Soil Features
Baraga County Area, Michigan

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

| Map symbol and soil name | Restrictive layer | | | | Subsidence | | Potential for frost action | Risk of corrosion | |
|---|---|---|---|---|---|---|---|---|---|
| | Kind | Depth to top | Thickness | Hardness | Initial | Total | | Uncoated steel | Concrete |
| | | In | In | | In | In | | | |
| 10B: | | | | | | | | | |
| Watton | --- | --- | --- | --- | 0 | --- | Moderate | Moderate | Low |
| 10D: | | | | | | | | | |
| Watton | --- | --- | --- | --- | 0 | --- | Moderate | Moderate | Low |
| 11A: | | | | | | | | | |
| Alstad | --- | --- | --- | --- | 0 | --- | High | Moderate | Moderate |
| 12: | | | | | | | | | |
| Alstad Variant | --- | --- | --- | --- | 0 | --- | High | High | Low |
| 13B: | | | | | | | | | |
| Grayling | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| 13D: | | | | | | | | | |
| Grayling | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| 14B: | | | | | | | | | |
| Rubicon | --- | --- | --- | --- | 0 | --- | Low | Low | High |
| 14D: | | | | | | | | | |
| Rubicon | --- | --- | --- | --- | 0 | --- | Low | Low | High |
| 14E: | | | | | | | | | |
| Rubicon | --- | --- | --- | --- | 0 | --- | Low | Low | High |
| 14F: | | | | | | | | | |
| Rubicon | --- | --- | --- | --- | 0 | --- | Low | Low | High |
| 15B: | | | | | | | | | |
| Champion | --- | --- | --- | --- | 0 | --- | Moderate | Moderate | High |
| 15D: | | | | | | | | | |
| Champion | --- | --- | --- | --- | 0 | --- | Moderate | Moderate | High |
| 15E: | | | | | | | | | |
| Champion | --- | --- | --- | --- | 0 | --- | Moderate | Moderate | High |
| 16A: | | | | | | | | | |
| Croswell | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| 17A: | | | | | | | | | |
| Au Gres | --- | --- | --- | --- | 0 | --- | Moderate | Low | Moderate |
| 18: | | | | | | | | | |
| Kinross | --- | --- | --- | --- | 0 | --- | Moderate | High | Moderate |
| 19: | | | | | | | | | |
| Dawson | --- | --- | --- | --- | 0 | 30-36 | High | High | High |
| Greenwood | --- | --- | --- | --- | 0 | --- | High | High | High |
| 20: | | | | | | | | | |
| Carbondale | --- | --- | --- | --- | 6-18 | 43-54 | High | High | Moderate |
| Tacoosh | --- | --- | --- | --- | 4-20 | 9-29 | High | High | Moderate |
| 21B: | | | | | | | | | |
| Allouez | --- | --- | --- | --- | 0 | --- | Low | Low | High |
| 23B: | | | | | | | | | |
| Munising | --- | --- | --- | --- | 0 | --- | Moderate | Low | High |
| Yalmer | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |

Soil Features--Continued

| Map symbol and soil name | Restrictive layer | | | | Subsidence | | Potential for frost action | Risk of corrosion | |
|---|---|---|---|---|---|---|---|---|---|
| | Kind | Depth to top | Thickness | Hardness | Initial | Total | | Uncoated steel | Concrete |
| | | In | In | | In | In | | | |
| 23D: | | | | | | | | | |
| Munising | --- | --- | --- | --- | 0 | --- | Moderate | Low | High |
| Yalmer | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| 24B: | | | | | | | | | |
| Munising | --- | --- | --- | --- | 0 | --- | Moderate | Low | High |
| 24D: | | | | | | | | | |
| Munising | --- | --- | --- | --- | 0 | --- | Moderate | Low | High |
| 25A: | | | | | | | | | |
| Net | --- | --- | --- | --- | 0 | --- | High | Moderate | Moderate |
| 26: | | | | | | | | | |
| Witbeck | --- | --- | --- | --- | 0 | --- | High | High | Moderate |
| 27B: | | | | | | | | | |
| Munising | --- | --- | --- | --- | 0 | --- | Moderate | Low | High |
| 29D: | | | | | | | | | |
| Grayling | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| Kinross | --- | --- | --- | --- | 0 | --- | Moderate | High | Moderate |
| 30B: | | | | | | | | | |
| Kalkaska | --- | --- | --- | --- | 0 | --- | Low | Low | High |
| 30D: | | | | | | | | | |
| Kalkaska | --- | --- | --- | --- | 0 | --- | Low | Low | High |
| 30E: | | | | | | | | | |
| Kalkaska | --- | --- | --- | --- | 0 | --- | Low | Low | High |
| 30F: | | | | | | | | | |
| Kalkaska | --- | --- | --- | --- | 0 | --- | Low | Low | High |
| 31B: | | | | | | | | | |
| Kallio | --- | --- | --- | --- | 0 | --- | Moderate | Moderate | Moderate |
| 31D: | | | | | | | | | |
| Kallio | --- | --- | --- | --- | 0 | --- | Moderate | Moderate | Moderate |
| 32A: | | | | | | | | | |
| Kinross | --- | --- | --- | --- | 0 | --- | Moderate | High | Moderate |
| Croswell | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| 33: | | | | | | | | | |
| Histosols | --- | --- | --- | --- | 0 | --- | High | --- | --- |
| Aquents | --- | --- | --- | --- | 0 | --- | High | --- | --- |
| 34B: | | | | | | | | | |
| Ontonagon | --- | --- | --- | --- | 0 | --- | Moderate | High | Moderate |
| 35A: | | | | | | | | | |
| Rudyard | --- | --- | --- | --- | 0 | --- | Moderate | High | Low |
| 36A: | | | | | | | | | |
| Skanee | --- | --- | --- | --- | 0 | --- | High | Moderate | High |
| 37: | | | | | | | | | |
| Pickford | --- | --- | --- | --- | 0 | --- | Moderate | High | Low |
| 38B: | | | | | | | | | |
| Froberg | --- | --- | --- | --- | 0 | --- | Moderate | High | Moderate |
| 39B: | | | | | | | | | |

Soil Features--Continued

| Map symbol and soil name | Restrictive layer | | | | Subsidence | | Potential for frost action | Risk of corrosion | |
|---|---|---|---|---|---|---|---|---|---|
| | Kind | Depth to top | Thickness | Hardness | Initial | Total | | Uncoated steel | Concrete |
| | | In | In | | In | In | | | |
| Munising | --- | --- | --- | --- | 0 | --- | Moderate | Low | High |
| Skanee | --- | --- | --- | --- | 0 | --- | High | Moderate | High |
| 43A: | | | | | | | | | |
| Moquah | --- | --- | --- | --- | 0 | --- | Moderate | Moderate | Moderate |
| 44B: | | | | | | | | | |
| Michigamme | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | Moderate | Low | High |
| Rock Outcrop | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 44D: | | | | | | | | | |
| Michigamme | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | Moderate | Low | High |
| Rock Outcrop | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 44E: | | | | | | | | | |
| Michigamme | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | Moderate | Low | High |
| Rock Outcrop | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 44F: | | | | | | | | | |
| Michigamme | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | Moderate | Low | High |
| Rock Outcrop | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 47B: | | | | | | | | | |
| Yalmer | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| 48B: | | | | | | | | | |
| Rousseau | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| 49: | | | | | | | | | |
| Gay | --- | --- | --- | --- | 0 | --- | High | High | Moderate |
| 50B: | | | | | | | | | |
| Abbaye | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | Moderate | Low | Moderate |
| 50D: | | | | | | | | | |
| Abbaye | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | Moderate | Low | Moderate |
| 51A: | | | | | | | | | |
| Zeba | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | High | Moderate | Moderate |
| 52: | | | | | | | | | |
| Gay Variant | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | High | High | High |
| 53B: | | | | | | | | | |
| Onota Variant | Bedrock (lithic) | 10-20 | --- | --- | 0 | --- | Low | Low | High |
| 54B: | | | | | | | | | |
| Waiska | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| 54D: | | | | | | | | | |
| Waiska | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| 56A: | | | | | | | | | |
| Deerton Variant | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | Moderate | Low | High |
| 57A: | | | | | | | | | |
| Assinins | --- | --- | --- | --- | 0 | --- | High | Moderate | Moderate |
| Skanee | --- | --- | --- | --- | 0 | --- | High | Moderate | High |
| 59B: | | | | | | | | | |
| Amasa | --- | --- | --- | --- | 0 | --- | Moderate | Low | Moderate |
| 59D: | | | | | | | | | |

Soil Features--Continued

| Map symbol and soil name | Restrictive layer | | | | Subsidence | | Potential for frost action | Risk of corrosion | |
|---|---|---|---|---|---|---|---|---|---|
| | Kind | Depth to top | Thickness | Hardness | Initial | Total | | Uncoated steel | Concrete |
| | | In | In | | In | In | | | |
| Amasa | --- | --- | --- | --- | 0 | --- | Moderate | Low | Moderate |
| 59E: | | | | | | | | | |
| Amasa | --- | --- | --- | --- | 0 | --- | Moderate | Low | Moderate |
| 59F: | | | | | | | | | |
| Amasa | --- | --- | --- | --- | 0 | --- | Moderate | Low | Moderate |
| 60B: | | | | | | | | | |
| Fence | --- | --- | --- | --- | 0 | --- | High | Low | High |
| 61B: | | | | | | | | | |
| Ishpeming | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | Low | Low | High |
| 61D: | | | | | | | | | |
| Ishpeming | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | Low | Low | High |
| 62: | | | | | | | | | |
| Beaches | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 64: | | | | | | | | | |
| Pits | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 65B: | | | | | | | | | |
| Ocqueoc | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| 66B: | | | | | | | | | |
| Champion | --- | --- | --- | --- | 0 | --- | Moderate | Moderate | High |
| Net | --- | --- | --- | --- | 0 | --- | High | Moderate | Moderate |
| 67: | | | | | | | | | |
| Witbeck | --- | --- | --- | --- | 0 | --- | High | High | Moderate |
| Tacoosh | --- | --- | --- | --- | 4-20 | 9-29 | High | High | Moderate |
| 68B: | | | | | | | | | |
| Amasa | --- | --- | --- | --- | 0 | --- | Moderate | Low | Moderate |
| 68D: | | | | | | | | | |
| Amasa | --- | --- | --- | --- | 0 | --- | Moderate | Low | Moderate |
| 69E: | | | | | | | | | |
| Yalmer | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| Munising | --- | --- | --- | --- | 0 | --- | Moderate | Low | High |
| 69F: | | | | | | | | | |
| Yalmer | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| Munising | --- | --- | --- | --- | 0 | --- | Moderate | Low | High |
| 70: | | | | | | | | | |
| Winterfield | --- | --- | --- | --- | 0 | --- | Moderate | Low | Low |
| 71A: | | | | | | | | | |
| Pelkie | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| 72: | | | | | | | | | |
| Sturgeon | --- | --- | --- | --- | 0 | --- | High | Moderate | Moderate |
| 73: | | | | | | | | | |
| Arnheim | --- | --- | --- | --- | 0 | --- | High | High | Moderate |
| 74B: | | | | | | | | | |
| Waiska Variant | --- | --- | --- | --- | 0 | --- | Low | Low | High |
| 75D: | | | | | | | | | |
| Fence | --- | --- | --- | --- | 0 | --- | High | Low | High |

Soil Features--Continued

| Map symbol and soil name | Restrictive layer | | | | Subsidence | | Potential for frost action | Risk of corrosion | |
|---|---|---|---|---|---|---|---|---|---|
| | Kind | Depth to top | Thickness | Hardness | Initial | Total | | Uncoated steel | Concrete |
| | | In | In | | In | In | | | |
| 76A: | | | | | | | | | |
| Allendale | --- | --- | --- | --- | 0 | --- | Moderate | High | Moderate |
| 77A: | | | | | | | | | |
| Udipsamments | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| Udorthents | --- | --- | --- | --- | 0 | --- | --- | --- | --- |
| 78B: | | | | | | | | | |
| Champion | --- | --- | --- | --- | 0 | --- | Moderate | Moderate | High |
| Michigamme | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | Moderate | Low | High |
| 78D: | | | | | | | | | |
| Champion | --- | --- | --- | --- | 0 | --- | Moderate | Moderate | High |
| Michigamme | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | Moderate | Low | High |
| 78E: | | | | | | | | | |
| Champion | --- | --- | --- | --- | 0 | --- | Moderate | Moderate | High |
| Michigamme | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | Moderate | Low | High |
| 79B: | | | | | | | | | |
| Nunica | --- | --- | --- | --- | 0 | --- | High | Moderate | Low |
| 79D: | | | | | | | | | |
| Nunica | --- | --- | --- | --- | 0 | --- | High | Moderate | Low |
| 80A: | | | | | | | | | |
| Bowers | --- | --- | --- | --- | 0 | --- | High | High | Low |
| 81A: | | | | | | | | | |
| Burt Variant | Bedrock (lithic) | 10-20 | --- | --- | 0 | --- | Low | Low | High |
| 82: | | | | | | | | | |
| Roscommon Variant | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | Moderate | High | High |
| 83E: | | | | | | | | | |
| Nunica | --- | --- | --- | --- | 0 | --- | High | Moderate | Low |
| Ontonagon | --- | --- | --- | --- | 0 | --- | Moderate | High | Moderate |
| 84A: | | | | | | | | | |
| Channing | --- | --- | --- | --- | 0 | --- | High | Moderate | Moderate |
| 86A: | | | | | | | | | |
| Net | --- | --- | --- | --- | 0 | --- | High | Moderate | Moderate |
| Witbeck | --- | --- | --- | --- | 0 | --- | High | High | Moderate |
| 87A: | | | | | | | | | |
| Skanee | --- | --- | --- | --- | 0 | --- | High | Moderate | High |
| Gay | --- | --- | --- | --- | 0 | --- | High | High | Moderate |
| 88B: | | | | | | | | | |
| Munising | --- | --- | --- | --- | 0 | --- | Moderate | Low | High |
| Yyalmeralmer | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| 88D: | | | | | | | | | |
| Munising | --- | --- | --- | --- | 0 | --- | Moderate | Low | High |
| Yalmer | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| 88E: | | | | | | | | | |
| Yalmer | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |

Soil Features--Continued

| Map symbol and soil name | Restrictive layer | | | | Subsidence | | Potential for frost action | Risk of corrosion | |
|---|---|---|---|---|---|---|---|---|---|
| | Kind | Depth to top | Thickness | Hardness | Initial | Total | | Uncoated steel | Concrete |
| | | In | In | | In | In | | | |
| Munising | --- | --- | --- | --- | 0 | --- | Moderate | Low | High |
| 91B: | | | | | | | | | |
| Keweenaw | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| Kalkaska | --- | --- | --- | --- | 0 | --- | Low | Low | High |
| 91D: | | | | | | | | | |
| Keweenaw | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| Kalkaska | --- | --- | --- | --- | 0 | --- | Low | Low | High |
| 91E: | | | | | | | | | |
| Keweenaw | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| Kalkaska | --- | --- | --- | --- | 0 | --- | Low | Low | High |
| 92B: | | | | | | | | | |
| Keweenaw | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| Kalkaska | --- | --- | --- | --- | 0 | --- | Low | Low | High |
| 92D: | | | | | | | | | |
| Keweenaw | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| Kalkaska | --- | --- | --- | --- | 0 | --- | Low | Low | High |
| 92E: | | | | | | | | | |
| Keweenaw | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| Kalkaska | --- | --- | --- | --- | 0 | --- | Low | Low | High |
| 93B: | | | | | | | | | |
| Deerton | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | Low | Low | High |
| Abbaye | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | Moderate | Low | Moderate |
| 93D: | | | | | | | | | |
| Deerton | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | Low | Low | High |
| Abbaye | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | Moderate | Low | Moderate |
| 94B: | | | | | | | | | |
| Deerton | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | Low | Low | High |
| 95B: | | | | | | | | | |
| Amasa | --- | --- | --- | --- | 0 | --- | Moderate | Low | Moderate |
| 95D: | | | | | | | | | |
| Amasa | --- | --- | --- | --- | 0 | --- | Moderate | Low | Moderate |
| 96A: | | | | | | | | | |
| Richter Variant | --- | --- | --- | --- | 0 | --- | High | Moderate | Moderate |
| 98A: | | | | | | | | | |
| Burt Variant | Bedrock (lithic) | 10-20 | --- | --- | 0 | --- | Low | Low | High |
| Burt | Bedrock (lithic) | 10-20 | --- | --- | 0 | --- | Moderate | High | High |
| 99B: | | | | | | | | | |
| Rubicon | --- | --- | --- | --- | 0 | --- | Low | Low | High |
| Rousseau | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| Ocqueoc | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| 99D: | | | | | | | | | |
| Rubicon | --- | --- | --- | --- | 0 | --- | Low | Low | High |

Soil Features--Continued

| Map symbol and soil name | Restrictive layer | | | | Subsidence | | Potential for frost action | Risk of corrosion | |
|---|---|---|---|---|---|---|---|---|---|
| | Kind | Depth to top | Thickness | Hardness | Initial | Total | | Uncoated steel | Concrete |
| | | In | In | | In | In | | | |
| Rousseau | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| Ocqueoc | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| 100B: | | | | | | | | | |
| Amasa | --- | --- | --- | --- | 0 | --- | Moderate | Low | Moderate |
| 100D: | | | | | | | | | |
| Amasa | --- | --- | --- | --- | 0 | --- | Moderate | Low | Moderate |
| 100E: | | | | | | | | | |
| Amasa | --- | --- | --- | --- | 0 | --- | Moderate | Low | Moderate |
| 101E: | | | | | | | | | |
| Peshekee | Bedrock (lithic) | 10-20 | --- | --- | 0 | --- | Moderate | Low | High |
| Rock Outcrop | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 101F: | | | | | | | | | |
| Peshekee | Bedrock (lithic) | 10-20 | --- | --- | 0 | --- | Moderate | Low | High |
| Rock Outcrop | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 102A: | | | | | | | | | |
| Channing | --- | --- | --- | --- | 0 | --- | High | Moderate | Moderate |
| 105: | | | | | | | | | |
| Pits | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dumps | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 106B: | | | | | | | | | |
| Yalmer | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| 107F: | | | | | | | | | |
| Rousseau | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| Ocqueoc | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| 108B: | | | | | | | | | |
| Champion | --- | --- | --- | --- | 0 | --- | Moderate | Moderate | High |
| Net | --- | --- | --- | --- | 0 | --- | High | Moderate | Moderate |
| Michigamme | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | Moderate | Low | High |
| 109F: | | | | | | | | | |
| Rousseau | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| Fence | --- | --- | --- | --- | 0 | --- | High | Low | High |
| Ocqueoc | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| 110E: | | | | | | | | | |
| Ishpeming | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | Low | Low | High |
| Rock Outcrop | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 111B: | | | | | | | | | |
| Yalmer | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| Assinins | --- | --- | --- | --- | 0 | --- | High | Moderate | Moderate |
| 112A: | | | | | | | | | |
| Assinins | --- | --- | --- | --- | 0 | --- | High | Moderate | Moderate |
| 113B: | | | | | | | | | |
| Petticoat | --- | --- | --- | --- | 0 | --- | Moderate | Low | Moderate |
| 113D: | | | | | | | | | |

Soil Features--Continued

| Map symbol and soil name | Restrictive layer | | | | Subsidence | | Potential for frost action | Risk of corrosion | |
|---|---|---|---|---|---|---|---|---|---|
| | Kind | Depth to top | Thickness | Hardness | Initial | Total | | Uncoated steel | Concrete |
| | | In | In | | In | In | | | |
| Petticoat | --- | --- | --- | --- | 0 | --- | Moderate | Low | Moderate |
| 114B: | | | | | | | | | |
| Peshekee Variant | Bedrock (lithic) | 10-20 | --- | --- | 0 | --- | Moderate | Low | Moderate |
| 114E: | | | | | | | | | |
| Peshekee Variant | Bedrock (lithic) | 10-20 | --- | --- | 0 | --- | Moderate | Low | Moderate |
| 115D: | | | | | | | | | |
| Munising | --- | --- | --- | --- | 0 | --- | Moderate | Low | High |
| Michigamme | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | Moderate | Low | High |
| 115E: | | | | | | | | | |
| Munising | --- | --- | --- | --- | 0 | --- | Moderate | Low | High |
| Michigamme | Bedrock (lithic) | 20-40 | --- | --- | 0 | --- | Moderate | Low | High |
| 116F: | | | | | | | | | |
| Udorthents | --- | --- | --- | --- | 0 | --- | --- | --- | --- |
| Udipsamments | --- | --- | --- | --- | 0 | --- | Low | Low | Moderate |
| W: | | | | | | | | | |
| Water | --- | --- | --- | --- | --- | --- | --- | --- | --- |

Soil Features--Continued

ENDNOTE--SOIL FEATURES

This table gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A RESTRICTIVE LAYER is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. Depth to top is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

SUBSIDENCE is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinking or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

POTENTIAL FOR FROST ACTION is the likelihood of upward lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artifically drained. Silty and highly structured, clayey soils hat have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

RISK OF CORROSION pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfafe and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as low, moderate, or high is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete the risk of corrosion also is expressed as low, moderate, or high. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.