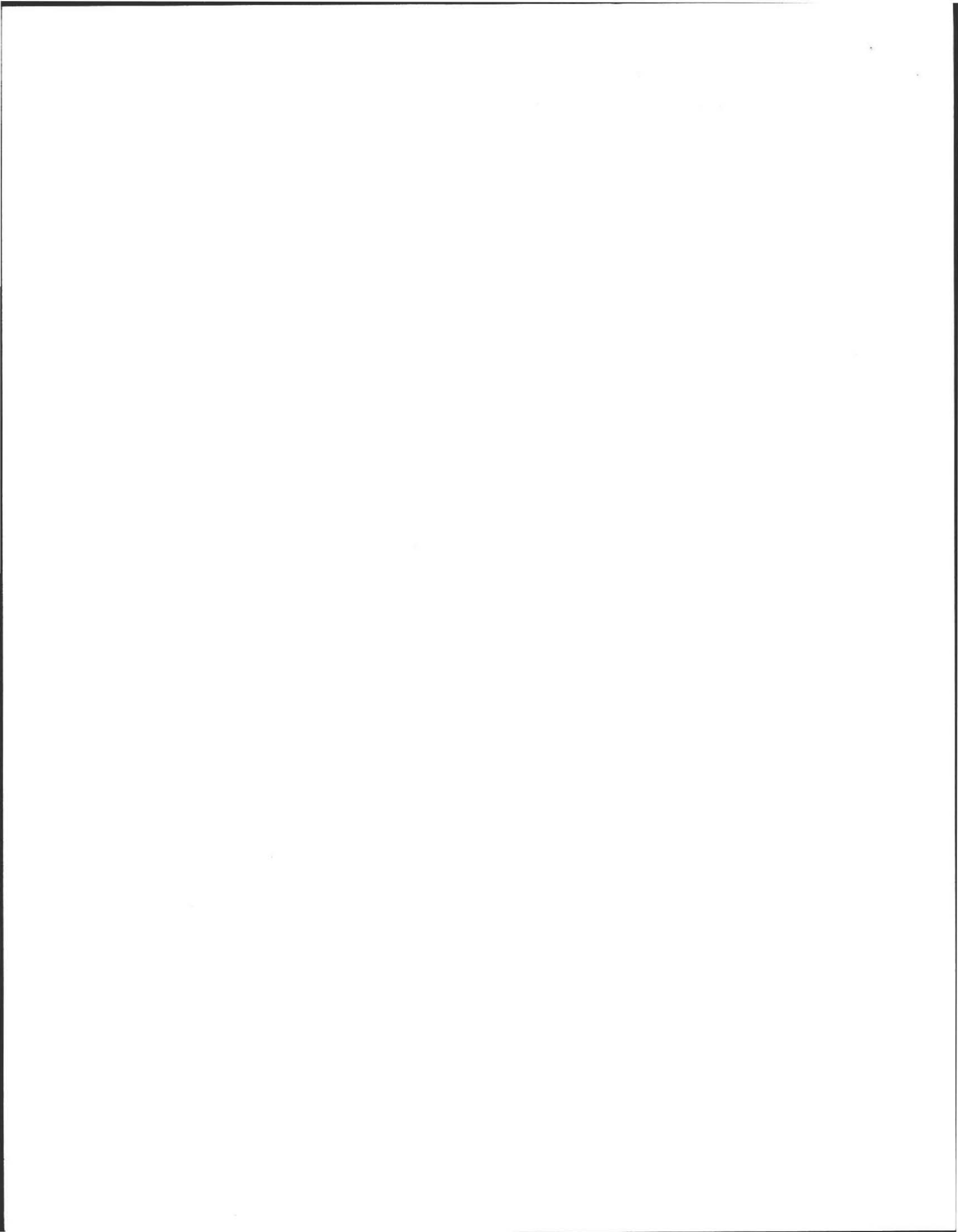
- \_\_\_\_\_ broken pipe(s) are replaced
- \_\_\_\_\_ obstruction is removed
- \_\_\_\_\_ distribution box is leveled or replaced

ND explain:

\_\_\_\_\_ The system required pumping more than 4 times a year due to broken or obstructed pipe(s). The system will pass inspection if (with approval of the Board of Health):

- \_\_\_\_\_ broken pipe(s) are replaced
- \_\_\_\_\_ obstruction is removed

ND explain:



**OFFICIAL INSPECTION FORM - NOT FOR VOLUNTARY ASSESSMENTS  
SUBSURFACE SEWAGE DISPOSAL SYSTEM INSPECTION FORM  
PART A**

**CERTIFICATION (continued)**

**Property Address: 109 High Point Drive  
Amherst MA**

**Owner's Name: Clifford & Susan Kurz**

**Owner's Address: same**

**Date of Inspection: 06/29/2005**

**C. Further Evaluation is Required by the Board of Health:**

       Conditions exist which require further evaluation by the Board of Health in order to determine if the system is failing to protect public health, safety or the environment.

**1. System will pass unless Board of Health determines in accordance with 310 CMR 15.303(1)(b) that the system is not functioning in a manner which will protect public health, safety and the environment:**

- Cesspool or privy is within 50 feet of a surface water
- Cesspool or privy is within 50 feet of a bordering vegetated wetland or a salt marsh

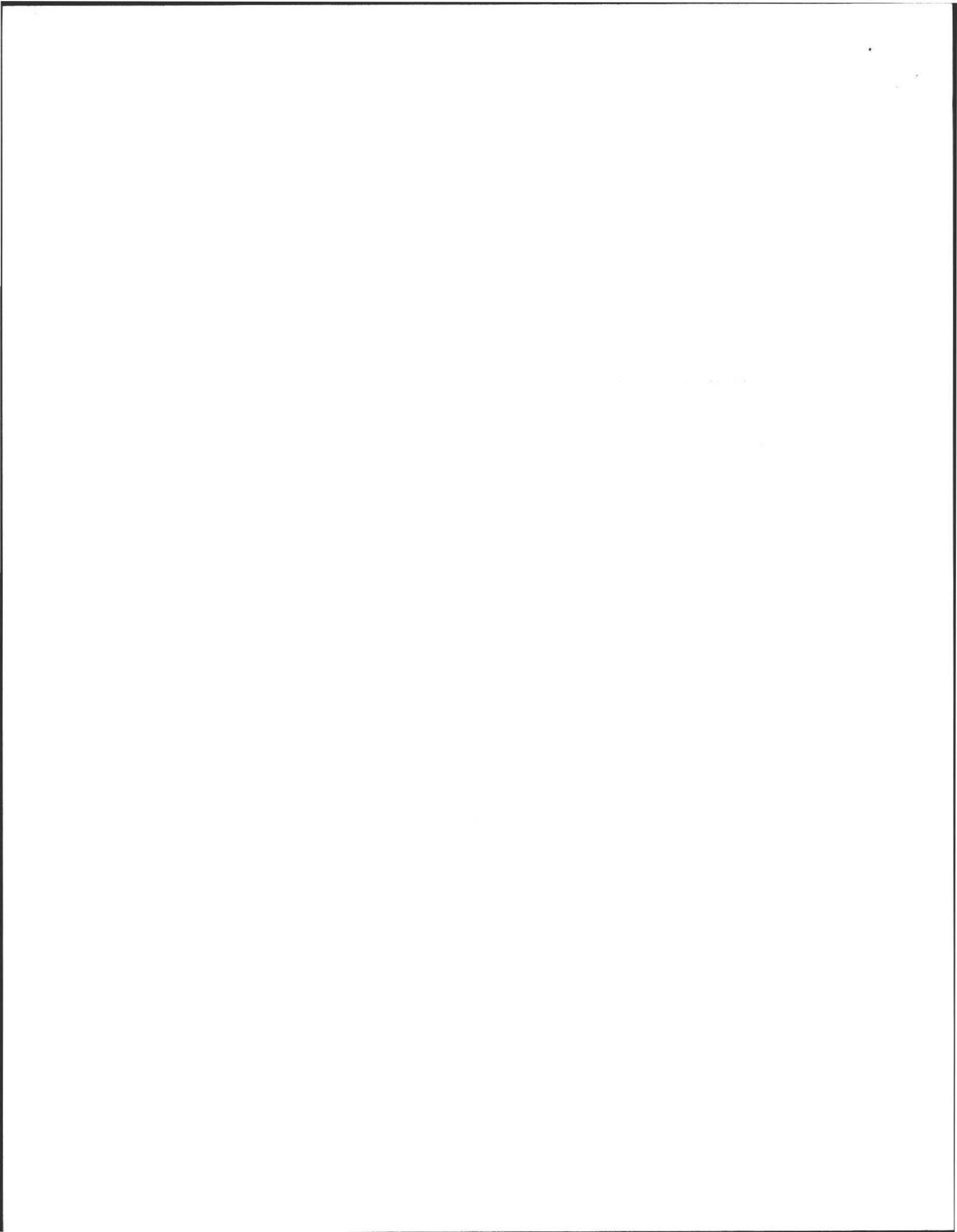
**2. System will fail unless the Board of Health (and Public Water Supplier, if any) determines that the system is functioning in a manner that protects the public health, safety and environment:**

- The system has a septic tank and soil absorption system (SAS) and the SAS is within 100 feet of a surface water supply or tributary to a surface water supply.
- The system has a septic tank and SAS and the SAS is within a Zone 1 of a public water supply.
- The system has a septic tank and SAS and the SAS is within 50 feet of a private water supply well.
- The system has a septic tank and SAS and the SAS is less than 100 feet but 50 feet or more from a private water supply well\*\*. Method used to determine distance \_\_\_\_\_

\*\*This system passes if the well water analysis, performed at a DEP certified laboratory, for coliform bacteria and volatile organic compounds indicates that the well is free from pollution from that facility and the presence of ammonia nitrogen and nitrate nitrogen is equal to or less than 5 ppm, provided that no other failure criteria are triggered. A copy of the analysis must be attached to this form.

**3. Other:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



**OFFICIAL INSPECTION FORM – NOT FOR VOLUNTARY ASSESSMENTS  
SUBSURFACE SEWAGE DISPOSAL SYSTEM INSPECTION FORM  
PART A**

**CERTIFICATION (continued)**

**Property Address:** 109 High Point Drive  
Amherst MA

**Owner's Name:** Clifford & Susan Kurz

**Owner's Address:** same

**Date of Inspection:** 06/29/2005

**D. System Failure Criteria applicable to all systems:**

You must indicate "yes" or "no" to each of the following for all inspections:

- | Yes                      | No                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Backup of sewage into facility or system component due to overloaded or clogged SAS or cesspool                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Discharge or ponding of effluent to the surface of the ground or surface waters due to an overloaded or clogged S.A.S. or cesspool.                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Static liquid level in the distribution box above outlet invert due to an overloaded or clogged SAS or cesspool                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Liquid depth in cesspool is less than 6" below invert or available volume is less than 1/2 day flow                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Required pumping more than 4 times in the last year <b>NOT</b> due to clogged or obstructed pipe(s). Number of times pumped ____.                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Any portion of the SAS, cesspool or privy is below high ground water elevation. ____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Any portion of cesspool or privy is within 100 feet of a surface water supply or tributary to a surface water supply.                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Any portion of a cesspool or privy is within a Zone 1 of a public well.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Any portion of a cesspool or privy is within 50 feet of a private water supply well.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | Any portion of a cesspool or privy is less than 100 feet but greater than 50 feet from a private water supply well with no acceptable water quality analysis. <b>[This system passes if the well water analysis, performed at a DEP certified laboratory, for coliform bacteria and volatile organic compounds indicates that the well is free from pollution from that facility and the presence of ammonia nitrogen and nitrate nitrogen is equal to or less than 5 ppm, provided that no other failure criteria are triggered. A copy of the analysis must be attached to this form.]</b> |

**NO** (Yes/No) **The system fails.** I have determined that one or more of the above failure criteria exist as described in 310 CMR 15.303, therefore the system fails. The system owner should contact the Board of Health to determine what will be necessary to correct the failure.

**E. Large Systems:**

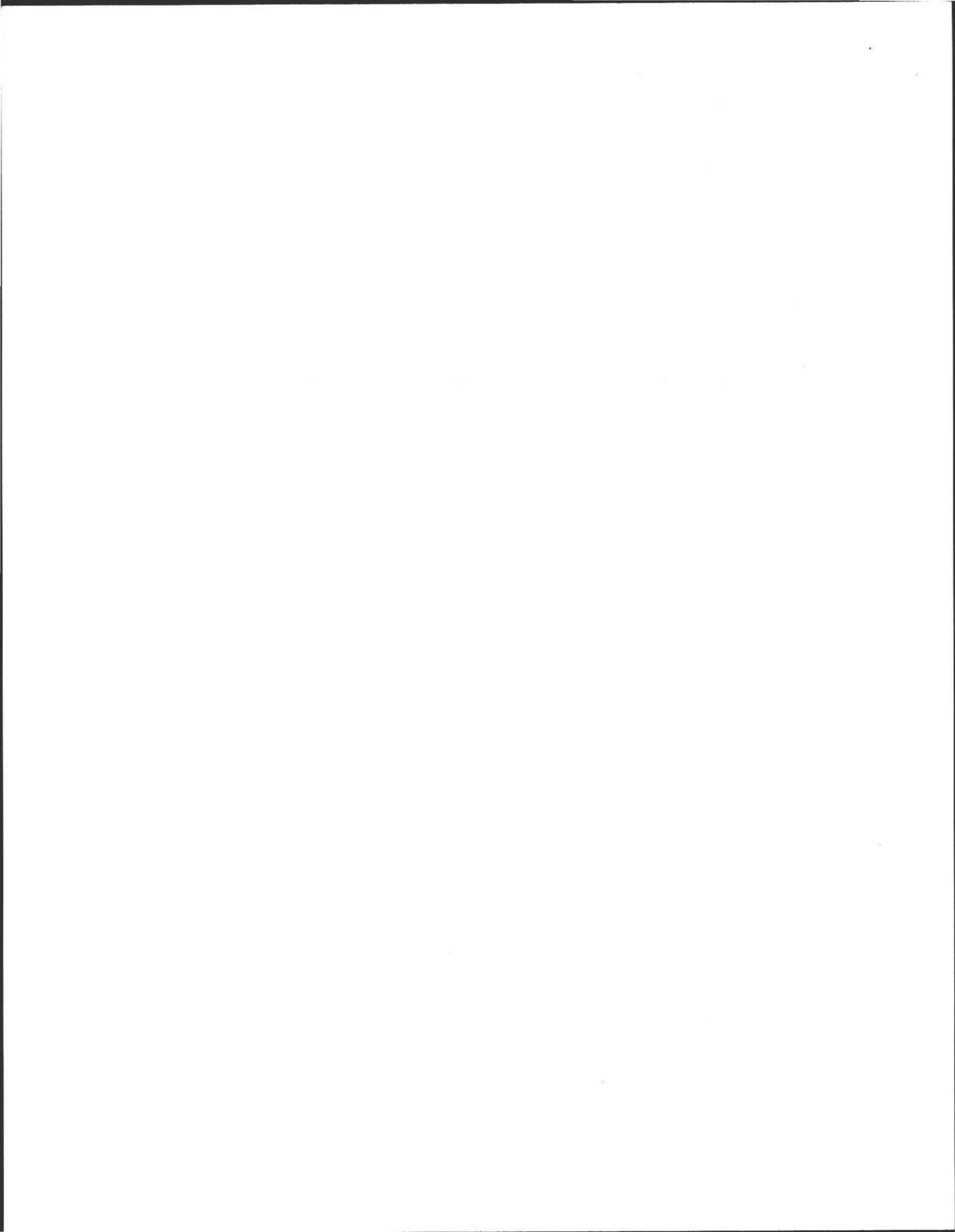
**To be considered a large system the system must serve a facility with a design flow of 10,000 gpd to 15,000 gpd.**

You must indicate either "yes" or "no" to each of the following:

(The following criteria apply to large systems in addition to the criteria above)

- | yes                      | no                       |                                                                                                                                                |
|--------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | the system is within 400 feet of a surface drinking water supply                                                                               |
| <input type="checkbox"/> | <input type="checkbox"/> | the system is within 200 feet of a tributary to a surface drinking water supply                                                                |
| <input type="checkbox"/> | <input type="checkbox"/> | the system is located in a nitrogen sensitive area (Interim Wellhead Protection Area – IWPA) or a mapped Zone II of a public water supply well |

If you have answered "yes" to any question in Section E the system is considered a significant threat, or answered "yes" in Section D above the large system has failed. The owner or operator of any large system considered a significant threat under Section E or failed under Section D shall upgrade the system in accordance with 310 CMR 15.304. The system owner should contact the appropriate regional office of the Department.



**OFFICIAL INSPECTION FORM – NOT FOR VOLUNTARY ASSESSMENTS  
SUBSURFACE SEWAGE DISPOSAL SYSTEM INSPECTION FORM  
PART B  
CHECKLIST**

**Property Address: 109 High Point Drive  
Amherst MA  
Owner's Name: Clifford & Susan Kurz  
Owner's Address: same  
Date of Inspection: 06/29/2005**

Check if the following have been done. You must indicate "yes" or "no" as to each of the following:

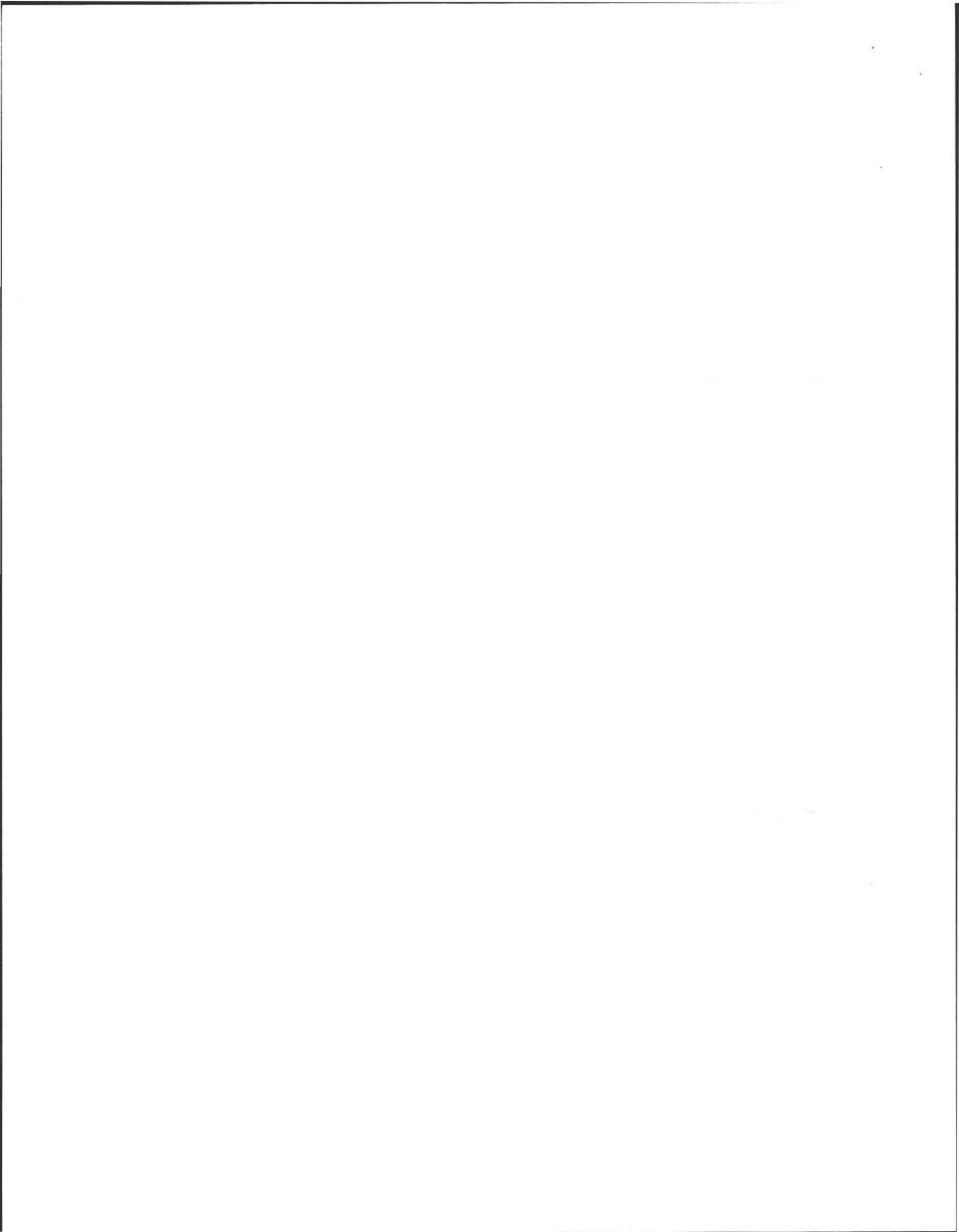
Yes No

- Pumping information was provided by the owner, occupant, or Board of Health
- Were any of the system components pumped out in the previous two weeks ?
- Has the system received normal flows in the previous two week period ?
- Have large volumes of water been introduced to the system recently or as part of this inspection ?
- Were as built plans of the system obtained and examined? (If they were not available note as N/A)
- Was the facility or dwelling inspected for signs of sewage back up ?
- Was the site inspected for signs of break out ?
- Were all system components, excluding the SAS, located on site ?
- Were the septic tank manholes uncovered, opened, and the interior of the tank inspected for the condition of the baffles or tees, material of construction, dimensions, depth of liquid, depth of sludge and depth of scum ?
- Was the facility owner (and occupants if different from owner) provided with information on the proper maintenance of subsurface sewage disposal systems ?

The size and location of the Soil Absorption System (SAS) on the site has been determined based on:

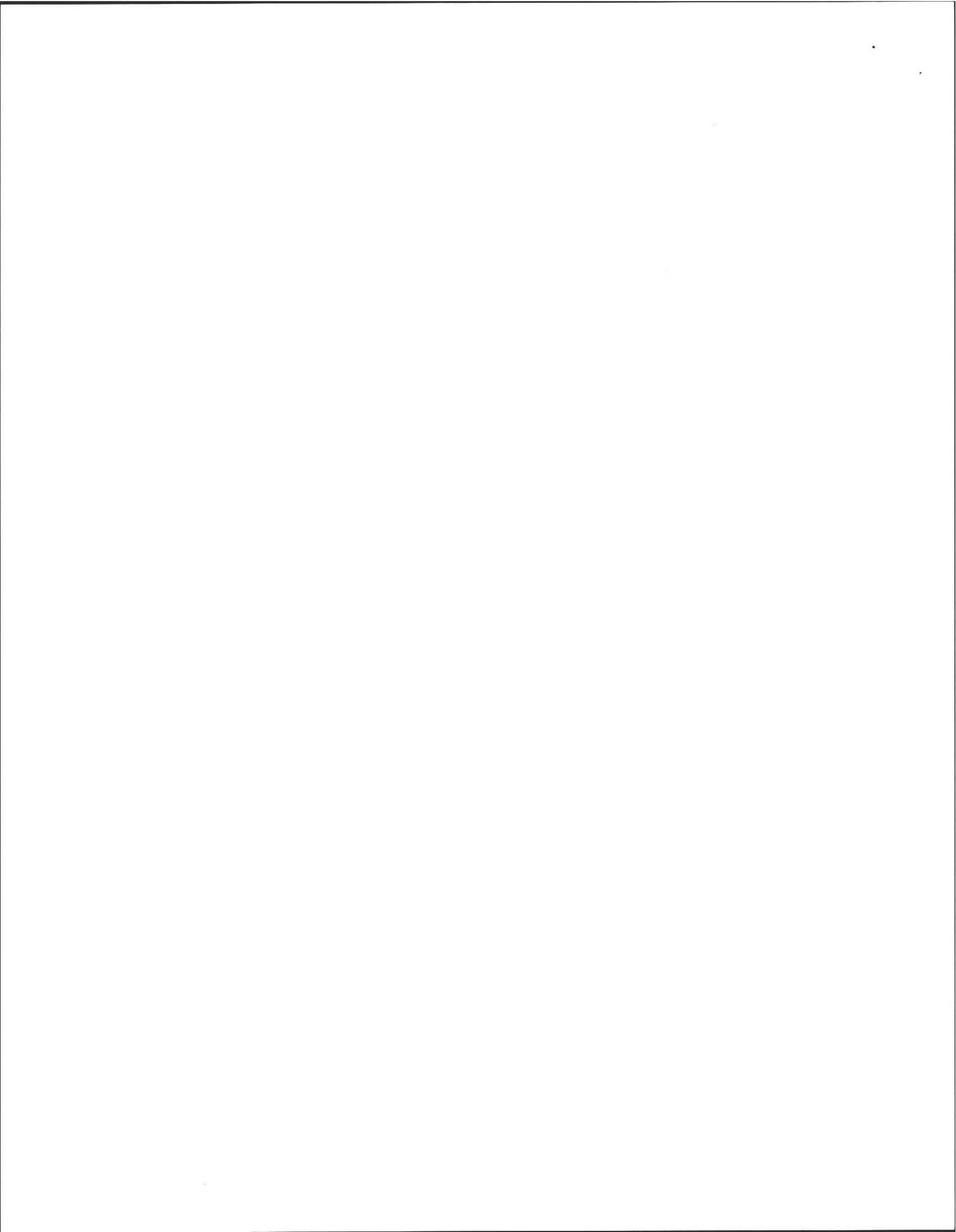
Yes No

- Existing information. For example, a plan at the Board of Health.
- Determined in the field (if any of the failure criteria related to Part C is at issue approximation of distance is unacceptable) [310 CMR 15.302(3)(b)]









**OFFICIAL INSPECTION FORM – NOT FOR VOLUNTARY ASSESSMENTS**  
**SUBSURFACE SEWAGE DISPOSAL SYSTEM INSPECTION FORM**  
**PART C**  
**SYSTEM INFORMATION (continued)**

**Property Address:** 109 High Point Drive  
Amherst MA  
**Owner's Name:** Clifford & Susan Kurz  
**Owner's Address:** same  
**Date of Inspection:** 06/29/2005

**BUILDING SEWER** (locate on site plan)

Depth below grade: 1'11"  
Materials of construction: cast iron  40 PVC  other (explain):  
Distance from private water supply well or suction line: N/A  
Comments (on condition of joints, venting, evidence of leakage, etc.):  
**Joints and venting appear okay. No leaks.**

**SEPTIC TANK:**  (locate on site plan)

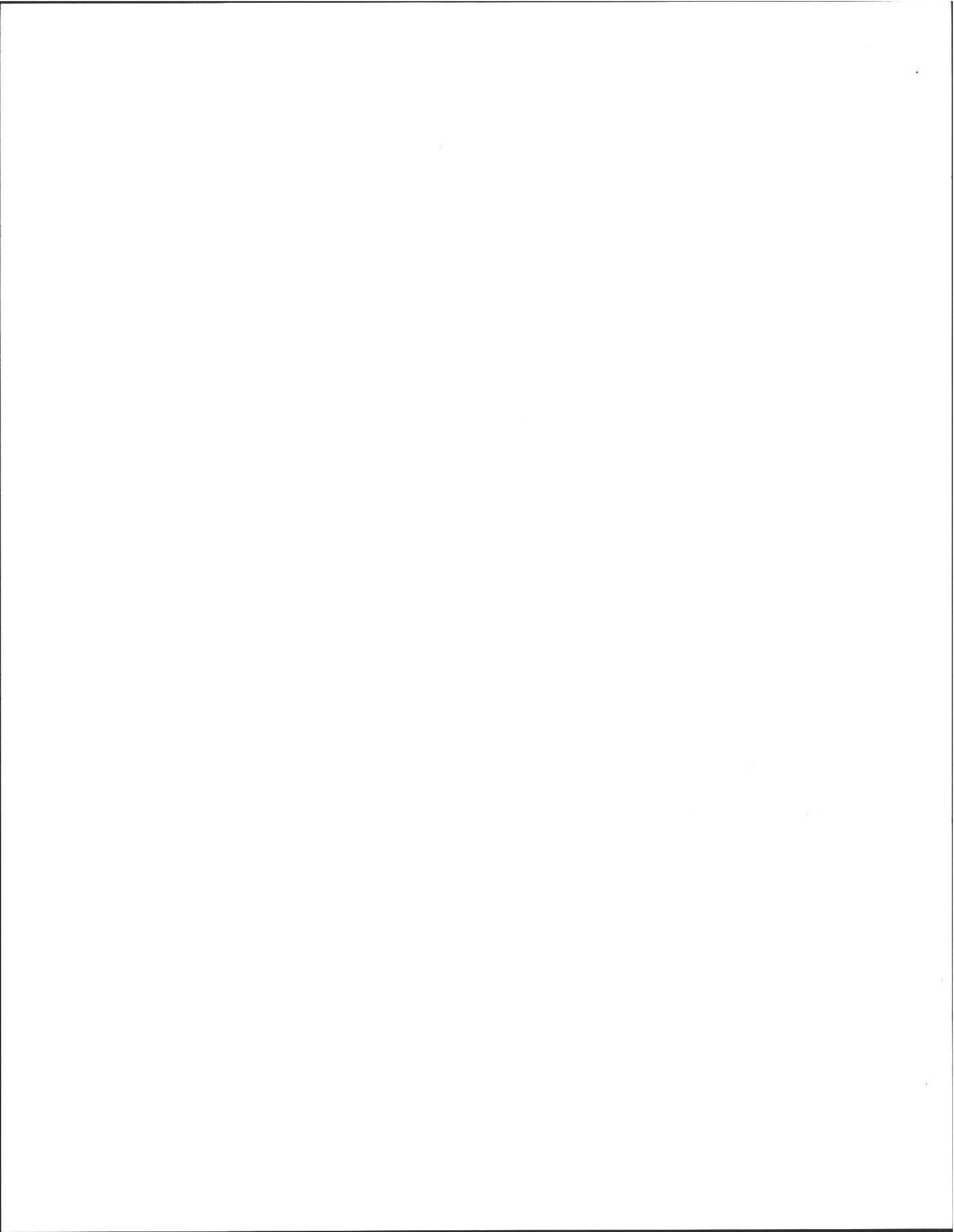
Depth below grade: 1'3"  
Material of construction:  concrete  metal  fiberglass  polyethylene  other  
(explain) \_\_\_\_\_  
If tank is metal list age: \_\_\_ Is age confirmed by a Certificate of Compliance (yes or no): \_\_\_ (attach a copy of certificate)  
Dimensions: L 10'6" x W 5' x D 5'  
Sludge depth: 1'  
Distance from top of sludge to bottom of outlet tee or baffle: 36"  
Scum thickness: \_\_\_\_\_  
Distance from top of scum to top of outlet tee or baffle: 8"  
Distance from bottom of scum to bottom of outlet tee or baffle: 19"  
How were dimensions determined: **Measured**  
Comments (on pumping recommendations, inlet and outlet tee or baffle condition, structural integrity, liquid levels as related to outlet invert, evidence of leakage, Etc.):  
**Pump septic tank annually or as needed. Everything appears to be in good working condition. No leaks.**

**GREASE TRAP:**  (locate on site plan)

Depth below grade: \_\_\_\_\_  
Material of construction:  concrete  metal  fiberglass  polyethylene  other  
(explain): \_\_\_\_\_  
Dimensions: gal required tank capacity \_\_\_\_\_  
Scum thickness: \_\_\_\_\_  
Distance from top of scum to top of outlet tee or baffle: \_\_\_\_\_  
Distance from bottom of scum to bottom of outlet tee or baffle: \_\_\_\_\_  
Date of last pumping: \_\_\_\_\_  
Comments (on pumping recommendations, inlet and outlet tee or baffle condition, structural integrity, liquid levels as related to outlet invert, evidence of leakage, etc.): \_\_\_\_\_

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**OFFICIAL INSPECTION FORM – NOT FOR VOLUNTARY ASSESSMENTS**  
**SUBSURFACE SEWAGE DISPOSAL SYSTEM INSPECTION FORM**  
**PART C**  
**SYSTEM INFORMATION (continued)**

**Property Address:** 109 High Point Drive  
Amherst MA  
**Owner's Name:** Clifford & Susan Kurz  
**Owner's Address:** same  
**Date of Inspection:** 06/29/2005

**TIGHT or HOLDING TANK:** \_\_\_ (tank must be pumped at time of inspection)(locate on site plan)

Depth below grade: \_\_\_\_\_  
Material of construction: \_\_\_ concrete \_\_\_ metal \_\_\_ fiberglass \_\_\_ polyethylene \_\_\_ other(explain): \_\_\_\_\_

Dimensions: \_\_\_\_\_  
Capacity: \_\_\_\_\_ gallons  
Design Flow: \_\_\_\_\_ gallons/day  
Alarm present (yes or no): \_\_\_\_\_  
Alarm level: \_\_\_\_\_ Alarm in working order (yes or no): \_\_\_\_\_  
Date of last pumping: \_\_\_\_\_  
Comments (condition of alarm and float switches, etc.): \_\_\_\_\_

**DISTRIBUTION BOX:** **X** (if present must be opened)(locate on site plan) **D-box is approximately 1'5" deep.**  
Depth of liquid level above outlet invert: **0"**  
Comments (note if box is level and distribution to outlets equal, any evidence of solids carryover, any evidence of leakage into or out of box, etc.): **D-box is level. Distribution is equal. No leaks.**

**PUMP CHAMBER :** \_\_\_ (locate on site plan)

Pumps in working order (yes or no): \_  
Alarms in working order (yes or no): \_  
Comments (note condition of pump chamber, condition of pumps and appurtenances, etc.): \_\_\_\_\_



**OFFICIAL INSPECTION FORM – NOT FOR VOLUNTARY ASSESSMENTS**  
**SUBSURFACE SEWAGE DISPOSAL SYSTEM INSPECTION FORM**  
**PART C**  
**SYSTEM INFORMATION (continued)**

**Property Address:** 109 High Point Drive  
Amherst MA  
**Owner's Name:** Clifford & Susan Kurz  
**Owner's Address:** same  
**Date of Inspection:** 06/29/2005

**SOIL ABSORPTION SYSTEM (SAS):** \_\_\_\_ (locate on site plan, excavation not required)

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If SAS not located explain why:

- leaching pits, number: \_\_\_\_\_
  - leaching chambers, number: \_\_\_\_\_
  - leaching galleries, number: \_\_\_\_\_
  - leaching trenches, number, length: **3 leach lines off of D-box 50' long**
  - leaching fields, number, dimensions: \_\_\_\_\_
  - overflow cesspool, number: \_\_\_\_\_
  - innovative/alternative system Type/name of technology: \_\_\_\_\_
- Comments (note condition of soil, signs of hydraulic failure, level of ponding, damp soil, condition of vegetation, etc.):  
 **No signs of hydraulic failure. Soil and vegetation appear okay.**

**CESSPOOLS:** \_\_\_\_ (cesspool must be pumped as part of inspection)(locate on site plan)

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Number and configuration: \_\_\_\_  
Depth – top of liquid to inlet invert: \_\_\_\_  
Depth of solids layer: \_\_\_\_  
Depth of scum layer: \_\_\_\_  
Dimensions of cesspool: \_\_\_\_  
Materials of construction: \_\_\_\_  
Indication of groundwater inflow (yes or no): \_\_\_\_  
Comments (note condition of soil, signs of hydraulic failure, level of ponding, condition of vegetation, etc.):

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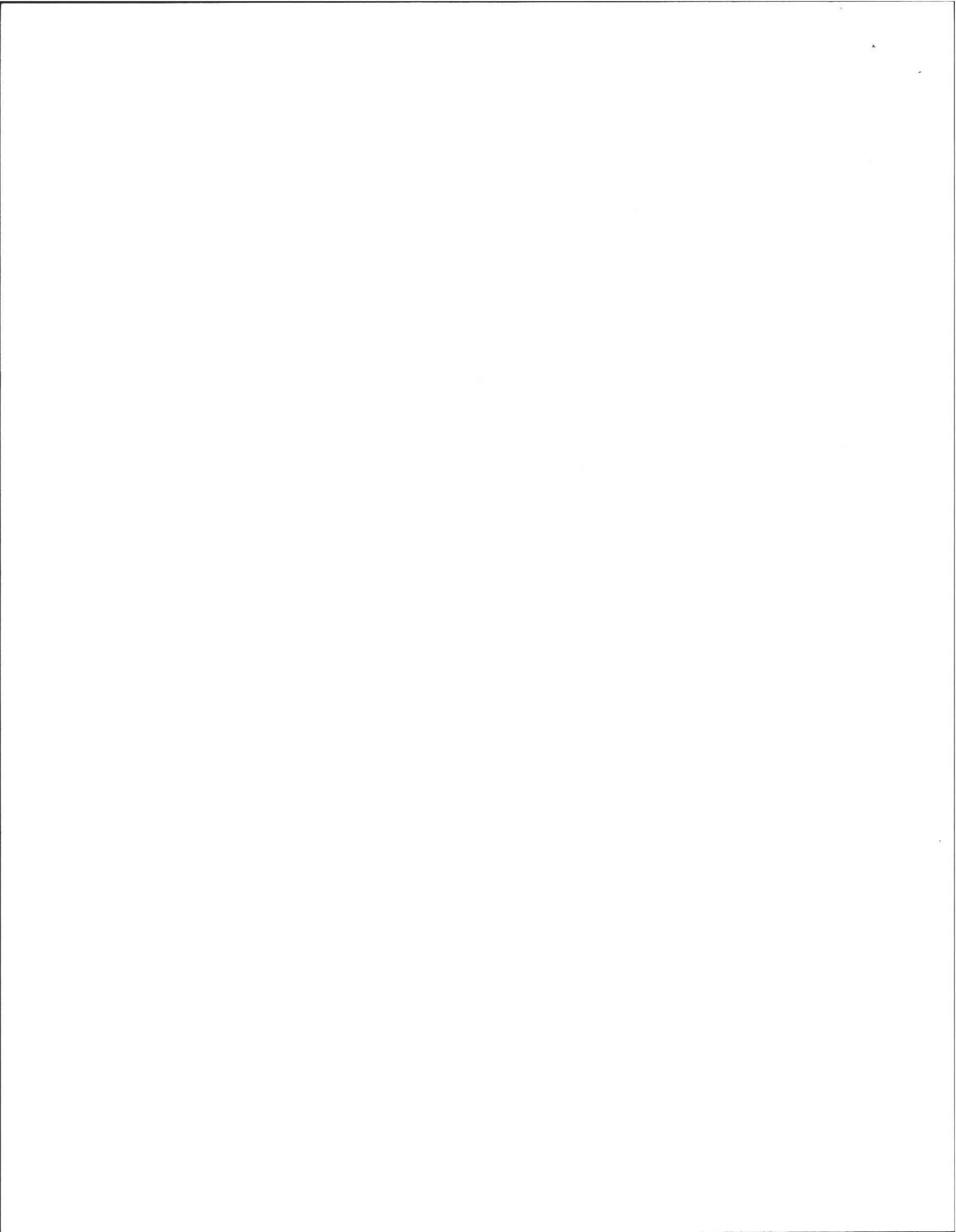
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**PRIVY:** \_\_\_\_ (locate on site plan)

Materials of construction: \_\_\_\_\_  
Dimensions: \_\_\_\_\_  
Depth of solids: \_\_\_\_\_  
Comments (note condition of soil, signs of hydraulic failure, level of ponding, condition of vegetation, etc.):

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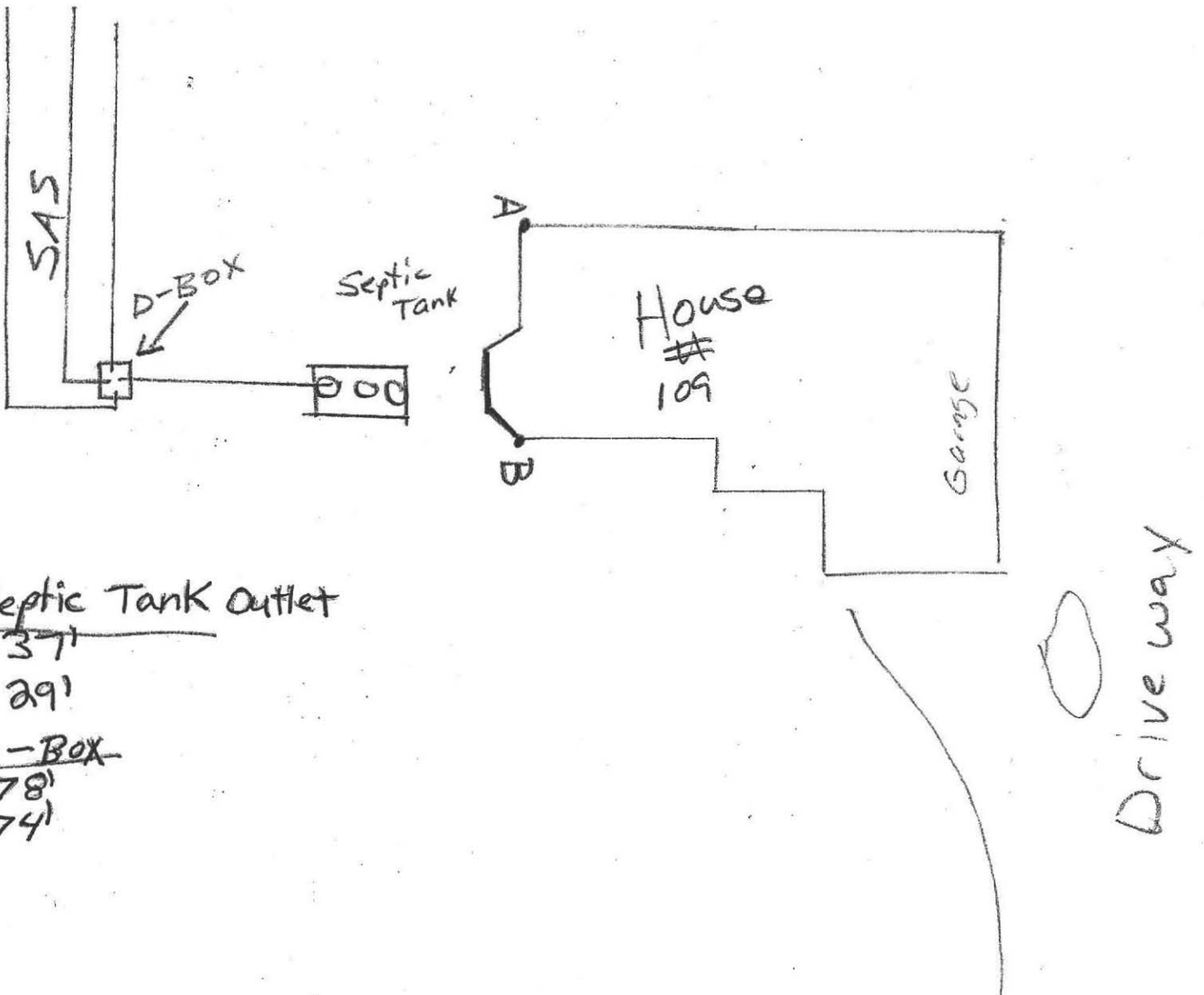


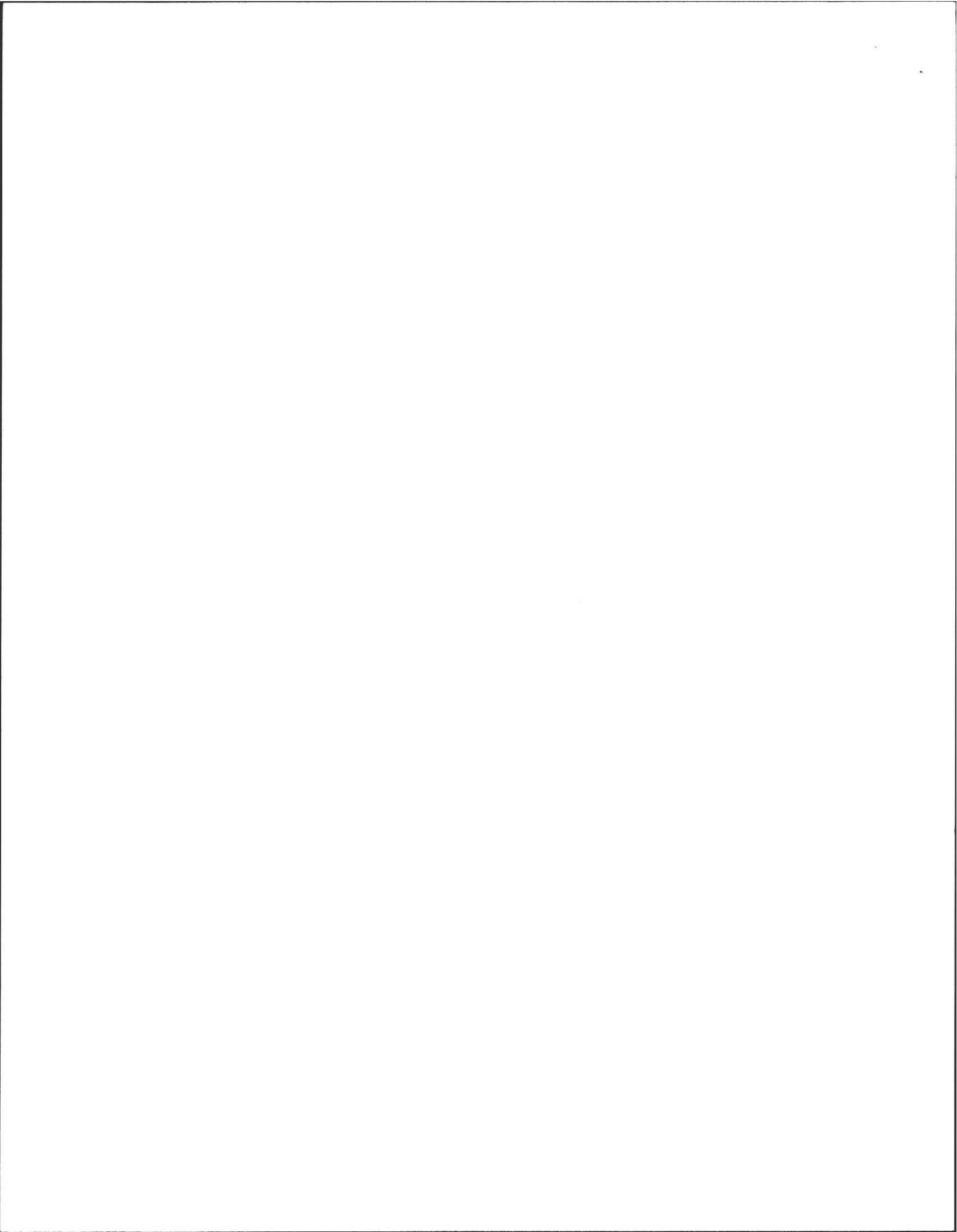
**OFFICIAL INSPECTION FORM – NOT FOR VOLUNTARY ASSESSMENTS**  
**SUBSURFACE SEWAGE DISPOSAL SYSTEM INSPECTION FORM**  
**PART C**  
**SYSTEM INFORMATION (continued)**

Property Address: 109 High Point Drive  
Amherst MA  
Owner's Name: Clifford & Susan Kurz  
Owner's Address: same  
Date of Inspection: 06/29/2005

**SKETCH OF SEWAGE DISPOSAL SYSTEM**

Provide a sketch of the sewage disposal system including ties to at least two permanent reference landmarks or benchmarks. Locate all wells within 100 feet. Locate where public water supply enters the building.  
Drawing not to scale.





**OFFICIAL INSPECTION FORM – NOT FOR VOLUNTARY ASSESSMENTS**  
**SUBSURFACE SEWAGE DISPOSAL SYSTEM INSPECTION FORM**  
**PART C**  
**SYSTEM INFORMATION (continued)**

**Property Address: 109 High Point Drive**  
**Amherst MA**  
**Owner's Name: Clifford & Susan Kurz**  
**Owner's Address: same**  
**Date of Inspection: 06/29/2005**

**SITE EXAM**

Slope  
Surface water  
Check cellar  
Shallow wells

Estimated depth to ground water: **none @ 1'7"**

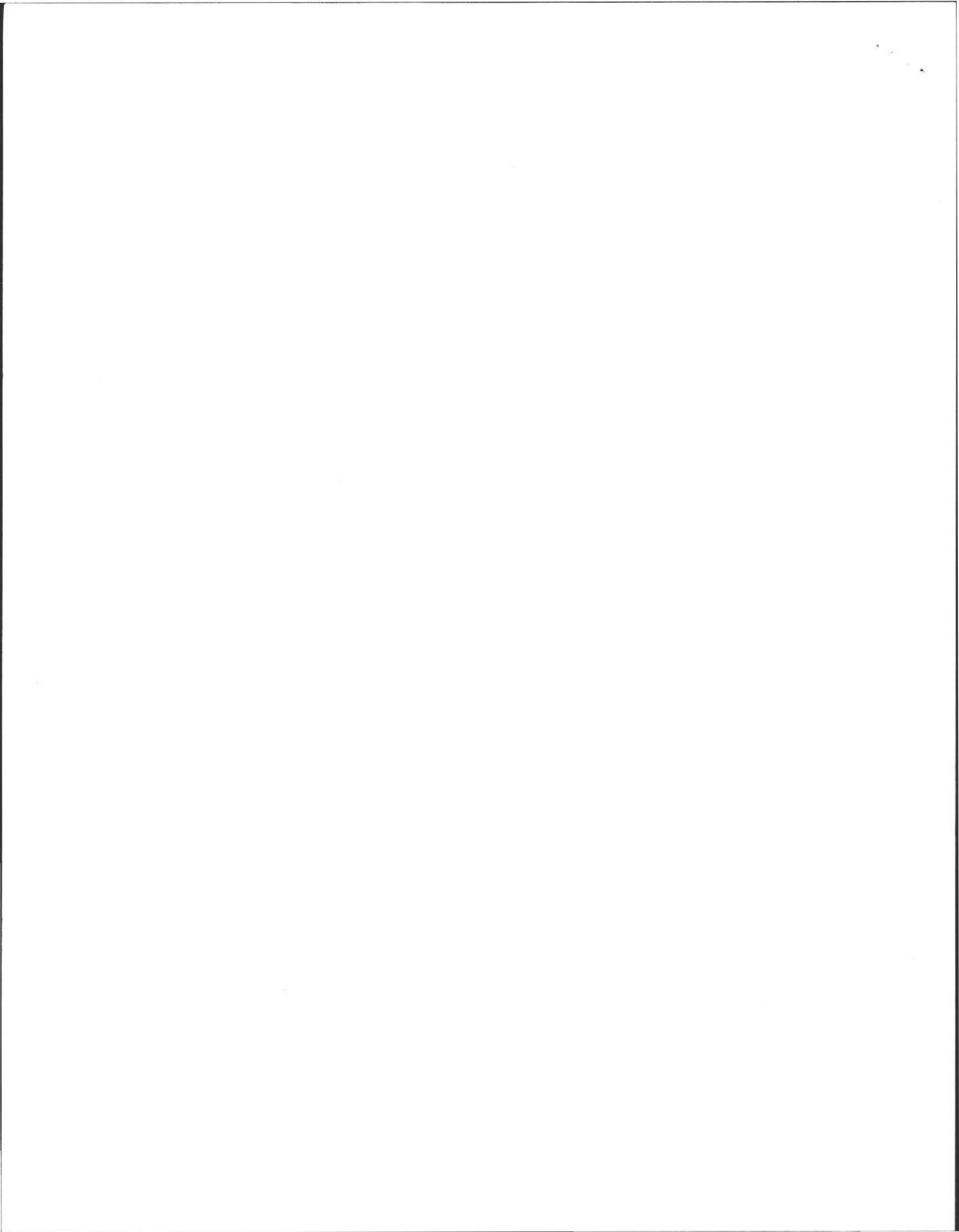
Please indicate (check) all methods used to determine the high ground water elevation:

- X** Obtained from system design plans on record - If checked, date of design plan reviewed: **6/24/98**
- Observed site (abutting property/observation hole within 150 feet of SAS)
- Checked with local Board of Health-explain: \_\_\_\_\_
- Checked with local excavators, installers- (attach documentation)
- Accessed USGS database-explain: \_\_\_\_\_

You must describe how you established the high ground water elevation:

**Ron Bercume, 6/24/98.**

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No. 97-21

#109

FEE 160

Per + Plus

6B-7

### COMMONWEALTH OF MASSACHUSETTS

Board of Health, AMHERST, MA.

### APPLICATION FOR DISPOSAL SYSTEM CONSTRUCTION PERMIT

Application for a Permit to Construct(  Repair( ) Upgrade( ) Abandon( ) -  Complete System  Individual Components

Location <u>169 HIGH POINT DRIVE</u>	Owner's Name <u>RON BERGUME</u>
Map/Parcel#	Address <u>25 SYLVIA HEIGHTS HADLEY, MA</u>
Lot# <u>1 (169 High Point)</u>	Telephone# <u>01035</u>
Installer's Name <u>EAST COAST</u>	Designer's Name <u>DAVID E. KEATES</u>
Address	Address <u>102 RUSSELL ST. SUNDERLAND, MA 01375</u>
Telephone# <u>593536</u>	Telephone# <u>413-665-7670</u>

Type of Building \_\_\_\_\_ Lot Size \_\_\_\_\_ sq. ft.  
 Dwelling - No. of Bedrooms 4 Garbage grinder (  )  
 Other - Type of Building \_\_\_\_\_ No. of persons \_\_\_\_\_ Showers ( ), Cafeteria ( )  
 Other Fixtures \_\_\_\_\_  
 Design Flow (min. required) 440 gpd Calculated design flow \_\_\_\_\_ Design flow provided 660 gpd  
 Plan: Date 11/28/97 Number of sheets 19 Revision Date \_\_\_\_\_  
 Title SEWAGE DISPOSAL SYSTEM FOR RON BERGUME  
 Description of Soil(s) SEE LOGS SHEETS 4, 5, 6, 7 OF 19  
 Soil Evaluator Form No. \_\_\_\_\_ Name of Soil Evaluator CHRISTIAN BOYSEN Date of Evaluation 3/14/97

#### DESCRIPTION OF REPAIRS OR ALTERATIONS

The undersigned agrees to install the above described Individual Sewage Disposal System in accordance with the provisions of TITLE 5 and further agrees to not to place the system in operation until a Certificate of Compliance has been issued by the Board of Health.

Signed David E. Keates for Ron Bergume Date 11/28/97



Inspections \_\_\_\_\_

No. 97-21

### COMMONWEALTH OF MASSACHUSETTS

FEE 160

PB

Board of Health, Amherst, MA.

### CERTIFICATE OF COMPLIANCE

Description of Work:  Individual Component(s)  Complete System

The undersigned hereby certify that the Sewage Disposal System; Constructed ( ), Repaired ( ), Upgraded ( ), Abandoned ( )  
by: \_\_\_\_\_  
at \_\_\_\_\_

has been installed in accordance with the provisions of 310 CMR 15.00 (Title 5) and the approved design plans/as-built plans relating to application No. \_\_\_\_\_, dated \_\_\_\_\_, Approved Design Flow \_\_\_\_\_ (gpd)

Installer: \_\_\_\_\_ Designer: \_\_\_\_\_ Inspector: David Zayant Date: 7-10-98

The issuance of this permit shall not be construed as a guarantee that the system will function as designed.

No. 97-21

### COMMONWEALTH OF MASSACHUSETTS

FEE 160

Per - Plus

Board of Health, Amherst, MA.

### DISPOSAL SYSTEM CONSTRUCTION PERMIT

Permission is hereby granted to; Construct( ) Repair(  ) Upgrade( ) Abandon( ) an individual sewage disposal system at High Point Drive (Lot 1) as described in the application for Disposal System Construction Permit No. 97-21, dated 12-12-97

Provided: Construction shall be completed within three years of the date of this permit. All local conditions must be met.

Form 1255 Rev. 5/96 A.M. Sulkin Co. Boston, MA Date 12-12-97 Board of Health David Zayant



**Septic System Installation**  
**Certificate of Compliance**

The undersigned designer on 7/9 #10, 1998 inspected a Title 5 septic system installed by East Coast Const. for Ron Bercome

at LOT 1 High Point Drive in the town of Amherst, MA and certifies that, based upon field observations and supporting information provided by the installer, the disposal works as constructed generally satisfies the requirements of Title 5 and the design plan

entitled: Sewage Disposal System for Ron Bercome 11/28/97  
(Plan Title) (Plan Date)

with the followings comments;

all grades checked & OK  
Contracts to cover system

David E. Keates  
Designer's signature

7/10/98  
Date

I am currently a licensed installer in the town and have installed the above referenced septic system strictly in accordance with the above referenced plan and have addressed any comments prepared by the design engineer and/or B.O.H representative made during their inspections. A dimensioned as-built plan has been provided to the owner showing two dimensions from permanent points to each of the following: septic tank invert-in and invert-out, all angle points in all piping, D-box, beginning and end of each leaching trench, the four corners of each leach field, center cover of each leach chamber. As-built elevations have been recorded on plans submitted to the owner.

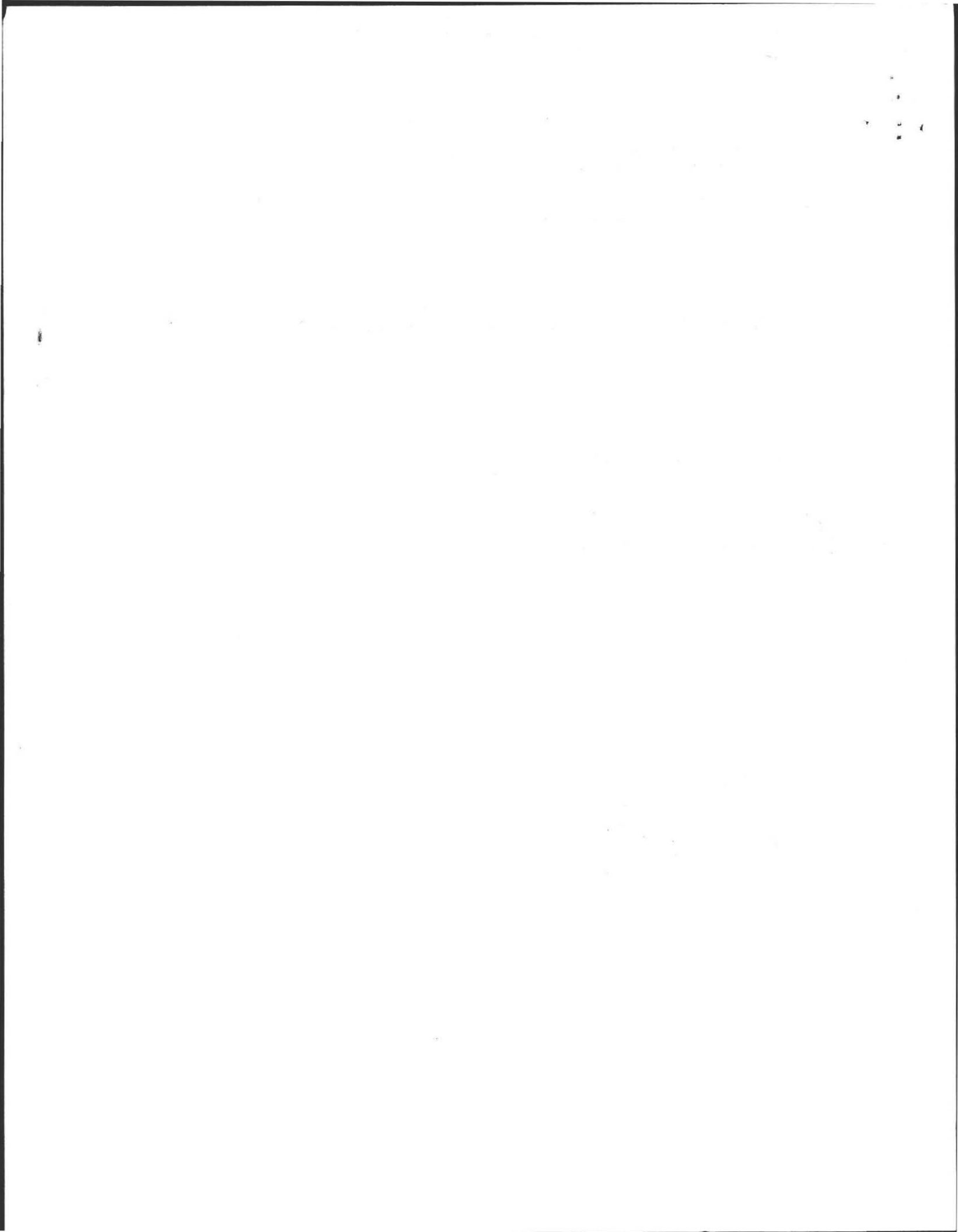
Mick S. [Signature] # 98-11  
Installer's signature

9/12/98  
Date

Disposal Works Construction Permit # 98-11

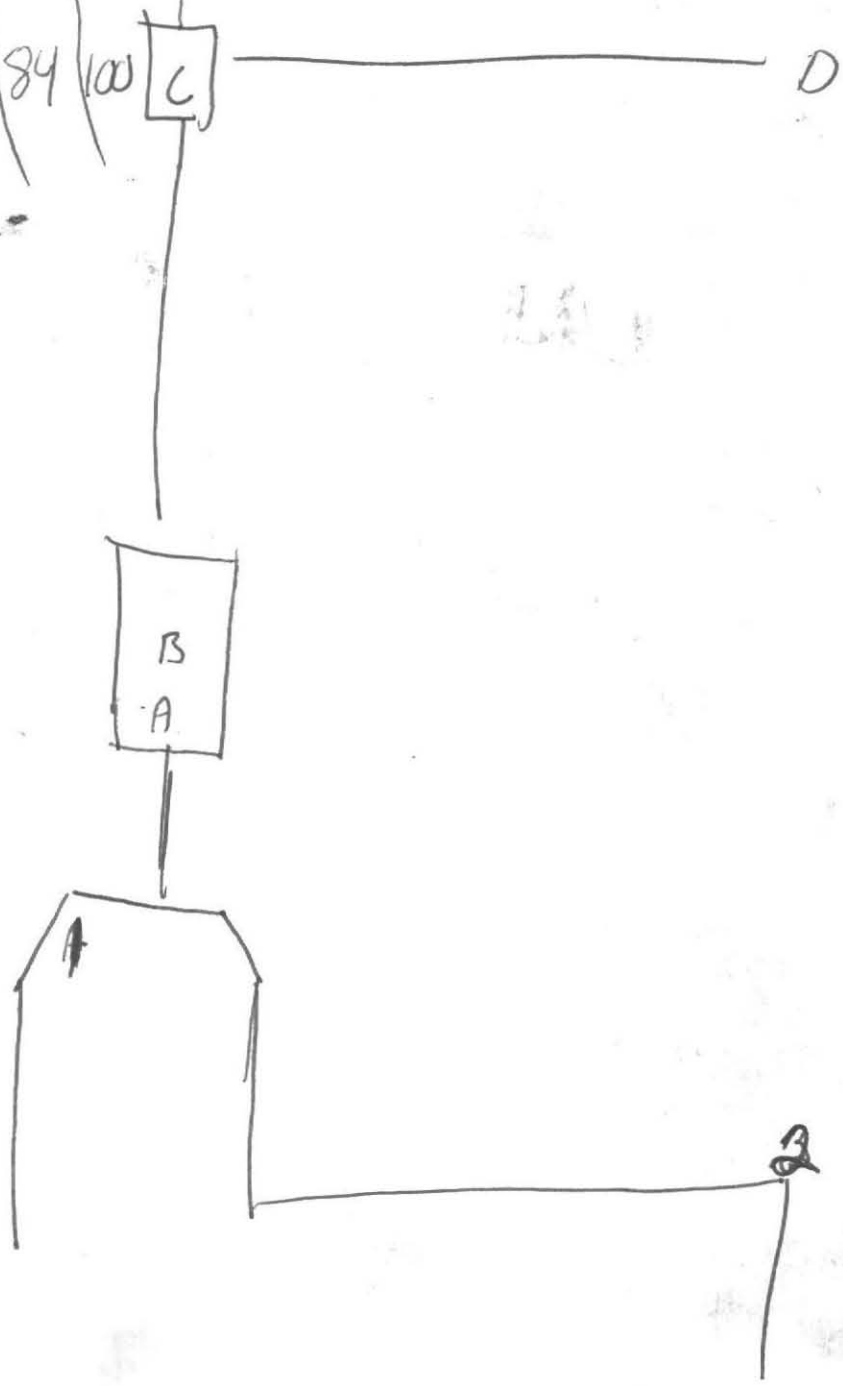
Approved for construction on \_\_\_\_\_  
Date

Installer to send signed original copy of this form to the owner and a copy to the B.O.H. and designer. The original signature of both the designer and the installer are to be on this form prior to sending to the above parties. Final payment will be made to the installer after the owner receives this form. The issuance of this certificate shall not be construed as a guarantee that the system will function as designed.

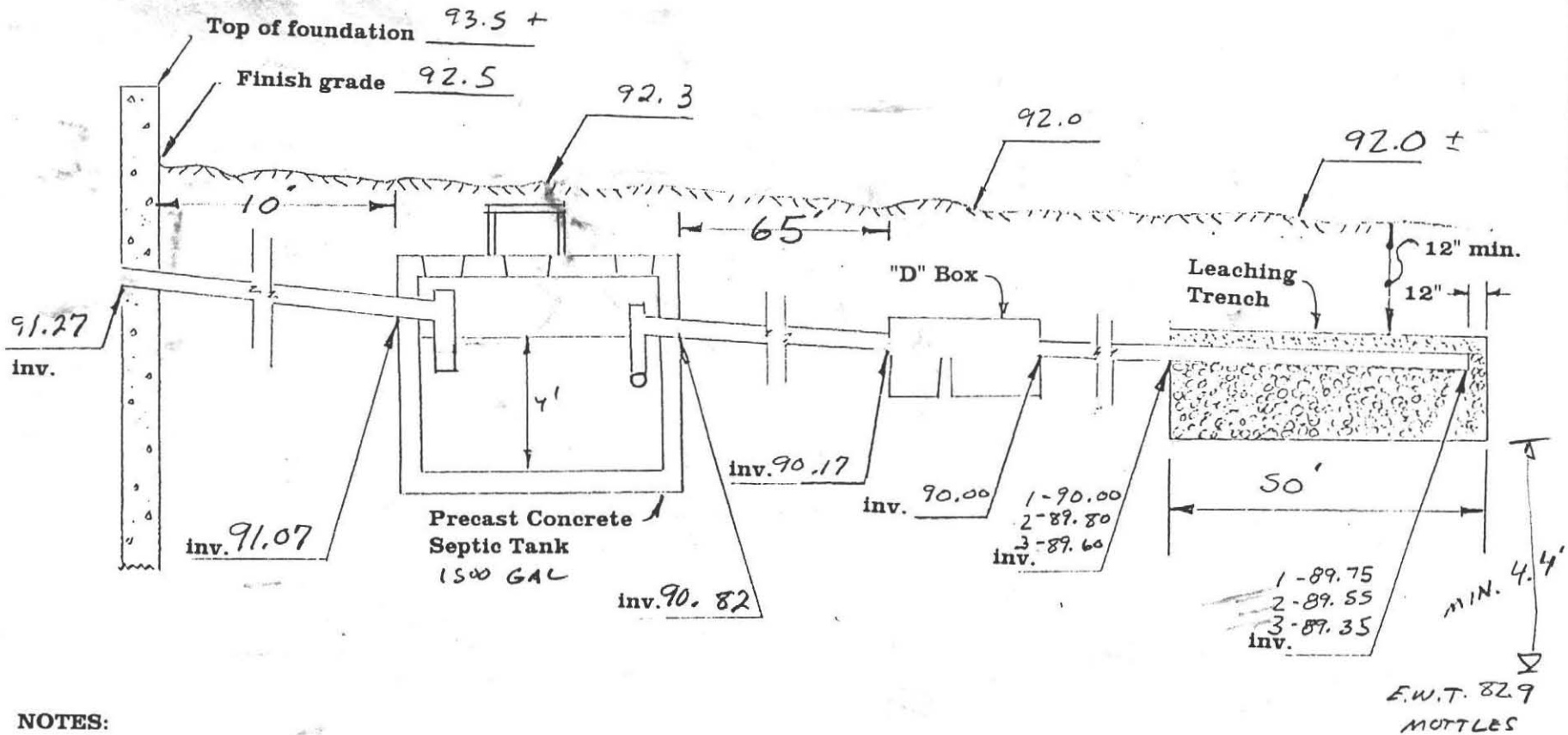




Tank	Tank	DBx	Jenettes			END
A	B	C	D	E	F	
118	22	22	77"	94"	109"	12
232	34"	29	67	84	100	E
						D

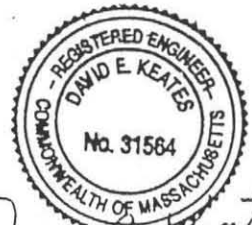


# Septic System Profile



**NOTES:**

1. The grade above and adjacent to leaching trench shall slope at least 2.0% to prevent accumulation of surface water.
2. Leaching trench distribution pipe shall have a min. slope of 0.005 ft./ft.
3. The bottom of each leaching trench shall be level at the elevation specified.
4. Pipe from foundation wall to septic tank shall be schedule 40 PVC or equivalent and have a minimum grade of 1/4" per foot.
5. Pipe from septic tank to "D" box shall be schedule 40 PVC or equivalent and have a minimum grade of 1/8" per foot.
6. All piping shall be 4" diameter.



*David E. Keates*  
11/28/97

Rev 12/1/95

PROJECT

Sewage Disposal System  
Ron Bercome  
Lot 1  
High Point Drive  
Amherst, MA

Sheet 18 of 19

David E. Keates, P.E.  
Consulting Civil Engineer  
102 Russell Street  
Sunderland, MA 01375  
Tel: 413-665-7670

# Sewage Disposal System

for

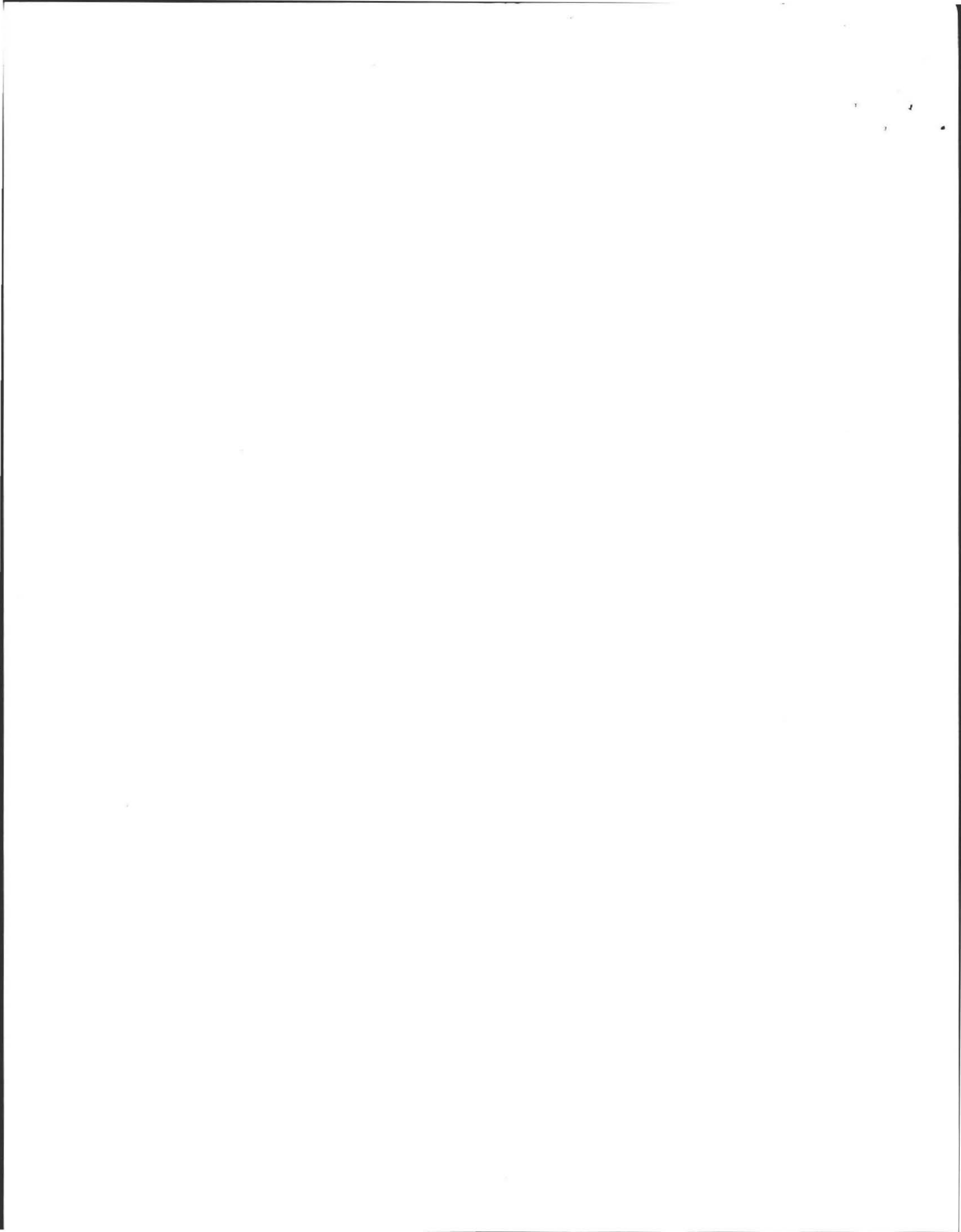
Ron Bercume  
Lot 1  
High Point Drive  
Amherst, MA

Note: Board of Health approval of this plan required before a licensed contractor can be retained to install system. Contractor not to start work until approved Disposal Works Permit has been obtained.



*David E. Keates*  
11/28/97  
Revised 12/9/97 DEC

David E. Keates, P.E.  
Consulting Civil Engineer  
102 Russell Street  
Sunderland, MA 01375  
Tel: 413-665-7670



# Sewage Disposal System

for

INFO  
INSIDE

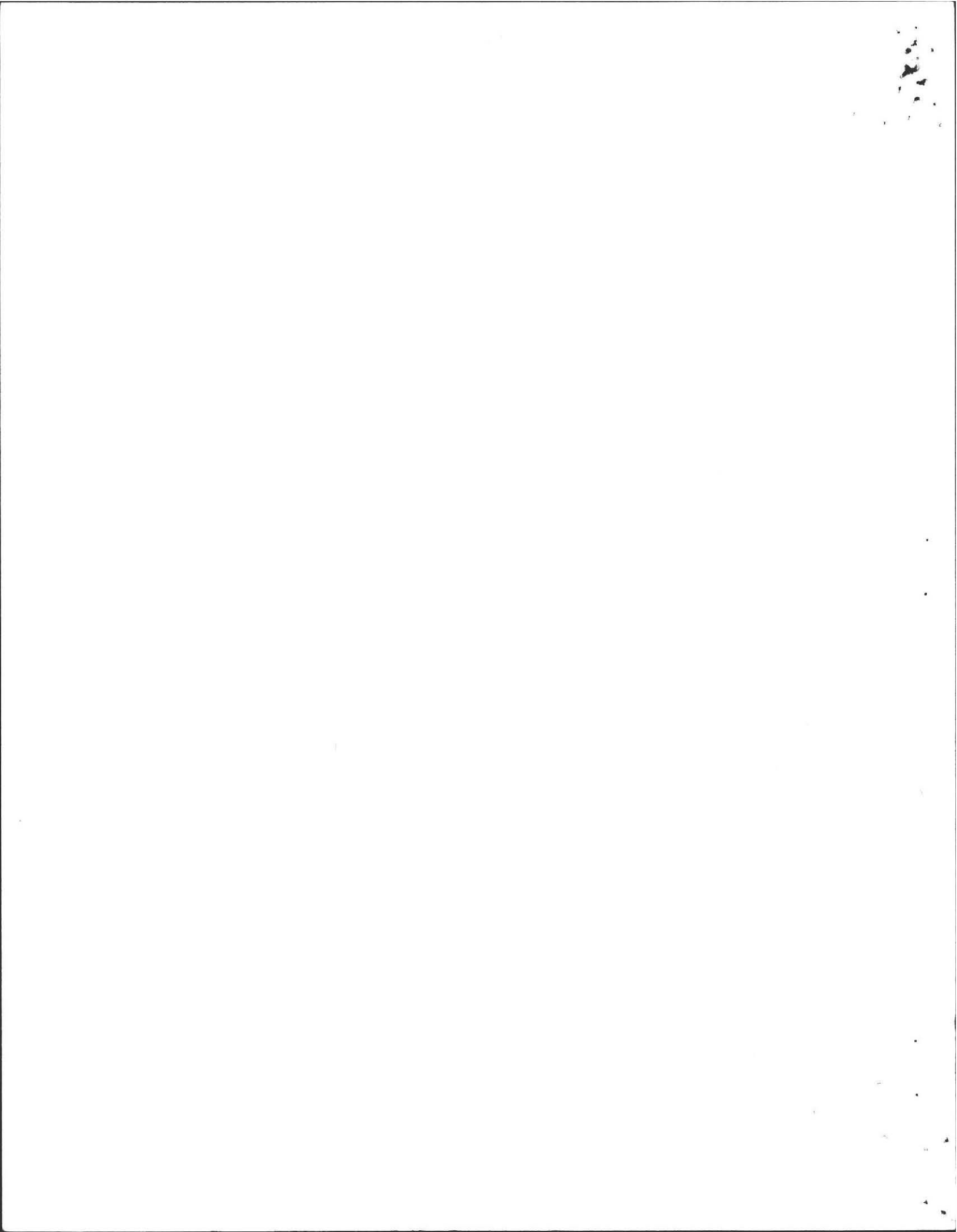
Ron Bercume  
Lot 1  
High Point Drive  
Amherst, MA

Note: Board of Health approval of this plan required before a licensed contractor can be retained to install system. Contractor not to start work until approved Disposal Works Permit has been obtained.



*David E. Keates*  
11/28/97

David E. Keates, P.E.  
Consulting Civil Engineer  
102 Russell Street  
Sunderland, MA 01375  
Tel: 413-665-7670



Septic System Installation  
Certificate of Compliance

The undersigned designer on \_\_\_\_\_, 19\_\_ inspected a Title 5 septic system installed by \_\_\_\_\_ for RON BERCOME

at LOT 1 HIGH POINT DRIVE in the town of AMHERST, MA and certifies that, based upon field observations and supporting information provided by the installer, the disposal works as constructed generally satisfies the requirements of Title 5 and the design plan

entitled: \_\_\_\_\_  
(Plan Title) (Plan Date)

with the followings comments;  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Designer's signature Date

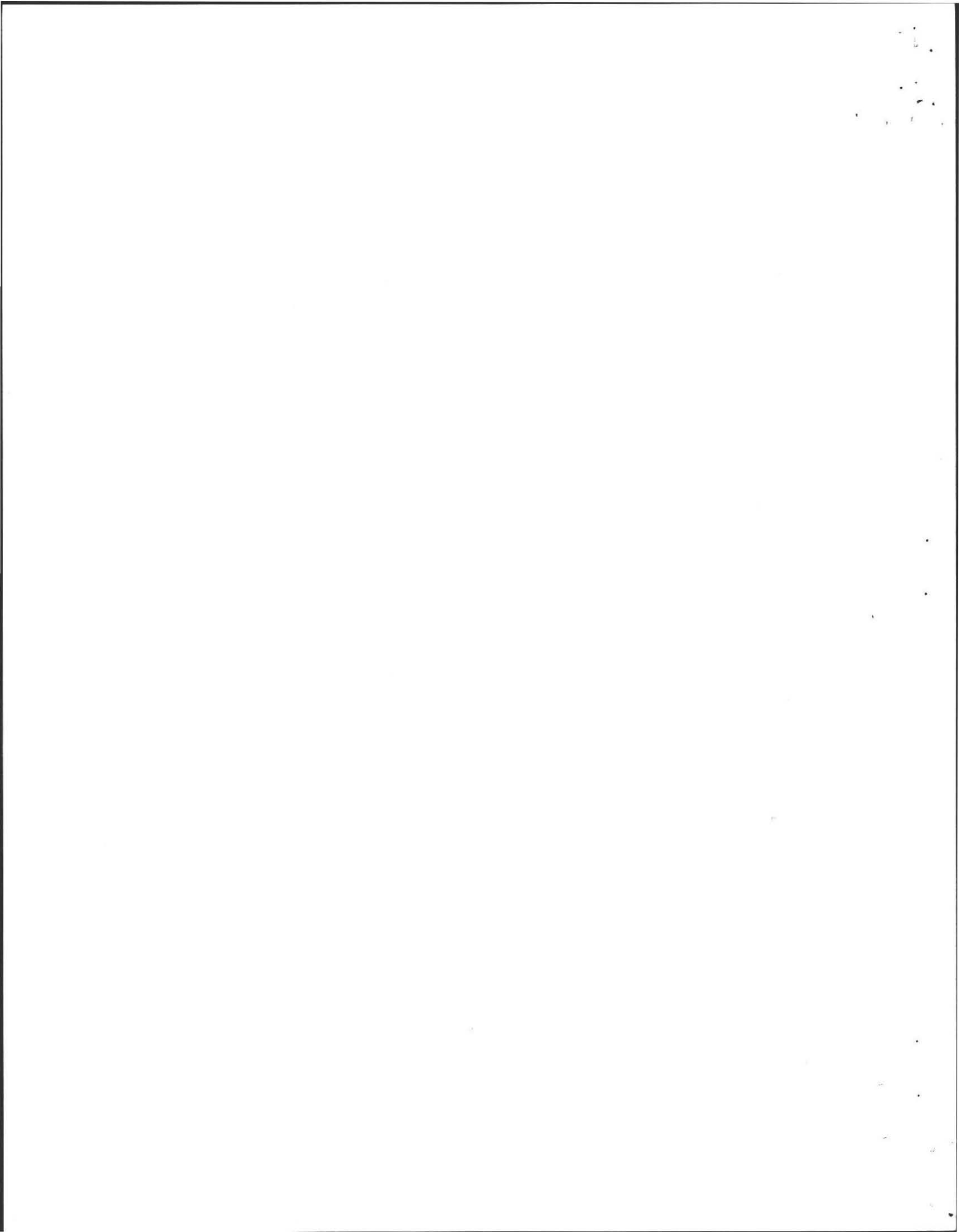
I am currently a licensed installer in the town and have installed the above referenced septic system strictly in accordance with the above referenced plan and have addressed any comments prepared by the design engineer and/or B.O.H representative made during their inspections. A dimensioned as-built plan has been provided to the owner showing two dimensions from permanent points to each of the following: septic tank invert-in and invert-out, all angle points in all piping, D-box, beginning and end of each leaching trench, the four corners of each leach field, center cover of each leach chamber. As-built elevations have been recorded on plans submitted to the owner.

\_\_\_\_\_  
Installer's signature Date

Disposal Works Construction Permit # \_\_\_\_\_

Approved for construction on \_\_\_\_\_  
Date

Installer to send signed original copy of this form to the owner and a copy to the B.O.H. and designer. The original signature of both the designer and the installer are to be on this form prior to sending to the above parties. Final payment will be made to the installer after the owner receives this form.





Location: LOT 1 HIGH POINT DR., AMHERST

Name: HIGH

Date : 5/14/97

Job #: 97-035

Commonwealth of Massachusetts;  
Massachusetts

Site Suitability Assessment for On-Site Sewage Disposal

Performed By : K. Christian Boysen

Certification Number : Nov. '94

Witnessed By : DAVID ZARAZINSKI - BOH AGENT & CERT. SOILS EVAL.

Location Address or Lot No.	Owner's Name, Address and Tel. #
LOT 1	RON BERGUME
HIGH POINT DRIVE	SYLVIA HEIGHTS
AMHERST, MA 01002	HADLEY, MA 01035

YES New Construction: 4 BR HSE, NO GARBAGE GR. Repair

Office Review

Published Soil Survey Available : Map#: 7 Yes

Year Published 1981 Publication Scale 1: 15 840

Soil Map Unit SCITUATE Drainage Class Soil Limitations

Surficial Geologic Report Available : Yes No

Year Published Publication Scale

Geological Material (Map Unit)

Landform

USGS Map Unit SHUTESBURY Scale 1: 25 000 Date 1990

Flood Insurance Rate Map : Panel # 2501560005 Date: 1983

Above 500 year flood plain Yes

Within 500 year flood plain No

Within 100 year flood plain No

Wetland Area :

National Wetland Inventory Map (map unit) :

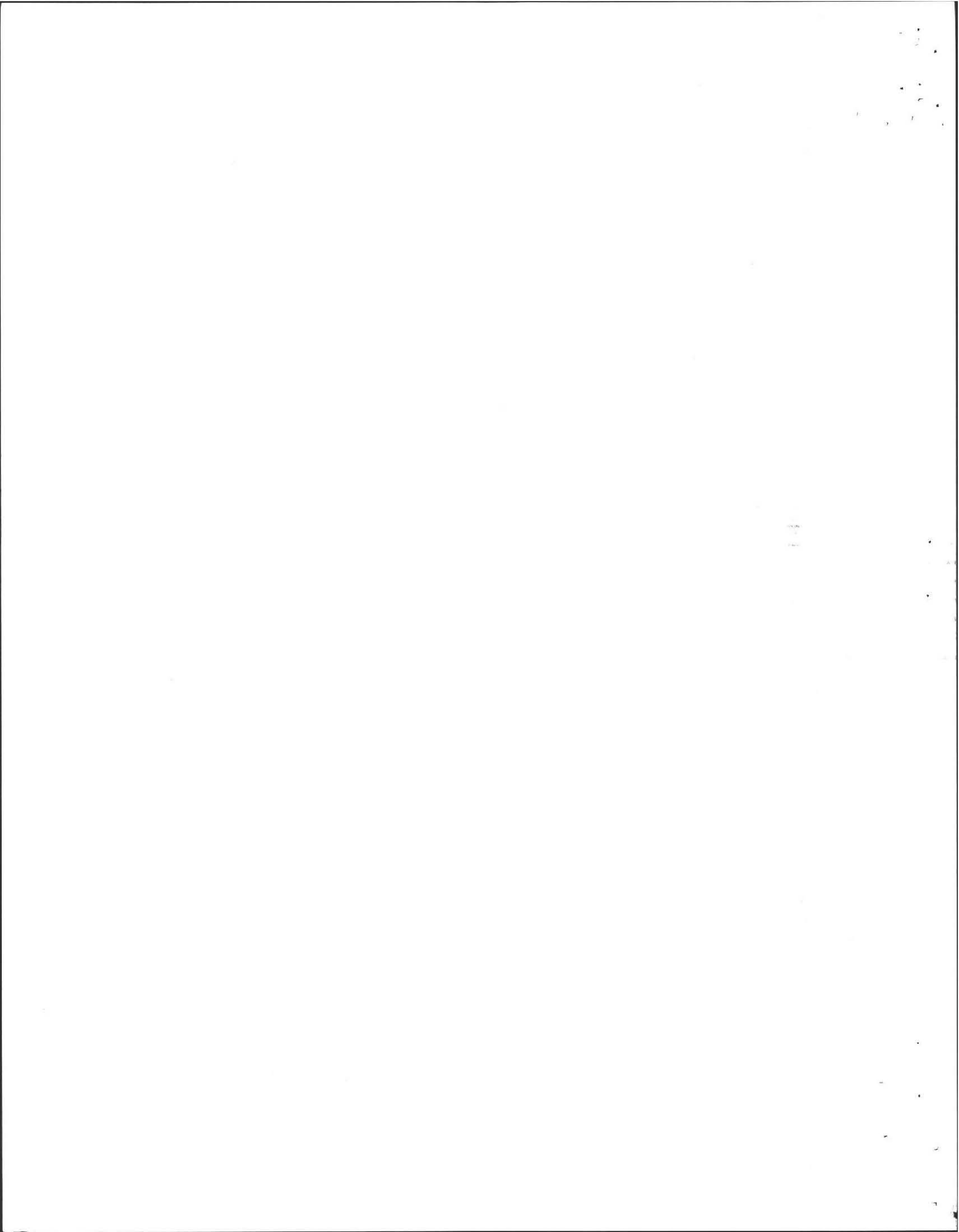
Wetlands Conservancy Program Map (map unit) :

Current Water Resource Conditions (USGS) : Month

Range : Above Normal Normal Below Normal

Other References Reviewed :

Sewage Disposal System  
Ron Bergume  
Lot 1  
High Point Drive  
Amherst, MA  
Sheet 3 of 19



Location: LOT 1 HIGH POINT DRIVE, AMHERST

Name: HIGH

Date: 5/14/97

Job#: 97-035

On-site Review

Deep Hole Number : 101A Date : 5/21/97 Time : 9:45 AM Weather : SUNNY, 70

Location (identify on site plan) SEE SITE PLAN

Land Use : WOODS Slope : 1% Surface Stones : FEW

Vegetation : BEECH, MAPLES

Landform : TERRACE

Position on landscape (sketch on back) : ON TERRACE

Distance From :

Open Water Body : >200' Drainageway : >150'

Possible Wet Area : >150' Property Line : 30'+/- EST-SEE SITE PLAN

Drinking Water Well: >200' Other : TOWN WATER? @ ROAD 1000'+/-

**DEEP OBSERVATION HOLE LOG**

Depth from Surface (inches)	Soil Horizons	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (structure, stones, etc)
-1-0	O	FIBROUS	10YR 3/3	NONE	-LEAF LITTER -FOREST DUFF
0-2	A	V. FINE SANDY LOAM	10YR 4/4	NONE	-FRIABLE -GRANULAR -MANY ROOTS -WAVY BNDRY
2-16	Bw	FINE SANDY LOAM	10YR 4.5/5	NONE	-20% SUB-ANG GRAV TO 1-1/2 -FRIABLE -GRANULAR -MANY ROOTS
16-22	BC	FINE SANDY LOAM	10YR 4.5/4	NONE	-FRIABLE -30% GRAV TO 1-1/2 -COMPACT & FIRM IN PLACE -GRANULAR
22-41	C1	V. FINE SANDY LOAM	5Y 4/3	NONE	-30% GRAV & STONES TO 12" -V. COMPACT IN PLACE -V. WAVY BNDRY
41-122	C2	FINE SANDY LOAM	5Y 5.5/2.5	-@118-122" = -5% 10YR 4/4 -DISTINCT	-NEARLY FINE SAND -V. FRIABLE

92.6

Sewage Disposal System

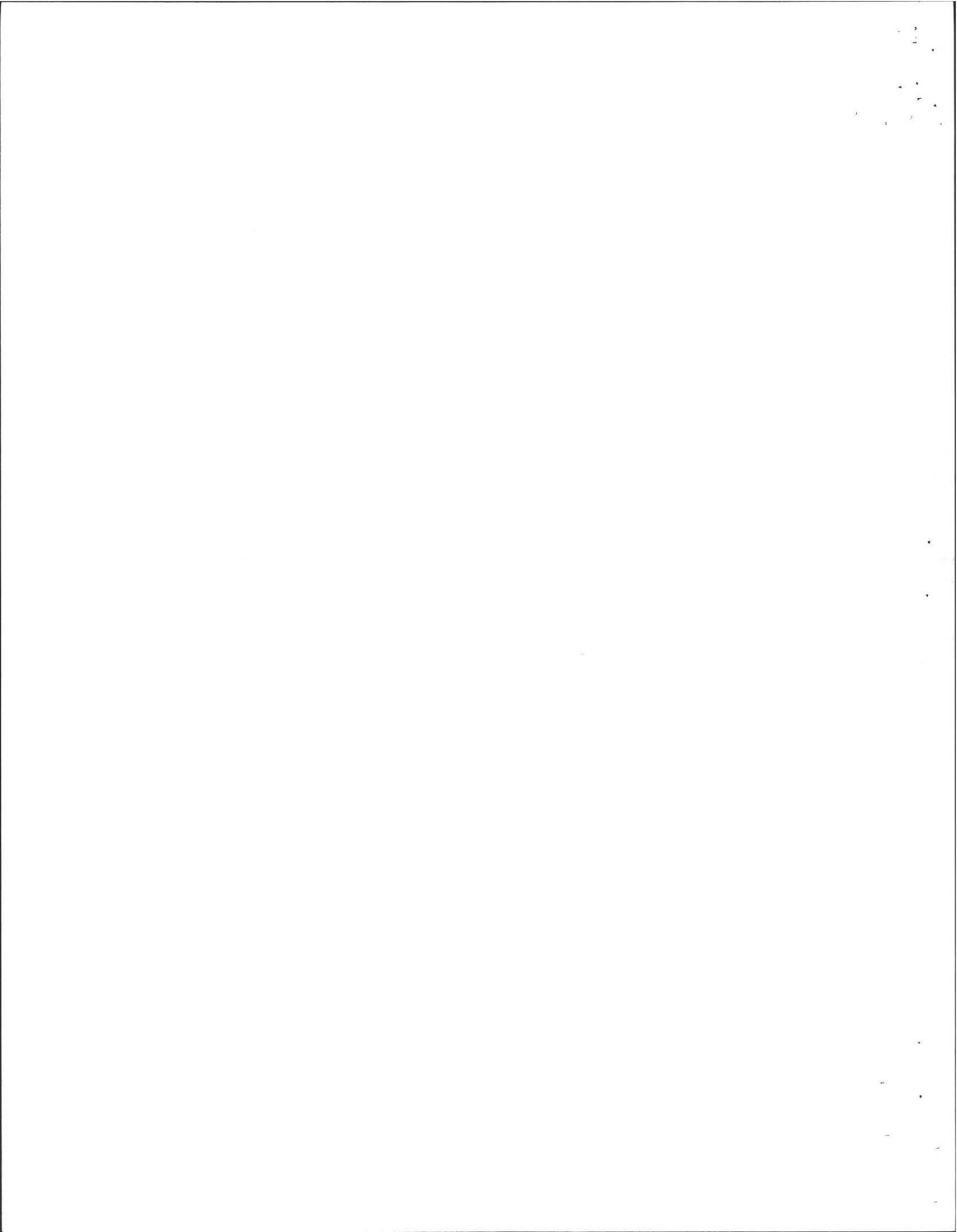
Ron Bercume

Lot 1

High Point Drive

Amherst, MA

Sheet 4 of 19

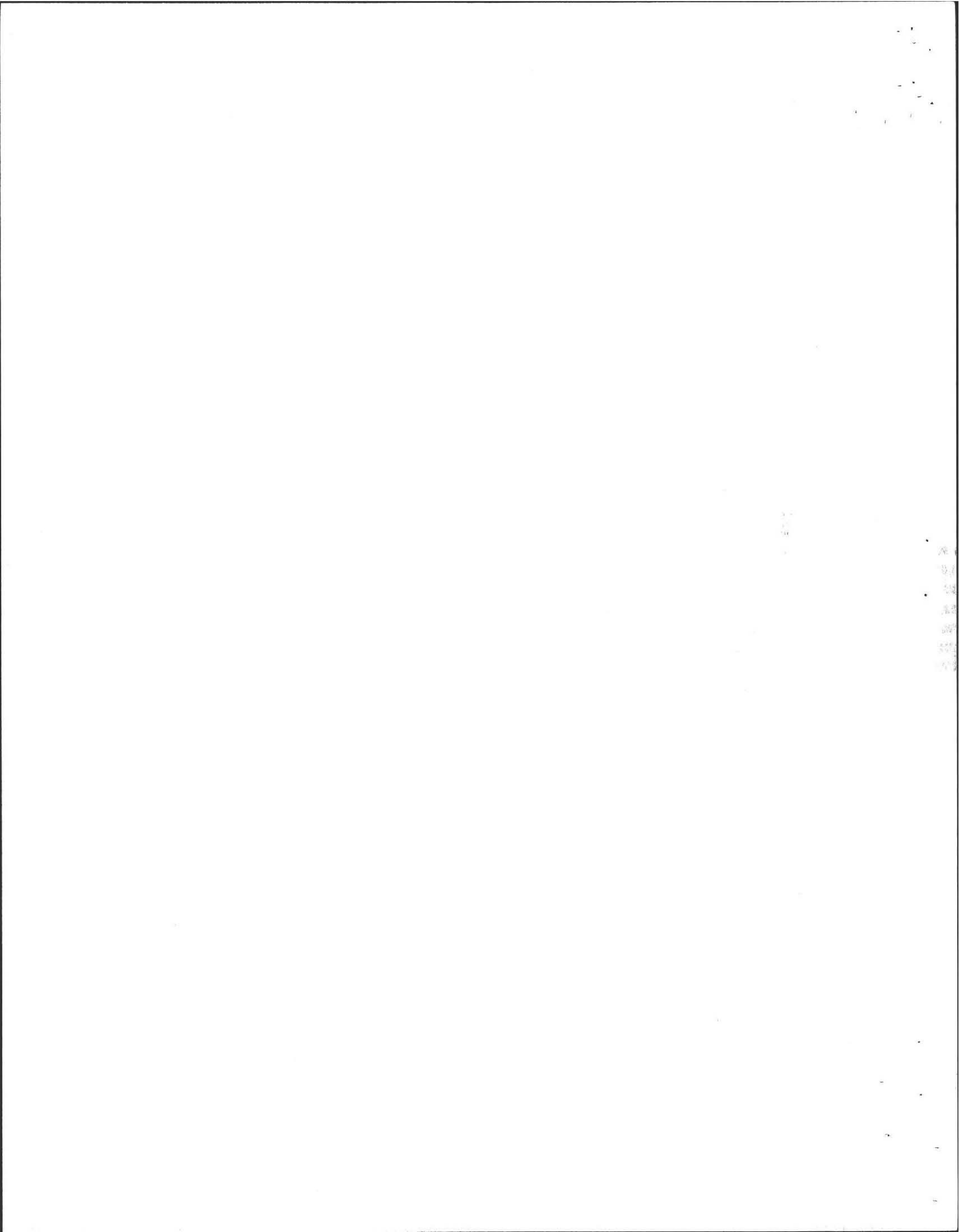


	-FINE	-V. GRANULAR
		-10% GRAV &
LOG 101A CONTINUED...		
		STONES TO 24"
		-FIRM
NOTE: REMOVE C1 FOR DESIGN & FIELD INSPECT SUBGRADE @ INSTALLATION		

Parent Material (geologic): **GLACIO/FLUVIAL**      Depth to Bedrock : >122"  
 Depth to Groundwater: Standing Water in Hole: **NONE**      Weeping from Pit Face: **NONE**  
 Estimated Seasonal High GroundWater : **118" (MOTTLES)**

9.8' elev. 82.8

**Sewage Disposal System**  
**Ron Bercume**  
**Lot 1**  
**High Point Drive**  
**Amherst, MA**  
**Sheet 5 of 19**



Location: LOT 1 HIGH POINT DRIVE, AMHERST

Name: HIGH

Date: 5/14/97

Job#: 97-035

On-site Review

Deep Hole Number : 101B Date : 5/21/97 Time : 10:45 AM Weather : SUNNY, 70  
 Location (identify on site plan) 60' S OF DH 101A & 20' W OF WOOD RD. - SEE SITE PLAN

Land Use : WOODS Slope : 1% Surface Stones : FEW

Vegetation : BEECH, MAPLES

Landform : TERRACE

Position on landscape (sketch on back) : ON TERRACE

Distance From :

Open Water Body : >200' Drainageway : >150'

Possible Wet Area : >150' Property Line : 30'+/- EST-SEE SITE PLAN

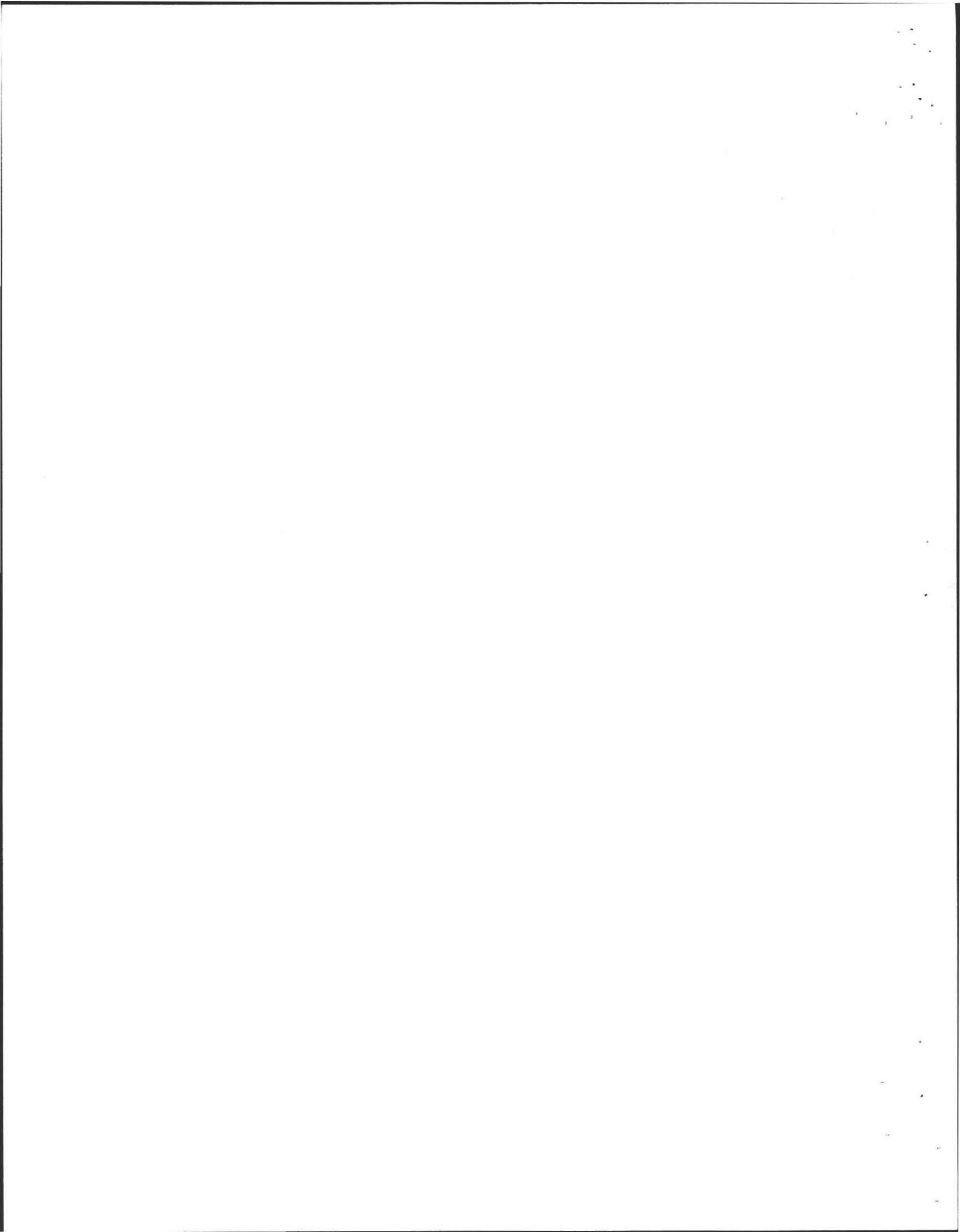
Drinking Water Well: >200' Other : TOWN WATER? @ ROAD 1000'+/-

**DEEP OBSERVATION HOLE LOG**

Depth from Surface (inches)	Soil Horizons	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (structure, stones, etc)
-1-0	O	FIBROUS	10YR 3/3	NONE	-LEAF LITTER -FOREST DUFF
0-2	A	V. FINE SANDY LOAM	10YR 4/4	NONE	-FRIABLE -GRANULAR -MANY ROOTS -WAVY BNDRY
2-24	Bw	FINE SANDY LOAM	10YR 4.5/5	NONE	-20% SUB-ANG GRAV TO 1-1/2 -FRIABLE -GRANULAR -MANY ROOTS
24-30	BC	FINE SANDY LOAM	10YR 4.5/4	NONE	-FRIABLE -30% GRAV TO 1-1/2 -COMPACT & FIRM IN PLACE
30-44	C1	V. FINE SANDY LOAM	5Y 4/3	NONE	-30% GRAV & STONES TO 12" -V. COMPACT IN PLACE -V. WAVY BNDRY
44-122	C2	FINE SANDY LOAM	5Y 5.5/2.5	-@118-122" = -5% 10YR 4/4 -DISTINCT -FINE	-NEARLY FINE SAND -V. FRIABLE -V. GRANULAR -10% GRAV &

92.7

Sewage Disposal System  
 Ron Bercume  
 Lot 1  
 High Point Drive  
 Amherst, MA  
 Sheet 6 of 19





LOG 101B CONTINUED...

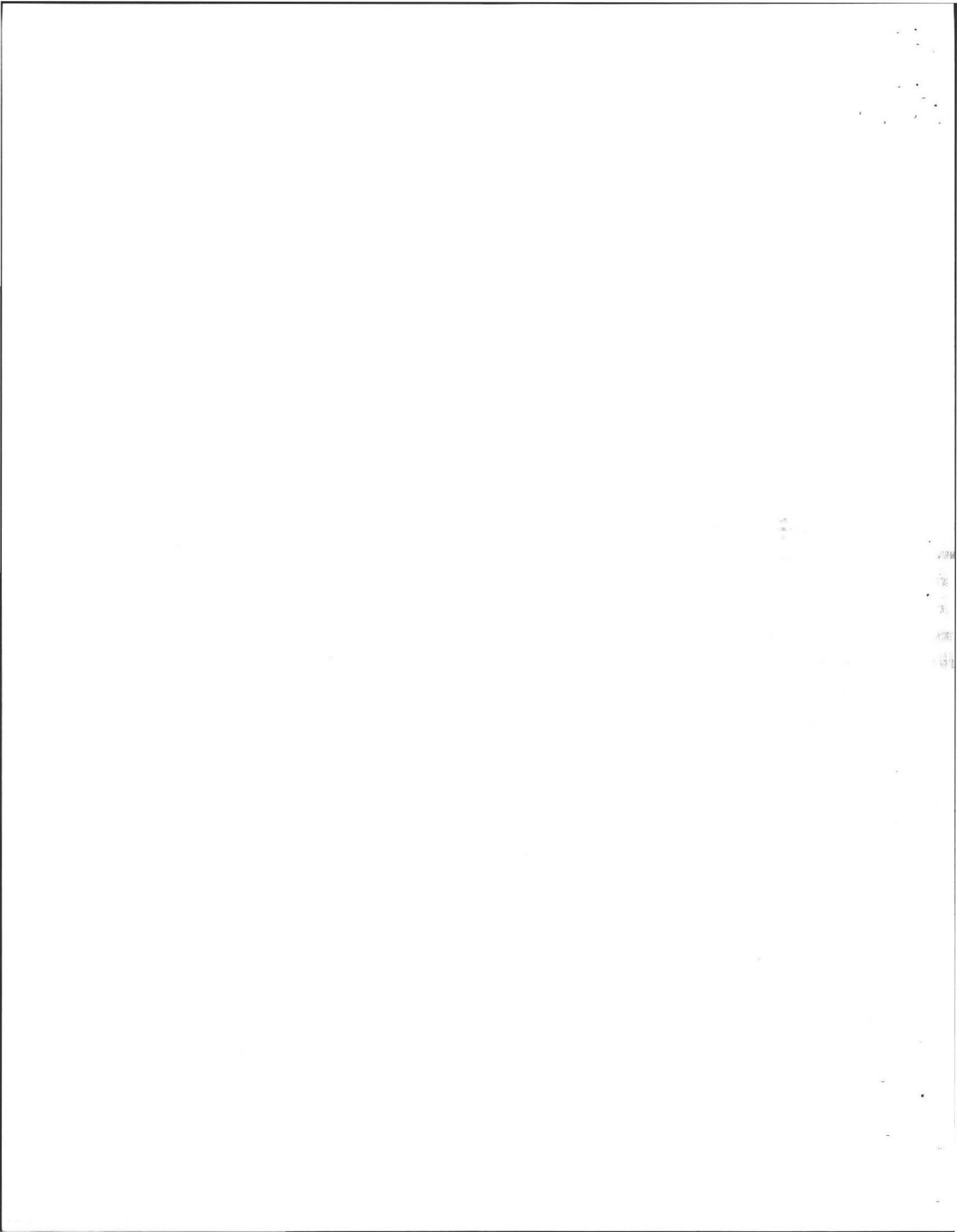
STONES TO 24"
-FIRM

NOTE: REMOVE C1 FOR DESIGN & FIELD INSPECT SUBGRADE @ INSTALLATION

Parent Material (geologic): **GLACIO/FLUVIAL**      Depth to Bedrock : **>122"**  
Depth to Groundwater: Standing Water in Hole: **NONE**      Weeping from Pit Face: **NONE**  
Estimated Seasonal High GroundWater : **118" (MOTTLES)**

9.8'      elev 82.9

**Sewage Disposal System**  
**Ron Bercume**  
**Lot 1**  
**High Point Drive**  
**Amherst, MA**  
**Sheet 7 of 19**



Location: LOT 1 HIGH POINT DRIVE, AMHERST

Name: HIGH

Date: 5/14/97

Job#: 97-035

Table Determination for Seasonal High Water

Method Used :

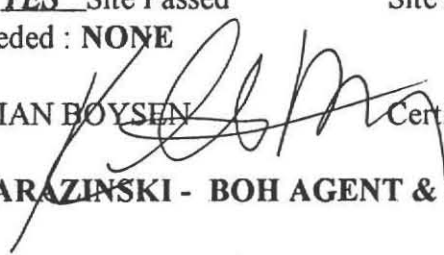
Depth observed standing in observation hole inches.  
 Depth weeping from side of observation hole inches.  
**YES** Depth to soil mottles **118** inches.  
 Ground water adjustment feet.

Index Well Number                      Reading Date                      Index Well Level  
 Adjustment Factor                      Adjusted Ground Water Level

Percolation Test		
	Date : 5/14/97	Time : 10:14 AM
Observation Hole #	101A	CONFIRMATION PERC FOR
Depth of Perc.	19" + 55"	RESULTS BY HUNTLEY
Start Pre-soak	11:39	ASSOC, 1996
End Pre-soak	11:54	(ATTACHED)
Time at 12"	11:54	
Time at 9"	12:16	NOTE: REMOVE C1 FOR DESIGN
Time at 6"	12:39	& FIELD INSPECT SUBGRADE.
Time (9"-6")	23 MINS	
Rate Min./Inch	8 MINS/INCH	- USE 15 MINS/INCH DESIGN

Site Suitability Assessment : YES Site Passed                      Site Failed

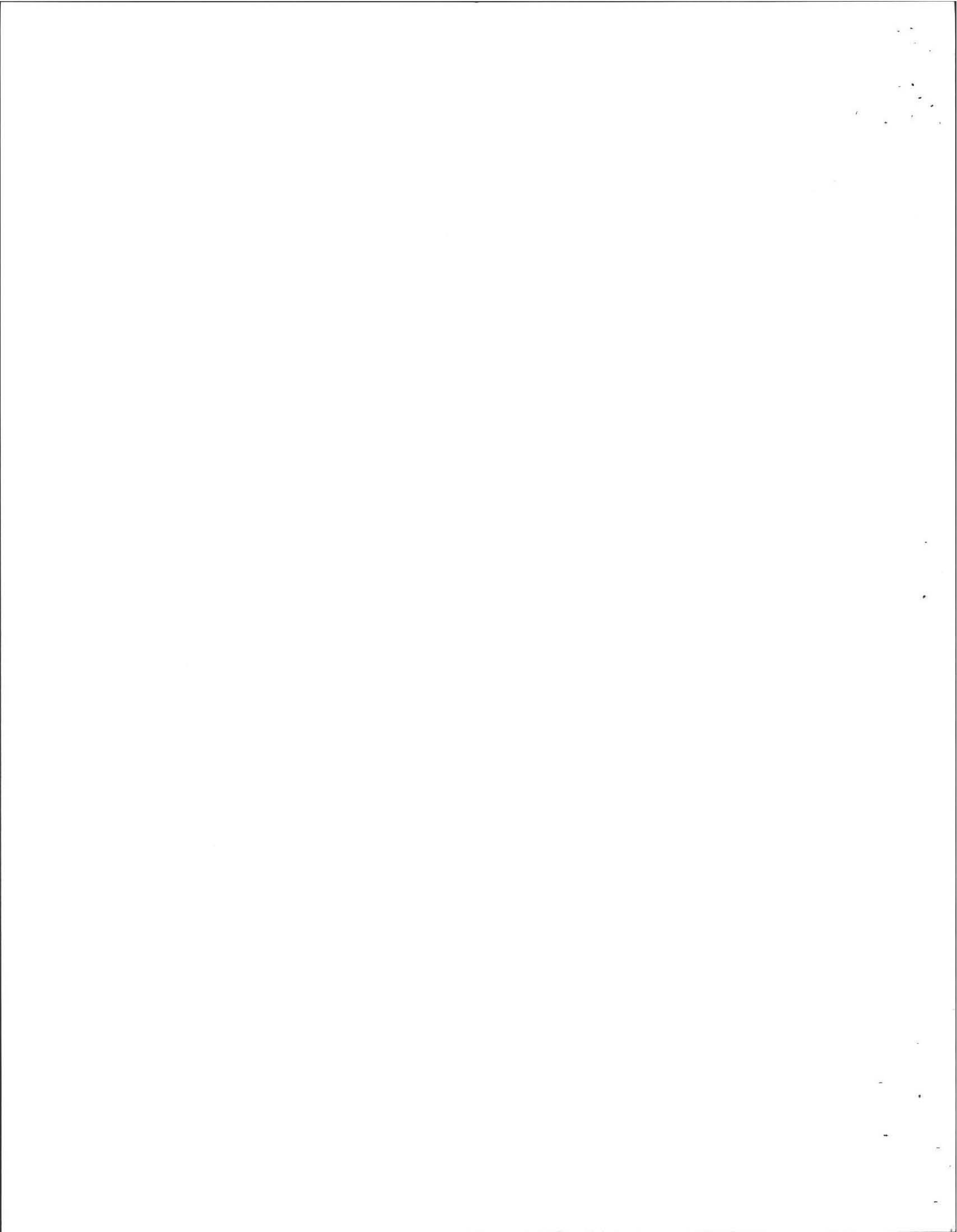
Additional Testing Needed : NONE

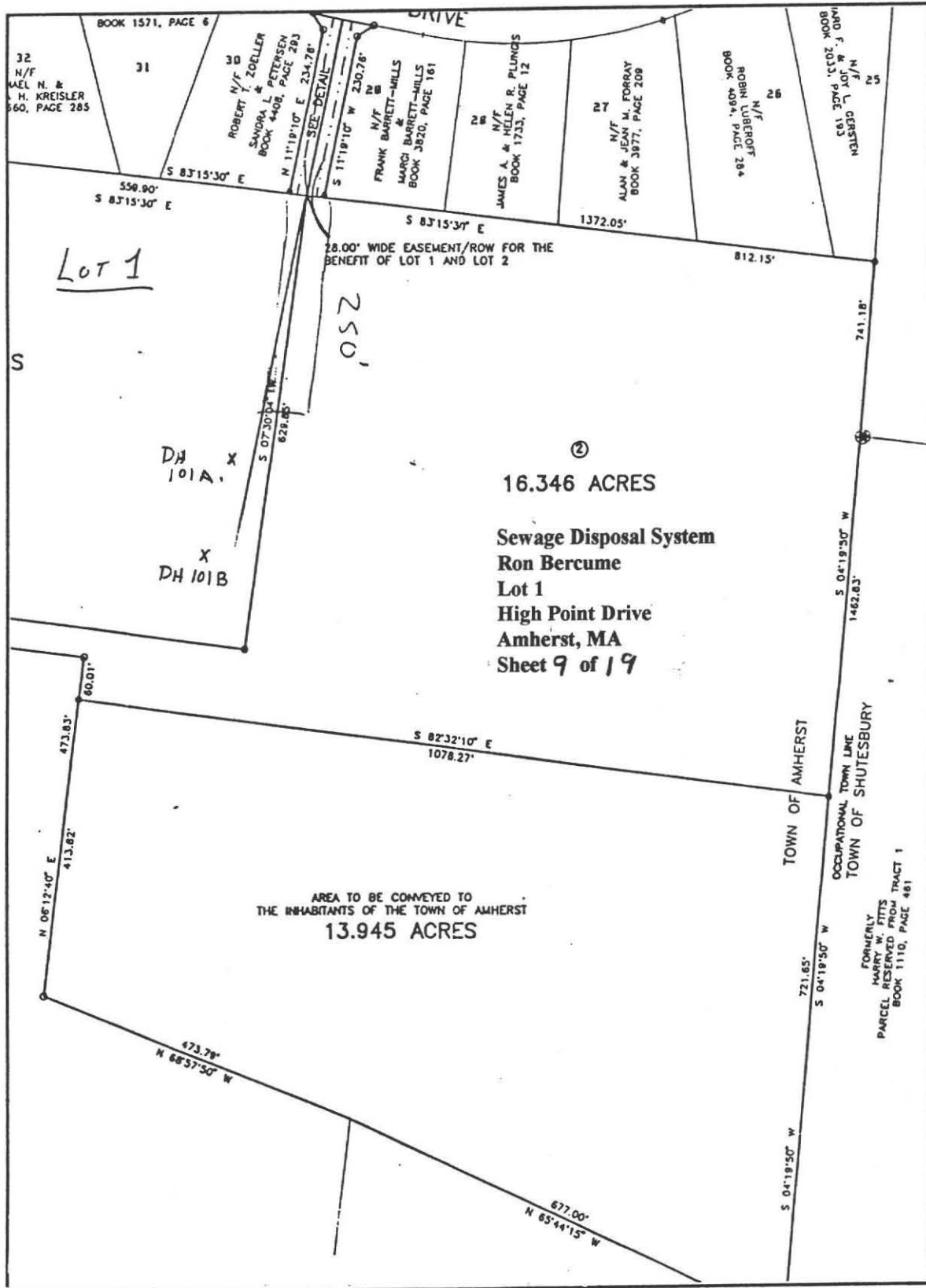
Performed By : K. CHRISTIAN BOYSEN  Certification # : NOV. 1994

Witnessed By : DAVID ZARAZINSKI - BOH AGENT & SOILS CERT. EVAL.

I certify that on **NOV. 1994** (date) I have passed the examination approved by the department of Environmental Protection and that the above analysis has been performed by me consistent with the required training, expertise, and experience described in 310 CMR 15.018(2).

Sewage Disposal System  
 Ron Bercume  
 Lot 1  
 High Point Drive  
 Amherst, MA  
 Sheet 8 of 19

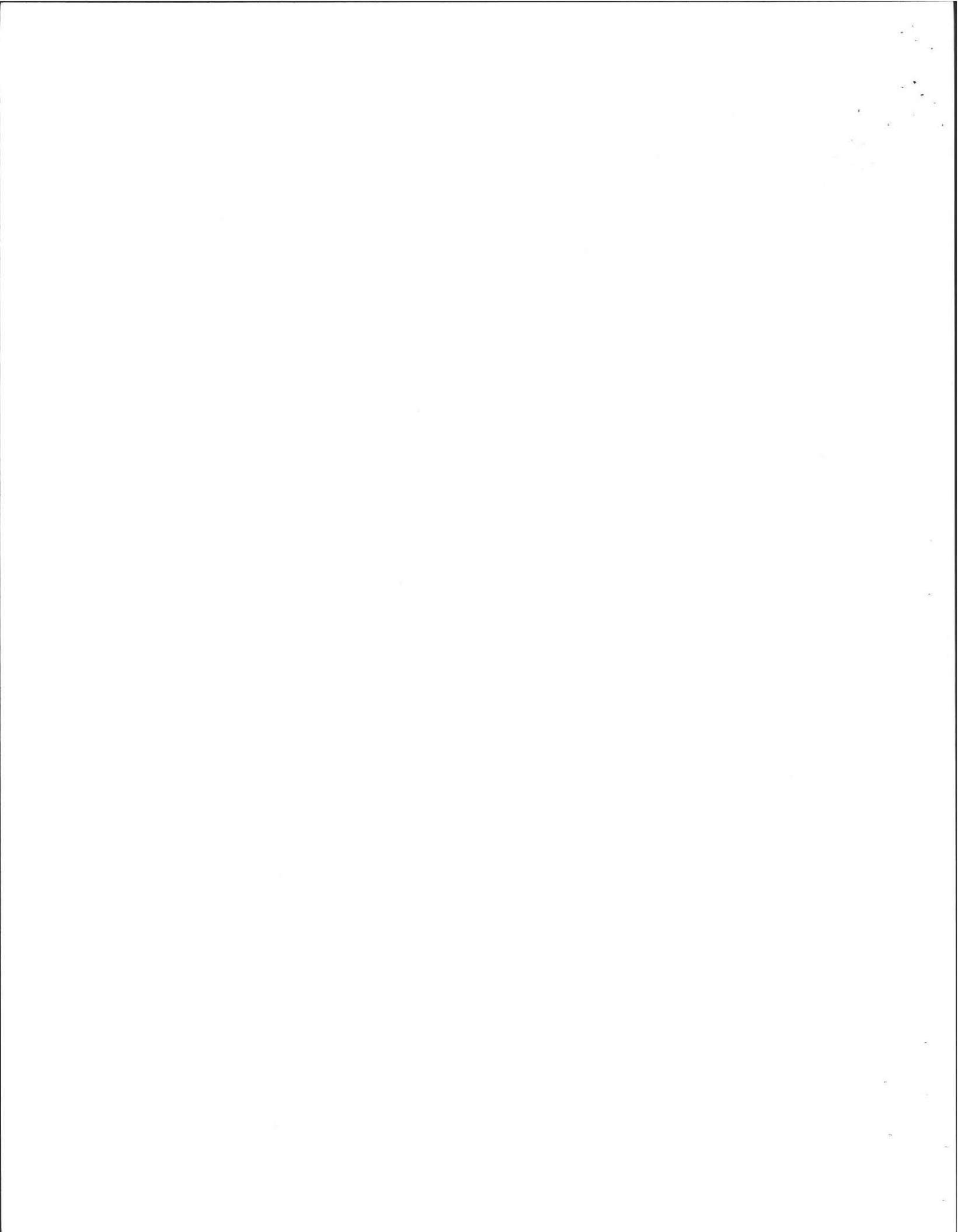




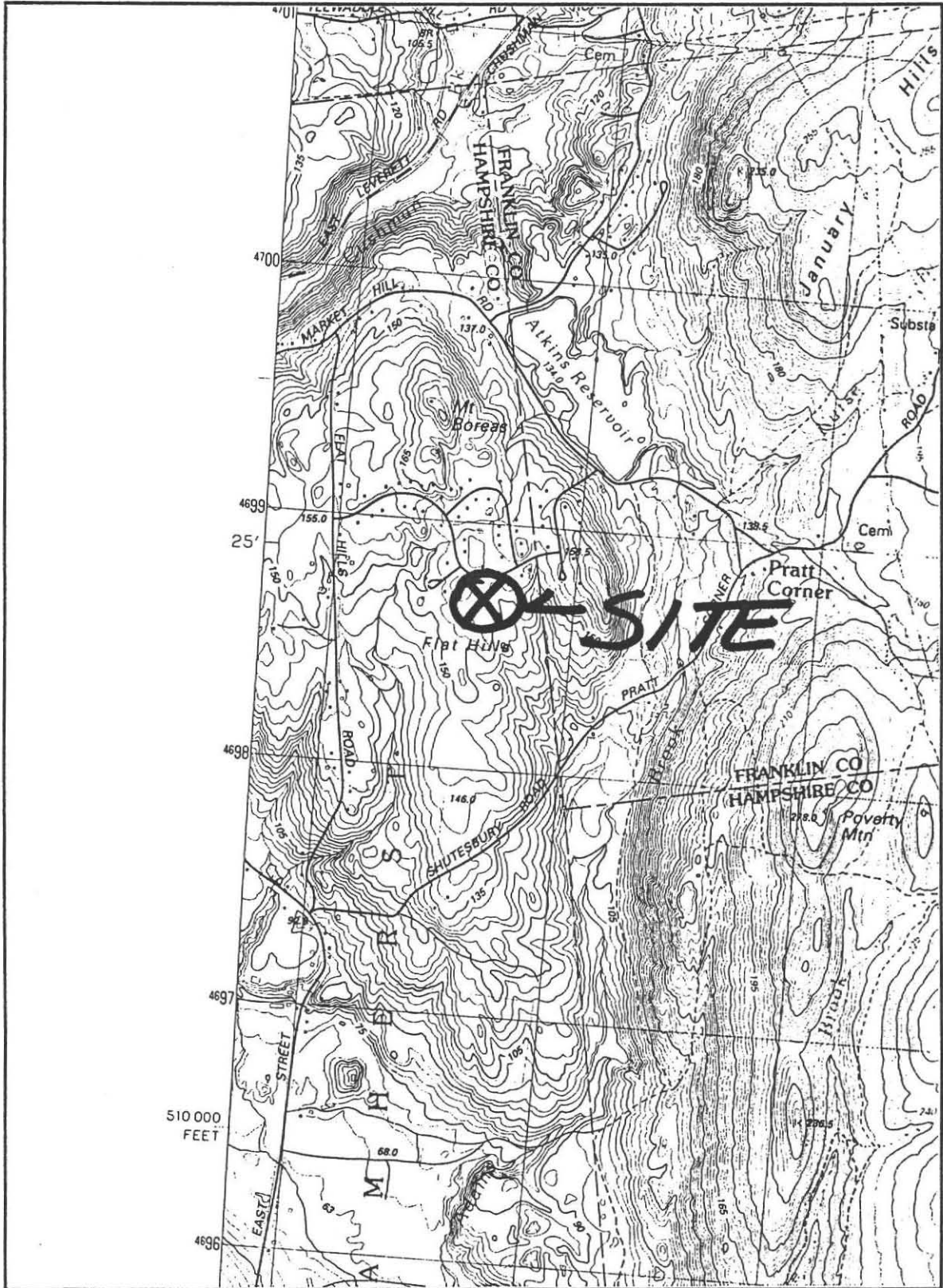
ASSESSORS MAP UNIT:

SCALE:

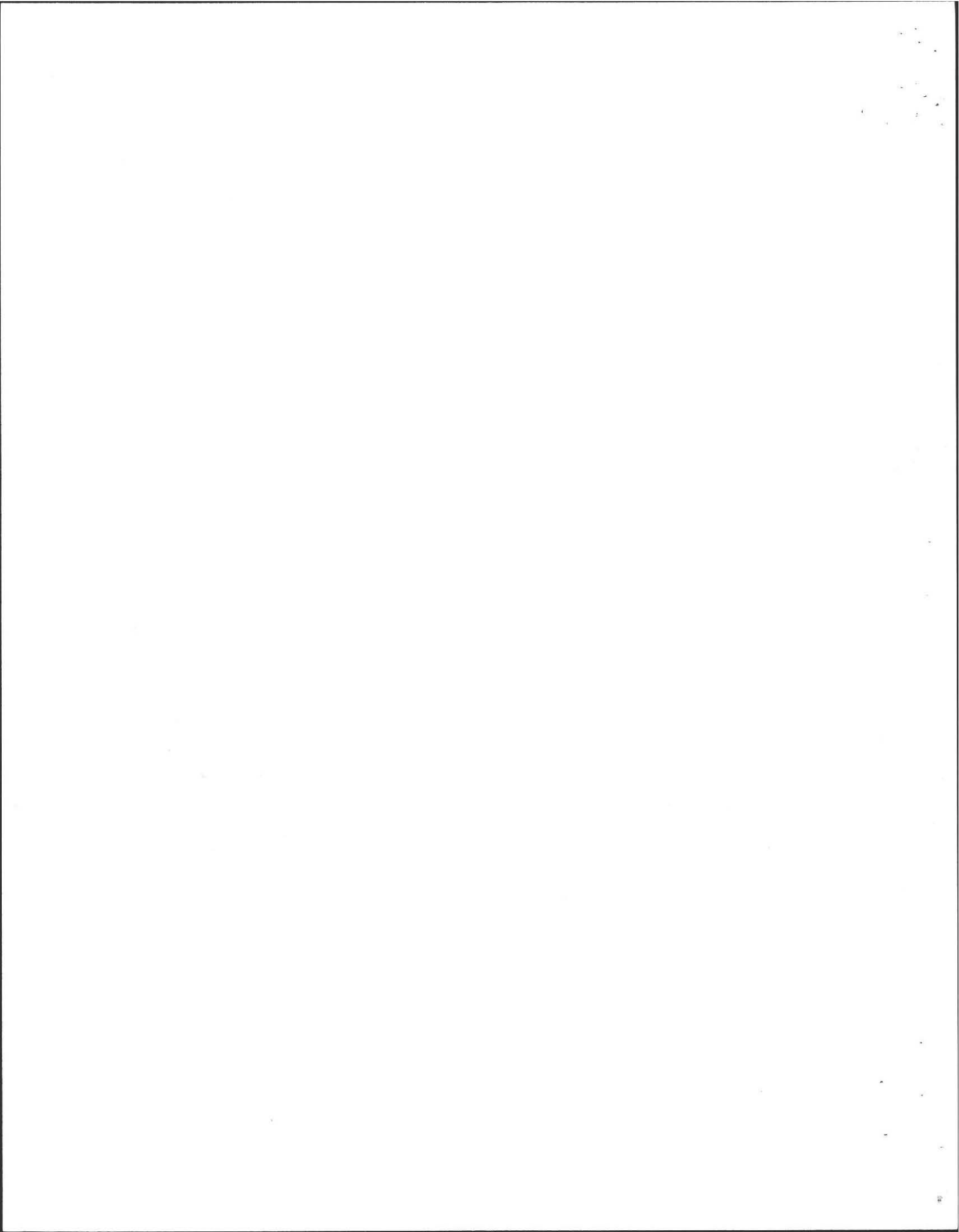
NO  
SHEET #: OF



Sewage Disposal System  
Ron Bercume  
Lot 1  
High Point Drive  
Amherst, MA  
Sheet 10 of 19



USGS MAP UNIT: 1990 SCALE: 1:25K N  
**SHUTESBURY** SHEET #: OF

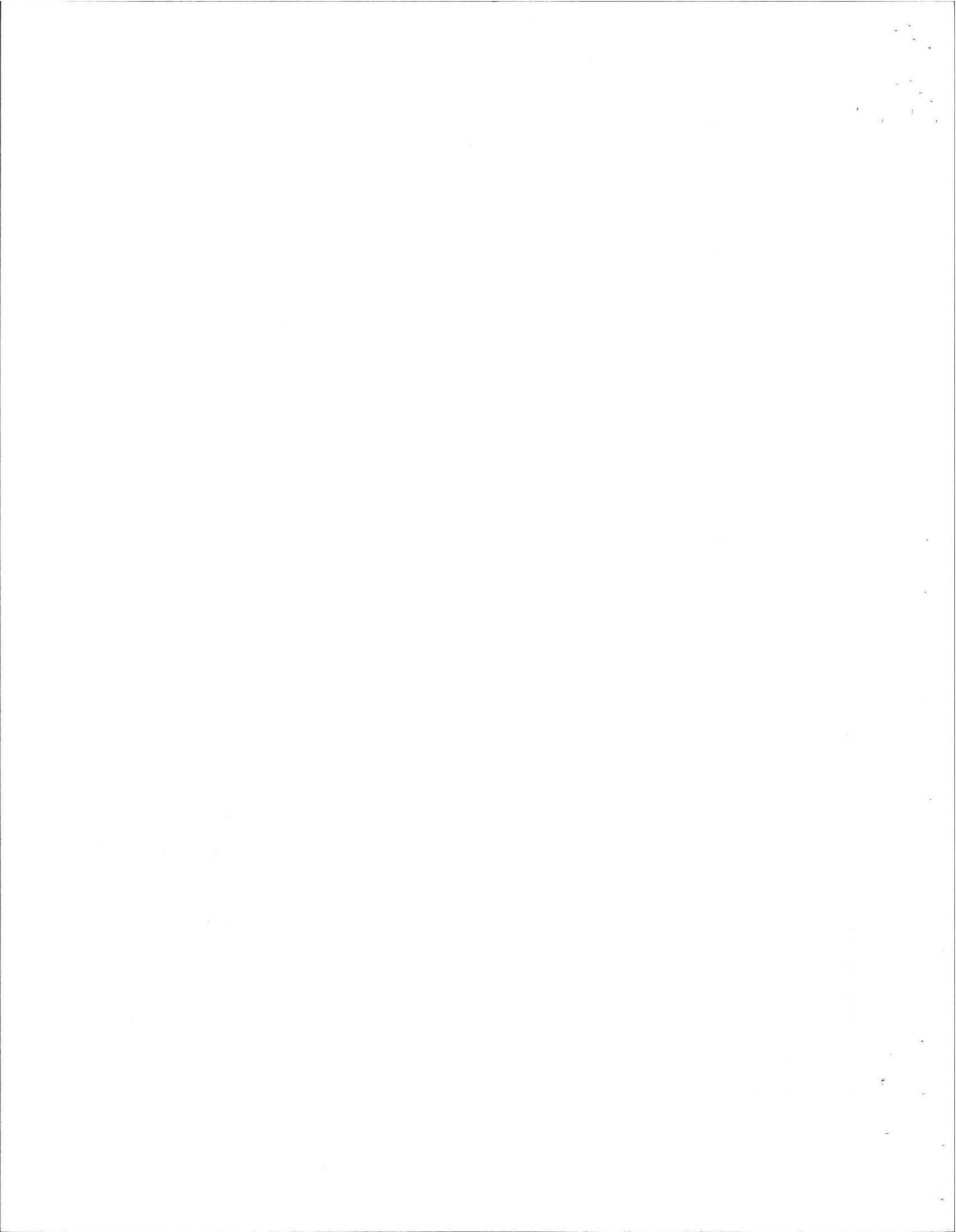




Sewage Disposal System  
Ron Bercume  
Lot 1  
High Point Drive  
Amherst, MA  
Sheet 11 of 19



SOILS MAP UNIT: 7/1981 SCALE: 1:5000  
HAMPSHIRE GLOUCESTER SHEET #: OF  
SCITUATE



# AMHERST

NATIONAL FLOOD INSURANCE PROGRAM

## FIRM FLOOD INSURANCE RATE MAP

TOWN OF  
AMHERST,  
MASSACHUSETTS  
HAMPSHIRE COUNTY

## MAP INDEX

PANELS PRINTED: 5, 10

COMMUNITY-PANEL NUMBERS  
250156 0001-0010

MAP REVISED:  
DECEMBER 15, 1983



Federal Emergency Management Agency

# AMHERST

NATIONAL FLOOD INSURANCE PROGRAM

## FIRM FLOOD INSURANCE RATE MAP

TOWN OF  
AMHERST,  
MASSACHUSETTS  
HAMPSHIRE COUNTY

PANEL 5 OF 10  
(SEE MAP INDEX FOR PANELS NOT PRINTED)

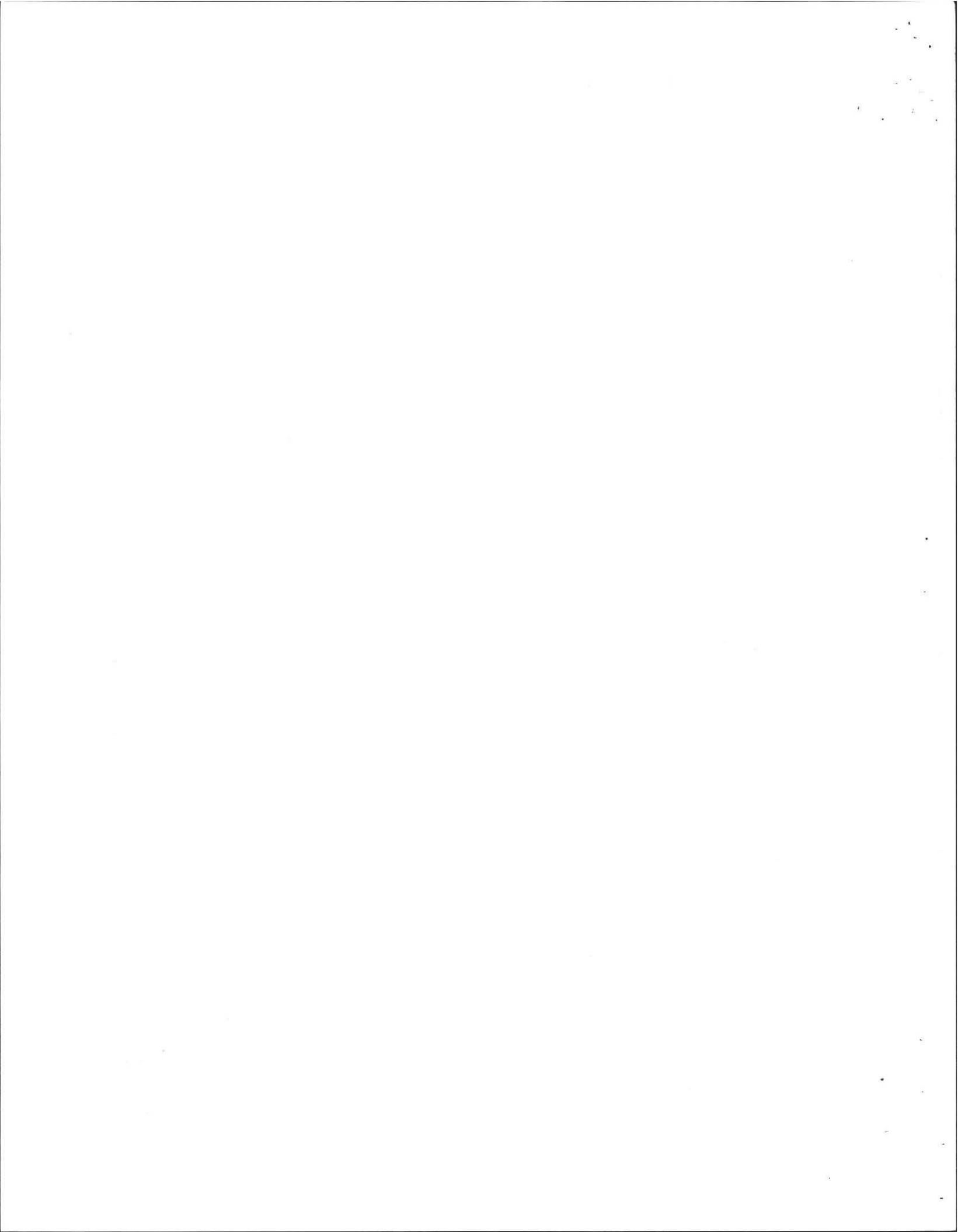
COMMUNITY-PANEL NUMBER  
250156 0005 C

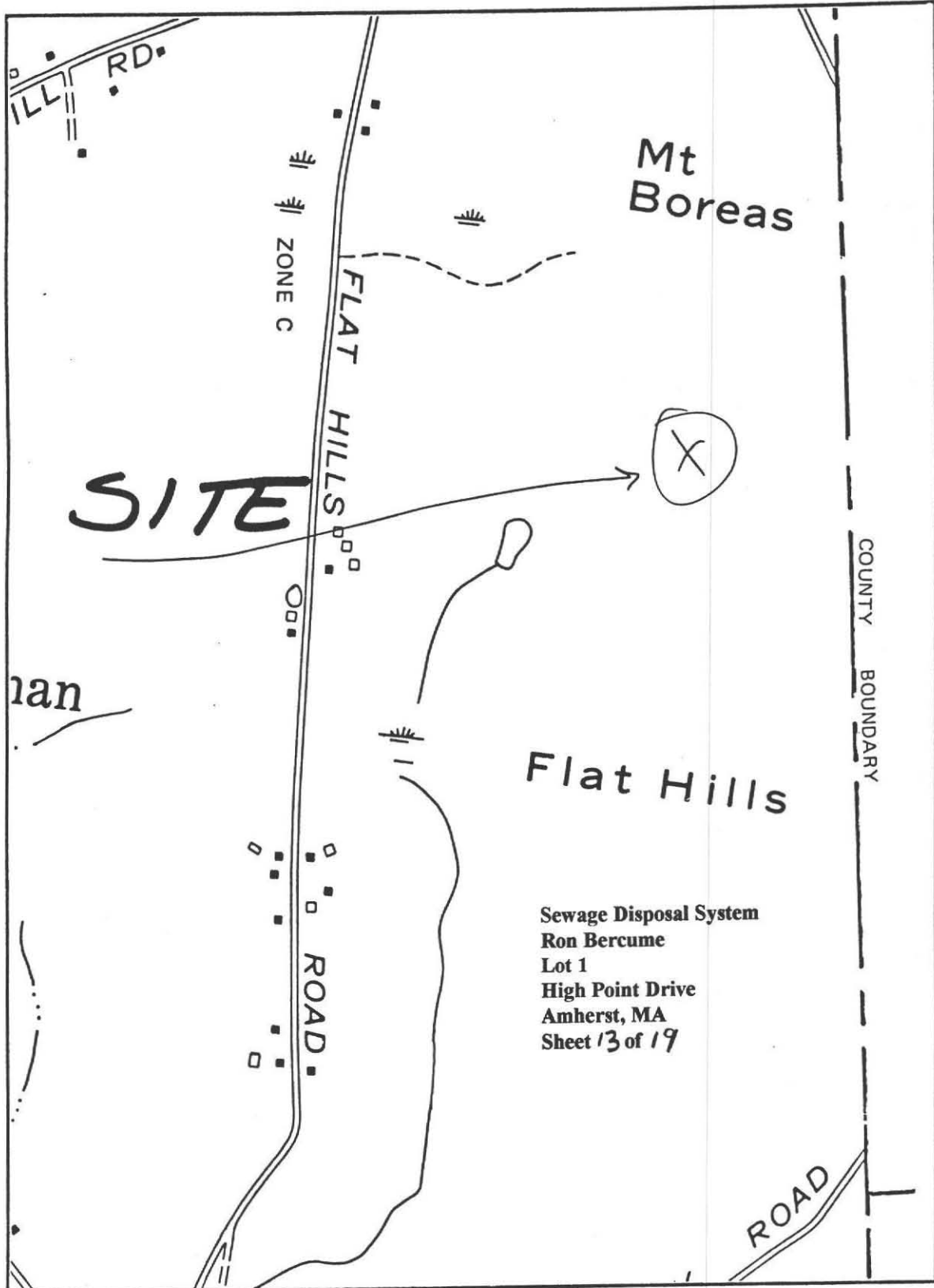
MAP REVISED:  
DECEMBER 15, 1983



Federal Emergency Management Agency

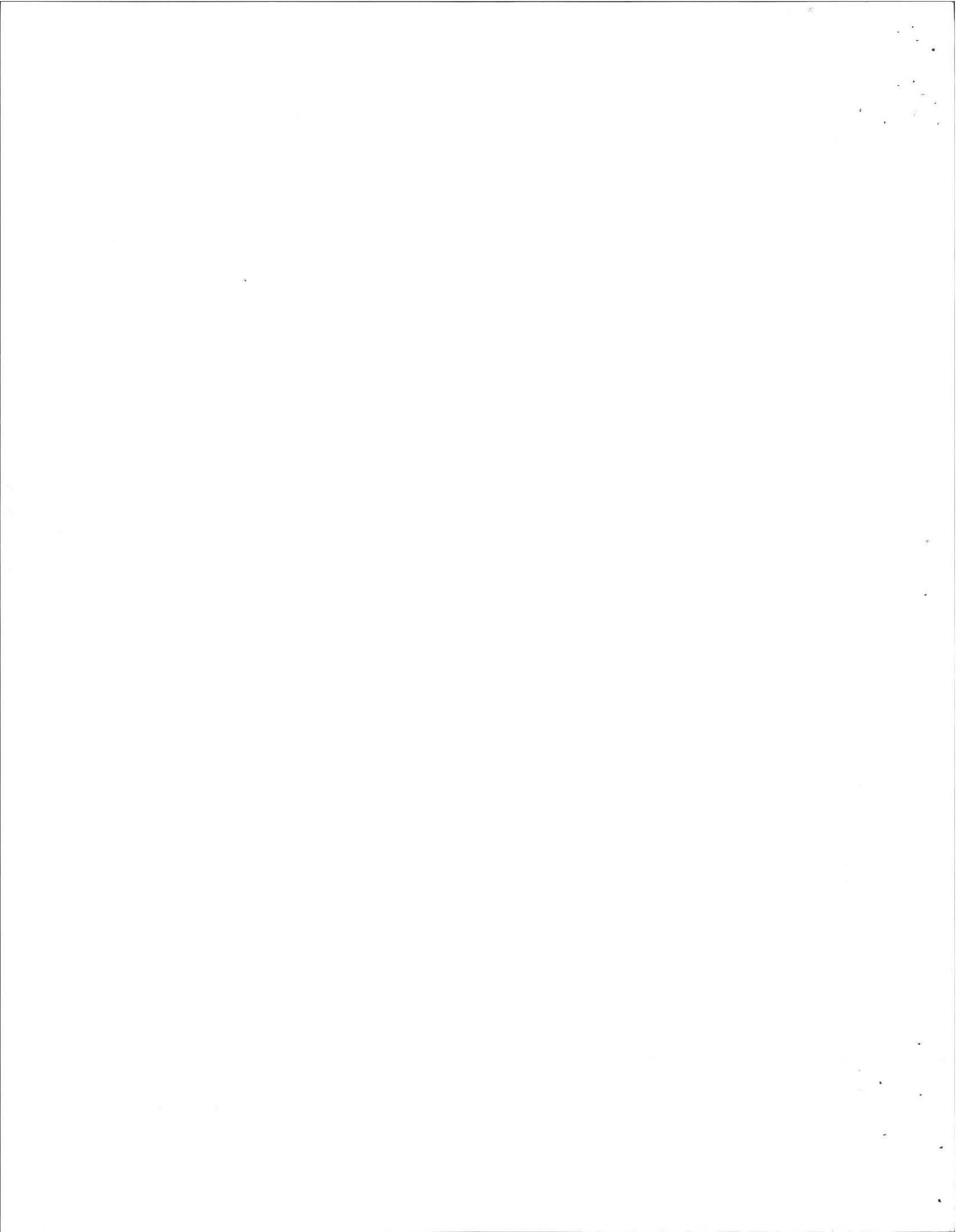
Sewage Disposal System  
Ron Bercume  
Lot 1  
High Point Drive  
Amherst, MA  
Sheet/2 of 19





FIRM MAP UNIT: 1983 / SCALE: 1:800 N(↑)  
 SHEET #: OF

2501560005



# Leaching Trench Design



David E. Keates  
11/28/97

Structure SINGLE FAMILY HOUSE

Design Flow 110 gal/day/bedroom

Number of bedrooms 4

Design Flow 440 gal/day

Garbage grinder to be used \_\_\_ yes  no

If yes, increase design flow by 50 %

Revised design flow 440 (1.5) = 660 gal/day

NOTE: B.O.H. REQUIRES 25% INCREASE

Percolation rate 8 min/in, use 15 min/in. for design

Soil mapping unit from HAMPSHIRE County, Massachusetts soil survey sheet number 7 is SCITUATE

## TRENCH LENGTH CALCULATION

From TITLE V, leaching area factor,  $F = 0.56$  gal/square foot

$$2 ( F ) ( \text{effective depth} ) L + ( \text{effective width} ) ( F ) L = 660 \text{ gal/day}$$

$$2 ( .56 ) ( 2.0 ) L + ( 4.0 ) ( .56 ) L = 660$$

$$\underline{2.24} L + \underline{2.24} L = 660$$

$$\underline{4.48} L = 660$$

$$L = \underline{147.3} \text{ linear feet.}$$

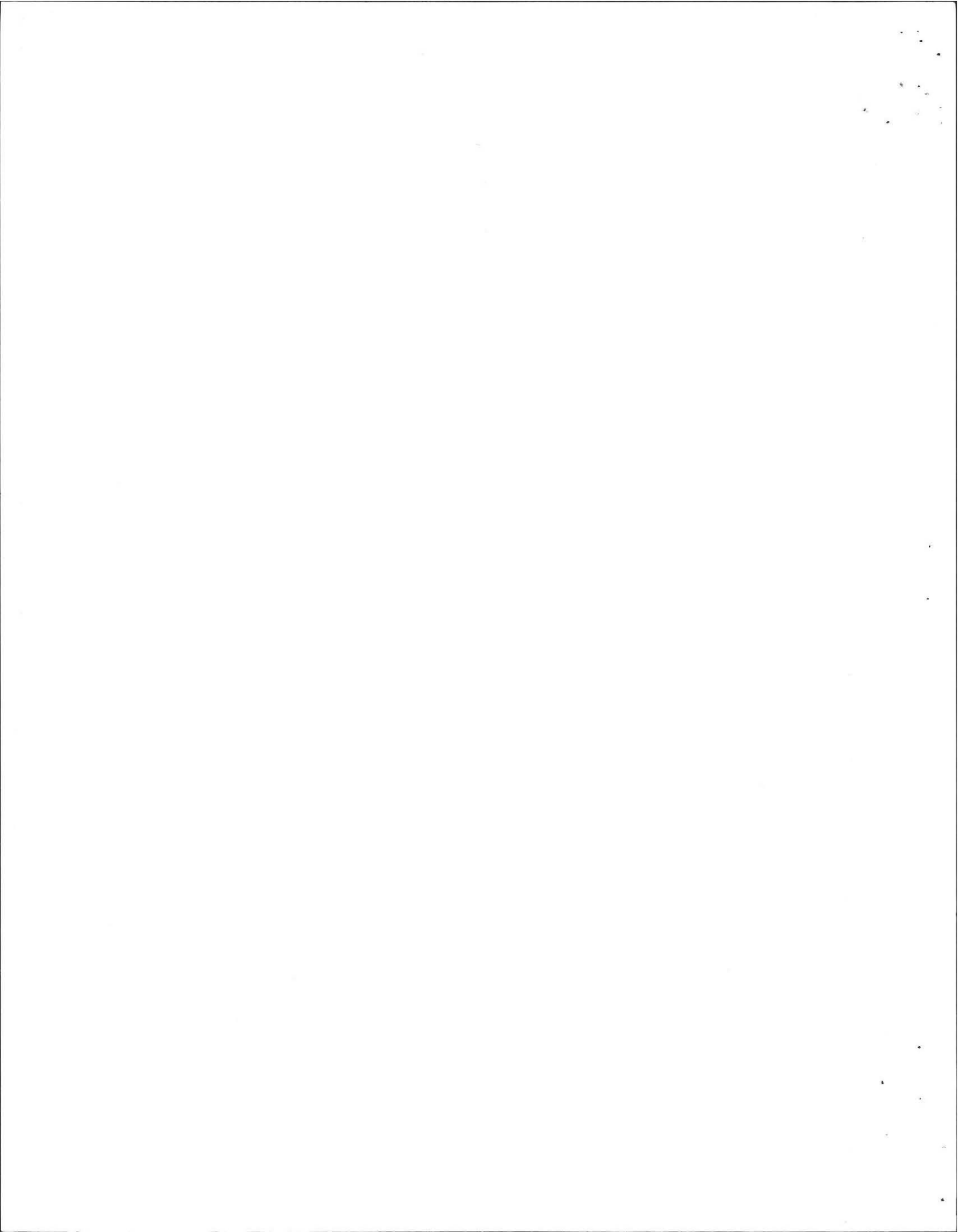
USE 3 TRENCHES 50' LONG = 150' > 147.3'

Note: Maximum length of single trench = 100 linear feet.  
Trenches over 50 feet long require a vent at end of trench.

PROJECT Sewage Disposal System  
Ron Bercume  
Lot 1  
High Point Drive  
Amherst, MA

Sheet 14 of 19

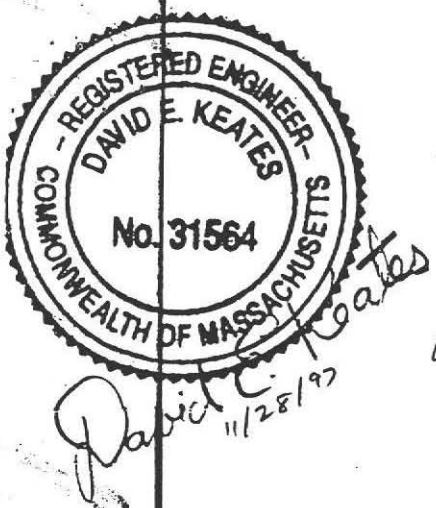
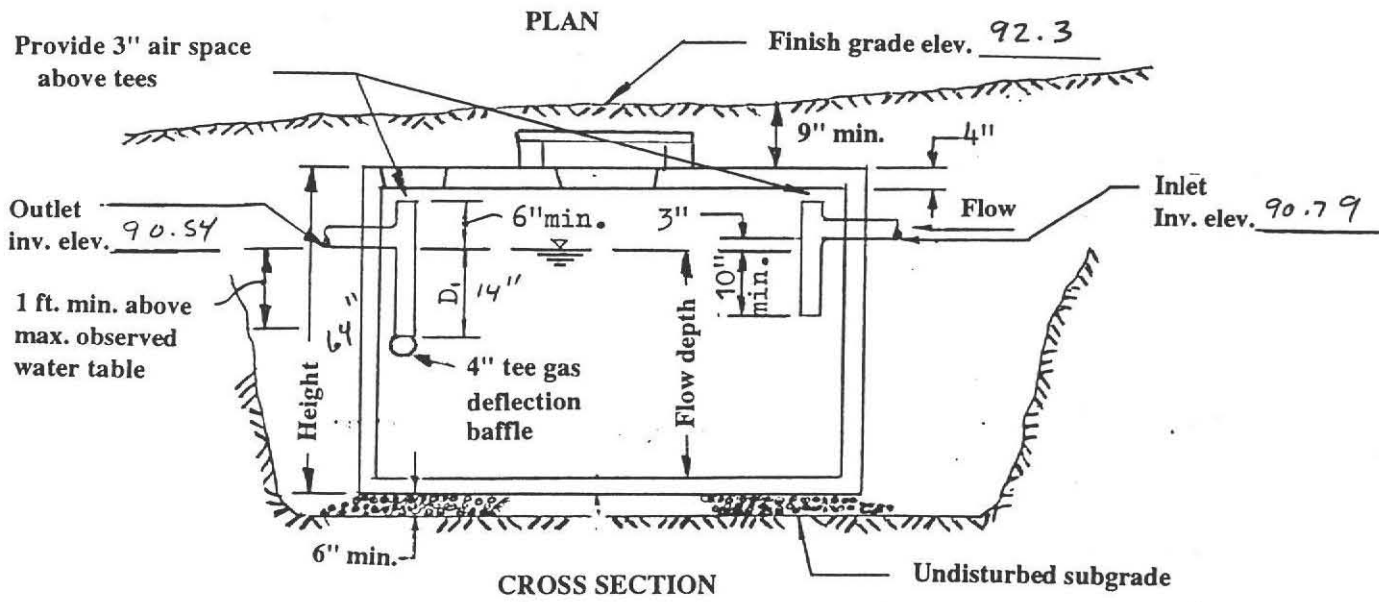
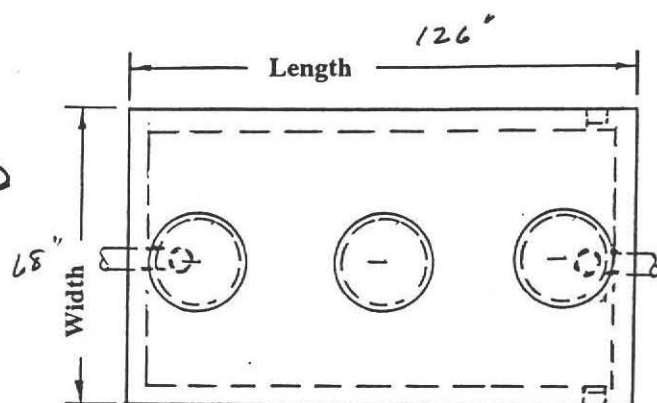
David E. Keates, P.E.  
Consulting Civil Engineer  
102 Russell Street  
Sunderland, MA 01375  
Tel: 413-665-7670





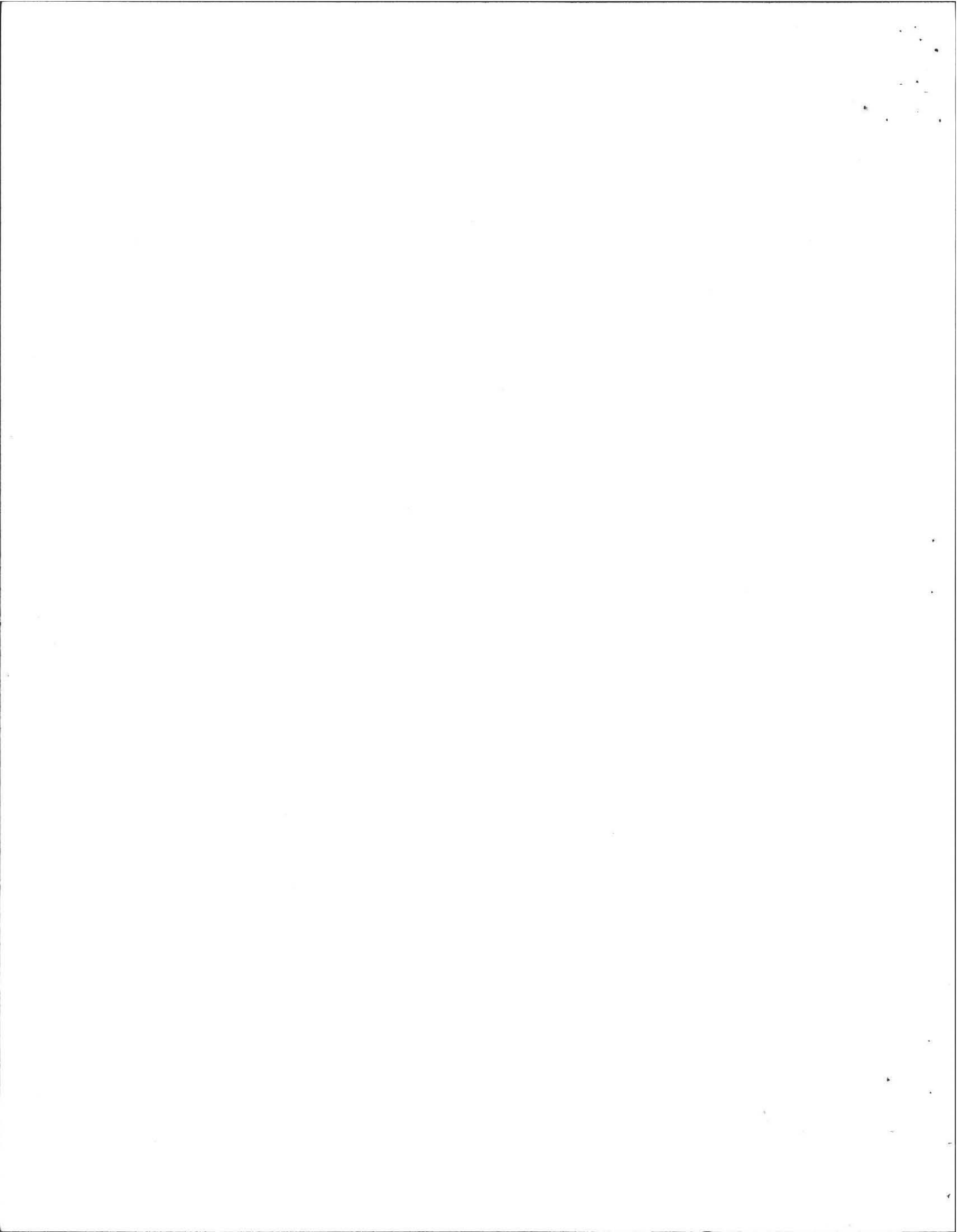
TYPICAL SEPTIC TANK  
1500 GALLON

Liquid depth in septic tank	Depth of outlet tee below flow line
D	D <sub>1</sub>
4'	14"
5'	19"
6'	24"
7'	29"
8'	34"

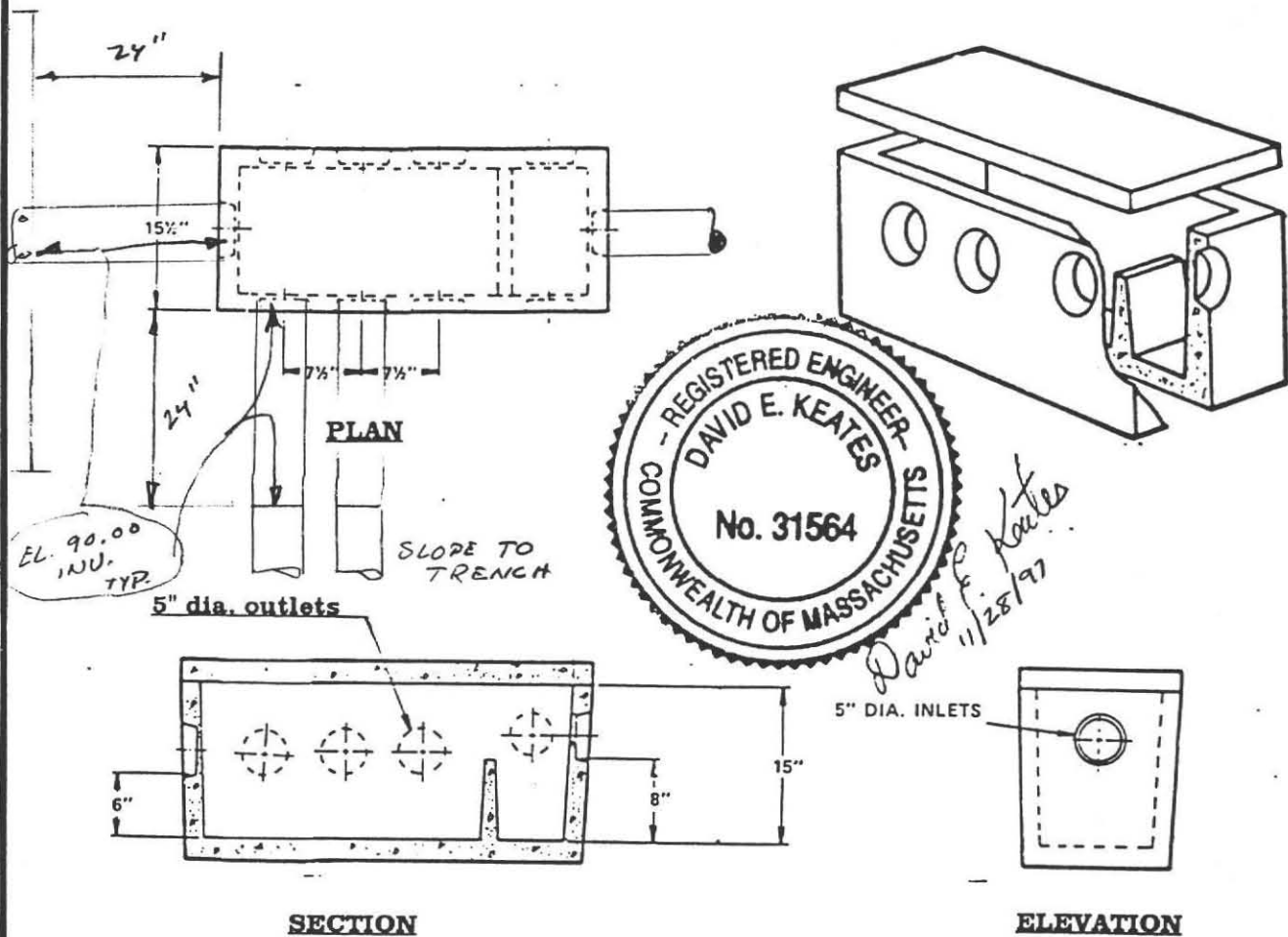


NOTES:

1. Septic tanks should be inspected at least annually and when the total depth of scum and solids exceed 1/3 the depth of the tank, the tank should be pumped.
2. Backfill around the tank shall be placed in even layers on all sides of the tank and in such a manner as to prevent damage to the tank.
3. Tanks shall be installed on a 6 in. min. layer of crushed stone leveled to grade and thoroughly compacted to the satisfaction of the Engineer.
4. Contractor shall provide a written certification that tank conforms to State and Town Board of Health specifications and regulations.
5. Tank and cover shall be capable of withstanding H20 loading.  yes  no  
If no, tank shall be capable of withstanding H10 loading.
6. Inlet and outlet tees shall extend to cleanout openings and shall be constructed of cast iron, schedule 40 PVC pipe or cast in place concrete.
7. Rectangular tanks shall have a min. inside length to width ratio of no less than 1.5 to 1.0.
8. At least 3 - 20" dia. manholes with readily removable impermeable covers of durable material shall be provided.
9. Access ports shall be placed at the center and over each inlet and outlet tee.
10. Center access port shall be accessible within 6 in. of final grade.



## Typical Distribution Box



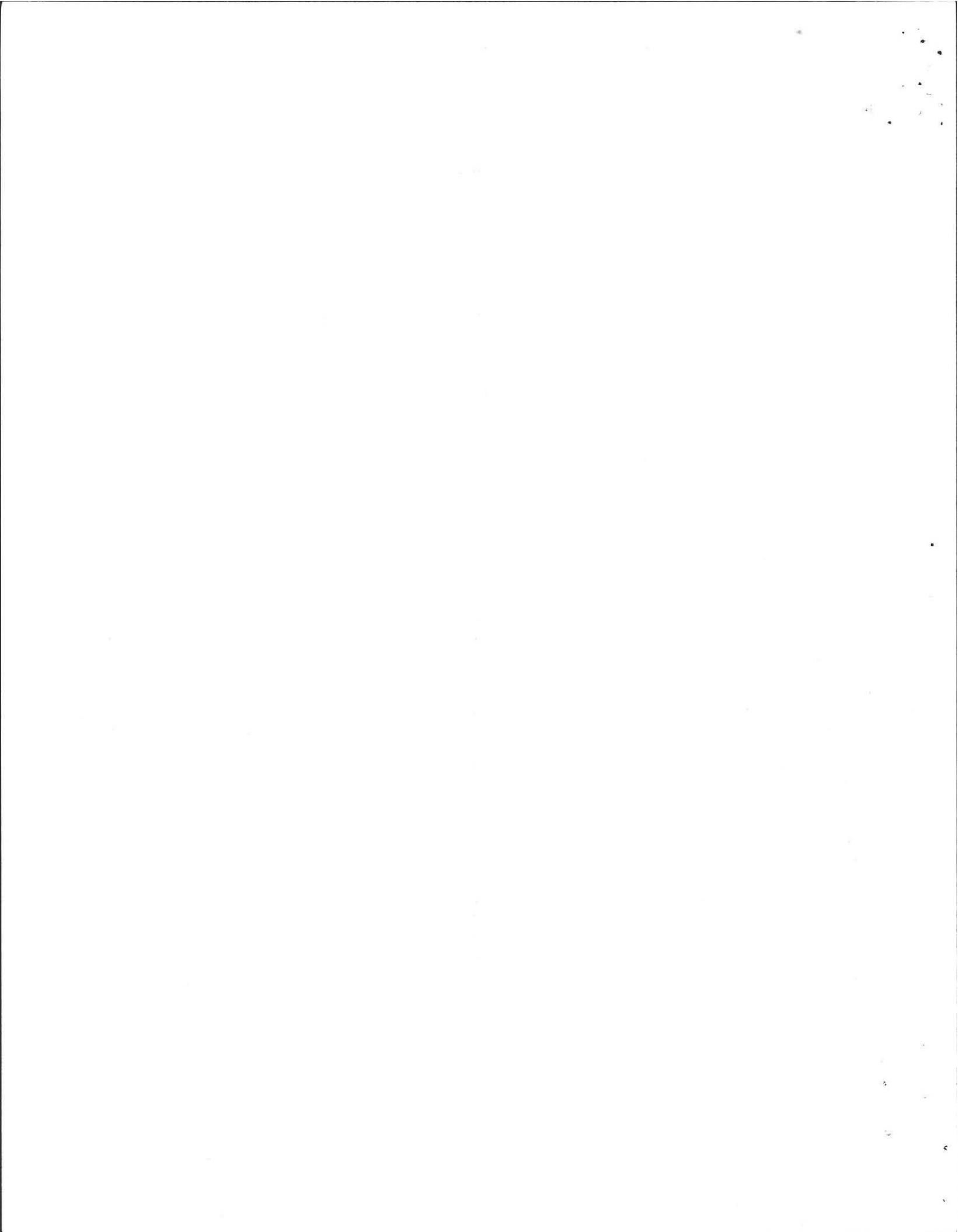
**Notes:**

1. The minimum wall thickness for reinforced concrete shall be two inches.
2. The invert elevations of all outlets shall be equal to each other and located at least two inches below the invert elevation of the inlet.
3. Cover of distribution box to be watertight.
4. There shall be a minimum sump of six inches as measured below the outlet invert elevation.
5. The minimum inside dimension of the distribution box, regardless of material, shall be 12 inches.
6. When the soil absorption system is to be dosed or when the slope of the inlet pipe exceeds 0.08 feet per foot, an inlet tee, baffle or splash plate extending to one inch above the outlet invert elevation shall be provided to dissipate the velocity of the influent.
7. Distribution box shall be installed on a level stable base that will not settle.
8. Distribution box to be placed on a 6 inch layer of compacted 3/4"-1 1/2" stone.
9. Distribution box outlets to be laid level for a distance of 2 feet, then sloped to leaching system.
10. Distribution box shall be capable of withstanding H-20 loading.    yes  no
11. To insure proper distribution, all lines must discharge equally. Testing will be done with water, prior to final inspection and/or at the final inspection in presence of the engineer.

**PROJECT** Sewage Disposal System  
Ron Bercume  
Lot 1  
High Point Drive  
Amherst, MA

Sheet 16 of 19

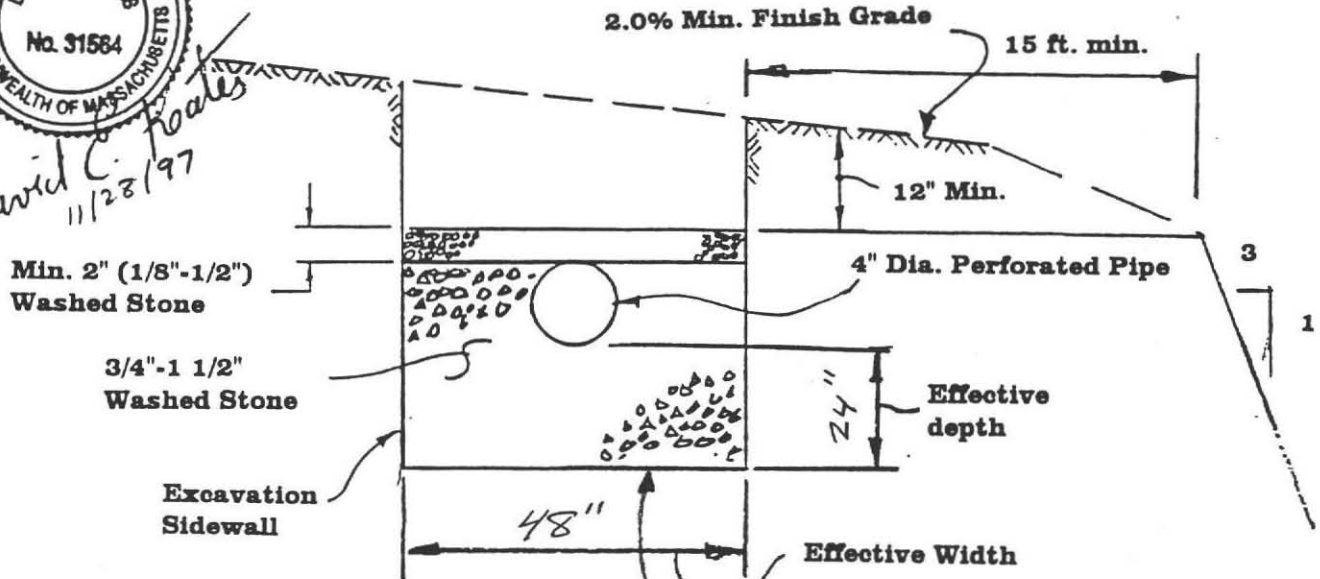
David E. Keates, P.E.  
Consulting Civil Engineer  
102 Russell Street  
Sunderland, MA 01375  
Tel: 413-665-7670



# Typical Leaching Trench Section



*David E. Keates*  
11/28/97



*bottom stone Trench 1 - 89.75*  
*" 2 - 87.55*  
*" 3 - 87.35*

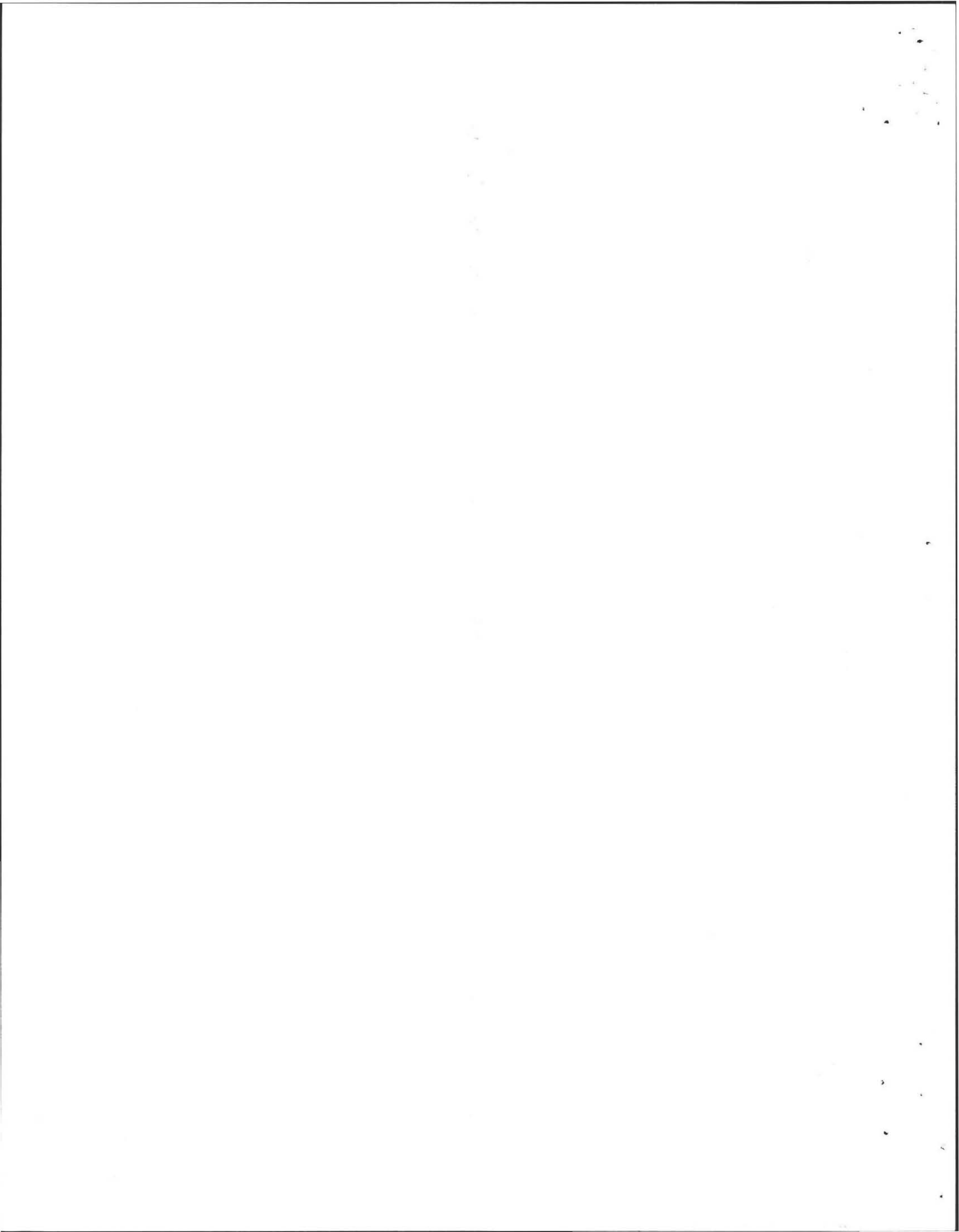
**Notes:**

1. Distance between excavation sidewalls shall be no less than three times the effective width or depth, whichever is greater. In no case shall the distance between excavation sidewalls be less than 6 ft. if the area between the trenches is to be used for reserve area.
2. All distribution pipe from the D-box to the leaching trench shall be unperforated and shall be laid with tight joints.
3. Trench pipe shall have a minimum slope of 0.005 ft./ft.
4. All stone must have less than 0.2% material finer than a number 200 sieve as determined by AASHTO T-11 and T-27 (latest edition).
5. Pipe shall be capped 12 inches from the end of the trench.
6. Pipe shall be constructed of either polyvinyl chloride (PVC), acrylonitrile-butadiene-styrene (ABS), or high density polyethylene (HDPE). PVC pipe shall be schedule 40 General Purpose Sewer Pipe (ASTM D 1785), schedule 40 Drain, Waste and Vent Pipe (ASTM D 2665) or SDR 35 PVC Gravity Sewer Pipe and Drain Pipe (ASTM D 3034). ABS pipe shall be schedule 40 (ASTM F 628). HDPE pipe shall meet or exceed ASTM F 810 for Smoothwall Polyethylene Pipe for use in Drainage and Waste Disposal Fields.
7. All system components shall be installed in accordance with TITLE V of the state sanitary code and any applicable local rules and regulations.
8. The bottom of all trenches shall be installed level at the design elevation given for each trench.
9. Trench sidewalls shall be scarified to remove any smearing of soil done during excavation.
10. Any change to this plan must be approved by the Board of Health and the design engineer.
11. The system shall not be backfilled prior to inspection and approval by the Board of Health and/or the engineer.
12. No permanent structure shall be constructed over the 100% expansion area.
13. Heavy equipment shall not be permitted to pass over the leaching area.
14. Any conditions encountered during construction differing from those shown on the plans shall be reported to the design engineer before construction continues.
15. Distribution lines exceeding 50 feet in length shall be connected and venting provided in accordance with 310 CMR 15.241
16. Contractor will give engineer and Board of Health representative a minimum of 3 days notice for any inspections.
17. Engineer does not represent nor warrant the operation or proper functioning of this system for any period of time.
18. Elevations refer to  assumed datum  USGS

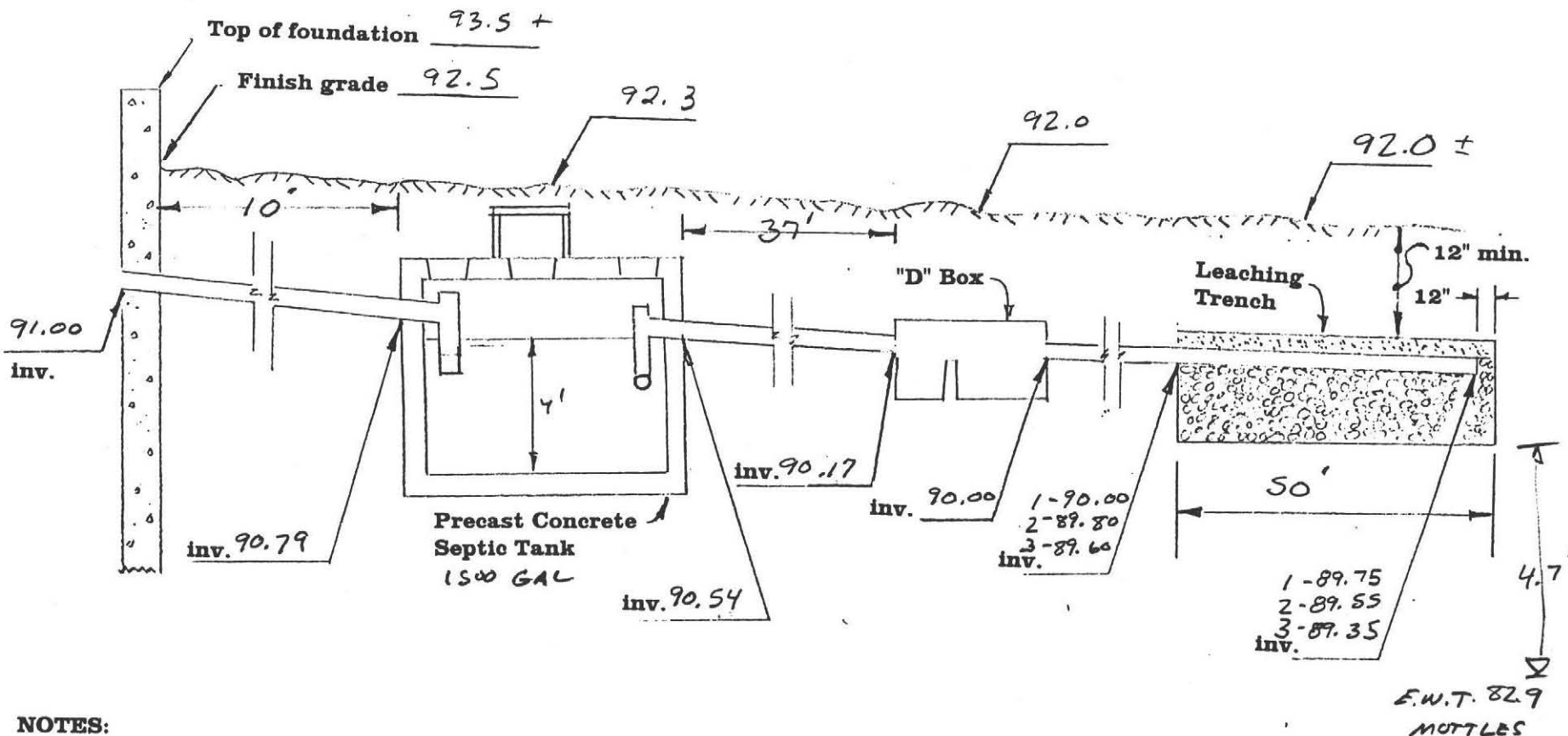
**PROJECT** Sewage Disposal System  
Ron Bercume  
Lot 1  
High Point Drive  
Amherst, MA

Sheet 17 of 19

David E. Keates, P.E.  
Consulting Civil Engineer  
102 Russell Street  
Sunderland, MA 01375  
Tel: 413-665-7670

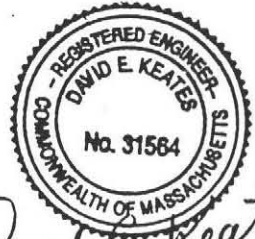


# Septic System Profile



**NOTES:**

1. The grade above and adjacent to leaching trench shall slope at least 2.0% to prevent accumulation of surface water.
2. Leaching trench distribution pipe shall have a min. slope of 0.005 ft./ft.
3. The bottom of each leaching trench shall be level at the elevation specified.
4. Pipe from foundation wall to septic tank shall be schedule 40 PVC or equivalent and have a minimum grade of 1/4" per foot.
5. Pipe from septic tank to "D" box shall be schedule 40 PVC or equivalent and have a minimum grade of 1/8" per foot.
6. All piping shall be 4" diameter.



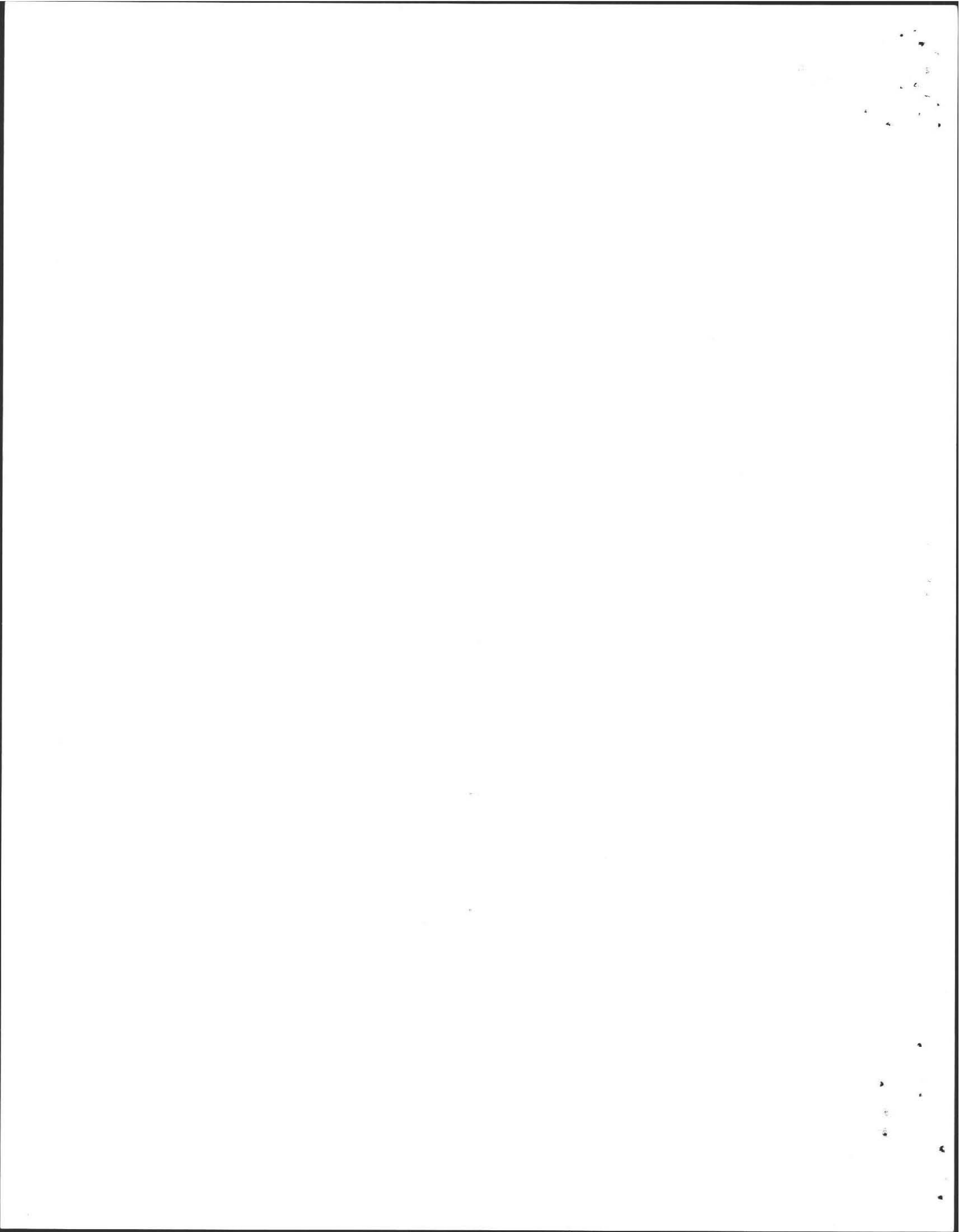
*David E. Keates*  
11-28/97

PROJECT

Sewage Disposal System  
Ron Bercume  
Lot 1  
High Point Drive  
Amherst, MA

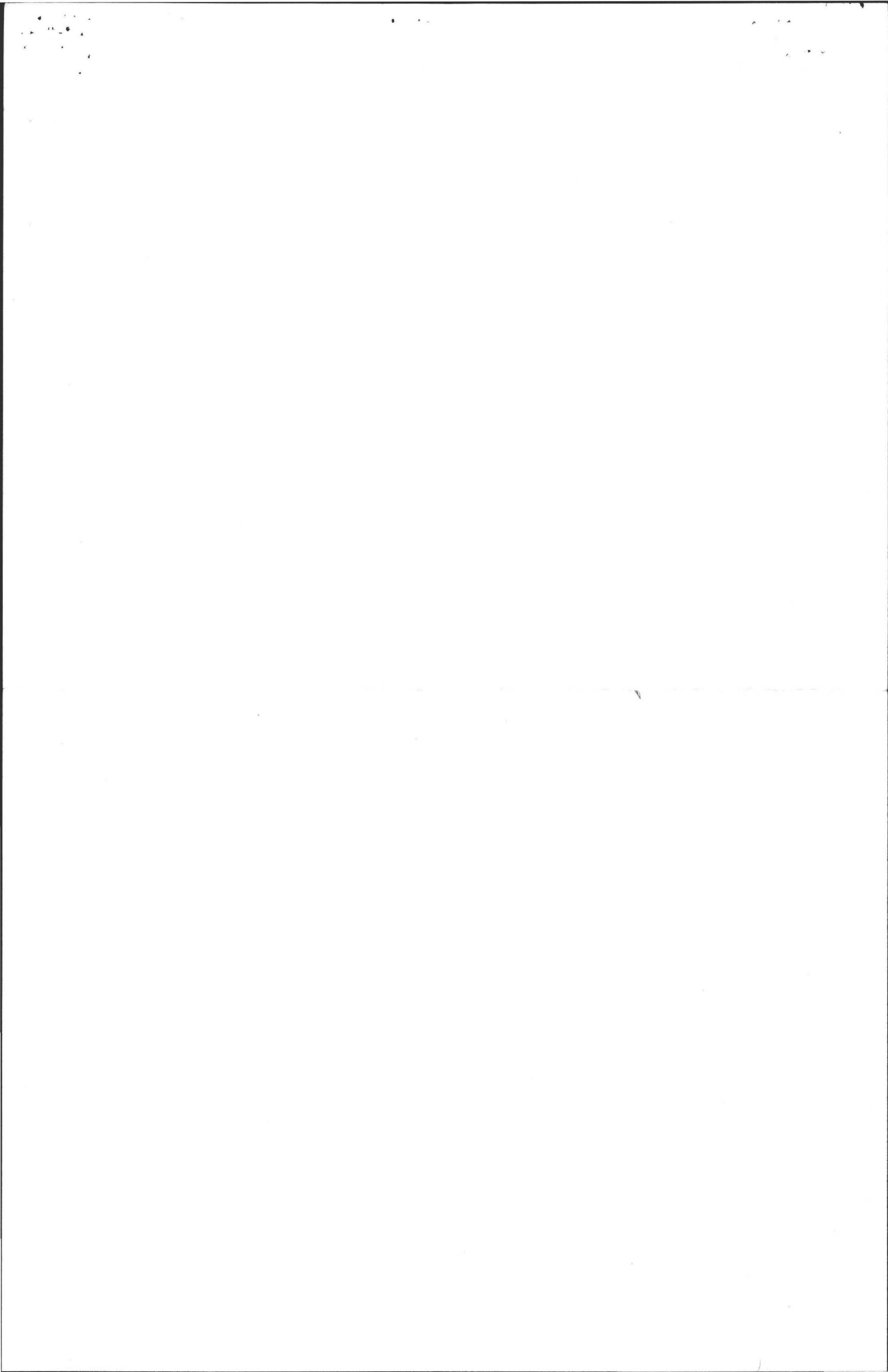
Sheet 18 of 19

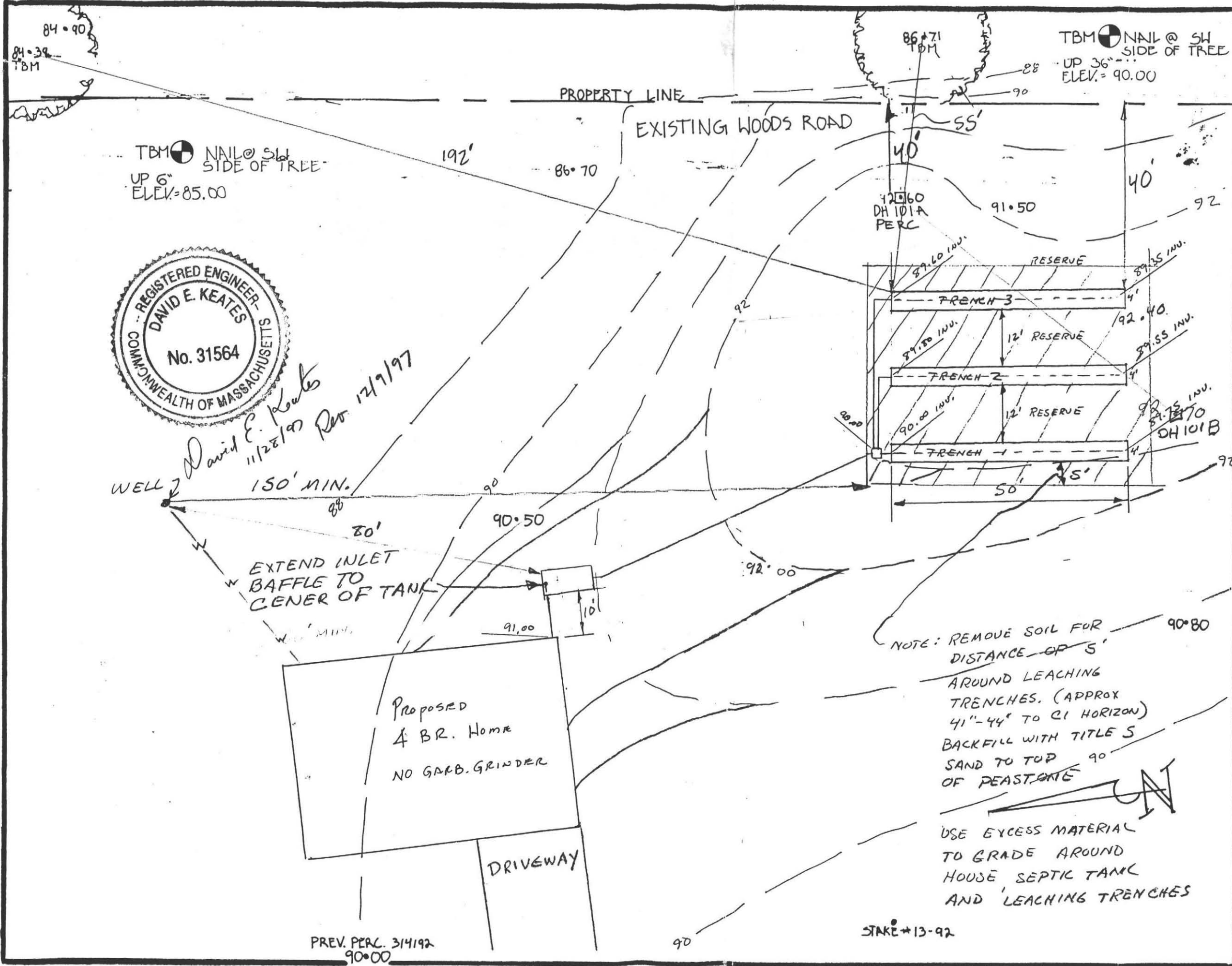
David E. Keates, P.E.  
Consulting Civil Engineer  
102 Russell Street  
Sunderland, MA 01375  
Tel: 413-665-7670











David E. Keates  
11/28/97 Per 12/9/97

PREV. PERC. 314192  
90.00

STAKE #13-92

TBM NAIL @ SW SIDE OF TREE  
UP 36" ELEV. = 90.00

TBM NAIL @ SW SIDE OF TREE  
UP 6" ELEV. = 85.00

84.38 TBM  
84.90

86.71 TBM  
88  
90

192'  
86.70

40'  
55'  
40'  
91.50  
92

12.60  
DH 101A  
PERC  
89.60 INU.  
RESERVE  
89.35 INU.

92  
92.40  
12' RESERVE  
89.55 INU.

90.00 INU.  
12' RESERVE  
92.75 INU.

92  
92.75 INU.  
DH 101B

50'  
5'  
90

92.00

90.80

90

90

90

90

90

90

90

