RECEIVED JUN 3 0 2000

Richard Scott, P.E.
31 Shutesbury Road
Pelham, MA 01002
(413) 256-0647

Dave Zarozinski
Health Department – INSPECTION SERVICES (DOWNSTAIRS)
Town Hall – 4 Boltwood Avenue
Amherst, MA 01002-2351

June 26, 2000

Subject: Title 5 Septic System Repair Design for 300 Market Hill Road
(Property of Walker Gibson)

Dear Dave:

Enclosed are two copies of the application materials for the septic system repair, which is proposed for the subject property. I have also sent a copy to W. W. Clark Excavating for Bill Clark's "first look" before we have your permit. I will plan to drop this off at your office on Tuesday June 27.

This proposed design includes leach trenches and I have elevations as high as the existing septic tank and the soil test results will allow. This results in a groundwater offset of four feet. The design meets all requirements of 310 CMR 15.000 (Title 5) without variance. No Local Upgrade Approvals are required. I was not able to provide sufficient area for the 1.25 "Amherst Factor" for this repair but all other requirements are met.

If you have questions at any time when you review this package, please call me. If you have no further requirements, please call Bill Clark directly at 259-1411 or me so we can proceed with the installation. Thanks, Dave.

Sincerely,

Richard Scott

Richard Scott, P.E.

cc: Walker Gibson, Owner
Bill Clark, Installer

FORM 1A - APPLICATION FOR DSCP

No. 00-09

Fee 225.00 ck
PD CK # 3624

COMMONWEALTH OF MASSACHUSETTS
Board of Health, TOWN OF AMHERST, MA.

APPLICATION FOR DISPOSAL SYSTEM CONSTRUCTION PERMIT

Application for a Permit to: Construct ( ) Repair (✓) Upgrade ( ) Abandon ( )

☑ Complete System ☐ Individual Components

Location 300 MARKET HILL ROAD	Owner's Name WALKER GIBSON
Map/Parcel#	Address 300 MARKET HILL RD. AMHERST 01002
Lot#	Telephone# 413-549-0497
Installer's Name W.W. CLARK EXCAVATING	Designer's Name RICHARD SCOTT, P.E.
Address 23 PRATT CORNER RD. SHUTESBURY	Address 31 SHUTESBURY RD. PELHAM, MA 01002
Telephone# 413-259-1411	Telephone# 413-256-0647

Type of Building: RESIDENTIAL
Dwelling - No. of Bedrooms 3
Other - Type of Building _____
No. of persons _____ Showers ( ), Cafeteria ( )
Other Fixtures _____

Lot Size EXISTING sq.ft.
Garbage grinder NO

Design Flow (min. required) 330 gpd Calculated design flow 330 gpd
Design flow provided 340 gpd

Plan: Date 6-21-00 Number of sheets 2 Revision Date _____
Title SEPTIC SYSTEM DESIGN AT 300 MARKET HILL ROAD

Description of Soil(s) UNDERLYING SOIL IS LOAMY SAND - SEE SOIL SUITABILITY ASSESSMENT
Soil Evaluator Form No. 11 Name of Soil Evaluator RICHARD SCOTT
Date of Soil Evaluation 5-24-00

DESCRIPTION OF REPAIRS OR
ALTERATIONS DISCONTINUE EXISTING SYSTEM. INSTALL NEW SEPTIC TANK, DISTRIBUTION BOX & LEACH TRENCHES.

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

Signed Richard Scott for WALKER GIBSON Date 6-21-00

Inspections _____

DEP APPROVED FORM 5/96

FORM 2A - DSCP

No. 00-09

Fee 225 @ pl

COMMONWEALTH OF MASSACHUSETTS

Board of Health, Town of Amherst, MA.

DISPOSAL SYSTEM CONSTRUCTION PERMIT

Permission is hereby granted to: Construct( ) Repair(✓) Upgrade( ) Abandon( ) an individual sewage disposal system at 300 Market Hill Road as described in the application for Disposal System Construction Permit No. 00-09, dated 6/27/00.

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

Date 6/27/00 Board of Health David Ziemanski for Water & Wastewater Supervisor Dept.

FORM 3A - CERTIFICATE OF COMPLIANCE

No. 00-09

Fee 225.00
PJ

COMMONWEALTH OF MASSACHUSETTS

Board of Health, TOWN OF 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: W.W. CLARK EXCAVATING

at: 300 MARKET HILL ROAD

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 6-21-00. Approved Design Flow_____ (gpd)

Installer W.W. Clark

Designer: Richard Scott Inspector David Jayne

Date 6/28/00

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

RICHARD SCOTT, P.E.
REGISTERED CIVIL ENGINEER

SITE ENGINEERING
PERC TESTS SEPTIC SYSTEM DESIGN

31 SHUTESBURY ROAD
PELHAM, MA 01002

(413) 256-0647

FORM 11 - SOIL EVALUATOR FORM
Page 1

No.

Date 5-24-00

, Massachusetts

Soil Suitability Assessment for On-site Sewage Disposal

Performed By: RICHARD SCOTT, P.E.

Witnessed By: DAVID ZAROZINSKI, HEALTH AGENT

Location Address or Lot # 300 MARKET HILL ROAD MAP PARCEL#	Owner's Name, Address, and Telephone # WALKER GIBSON 300 MARKET HILL ROAD AMHERST, MA 01002 413-549-0497

New Construction ☐ Repair ☑

Office Review

Published Soil Survey Available: No ☐ Yes ☑

Year Published 1981 Publication Scale 1:15,840 Soil Map Unit CENTRAL HAMPSHIRE MAP SHEET 7 B&B BELGRADE (ADJACENT TO HINCKLEY)

Drainage Class MODERATELY WELL DRAINED Soil Limitations ____ DRAINAGE CLASS I

Surficial Geologic Report Available: No ☑ Yes ☐

Year Published ____ Publication Scale ____

Geologic Material (Map Unit) ____

Landform GLACIAL OUTWASH TERRACE (HINCKLEY) AT TOE OF GLACIO-LACUSTRINE SLOPE (BELGRADE)

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: SOILS REPORT AT ADJACENT LOT TO THE NORTH

RICHARD SCOTT, P.E.
REGISTERED CIVIL ENGINEER

SITE ENGINEERING
PERC TESTS SEPTIC SYSTEM DESIGN

31 SHUTESBURY ROAD
PELHAM, MA 01002

(413) 256-0647

SOIL EVALUATOR FORM

On-site Review

Deep Hole Number DH1 & DH2 Date: 5-24-00 Time: 10:00 A.M. Weather 70° OVERCAST
Location (identify on site plan) .....
Land Use RESIDENTIAL Slope (%) 3-8% Surface Stones FEW
Vegetation LAWN
Landform GLACIAL OUTWASH TERRACE
Position on landscape (sketch on the back) .....
Distances from:

Open Water Body	200+ feet	Drainage way	200+ feet
Possible Wet Area	200+ feet	Property Line	50+ feet
Drinking Water Well	200+ feet	Other	

DEEP OBSERVATION HOLE LOG

Depth from Surface (Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
Deep Hole DH1					
0-8	A	FINE SANDY LOAM	10YR 3/2	NONE	
8-20	B_W	GRAVELLY LOAMY SAND	10YR 5/6	NONE	
20-54	C_1	GRAVELLY SAND	10YR 7/3	NONE	LOOSE w/ 30% GRAVEL & COBBLES
54-123	C_2	LOAMY SAND	10YR 7/2	NONE	COMPACT w/ 10% GRAVEL
Deep Hole DH2					
0-6	A	FINE SANDY LOAM	10YR 3/2	NONE	
6-18	B_W	GRAVELLY LOAMY SAND	10YR 5/6	NONE	
18-56	C_1	GRAVELLY SAND	10YR 7/3	NONE	LOOSE w/ 30% GRAVEL & COBBLES
56-66+	C_2	LOAMY SAND	10YR 7/2	NONE	COMPACT w/ 10% GRAVEL

Parent Material (geologic) GLACIAL OUTWASH TILL Depth to Bedrock: >123"

Depth to Groundwater: Standing Water in the Hole: >123" Weeping from Pit Face: >123"

Estimated Seasonal High Ground Water: >123"

RICHARD SCOTT, P.E.
REGISTERED CIVIL ENGINEER

SITE ENGINEERING
PERC TESTS SEPTIC SYSTEM DESIGN

31 SHUTESBURY ROAD
PELHAM, MA 01002

(413) 256-0847

SOIL EVALUATOR FORM

On-site Review

Deep Hole Number DH3 & DH4 Date: 5-24-00 Time: 11:00 A.M. Weather 70° OVERCAST
Location (identify on site plan)
Land Use RESIDENTIAL Slope (%) 3-8% Surface Stones FEW
Vegetation LAWN
Landform GLACIAL OUTWASH TERRACE
Position on landscape (sketch on the back)
Distances from:

Open Water Body	200+ feet	Drainage way	200+ feet
Possible Wet Area	200+ feet	Property Line	50+ feet
Drinking Water Well	200+ feet	Other	

DEEP OBSERVATION HOLE LOG

Depth from Surface (Inches)	Soil Horizon	Soil Texture (USDA)	Soil Color (Munsell)	Soil Mottling	Other (Structure, Stones, Boulders, Consistency, % Gravel)
Deep Hole DH3 — Ground Surface EL = 98.9; C_3 EL = 93.0					
0-8	A	FINE SANDY LOAM	10YR 3/2	NONE	
8-20	B_W	GRAVELLY LOAMY SAND	10YR 5/6	NONE	
20-63	C_1	FINE LOAMY SAND	2.5Y 7/3	NONE	FIRM <5% GRAVEL
63-70	C_2	GRAVELLY SAND	10YR 7/3	NONE	LOOSE w/ 30% GRAVEL
70-123	C_3	LOAMY SAND	10YR 7/2	NONE	COMPACT w/ 10% GRAVEL
Deep Hole DH4 — Ground Surface EL = 96.8; C_2 EL = 91.3					
0-6	A	FINE SANDY LOAM	10YR 3/2	NONE	
6-18	B_W	GRAVELLY LOAMY SAND	10YR 5/6	NONE	
18-66	C_1	GRAVELLY SAND	10YR 7/3	NONE	LOOSE w/ 30% GRAVEL
66-78+	C_2	LOAMY SAND	10YR 7/2	NONE	COMPACT w/ 10% GRAVEL

Parent Material (geologic) GLACIAL OUTWASH TILL Depth to Bedrock: >123"

Depth to Groundwater: Standing Water in the Hole: >123" Weeping from Pit Face: 123"

Estimated Seasonal High Ground Water: >123"

RICHARD SCOTT, P.E.
REGISTERED CIVIL ENGINEER

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PERC TESTS SEPTIC SYSTEM DESIGN

31 SHUTESBURY ROAD
PELHAM, MA 01002

(413) 256-0647

Determination for Seasonal High Water Table

Location 300 MARKET HILL ROAD

Method Used: Town AMHERST

- ☐ Depth observed standing in observation hole ..... inches
- ☐ Depth weeping from side of observation hole ..... inches
- ☑ Depth to soil mottles >123 inches
- ☐ Ground water adjustment feet

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
(DESIGN OVER DH_3 & DH_4)

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

Certification

I certify that on JUNE 16, 1995 (date) I have passed the 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 Richard Scott Date 5-24-00

RICHARD SCOTT, P.E.
REGISTERED CIVIL ENGINEER

SITE ENGINEERING
PERC TESTS SEPTIC SYSTEM DESIGN

31 SHUTESBURY ROAD
PELHAM, MA. 01002 (413) 256-0847

FORM 12 - PERCOLATION TEST

COMMONWEALTH OF MASSACHUSETTS

AMHERST, Massachusetts

Percolation Test

Date: Time:

Observation Hole #	P_1	P_3		
Depth of Perc Bottom	69"	36"		
Start Pre-soak	9:59	10:47		
End Pre-soak	10:14	11:02		
Time at 12"	10:14	11:02		
Time at 9"	11:12	11:18		
Time at 6"	11:42 @ 7½"	11:44		
Time (9"-6")		26 MIN.		
Rate Min./Inch	ESTIMATED 20+ AT COMPACT LAYER	8.7 MIN/IN.		

Site Passed ☑ Site Failed ☐

DESIGN IS BASED ON THE PERC RATE OF THE MOST RESTRICTIVE SOIL LAYER WITHIN THE 4 FEET OF PERMEABLE SOIL.

Performed By: RICHARD SCOTT, P.E.

Witnessed By: DAVID ZARDZINSKI

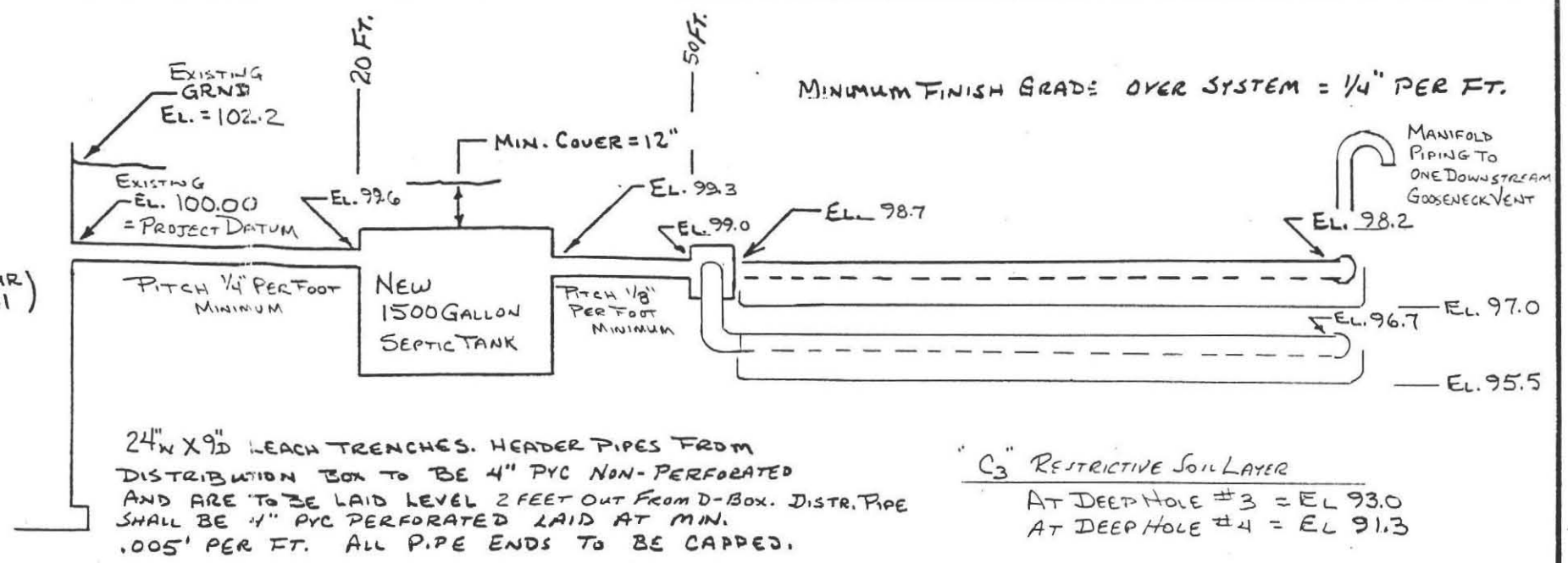
Comments: DESIGN OVER DH_3 & DH_4 MOST RESTRICTIVE LAYER IN THE CRITICAL 48" DEPTH IS P_3 WHICH IS THE C_1 LAYER IN DH_3.

System Design Calculations

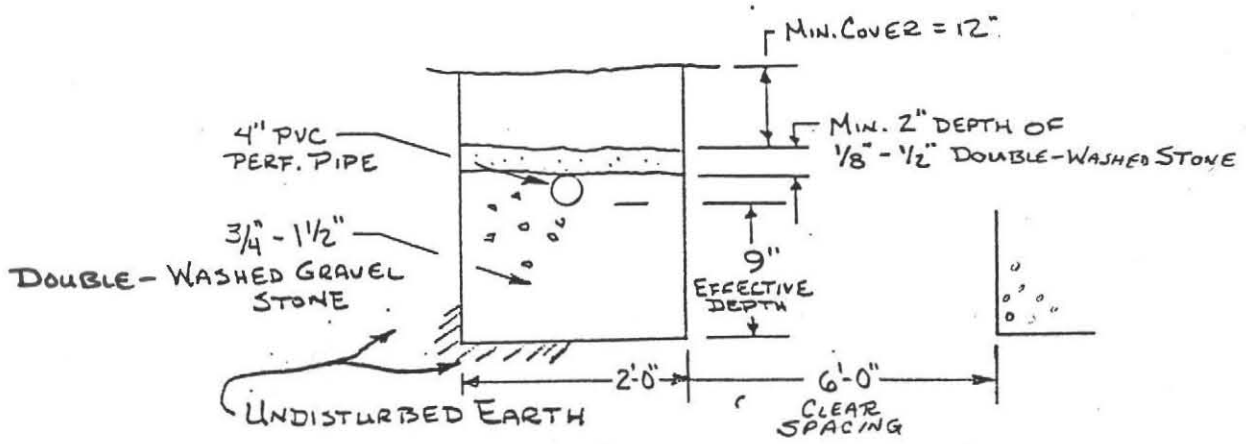
3 Bedroom x 110 gal. per BR per day =
330 gal. per day design flow.
Minimum Effective septic tank volume = 2.0 x 330 = 660 gal
Specified tank volume for this installation = 1500 gal. (Per 310 CMR 15.223.1)
Percolation rate = 9 minutes per inch →
Design loading = 0.60 gpd per sq. ft. of effective sidewall & 0.60 gpd per sq. ft of bottom area.

Specified leach trenches are 2.0 ft. wide x 0.75 ft. effective depth. Allowable loading per ft. of trench = 1.0 x 2.0 x 0.60 + 2 x 1.0 x 0.75 x 0.60 = 2.10 gpd/ft.
Required trench length = 330 ÷ 2.10 = 157 feet
(Without consideration of trench ends)

- Specified trenches = 2 @ 80 Ft. Long
- Allowable volume = 160 x 2.10 + 4 x 2.0 x 0.75 x 0.60 = 340 gpd
(With consideration of trench ends)



System Profile ~ Section Parallel to Flow
(Not to Scale)



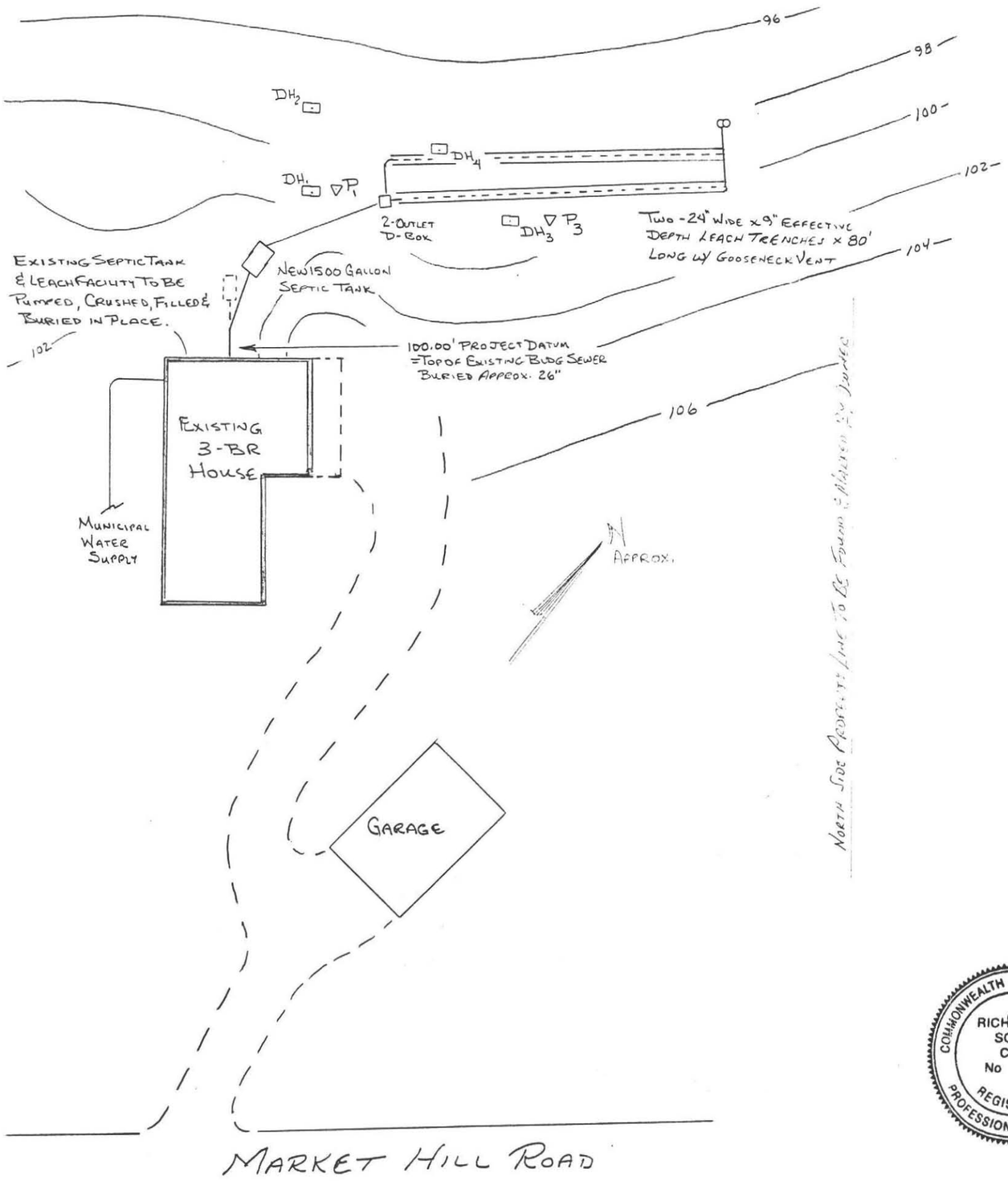
Leach Trench Section
(Not To Scale)

Commonwealth of Massachusetts
Richard M. Scott
Civil
No 31199
Registered
Professional Engineer
6/22/00

Sheet 1 of 2

Septic System Design At 300 Market Hill Road Amherst		
Scale: As Shown	Approved by:	Drawn by RMS
Date: 6-21-00		Revised
For Walker Gibson By Richard Scott, P.E.		
		Drawing Number

11 X 17 PRINTED ON NO. 1000H CLEARPRINT ●



CONSTRUCTION NOTES

THIS DESIGN HAS BEEN COMPLETED AND CONSTRUCTION IS TO BE CARRIED OUT IN ACCORDANCE WITH 310CMR-15.00 (TITLE 5) 12-27-96 REVISION.

BUILDING SEWER DOES NOT NEED TO BE RE-PLUMBED INSIDE HOUSE. BUILDING SEWER OUTSIDE HOUSE IS TO BE CONNECTED TO NEW PVC PIPING TO NEW SEPTIC TANK. BUILDING SEWER AND TANK-TO-D-BOX PIPING IS TO BE NON-PERFORATED 4" PVC SCHEDULE 40 OR 35 SDR SUITABLE FOR OCCASIONAL VEHICLE TRAFFIC. ELEVATIONS ARE ON SHEET 1 OF 2.

EXISTING SEPTIC TANK AND LEACH PIT (IF THERE IS ONE) ARE TO BE PUMPED, CRUSHED, FILLED WITH SAND AND BURIED IN PLACE.

NEW SEPTIC TANK TO BE INSTALLED IS 1500 GALLONS WITH INLET AND OUTLET PIPE TEES AND GAS BAFFFLE PER 310CMR-15.223. SEPTIC TANK AND D-BOX TO BE SET ON LEVEL 6" BASE OF CRUSHED STONE.

ALL TOP & SUBSOIL IS TO BE REMOVED FROM THE AREA OF THE LEACH TRENCHES + 5 FEET ON ALL SIDES. THE DESIGNED ELEVATIONS ARE INTENDED TO ALLOW INSTALLATION WITHOUT IMPORTING OF SAND FILL. LEACH TRENCH BASE ELEVATIONS ARE SHOWN ON SHEET 1 OF 2. FINISH CONTOURS ARE TO APPROXIMATE EXISTING. TOP OF FINISHED LEACH TRENCHES ARE TO BE 12 TO 24" BELOW FINISH GRADE. LOCATE TRENCHES TO PARALLEL THE SURFACE CONTOURS.

ORIGINAL SUB AND TOPSOIL ARE TO BE RETURNED TO THE CONSTRUCTION AREA. FINISHED SURFACES ARE TO BE RAKED, SEEDED AND MULCHED.

THIS DESIGN DOES NOT INCLUDE CAPACITY FOR A GARBAGE GRINDER. INSTALLATION OF A GARBAGE GRINDER IS NOT ALLOWED.

FINAL AS-BUILT INSPECTIONS ARE REQUIRED. FOR INSPECTIONS CONTACT:

DESIGNER: (413) 256-0647
HEALTH AGENT: (413) 256-4033

COMMONWEALTH OF MASSACHUSETTS
RICHARD M. SCOTT
CIVIL
No 31199
REGISTERED PROFESSIONAL ENGINEER

6/22/00

SEPTIC SYSTEM DESIGN
AT 300 MARKET HILL ROAD AMHERST

SCALE: 1"=30'	APPROVED BY:	DRAWN BY RMS
DATE: 6-21-00		REVISED

FOR WALKER GIBSON
BY RICHARD SCOTT, P.E.

DRAWING NUMBER