

**Appendix A**  
**Soil Classification and Use Guidelines**

- A. Purpose.
- (1) The purpose of this table is to provide guidance to those who may be considering the use of land in the Village as a site for the construction of housing or other structures.
  - (2) This guide does not obviate the ultimate necessity of securing approval from the Tompkins County Department of Health for the use of on-site septic systems.
  - (3) This Appendix is intended to empower the Village to exercise the greater limitations embodied herein.
- B. Map. The soil groups are comprised of several soil types as identified herein and which soil types are shown on the map designated as the Tompkins County Soil Map, dated July 1965, and made a part of this regulation. [All pertinent notations, soil mapping unit designators and other information shown upon said map shall be as much a part of this regulation as if the matter and things set forth by said map were fully described herein.](#)
- C. Preparation.
- (1) The soil groups and the Tompkins County Soil Map were prepared with the assistance and cooperation of the USDA Soil Conservation Service, Tompkins County, New York and Cornell University Agriculture Experimental Station, published in July, 1965.
  - (2) While this is considered to be an up-to-date map of standard scale, a soil map is no substitute for on-site investigation. It must be anticipated that conditions on a specific lot may be as described, better than described or worse. This applies to soil texture, drainage and the depth-to-bedrock values.
  - (3) A soil map of the Village area is included herein and should be used in conjunction with the table. The eleven (11) soil groups are described as to characteristics and use guidelines.
- D. Nonrepresentation. The approval of a subdivision shall not constitute a representation, guarantee or warranty by the approving authority of the suitability of the land for, or the practicability or safety of, any structure, use or other plan proposed.
- E. Utilization.
- (1) It is recognized that the soil maps and the information found in the Tompkins County Soil Report do not eliminate the need for future on-site investigations. Because the soil surveys, in which these are based, are confined to the upper thirty-six (36) inches, all other descriptions (such as depth-to-bedrock, texture and drainage) are inferred. They are suitable as guidelines but should be checked, especially near the streams and in the western half of the Village area.
  - (2) The Village Engineer shall have full authority to make additional requirements to fit conditions that may be observed in the field and/or as a result of subsequent tests that he might deem necessary, at the expense of the developer.
  - (3) Under use guidelines the intent is to warn those contemplating construction that the soil conditions are such that more than ordinary precautions in size, design, layout, etc., may be required for on-site septic systems and foundation.
  - (4) Adequate foundation drains are a necessity to assure dry basements and to protect homeowners against losses resulting from flooding. Where gravity flow from the foundation drain(s) is not feasible, sump pumps are acceptable.

C. List of soil types. [11](#)

<b>Soil</b>	<b>Group</b>
Ab	X
ArB	I
BgC	II
DgB	VI
EbB	VIII
EcA	X

Em	X
ErA	VIII
Ha	X
Hc	X
HdA	I
HdB	I
HdC	I
HsB	IV

Soil Types continued on next page.

<b>Soil</b>	<b>Group</b>
HsC <sub>3</sub>	V
HsD <sub>3</sub>	V
HuB	IV
HwB	IV
HuB <sub>3</sub>	IV
HuC <sub>3</sub>	V
IcB	VIII
LaB	III
LnC	IX
LoF	XI
LtB	IX
LtC	XI
OaA	VI
OcC <sub>3</sub>	VII
OrA	VIII
OrB	IX
OrC	IX
PhA	III
RhA	VI
RkA	VI
RkB	VI
RnC <sub>3</sub>	VII
Ro	XI
TeA	VIII
Wm	X
Ws	X

G. Soil classification.

GROUP I - Well drained sands and gravel, nearly level through sloping.

- (1) Characteristics. The soils in this group are well drained, coarse-textured and are formed in glacial outwash plains, terraces and stream valleys. They are underlain by water deposited beds of sand or sand and gravel. These soils have moderately rapid to moderate permeability. The seasonal high water table and bedrock are below six (6) feet. Slope ranges from zero (0) through fifteen percent (15%). Soils included in this group are: ArB, HdB, HdC and HdA.
- (2) Use guidelines.

- (a) These soils are usually suitable for on-site septic systems that are adequately designed.
- (b) Buildings with and without basements may be installed on these soils. Some slight problems with cut slope slippage may occur.

GROUP II - Well drained coarse silts and loam with a fragipan, gently to sloping.

- (1) Characteristics. The soils in this group are well drained. The soils are underlain by loose glacial till and have a fragipan twenty-four to thirty-six (24 to 36) inches below the soil surface. These soils are moderately permeable and have a period of very short seasonal wetness. Bedrock is usually six (6) feet. Slopes range from five percent (5%) to fifteen percent (15%). Soils included in this group are: BgC.
- (2) Use guidelines.
  - (a) These soils have moderate limitations for septic systems and may be used for on-site septic systems that are adequately designed.
  - (b) These soils have moderate limitations for homesites with and without basements and a moderately high bearing capacity. When buildings with basements are installed below grade (ground line), foundation drains to a free flowing outlet should be installed.
  - (b) Erodibility on these soils is low.

GROUP III - Moderately well drained coarse silts and loam with a firm basal till or fragipan layer, nearly level.

- (1) Characteristics. The soils in this group are moderately well drained with a seasonal high water table at twelve to twenty-four (12 to 24) inches, and bedrock usually deeper than six (6) feet. Cuts and excavations deeper than four (4) feet may encounter an occasional ledge of bedrock. These soils are moderately permeable in the upper one and one-half to two (1 1/2 to 2) feet and slowly permeable below these depths. Slopes range from two percent (2%) to eight percent (8%). Soils included in this group are: PhA and LaB.
- (2) Use guidelines.
  - (a) These soils have moderate limitations for septic systems and may be used for on-site septic systems that are adequately designed.
  - (b) These soils have moderate limitations for homesites with and without basements and a moderately high bearing capacity. When buildings with basements are installed below grade (ground line), foundation drains to a free flowing outlet should be installed.
  - (c) Erodibility on these soils is low.

GROUP IV - Moderately well drained heavy silts and clays, nearly level to gently sloping.

- (1) Characteristics. The soils in this group are moderately well drained and occur in areas where glacial lake sediments have accumulated. These sediments contain clay and heavy silts. These soils are slowly permeable, and are susceptible to cut slope slippage. The seasonal high water table is from one and one-half to three (1 1/2 to 3) feet. Bedrock is generally below six (6) feet. Slope ranges from zero (0) to six percent (6%). Soils included in this group are: HsB, HuB, HuB3 and HwB.
- (2) Use guidelines.
  - (a) These soils have severe limitations for septic systems.
  - (b) Buildings with basements may be installed on these soils. Adequate foundation drainage to a free flowing outlet should be provided.
  - (c) Erodibility on these soils is high, and erosion may be a problem on all slopes. Final cuts and fills should not be steeper than four to one (4:1) due to cut slope slippage.

GROUP V - Moderately well drained, heavy silts and clays, gently sloping to sloping.

- (1) Characteristics. The soils in this group are well to moderately well drained and occur in areas where glacial lake sediments have accumulated. These sediments are in layers composed of silts, very fine sands and clay. These soils are slowly permeable. The water table ranges from one and one-half to six (1 1/2 to 6) feet. Cut slope slippage on these soils is severe. Bedrock is generally below six (6) feet. Slope ranges from six percent (6%) to twenty percent (20%). Soils included in this group are HuC3, HsC3 and HsD3.
- (2) Use guidelines.
  - (a) These soils have severe limitations for septic systems.

(b) Buildings with basements may be installed on these soils. Adequate foundation drainage to a free flowing outlet should be provided.

(c) Erodibility on these soils is high, and erosion may be a problem on all slopes. Final cuts and fills should not be steeper than four to one (4:1) due to cut slope slippage.

GROUP VI - Somewhat poorly drained silts, clays and very fine sands that are wet, nearly level to gently sloping

(1) Characteristics. The soils in this group are somewhat poorly drained and are formed in lake-laid clay and silt. These soils have a moderately low bearing capacity. Slopes are zero (0) to eight percent (8%). These soils range from very fine sands through silty clay loam texture. Permeability is slow to very slow. The seasonal high water table is one-half to one and one-half (1/2 to 1 1/2) feet. Bedrock is generally six (6) feet plus. Soils in this group are: DgB, OaA, RhA, RkA and RkB.

(2) Use guidelines.

(a) There are very severe limitations for septic systems on these soils.

(b) These soils have very severe limitations for homesites with basements due to underground seepage and lack of adequate outlet for foundation drainage. Wet basements and caving walls are potential problems.

(c) Erodibility on these soils is high. Final cuts and fill slopes should be steeper than four to one (4:1).

GROUP VII - Somewhat poorly drained silts, clays and very fine sands that are wet and sloping.

(1) Characteristics. The soils in this group are somewhat poorly drained and formed in lake-laid clay and silt and have a clay pan at six to eight (6 to 8) inches. These soils have a moderately low bearing capacity. Slopes are six percent (6%) to twelve percent (12%). These soils range from very fine sands through silty clay loam texture. Permeability is slow to very slow. The seasonal high water table is one-half to one and one-half (1/2 to 1 1/2) feet. Bedrock is generally six (6) feet plus. Soils included in this group are: OcC3 and RnC3.

(2) Use guidelines.

(a) There are severe limitations for septic systems on these soils.

(b) These soils have very severe limitations for homesites with basements due to underground seepage and lack of adequate outlet for foundation drainage. Wet basements and caving walls are potential problems.

(c) Erodibility on these soils is higher than in Group VI. Final cut and fill slopes should be steeper than four to one (4:1).

GROUP VIII - Somewhat poorly, nearly level or gently sloping in glacial till.

(1) Characteristics. The soils in this group have a seasonal high water table at zero (0) to one-half (1/2) foot. These soils are located in flat to gently undulating landscape. Permeability is very slow. A surface seep condition is very evident during the wetter periods of the year. Slope ranges from zero (0) to eight percent (8%). Deep cuts may encounter an occasional ledge of bedrock. Soils included in this group are: EbB, ErA, IcB, TeA and OrA.

(2) Use guidelines.

(a) These soils have severe limitations for septic systems.

(b) These soils have severe drainage problems for basements due to surface water seepage into basements. Diverting roof water and grading fill away from the building is highly recommended.

[1] Foundation drains should be installed below footings and vented to a free flowing outlet. Sump pumps may be needed where free flowing foundation drains cannot be installed.

GROUP IX - Well to somewhat poorly drained medium textured materials.

(1) Characteristics. These soils are in areas where bedrock is within three or four (3 or 4) feet of the soil surface. Some areas have a slight seasonal surface wetness. Permeability of the soil material is moderately slow. Some of the rock can be excavated but blasting may be required, especially in deep cuts. Soils included in this group are: LnC, LtB, OrB and OrC.

(2) Use guidelines.

(a) There are severe limitations for septic systems on these soils due to shallow depth to bedrock.

(b) Depth of bedrock may limit basement construction.

(c) Erodibility on these soils is low to medium.

GROUP X - Poorly drained soils that are subject to ponding and/or flooding, nearly level.

(1) Characteristics. These soils are deep, nearly level and generally found in wet depressions or along drainageways. During the wetter seasons ponding is common and some areas are subject to flooding. Permeability is moderate though very slow. Slope ranges are from zero (0) to three percent (3%). Soils included in this group are: Ab, Ws, Em, EcA, Ha, Hc and Wm.

(2) Use guidelines.

(a) Generally these soils are too wet to use, and serve as water retention areas and watercourses. Building in this area is discouraged.

GROUP XI - Well drained to moderately well drained medium textured material with bedrock at the surface or within twenty (20) inches, moderately steep to steep.

(1) Characteristics. Generally these are the soils with slopes in excess of twenty-five percent (25%) grades. In some areas it is gorge-like. Usually rock is within three or four (3 or 4) feet of the soil surface. Soils included in this group are: LtC, LoF and Ro.

(2) Use guidelines.

(a) Generally these soils are too steep to use, and should remain in their natural cover to prevent excessive erosion. Building in this area is discouraged.

H. Table of Soils Groups. The Table of Soils Groups shall be as follows:

**Table of Soils Groups  
Village of Lansing  
Tompkins County**

- I. Well drained sand and gravel 0 to 15%; A, B (276L-1)
- II. Well drained with fragipan 5 to 15%; A, B (227LF)
- III. Moderately well drained with fragipan or basal till 2 to 8%; A, B (266FL)
- IV. Moderately well drained silt and clays 0 to 6%; B, C (366FL)
- V. Moderately well drained silt and clays 6 to 20%; D, E (213LF)
- VI. Somewhat poorly drained silt and clays 0 to 8%; D, E (254LF)
- VII. Somewhat poorly drained silt and clays 6 to 12%; D, F (258LF) VIII. Somewhat poorly drained in glacial till 0 to 8%; B, C (208LF)
- IX. Well to somewhat poorly drained over rock 0 to 15%; B, F (299L7F)
- X. Poorly drained, some flooding 0 to 3%; F, G (265LF)
- XI. Well to moderately well drained over rock 0 to 70%; F, G (293LF)
- A. Septic systems permitted, specific design site investigation needed.
- B. Buildings permitted, foundation drains required.
- C. Septic systems permitted if it can be proven that limitations have been overcome.
- D. Buildings not permitted without proof that problems can be solved.
- E. Septic systems should not be permitted, but in cases where problems are solved, septic systems may be approved [in most cases, for one (1) lot].
- F. Septic systems should not be permitted.
- G. Buildings should not be permitted

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**[1]** Editor's Note: Amended at time of adoption of Code; see Ch. 1, General Provisions, Art. I.

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