

MEMORANDUM

TO: NH Planning Boards

FROM: Francesca Latawiec, CPSS, PWS, Principal Planner,
Water Protection Assistance Program

DATE: October 1, 1999

RE: Requirements for Soils and Wetlands Data in Subdivision
[Site Plan Review] Regulations, 1999

This will transmit recommended language that can be included in subdivision [site plan] review regulations to specify on-site data requirements for local reviews. This proposal was designed to implement the findings of the Ad Hoc Committee on Site Review Requirements, an interagency, multi-disciplinary committee whose charge it has been to develop guidance for planning boards to use in reviewing local subdivision plans [site plans]. The intent is to provide the planning board with guidance as to the type of data needed for making informed land use decisions about developments of different magnitudes and levels of intensity. For each level, the data recommended to be required is specified in this document, as well as the standards to be used in preparing the data and the type of professionals qualified to do the work.

Questions and/or comments regarding the content or usefulness of the enclosed information are welcome.

FL:cjw

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Enclosure

Requirements for Soils and Wetlands Data in Subdivision and Site Plan Review Regulations

State of New Hampshire,
Jeanne Shaheen, Governor

New Hampshire Office of State Planning,
Jeffrey H. Taylor, Director

New Hampshire Department of Environmental Services
Robert W. Varney, Commissioner

September, 1999

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Requirements for Soils and Wetland Data in Subdivision [Site Plan Review] Regulations

Background

Municipal subdivision and site plan review regulations require applicants to submit site specific technical information needed by the planning board to make informed decisions about proposed land use changes.

This document provides guidance to planning boards in determining the level of physical site characteristics that should be required for proposals with different levels of development intensity. It describes three levels of planning board review and specifies appropriate technical information that should be required for each. It also details the type of professionals qualified to prepare this information. A flow chart depicting the review process can be found in Figure 1 on page 7 with specific requirements in Figure 2 on page 8.

This document complements the review process outlined in the report entitled DATA REQUIREMENTS FOR SITE REVIEW: GUIDANCE FOR PLANNING BOARDS, DES and OSP, 1999. That report should be reviewed carefully by municipalities before adopting the recommendations herein. Furthermore, planning boards should keep a copy of the document on file for public review along with their subdivision [site plan review] regulations. Copies of the document are available for \$3.50 from the Office of State Planning (OSP) at 2 ½ Beacon Street, Concord, NH 03301, (603) 271-2155.

It is important for the planning board to carefully review the requirements presented in this document prior to adoption. There may be conflicts or inconsistencies between them and the requirements of the existing subdivision and site plan review regulations.

Model Ordinance

Note: The language presented here can be incorporated into either the subdivision or site plan review regulations. [Bracketed] text is intended to apply to site plan review regulations.

SECTION 1: Authority and Purpose

Pursuant to the authority vested in the planning board by the voters of the Town of _____ on _____, and in accordance with the provisions of RSA 674:35 & 36 [RSA 674:43 & 44] as amended, the Planning Board hereby adopts the following regulations governing the subdivision of land [development or change or expansion of use of tracts for nonresidential uses or multi-family dwelling units, whether or not such development includes a subdivision or resubdivision of the site.] These regulations are designed to accomplish the purposes set forth in RSA 674:36, as amended [RSA 674:44, as amended] and for the purpose of protecting the health, safety, and general welfare and to provide for the harmonious development of the Town of _____ and its environs.

EXPLANATORY NOTES

Italicized text in this column is for explanatory purposes and should not be incorporated into the subdivision [site plan review] regulations.

The language in the left hand column should be the standard Authority and Purpose section of the subdivision and site plan review regulations already adopted by the municipality. The planning board should review this section of their regulations to determine if they are consistent with the language presented here.

SECTION 2: Definitions

“Average area” means the total acreage of the property, exclusive of very poorly drained soils, divided by the total number of proposed lots. (Use of average area here assumes that all lots are roughly the same size.)

“Bedrock within 18 inches of the soil surface” meets the definition of either lithic or paralithic material. At least 75 percent of delineated areas must meet this definition with no more than 15 percent of the area having soil properties more limiting (i.e., hydric conditions). (Site-Specific Soil Mapping Standards for New Hampshire and Vermont, SSSNNE Special Publication No.3, June 1999, pp 6-7)

“Indurated” means a rock or soil hardened or consolidated by pressure, cementation, or heat. (Dictionary of Geological Terms, Bates and Jackson, 1984.)

“Limiting physical features” means rock outcrops, steep slopes > 35%, soils with bedrock within 18 inches of the soil surface, and very poorly drained areas.

The terms defined in this section should be added to the main definitions portion in the subdivision [site plan review] regulations. It may be necessary to amend some existing definitions for consistency with this recommended review process

This definition applies to subsection 3B of this proposal.

This defines one of the limiting physical features identified in subsection 3C, Level 2, Step C.

This further defines one of the taxonomic terms used to define lithic materials.

These are to be identified under subsection 3C, Level 2, Step C. Presence of any of these limiting physical features on-site triggers the requirement for a subsection 3D, Level 3 review.

“Lithic material” means unaltered material that is continuous, coherent, and indurated. The material qualifies for an “R” designation as a master layer (USDA Soil Survey Manual, 1993, pg. 121). Plant and tree roots cannot enter except in cracks. Hand digging with a spade is impractical. Some lithic material can be ripped with heavy power equipment. The material must be in a strongly cemented or more cemented rupture-resistance class. Granite, quartzite, and indurated limestone or sandstone are examples. (Keys to Soil Taxonomy, Eighth Edition, 1998, pg.32)

“Non-limiting” means the area, exclusive of very poorly drained soils, rock outcrops, bedrock within 18 inches of the soil surface, and soils with steep slopes greater than 35 percent

“Paralithic material” means a relatively unaltered material that has an extremely weakly cemented to moderately cemented rupture-resistance class. The material qualifies for a “Cr” designation as a subordinate distinction within a master soil layer (USDA Soil Survey Manual, 1993, pg. 124). Cementation or bulk density are such that plant and tree roots cannot enter except in cracks. The material can be hand dug with a spade with much difficulty. Commonly these materials consist of weathered or weakly consolidated bedrock. (Keys to Soil Taxonomy, Eighth Edition, 1998, pg.32) This further defines one of the taxonomic terms used to define bedrock.

“Soil surface” refers to the top of the first mineral layer.

This further defines one of the taxonomic terms used to define bedrock.

This term is defined here, as it is to be used to determine the development intensity criteria under subsection 3B.

This further defines one of the taxonomic terms used to define bedrock.

This term is defined to clarify the position from which soil depth measurements are to be taken in order to meet the prescribed standards.

SECTION 3: Requirements for Soils and Wetlands Data in Subdivision [Site Plan Review] Regulations

(In all cases, subsection A, Level 1 information is required.)

A: Level 1 Delineation of Wetlands and Surface Waters: for All Subdivision [Site Plan Review] Applications

Information on wetlands and surface waters shall be provided on the plan with identification and delineation of the resources in accordance with the definitions and standards specified in Steps A and B of this section.

The written documentation specified in Step C shall be included on the plan and be certified by the stamp of a qualified professional.

This section provides the planning board with a framework for determining the type of data needed for different magnitudes and levels of development intensity. Three levels of planning board review are established; for each level, the data to be required is specified, as well as the standards to be used in preparing the data and the type of professionals qualified to do the work. A schematic diagram of the review process is shown in Figure 1. Further details about specific requirements are shown in Figure 2.

This first level of information is required of all proposed subdivision [site plan review] applications. It involves the on-site delineation of wetlands and surface waters existing on the subject property. All subdivision [site plan review] applications are required to show the location and extent of wetlands and surface waters on the parcel or parcels under consideration, directly on the plan. Wetland and water body information is intended to demarcate the upland portions of a property on the site. This allows the board to know the location of the more sensitive natural resources and to determine if the development structures are proposed to be sited in or near them.

*** Step A:** Wetlands are to be identified and delineated according to the following standards and/or methodologies:

- Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, Environmental Laboratory, Department of the Army, 1987.
- Field Indicators for Identifying Hydric Soils in New England, Version 2, New England Interstate Water Pollution Control Commission, 1998.
- Chapters Wt 100-800 of the NH Code Of Administrative Rules, April 21, 1997.

*** Step B:** Surface Waters are to be identified and delineated in accordance with RSA 485 - A:2, XIV, NH Water Pollution and Waste Disposal and NH code of administrative rules pursuant to 485 - A.

*** Step C:** Written Documentation

- A written statement shall be included on the subdivision plan [site plan], **certified by the stamp of the Certified Wetland Scientist (CWS) or Permitted Septic Designer (PSD), that all wetlands and surface waters on-site have been delineated in accordance with the standards specified in Steps A and B above.**

These standards and/or methodologies are consistent with applicable state and federal regulatory requirements. They are recommended for use where existing mapped information is not adequate for site specific land use decision making.

These standards and/or methodologies are consistent with applicable state regulatory requirements.

This statement assures the planning board that the certified or permitted professional preparing the Step C information has adhered to the required standards.

Figure 1. Section 3 Submission Process

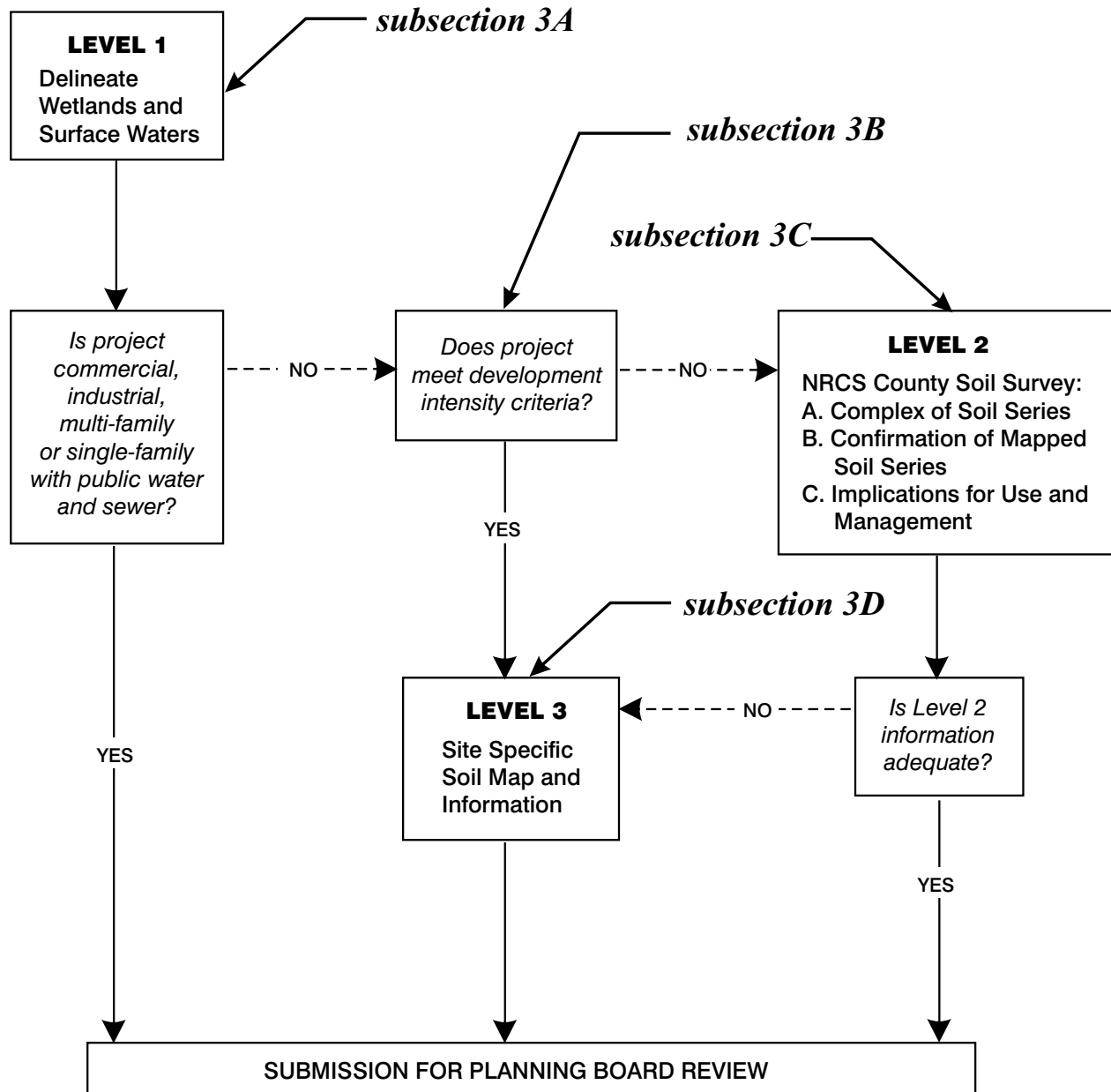


Figure 2. Levels of Information for Subdivision and Site Plan Applications

LEVEL	TASKS	STANDARDS	QUALIFICATIONS
1	<p>Step A. Wetlands Delineation</p> <p>Step B. Surface Waters Delineation</p>	<ul style="list-style-type: none"> • 1987 US Army Corps of Engineers Wetlands Delineation Manual • 1998 Field Indicators for Identifying Hydric Soils for New England • Defined by RSA 485-A:2, XIV 	Certified Wetland Scientist, or Permitted Septic Designer*
2	<p>Step A. Identification of Dramatically Different Soil Complexes</p> <p>Step B. Confirmation of NRCS Soil County Soil Survey Map</p> <p>Step C. Identification of Limiting Physical Features</p>	<ul style="list-style-type: none"> • Appendix 1 of this document. • NRCS Official Series Description Sheets and/or NRCS published map unit descriptions (Steps A-C). • Field Book for Describing and Sampling Soils: Vers. 1.1, 1998 • Site Specific Soil Mapping Standards for NH & VT, 1999 • Keys to Soil Taxonomy, Eighth Edition, 1998 • Same as Step B 	Certified Soil Scientist or Permitted Septic Designer*
3	<p>Site Specific Soil Map, when:</p> <ol style="list-style-type: none"> Average lot size <2 acres, without municipal water and sewer, or Average lot size <1 acre, with municipal water, but without municipal sewer, or Non-limiting, non-wetland contiguous area <20,000 square feet and without municipal water and sewer, or Areas without municipal water and sewer and with soil complexes with dramatically different characteristics. 	<ul style="list-style-type: none"> • Site Specific Soil Mapping Standards for NH & VT, 1999 	Certified Soil Scientist
<p>*Per RSA 310-A:79, IV and NH Code of Administrative Rules Chapters Env-Ws 1000 adopted under RSA 485-A for the purpose of septic system design or subdivision applications.</p>			

3B: Additional Information Required Based on the Type of Proposal

1. [If a project proposed for site plan review is served by public water and sewer, **no additional soils data needs to be submitted for the purpose of determining suitability of the site for subsurface wastewater disposal systems.**]

Additionally, if the site development calls for structures and/or impervious cover or alteration of an area greater than 100,000 square feet, or 50,000 square feet within the protected shoreland, then the applicant should file a site specific application under **NH Code of Administrative Rules Env-Ws 415 and RSA 485-A:17**, significant alteration of terrain. Approval of the permit specified in these rules and statute is required by DES.

2. If a project involves a subdivision which is served by public water and sewer, no additional soils data needs to be submitted for the purpose of determining suitability of the site for subsurface wastewater disposal systems.
3. If the project meets at least one of the following three development intensity criteria, **then the applicant should submit Site Specific Soil Map (SSS Map) information as specified in subsection 3D:**
 - a. The average area is less than two (2) acres in area and is not served by either municipal water or sewer,

In these cases, on-site wastewater disposal is not an issue and other limiting features should be addressed as part of the plan.

However, the planning board may, at its discretion, require submission of on-site soils data for other purposes.

*The planning board can be assured that the appropriate level of technical information and design criteria are applied to the project through this state permitting program. **Proof of a state approved permit under this program can be required as a condition of final local approval of the subdivision plan [site plan].***

In these cases, on-site wastewater disposal is not an issue and other limiting features should be addressed as part of the plan.

However, the planning board may, at its discretion, require submission of on-site soils data for other purposes.

See the definitions of “average area” and “non-limiting” in Section 2.

b. The average area is less than one (1) acre in area and is served by municipal water, but not sewer; or

c. The non-limiting, upland, contiguous area on any proposed lot is less than 20,000 square feet. (Can only be determined after completion of the requirements in subsection 3C, Level 2.)

4. For all other projects, the applicant should comply with the data requirements of Section 6, Level 2.

This provides for the planning board to require more detailed information for projects with a higher development intensity.

*If the proposal does not meet any of the tests in subsection 3B then subsection 3C, Level 2 information is potentially adequate for local review, provided that the NRCS soil survey information is determined to be sufficient for the proposed use and management of the property. **However, the planning board may, at its discretion, require submission of a site specific soil map for other purposes.***

3C: Level 2 Confirmation of County Soil Survey Maps and Identification of Limiting Physical Features

*** Step A: Identification of Soil Complexes With Dramatically Different Characteristics**

- If any of the soil map units on the property, as mapped by the NRCS county soil survey, is a complex of soils with dramatically different characteristics that would have an impact on use and management of the property, then the applicant must provide SSSMS information as required in subsection 3D, Level 3.
- If the soils mapped by the NRCS county soil survey do not include one of these complexes, **continue to Step B.**

*** Step B: Confirmation of NRCS County Soil Survey Map**

The following information is required to be submitted for confirmation of the NRCS county soil survey:

- A copy of the NRCS county soil survey with the subdivision [site plan] location and approximate boundaries superimposed on the soil map. **The copy of the county soil survey must be provided at the same scale as the original county soil survey.** This is important, so that the limitations of the information provided at the scale of the survey are not misunderstood by the users.

The applicant is required to submit existing data, such as soil maps representing the NRCS county soil survey, and evaluate detailed soil profile descriptions to corroborate the soil series and map unit determination from the county soil survey.

Appendix 1 of the document entitled DATA REQUIREMENTS FOR SITE REVIEW: GUIDANCE FOR PLANNING BOARDS, DES and OSP, 1999, prepared by the NRCS State Soil Scientist, lists these complex soil map units.

This is required to show the planning board the location of the proposal relative to the soils identified in the county soil survey .

- A representative number of detailed soil profile descriptions to characterize variations in the landscape for each mapped unit, based on NRCS standards as described in the Field Book for Describing and Sampling Soils: Version 1.1 National Soil Survey Center, NRCS, 1998. These profile descriptions are to be included in a narrative report for the project.

The applicant is required to evaluate and submit detailed soil profile descriptions to document that the conditions on site **are adequate to support the proposed use and management of the property. The standards and/or methodologies for doing this are listed below. These sources should be cited directly on the subdivision plan [site plan].**

If the proposal meets the requirements of Step B, then subsection 3C, Level 2 information is potentially adequate for local review, provided that the NRCS soil survey information is determined to be sufficient for the proposed use and management of the property.

Standards

Field Book for Describing and Sampling Soils: Version 1.1 National Soil Survey Center, NRCS, 1998. (To replace the dated, 1991 Soil Manual for Site Evaluation in New Hampshire, 2nd Edition)

NRCS Official Series Description Sheets and/or published map unit descriptions USDA/NRCS

Keys to Soil Taxonomy, Eighth Edition, USDA/NRCS 1998.

(or the most current revision of these sources)

This is required to give the planning board a general idea as to whether the soil conditions on the site are consistent with those of the soil series mapped in the County Soil Survey.

It is expected that there will be variations in soil conditions within any mapped unit. This evaluation is required to give the planning board an indication as to whether these variations would have an impact or present limitations for the proposed use and management of the property.

The planning board may, at its discretion, require submission of on-site soils data for other purposes.

These are the most current, technically accurate sources for use in describing soils.

Methodologies

A minimum of one soil profile description shall be completed per soil map unit within the subdivision plan [site plan] area, as depicted on the NRCS county soil survey. The soil will be described in sufficient detail, so as to support or refute that identified properties are within, or similar to those of the soil series used to name the map unit.

Soils descriptions should be carried out in areas suspected of having the greatest likelihood of contrasting soil features. Some map units will require more than one soil description to document soil variability. The map unit purity standards from Site Specific Soil Mapping Standards for New Hampshire and Vermont Version 2.0, Society of Soil Scientists of Northern New England Publication No. 3, 1999, will apply.

- The location(s) of the soil profile description(s) used to corroborate the NRCS soil series shall be shown on the plan, with a reference to the description(s) in the narrative report for the project.
- A detailed comparison between each soil profile description and the representative pedon (a description of a small three-dimensional area of soil that is typical of the soil series in the county) for that soil from the county soil survey shall be included in the detailed narrative for the project. The NRCS Official Series Description Sheets and/or NRCS published map unit descriptions for each mapped unit are to be used as references.
- A written statement that the soil profile description(s) from the site adequately reflect the range of characteristics for the series, as described in the county soil survey. The statement shall indicate that the county soil survey adequately represents soil and landscape characteristics, such that site specific land use decisions can be made without further soil investigations. **This statement is to be certified by the stamp of the CSS or PSD. If this statement cannot be made, proceed to subsection 3D, Level 3.**

Three examples of suggested documentation for NRCS soil map confirmation for Step B are presented in Appendix 3 of the document entitled DATA REQUIREMENTS FOR SITE REVIEW: GUIDANCE FOR PLANNING BOARDS, DES and OSP, 1999.

This statement assures the planning board that the certified or permitted professional preparing this information has adhered to the required standards.

- A narrative report for the project which summarizes the information compiled in Step B. This shall include a determination of whether limiting physical features are present on the parcel and indicate the specific mapped soil units where these occur. **If any limiting physical features are identified on-site, then Step C is required.**
- If the on-site investigations confirm the nature and properties of the soils as reflected by the soil map, consistent with the intended use and intensity of development, **a subsection 3C, Level 2 review is potentially adequate for the planning board's purposes. However, the planning board may, at its discretion, require submission of on-site soils data.**

*** Step C: Identification of Limiting Physical Features**

In addition to the information required in Steps A and B, the information specified below is required for identification and documentation of limiting physical features. This can either be done as a stand-alone document or as an amendment or addendum to the narrative prepared under Step B.

- Delineation of the limiting features, specifically rock outcrops, steep slopes > 35%, soils with bedrock within 18 inches of the soil surface, and very poorly drained areas on-site. These features are to be shown on the subdivision plan [site plan].

This statement and narrative report assure the planning board that the certified or permitted professional preparing the Step B information has adhered to the required standards.

If the on-site soil investigations indicate that limiting physical features, as defined in Section 2, which have the potential to affect the usability of certain areas for structures, on-site wastewater disposal systems, or roads, they must be identified and documented by the applicant. This information should be shown on the subdivision plan [site plan] and included in the narrative report for the project.

If the on-site soil investigations indicate that limiting physical features which have the potential to affect the usability of certain areas for structures, on-site wastewater disposal systems, or roads, they must be identified and documented by the applicant. The terms used to describe the limiting physical features are defined in Section 2.

- A detailed description of each limiting physical feature, based on NRCS standards, in a narrative report for the project, with reference to its location on the subdivision plan [site plan]. This can either be done as a stand-alone document or as an amendment or addendum to the narrative prepared under Step B.
- A written statement that the limiting physical features identified above would not have a significant impact on use and management of the property. **This statement is to be certified by the stamp of the Certified Soil Scientist (CSS) or Permitted Septic Designer (PSD). If this statement cannot be made, then proceed to subsection 3D, Level 3.**

- A written statement to indicate that the county soil survey adequately represents soil and landscape characteristics such that site specific land use decisions can be made without further soil investigations. **This statement is to be certified by the stamp of the CSS or PSD. If this statement cannot be made, then proceed to subsection 3D, Level 3.**
- A written statement that limiting physical features are present on the parcel(s) and that **either (1) a SSS Map (Section 7) is required or (2) not required, with supporting documentation for this position. This determination is to be certified by the stamp of the CSS or PSD. If a SSS Map is required, then proceed to Section 7, Level 3.**

3D: Level 3, Site Specific Soil (SSS) Map for Intense Development and for Sites With Limiting Features

If required, an applicant shall submit a site specific soil map prepared in accordance with Site Specific Soil Mapping Standards for New Hampshire and Vermont Version 2.0, Society of Soil Scientists of Northern New England Publication No. 3, 1999. **This is to be certified by the stamp of the Certified Soil Scientist (CSS).**

These statements and the detailed description in the narrative report for the project assure the planning board that the certified or permitted professional preparing the information required for subsection 3C, Level 2, Step C has adhered to the required standards.

These statements assure the planning board that the certified or permitted professional preparing this documentation has evaluated the information in accordance with the required standards.

This assures the planning board that the certified professional has adhered to the required standards.