

489 MARVET HILL ROAD

PARCEL 03D000045

4/23/2008

BUILDING PERMIT

Corenzo is Contractor

Kachel is Owner

Geothermal is listed as heating source

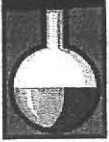
10/27/08 - water test submitted (original in B.I. file)

Watrobas / semi

83 Sunderland Road

7 rooms no kitchen (have kitchen, ^{LR} ~~to~~
caretaker unit.

RECEIVED JAN 05 2008



489 MARKET HILL RD.
WENTWORTH

Quabbin Analytical Laboratory

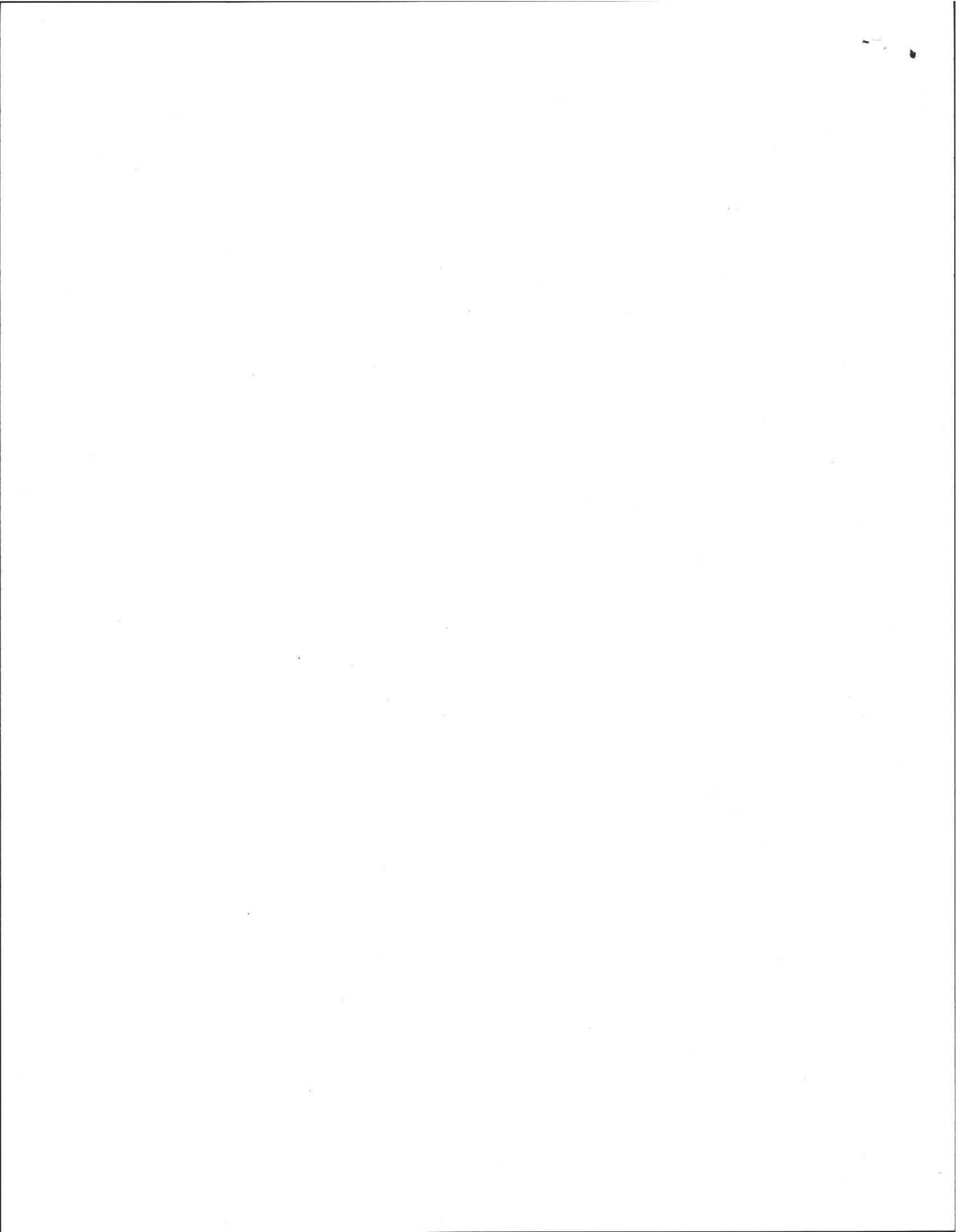
Box 1192 Stadler Street, Belchertown, MA 01007

(413)-323-7134

Name:	<u>Randall Wentworth</u>	Sample Date:	<u>10-27-08</u>
Address:	<u>489 Market Hill Road</u>	Report Date:	<u>10-31-08</u>
	<u>Amherst, MA 01002</u>	Collected By:	<u>Randall Wentworth</u>
Sample Location:	<u>Randall Wentworth</u>	Type Supply:	<u>Well</u>
	<u>489 Market Hill Road</u>	Sample No.:	<u>QAL 5424 with SP 7376</u>
	<u>Amherst, MA 01002</u>	Lab ID#:	<u>M-02454 & M-MA 138</u>

PARAMETER	RESULT	MAX. RECOMMENDED LEVEL
Total Coliform Bacteria	Absent	Present or Absent
Arsenic	0	0.01 mg/l
Lead	0	0.015 mg/l

For the items tested, this sample was found to be within acceptable levels for E.P.A. Standards.





489 MARKET HILL RD.
WENTWORTH
Quabbin Analytical Laboratory

Box 1192 Stadler Street, Belchertown, MA 01007

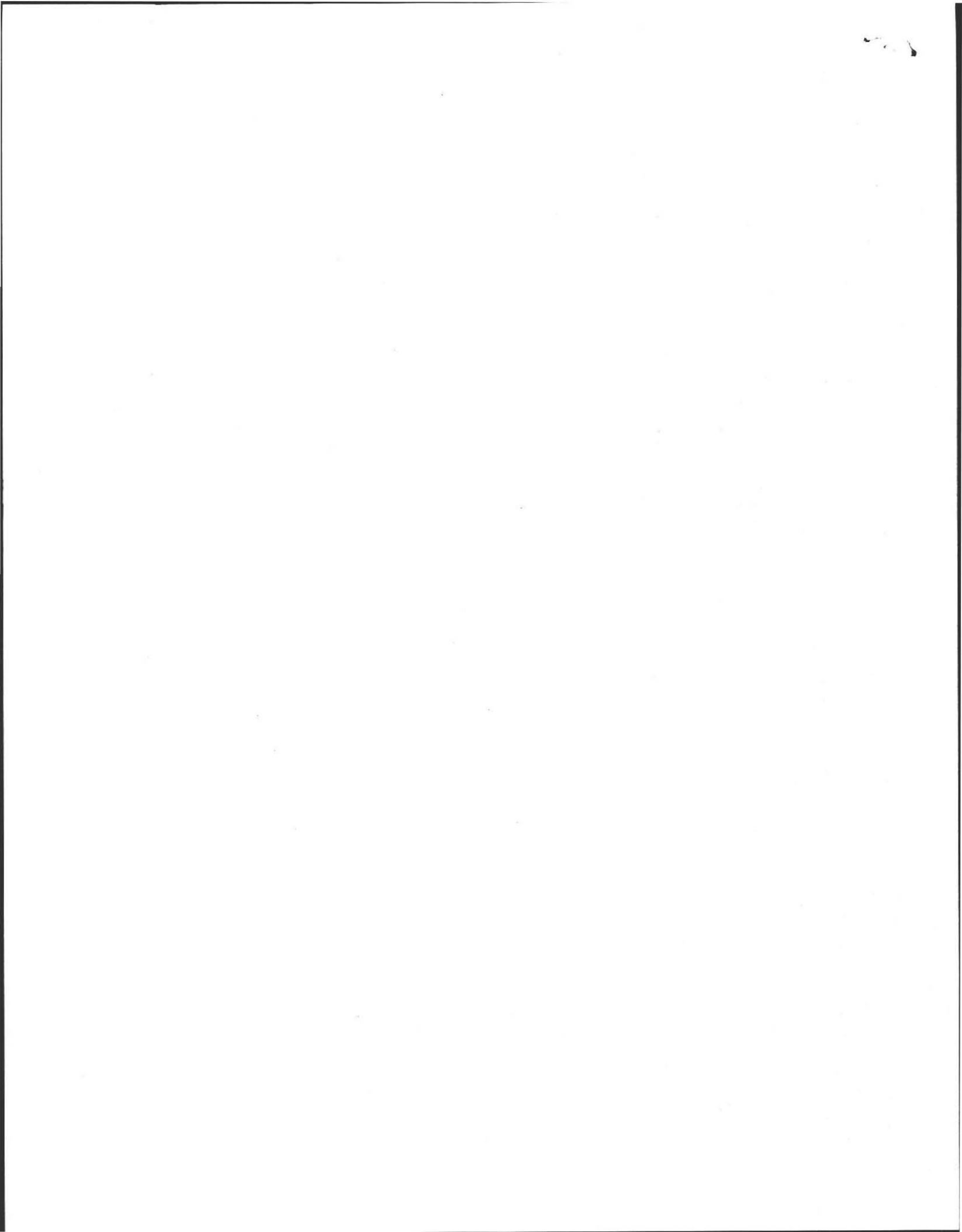
(413)-323-7134

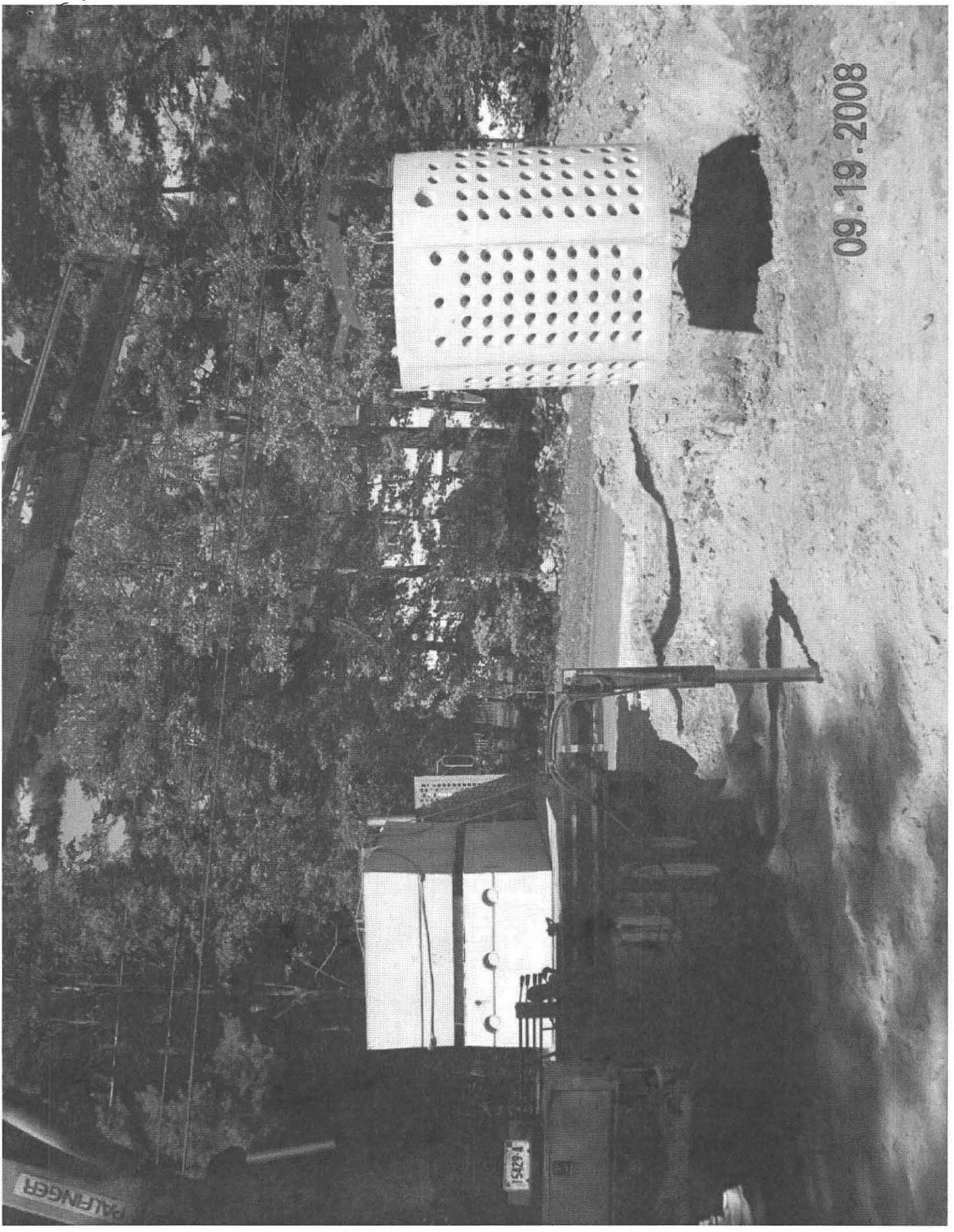
Name:	Quabbin Well Supply	Sample Date:	3-18-08
Address:	P.O. Box 33	Report Date:	3-19-08
	Belchertown, MA 01007	Collected By:	Scott Keene
Sample Location:		Type Supply:	Well
	Agustin Construction	Sample No.:	QAL 3657
	Market Hill Road	Lab ID#:	M-02454
	Amherst, MA 01002		

TESTED FOR	RESULTS	MAX. RECOMMENDED LEVELS
Total Coliform Bacteria	Absent	Present or Absent
Fecal Coliform Bacteria	Absent	Present or Absent
Nitrite	0	1.0 mg/l
Nitrate	0.4	10.0 mg/l
pH	8.13	6.5-8.5
Alkalinity	98.0	No Limit
Iron	.16	.30 mg/l
Manganese	.04	.05 mg/l
Copper	0	1.3 mg/l
Sulfate	24.0	250 mg/l
Chloride	2.01	250 mg/l
Hardness	128.0	No Limit
Conductivity	247.0	No Limit
Total Dissolved Solids	163.0	500 mg/l
Turbidity	1.3	5 NTU
Chlorine	0	No Limit
Sodium	4.02	No Limit

Results are only for those items listed above and on the above collected date. Except for the following _____, the sample was found to be within acceptable levels for D.E.P. Drinking Water Standards. If there are any questions on this report, please do not hesitate to call this office.

David Fredenburgh, Director





09.19.2008

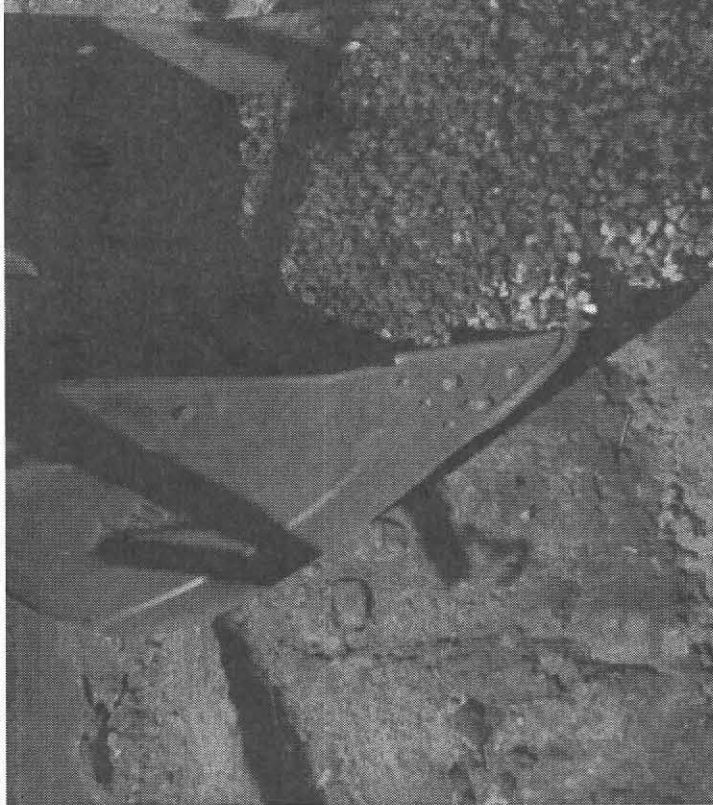
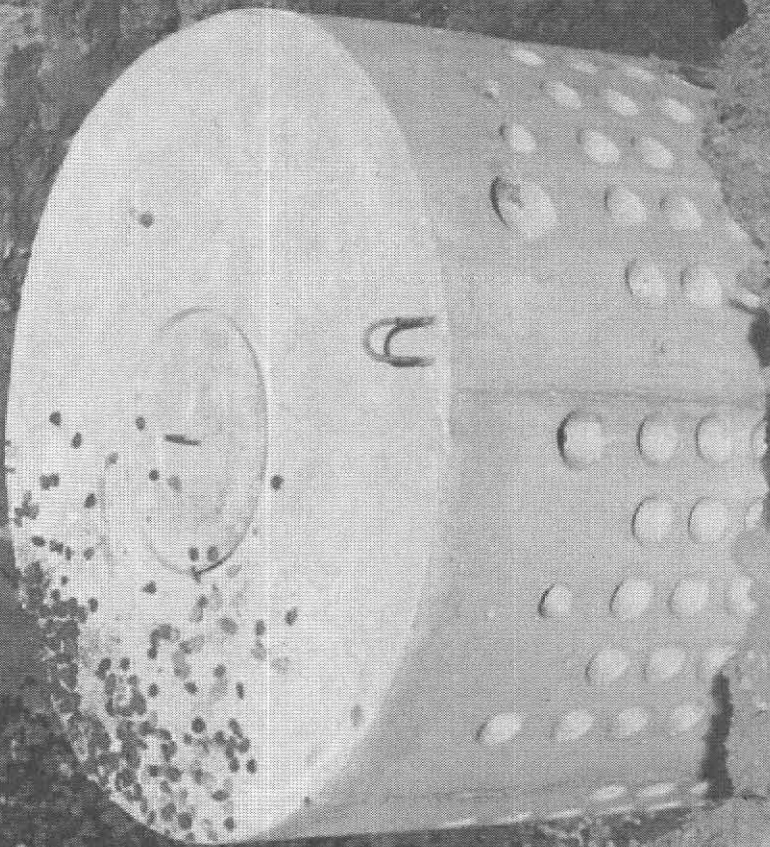
PALFINGER

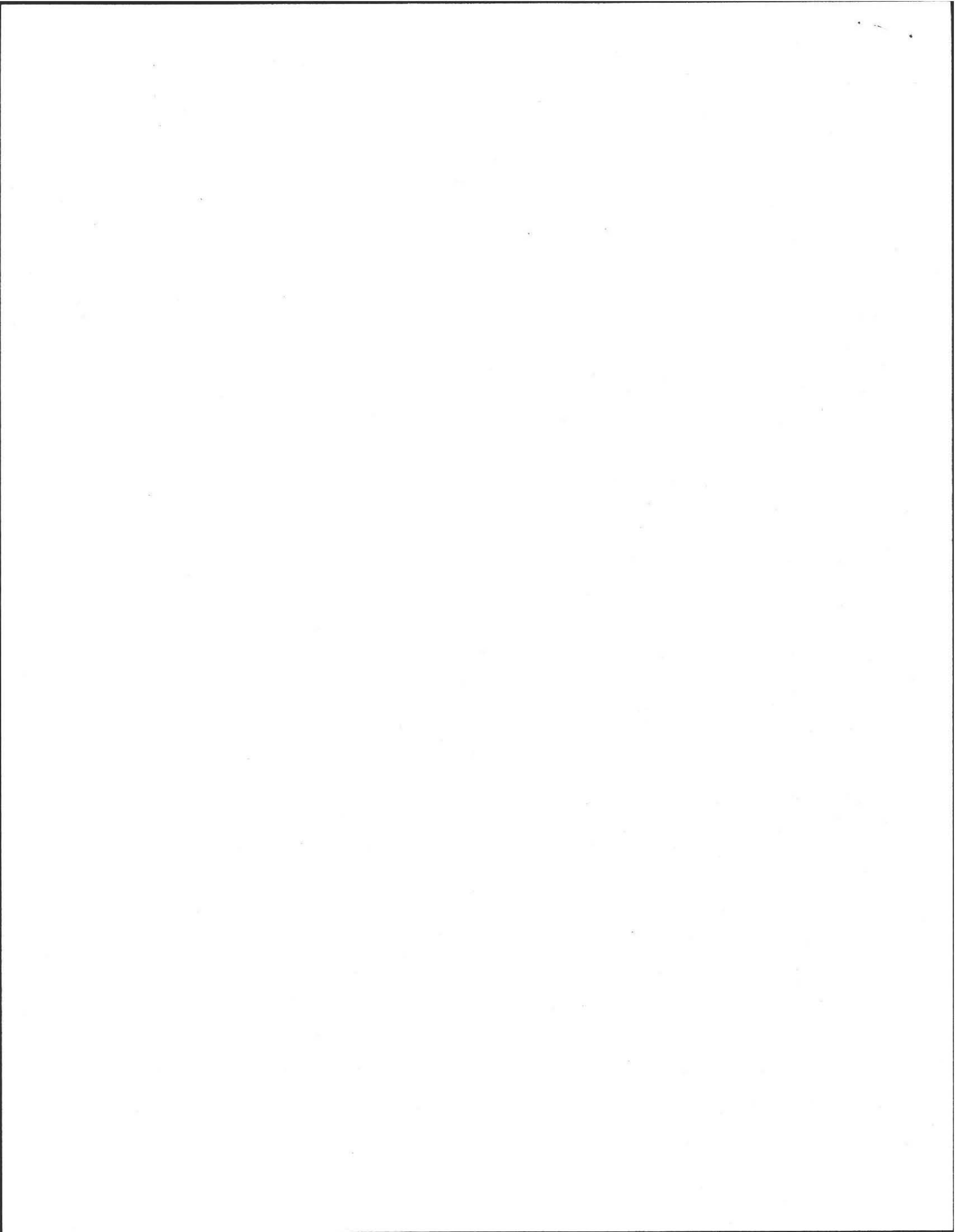
15420

KANTOR



09.19.2008





Smith, Edmund

From: Wentworth, Randy [Randy.Wentworth@nationalgrid.com]
Sent: Wednesday, February 20, 2013 10:37 AM
To: Cerutti, Joseph (DEP)
Cc: Smith, Edmund; Federman, Julie; Willson, Elizabeth
Subject: RE: UIC Registration application Amherst_489 Market Hill Road
Attachments: DSCN0075.JPG; DSCN0076.JPG; DSCN0078.JPG

Follow Up Flag: Flag for follow up
Flag Status: Flagged

Hi Joe,

Yes, the 120' deep well is indeed the well used for the geothermal.

And yes, it is a large dry well (I think bottomless). I have some pictures of it when it went in with the backfill and can perhaps come up with the dimensions and type of material from those (I attached the pictures). Kind of hard finding all my receipts as it was some time ago but perhaps I can find the purchase receipt which may have the dimensions.

Is there a form that I would put the description on? Did Atlantic Geothermal forget to include that info on the application or was there another application for that and the water analysis?

Ed, since you are copied on this, could you please look for the well analysis (I had two of them submitted) or do I need to come down and look...? I'll look through my stuff too, but for now, I haven't been able to find them.

Thanks for getting back to me Joe.

Randy

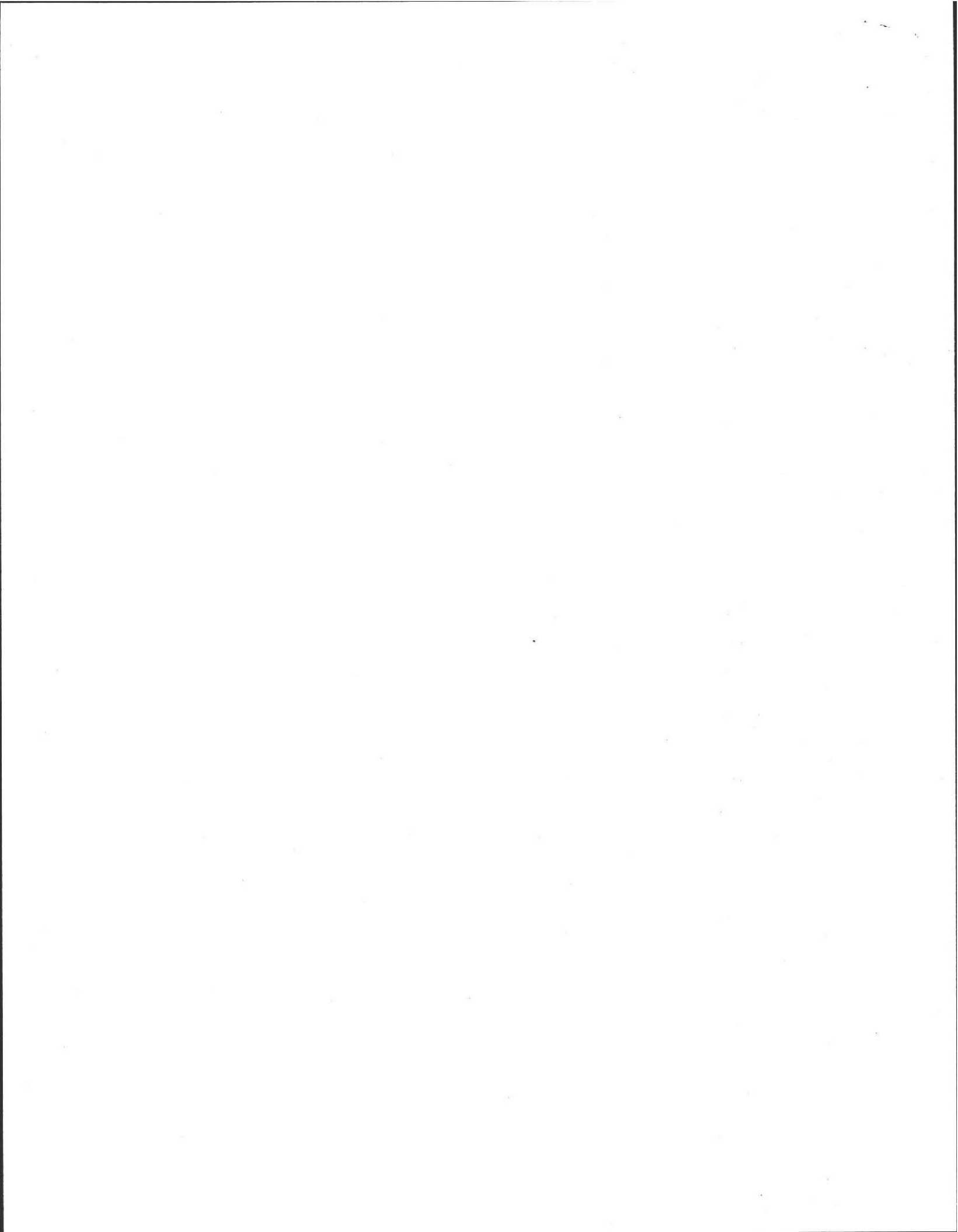
From: Cerutti, Joseph (DEP) [mailto:joseph.cerutti@state.ma.us]
Sent: Wednesday, February 20, 2013 10:05 AM
To: Wentworth, Randy
Cc: 'Smith, Edmund'; 'Federman, Julie'; 'Willson, Elizabeth'
Subject: UIC Registration application Amherst_489 Market Hill Road

Hi Randy,

Thanks for sending me the copy of the original MassDEP UIC Registration application. As a result I conducted additional searches through MassDEP paper file records and electronic records and was able to find the original application. What I found indicates that we received a faxed copy on 11/30/08. Based upon my review of that application I sent an email to Atlantic Geothermal on 12/11/08 (copied below) regarding requirements for the submittal of the original signed copy of the application, copies of well completion reports, and the water quality testing requirements. On 12/31/08 MassDEP received the original signed copy but no copies of well completion reports or water quality testing analyses.

This morning I went into the MassDEP Well Drillers Program's database and retrieved the well completion report for a 120-foot deep well that was installed at 489 Market Hill Road, Amherst on March 14, 2008 by Barre Artesian Well. I'm assuming that this is the supply well for the geothermal system. Please confirm whether or not that assumption is correct.

I see from the application, and my understanding from information received by the Amherst Health Department, that the discharge well for the geothermal system is a dug well or dry well. If that's the case, there would probably not be a well completion report for the discharge well filed with the Well Drillers Program. MassDEP requires well construction



details concerning the discharge well. A cross sectional sketch or a detailed description of the discharge well shall include the horizontal dimensions (the inside well diameter assuming the well casing is round), the depth to the base of the well and the length of the well casing (presumably less than the depth to base of well if top of well casing is buried below ground surface), and information regarding whether or not there is any overflow piping that would discharge to perforated drainage pipe, to another subsurface infiltration structure, or to a ground surface outfall in the event that the discharge well overflows. Also required is information concerning the materials of construction of the discharge well (for example, is it an open bottomed concrete casing, are the sidewalls perforated, or is it a stone filled pit with the discharge pipe terminating within the stone fill, or is it composed of one or more leaching chambers).

It is the UIC well owner's responsibility to submit the required water quality laboratory testing results to the MassDEP UIC program. If you don't have copies of the historic water quality laboratory reports please request copies from the Amherst Health Department and forward to my attention by mail or as an electronic copy (.pdf) by email.

I apologize for not finding the application information when the original inquiry came in from Amherst Health Department.

Ed Smith and Julie Federman have been copied at Amherst Health Department and Beth Willson, Amherst Wetlands Administrator.

Joe Cerutti
UIC Program Coordinator
MassDEP
1 Winter Street, 5th Floor
Boston, MA 02108
617 292-5859
fax 617 292-5696 (Note, if faxing, please notify by email or phone)

From: Cerutti, Joseph (DEP)
Sent: Thursday, December 11, 2008 4:15 PM
To: 'dave@atlanticgeothermal.com'
Subject: UIC registration application_Amherst

Hi Mike and Dave,

Per my telephone conversation with Mike, I have reviewed the UIC registration application for the property located at 489 Market Hill Road, Amherst, MA. The application is for an active open-loop ground source heat pump well that utilizes one production well and one discharge well.

For future reference, the UIC registration should be submitted to MassDEP prior to the installation of a ground source heat pump system. Also, 1 to 4 unit residential installations should be submitted on the BRP WS06e form. You can find this form about half way down the wide right hand column on the following MassDEP web page:
<http://www.mass.gov/dep/water/laws/uic.htm> It is immediately below the link to the BRP WS06a,b,c form.

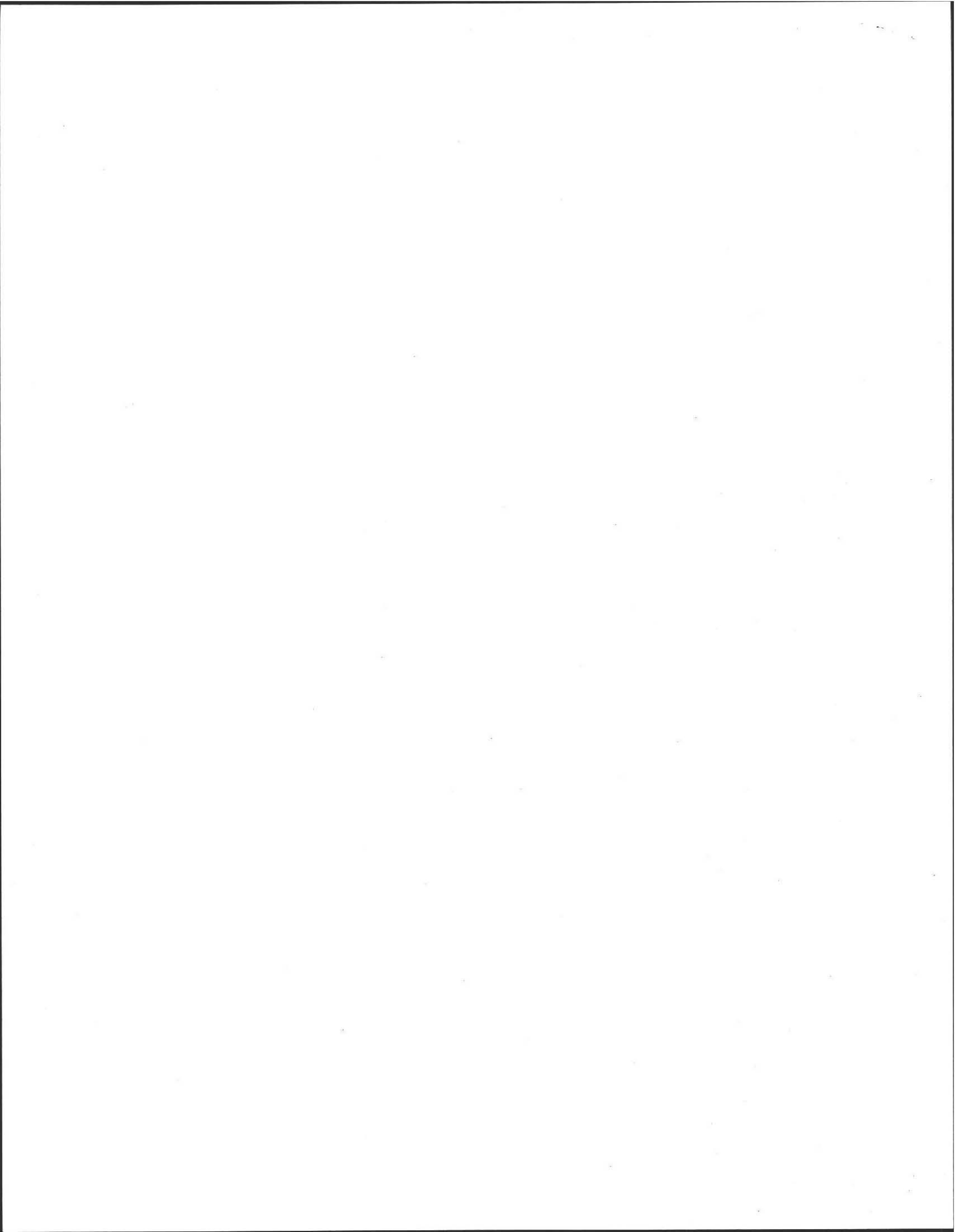
In order to issue a UIC registration for the above referenced property I need the following information/material:

Original signed copy of the UIC registration form.

Copies of the well completion reports for both the withdrawal and recharge wells. The well driller must complete these forms and send them to the Department of Conservation and Recreation's (DCR's) Well Driller Program and local Board of Health as part of their requirements as registered well drillers so it should not be an extra level of effort for them.

Please see the draft ground source heat pump guidelines at the same web link provided above for a list of the water quality data that must be submitted to MassDEP. It's the second document in the right column. Please be aware that the list of required analytical work is more extensive than what is required by the typical local health department for a private drinking water well.

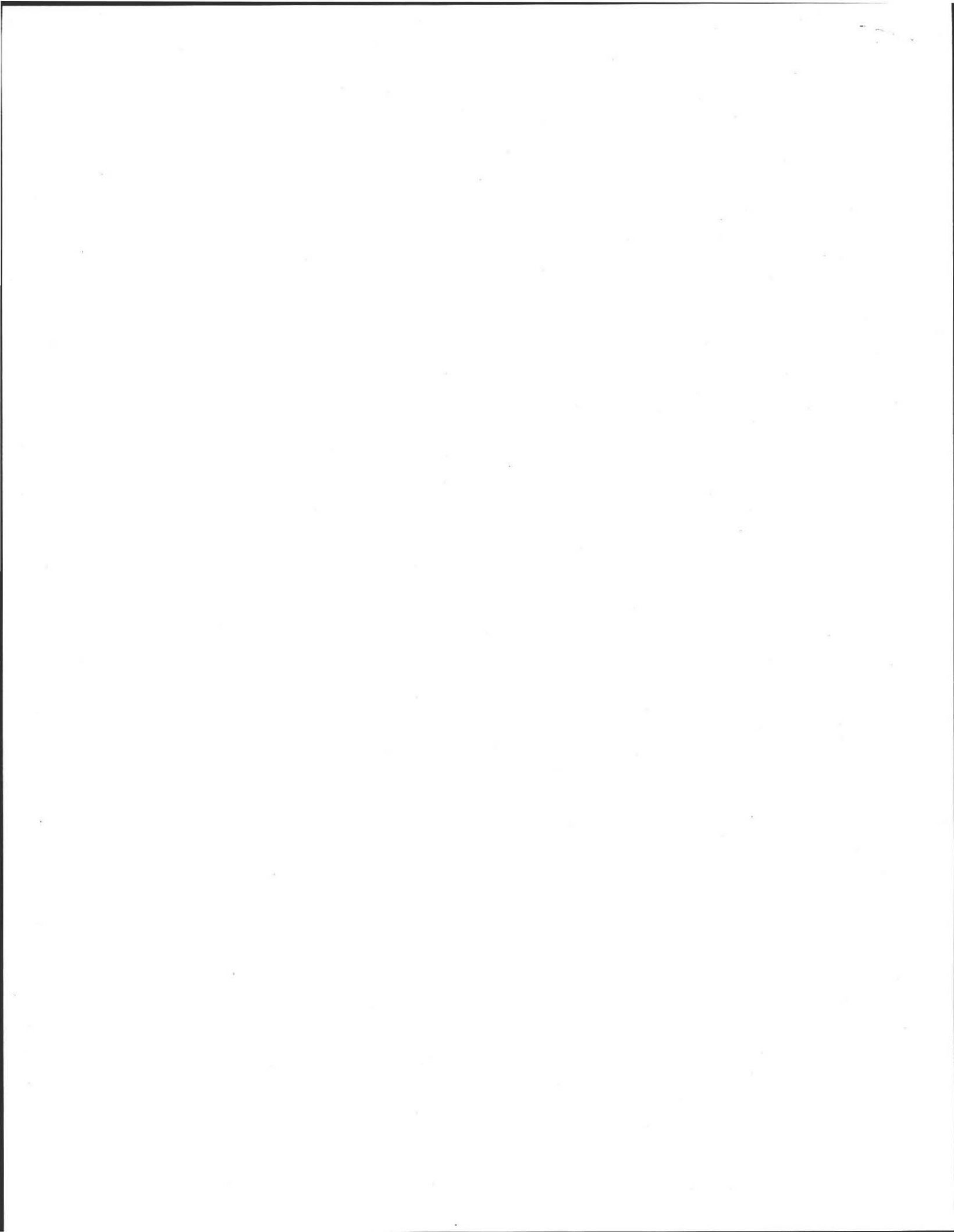
<http://www.mass.gov/dep/water/laws/uic.htm>

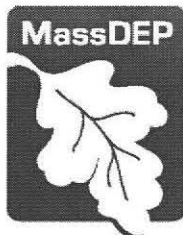


Thanks,

Joe Cerutti
Hydrogeologist
MassDEP
1 Winter Street, 5th Floor
Boston, MA 02108
617 292-5859
fax 617 292-5696

***** This e-mail and any files transmitted with it, are confidential and are intended solely for the use of the individual or entity to whom they are addressed. If you have received this e-mail in error, please reply to this message and let the sender know.





Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

DEVAL L. PATRICK
Governor

RICHARD K. SULLIVAN JR.
Secretary

TIMOTHY P. MURRAY
Lieutenant Governor

KENNETH L. KIMMELL
Commissioner

February 14, 2012

Randall & Ann Wentworth
489 Market Hill Road
Amherst, MA 01002

Re: City/Town: Amherst
Residential Property Name: Wentworth Residence
UIC ID#: No UIC Registration ID assigned
Program: Underground Injection Control (UIC)
Action: Notification of Requirement to Register UIC Class V
Well

Dear Mr. and Mrs. Wentworth,

The purpose of this letter is to notify you that Massachusetts Department of Environmental Protection (MassDEP) received information that an open-loop ground source heat pump (GSHP) well discharge may be occurring on your property located at 489 Market Hill Road, Amherst, Massachusetts (hereafter referred to as the subject property) and to inform you that the discharge of GSHP return flow to a drilled well, dug well, dry well, or drainfield requires the application for, and MassDEP approval of, a BRP WS 06 Underground Injection Control (UIC) Registration application.

A GSHP discharge to a subsurface infiltration structure is classified as a UIC Class V well. As such, it requires Registration through MassDEP per the Massachusetts *Underground Injection Control Regulations* (310 CMR 27.00).

MassDEP requires that you contact MassDEP UIC Program by March 1, 2013 via email, mail, or phone (see following page for contact information) to indicate whether or not a GSHP discharge is occurring or has occurred at the subject property and to propose a schedule for the date by which you will submit to MassDEP a completed *BRP WS 06 UIC Registration – Open-Loop Ground Source Heat Pump Well* form.

On February 7, 2013 MassDEP received an inquiry from Ed Smith, Amherst Health Department concerning the alleged GSHP discharge at the subject property due to a complaint that was received by Beth Wilson, Amherst's Wetlands Administrator. Upon review of MassDEP UIC program's records, no information was discovered regarding MassDEP's receipt of a BRP WS 06 UIC Registration application for the subject property.

The *BRP WS 06 UIC Registration – Open-Loop Ground Source Heat Pump Well* form and its instructions may be downloaded from the following web address:

<http://www.mass.gov/dep/water/approvals/uicforms.htm#paper>

You may submit the BRP WS 06 application form prior to obtaining the laboratory analytical testing results that will be required prior to receiving approval to operate the GSHP discharge well system. The laboratory analytical requirements include results from a raw water sample collected from the GSHP supply well and a post heat pump sample analyzed for coliform bacteria, copper and lead. See the *Guidelines for Ground Source Heat Pump Wells* for a list of the required laboratory analytical work at the following web site <http://www.mass.gov/dep/water/drinking/uic.htm> (2nd item in the "Guidance" section in the main column). The applicable water quality testing requirements are also provided as an attachment to this letter. If you have historical raw water results for some but not all of the required analytes you may submit the existing data to meet part of the sampling requirements and provide additional testing results for those analytes that were not included in the historical analyses.

Additional tips for correctly filling out the BRP WS 06 application:

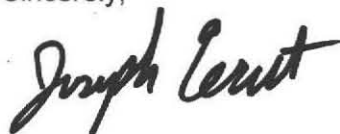
You will be required to enter the coordinates of the return (discharge) well location (the instructions provide information on a google maps tool for obtaining coordinates from aerial photos if you don't have access to a GPS unit). In the well table in Section I you should only enter the name (e.g. "return well") and coordinates of the return/discharge well and not the supply well (unless the supply well is also a return well). Only the well (or wells) that will be receiving discharge from the heat pump or heat exchanger is considered a UIC well. Similarly, at the top of Section J where it asks for the number of proposed, existing, and combined proposed + existing wells you will only count the number of wells receiving GSHP discharge.

The Section K question about whether the well is also being used as a water supply for other purposes only applies to the return/discharge well. Therefore, if the return/discharge well is only used as an injection well and is not used to supply water for drinking, irrigation, or other purposes you would answer "no" even if the supply well is being used for multiple purposes.

The instructions document should guide you through the rest of the form.

If you have questions, please contact me at 617-292-5859 or by e-mail at joseph.cerutti@state.ma.us or by fax at 617-292-5696.

Sincerely,



Joseph Cerutti
MassDEP UIC Program Coordinator
1 Winter Street, 5th Fl.
Boston, MA 02108

Phone: 617 292-5859

Fax: 617 292-5696

Email: joseph.cerutti@state.ma.us

Attachment: Laboratory Analytical Testing Requirements from MassDEP Guidelines for Ground Source Heat Pump Wells (Sections 4.1 and 4.2)

cc: Deirdre Cabral, MassDEP-WERO-DWP Section Chief
Rick Larson, MassDEP-WERO-DWP UIC Coordinator
Ed Smith, Amherst Health Department, 70 Boltwood Walk, Amherst, MA 01002
Julie Federman, Amherst Health Department Director (via email only)
Beth Wilson, Amherst Wetlands Administrator (via email only)

[Type text]

Attachment – Laboratory Analytical Testing Requirements from MassDEP Guidelines for Ground Source Heat Pump Wells (Sections 4.1 and 4.2)

4.1 Raw Water Testing

The raw intake water from the open-loop GSHP Wells [5A6 & 5A7] must be analyzed for the following primary and secondary parameters using a method approved by MassDEP for potable water. A minimum of three well volumes shall be removed from the well prior to collecting the sample for laboratory analysis. MassDEP may require analyses for additional parameters based upon site or area specific concerns. Unless there are site specific concerns, MassDEP does not require gross alpha, radium, and uranium testing for overburden wells installed on the Cape, the Islands, and in the Plymouth-Carver Aquifer.

Table 1: Raw Water Analytes with Primary Massachusetts Maximum Contaminant Level for Drinking Water

SUBSTANCE	PRIMARY MMCL ¹ (mg/L)
Arsenic	0.010
Nitrate (as N)	10
Nitrate/Nitrite (total)	10
Nitrite (as N)	1
Gross alpha radiation	15 pCi/L
Radium (226 + 228) ³	5 pCi/L
Uranium ⁴	0.030
Benzene	0.005
Carbon Tetrachloride	0.005
Dichloromethane (methylene chloride)	0.005
1,2-Dichlorobenzene (o-DCB)	0.6
1,4-Dichlorobenzene (p-DCB)	0.005
1,2-Dichloroethane	0.005
1,2-Dichloroethylene (cis)	0.07
1,2-Dichloroethylene (trans)	0.1
1,1-Dichloroethylene	0.007
1,2-Dichloropropane	0.005
Ethylbenzene	0.7
Methyl Tertiary Butyl Ether (MTBE)	0.07 ²
Monochlorobenzene (chlorobenzene)	0.1

SUBSTANCE	PRIMARY MMCL ¹ (mg/L)
Styrene	0.1
Tetrachloroethylene (PCE)	0.005
Toluene	1
Trichloroethylene (TCE)	0.005
1,1,1-Trichloroethane (1,1,1-TCA)	0.2
1,2,4-Trichlorobenzene	0.07
1,1,2-Trichloroethane	0.005
Vinyl Chloride (VC)	0.002
Xylenes (total)	10

¹ Massachusetts Maximum Contaminant Level

² Office of Research and Standards Guideline (ORSG)

³ If the gross alpha result is less than 5 picocuries per liter (pCi/L) then radium 226 and radium 228 analyses are not required.

⁴ If the gross alpha result is less than 15 picocuries per liter (pCi/L) then uranium analysis is not required.

Table 2: Raw Water Analytes with Secondary Maximum Contaminant Level for Drinking Water

SUBSTANCE	SECONDARY MCL ¹ (mg/L)
Sodium	20 ²
Chloride	250
Corrosivity	non-corrosive
Iron	0.3
Manganese	0.05
pH	6.5 - 8.5

¹ Massachusetts Maximum Contaminant Level

² Office of Research and Standards Guideline (ORSG)

4.2 Discharge Water Testing

1. The discharge from the heat pump (prior to discharge into the GSHP return flow well) must be analyzed for the following parameter using a method approved by MassDEP for potable water, during start-up of the system.

Table 3: System Startup Sampling Requirements for GSHP Discharge

Substance	Primary MMCL
Total coliform bacteria (including fecal coliform and <i>E. coli</i>)	refer to 310 CMR 22.05

2. The discharge from the heat pump (prior to discharge into the open-loop or open-transfer GSHP return flow well) must be analyzed for the following parameters using a method approved by MassDEP for potable water, 90 to 120 days after start-up of the system. This requirement shall be waived if the proponent provides documentation indicating that all components of the GSHP system that come into contact with the return flow have received NSF International and Massachusetts Board of State Examiners of Plumbers and Gas Fitters approval for use with potable water and the water is non-corrosive.

Table 4: Post System Startup Sampling Requirements for GSHP discharge

Substance	Primary MMCL (mg/L)
Copper	Treatment Technique, 1.3 (Action Level)
Lead	Treatment Technique, 0.015 (Action Level)

Smith, Edmund

From: Federman, Julie
Sent: Monday, January 28, 2013 1:43 PM
To: Smith, Edmund
Cc: Mir, Javeria
Subject: RE: 489 Market Hill Rd.

Follow Up Flag: Flag for follow up
Flag Status: Flagged

OK, that would be great.

Julie Federman RN Health Director

Amherst Health Department
413-259-3101
federmanj@amherstma.gov
Bangs Center
70 Boltwood Walk
Amherst, MA
01002

From: Smith, Edmund
Sent: Monday, January 28, 2013 1:42 PM
To: Federman, Julie
Cc: Mir, Javeria
Subject: Re: 489 Market Hill Rd.

Julie I have not followed up on this yet - sorry; I can tomorrow.
Ed

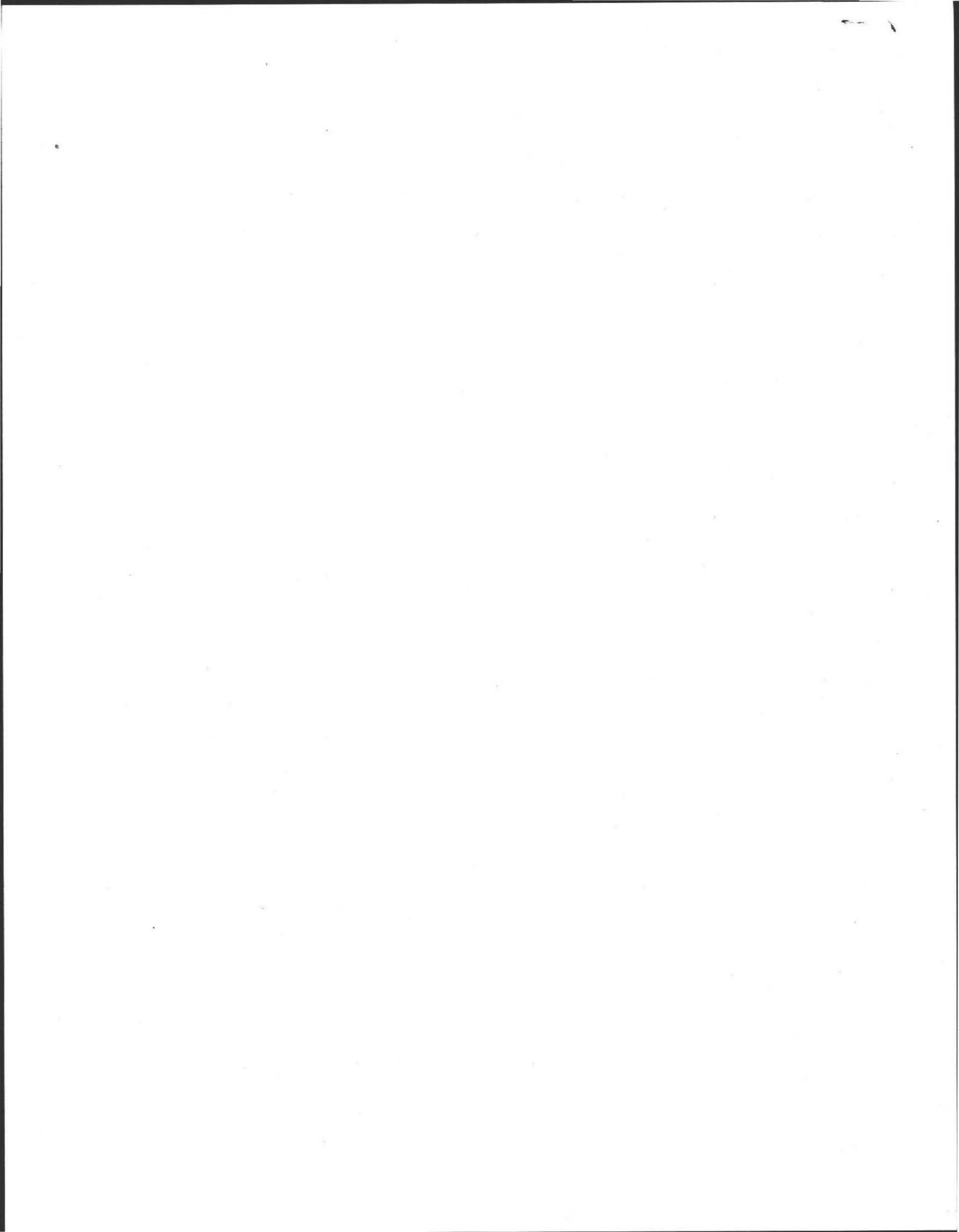
Sent from my iPad

On Jan 28, 2013, at 1:29 PM, "Federman, Julie" <federmanj@amherstma.gov> wrote:

I forwarded this before I left, did we find anything out?

Julie Federman RN Health Director

Amherst Health Department
413-259-3101
federmanj@amherstma.gov
Bangs Center
70 Boltwood Walk
Amherst, MA
01002



From: Willson, Elizabeth
Sent: Friday, January 18, 2013 11:33 AM
To: Federman, Julie
Subject: 489 Market Hill Rd.

Hi Julie,

We received a complaint about a geothermal heating system at 489 Market Hill Rd. where the outflow was going into a cistern on their property. I thought the best place for this complaint would be the Health department since the concern is impact to drinking water and it involves wells. I always think of geothermal systems as being closed, taking water out and putting it back into the same well. The person who complained is Lorenzo Agustin (sp?), 413-658-5695 and he is concerned that the water going into the cistern will contaminate (not sure with what) the Atkins Reservoir.

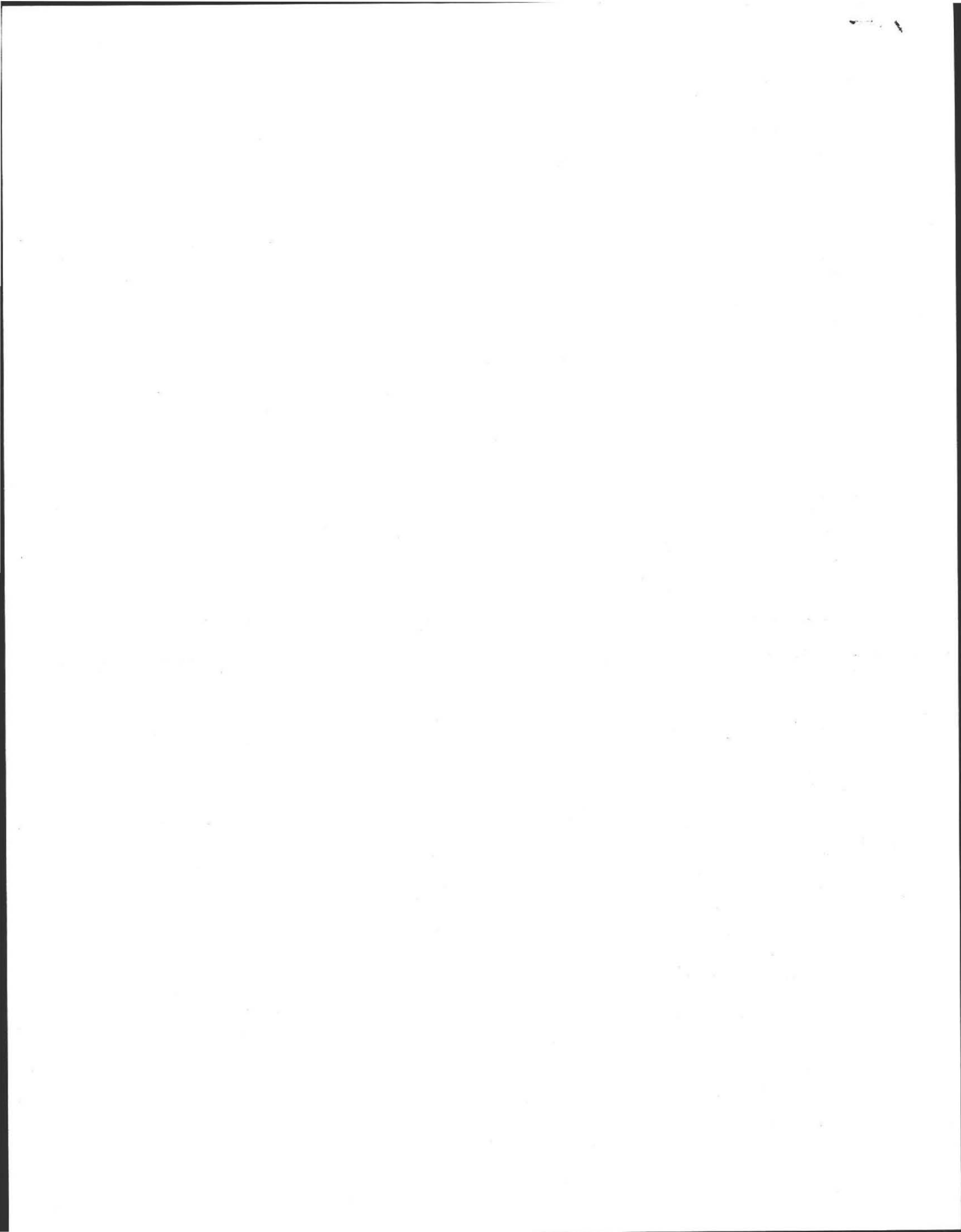
Thanks,
Beth

Beth Willson
Wetlands Administrator
4 Boltwood Ave.
Amherst, MA 01002
(413)-259-3202 - Direct
(413)-259-3045 - Conservation
(413) 259-2410 - Fax
willson@amherstma.gov

was originally a solar hot water heating system; owner wanted to go geothermal. Lorenzo thinks that horizontal system would mean closed, vertical loop is dumping into underground cistern. David Reynolds of ~~the~~ Atlantic Geothermal. Florence, Ma.
(of Amherst) (maybe in Worcester)

Mr. Bob Stebbin (across street) well started filling w/sand - relieved (possibly surface soil).

no separate well for geothermal - same well



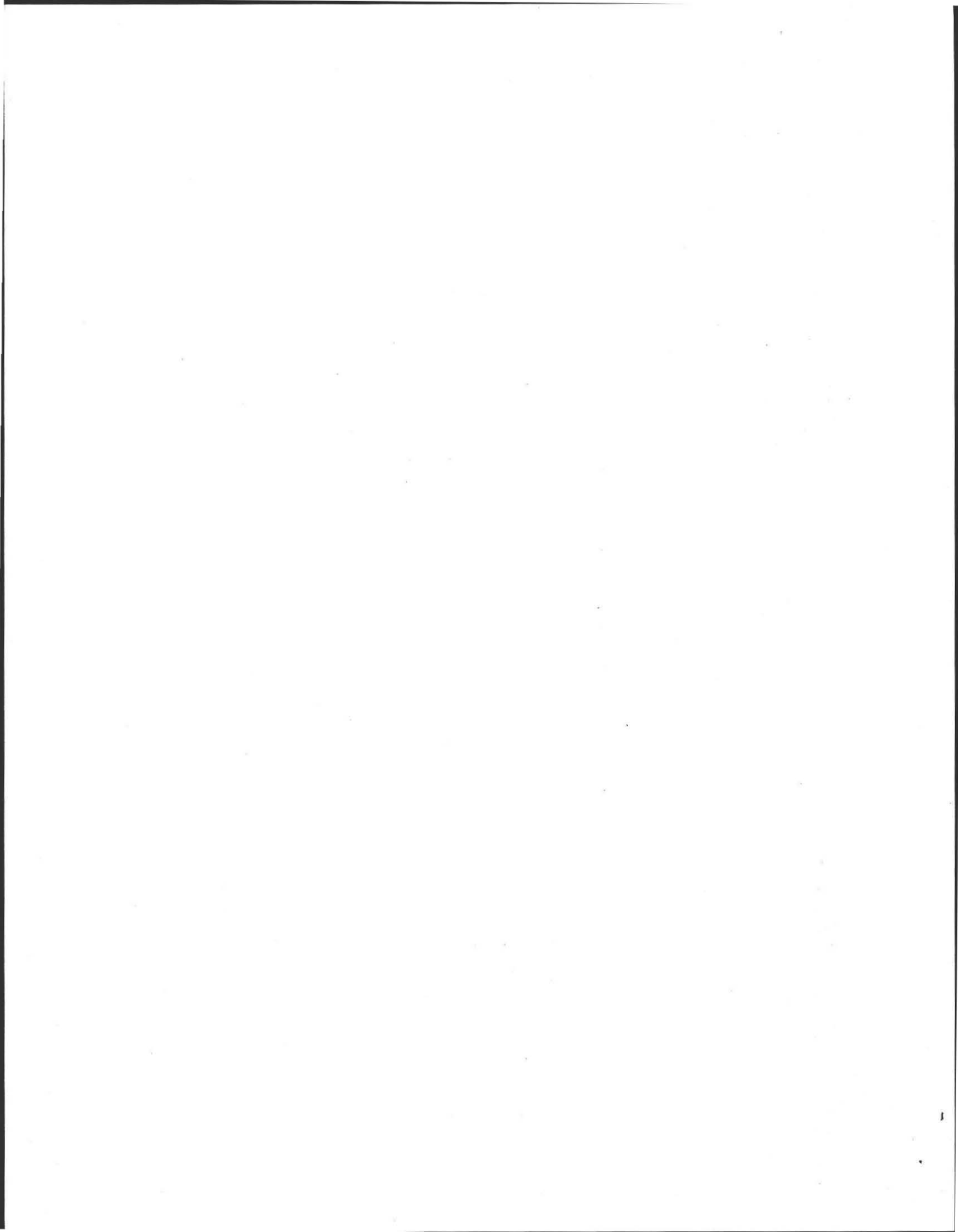
489 LOT 4

MARKET HILL RD.

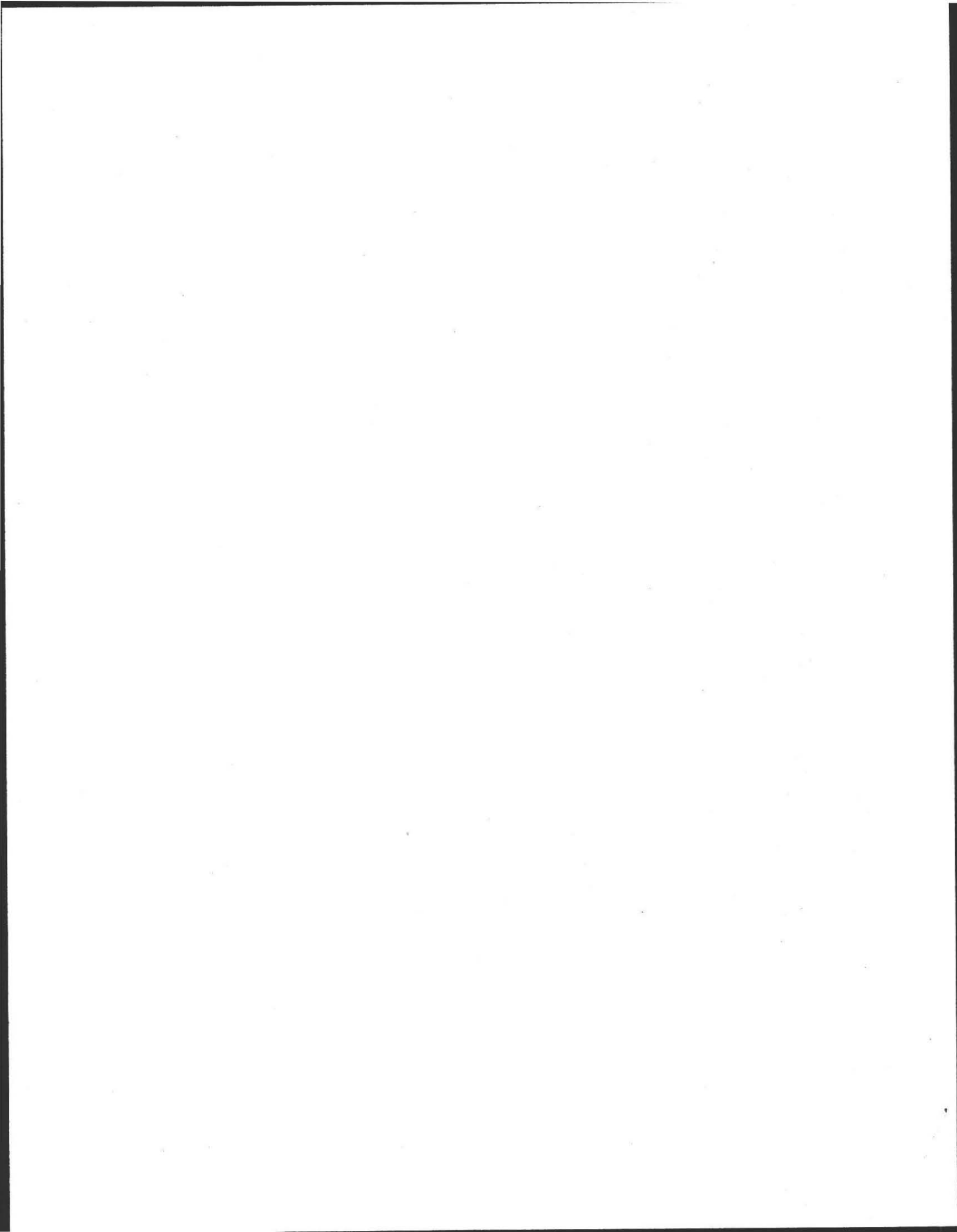
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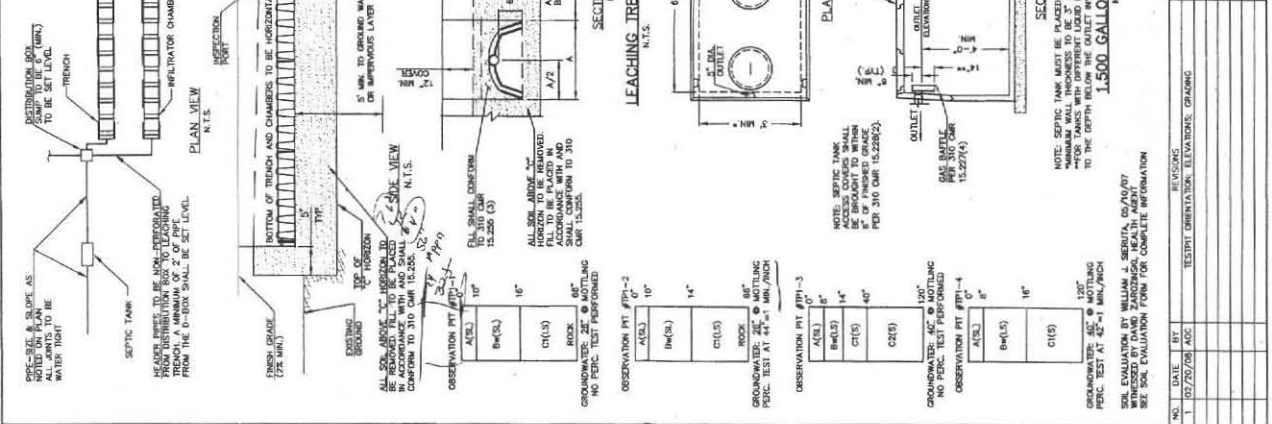
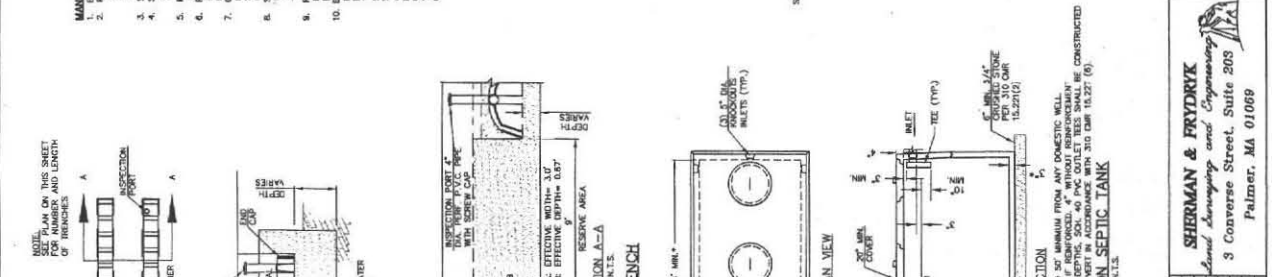
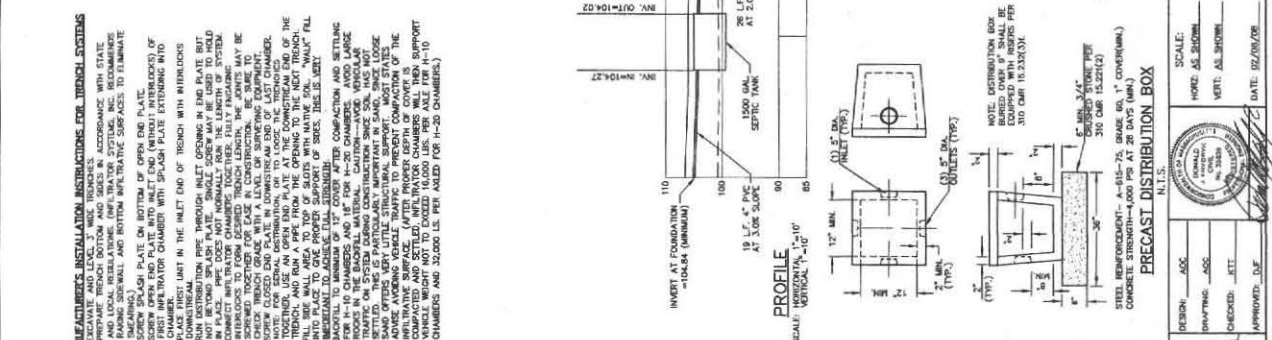
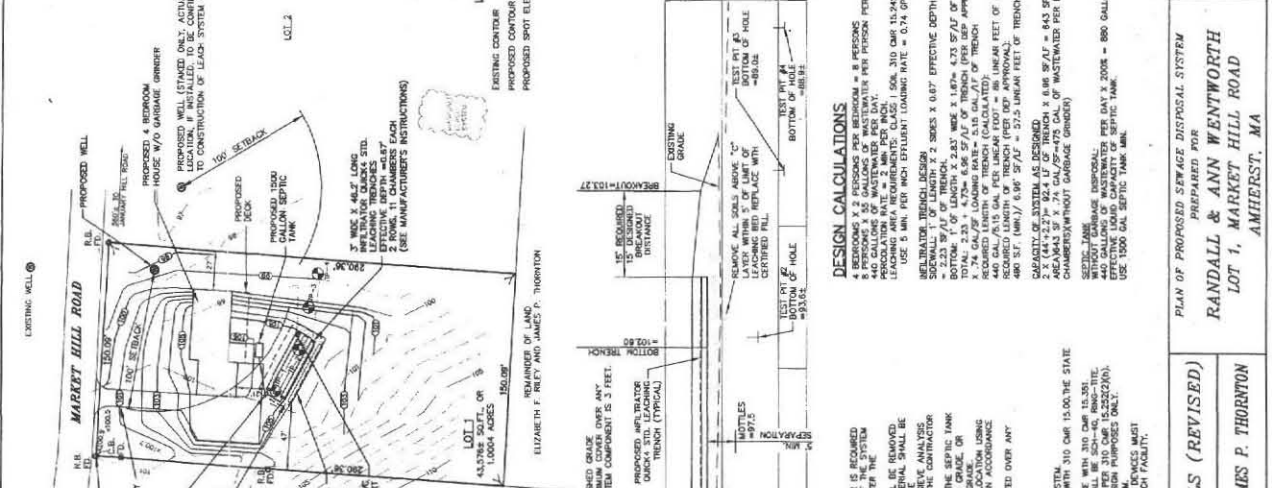
L-1

3 1/2" x 1/2" E
88-20



11-05-08 Randy Wentworth picked-up Cert. of Compliance + As-Built
and dropped off well testing done 3-18-08 + 10-27-08





SHERMAN & FRYDRYK
Soil Engineering and Geotechnical
3 Converse Street, Suite 205
Palmer, MA 01069

DATE: 02/26/08

DESIGN: ASS

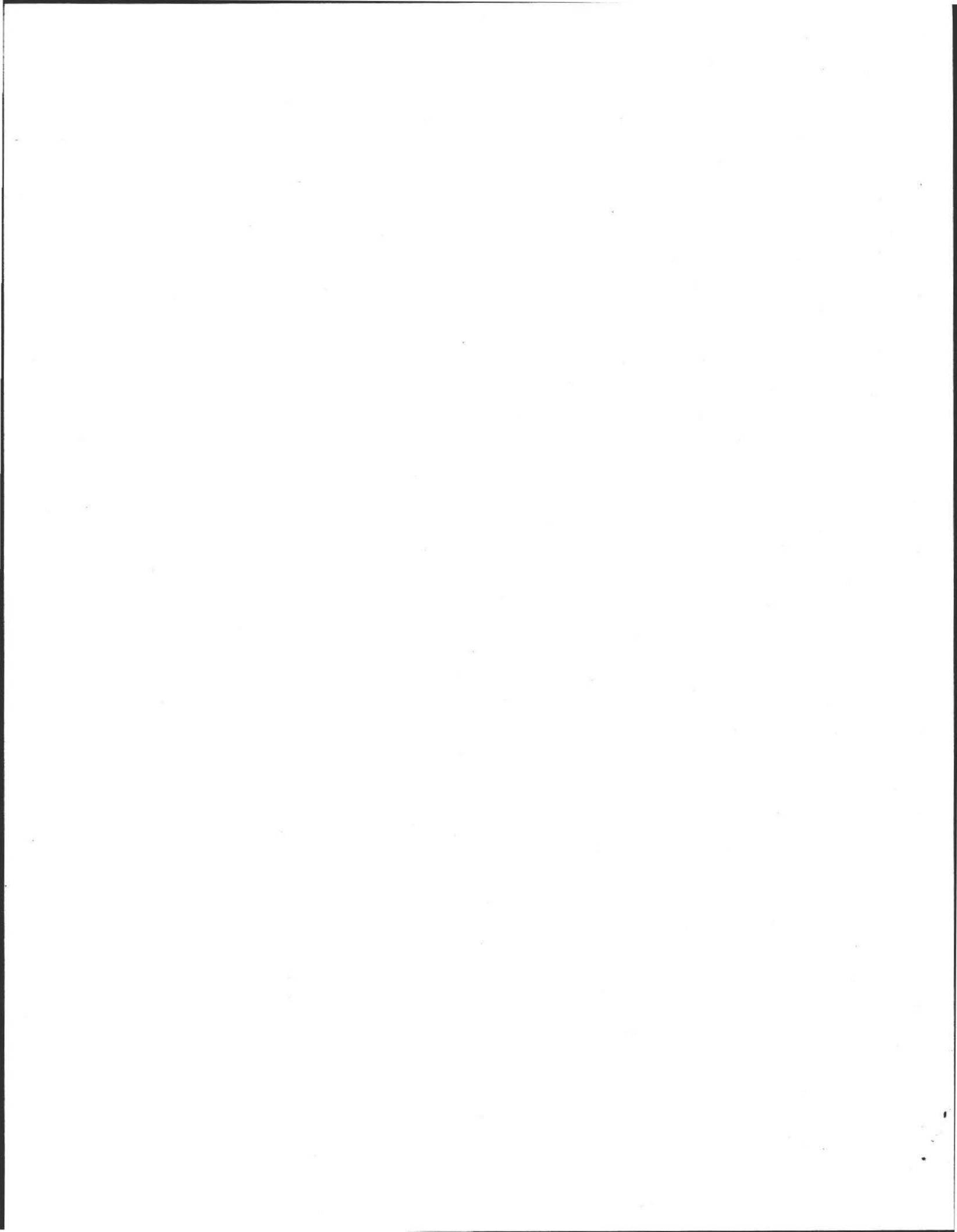
DRAWING: ASS

CHECKED: KTT

APPROVED: DJF

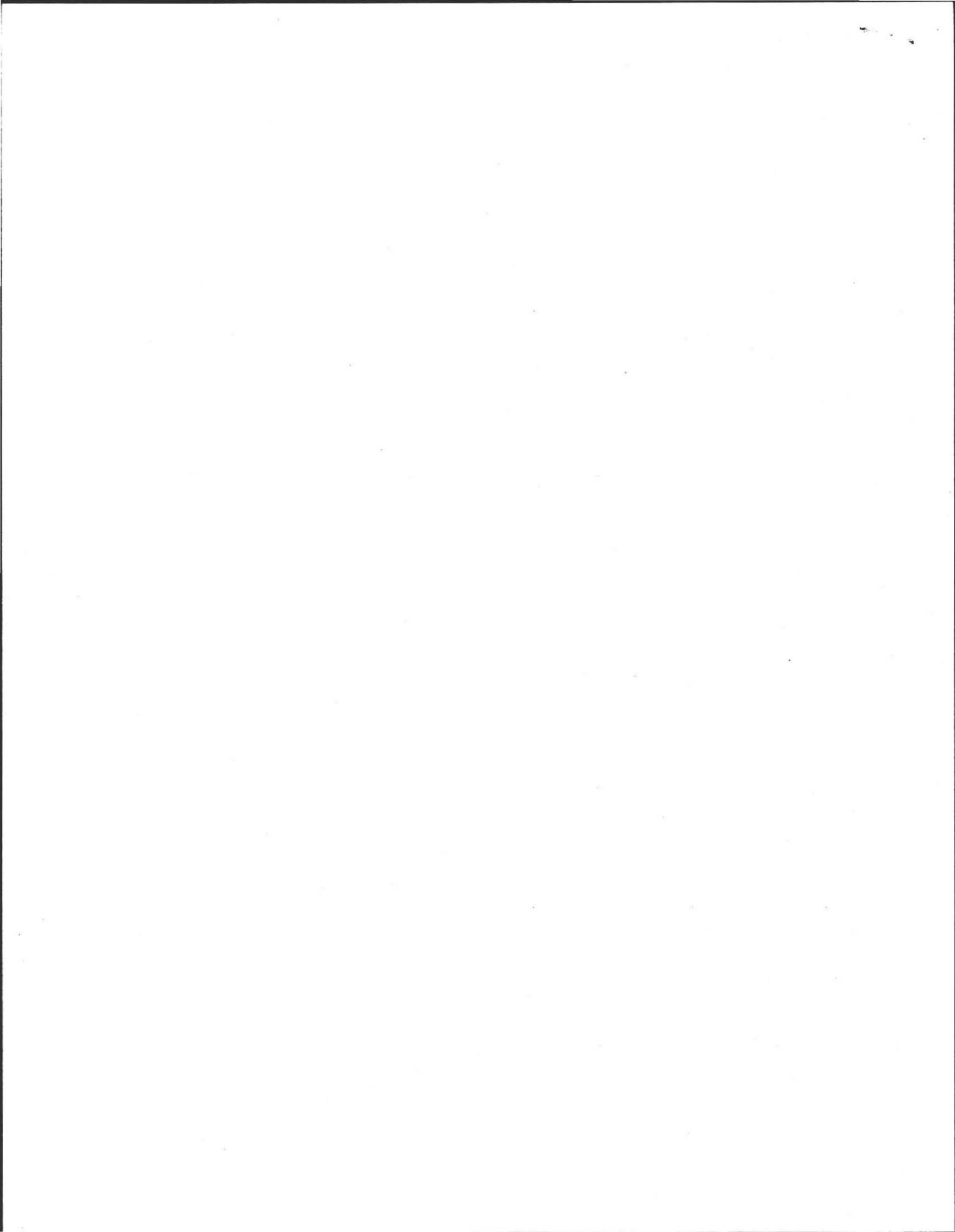
NO.	DATE	BY	REVISIONS
1	02/20/08	ASS	TEST/ OBSERVATION ELEVATIONS, GRADING

SOIL EVALUATION BY WILLIAM J. SERRA, 02/10/07
WITNESSED BY DAVID J. ZARONSKA, HEALTH AGENT
SEE SOIL EVALUATION FORM FOR COMPLETE INFORMATION



Permit Record Detail	
Case #	BLD2009-00122
Project #	BLD2009-00122
Master #	BLD2009-00122
Address	489 MARKET HILL RD
Applicant	WENTWORTH, RANDELL
Parcel (Map It!)	03D000045
Project Name	RETAINING WALL
Description	To build a 4' high retaining wall to divert water from west side of property.
Document	
Status	ISS
Issued	08/12/2008
Finalled	
Expiration	02/12/2009
Received by	ETS
Received	08/12/2008

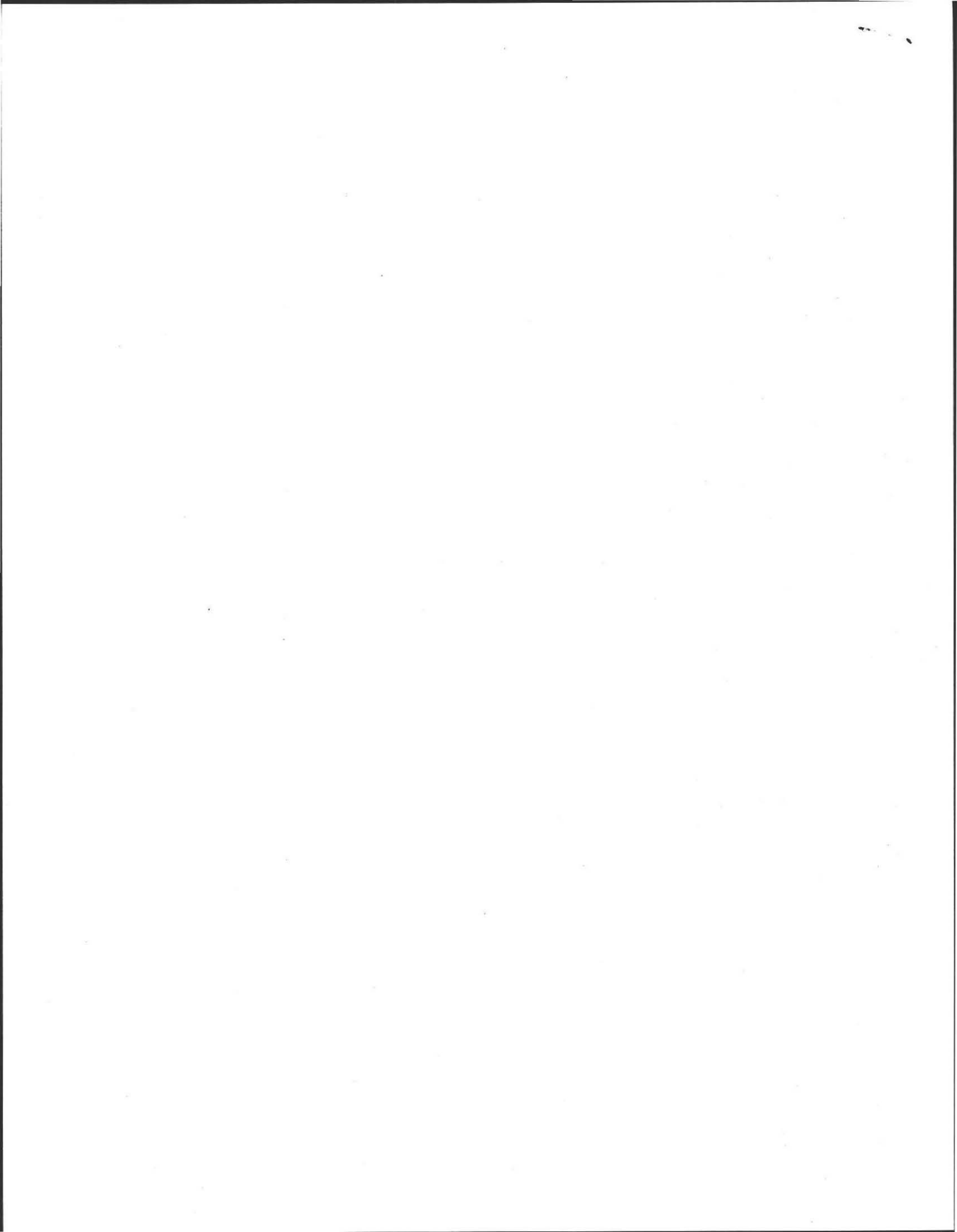
Description	Date	Notes
(F) Print Job Card	08/12/2008	
(F) Issue Permit	08/12/2008	
Application Entered	08/12/2008	



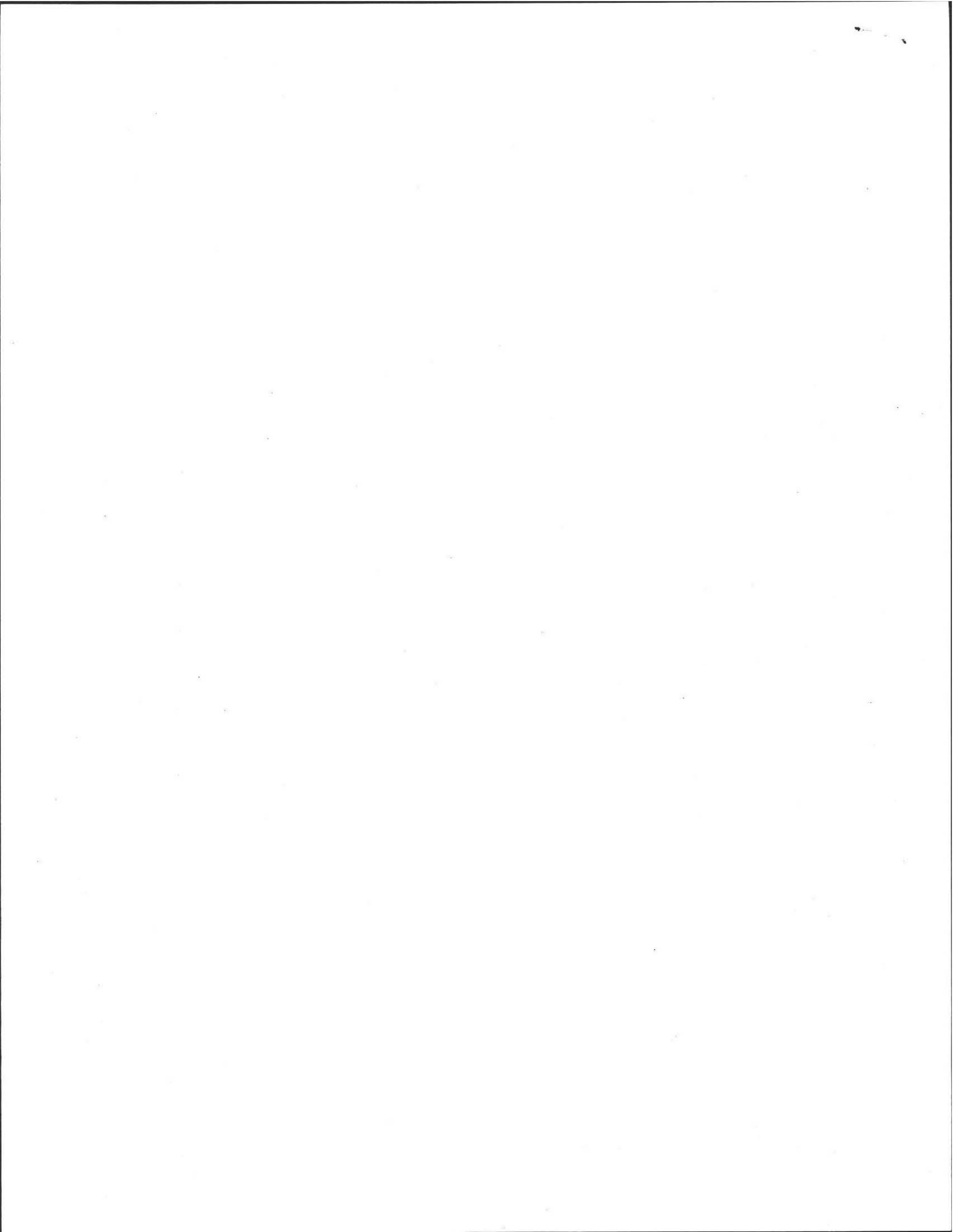
Permit Record Detail	
Case #	SPT2008-00022
Project #	SPT2008-00022
Master #	SPT2008-00022
Address	489 MARKET HILL RD
Applicant	AGUSTIN, LORENZO
Parcel (Map It!)	03D000045
Project Name	SEPTIC
Description	Paid \$150 for plan review and inspection ck# 94 rec.# 08-316.Perc test had been paid for by previous owner.
Document	
Status	REC
Issued	
Finalied	
Expiration	
Received by	THD
Received	03/19/2008

Description	Date	Notes
Application Entered	03/19/2008	

Septic System Detail	
year	2008
caseno	00022
CSM_CASENO	SPT2008-00022
SPT_INSTALLER	
SPT_CASETYPE	NEW
SPT_TWOCOMP	
SPT_BEDRMS	
SPT_SYSTEM	ONSITE
SPT_TANK1	



SPT_TITLE5_DATE	
SPT_TANK2	
SPT_SEPDATE	
SPT_DESIGNER	
SPT_SEPSYSTEM	
SPT_SOILABS	
SPT_ONFILE	Y
SPT_DESIGNFL	
SPT_REV_DATE	
SPT_ASBUILT	
SPT_TANKCONS	
SPT_SEPRMT	
SPT_ELEVATE	
SPT_GRDWATER	
SPT_WTR	
SPT_SEWAGE	
SPT_GRINDER	
SPT_LOCALVAR	
SPT_LOCALVAR_COMM	
SPT_TITLE5	
SPT_TITLE5_COMM	
SPT_NOTES	
SPT_WASTE	
SPT_INSTL_DATE	



House for Sale

489 Market Hill Road,
Amherst Ma. 01002

This four year old home is ideally suited for the extended family. Although this is a single family home, it has a duplex design which allows for two separate and distinct sides if the family desires. Each side has a kitchen and two bathrooms. The downstairs has ten foot ceilings and the upstairs eight foot. The heating and air conditioning are by two separate state-of-the-art geothermal units, one for each side. Heating can also be done for both units with the wood stove in the basement which is connected into the duct system. Each side has their own central vacuum system. There are two separate long-life super efficient electric water heaters interconnected with the geothermal which assists with heating the water. The septic system was designed and built for two families. The artesian well has a fast recovery pump system and the water is exceptionally pure without the usual discoloration in bathrooms that can plague some water systems. There is a 400 amp underground electric service which feeds the two separate 200 amp electric panels, one for each side. The house is not only super insulated in the attic and walls but also more than one foot of insulation was placed between the 1st and 2nd floors. There are two separate laundries with washers and driers on each side.

Hardwood and tile floors are throughout the entire home.

The walk-out basement allows for easy access through a double door. This basement also has a large unfinished recreation room for the kids and an office area not included in the square footage.

The thirty year architectural roof shingles, vinyl siding, and aluminum white coated gutters all make for low maintenance.

A very large south facing deck is in the back running the full length of the house constructed of composite decking and includes a large, 16' motorize Sunsetter awning. The deck overlooks the spacious backyard and the wooded area. There are numerous perennials and the lawn remains lush with the sprinkler system.

The two car garage is also insulated and has a stairway to a large storage area above it. This could easily be converted to living space if desired.

This home is within a very short walking distance to the beautiful Atkins Reservoir area and numerous nature trails. For those that love the outdoors or walking and biking, this is a must area to visit.

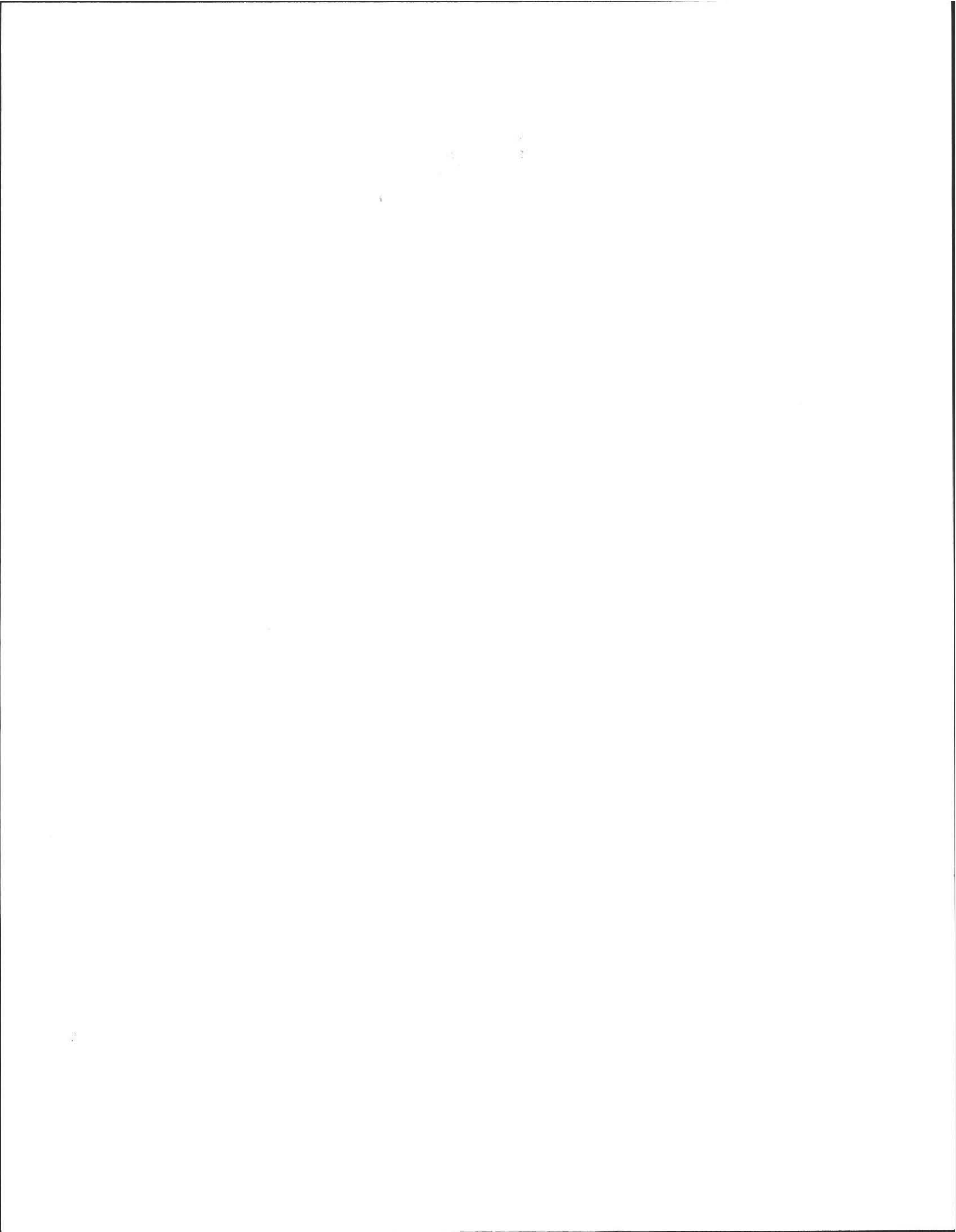
Please go to [isoldmyhouse.com](http://www.isoldmyhouse.com) for the listing with all the pictures:

<http://www.isoldmyhouse.com/index/AMHERST-MA/180335>

Please e-mail any questions to: rawentworth@comcast.net or call 413-835-6618 and leave message.

\$539,000



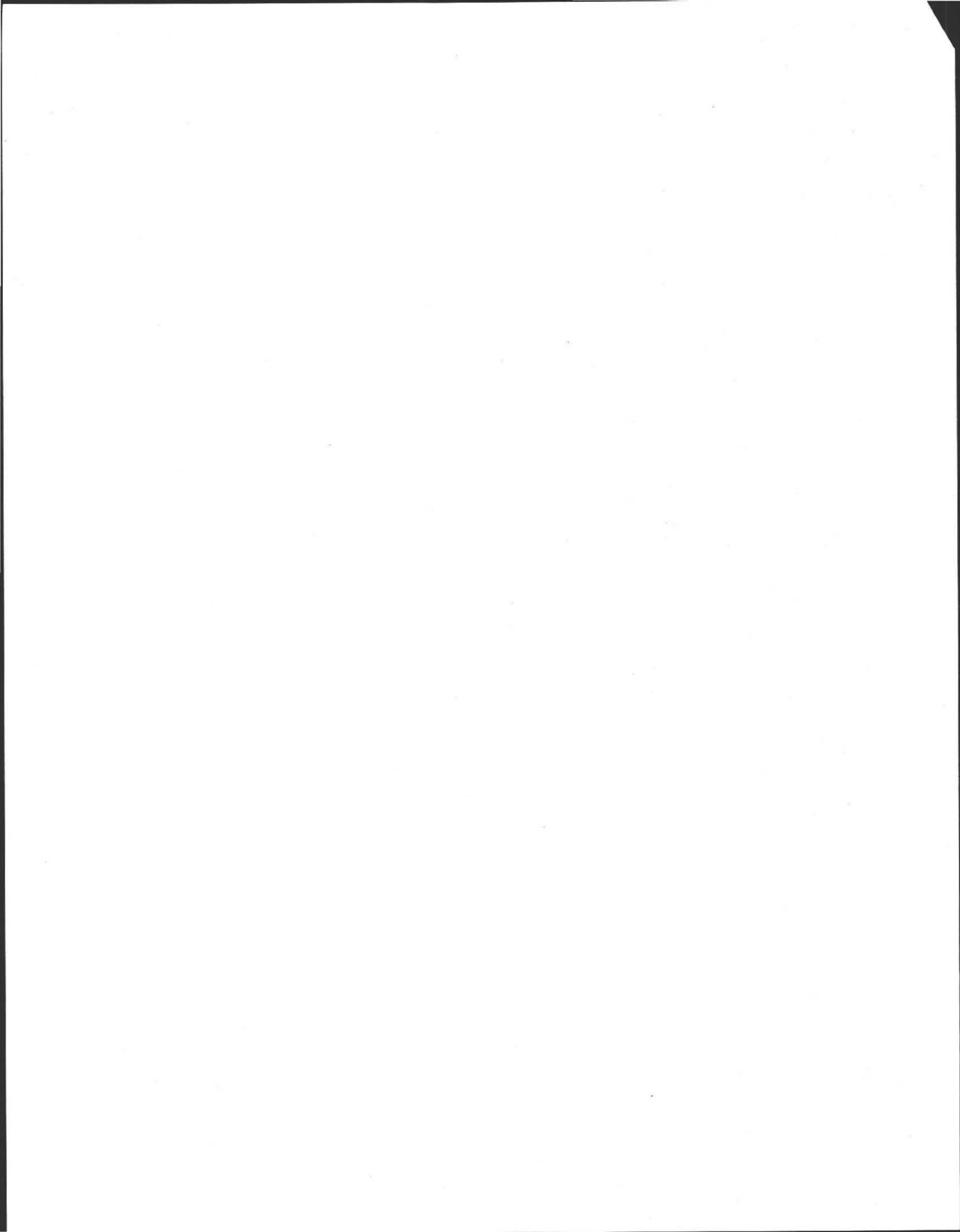


01/30/2013 11:43
 thompsonj

 |***TOWN OF AMHERST***
 |APPLICATIONS

 |PG 1
 |piappent

Application Ref	Project/Activity	Location
000007776	SFDU - SINGLE FAMILY UNKNOWN	489 MARKET HILL RD
000007953	SFDN - SINGLE FAMILY NEW	489 MARKET HILL RD
000008220	ACCU - ACCESSORY UNKNOWN	489 MARKET HILL RD
000008226	UNKU - Permit Plan (Do Not Use)	489 MARKET HILL RD
000021328	ELE - Permit Plan (Do Not Use)	489 MARKET HILL RD
000040391	PRJ - Permit Plan (Do Not Use)	489 MARKET HILL RD
000041577	SEPTIC PLAN REVIEW	489 MARKET HILL RD
000041578	SEPTIC -HEALTH	489 MARKET HILL RD - 3/19/2008
000043011	SPT - Permit Plan (Do Not Use)	489 MARKET HILL RD
651	PLM - EXISTING RESIDENTIAL	489 MARKET HILL RD



CURRENT OWNER		TOPO.	UTILITIES	STRT./ROAD	LOCATION	CURRENT ASSESSMENT				601 Amherst, MA
WENTWORTH, RANDALL & ANN M TR						Description	Code	Appraised Value	Assessed Value	
489 MARKET HILL RD AMHERST, MA 01002 Additional Owners:						RESIDENTL	1010	346,800	346,800	
						RES LAND	1010	131,000	131,000	VISION
						Total		477,800	477,800	

RECORD OF OWNERSHIP		BK-VOL/PAGE	SALE DATE	q/u	v/i	SALE PRICE	V.C.	PREVIOUS ASSESSMENTS (HISTORY)								
WENTWORTH, RANDALL & ANN M TRUSTEES		10009/ 122	10/30/2009	U	I	100	1A	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value	Yr.	Code	Assessed Value
WENTWORTH, RANDALL		9409/ 353	03/03/2008	U	V	120,000	1P	2013	1010	346,800	2012	1010	340,700	2012	1010	340,700
RILEY GLADYS A LIFE ESTATE		9092/ 208	04/09/2007	U	V	1	1A	2013	1010	131,000	2012	1010	131,000	2012	1010	131,000
						Total:				477,800	Total:		471,700	Total:		471,700

EXEMPTIONS			OTHER ASSESSMENTS					
Year	Type	Description	Amount	Code	Description	Number	Amount	Comm. Int.
2012	ER	OWNER OCCUPIED	0					
Total:			0					

This signature acknowledges a visit by a Data Collector or Assessor

ASSESSING NEIGHBORHOOD				
NBHD/ SUB	NBHD Name	Street Index Name	Tracing	Batch
CU/A				

APPRAISED VALUE SUMMARY	
Appraised Bldg. Value (Card)	342,900
Appraised XF (B) Value (Bldg)	3,900
Appraised OB (L) Value (Bldg)	0
Appraised Land Value (Bldg)	131,000
Special Land Value	0
Total Appraised Parcel Value	477,800
Valuation Method:	C
Exemptions	0
Adjustment:	0
Net Total Appraised Parcel Value	477,800

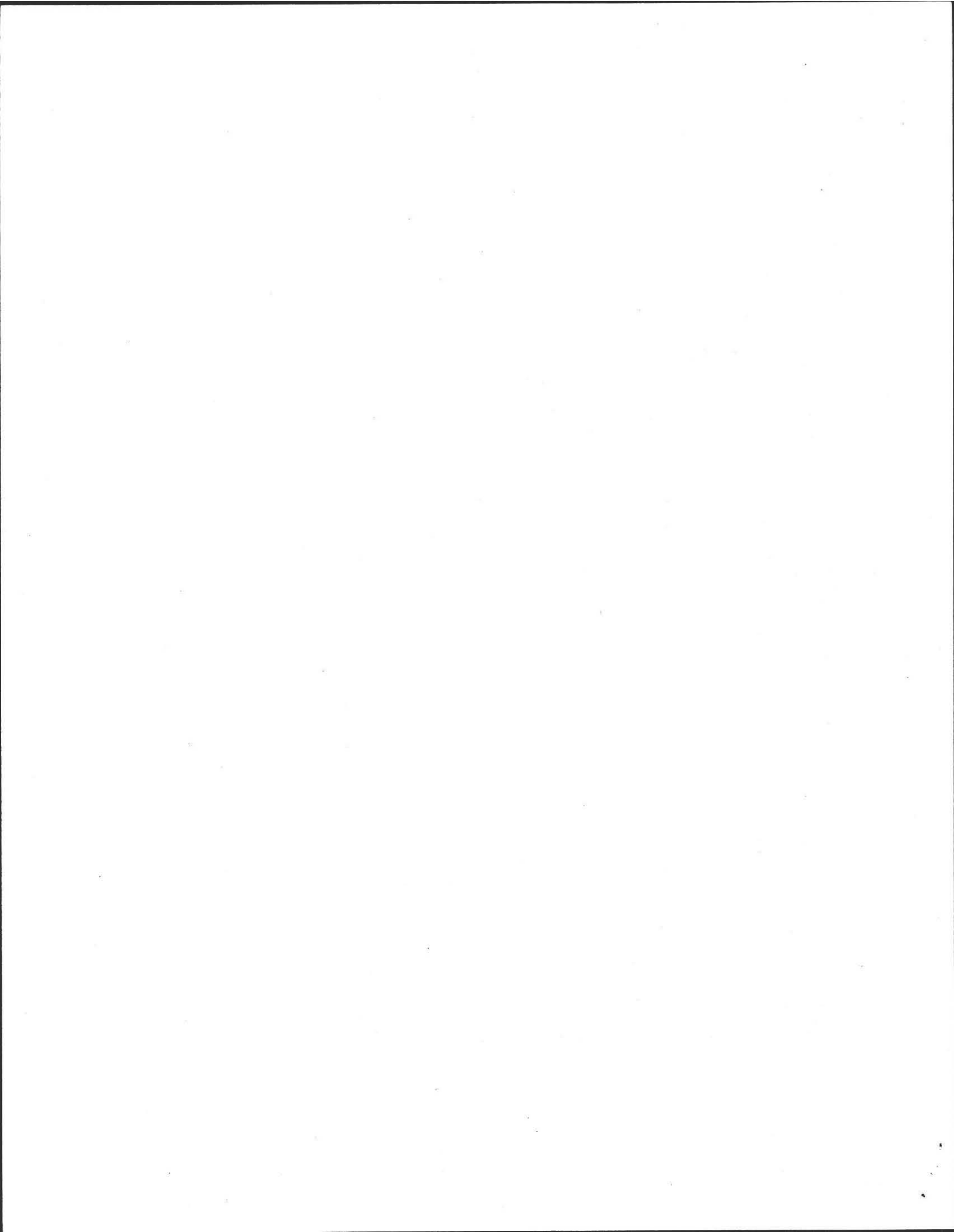
NOTES

NEW PARCEL FY 2009 OUT OF 3D-1-37 DWB

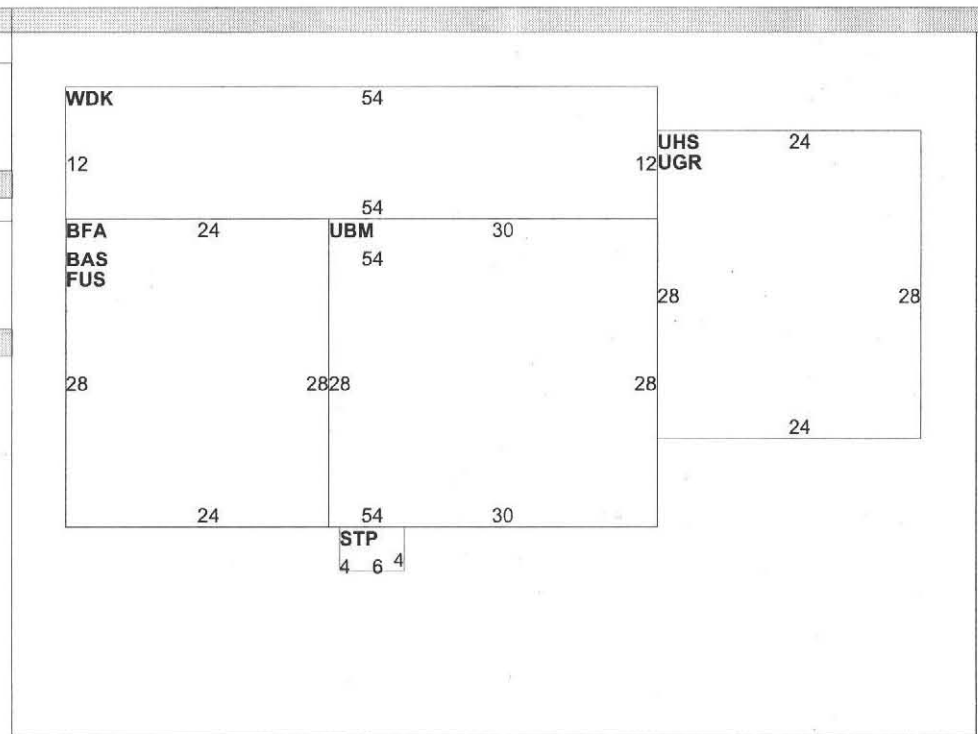
BUILDING PERMIT RECORD										VISIT/ CHANGE HISTORY				
Permit ID	Issue Date	Type	Description	Amount	Insp. Date	% Comp.	Date Comp.	Comments	Date	Type	IS	ID	Cd.	Purpose/Result
PLM09-0141	11/21/2008	PL	Plumbing	0		0		2TUBS,4WTR CLST,6LA	08/19/2011			LT	46	Review From Sales Data Sh
BLD09-0122	08/12/2008	RE	Remodel	1,600		0		RETAINING WALL	03/17/2010			LT	04	Building Permit Review Es
BLD09-0128	08/12/2008	RE	Remodel	4,500		0		CONSTRUCT CHIMNEY	07/11/2008			LT	03	Building Permit Review
BLD08-0635	05/27/2008	NC	New Construct	224,500		0		MOD SFD.ATT'D 2CAR						
ELE08-0855	04/04/2008	EL	Electric	0		0		UNDERGROUND SERVI						
BLD08-0458	03/31/2008	NC	New Construct	0		0		FOUNDATION ONLY						

LAND LINE VALUATION SECTION																			
B #	Use Code	Use Description	Zone	D	Front	Depth	Units	Unit Price	I Factor	S.A.	Acre Disc	C Factor	ST. Idx	Adj.	Notes- Adj	Special Pricing	S Adj Fact	Adj. Unit Price	Land Value
1	1010	Single Family	RO		150		30,000	SF	4.40	0.9800	4	1.0000	1.00	CU	1.00			1.00	129,400
1	1010	Single Family	RO				0.31	AC	5,200.00	1.0000	0	1.0000	1.00	CU	1.00			1.00	1,600

Total Card Land Units: 1.00 AC Parcel Total Land Area: 1 AC Total Land Value: 131,000



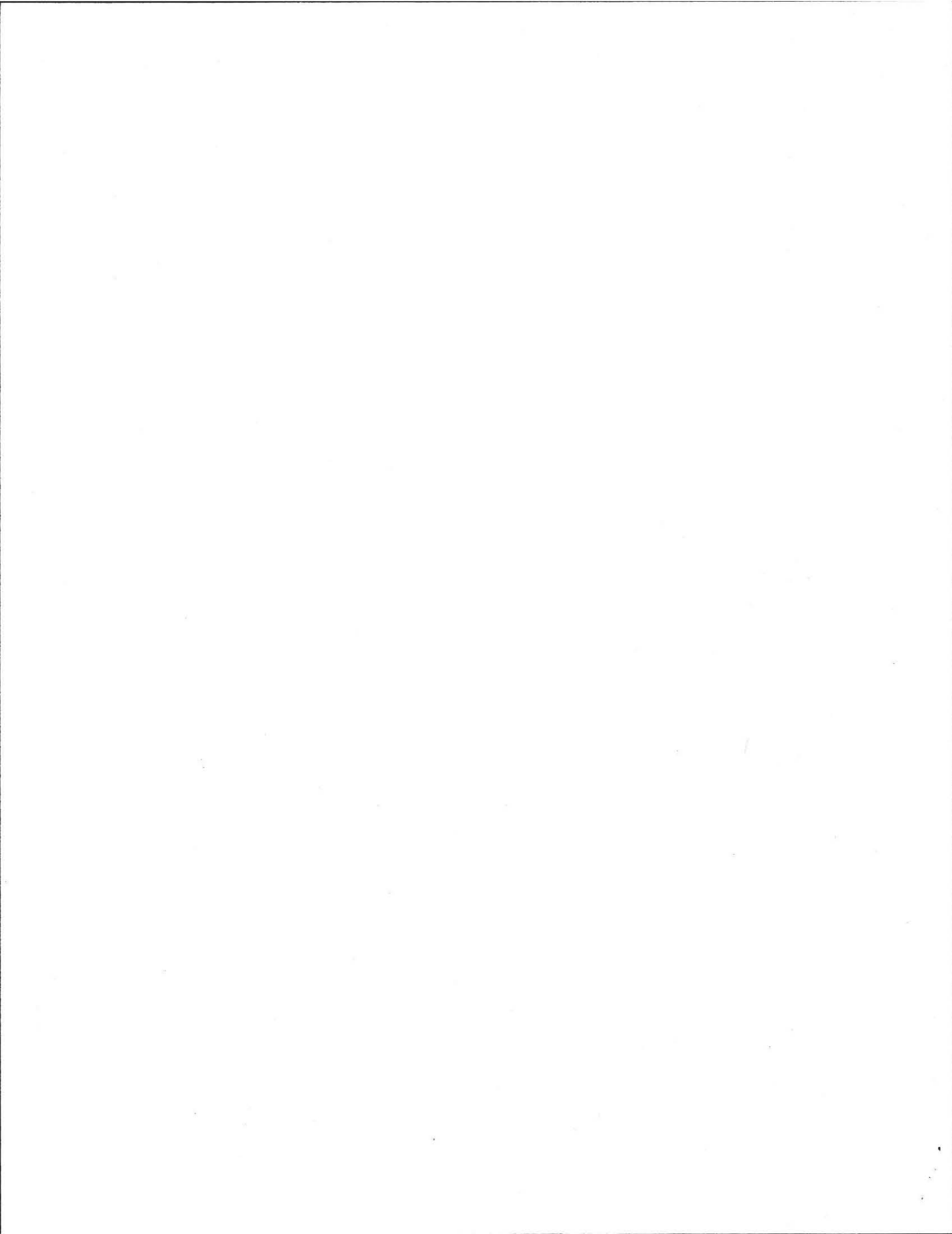
CONSTRUCTION DETAIL				CONSTRUCTION DETAIL (CONTINUED)			
Element	Cd.	Ch.	Description	Element	Cd.	Ch.	Description
Style	03		Colonial				
Model	01		Residential				
Grade	13		A-				
Stories	2			Foundation	04		Concrete
Occupancy	1			MIXED USE			
Exterior Wall 1	25		Vinyl Siding	Code	Description		Percentage
Exterior Wall 2				1010	Single Family		100
Roof Structure	03		Gable/Hip	COST/MARKET VALUATION			
Roof Cover	03		Asph/F Gls/Cmp	Adj. Base Rate:			90.17
Interior Wall 1	05		Drywall/Sheet	Replace Cost			349,943
Interior Wall 2				AYB			2008
Interior Flr 1	12		Hardwood	Dep Code			AV
Interior Flr 2				Remodel Rating			
Heat Fuel	02		Oil	Year Remodeled			
Heat Type	09		Geothermal	Dep %			2
AC Type	03		Central	Functional Obslnc			
Total Bedrooms	05		5 Bedrooms	External Obslnc			
Total Bthrms	4			Cost Trend Factor			
Total Half Baths				Condition			
Total Xtra Fixtrs	1			% Complete			
Total Rooms	10			Overall % Cond			98
Bath Style	03		Modern	Apprais Val			342,900
Kitchen Style	03		Luxurious	Dep % Ovr			0
				Dep Ovr Comment			
				Misc Imp Ovr			0
				Misc Imp Ovr Comment			
				Cost to Cure Ovr			0
				Cost to Cure Ovr Comment			



OB-OUTBUILDING & YARD ITEMS(L) / XF-BUILDING EXTRA FEATURES(B)												
Code	Description	Sub	Sub Descript	L/B	Units	Unit Price	Yr	Gde	Dp Rt	Cnd	%Cnd	Apr Value
FLUG	Gas No Flue			B	2	2,000.00	2009		1		100	3,900

BUILDING SUB-AREA SUMMARY SECTION							
Code	Description	Living Area	Gross Area	Eff. Area	Unit Cost	Undeprec. Value	
BAS	First Floor	1,512	1,512	1,512	90.17	136,334	
BFA	Basement Fin Li	470	672	336	45.08	30,297	
FUS	Upper Story, Finished	1,512	1,512	1,361	81.16	122,719	
STP	Stoop	0	24	2	7.51	180	
UBM	Basement, Unfinished	0	840	168	18.03	15,148	
UGR	Garage, Unfinished	0	672	202	27.10	18,214	
UHS	Half Story, Unfinished	0	672	235	31.53	21,190	
WDK	Deck, Wood	0	648	65	9.04	5,861	
Ttl. Gross Liv/Lease Area:		3,494	6,552	3,881		349,943	





AMHERST MASSACHUSETTS  amherstma.gov/maps AMHERST MAPS [Back To Search](#)

Property Map | Aerial Photos | Topography | Utilities | Zoning | Predicts | Conservation

Help | Mobile | Scale 1" = 98 ft



98 ft

[More Maps Here -->](#) [Go](#) 4.0.2 (production) AppGeo [Save Map as Image](#)

Selection | Legend | Location | Markup

Select Parcels

(show all)

Parcel	Address	Owner
3D-45	489 MARKET HILL RD	WENTWORTH, RANDALL & ANN

1 selected [To Mailing Labels](#) [To Spreadsheet](#)

Property | Sales | Permits | Neighborhood Sales [Print](#)

LOT 1 / 489 MARKET HILL RD

Parcel 3D-45
 Owner WENTWORTH, RANDALL & ANN
 M TRUSTEES

Assessment \$477,800.00 (FY12)
 \$531,300.00 (FY11)

Landuse Single Family (1010)
 Primary Zone RO (Dimensional Regulations)
 Neighborhood CUSHMAN
 Area 1.00 Ac / 43504 SqFt

Property Cards

Current (as of 01/28/2013)
 2012 | 2011 | 2010 | 20092008
 | 2007 | 2006

Assessment Note #1

NEW PARCEL FY 2009 OUT OF
 3D-1-37 DWB

Additional Resources

Photo Photo #1, 05/07/2009
 Photo Photo #2, 07/11/2008
 Document Address change request 489
 market hill rd, 06/21/2010
 Document BK10009PG122, 11/03/2009
 School District Fort River

Plan: ANR2008-00006

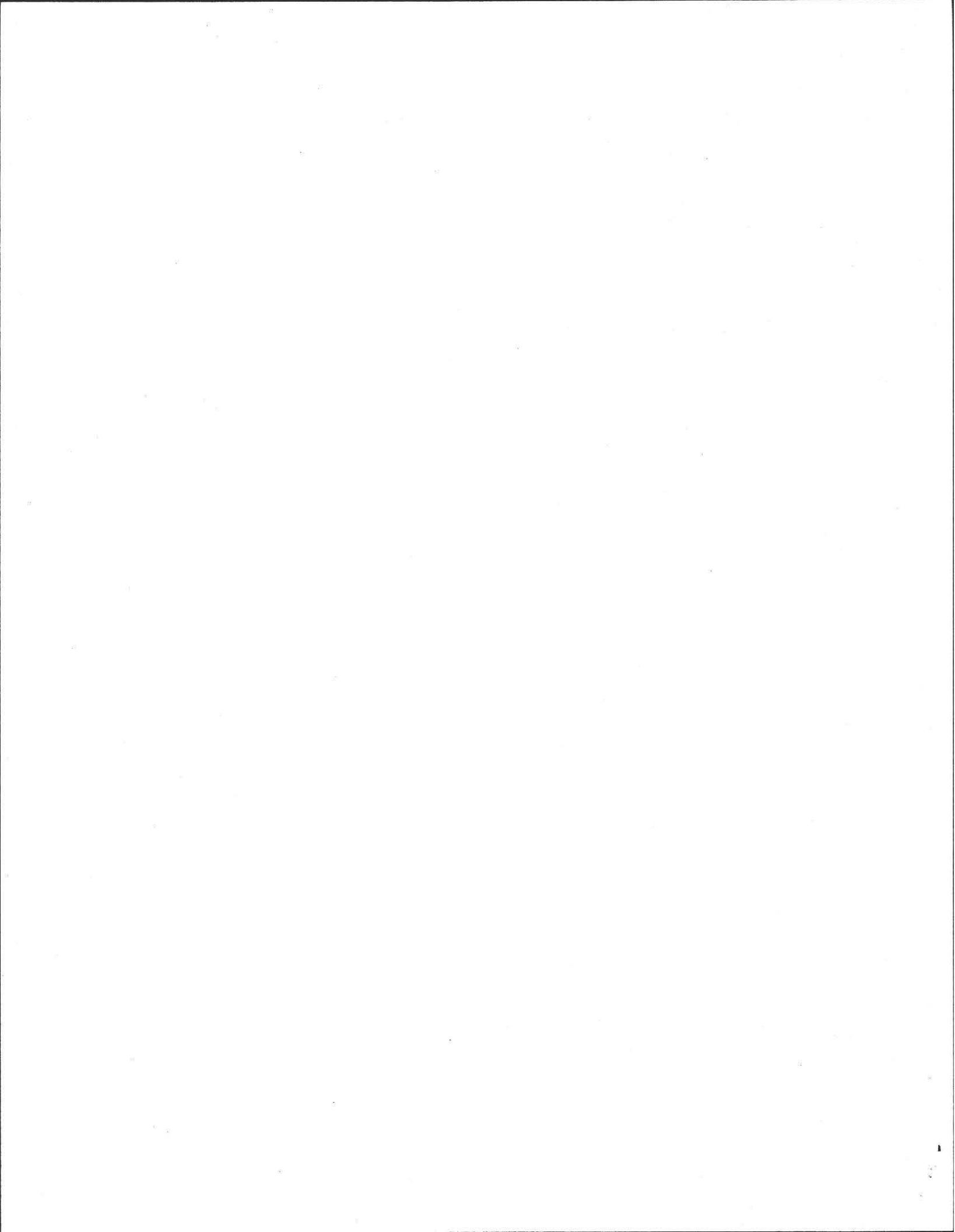
Map Revised on 01/16/2008:
 Split from 3D-37
 Click for Scan

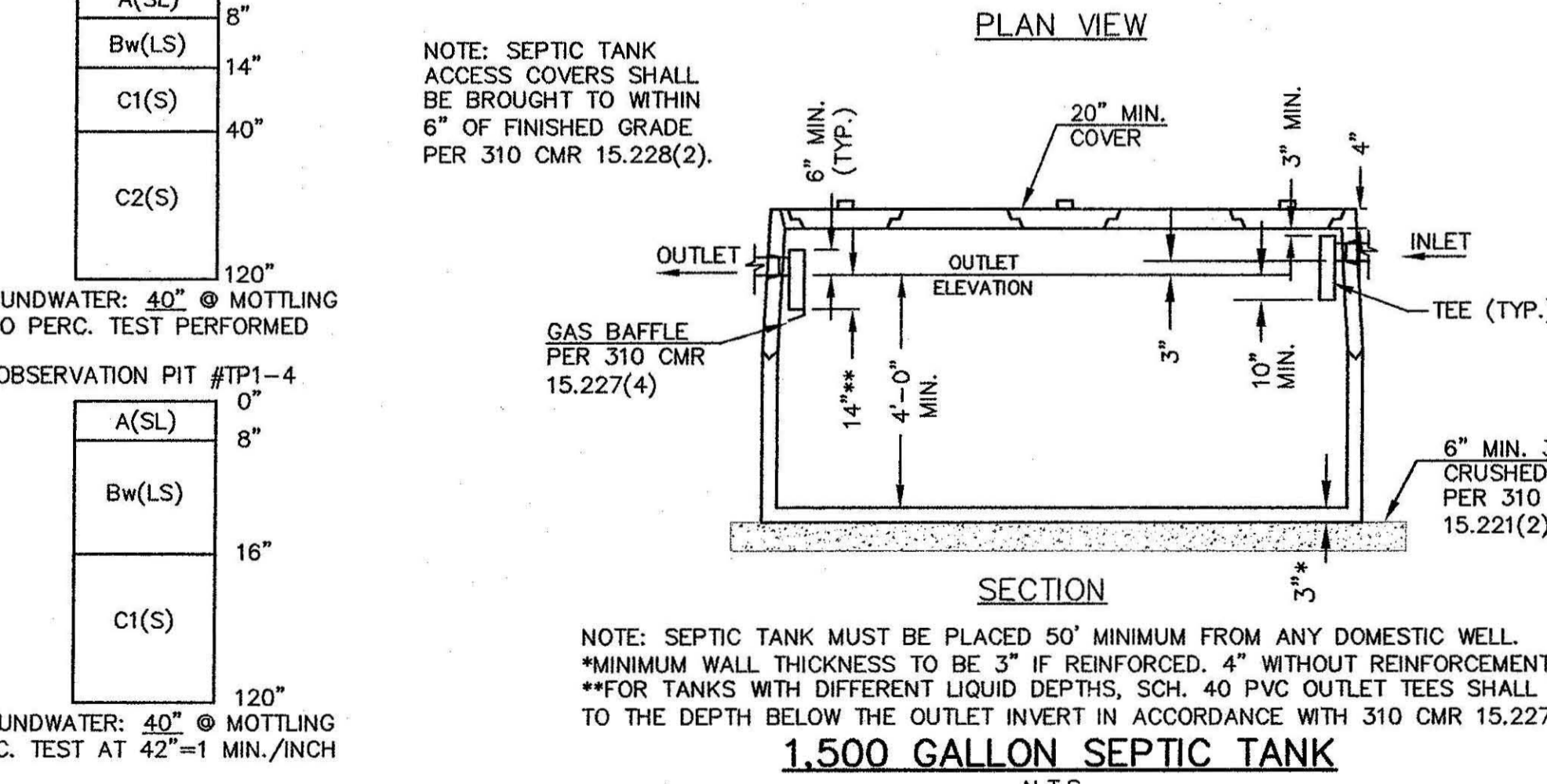
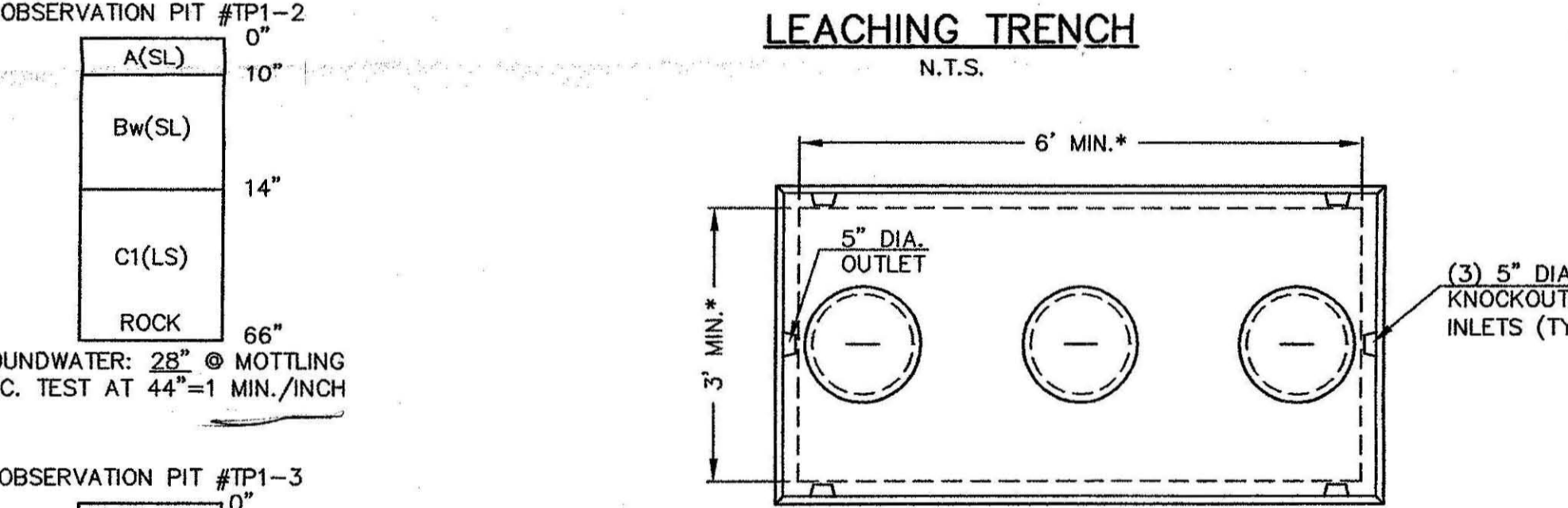
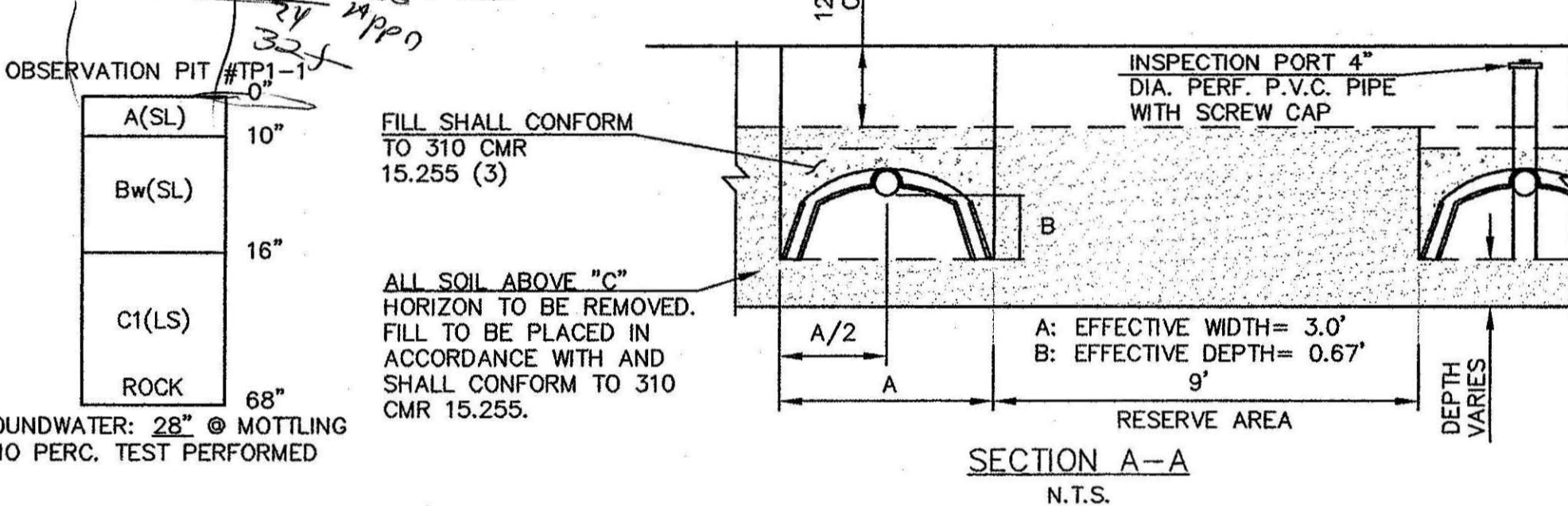
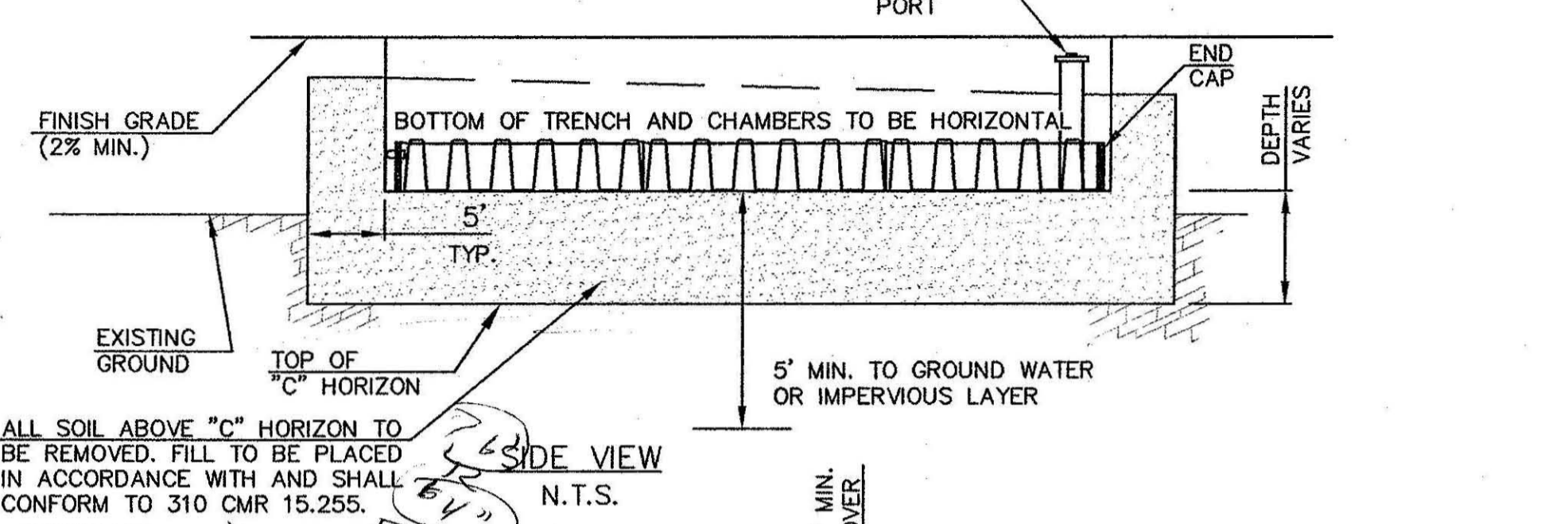
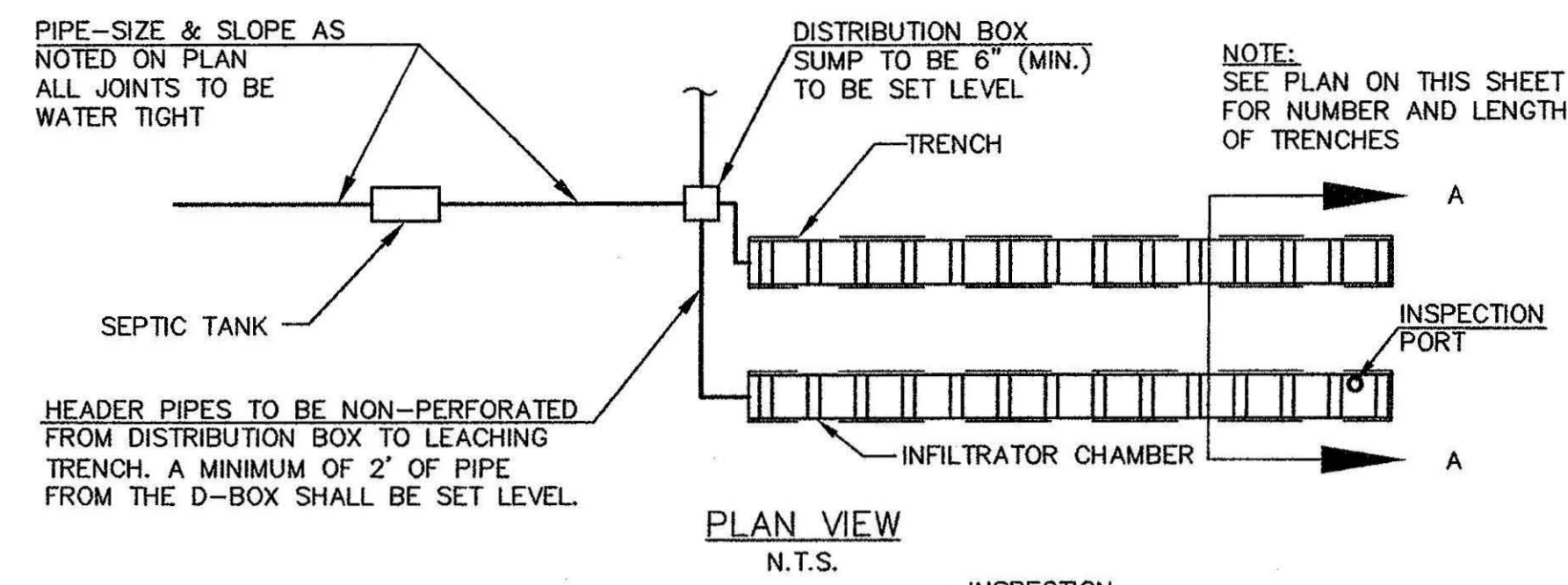
Tax Map 3D PDF Download

2010 Map | 2009 Map2008 Map
 | 2006 Map2000 Map

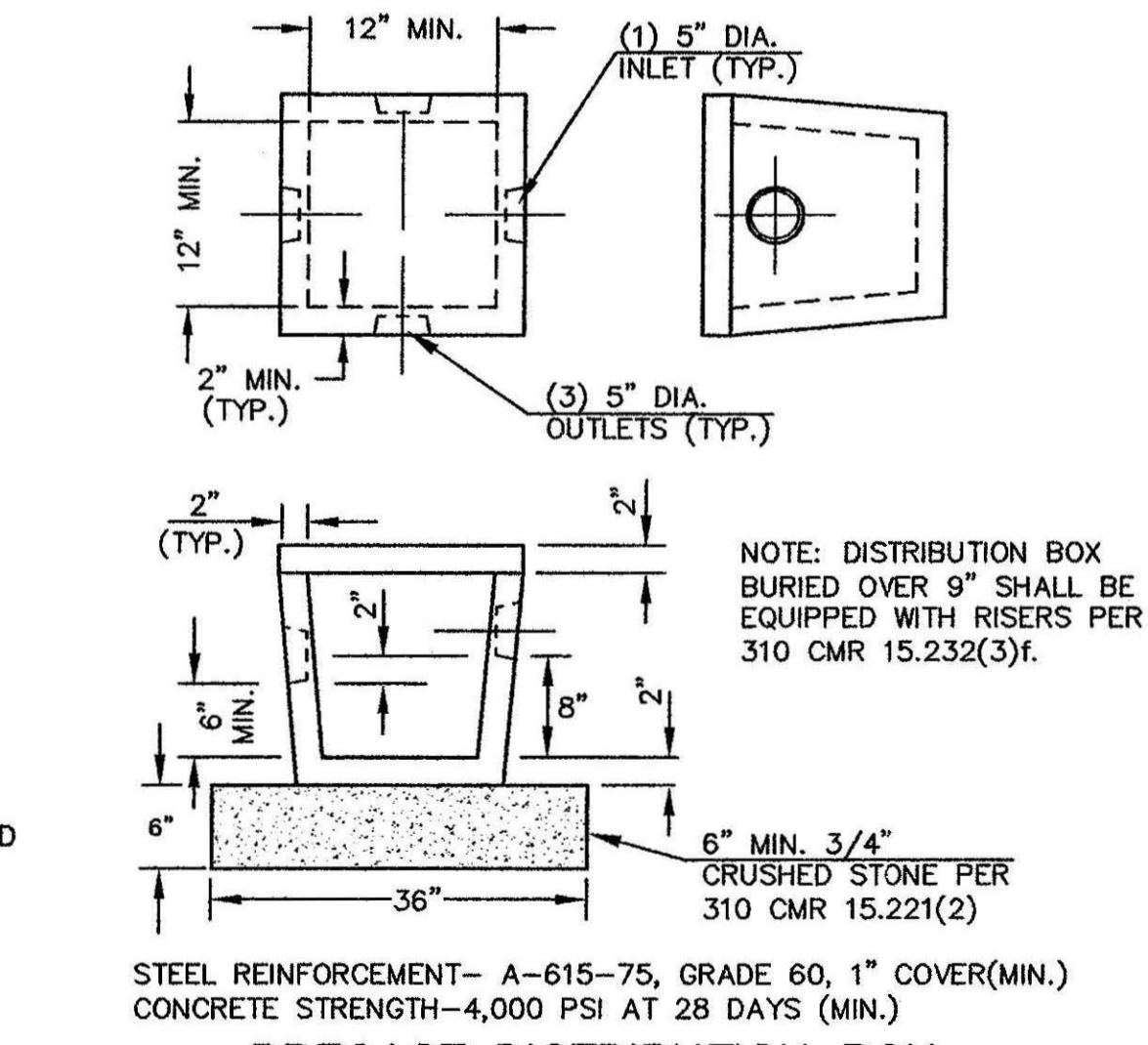
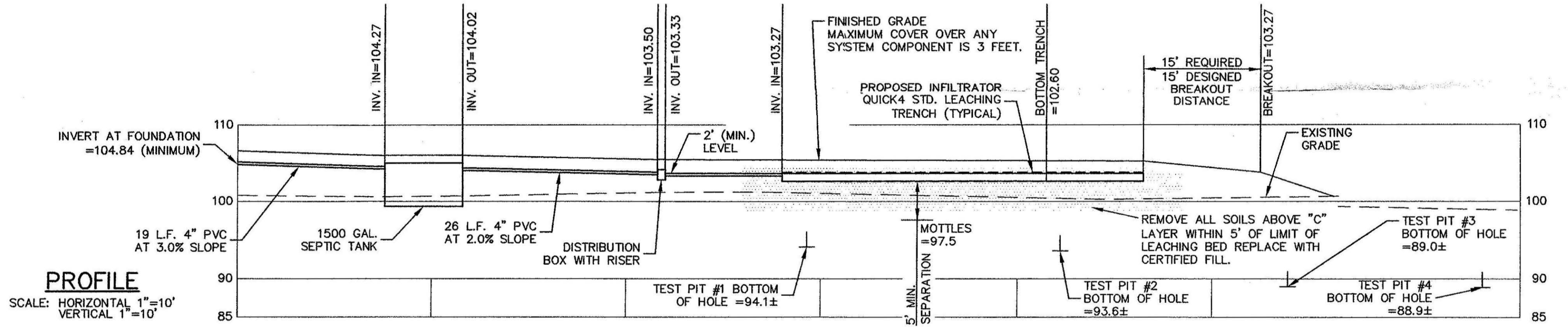
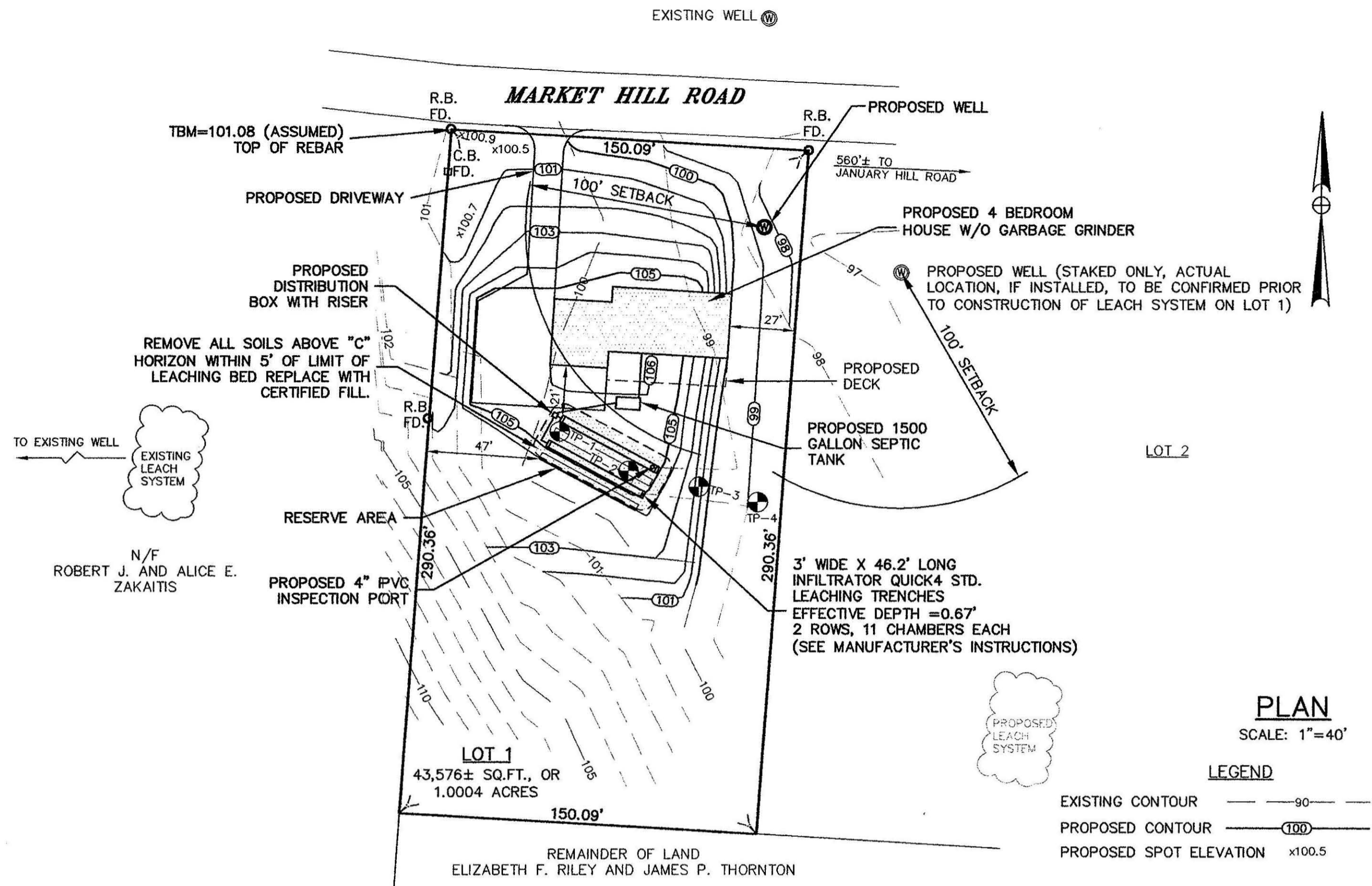
Selection Tools

All properties on MARKET HILL
 RD
 All properties on Tax Map 3D
 All properties that are Single
 Family
 Simple map of this parcel





- MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR TRENCH SYSTEMS**
- EXCAVATE AND LEVEL 3' WIDE TRENCHES.
 - PREPARE TRENCH BOTTOM AND SIDES IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS. (INFILTRATOR SYSTEMS, INC. RECOMMENDS RAKING SIDEWALL AND BOTTOM INFILTRATIVE SURFACES TO ELIMINATE SMEARING.)
 - SCREW SPLASH PLATE ON BOTTOM OF OPEN END PLATE.
 - SCREW OPEN END PLATE INTO INLET END (WITHOUT INTERLOCKS) OF FIRST INFILTRATOR CHAMBER WITH SPLASH PLATE EXTENDING INTO CHAMBER.
 - PLACE FIRST UNIT IN THE INLET END OF TRENCH WITH INTERLOCKS DOWNSTREAM.
 - RUN DISTRIBUTION PIPE THROUGH INLET OPENING IN END PLATE BUT NOT BEYOND SPLASH PLATE. SINGLE SCREW MAY BE USED TO HOLD IN PLACE. PIPE DOES NOT NORMALLY RUN THE LENGTH OF SYSTEM. CONNECT INFILTRATOR CHAMBERS TOGETHER, FULLY ENGAGING INTERLOCKS TO FORM DESIRED TRENCH LENGTH. THE JOINTS MAY BE SCREWED TOGETHER FOR EASE IN CONSTRUCTION. BE SURE TO CHECK TRENCH GRADE WITH A LEVEL OR SURVEYING EQUIPMENT.
 - SCREW CLOSED END PLATE IN DOWNSTREAM END OF LAST CHAMBER. NOTE: FOR SERIAL DISTRIBUTION, OR TO LOOSE THE CHAMBERS TOGETHER, USE AN OPEN END PLATE AT THE DOWNSTREAM END OF THE TRENCH, AND RUN A PIPE FROM THE OPENING TO THE NEXT TRENCH.
 - FILL SIDE WALL AREA TO TOP OF SLOTS WITH NATIVE SOIL. "WALK" FILL INTO PLACE TO GIVE PROPER SUPPORT OF SIDES, THIS IS VERY IMPORTANT TO ACHIEVE FULL STRENGTH.
 - BACKFILL TO MINIMUM OF 12" COVER AFTER COMPACTION AND SETTLING FOR H-10 CHAMBERS AND 18" FOR H-20 CHAMBERS. AVOID LARGE ROCKS IN THE BACKFILL MATERIAL. CAUTION—AVOID VEHICULAR TRAFFIC ON SYSTEM DURING CONSTRUCTION SINCE SOIL HAS NOT SETTLED. THIS IS PARTICULARLY IMPORTANT IN SAND, SINCE LOOSE SAND OFFERS VERY LITTLE STRUCTURAL SUPPORT. MOST STATES ADVISE AVOIDING VEHICLE TRAFFIC TO PREVENT COMPACTION OF THE INFILTRATIVE SURFACE. (AFTER PROPER DEPTH OF COVER IS COMPACTIONED AND SETTLED, INFILTRATOR CHAMBERS WILL THEN SUPPORT VEHICLE WEIGHT NOT TO EXCEED 16,000 LBS. PER AXLE FOR H-10 CHAMBERS AND 32,000 LBS. PER AXLE FOR H-20 CHAMBERS.)



- CONSTRUCTION NOTES**
- A MINIMUM OF 48 HOURS NOTICE TO THE ENGINEER IS REQUIRED FOR INSPECTION OF THE SYSTEM. FINAL COVER OF THE SYSTEM COMPONENTS SHALL NOT BE COMPLETED UNTIL AFTER THE INSPECTION.
 - ALL EXISTING SOILS ABOVE THE "C" HORIZON SHALL BE REMOVED WITHIN THE AREA SHOWN ON THE PLAN. FILL MATERIAL SHALL BE PLACED IN ACCORDANCE WITH AND SHALL MEET THE SPECIFICATIONS OF 310 CMR 15.255. A CERTIFIED SIEVE ANALYSIS FOR THE FILL MATERIAL SHALL BE FURNISHED BY THE CONTRACTOR TO THE OWNER.
 - ALL STRUCTURES, INCLUDING BUT NOT LIMITED TO THE SEPTIC TANK AND THE D-BOX, SHALL BE WITHIN 9" OF FINISHED GRADE, OR EQUIPPED WITH RISERS TO WITHIN 6" OF FINISHED GRADE.
 - ALL STRUCTURES SHALL BE MARKED FOR FUTURE LOCATION USING MAGNETIC TAPE OR OTHER COMPARABLE METHOD, IN ACCORDANCE WITH 310 CMR 15.221(12).
 - NO PERMANENT STRUCTURES SHALL BE CONSTRUCTED OVER ANY PART OF THE SEWAGE DISPOSAL SYSTEM.
- GENERAL NOTES**
- NO WETLANDS WITHIN 50' OF PROPOSED SEPTIC SYSTEM.
 - ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH 310 CMR 15.00, THE STATE ENVIRONMENTAL CODE, TITLE 5.
 - SEPTIC TANK SHALL BE MAINTAINED IN ACCORDANCE WITH 310 CMR 15.351.
 - ALL PIPING FROM HOUSE TO DISTRIBUTION BOX SHALL BE SCH-40, RING-TITE. DISTRIBUTION LINES SHALL BE SCH 40 OR SDR 35 PER 310 CMR 15.252(2)(h).
 - PROPERTY LINES SHOWN ARE FOR ENGINEERING DESIGN PURPOSES ONLY.
 - NO OTHER WELLS OBSERVED WITHIN 200' OF SYSTEM. BACKWASH OF WATER PURIFICATION OR FILTRATION DEVICES MUST DISCHARGE TO A DRYWELL, NOT TO PROPOSED LEACH FACILITY.

DESIGN CALCULATIONS

4 BEDROOMS X 2 PERSONS PER BEDROOM = 8 PERSONS
 8 PERSONS X 55 GALLONS OF WASTEWATER PER PERSON PER DAY = 440 GALLONS OF WASTEWATER PER DAY.
 PERCOLATION RATE = 2 MIN PER INCH.
 LEACHING AREA REQUIREMENTS: CLASS I SOIL 310 CMR 15.242
 USE 5 MIN. PER INCH EFFLUENT LOADING RATE = 0.74 GPD/SF

INFILTRATOR TRENCH DESIGN
 SIDEWALL: 1' OF LENGTH X 2 SIDES X 0.67' EFFECTIVE DEPTH X 1.67 = 2.23 SF/LF OF TRENCH.
 BOTTOM: 1' OF LENGTH X 2.83' WIDE X 1.67 = 4.73 SF/LF OF TRENCH.
 TOTAL: 2.23 + 4.73 = 6.96 SF/LF OF TRENCH (PER DEP APPROVAL) X .74 GAL/SF LOADING RATE = 5.15 GAL./LF OF TRENCH (CALCULATED).
 440 GAL./5.15 GAL PER LINEAR FOOT = 86 LINEAR FEET OF TRENCH.
 REQUIRED LENGTH OF TRENCH (PER DEP APPROVAL):
 400 S.F. (MIN.) / 6.96' SF/LF = 57.5 LINEAR FEET OF TRENCH.

CAPACITY OF SYSTEM AS DESIGNED
 2 X (44'+2.2') = 92.4 LF OF TRENCH X 6.96 SF/LF = 643 SF (EFF. LEACH AREA) 643 SF X .74 GAL/SF = 475 GAL. OF WASTEWATER PER DAY. (22 CHAMBERS)(WITHOUT GARBAGE GRINDER)

SEPTIC TANK
 WITHOUT GARBAGE DISPOSAL:
 440 GALLONS OF WASTEWATER PER DAY X 200% = 880 GALLONS REQUIRED EFFECTIVE LIQUID CAPACITY OF SEPTIC TANK.
 USE 1500 GAL SEPTIC TANK MIN.

NO.	DATE	BY	REVISIONS
1	02/20/08	AOC	TESTPIT ORIENTATION; ELEVATIONS; GRADING

SHERMAN & FRYDRYK
 Land Surveying and Engineering
 3 Converse Street, Suite 203
 Palmer, MA 01069

DESIGN: AOC
 DRAFTING: AOC
 CHECKED: KTT
 APPROVED: DJF

SCALE:
 HORZ: AS SHOWN
 VERT: AS SHOWN
 DATE: 02/08/08

PLAN, PROFILE, & DETAILS (REVISED)

OWNER: ELIZABETH F. RILEY & JAMES P. THORNTON

PLAN OF PROPOSED SEWAGE DISPOSAL SYSTEM
 PREPARED FOR
RANDALL & ANN WENTWORTH
 LOT 1, MARKET HILL ROAD
 AMHERST, MA

PROJECT NUMBER
 08011

SHEET NUMBER
 1 OF 1

received
5.18.07

No. _____

Date: 5/10/07

Commonwealth of Massachusetts
Massachusetts

Soil Suitability Assessment for On-site Sewage Disposal

Performed By: WILLIAM SIERUTA PE EVM Date: 5/10/07
Witnessed By: DAVID ZAROZINSKI BOH

Location Address or Lot # <u>BETSY RILEY</u> <u>(539) MARKET HILL RD.</u> <u>LOT 1</u> <u>Amherst</u> New Construction <input checked="" type="checkbox"/> Repair <input type="checkbox"/> <u>MA</u>	Owner's Name, Address, and Telephone # <u>BETSY RILEY</u> <u>539 MARKET HILL RD</u> <u>Amherst MASS</u>
---	--

Office Review

Published Soil Survey Available: No Yes

Tele

Year Published Publication Scale Soil Map Unit

Drainage Class Soil Limitations

Surficial Geologic Report Available: No Yes

Year Published Publication Scale

Geologic Material (Map Unit)

Landform

Flood Insurance Rate Map:

Above 500 year flood boundary No Yes

Within 500 year flood boundary No Yes

Within 100 year flood boundary No Yes

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

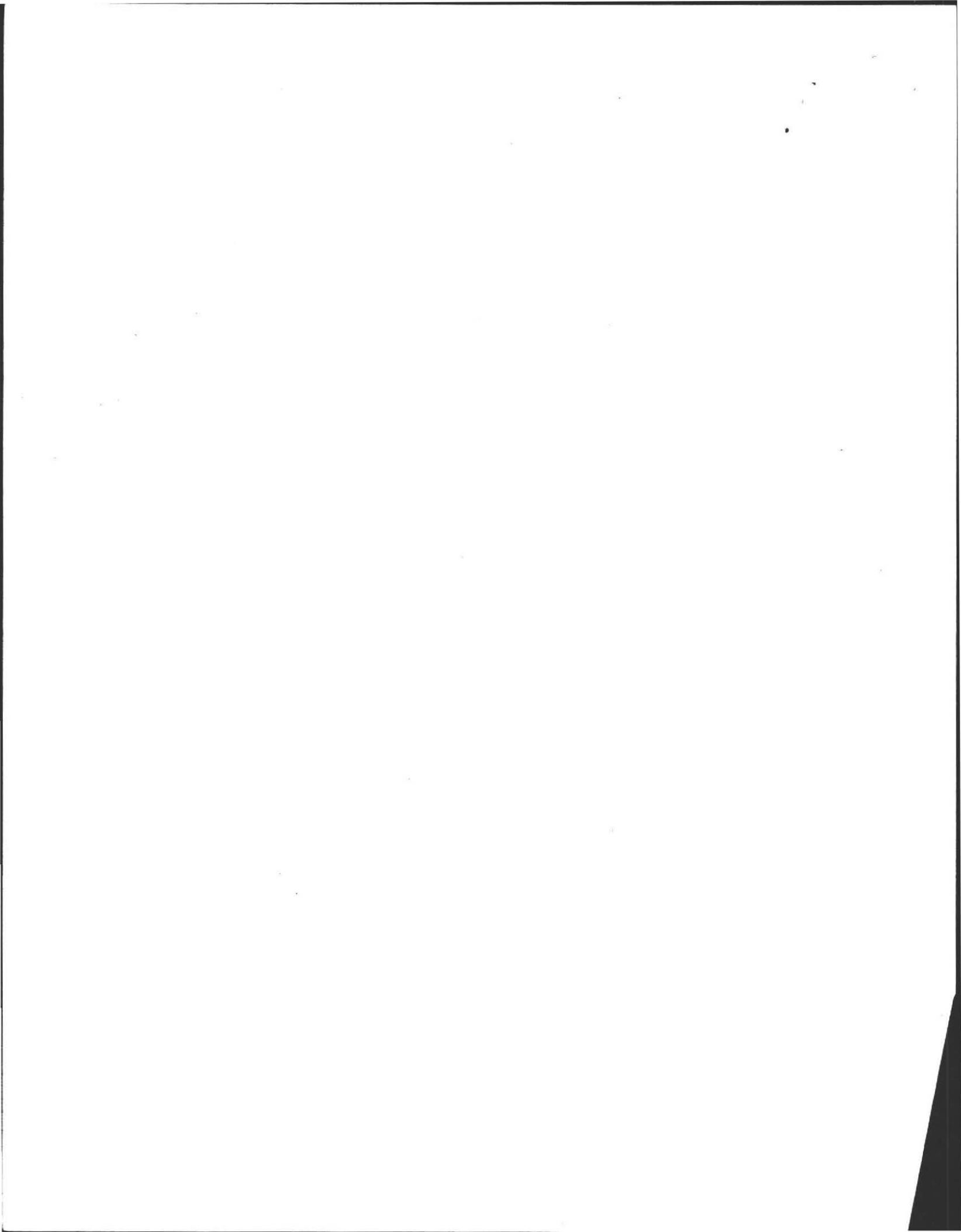
Other References Reviewed: _____



DEP APPROVE

LOT 1 ADDRESS IS

489 ~~MARKET HILL~~ RD.
MARKET HILL RD.



FORM II - SOIL EVALUATOR FORM

Page 2 of 3

Location Address or Lot No.

539 market Hill Rd
LOT 1 Amberst

LOT 1

Location Address or Lot No.

On-site Review

On-site Review

Deep Hole Number TP-1 Date 5/10/07 Time — Weather cloudy

Deep Hole Number TP-2 Date 5/10/07 Time — Weather —

Location (Identify on site plan) and Use residential Slope (%) 0 Surface Stones some rock

Location (Identify on site plan) Slope (%) 0 Surface Stones some rock

Vegetation FIELD

Vegetation FIELD

Landform OUTWASH TERRACE

Landform TERRACE

Position on landscape (sketch on the back) 400'

Position on landscape (sketch on the back) 400'

Distances from: 400' feet

Distances from: 400' feet

Open Water Body — feet

Open Water Body — feet

Possible Wet Area 400' feet

Possible Wet Area 400' feet

Drinking Water Well 200' feet

Drinking Water Well 200' feet

Drainage way DNA feet

Drainage way DNA feet

Property Line 200' feet

Property Line — feet

Other — feet

Other — feet

DEER OBSERVATION HOLE LOG

DEER OBSERVATION HOLE LOG

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Moisture	Other (Squash, Stems, Builders, Consistency, % Gravel)
0-10	Ap	5/2	10YR 4-2	10YR 4-2	
10-16	Bw	5/2	10YR 5-4	11YR 5-8	
16-68	C1	4/5	10YR 4-8	10YR 6-1	30% gravel
68"	R ₁	Rock	COARSE		20% cobbles

Depth from Surface (inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Moisture	Other (Squash, Stems, Builders, Consistency, % Gravel)
0-10	Ap	10YR 4-2	10YR 4-2	10YR 4-2	
10-14	Bw	10YR 5-4	10YR 5-4	10YR 5-8	
14-66	C1	10YR 4-4	10YR 4-5	10YR 4-1	30% gravel
66"	R ₁	Rock		28"	20% cobbles

MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Percent Material (geologic)

Percent Material (geologic)

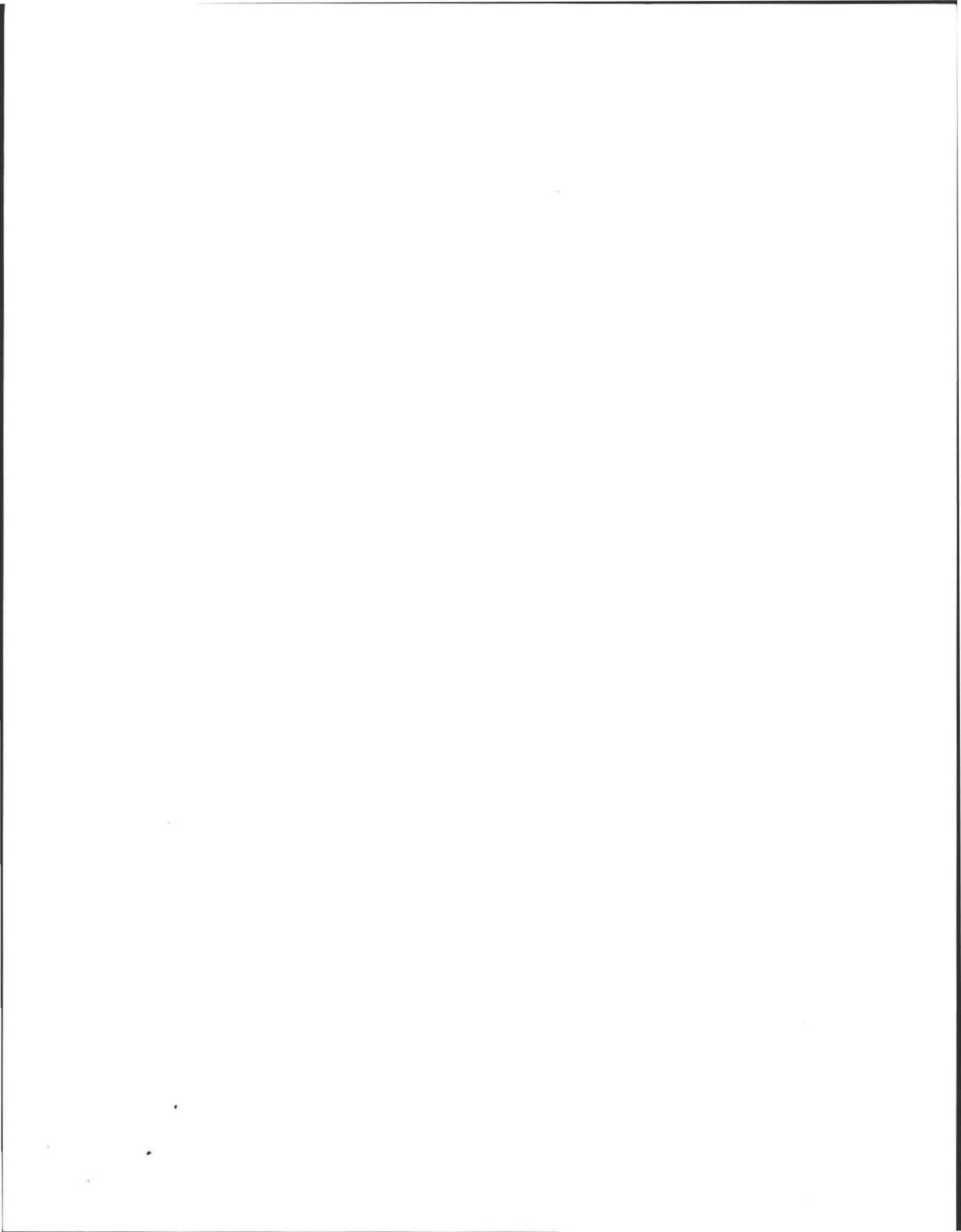
Depth to Groundwater: Standing Water in the Hole: 100

Depth to Groundwater: Standing Water in the Hole: 60

Estimated Seasonal High Ground Water: 28"

Estimated Seasonal High Ground Water: 28"





FORM 11 - SOIL EVALUATOR FORM

539 Munnlet Hill Page 2 of 3

LOT 1 Amherst

Location Address or Lot No.

On-site Review

Deep Hole Number TP-3 Date: 5/10/07 Time: - Weather: -
 Location (Identify on site plan) Residential
 Land Use Residential Slope (%) 0 Surface Stones None
 Vegetation FIELD
 Landform OUTWASH
 Position on landscape (sketch on the back)
 Distances from:
 Open Water Body 400+ feet Drainage way DNA feet
 Possible Wet Area 400+ feet Property Line - feet
 Drinking Water Well 200+ feet Other - feet

DEEP OBSERVATION HOLE LOG

Depth from Surface (Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Moisture	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-8	AP	SL	10YR 4-2		
0-8				10YR 5-8	
8-14	BW	LS	10YR 5-8		NO stone
14-40	C1	SAND med	10YR 5-8		
40-120	C2	SAND coarse	10YR 4-4	40	30% gravel 20% cobbles MASSIVE FRIABLE

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) OUTWASH Depth to Bedrock: -
 Depth to Groundwater: Standing Water in the Hole: 77 Weeping from Pit Face: 77
 Estimated Seasonal High Ground Water: KEHWT 40



Location Address or Lot No.

On-site Review

Deep Hole Number TP-4 Date: 5/10/07 Time: - Weather: cloudy
 Location (Identify on site plan) Residential
 Land Use Residential Slope (%) - Surface Stones some none
 Vegetation FIELD
 Landform OUTWASH
 Position on landscape (sketch on the back)
 Distances from:
 Open Water Body 400+ feet Drainage way DNA feet
 Possible Wet Area 400+ feet Property Line - feet
 Drinking Water Well 200+ feet Other - feet

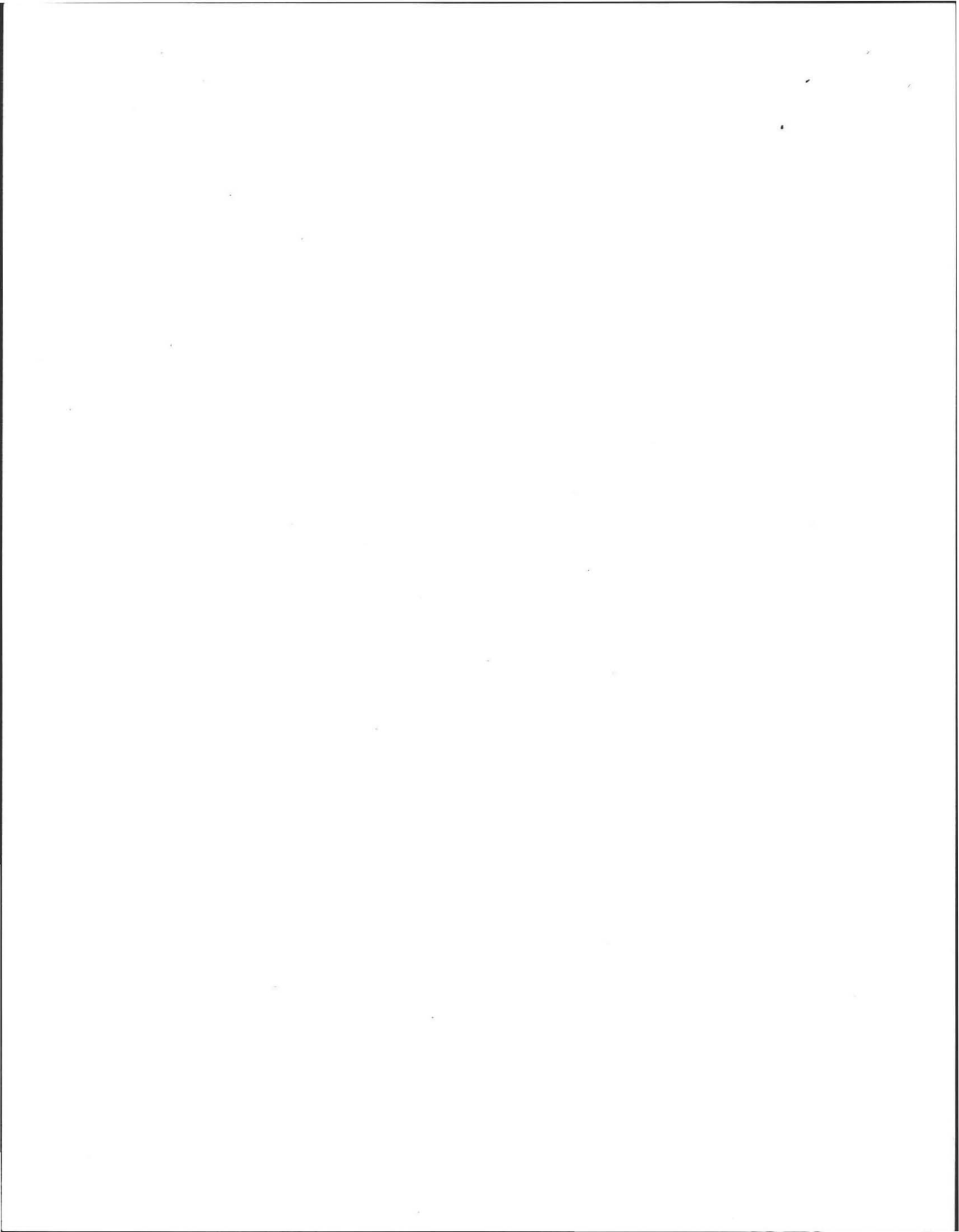
DEEP OBSERVATION HOLE LOG

Depth from Surface (Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Moisture	Other (Structure, Stones, Boulders, Consistency, % Gravel)
0-8	AP	SL	10YR 4-2		
8-16	BW	LS	10YR 5-6	10YR 5-8	10% gravel
16-120	C1	SAND coarse	10YR 7-4	10YR 4-4 10YR 6-1 40	20% cobbles MASSIVE FRIABLE

* MINIMUM OF 2 HOLES REQUIRED AT EVERY PROPOSED DISPOSAL AREA

Parent Material (geologic) OUTWASH Depth to Bedrock: -
 Depth to Groundwater: Standing Water in the Hole: 71 Weeping from Pit Face: 71
 Estimated Seasonal High Ground Water: EHWT 40





Percolation Test

Test No. perc1
 Reading _____ Time _____
 Saturation (15 min) 249als
 _____ 926
 _____ 928
 _____ 932

Test No. perc2 249als
 Reading _____ Time _____
 Saturation (15 min) 936 944
 _____ 944
 _____ 945
 _____ 948

Perc Rate _____
 Ground Elev. 5.0
 Depth of Hole design rate 6
Min/inch
174"

Perc. Rate _____
 Ground Elev. 5.0
 Depth of Hole design
Min/inch
40

Test Pit TP1-2
 Depth Soil Description
0-10 CLAY LOAM
10-16 SANDY SUB
16-68 SAND CORSED
68 GRAVEL

Deep Test Pit TP1-3
 Test Pit TP1-3
 Depth Soil Description
0-8 CLAY LOAM
8-14 SAND SUB
14-40 SAND
40-120 GRAVEL FINE TO

Groundwater Depth 60 Elev. _____
 Bedrock Depth _____ Elev. _____
 Ground Elev. EHWT 28"

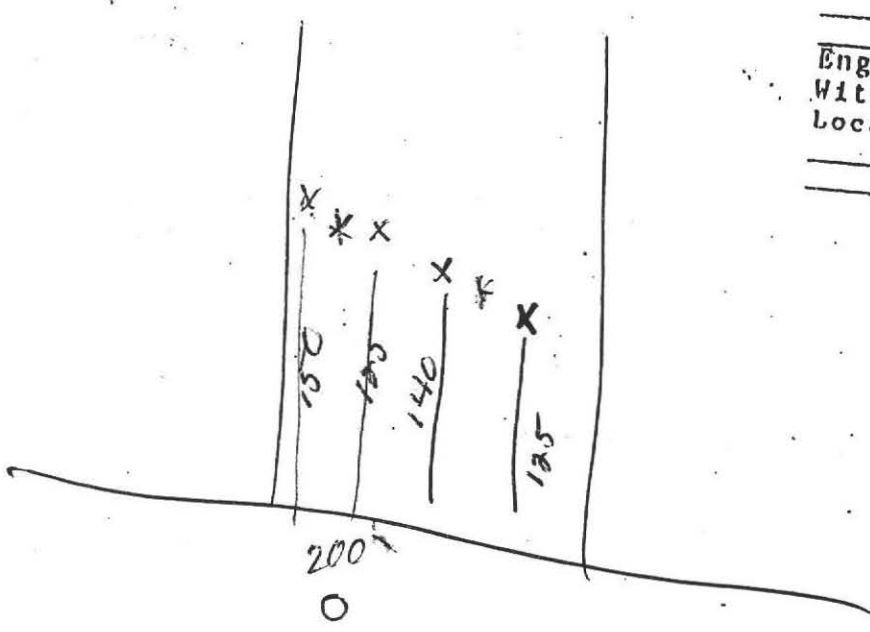
Groundwater Depth 71 Elev. _____
 Bedrock Depth _____ Elev. _____
 Ground Elev. EHWT 40"

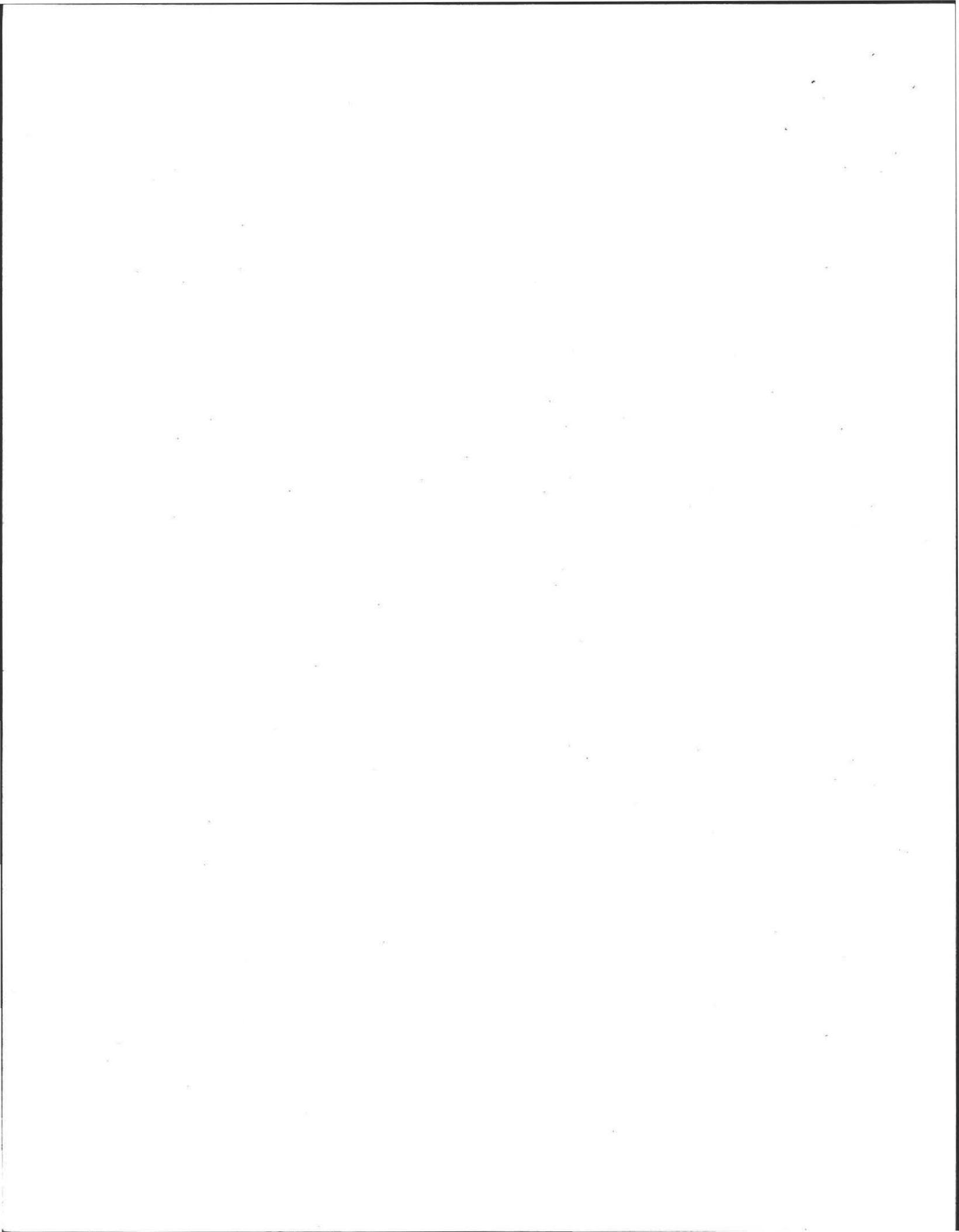
S.C.S. Soil Description _____ Seasonal High Water Table? _____

Bench Mark: Elev. _____ Description _____

COMMENTS: 60" separate head

Date: 5/10/07
 Client: BETSY PIKE
539 MARKET HILL RD
AMHERST MASS
 Engineer: WJ STERNUTTA PE
 Witness: D. ZARAZINSKI
 Location of Perc: LOT 1 PART OF 539
MARKET HILL RD
AMHERST MA





Location Address or Lot No. LOT 1 MARKET HILL RD

COMMONWEALTH OF MASSACHUSETTS
Amherst, Massachusetts

Percolation Test*		
Date: <u>5/10/07</u>		Time:
Observation Hole #	<u>TP1-2</u>	<u>TP1-4</u>
Depth of Perc	<u>44</u>	<u>42</u>
Start Pre-soak	<u>24 gals</u>	<u>24 gals</u>
End Pre-soak	<u>926</u>	
Time at 12"	<u>926</u>	<u>944</u>
Time at 9"	<u>928</u>	<u>945</u>
Time at 6"	<u>932</u>	<u>948</u>
Time (9"-6")	<u>4/3 = 1.33</u>	<u>3/3 = 1.0</u>
Rate Min./Inch	<u>5.0</u>	<u>5.0</u>

CLASS I SOIL 60" separate per 310 CMR
* Minimum of 1 percolation test must be performed in both the primary area AND 15.212 reserve area.

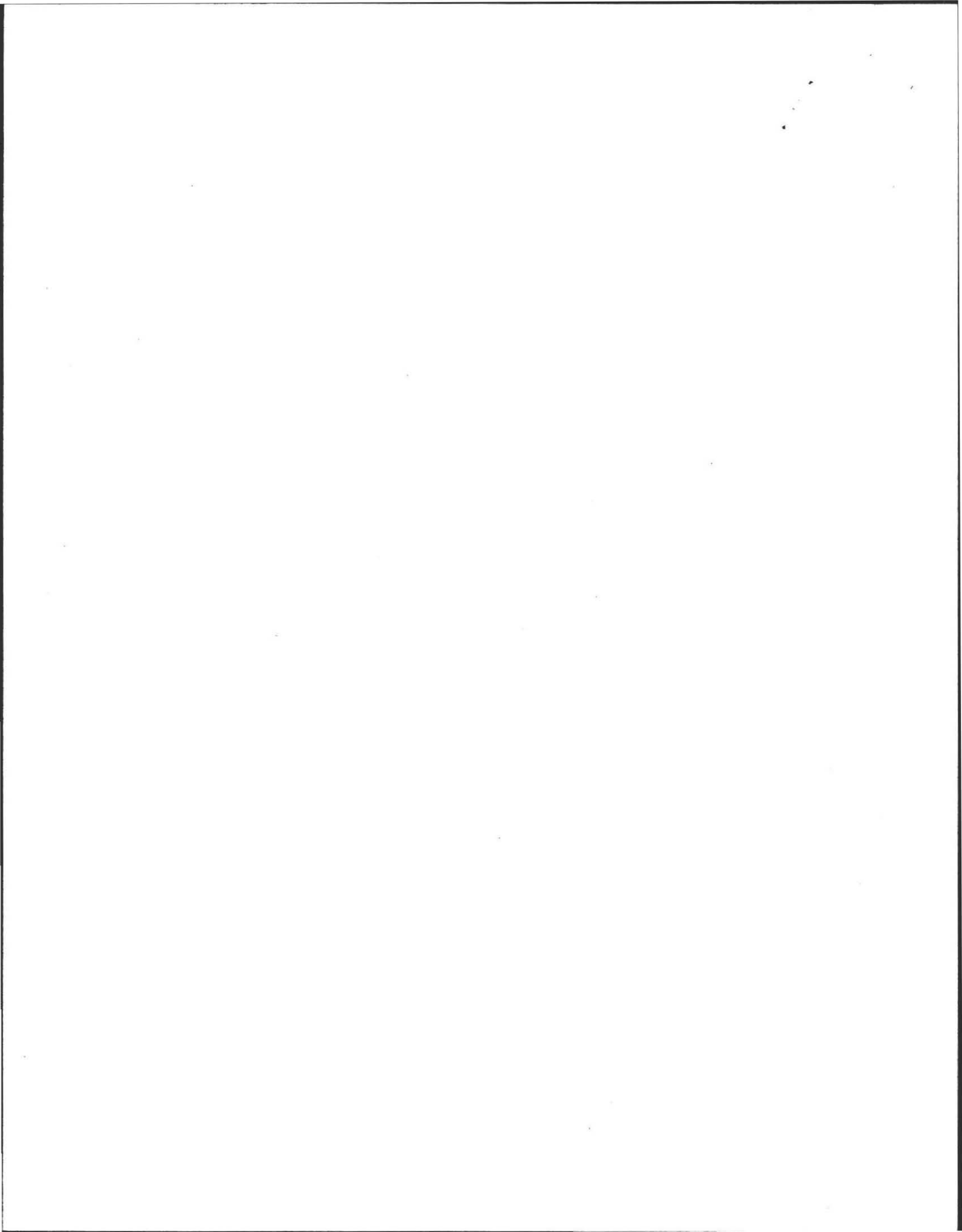
Site Passed Site Failed

Performed By: WILLIAM J SIERNYA PEREVAL

Witnessed By: DAVID ZANAZINSKI BOIT

Comments:





PART OF 539

Location Address or Lot No. LOT 1 MARKET HILL RD

Determination for Seasonal High Water Table

Method Used:

- Depth observed standing in observation hole _____ inches
- Depth weeping from side of observation hole _____ inches
- Depth to soil mottles _____ inches
- Ground water adjustment _____ feet

TR-1	TR-2	TR-3	TR-4
60	60	77	71
60	60	77	71
28	28	40	40

Index Well Number _____ Reading Date _____ Index well level _____

Adjustment factor _____ Adjusted ground water level _____

Depth of Naturally Occurring Pervious Material

Does at least four feet of naturally occurring pervious material exist in all areas observed throughout the area proposed for the soil absorption system? Yes

If not, what is the depth of naturally occurring pervious material? _____

Certification

I certify that on 5/95 (date) I have passed the soil evaluator examination approved by the Department of Environmental Protection and that the above analysis was performed by me consistent with the required training, expertise and experience described in 310 CMR 15.017.

Signature [Handwritten Signature] Date 5/10/07

