

WALSH
ENGINEERING ASSOCIATES, INC.

TRANSMITTAL

Date: March 7, 2018

Project Number: 16149

Project Name: Watson Woods, Parsonsfield

To: Mr. David Bower, CEO
Town of Parsonsfield
634 North Rd
Parsonsfield, ME 04047

From: Rita Sawyer

Copy: (1) Nate Wadsworth-24x36, (1) File

Enc: **Cover Letter, Soils Narrative Report, Lot Layout Septic Plans, Wastewater Disposal Test Pits and High Intensity Soils Report, Education Material for Soil Scientists, Subsurface Wastewater Rules, & Biological Rare Plant Report**

Drawings:

C1.1 – Rev 4

C1.2 – Rev 1

C1.3 – Rev 0

D1.0 – Rev 0

Message:

Attached are 10 Sets of Documents, 8 sets of 11x17 drawings and 2 sets of 24x36 drawings for your review and approval.

Mailed

Fax Number:

Delivered

No. of Pages (including cover):

WALSH
ENGINEERING ASSOCIATES, INC.

File: 16149

March 7, 2018

Mr. David Bower, CEO
Town of Parsonsfield
634 North Rd
Parsonsfield, ME 04047

RE: Watson Woods

Dear David,

Attached are revised plans for Watson Woods. We have made the following changes as a result of the last meeting.

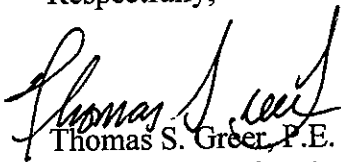
1. We have added grading to the individual house lot plans.
2. We have added a sheet showing all of the slopes greater than 20%.
3. We have added additional no cut buffers between some of the lots.
4. We have added a note, stating all buildings must be 75' from the Farm and Forest District.
5. We are including the High Intensity Soils Mapping for the lot areas.
6. We are including background on Mark Hampton and some educational materials on soils mapping.
7. We are including a Biological Report on rare plants that may be on the site.

We believe this data plus the already submitted data on the property, respond to all of the questions raised by the Board.

If you could give this submittal to the Board members on the 20th, they can hopefully review it for the meeting on the 27th.

We are hopeful the Board can grant approval at the meeting on the 27th. Thanks for your help.

Respectfully,



Thomas S. Greer, P.E.

Walsh Engineering Associates, Inc.

cc. Nate Wadsworth, File
Enc.



MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

4643

Watson Woods
Hussey Road
Nathan Wadsworth
Parsonsfield, ME

Soil Narrative Report

DATE: Soil Profiles observed on July 19, 2017 and August 21, 2017

BASE MAP: Base plan provided by Pinkham & Greer Civil Engineers scale 1 inch equals 100 feet and two foot contours in developed portion and ten foot contours in undeveloped portion of project parcel.

GROUND CONTROL: Soil survey boundaries located by Mark Hampton Associates, Inc. for Class A Soil Survey in developed portion and Class C in undeveloped portion of project parcel.

Class A-High Intensity Soil Survey (Minimum Standards) Developed Portion of Project

Mapping units of 1/8 acre or less.
Scale of 1"= 100 feet or larger.
Up to 25% inclusions in mapping units of which no more than 15% may be dissimilar soils.
Ground Control –base line and test pits accurately located under the direction of a registered land surveyor or qualified engineer.
Base Map –2 foot contours with ground survey, or aerial survey with ground control

Provided:

Mapping units of 1/8 acre or less
Base map scale of 1"= 100 feet.
Up to 25 percent inclusions in mapping units of which no more than 15 percent is dissimilar soils.
Baseline information and test pits located by Mark Hampton Associates, Inc. under direction of Pinkham & Greer Civil Engineers and Maine Survey Consultants, Inc.
Topographic survey with two foot contours and ground control provided.

Class C-Medium Intensity Soil Survey (Minimum Standards) Undeveloped portion of project

Mapping units of 3 acre or less.

Scale of 1"= 500 feet or larger.

Up to 25% inclusions in mapping units of which no more than 15% may be dissimilar soils.

Ground Control -as determined by mapper

Base Map -as determined by mapper

Provided:

Mapping units of 3 acre or less

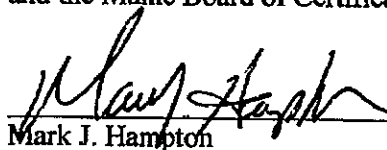
Base map scale of 1"= 100 feet.

Up to 25 percent inclusions in mapping units of which no more than 15 percent is dissimilar soils.

Baseline information and test pits located by Mark Hampton Associates, Inc. under direction of Pinkham & Greer Civil Engineers and Maine Survey Consultants, Inc.

Topographic survey with ten foot contours.

The accompanying soil profile descriptions, soil map, and this soil narrative report were done in accordance with the standards adopted by the Maine Association of Professional Soil Scientists, and the Maine Board of Certification of Geologists and Soil Scientists.


Mark J. Hampton

C.S.S. #216, L.S.E. #263



SOIL PROFILE / CLASSIFICATION INFORMATION **DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES**

Project Name: Watson Woods Applicant Name: Nathan Woodsworth Project Location (municipality): Parsonsfield

Exploration Symbol # SS1 Test Pit Boring Probe
 * Organic horizon thickness _____ Ground surface elev. _____
 * Depth of exploration or to refusal _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy loam	Fr	Dark brown	
10	Sandy loam	Fr	Brown	
20	Sandy loam	Fr	Brown	
30	Stony clay loam	Fm	Tan	
40				
50				
60				

Soil Details by S.E. Soil Classification: A B Slope: 12 Limiting Factor: _____
 Profile: A Condition: B Percent: _____
 S.S. Soil Series/Phase Name: Becket WD Hydric Non-hydric Hydrologic: _____ Soil Group: _____

Exploration Symbol # SS2 Test Pit Boring Probe
 * Organic horizon thickness _____ Ground surface elev. _____
 * Depth of exploration or to refusal _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy loam	Fr	Dark brown	
10	Sandy loam	Fr	Brown	
20	Sandy loam	Fr	Brown	
30	Sandy loam	Fm	Tan	
40				
50				
60				

Soil Details by S.E. Soil Classification: A B Slope: 20 Limiting Factor: _____
 Profile: A Condition: B Percent: _____
 S.S. Soil Series/Phase Name: Becket WD Hydric Non-hydric Hydrologic: _____ Soil Group: _____

Exploration Symbol # SS3 Test Pit Boring Probe
 * Organic horizon thickness _____ Ground surface elev. _____
 * Depth of exploration or to refusal _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy loam	Fr	Dark brown	
10	Sandy loam	Fr	Brown	
20	Sandy loam	Fm	Brown	
30	Sandy loam	Fm	Dark	Common
40				
50				
60				

Soil Details by S.E. Soil Classification: B C Slope: 6 Limiting Factor: 16 Groundwater Restrictive Layer Bedrock
 Profile: B Condition: C Percent: _____
 S.S. Soil Series/Phase Name: Skerry mud Hydric Non-hydric Hydrologic: _____ Soil Group: _____

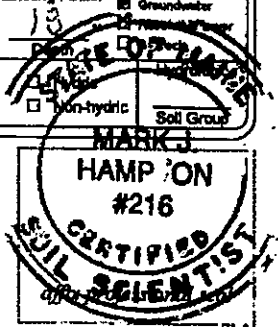
Exploration Symbol # SS4 Test Pit Boring Probe
 * Organic horizon thickness _____ Ground surface elev. _____
 * Depth of exploration or to refusal _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy loam	Fr	Dark brown	
10	Sandy loam	Fr	Brown	
20	Sandy loam	Fm	Brown	
30	Sandy loam	Fm	Dark	Common
40				
50				
60				

Soil Details by S.E. Soil Classification: B C Slope: 10 Limiting Factor: 13 Groundwater Restrictive Layer Bedrock
 Profile: B Condition: C Percent: _____
 S.S. Soil Series/Phase Name: Skerry mud Hydric Non-hydric Hydrologic: _____ Soil Group: _____

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: Mark J. Hampton Date: 7/23/17
 Name Printed: Mark J. Hampton Cert/Lic/Reg. #: 215516
 Title: Licensed Site Evaluator Certified Soil Scientist Certified Geologist Professional Engineer



SOIL PROFILE / CLASSIFICATION INFORMATION **DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES**

Project Name: Watson Woods Applicant Name: Nathan Wadsworth Project Location (municipality): Parsonsfield

Exploration Symbol # S55 Test Pit Boring Probe
 * Organic horizon thickness _____ Ground surface elev. _____
 * Depth of exploration or to refusal _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sample taken	Frail	2.5YR	
10	Sandy loam	Frail	5.5YR	Common
20				
30				
40				
50				
60				

Soil Details by S.E. Groundwater
 Profile 3 Condition E Slope 6 Limiting Factor 6 Restrictive Layer
 S.S. Soil Series/Phase Name: Brayton PD Hydric Non-hydric Hydrologic Soil Group

Exploration Symbol # S56 Test Pit Boring Probe
 * Organic horizon thickness _____ Ground surface elev. _____
 * Depth of exploration or to refusal _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sample taken	Frail	5.5YR	
10	Sandy loam	Frail	5.5YR	Common
20				
30				
40				
50				
60				

Soil Details by S.E. Groundwater
 Profile 3 Condition E Slope 6 Limiting Factor 6 Restrictive Layer
 S.S. Soil Series/Phase Name: Brayton PD Hydric Non-hydric Hydrologic Soil Group

Exploration Symbol # S57 Test Pit Boring Probe
 * Organic horizon thickness _____ Ground surface elev. _____
 * Depth of exploration or to refusal _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sample taken	Frail	5.5YR	
10	Sandy loam	Frail	5.5YR	
20	Sandy loam	Frail	5.5YR	Common
30	Sandy loam	Frail	5.5YR	
40				
50				
60				

Soil Details by S.E. Groundwater
 Profile 3 Condition C Slope 10 Limiting Factor 16 Restrictive Layer
 S.S. Soil Series/Phase Name: Skerry MWD Hydric Non-hydric Hydrologic Soil Group

Exploration Symbol # S58 Test Pit Boring Probe
 * Organic horizon thickness _____ Ground surface elev. _____
 * Depth of exploration or to refusal _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sample taken	Frail	5.5YR	
10	Sandy loam	Frail	5.5YR	
20	Sandy loam	Frail	5.5YR	None
30	Sandy loam	Frail	5.5YR	None
40				
50				
60				

Soil Details by S.E. Groundwater
 Profile 4 Condition B Slope 3 Limiting Factor 3 Restrictive Layer
 S.S. Soil Series/Phase Name: _____ Hydric Non-hydric Hydrologic Soil Group

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: Mary Hampton Date: 7/29/17
 Name Printed: MARY J. HAMPTON Cert/Lic/Reg. #: 261206
 Title: Licensed Site Evaluator Certified Soil Scientist Certified Geologist Professional Engineer



SOIL PROFILE / CLASSIFICATION INFORMATION **DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES**

Project Name: Watson Woods Applicant Name: Nathan Woodworth Project Location (municipality): Princeton

Exploration Symbol # SS9 Test Pit Boring Probe
 * Organic horizon thickness _____ Ground surface elev. _____
 * Depth of exploration or to refusal _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy loam	Frable	10YR 5/1	
10	Sandy loam	Loose	10YR 5/1	Common discrete
20				
30				
40				
50				
60				

Soil Details by S.E. Groundwater
 Restrictive Layer
 Bedrock
 S.S. Soil Classification: 3 C Slope: 0 Limiting Factor: 6
 Profile Condition Percent Depth
 Soil Series/Phase Name: Branta DD
 Hydric Non-hydric Hydrologic
 Soil Group

Exploration Symbol # SS10 Test Pit Boring Probe
 * Organic horizon thickness _____ Ground surface elev. _____
 * Depth of exploration or to refusal _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy loam	Frable	10YR 5/1	
10	Sandy loam	Frable	10YR 5/1	
20	Sandy loam	Loose	10YR 5/1	Common discrete
30				
40				
50				
60				

Soil Details by S.E. Groundwater
 Restrictive Layer
 Bedrock
 S.S. Soil Classification: 3 C Slope: 0 Limiting Factor: 6
 Profile Condition Percent Depth
 Soil Series/Phase Name: Skerry WUD
 Hydric Non-hydric Hydrologic
 Soil Group

Exploration Symbol # SS11 Test Pit Boring Probe
 * Organic horizon thickness _____ Ground surface elev. _____
 * Depth of exploration or to refusal _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy loam	Frable	10YR 5/1	
10	Sandy loam	Frable	10YR 5/1	
20	Sandy loam	Loose	10YR 5/1	Common discrete
30				
40				
50				
60				

Soil Details by S.E. Groundwater
 Restrictive Layer
 Bedrock
 S.S. Soil Classification: 3 C Slope: 10 Limiting Factor: 10
 Profile Condition Percent Depth
 Soil Series/Phase Name: Skerry WUD
 Hydric Non-hydric Hydrologic
 Soil Group

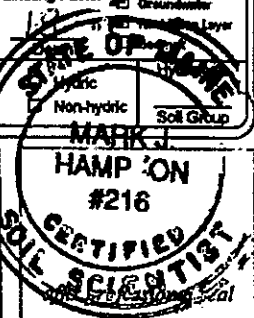
Exploration Symbol # SS12 Test Pit Boring Probe
 * Organic horizon thickness _____ Ground surface elev. _____
 * Depth of exploration or to refusal _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy loam	Frable	10YR 5/1	
10	Sandy loam	Frable	10YR 5/1	
20	Sandy loam	Loose	10YR 5/1	Common discrete
30				
40				
50				
60				

Soil Details by S.E. Groundwater
 Restrictive Layer
 Bedrock
 S.S. Soil Classification: 3 C Slope: 0 Limiting Factor: 6
 Profile Condition Percent Depth
 Soil Series/Phase Name: Skerry WUD
 Hydric Non-hydric Hydrologic
 Soil Group

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: Mark J. Hampson Date: 7/29/17
 Name Printed: Mark J. Hampson Cert/Lic/Reg. # 2051216
 Title: Licensed Site Evaluator Certified Soil Scientist Certified Geologist Professional Engineer



SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name: Wetson Woods Applicant Name: Nathan Woodsworth Project Location (municipality): Powassan

Exploration Symbol # SS13 Test Pit Boring Probe
 " Organic horizon thickness _____ Ground surface elev. _____
 " Depth of exploration or to refusal _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy loam	Friable	10YR 5/6	
10	Sandy loam	Friable	10YR 5/6	
20	Sandy loam	Friable	10YR 5/6	Common diffuse
30				
40				
50				
60				

Soil Details by S.E. 3 Soil Classification C Slope 8 Limiting Factor 17 Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth
 S.S. Soil Series/Phase Name: Skerry MUD Hydric Non-hydric Hydrologic Soil Group

Exploration Symbol # SS14 Test Pit Boring Probe
 " Organic horizon thickness _____ Ground surface elev. _____
 " Depth of exploration or to refusal _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy loam	Friable	10YR 5/6	
10	Sandy loam	Friable	10YR 5/6	
20	Sandy loam	Friable	10YR 5/6	Common diffuse
30				
40				
50				
60				

Soil Details by S.E. 3 Soil Classification C Slope 14 Limiting Factor 10 Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth
 S.S. Soil Series/Phase Name: Skerry MUD Hydric Non-hydric Hydrologic Soil Group

Exploration Symbol # SS15 Test Pit Boring Probe
 " Organic horizon thickness _____ Ground surface elev. _____
 " Depth of exploration or to refusal _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy loam	Friable	10YR 5/6	
10	Sandy loam	Friable	10YR 5/6	
20				
30	Sandy loam	Friable	10YR 5/6	Common diffuse
40				
50				
60				

Soil Details by S.E. 3 Soil Classification C Slope 6 Limiting Factor 21 Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth
 S.S. Soil Series/Phase Name: Skerry MUD Hydric Non-hydric Hydrologic Soil Group

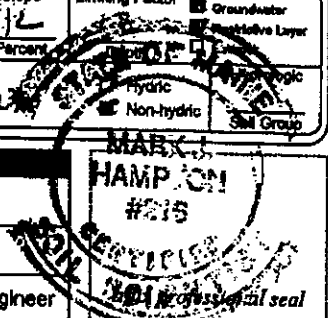
Exploration Symbol # SS16 Test Pit Boring Probe
 " Organic horizon thickness _____ Ground surface elev. _____
 " Depth of exploration or to refusal _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy loam	Friable	10YR 5/6	
10	Sandy loam	Friable	10YR 5/6	
20				
30	Sandy loam	Friable	10YR 5/6	Common diffuse
40				
50				
60				

Soil Details by S.E. 3 Soil Classification C Slope 12 Limiting Factor 10 Groundwater Restrictive Layer Bedrock
 Profile Condition Percent Depth
 S.S. Soil Series/Phase Name: Skerry MUD Hydric Non-hydric Hydrologic Soil Group

INVESTIGATOR INFORMATION AND SIGNATURE

Signature: Mark J. Hampson Date: 3/1/18
 Name Printed: Mark J. Hampson Cert/Lic/Reg. # 263216
 Title: Licensed Site Evaluator Certified Soil Scientist Certified Geologist Professional Engineer



SOIL PROFILE / CLASSIFICATION INFORMATION

DETAILED DESCRIPTION OF SUBSURFACE CONDITIONS AT PROJECT SITES

Project Name:

Watson Woods

Applicant Name:

Nathan A. Swadsworth

Project Location (municipality):

Parsons, IL

Exploration Symbol # 5517 Test Pit Boring Probe

* Organic horizon thickness _____ Ground surface elev. _____

* Depth of exploration or to refusal _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy loam	Friable	Dark Brown	
10	Sandy loam	Friable	Brown	
20	Sandy loam	Firm	Dark	Common Discrete
30				
40				
50				
60				

Soil Details by

S.E. Soil Classification: Profile 3 Condition C Slope 0 Percent Limiting Factor 10 Depth 10 Groundwater Restrictive Layer Bedrock

S.S. Soil Series/Phase Name: SKERRY MUDS Hydric Non-hydric Hydrologic Soil Group

Exploration Symbol # 5518 Test Pit Boring Probe

* Organic horizon thickness _____ Ground surface elev. _____

* Depth of exploration or to refusal _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy loam	Friable	Dark Brown	
10	Sandy loam	Friable	Brown	
20	Sandy loam	Firm	Dark	Common Discrete
30				
40				
50				
60				

Soil Details by

S.E. Soil Classification: Profile 3 Condition C Slope 6 Percent Limiting Factor 20 Depth 20 Groundwater Restrictive Layer Bedrock

S.S. Soil Series/Phase Name: SKERRY MUD Hydric Non-hydric Hydrologic Soil Group

Exploration Symbol # 5519 Test Pit Boring Probe

* Organic horizon thickness _____ Ground surface elev. _____

* Depth of exploration or to refusal _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy loam	Friable	Dark Brown	
10	Sandy loam	Friable	Brown	
20	Sandy loam	Firm	Dark	Common Discrete
30				
40				
50				
60				

Soil Details by

S.E. Soil Classification: Profile 3 Condition C Slope 15 Percent Limiting Factor 2.5 Depth 2.5 Groundwater Restrictive Layer Bedrock

S.S. Soil Series/Phase Name: SKERRY MUDS Hydric Non-hydric Hydrologic Soil Group

Exploration Symbol # 5520 Test Pit Boring Probe

* Organic horizon thickness _____ Ground surface elev. _____

* Depth of exploration or to refusal _____

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Redox Features
0	Sandy loam	Friable	Dark Brown	
10	Sandy loam	Friable	Brown	
20	Sandy loam	Firm	Dark	Common Discrete
30				
40				
50				
60				

Soil Details by

S.E. Soil Classification: Profile 3 Condition C Slope 4 Percent Limiting Factor 1 Depth 1 Groundwater Restrictive Layer Bedrock

S.S. Soil Series/Phase Name: SKERRY MUDS Hydric Non-hydric Hydrologic Soil Group

INVESTIGATOR INFORMATION AND SIGNATURE

Signature

Mary Hampton

Date

3/1/12

Name Printed

MARY J. HAMPTON

Cert/Lic/Reg. #

26576

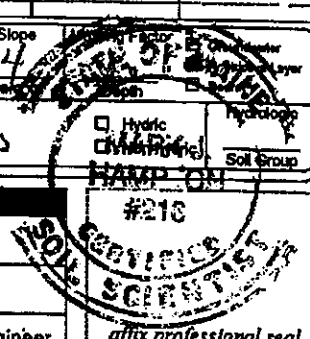
Title

Licensed Site Evaluator

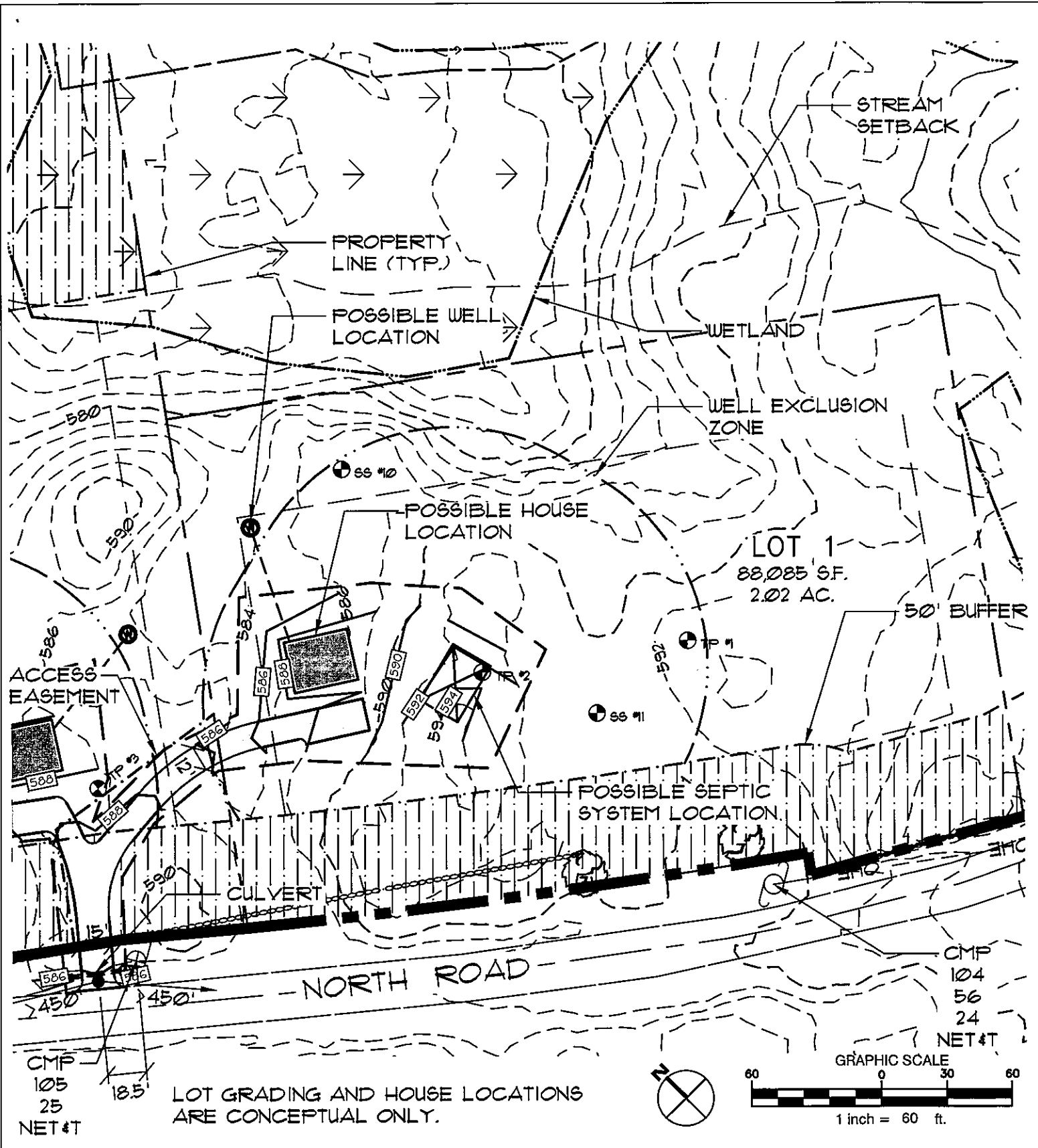
Certified Soil Scientist

Certified Geologist

Professional Engineer



affix professional seal



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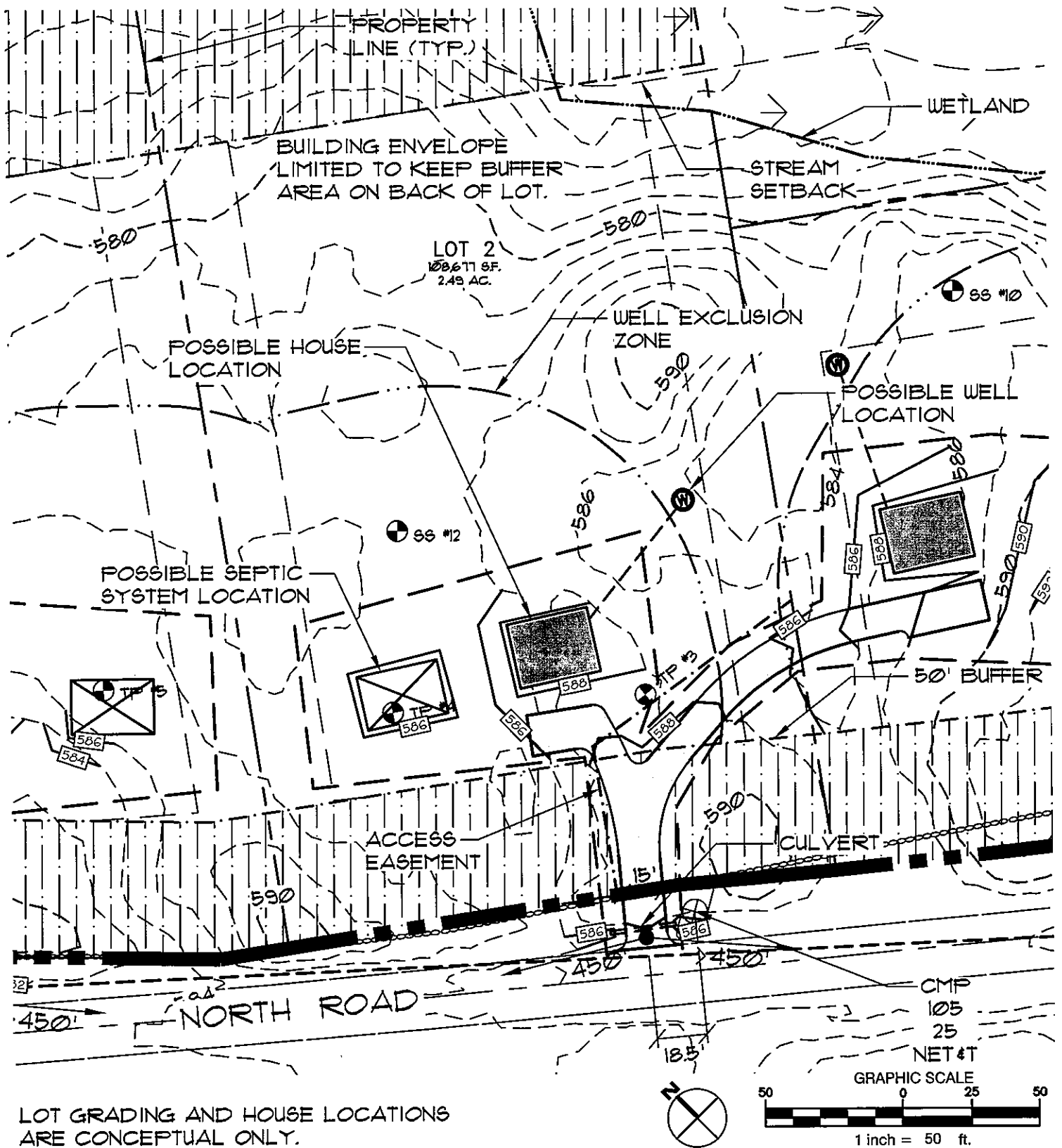
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PARSONSFIELD, MAINE

Sheet Title:	LOT 1
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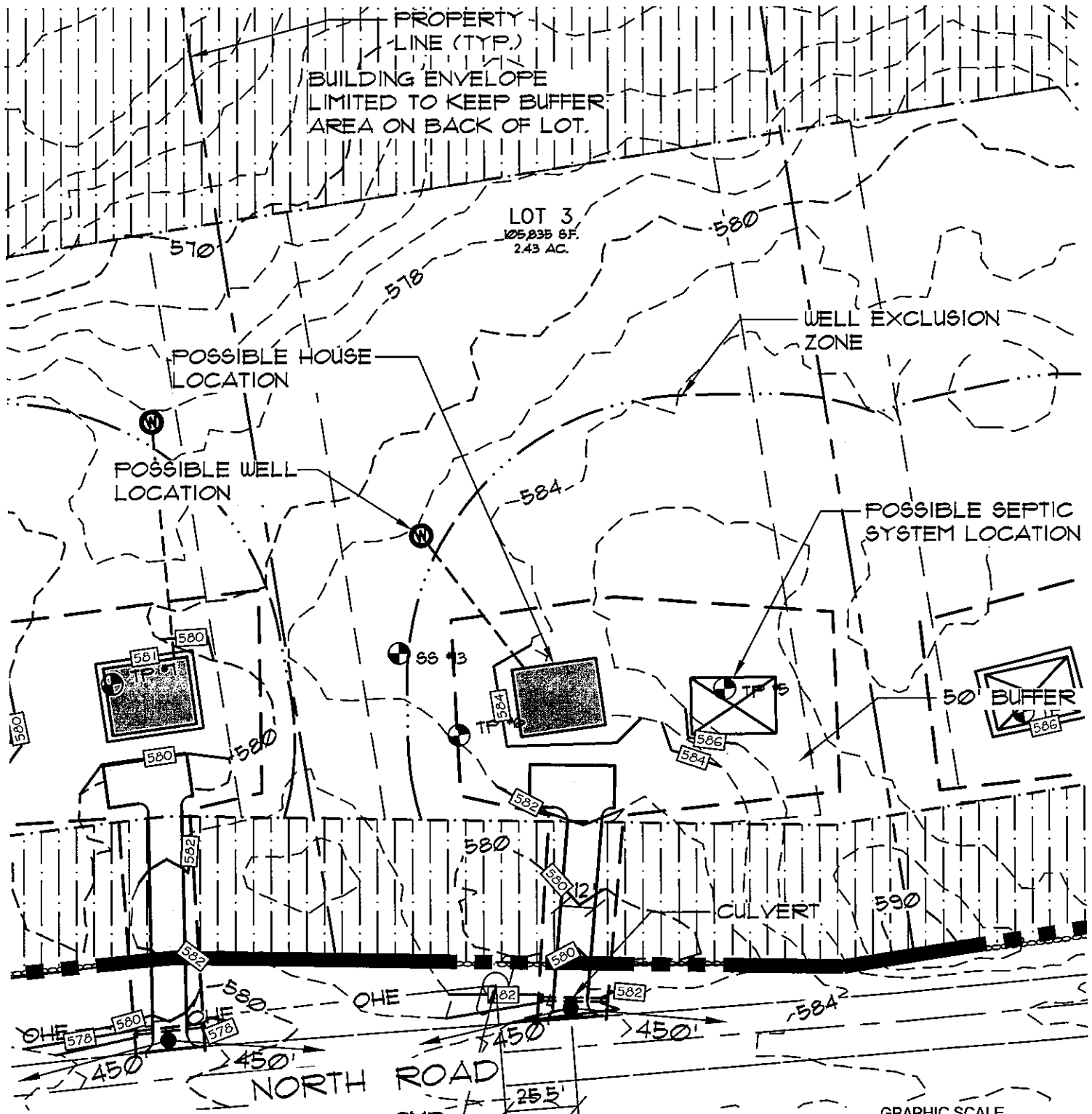
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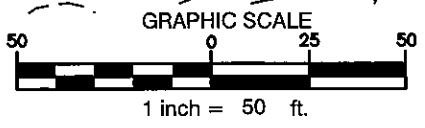
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LOT GRADING AND HOUSE LOCATIONS ARE CONCEPTUAL ONLY.

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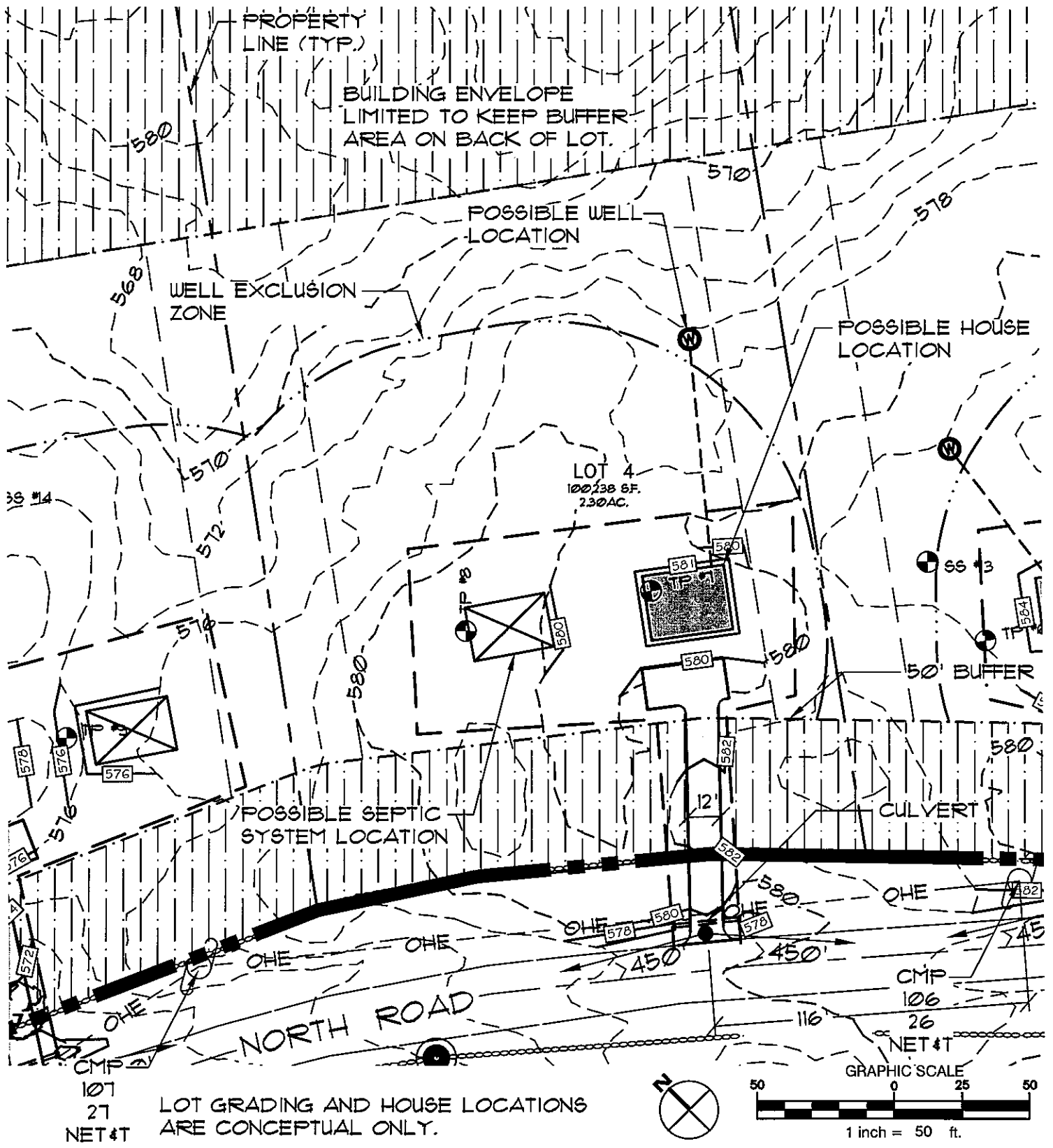
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PARSONSFIELD, MAINE

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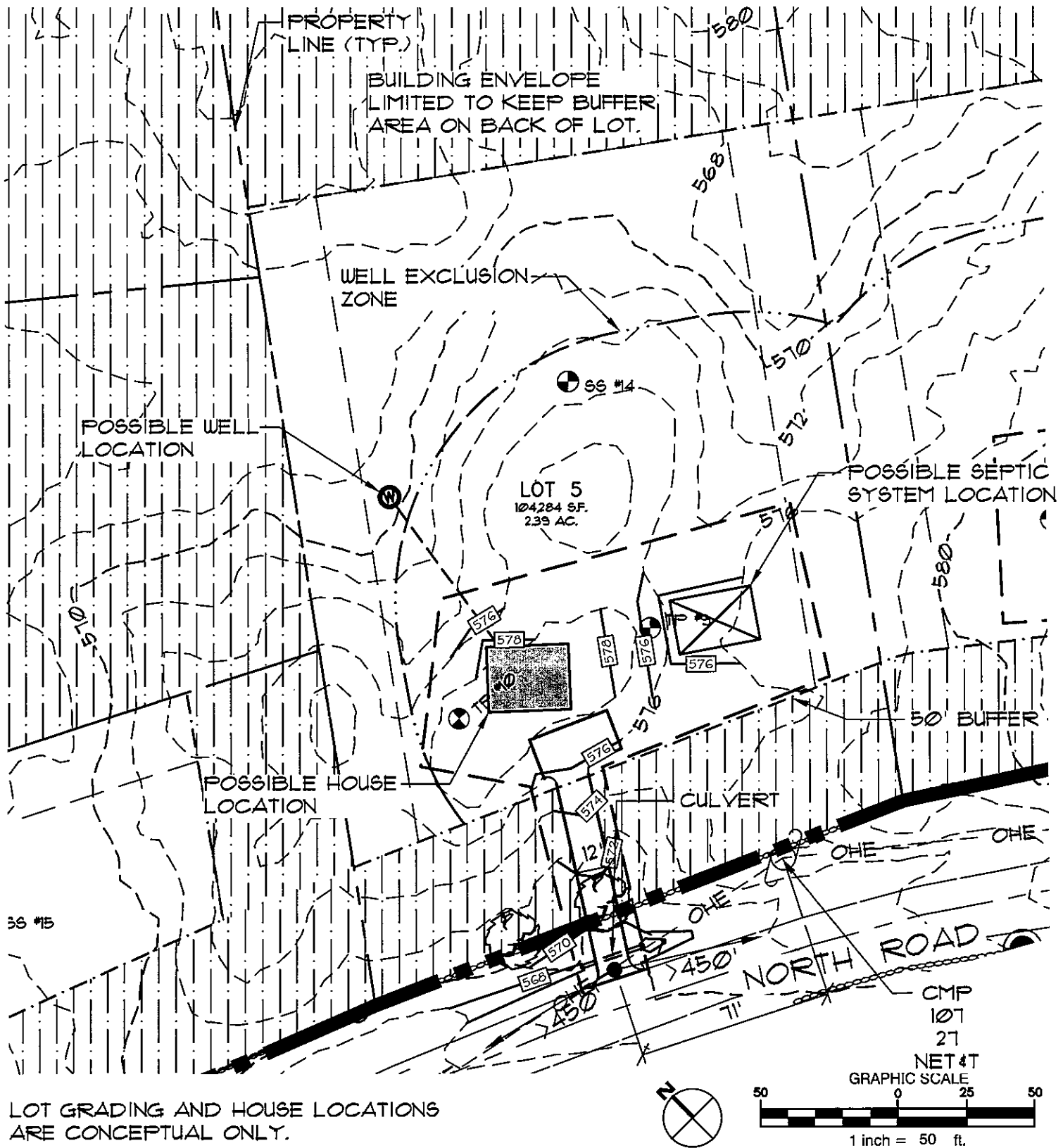
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PARSONSFIELD, MAINE

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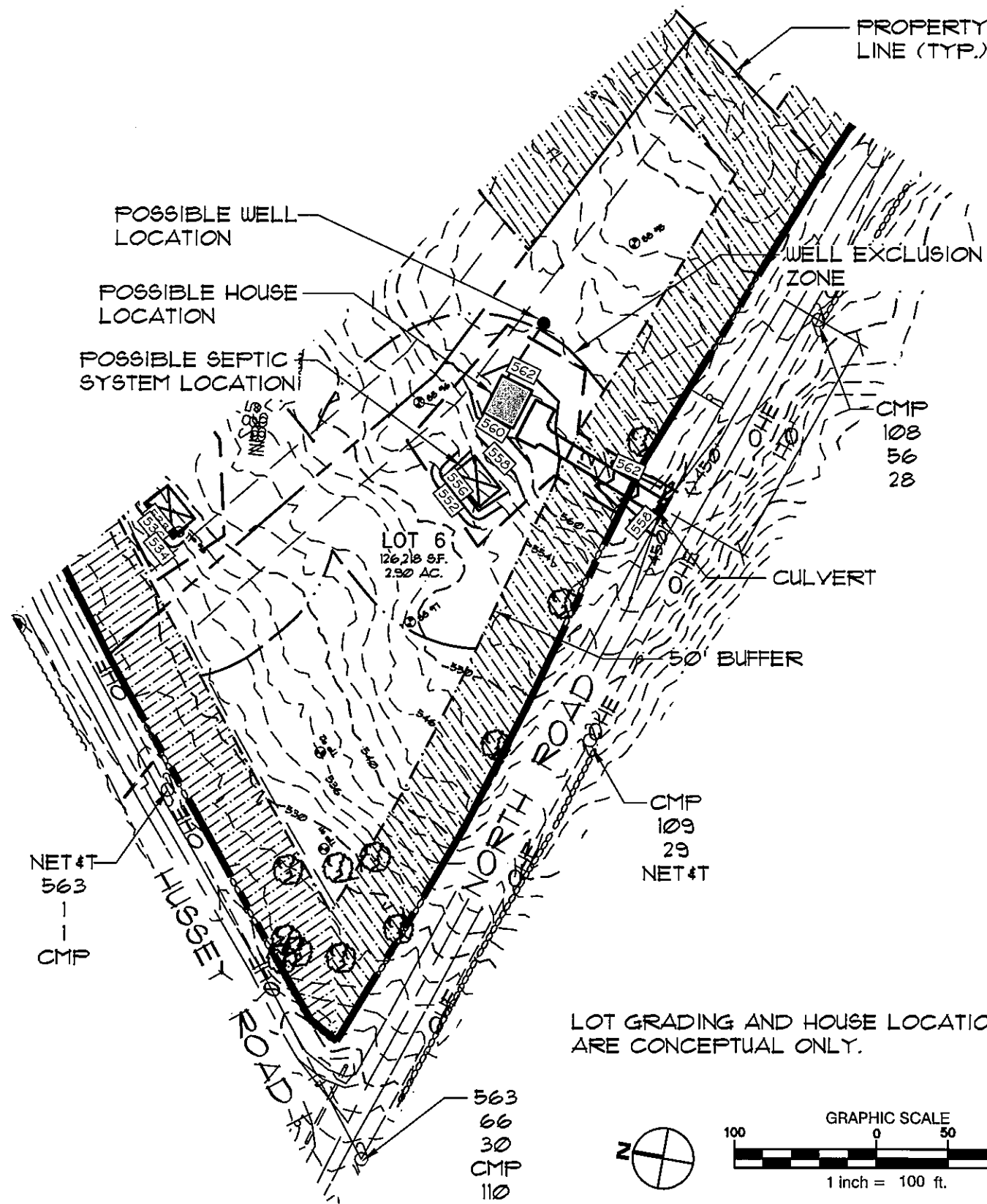
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PARSONSFIELD, MAINE

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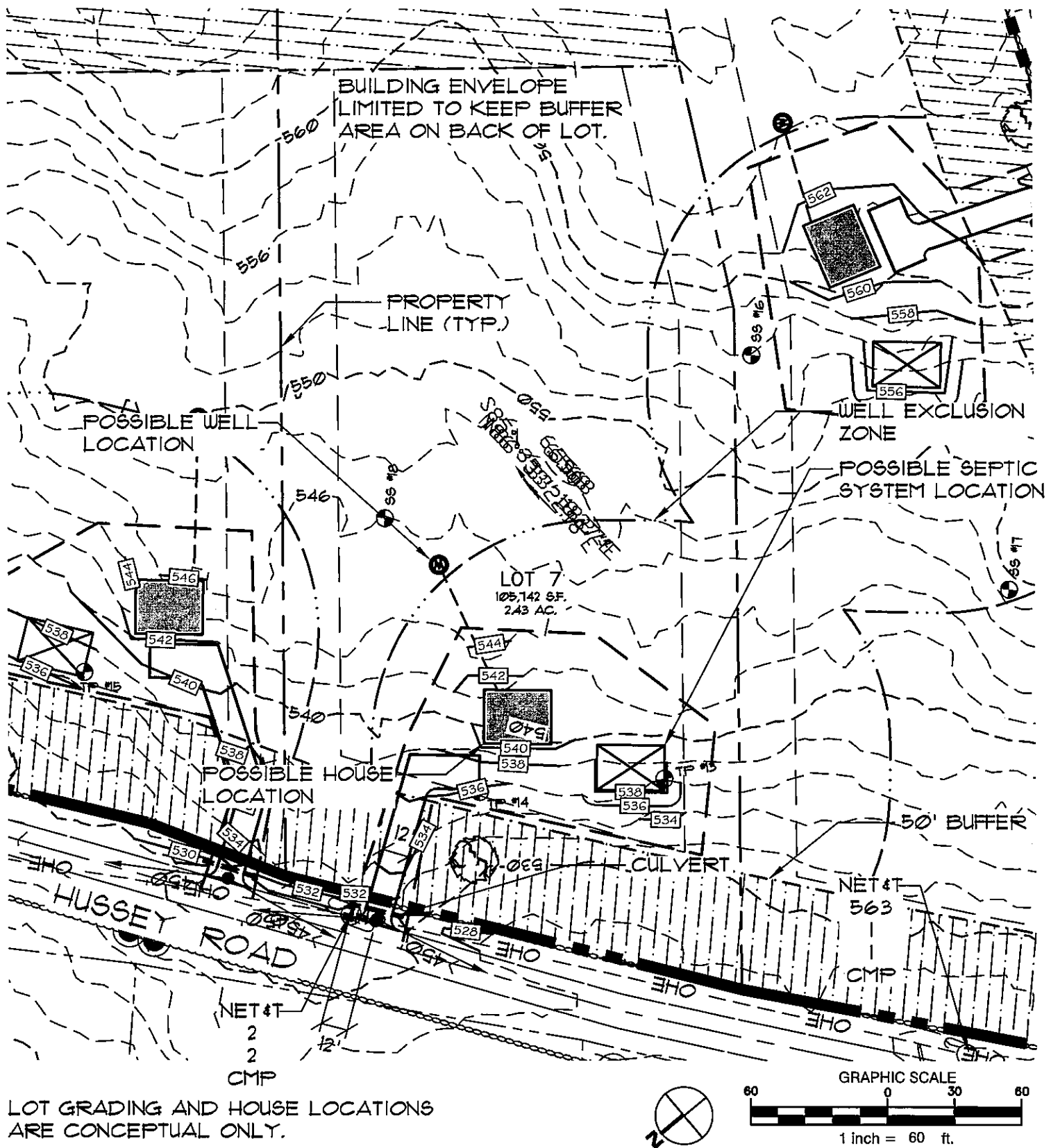
Job No.: 16149

Date: 1/15/17

Scale: AS SHOWN

Drawn: JWG

Checked:



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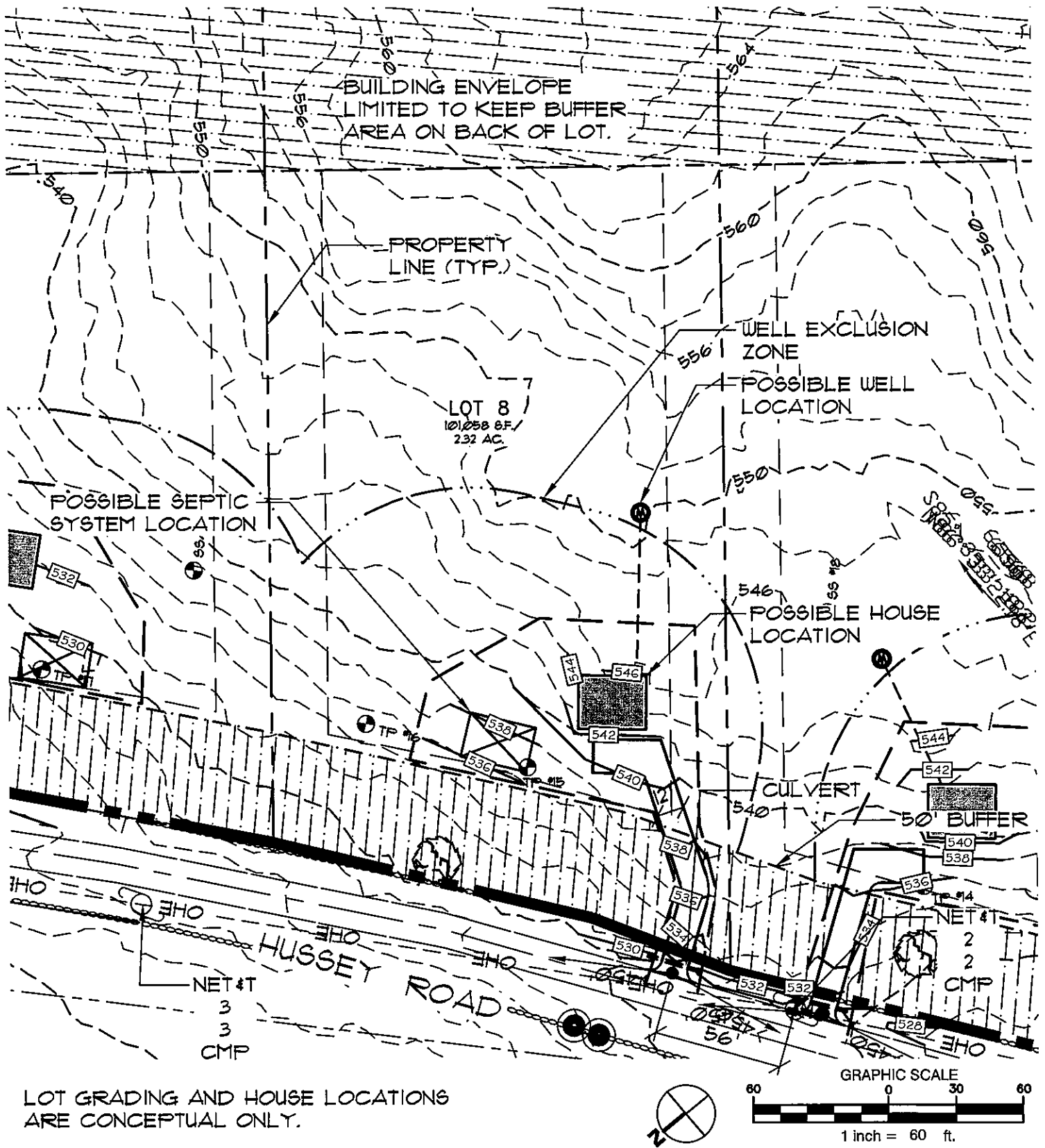
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NORTH ROAD & HUSSEY ROAD
PARSONSFIELD, MAINE

Sheet Title:
LOT 7

Job No.: 16149
Date: 1/15/17
Scale: AS SHOWN
Drawn: JWG
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Sheet Title:

LOT 8

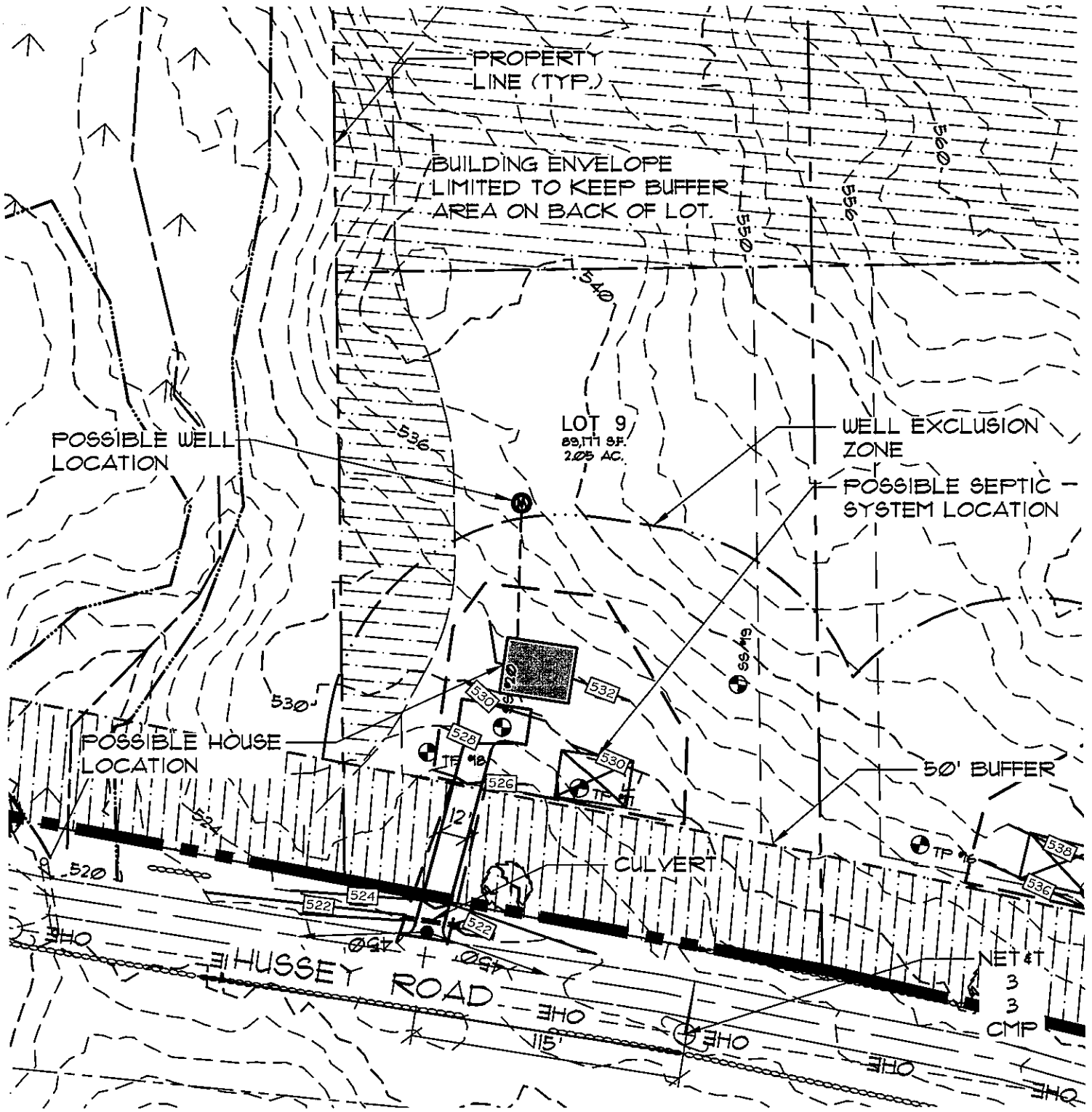
Job No.: 16149

Date: 1/15/17

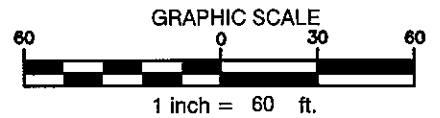
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PARSONSFIELD, MAINE

Sheet Title:
LOT 9

Job No.:	16149
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MARK HAMPTON ASSOCIATES, INC.

SOIL EVALUATION • WETLAND DELINEATIONS • SOIL SURVEYS • WETLAND PERMITTING

4643

March 1, 2018

Planning Board Chairman and Planning Board Members
Town of Parsonsfield
Parsonsfield, ME

Re: Evaluation of Test Pits for Subsurface Wastewater Disposal and High Intensity Soil Surveys

Dear Chairman and Members of the Planning Board,

I have been an active practicing Licensed Site Evaluator and Certified Soil Scientist for almost 30 years. I worked for a civil engineering company in Westbrook for 11 years before opening my own company in 1999. I am past president of both the Maine Association of Site Evaluators and the Maine Association of Professional Soil Scientists and continue to be active in both organizations.

I have attached to this letter sections from the Maine Subsurface Wastewater Disposal Rules, dated 8/15 as amended and the Maine Association of Professional Soil Scientists, Standards for Soil Survey. Each of these sections talk to the use of soil auger, hand shovels and backhoes for the evaluation of soil test pits. As you read each section you see that it is left up to the discretion of the professional to determine the means of observing and evaluating the test pits.

I hope this helps the board understand the reason why a backhoe is not required to evaluate the soils a parcel for either subsurface wastewater disposal or mapping the soil.

If I can be of anymore help, please don't hesitate to let me know.

Sincerely,

Mark J. Hampton, C.S.S., L.S.E.
Certified Soil Scientist #216
Licensed Site Evaluator #263

Enc.

**MAINE ASSOCIATION
OF PROFESSIONAL
SOIL SCIENTISTS**

**GUIDELINES FOR
MAINE CERTIFIED SOIL SCIENTISTS
FOR SOIL IDENTIFICATION AND MAPPING**

FEBRUARY 1995

**MAINE ASSOCIATION OF PROFESSIONAL SOIL SCIENTISTS
STANDARDS FOR SOIL SURVEY**

1. Map units may contain dissimilar limiting individual inclusions larger than 5 acres provided that each dissimilar limiting inclusion is smaller than the minimum map unit size utilized. Dissimilar inclusions within a map unit may total more than the minimum map unit size, in the aggregate, if not contiguous.
2. Scale of 1 inch equals 2,000 feet or larger (e.g. 1" = 1320').
3. Ground control—as determined by the mapper.
4. Base map—as determined by the mapper.

3. Map Units and Soils Classification

The soil survey map units shall be designed according to the standards of the National Cooperative Soil Survey, and the soils shall be classified at the series level according to the current Keys to Soil Taxonomy. Soil map units are phases of soil series.

4. Map Preparation by a Maine Certified Soil Scientist

All soil surveys submitted for the public record, with the exception of Natural Resources Conservation Service soil surveys, shall be stamped and signed by a Maine Certified Soil Scientist licensed by the Maine Board of Certification for Geologists and Soil Scientists.

5. Soil Test Pit Exploration and Observations Logs

All soil survey reports shall include soil observation logs for those test pits or borings described by the soil scientist while gathering data to prepare soil maps. As a minimum, one detailed soil observation log is required for each series and

**MAINE ASSOCIATION OF PROFESSIONAL SOIL SCIENTISTS
STANDARDS FOR SOIL SURVEY**

miscellaneous area named in the soil map legend. The location and number of test pits needed to properly identify and map an area of soils can vary significantly, depending on the complexity of the landscape and the purpose of the soil survey. The depth of the test pits to be logged should also be adequate to allow for complete examination and classification of the soil profiles, particularly if depth to limitations such as restrictive layers or bedrock is relevant. Test pits dug with a backhoe or by similar means are often necessary to verify subsoil and substratum characteristics.

Soil observation logs are not required for those test pits or borings that are used to verify consistency within a map unit for which detailed information is not generally gathered.

6. Accurate Soil Boundary Placement

Soil boundaries are observed throughout their length and their placement corresponds to changes in soils and/or land forms. Map unit boundary placement shall be based on soil characteristics, using observations of vegetation, landforms, and other site features as indications of changes in soil conditions.

7. Map Unit Purity

The soil(s) within an area enclosed by a map unit boundary will have a minimum of 75 percent of the soil(s) that provide the name of that map unit or similar soils. No one similar soil is greater than the named soil(s). The total amount of dissimilar soils shall not exceed 25 percent of the map unit.

8. Map Legend and Map Unit Description

The soil map legend shall include a symbol for each map unit, and the name of the map unit. Special and ad hoc symbols are used to indicate areas that will affect use and management of the soil(s), but are too small to be delineated at the mapping

10-144

Chapter 241

STATE OF MAINE
SUBSURFACE WASTEWATER DISPOSAL RULES



DEPARTMENT OF HEALTH & HUMAN SERVICES
MAINE CENTER FOR DISEASE CONTROL & PREVENTION
DIVISION OF ENVIRONMENTAL HEALTH
11 STATE HOUSE STATION
AUGUSTA, MAINE 04333

EFFECTIVE DATE: August 3, 2015

Appropriation 014-10A-2426-012-2658

**SECTION 4
DESIGN CRITERIA**

A. SITE EVALUATION REQUIREMENTS

1. **General:** The selection of a site for each system is based upon a licensed site evaluator's evaluation of those site characteristics that may affect the location and functioning of the system. Each system (and every part thereof) must be sited and designed so that, with adequate installation and maintenance, it will function in a satisfactory manner and will not create a nuisance or source of foulness, pose a threat to public health or safety or to the environment, or otherwise adversely affect the quality of surface water or groundwater.
2. **When a site evaluation is required:** The completion of a HHE-200 Form is required in order to obtain a permit for the following:
 - (a) All first-time subsurface wastewater disposal systems;
 - (b) All replacement subsurface wastewater disposal systems;
 - (c) All expanded subsurface wastewater disposal systems;
 - (d) The installation of any new subsurface wastewater disposal system component; or
 - (e) The replacement or modification of any components of an existing subsurface wastewater disposal area. Treatment tanks and other system components located outside the disposal area may be replaced in kind without a site evaluation, upon approval of page one of an HHE-200 (and all other applicable forms) by the LPI.
3. **Suitable soil conditions:** A disposal field must be located upon soils with the following minimum depths to limiting factors:
 - (a) All systems located outside the shoreland area of major water bodies/courses must be located on soils with a minimum depth to seasonal groundwater table or hydraulically restrictive horizon of 9 inches and a minimum depth to bedrock of 9 inches.
 - (b) All systems located within the shoreland area of major water bodies/courses must be located on soils with a minimum depth to seasonal groundwater table or hydraulically restrictive horizon of 15 inches and a minimum depth to bedrock of 15 inches, except as allowed in Sections 7(B) and 7(C).
4. **Setback distances:** For disposal system setback distances, see Sections 7 and 8, for first-time and replacement systems.
5. **Soil profile and condition:** The soil profile and condition used for the design of a disposal field must be based upon original soils at the site, except when the fill is considered as equivalent to original soils, as provided for in Sections 4(B)(4) and 4(B)(5). The soil profile and condition used for the design of a disposal field must be representative of the most limiting conditions beneath all disposal fields. In addition, the soil conditions beneath the down slope fill material extensions for engineered disposal areas must be evaluated and reported.
6. **Location of the system:** A system must be located entirely on property owned or controlled by the owner of the system.
 - (a) **Private property:** The owner of a system may locate the system or components partially or completely on other private property, provided the property owners execute an easement in perpetuity for the construction, operation, replacement, and maintenance of the system, giving the system's owner authorization to cross any land or right-of-way between the two parcels. The easement must be filed and cross-referenced in the Registry of Deeds and the municipality's office prior to issuance of a disposal system permit. The easement must provide sufficient buffer around the disposal field and fill material extensions for future replacement and maintenance of the system.

- (b) **Public property:** The owner of the proposed system may locate the system or components partially or completely on abutting public property, provided the entity controlling access to the property executes a letter of no objection giving the system's owner authorization for the construction, operation, replacement, and maintenance of the system.
7. **Slope:** The slope beneath a disposal field must not exceed 20 percent, interpreted as constant/average slope, unless approved by variance by the Department. The fill extension must reach the existing ground before an existing ground slope of 3:1 (33 percent) or greater, or within 100 feet horizontal distance of the disposal field.
 8. **Surface runoff:** The disposal field and fill shoulders must not be subject to the accumulation of surface runoff. The property owner may utilize surface water diversions, provided they are installed as prescribed by the site evaluator. Surface water diversions cannot result in additional runoff on to abutting properties.
 9. **Existing subsurface groundwater drains:** Ground that contains subsurface ground water drainage systems or the remnants of abandoned subsurface groundwater drainage systems may be unsuitable for the installation of a disposal field. If determined to be a problem this may be corrected by removing the ground water drains or permanently sealing the outlets of the groundwater drainage system.
 10. **Work Adjacent to or Within Wetlands and Waterbodies:** Designs for subsurface wastewater disposal systems adjacent to or within wetlands and waterbodies, each as defined in Section 14 of these Rules, must conform to provisions of Section 12 of these Rules.

B. SOIL PROFILE DESCRIPTIONS

1. **General:** Observation holes are used to determine the soil and site characteristics important for subsurface wastewater disposal.
2. **Soil profile description:** For each observation hole used for design purposes, the site evaluator must describe each recognizable soil property and /or parent material, not including bedrock, critical for disposal system design. For each observation hole, the site evaluator must provide this description and document the upper and lower limits within the profile of each of the following soil properties:
 - (a) **Soil texture:** Soil Textural Classification;
 - (b) **Soil color:** Soil color name per the Munsell soil color charts or Department-approved equivalent;
 - (c) **Soil consistency:** Soil resistance to penetration;
 - (d) **Soil profile:** Soil Profile Description (1-12; See Table 4D);
 - (e) **Soil conditions:** Soil drainage, Limiting Factor, Hydraulically Restrictive Horizons, and Bedrock Limiting Factor (See Table 4E)
 - (f) **Ground Slope:** Magnitude and direction of the maximum ground slope at the observation hole.
3. **Reporting:** The site evaluator must report soil profile data on a standardized application form for a disposal system permit provided by the Department.
4. **Filled sites:** Where the surface of the ground has been raised by the addition of fill material over the original soil, the disposal field sizing factor is to be determined according to the closest matching soil profile in Table 4E. If the fill is less than 4 feet in thickness, the sizing factor is to be based upon the texture of fill or on the original soil, whichever is finer, and the depth to the most limiting soil horizon. Measurements of depths of soil layers and limiting factors are to be taken from the original ground surface except as provided for in Section 4(B)(5). If the requirements of 4(Q)(7) are satisfied, the disposal area may be sized as described in 4(Q)(7).

- i. Original ground surface with notes for site preparation including scarification and transitional horizon;
 - ii. Height and width of disposal field stone or proprietary devices with dimensions;
 - iii. Pipes and on-center spacing with dimensions;
 - iv. Depths of fill material required;
 - v. Fill crown slope and shoulders with dimensions;
 - vi. Limits of all fill extensions with dimensions:
5. **Proprietary Products:** To reduce the appearance of an impropriety, the Site Evaluator shall clearly indicate on the HHE-200 form or on an attachment to same, his or her relationship with a company or concern that sells or distributes proprietary devices. The intent of this Section is to ensure disclosure to the homeowner.
 6. **Applicable Laws, Ordinances, and Regulations:** The completed HHE-200 Form must conform to all provisions of applicable laws, ordinances, and regulations, including those administered by public water systems.
 7. The LPI may authorize changes to the location(s) of treatment tanks, lift stations, building sewers, distribution boxes, drop boxes, and force mains provided that applicable minimum setback distances are maintained. Such alterations must be documented by the LPI.

B. LOCATION, DEPTH, AND MINIMUM NUMBER OF OBSERVATION HOLES

1. **General:** Because Maine soil conditions can change dramatically within a few feet, more than one observation hole is often necessary to allow a site evaluator to better define the true soil conditions beneath a proposed disposal field. Observation holes used for design purposes must be located at representative points clearly within the footprints of proposed non-engineered subsurface wastewater disposal fields.
2. **Minimum number of observation holes:** The number of observation holes must be sufficient to determine the soil and site characteristics beneath the entire disposal field.
3. **Minimum depth of observation holes:** The minimum depth of observation holes is based upon the soil horizons and conditions present at the site of a proposed disposal field, as follows:
 - (a) **Hydraulically restrictive horizons:** Observation holes must extend at least 12 inches into the hydraulically restrictive horizon to check for bedrock except that no excavation is required greater than 48 inches in depth.
 - (b) **Seasonal ground water table:** Observation holes must extend at least 12 inches below the seasonal ground water table to check for bedrock except no excavation is required greater than 48 inches in depth.
4. **Dig Safe Law:** The "Dig Safe Law" requires notification if other than hand tools are utilized to dig observation holes (See 23 M.R.S. § 3360-A).



PAUL R. LEPAGE
GOVERNOR

STATE OF MAINE
DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY
93 STATE HOUSE STATION
AUGUSTA, MAINE 04333

WALTER E. WHITCOMB
COMMISSIONER

Tom Greer
Pinkham and Greer, Civil Engineers

September 29, 2017

Re: Watson Woods – Small Whorled Pogonia Survey

Dear Mr. Greer:

As per your request, on September 28, 2017, Don Cameron, staff botanist with the Maine Natural Areas Program, surveyed the proposed Watson Woods subdivision site in the Town of Parsonsfield for Small Whorled Pogonia (*Isotria medeoloides*). Don is a recognized expert on the identification and ecology of this rare species.

The site is a 57 acre parcel located northeast of the intersection Rt. 160 and Hussey Road in the central part of the town. The site has been somewhat recently harvested for timber, with harvesting being heaviest in the northern portion where there was a large multi-acre clearing, and less intensive in other areas where some smaller patches of trees remained. The areas which had the highest potential for small whorled pogonia and received the most detailed survey were 1) the broad drainage that crossed the parcel from ~ the south corner toward the northwest boundary and 2) the parcel margin along the road frontage on Hussey Road. These areas still supported sufficient tree cover to provide the degree of shade that would be required by the rare small whorled pogonia as well as other common forest herbs. Other scattered patches within the harvested matrix also provided shade. These areas were mostly 50 – 100 feet in diameter and were also surveyed as part of the traverse through the site.

No small whorled pogonia was observed during the survey. See Map 1 on page 2 for GPS data showing survey effort. Areas with few or no GPS points were areas where no habitat was present that could have supported small whorled pogonia, i.e., the aforementioned large cleared section on the north side of the site.

Please let me know if you have any questions. Note that an invoice for services rendered will be sent under separate cover.

Sincerely,

Don Cameron, Botanist/Ecologist
Maine Natural Areas Program
#93 State House Station
Augusta, ME 04333-0093
(phone - 207-287-8041 / fax - 207-287-8040)

MOLLY DOCHERTY, DIRECTOR
MAINE NATURAL AREAS PROGRAM



PHONE: (207) 287-8044
FAX: (207) 287-8040
WWW.MAINE.GOV/DACF/MNAP

Map 1 – Survey Area – Watson Woods

Yellow dots are GPS waypoints representing survey effort from the survey performed on 9/28/2017. Areas with the highest concentration of survey effort correspond to areas at the site where there was sufficient shade to potentially support small whorled pogonia. Note that areal imagery used here is not representative of current site conditions.

