

Site Specific Soil Mapping Standards and Procedures for Rhode Island

SSSSNE

W. Alton Jones Campus

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University of Rhode Island Cooperative Extension
CELS Natural Resources Science Department



Nonpoint Education for Municipal Officials

RI NEMO provides training and technical support to local decision makers in evaluating and managing impacts of land use on local water resources.

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Cooperative Extension Water Quality Program*

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Acknowledgments

Site Specific Soil Mapping Standards and Procedures for Rhode Island

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Demonstration Project



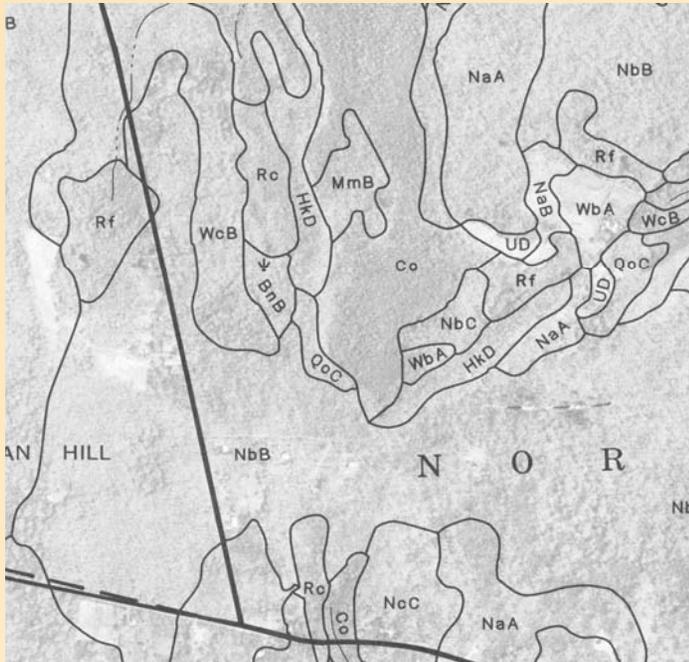
Topics

Why do we need site specific mapping?

Standards and Methods

Next steps

RI Soil Survey



Created at 1:15,840

1" = 1,320 ft.

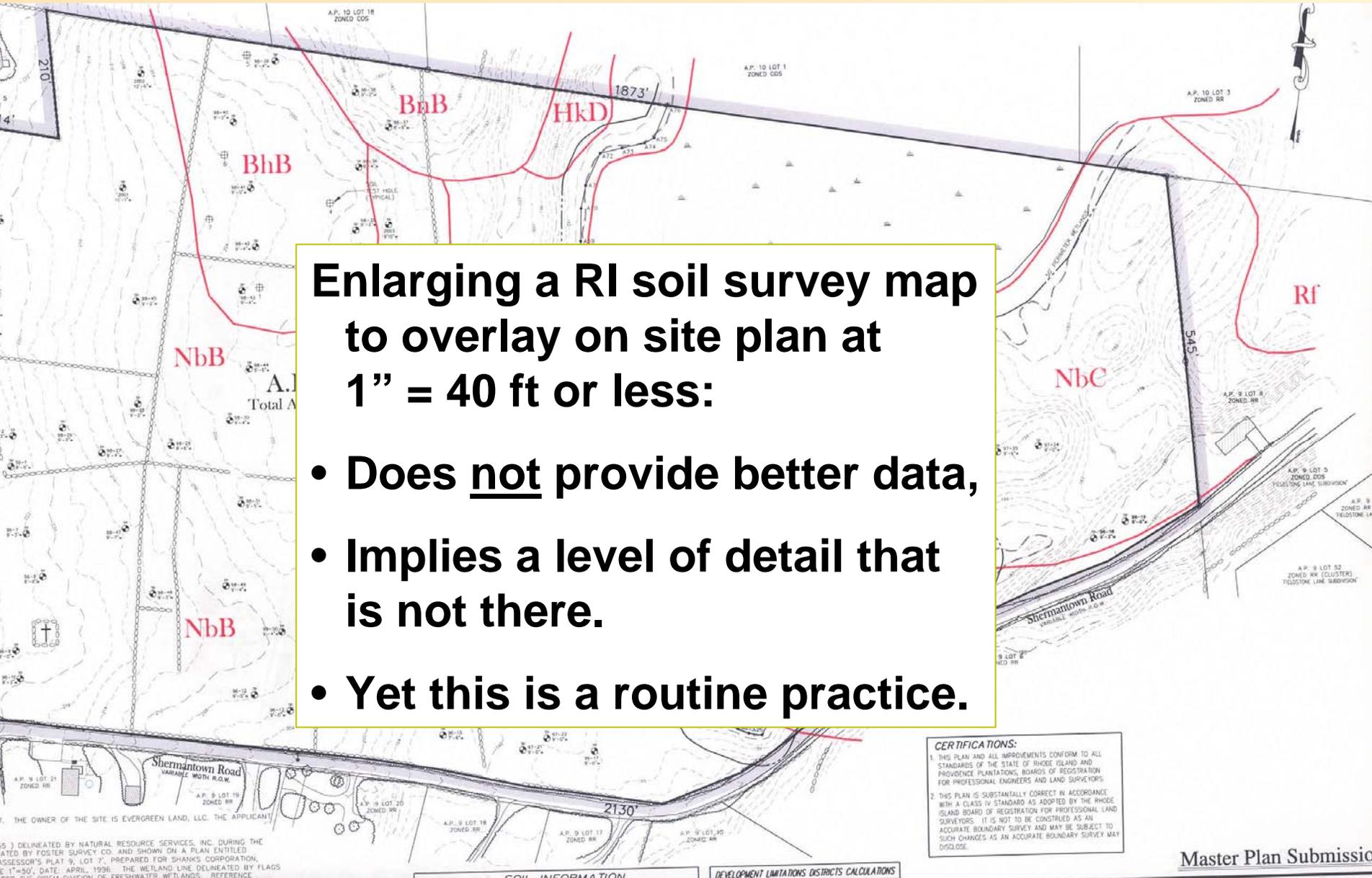
1" = ¼ mile

- Designed for planning, not parcel scale.
- Line error plus or minus 40 ft.
- Minimum map unit ¼ acre.
- One soil unit may include several types.
- Urban soils not mapped.

Site specific land use decisions require site specific data

Enlarging a RI soil survey map to overlay on site plan at 1" = 40 ft or less:

- Does not provide better data,
- Implies a level of detail that is not there.
- Yet this is a routine practice.



CERTIFICATIONS:
1. THIS PLAN AND ALL IMPROVEMENTS CONFORM TO ALL STANDARDS OF THE STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS, BOARDS OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS.
2. THIS PLAN IS SUBSTANTIALLY CORRECT IN ACCORDANCE WITH A CLASS IV STANDARD AS ADOPTED BY THE RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS. IT IS NOT TO BE CONSTRUED AS AN ACCURATE BOUNDARY SURVEY AND MAY BE SUBJECT TO SUCH CHANGES AS AN ACCURATE BOUNDARY SURVEY MAY DISCLOSE.

Site Specific Soil Mapping



- Made at a scale that allows detailed information about soil properties and characteristics to be accurately mapped.

- Provides information town officials, developers, land owners need to accurately evaluate suitability of land for development decisions.



- Standard method and procedures ensures consistency.

Site Specific Soil Mapping



Provides comprehensive assessment of a parcel for planning and initial site design.

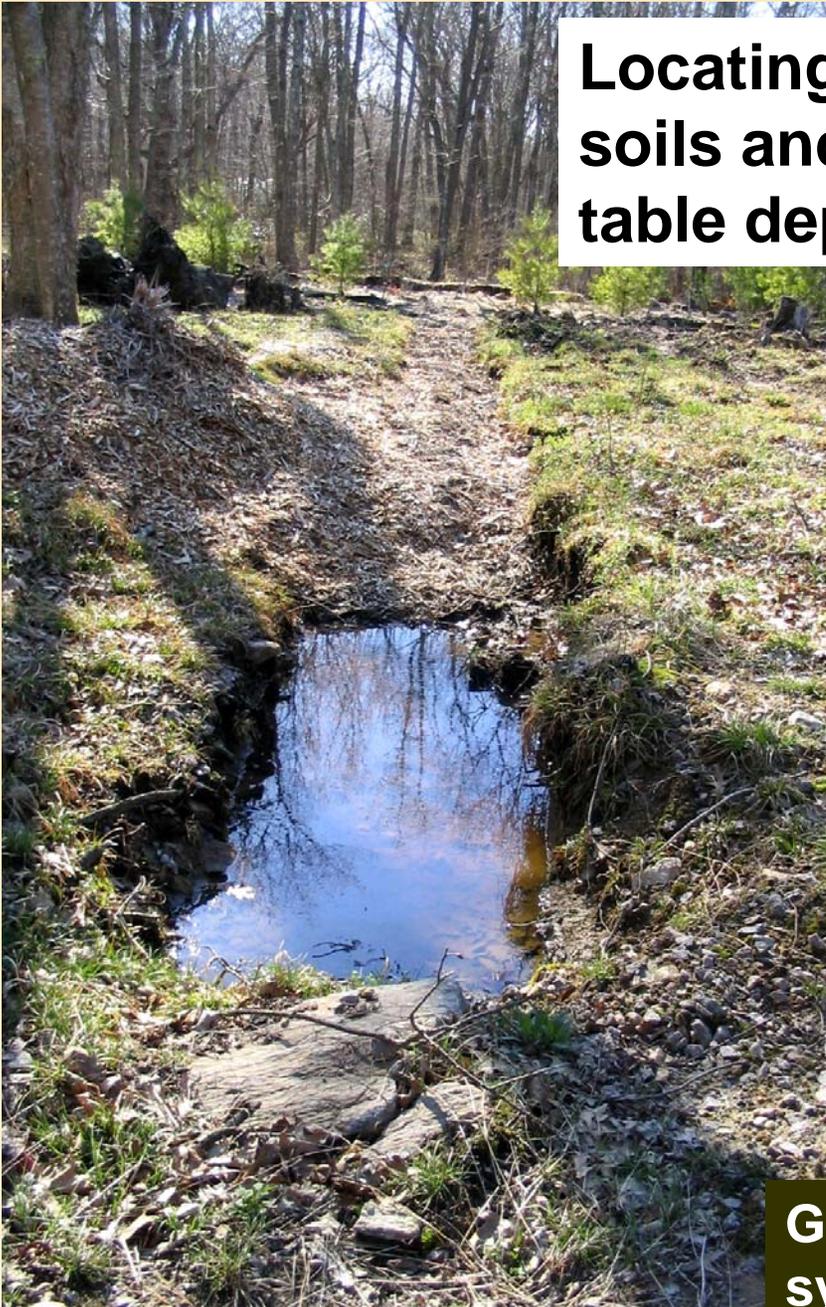
- Siting onsite wastewater treatment systems and stormwater facilities.
- Selection of test sites for more costly and disruptive field investigations.
- Provides better data for board member findings of fact for projects on difficult sites.

Especially critical for...



**Construction within
wetland buffers.**

Locating hydric soils and water table depth



Ground water table test pipe for septic system suitability determination



New village center



Rural conservation development

Design of compact development projects.

“Low impact development” design

Cluster layout with open space

Bioretention cul-de-sac

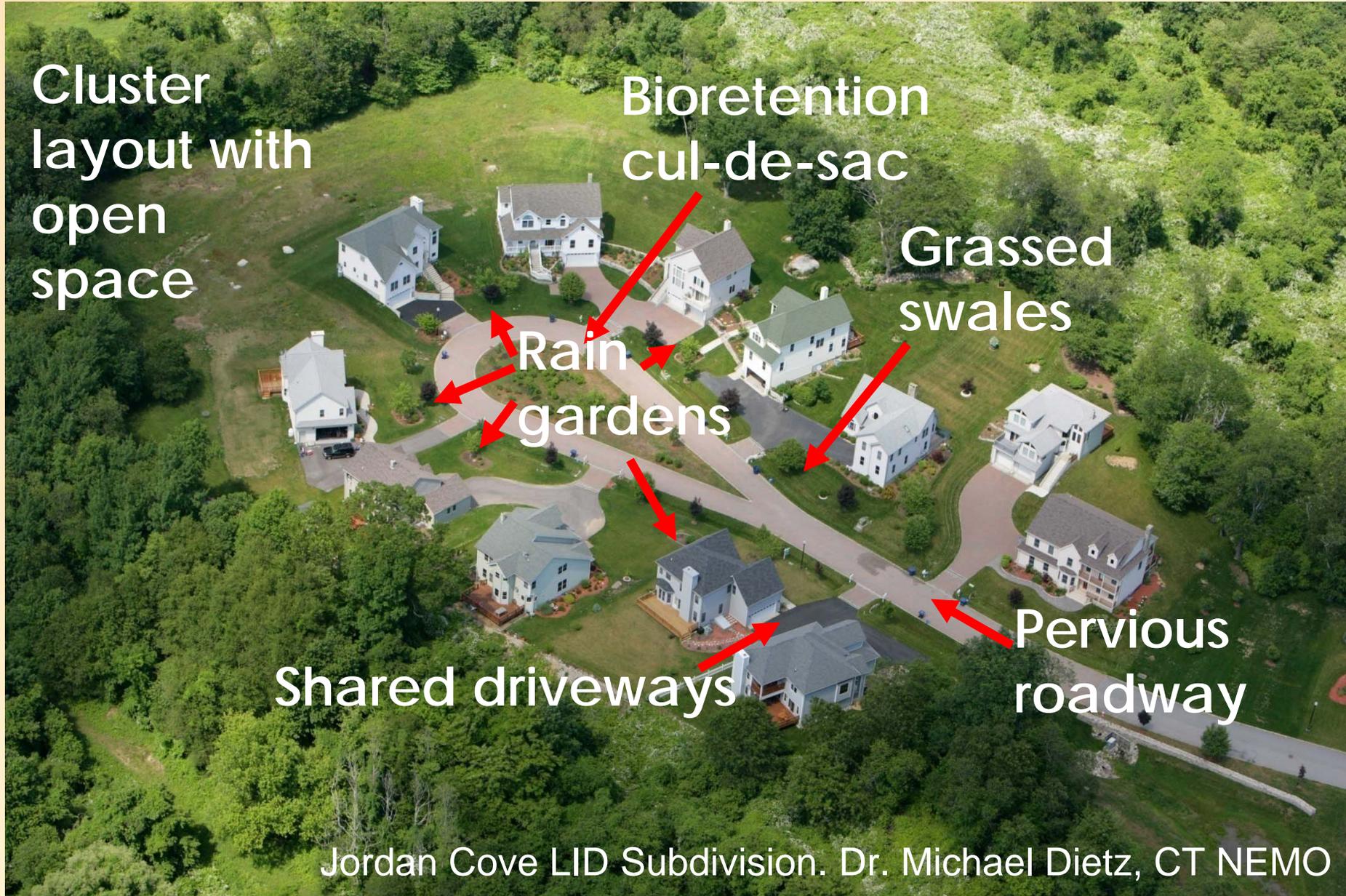
Grassed swales

Rain gardens

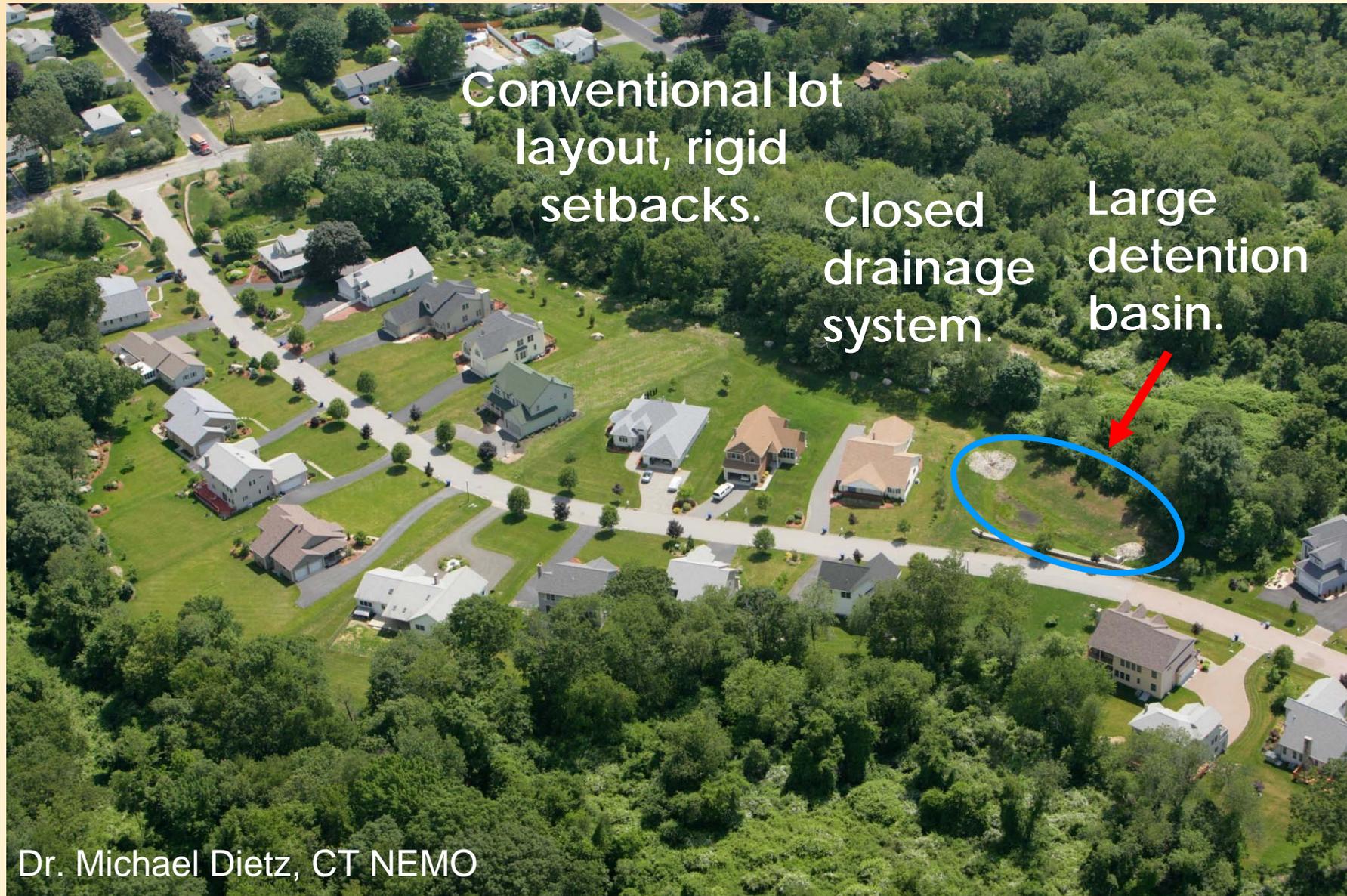
Shared driveways

Pervious roadway

Jordan Cove LID Subdivision. Dr. Michael Dietz, CT NEMO



Jordan Cove Traditional subdivision



Conventional lot layout, rigid setbacks.

Closed drainage system.

Large detention basin.



Rain Gardens

**Siting small scale,
distributed stormwater
facilities**



**Infiltration trenches,
North Kingstown, RI**

Topics

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Outline of Standards and Procedures for Site Specific Soil Mapping in Rhode Island

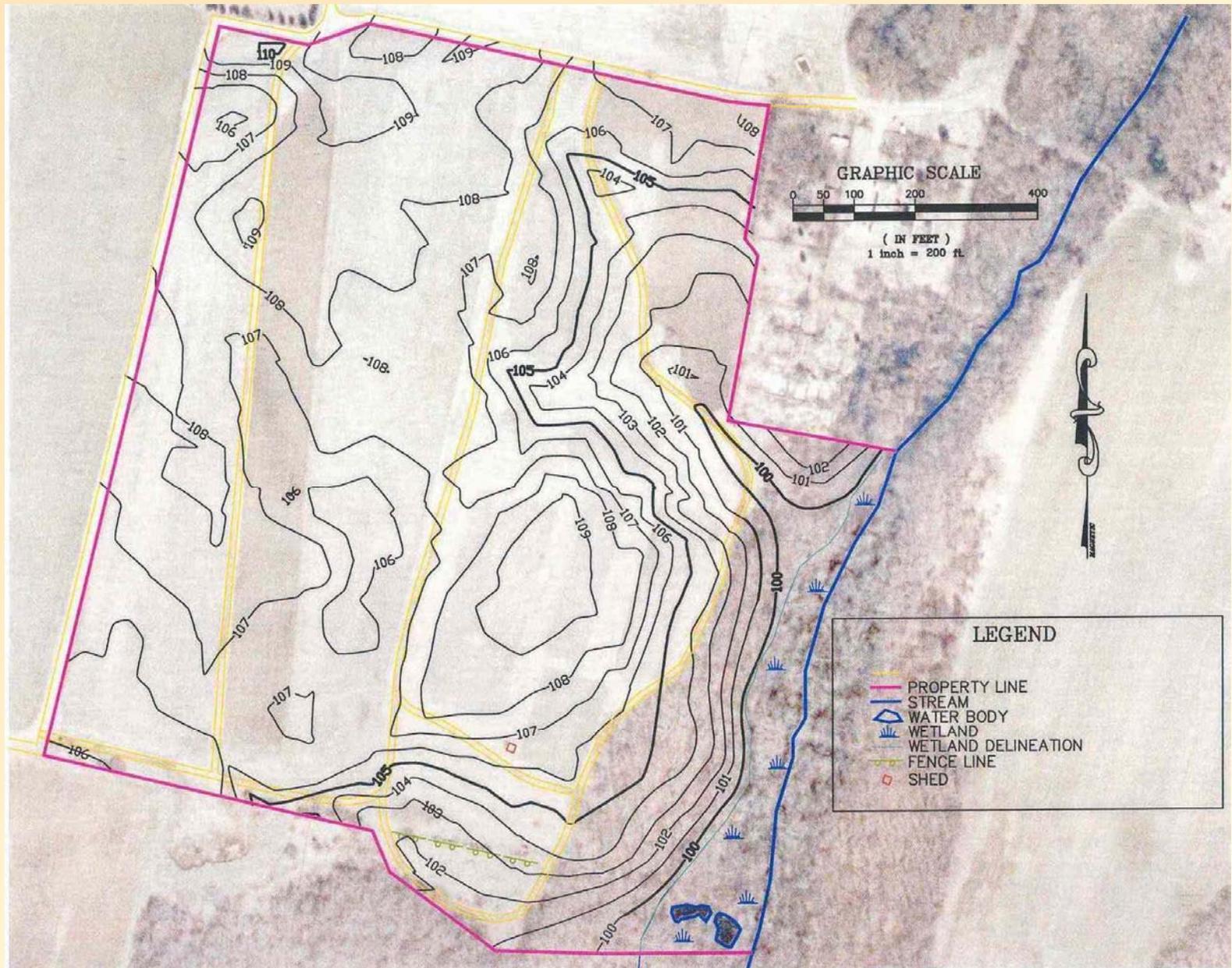
1. Mapping scale
2. Base Map
3. Soil Mapping Protocol
4. Map Unit Variability
5. Mapping Legend
6. Report

Outline of Standards and Procedures for Site Specific Soil Mapping in Rhode Island

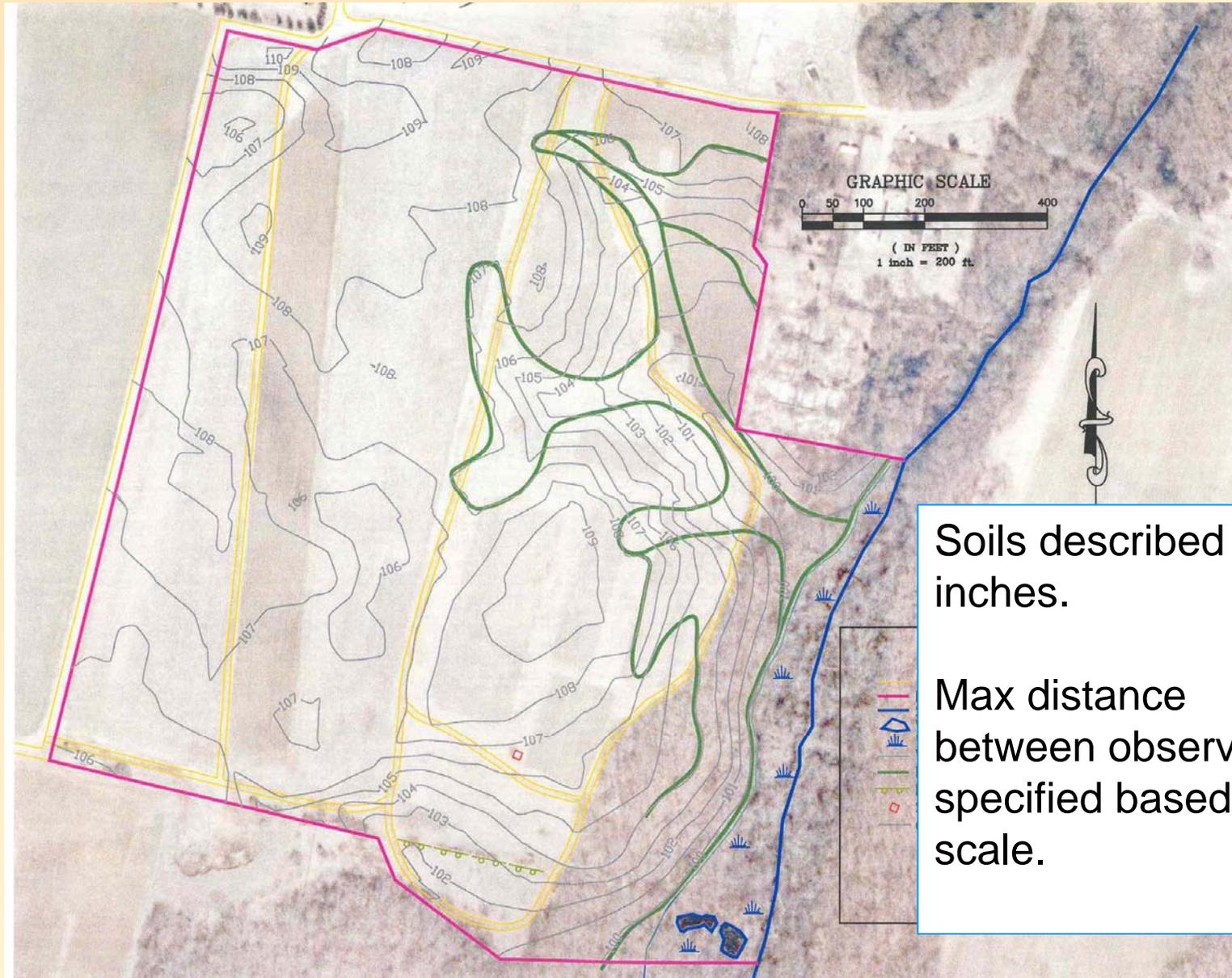
1. Mapping scale

- 1"=200 ft. for large developments
- 1" = 20 ft. to 1" = 50 ft. for small lots less than half acre.
- Finer scale for lands with high map unit variability.

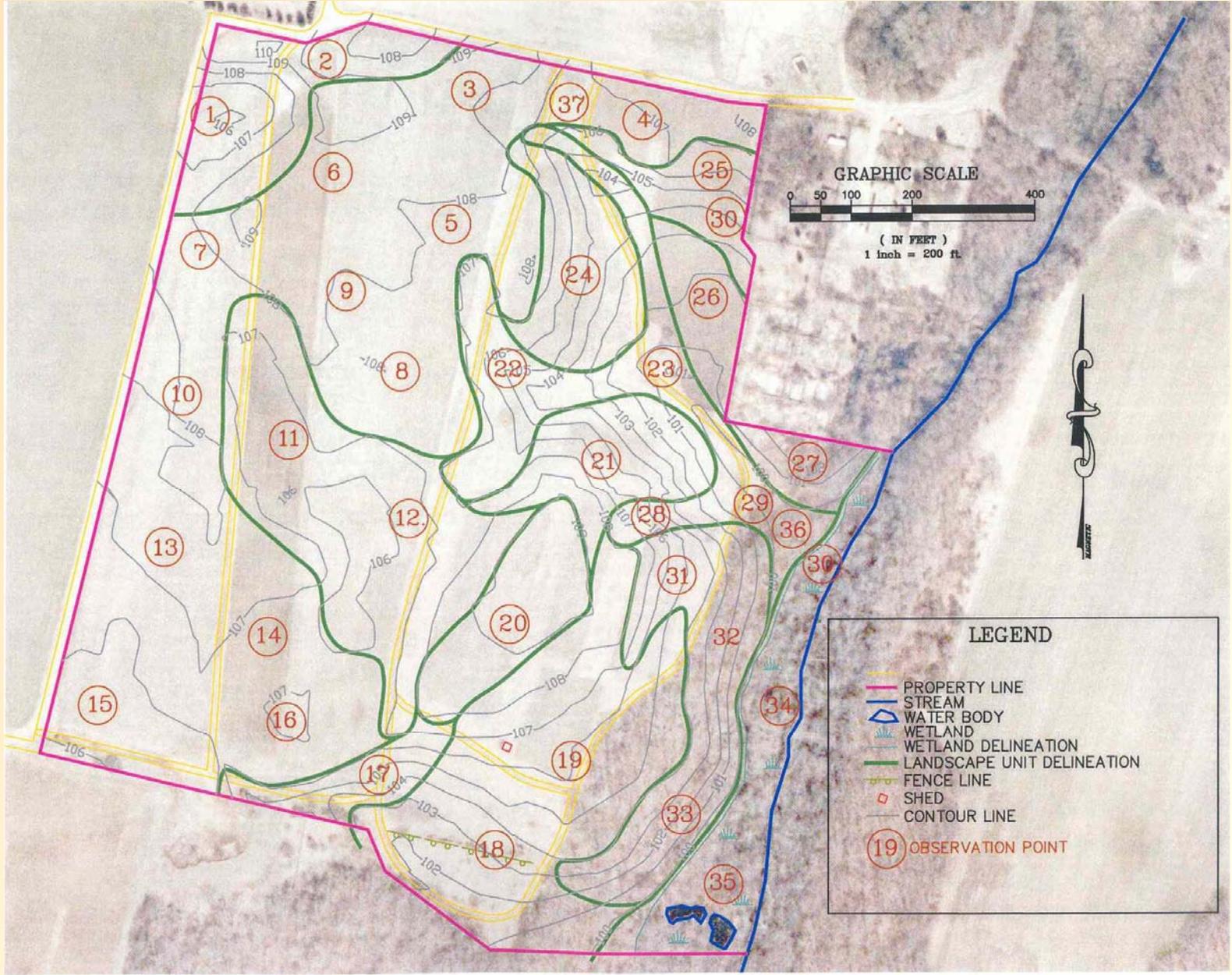
2. Base Map - Contour map of soil survey area over orthophoto



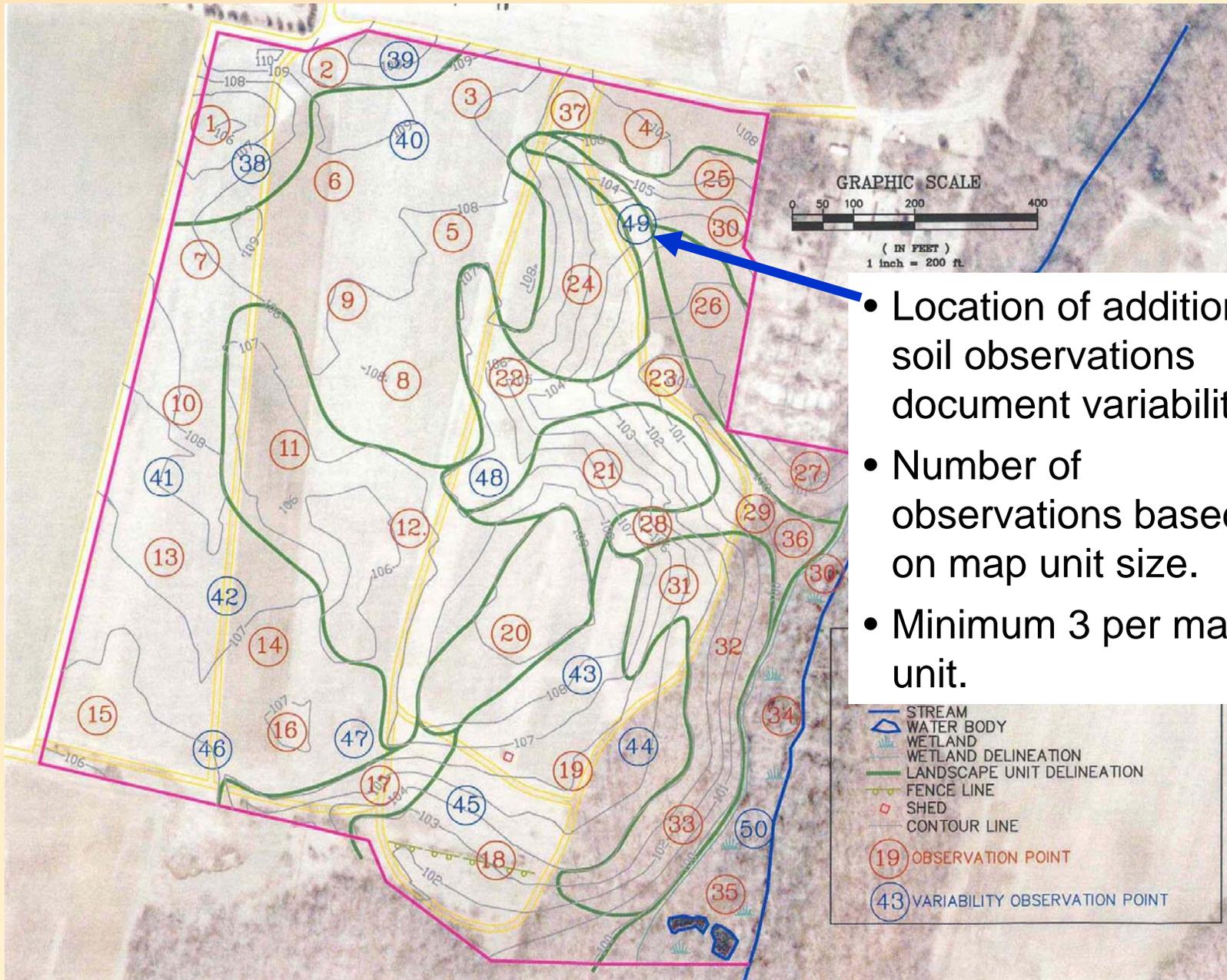
3. Soil Mapping Protocol. Examples of soil-landscape unit delineations (in process) based on contour line patterns and spacing.



Soil Mapping Protocol continued: Complete delineation of landscape units and location of soil observations



4. Map Unit Variability



5. Map Legend

Parent Material:
1 - Outwash
2 - Ice Contact.
3 - Dense Till
4 - Loose Till

Wetness class:
(Depth to SHWT)
0 – 0" - 12"
1 – >12" – 24"
2 – >24" – 36"
3 – >36" – 48"
4 – >48"

Depth to restrictive layer:
1 < 24"
2 24 – 48"
3 >48"

Bedrock or densic materials are indicated with "R" or "D"

322D

gr5C4

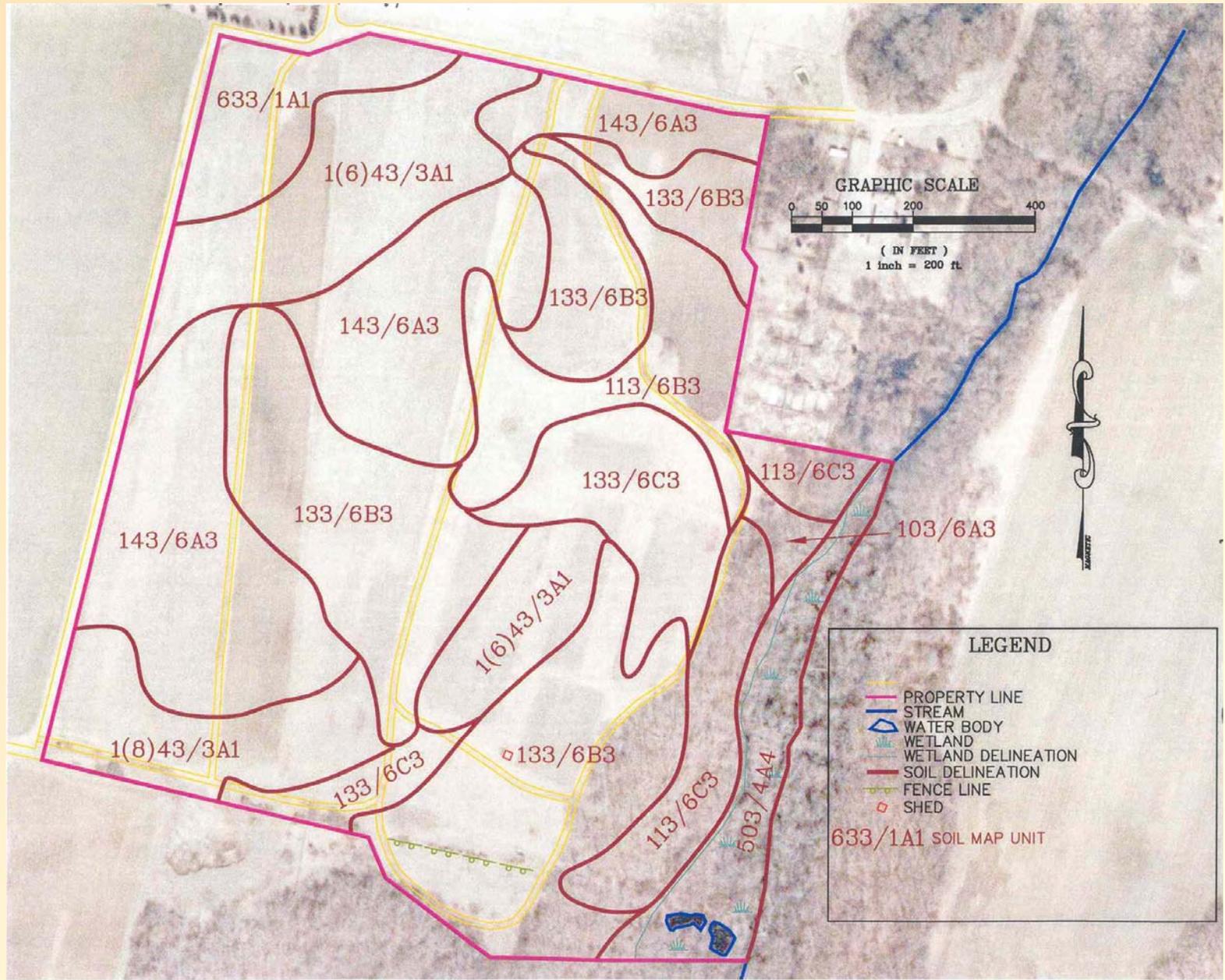
Coarse fragment modifiers:
gr – gravelly
vgr - v. gravelly
xgr – ex. gravelly
cb - cobbly

Parent material texture:
1 - Silt loam
2 - Loam
3 - Sandy loam
4 - Fine sandy loam

Slope class:
A 0 – 3%
B >3 – 8%
C >8 – 15%
D >15 – 25%
E >25%

Surface texture:
1 Silt loam
2 Loam
3 Sandy loam

Complete site specific soil survey – for demonstration purposes only



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Next Steps

1. Summer 2007. Finalize and publish map standards and procedures as URI CE technical bulletin.



2. Summer-Fall 2007 – Prepare interpretation guide for local officials, planners, other land use decision makers.

Interested in reviewing draft? See me today!



Next Steps *continued*

**3. November 15, 2007. URI Onsite Wastewater Training Center Class “Using the new RI Site Specific Soil Mapping Guide” 8am-5pm
Register at www.uri.edu/ce/wq.**

4. 2007-2008 provide training for municipal officials and others on use of the site specific mapping procedure.

Thank you for your attention!



www.uri.edu/ce/wq/

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To Register for Nov.15 Site Specific mapping class, go to New England Onsite Wastewater Training Center at above website.

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