

## Table ENG-4. - Building Site Development

Botetourt County, Virginia

The information in this table indicates the dominant soil condition, but does not eliminate the need for onsite investigation. The numbers in the value column range from 0.01 to 1.00. The larger the value, the greater the potential limitation. Limiting features in this report are limited to the top 5 limitations. Additional limitations may exist.

Map Symbol and Soil Name	Pct of Map Unit	Local Roads and Streets		Shallow Excavations		Lawns and Landscaping	
		Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value
<b>1B:</b>							
Alonville	85	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Cutbanks cave	0.10		
		Frost action	0.50				
<b>1C:</b>							
Alonville	85	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.37	Slope	0.37
		Frost action	0.50	Cutbanks cave	0.10		
		Slope	0.37				
<b>2C:</b>							
Bailegap	85	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to hard bedrock	0.42	Slope	0.37
		Frost action	0.50	Slope	0.37		
		Slope	0.37	Cutbanks cave	0.10		
<b>3C:</b>							
Bailegap	85	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to hard bedrock	0.42	Content of large stones	0.99
		Frost action	0.50	Slope	0.37		
		Slope	0.37	Cutbanks cave	0.10	Slope	0.37
<b>3D:</b>							
Bailegap	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Depth to hard bedrock	0.42	Content of large stones	0.99
		Frost action	0.50	Cutbanks cave	0.10		
<b>3E:</b>							
Bailegap	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Depth to hard bedrock	0.42	Content of large stones	0.99
		Frost action	0.50	Cutbanks cave	0.10		
<b>4C:</b>							
Berks	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.37	Depth to soft bedrock	0.46	Droughty	0.95
				Slope	0.37	Depth to bedrock	0.46
				Cutbanks cave	0.10	Slope	0.37
Weikert	40	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Frost action	0.50	Slope	0.37	Droughty	1.00
		Slope	0.37	Cutbanks cave	0.10	Slope	0.37

4D:

**Table ENG-4. - Building Site Development - Continued**

Botetourt County, Virginia

Map Symbol and Soil Name	Pct of Map Unit	Local Roads and Streets		Shallow Excavations		Lawns and Landscaping	
		Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value
<b>4D:</b>							
Berks	45	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock Cutbanks cave	1.00 0.46 0.10	Very limited Slope Droughty Depth to bedrock	1.00 0.95 0.46
Weikert	40	Very limited Slope Depth to soft bedrock Frost action	1.00 1.00 0.50	Very limited Depth to soft bedrock Slope Cutbanks cave	1.00 1.00 0.10	Very limited Depth to bedrock Slope Droughty	1.00 1.00 1.00
<b>4E:</b>							
Berks	45	Very limited Slope	1.00	Very limited Slope Depth to soft bedrock Cutbanks cave	1.00 0.46 0.10	Very limited Slope Droughty Depth to bedrock	1.00 0.95 0.46
Weikert	40	Very limited Slope Depth to soft bedrock Frost action	1.00 1.00 0.50	Very limited Depth to soft bedrock Slope Cutbanks cave	1.00 1.00 0.10	Very limited Depth to bedrock Slope Droughty	1.00 1.00 1.00
<b>5B:</b>							
Botetourt	85	Very limited Frost action Low strength Flooding	1.00 1.00 0.40	Very limited Cutbanks cave Depth to saturated zone	1.00 1.00	Somewhat limited Depth to saturated zone	0.19
<b>6C:</b>							
Botetourt	85	Very limited Frost action Low strength Slope	1.00 1.00 0.37	Very limited Cutbanks cave Depth to saturated zone Slope	1.00 1.00 0.37	Somewhat limited Slope Depth to saturated zone	0.37 0.19
<b>7C:</b>							
Carbo	85	Very limited Low strength Shrink-swell Frost action	1.00 1.00 0.50	Very limited Depth to hard bedrock Too clayey Slope	1.00 1.00 0.37	Not Rated	
<b>7D:</b>							
Carbo	85	Very limited Slope Low strength Shrink-swell	1.00 1.00 1.00	Very limited Depth to hard bedrock Slope Too clayey	1.00 1.00 1.00	Not Rated	
<b>8C:</b>							

**Table ENG-4. - Building Site Development - Continued**

Botetourt County, Virginia

Map Symbol and Soil Name	Pct of Map Unit	Local Roads and Streets		Shallow Excavations		Lawns and Landscaping	
		Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value
<b>8C:</b>							
Carbo	35	Very limited		Very limited		Not Rated	
		Low strength	1.00	Depth to hard bedrock	1.00		
		Shrink-swell	1.00	Too clayey	1.00		
		Frost action	0.50	Cutbanks cave	0.10		
Opequon	30	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Low strength	1.00	Cutbanks cave	0.10	Droughty	0.76
		Shrink-swell	1.00	Slope	0.04	Slope	0.04
Rock outcrop	30	Not Rated		Not Rated		Not Rated	
<b>8E:</b>							
Carbo	35	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Low strength	1.00	Slope	1.00	Depth to bedrock	0.46
		Shrink-swell	1.00	Too clayey	1.00	Droughty	0.10
Opequon	30	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Cutbanks cave	0.10	Droughty	0.76
Rock outcrop	30	Not Rated		Not Rated		Not Rated	
<b>9C:</b>							
Chilhowie	85	Very limited		Very limited		Not Rated	
		Shrink-swell	1.00	Depth to hard bedrock	1.00		
		Low strength	1.00	Too clayey	1.00		
		Depth to hard bedrock	0.74	Slope	0.37		
<b>9D:</b>							
Chilhowie	85	Very limited		Very limited		Not Rated	
		Slope	1.00	Depth to hard bedrock	1.00		
		Shrink-swell	1.00	Slope	1.00		
		Low strength	1.00	Too clayey	1.00		
<b>10E:</b>							
Chilhowie	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Shrink-swell	1.00	Slope	1.00	Droughty	0.99
		Depth to hard bedrock	0.74	Too clayey	1.00	Depth to bedrock	0.74
<b>11C:</b>							
Chiswell	45	Somewhat limited		Very limited		Very limited	
		Depth to soft bedrock	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Frost action	0.50	Slope	0.37	Droughty	1.00
		Slope	0.37	Cutbanks cave	0.10	Slope	0.37

**Table ENG-4. - Building Site Development - Continued**

Botetourt County, Virginia

Map Symbol and Soil Name	Pct of Map Unit	Local Roads and Streets		Shallow Excavations		Lawns and Landscaping	
		Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value
11C:							
Groseclose	25	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.37	Slope	0.37
		Shrink-swell	1.00	Too clayey	0.28	Gravel content	<0.01
		Frost action	0.50	Cutbanks cave	0.10		
11D:							
Chiswell	45	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	1.00
Groseclose	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	0.28	Gravel content	<0.01
		Shrink-swell	1.00	Cutbanks cave	0.10		
11E:							
Chiswell	45	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	1.00
Groseclose	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	0.28	Gravel content	<0.01
		Shrink-swell	1.00	Cutbanks cave	0.10		
12C:							
Dekalb	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Content of large stones	0.84
		Slope	0.04	Cutbanks cave	0.10	Droughty	0.69
				Slope	0.04	Depth to bedrock	0.46
12D:							
Dekalb	80	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	1.00	Content of large stones	0.84
				Cutbanks cave	0.10	Droughty	0.69
12E:							
Dekalb	80	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	1.00	Content of large stones	0.84
				Cutbanks cave	0.10	Droughty	0.69
13E:							

**Table ENG-4. - Building Site Development - Continued**

Botetourt County, Virginia

Map Symbol and Soil Name	Pct of Map Unit	Local Roads and Streets		Shallow Excavations		Lawns and Landscaping	
		Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value
<b>13E:</b>							
Dekalb	40	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	1.00	Content of large stones	0.84
				Cutbanks cave	0.10	Droughty	0.69
Rock outcrop	40	Not Rated		Not Rated		Not Rated	
<b>13F:</b>							
Dekalb	40	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	1.00	Content of large stones	0.84
				Cutbanks cave	0.10	Droughty	0.69
Rock outcrop	40	Not Rated		Not Rated		Not Rated	
<b>14A:</b>							
Derroc	85	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Content of large stones	0.92	Content of large stones	0.99
		Content of large stones	0.92	Flooding	0.60	Flooding	0.60
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.35
<b>15A:</b>							
Derroc	75	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Content of large stones	0.99	Flooding	1.00
		Content of large stones	0.99	Flooding	0.80	Content of large stones	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.35
<b>16C:</b>							
Edneytown	85	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Cutbanks cave	0.10	Slope	0.04
		Frost action	0.50	Slope	0.04		
		Slope	0.04				
<b>16D:</b>							
Edneytown	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Cutbanks cave	0.10		
		Frost action	0.50				
<b>16E:</b>							
Edneytown	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Cutbanks cave	0.10		
		Frost action	0.50				

17B:

**Table ENG-4. - Building Site Development - Continued**

Botetourt County, Virginia

Map Symbol and Soil Name	Pct of Map Unit	Local Roads and Streets		Shallow Excavations		Lawns and Landscaping	
		Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value
17B:							
Ernest	80	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to thick cemented pan	1.00	Depth to cemented pan	0.74
		Depth to thick cemented pan	0.74	Depth to saturated zone	1.00	Depth to saturated zone	0.03
		Shrink-swell	0.50	Cutbanks cave	0.10	Content of large stones	<0.01
Wet spots	3	Not Rated		Not Rated		Not Rated	
17C:							
Ernest	85	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to thick cemented pan	1.00	Depth to cemented pan	0.74
		Depth to thick cemented pan	0.74	Depth to saturated zone	1.00	Slope	0.37
		Shrink-swell	0.50	Slope	0.37	Depth to saturated zone	0.03
Wet spots	3	Not Rated		Not Rated		Not Rated	
18C:							
Ernest	85	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to thick cemented pan	1.00	Depth to cemented pan	0.74
		Depth to thick cemented pan	0.74	Depth to saturated zone	1.00	Content of large stones	0.32
		Shrink-swell	0.50	Cutbanks cave	0.10	Depth to saturated zone	0.03
Wet spots	3	Not Rated		Not Rated		Not Rated	
19B:							
Flatwoods	85	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Depth to bedrock	0.46
		Shrink-swell	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.03
		Frost action	0.50	Too clayey	0.72		
19C:							
Flatwoods	80	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to hard bedrock	1.00	Depth to bedrock	0.46
		Shrink-swell	0.50	Depth to saturated zone	1.00	Slope	0.37
		Frost action	0.50	Too clayey	0.72	Depth to saturated zone	0.03
20B:							
Frederick	90	Very limited		Very limited		Not limited	
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
20C:							

### Table ENG-4. - Building Site Development - Continued

Botetourt County, Virginia

Map Symbol and Soil Name	Pct of Map Unit	Local Roads and Streets		Shallow Excavations		Lawns and Landscaping	
		Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value
<b>20C:</b>							
Frederick	90	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Too clayey	1.00	Slope	0.37
		Shrink-swell	0.50	Slope	0.37		
		Frost action	0.50	Cutbanks cave	0.10		
<b>20D:</b>							
Frederick	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		
<b>21C:</b>							
Frederick	85	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Too clayey	1.00	Slope	0.37
		Shrink-swell	1.00	Slope	0.37		
		Frost action	0.50	Cutbanks cave	0.10		
<b>21D:</b>							
Frederick	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	1.00	Cutbanks cave	0.10		
<b>22C:</b>							
Frederick	85	Very limited		Very limited		Not Rated	
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	0.50	Slope	0.37		
		Frost action	0.50	Cutbanks cave	0.10		
<b>22D:</b>							
Frederick	85	Very limited		Very limited		Not Rated	
		Slope	1.00	Slope	1.00		
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		
<b>22E:</b>							
Frederick	75	Very limited		Very limited		Not Rated	
		Slope	1.00	Slope	1.00		
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		
<b>23C:</b>							
Frederick	75	Very limited		Very limited		Very limited	
		Low strength	1.00	Too clayey	1.00	Gravel content	1.00
		Shrink-swell	0.50	Slope	0.37	Slope	0.37
		Frost action	0.50	Cutbanks cave	0.10	Content of large stones	0.03
<b>23D:</b>							

**Table ENG-4. - Building Site Development - Continued**

Botetourt County, Virginia

Map Symbol and Soil Name	Pct of Map Unit	Local Roads and Streets		Shallow Excavations		Lawns and Landscaping	
		Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value
23D:							
Frederick	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00	Gravel content	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10	Content of large stones	0.03
24C:							
Frederick	80	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Too clayey	1.00	Slope	0.37
		Shrink-swell	0.50	Slope	0.37		
		Frost action	0.50	Cutbanks cave	0.10		
24D:							
Frederick	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		
25C:							
Frederick	55	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Too clayey	1.00	Slope	0.04
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50	Slope	0.04		
Urban land	40	Not Rated		Not Rated		Not Rated	
25D:							
Frederick	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		
Urban land	40	Not Rated		Not Rated		Not Rated	
26C:							
Gilpin	85	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.46	Depth to bedrock	0.46
		Frost action	0.50	Slope	0.37	Slope	0.37
		Slope	0.37	Cutbanks cave	0.10		
27A:							
Gladehill	80	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Frost action	0.50	Cutbanks cave	0.10		
28B:							

## Table ENG-4. - Building Site Development - Continued

Botetourt County, Virginia

Map Symbol and Soil Name	Pct of Map Unit	Local Roads and Streets		Shallow Excavations		Lawns and Landscaping	
		Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value
<b>28B:</b>							
Groseclose	80	Very limited		Somewhat limited		Not limited	
		Low strength	1.00	Too clayey	0.28		
		Shrink-swell	1.00	Cutbanks cave	0.10		
		Frost action	0.50				
<b>28C:</b>							
Groseclose	80	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.37	Slope	0.37
		Shrink-swell	1.00	Too clayey	0.28		
		Frost action	0.50	Cutbanks cave	0.10		
<b>28D:</b>							
Groseclose	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	0.28		
		Shrink-swell	1.00	Cutbanks cave	0.10		
<b>29C:</b>							
Groseclose	80	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.37	Slope	0.37
		Shrink-swell	1.00	Too clayey	0.28		
		Frost action	0.50	Cutbanks cave	0.10		
<b>29D:</b>							
Groseclose	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	0.28		
		Shrink-swell	1.00	Cutbanks cave	0.10		
<b>30C:</b>							
Groseclose	50	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Slope	0.37	Slope	0.37
		Shrink-swell	1.00	Too clayey	0.28		
		Frost action	0.50	Cutbanks cave	0.10		
<b>Litz</b>							
	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Depth to soft bedrock	0.46	Depth to bedrock	0.46
		Slope	0.37	Slope	0.37	Slope	0.37
				Cutbanks cave	0.10	Content of large stones	0.26
<b>30D:</b>							
Groseclose	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	0.28		
		Shrink-swell	1.00	Cutbanks cave	0.10		

**Table ENG-4. - Building Site Development - Continued**

Botetourt County, Virginia

Map Symbol and Soil Name	Pct of Map Unit	Local Roads and Streets		Shallow Excavations		Lawns and Landscaping	
		Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value
30D:							
Litz	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Depth to soft bedrock	0.46	Depth to bedrock	0.46
				Cutbanks cave	0.10	Content of large stones	0.26
30E:							
Groseclose	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Too clayey	0.28		
		Shrink-swell	1.00	Cutbanks cave	0.10		
Litz	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Depth to soft bedrock	0.46	Depth to bedrock	0.46
				Cutbanks cave	0.10	Content of large stones	0.26
31C:							
Hayesville	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Slope	0.37	Slope	0.37
		Slope	0.37	Too clayey	0.13		
		Low strength	<0.01	Cutbanks cave	0.10		
31D:							
Hayesville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Too clayey	0.13		
		Low strength	<0.01	Cutbanks cave	0.10		
32A:							
Irongate	85	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	0.60
		Frost action	0.50			Depth to saturated zone	0.03
		Depth to saturated zone	0.03	Flooding	0.60		
				Cutbanks cave	0.10		
33B:							
Laidig	85	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to thick cemented pan	1.00	Depth to cemented pan	0.29
		Depth to thick cemented pan	0.29	Depth to saturated zone	0.90	Droughty	0.25
				Cutbanks cave	0.10		
33C:							

## Table ENG-4. - Building Site Development - Continued

Botetourt County, Virginia

Map Symbol and Soil Name	Pct of Map Unit	Local Roads and Streets		Shallow Excavations		Lawns and Landscaping	
		Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value
<b>33C:</b>							
Laidig	85	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to thick cemented pan	1.00	Slope	0.37
		Slope	0.37	Depth to saturated zone	0.90	Depth to cemented pan	0.29
		Depth to thick cemented pan	0.29	Slope	0.37	Droughty	0.25
<b>34B:</b>							
Laidig	80	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to thick cemented pan	1.00	Depth to cemented pan	0.29
		Depth to thick cemented pan	0.29	Depth to saturated zone	0.90	Droughty	0.21
				Cutbanks cave	0.10	Content of large stones	0.08
<b>34C:</b>							
Laidig	80	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to thick cemented pan	1.00	Slope	0.37
		Slope	0.37	Depth to saturated zone	0.90	Depth to cemented pan	0.29
		Depth to thick cemented pan	0.29	Slope	0.37	Droughty	0.21
<b>34D:</b>							
Laidig	80	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to thick cemented pan	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to cemented pan	0.29
		Depth to thick cemented pan	0.29	Depth to saturated zone	0.90	Droughty	0.21
<b>35C:</b>							
Laidig	80	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to thick cemented pan	1.00	Depth to cemented pan	0.29
		Depth to thick cemented pan	0.29	Depth to saturated zone	0.90	Droughty	0.21
		Slope	0.04	Cutbanks cave	0.10	Content of large stones	0.08
<b>35D:</b>							
Laidig	75	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to thick cemented pan	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to cemented pan	0.29
		Depth to thick cemented pan	0.29	Depth to saturated zone	0.90	Droughty	0.21
<b>35E:</b>							

**Table ENG-4. - Building Site Development - Continued**

Botetourt County, Virginia

Map Symbol and Soil Name	Pct of Map Unit	Local Roads and Streets		Shallow Excavations		Lawns and Landscaping	
		Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value
<b>35E:</b>							
Laidig	75	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to thick cemented pan	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to cemented pan	0.29
		Depth to thick cemented pan	0.29	Depth to saturated zone	0.90	Droughty	0.21
<b>36D:</b>							
Lehew	45	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.35	Slope	1.00	Content of large stones	1.00
		Content of large stones	0.05	Cutbanks cave	0.10	Droughty	0.80
Dekalb	35	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	1.00	Content of large stones	0.84
				Cutbanks cave	0.10	Droughty	0.69
<b>36E:</b>							
Lehew	40	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.35	Slope	1.00	Content of large stones	1.00
		Content of large stones	0.05	Cutbanks cave	0.10	Droughty	0.80
Dekalb	35	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	1.00	Content of large stones	0.84
				Cutbanks cave	0.10	Droughty	0.69
<b>37C:</b>							
Lily	80	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	1.00	Depth to bedrock	0.46
		Depth to hard bedrock	0.46	Cutbanks cave	1.00	Content of large stones	0.20
		Slope	0.04	Slope	0.04	Slope	0.04
<b>37D:</b>							
Lily	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.46
		Depth to hard bedrock	0.46	Cutbanks cave	1.00	Content of large stones	0.20
<b>37E:</b>							

**Table ENG-4. - Building Site Development - Continued**

Botetourt County, Virginia

Map Symbol and Soil Name	Pct of Map Unit	Local Roads and Streets		Shallow Excavations		Lawns and Landscaping	
		Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value
37E:							
Lily	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.46
		Depth to hard bedrock	0.46	Cutbanks cave	1.00	Content of large stones	0.20
38A:							
Lindsay	80	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Flooding	0.60
		Flooding	1.00	Flooding	0.60	Depth to saturated zone	0.03
		Low strength	0.78	Cutbanks cave	0.10		
39A:							
Massanetta	80	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.99	Flooding	0.60
		Low strength	1.00	Flooding	0.60		
		Frost action	0.50	Cutbanks cave	0.10		
40B:							
Moomaw	80	Very limited		Very limited		Not Rated	
		Low strength	1.00	Depth to thick cemented pan	1.00		
		Content of large stones	1.00	Depth to saturated zone	1.00		
		Depth to thick cemented pan	0.99	Content of large stones	1.00		
40C:							
Moomaw	80	Very limited		Very limited		Not Rated	
		Low strength	1.00	Depth to thick cemented pan	1.00		
		Content of large stones	1.00	Depth to saturated zone	1.00		
		Depth to thick cemented pan	0.99	Content of large stones	1.00		
41C:							
Oriskany	85	Very limited		Very limited		Very limited	
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
		Low strength	1.00	Cutbanks cave	0.10	Droughty	0.27
		Frost action	0.50	Slope	0.04	Slope	0.04
41D:							
Oriskany	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
		Low strength	1.00	Cutbanks cave	0.10	Droughty	0.27

## Table ENG-4. - Building Site Development - Continued

Botetourt County, Virginia

Map Symbol and Soil Name	Pct of Map Unit	Local Roads and Streets		Shallow Excavations		Lawns and Landscaping	
		Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value
<b>42E:</b>							
Oriskany	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Content of large stones	1.00	Content of large stones	1.00	Content of large stones	1.00
		Low strength	1.00	Cutbanks cave	0.10	Droughty	0.27
<b>43E:</b>							
Peaks	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10	Droughty	1.00
						Content of large stones	0.32
<b>43F:</b>							
Peaks	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	0.10	Droughty	1.00
						Content of large stones	0.32
<b>44:</b>							
Pits	85	Not Rated		Not Rated		Not Rated	
<b>45A:</b>							
Purdy	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		
		Low strength	1.00	Too clayey	0.03		
<b>46F:</b>							
Rock outcrop	60	Not Rated		Not Rated		Not Rated	
<b>Opequon</b>							
	25	Very limited		Very limited		Very limited	
		Depth to hard bedrock	1.00	Depth to hard bedrock	1.00	Depth to bedrock	1.00
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Cutbanks cave	0.10	Droughty	0.76
<b>47C:</b>							
Rushtown	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Cutbanks cave	0.10	Gravel content	1.00
				Slope	0.04	Droughty	0.04
						Slope	0.04
<b>48C:</b>							
Sequoia	85	Very limited		Somewhat limited		Somewhat limited	
		Low strength	1.00	Depth to soft bedrock	0.46	Depth to bedrock	0.46
		Shrink-swell	0.50	Slope	0.37	Slope	0.37
		Slope	0.37	Too clayey	0.28		

## Table ENG-4. - Building Site Development - Continued

Botetourt County, Virginia

Map Symbol and Soil Name	Pct of Map Unit	Local Roads and Streets		Shallow Excavations		Lawns and Landscaping	
		Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value
48D:							
Sequoia	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Depth to soft bedrock	0.46	Depth to bedrock	0.46
		Shrink-swell	0.50	Too clayey	0.28		
49C:							
Shelocta	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.37	Depth to hard bedrock	1.00	Slope	0.37
				Slope	0.37	Gravel content	0.04
				Cutbanks cave	0.10	Content of large stones	<0.01
49D:							
Shelocta	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to hard bedrock	1.00	Gravel content	0.04
				Cutbanks cave	0.10	Content of large stones	<0.01
50B:							
Shottower	80	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Too clayey	0.88		
		Frost action	0.50	Cutbanks cave	0.10		
		Low strength	<0.01				
50C:							
Shottower	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Too clayey	0.88	Slope	0.37
		Frost action	0.50	Slope	0.37		
		Slope	0.37	Cutbanks cave	0.10		
51C:							
Shottower	75	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Too clayey	0.88	Content of large stones	0.68
		Frost action	0.50	Slope	0.37		
		Slope	0.37	Cutbanks cave	0.10	Slope	0.37
51D:							
Shottower	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Too clayey	0.88	Content of large stones	0.68
		Frost action	0.50	Cutbanks cave	0.10		
52C:							
Thurmont	80	Not Rated		Not Rated		Not Rated	
52D:							
Thurmont	80	Not Rated		Not Rated		Not Rated	
53B:							

**Table ENG-4. - Building Site Development - Continued**

Botetourt County, Virginia

Map Symbol and Soil Name	Pct of Map Unit	Local Roads and Streets		Shallow Excavations		Lawns and Landscaping	
		Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value
53B:							
Timberville	80	Somewhat limited Frost action	0.50	Somewhat limited Too clayey Cutbanks cave	0.28 0.10	Not limited	
54A:							
Toms	85	Very limited Frost action Low strength Depth to saturated zone	1.00 1.00 1.00	Very limited Depth to saturated zone Too clayey Cutbanks cave	1.00 0.28 0.10	Very limited Depth to saturated zone	1.00
55B:							
Tumbling	85	Somewhat limited Frost action	0.50	Somewhat limited Too clayey Cutbanks cave	0.13 0.10	Not Rated	
55C:							
Tumbling	80	Somewhat limited Frost action Slope	0.50 0.37	Somewhat limited Slope Too clayey Cutbanks cave	0.37 0.13 0.10	Not Rated	
55D:							
Tumbling	80	Very limited Slope Frost action	1.00 0.50	Very limited Slope Too clayey Cutbanks cave	1.00 0.13 0.10	Not Rated	
56C:							
Tumbling	80	Somewhat limited Frost action Slope	0.50 0.37	Somewhat limited Slope Too clayey Cutbanks cave	0.37 0.13 0.10	Somewhat limited Content of large stones Slope	0.68 0.37
56D:							
Tumbling	75	Very limited Slope Frost action	1.00 0.50	Very limited Slope Too clayey Cutbanks cave	1.00 0.13 0.10	Very limited Slope Content of large stones	1.00 0.68
57C:							
Tumbling	80	Somewhat limited Frost action Slope	0.50 0.04	Somewhat limited Too clayey Cutbanks cave Slope	0.13 0.10 0.04	Somewhat limited Content of large stones Slope	0.68 0.04
57D:							

**Table ENG-4. - Building Site Development - Continued**

Botetourt County, Virginia

Map Symbol and Soil Name	Pct of Map Unit	Local Roads and Streets		Shallow Excavations		Lawns and Landscaping	
		Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value
57D:							
Tumbling	75	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Too clayey	0.13	Content of large stones	0.68
				Cutbanks cave	0.10		
58C:							
Tumbling	40	Somewhat limited		Somewhat limited		Not Rated	
		Frost action	0.50	Too clayey	0.13		
		Slope	0.04	Cutbanks cave	0.10		
				Slope	0.04		
Urban land	25	Not Rated		Not Rated		Not Rated	
59B:							
Tygart	85	Very limited		Very limited		Very limited	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50	Too clayey	0.08		
60:							
Udorhents	85	Not Rated		Not Rated		Not Rated	
61:							
Udorhents	60	Not Rated		Not Rated		Not Rated	
Urban land	40	Not Rated		Not Rated		Not Rated	
62F:							
Weikert	60	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to bedrock	1.00
		Depth to soft bedrock	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	1.00
Rock outcrop	25	Not Rated		Not Rated		Not Rated	
63A:							
Wolfgap	80	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
		Frost action	0.50	Flooding	0.60		
		Shrink-swell	<0.01				
64A:							
Wolfgap	85	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
		Flooding	0.40				
		Shrink-swell	<0.01				
64B:							

## Table ENG-4. - Building Site Development - Continued

Botetourt County, Virginia

Map Symbol and Soil Name	Pct of Map Unit	Local Roads and Streets		Shallow Excavations		Lawns and Landscaping	
		Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value	Rating Class and Limiting Features	Value
64B:							
Wolfgap	85	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
		Flooding	0.40				
		Shrink-swell	<0.01				
65B:							
Zoar	85	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.19
		Shrink-swell	0.78	Cutbanks cave	0.10		
		Frost action	0.50	Too clayey	0.05		
W:							
Water	100	Not Rated		Not Rated		Not Rated	