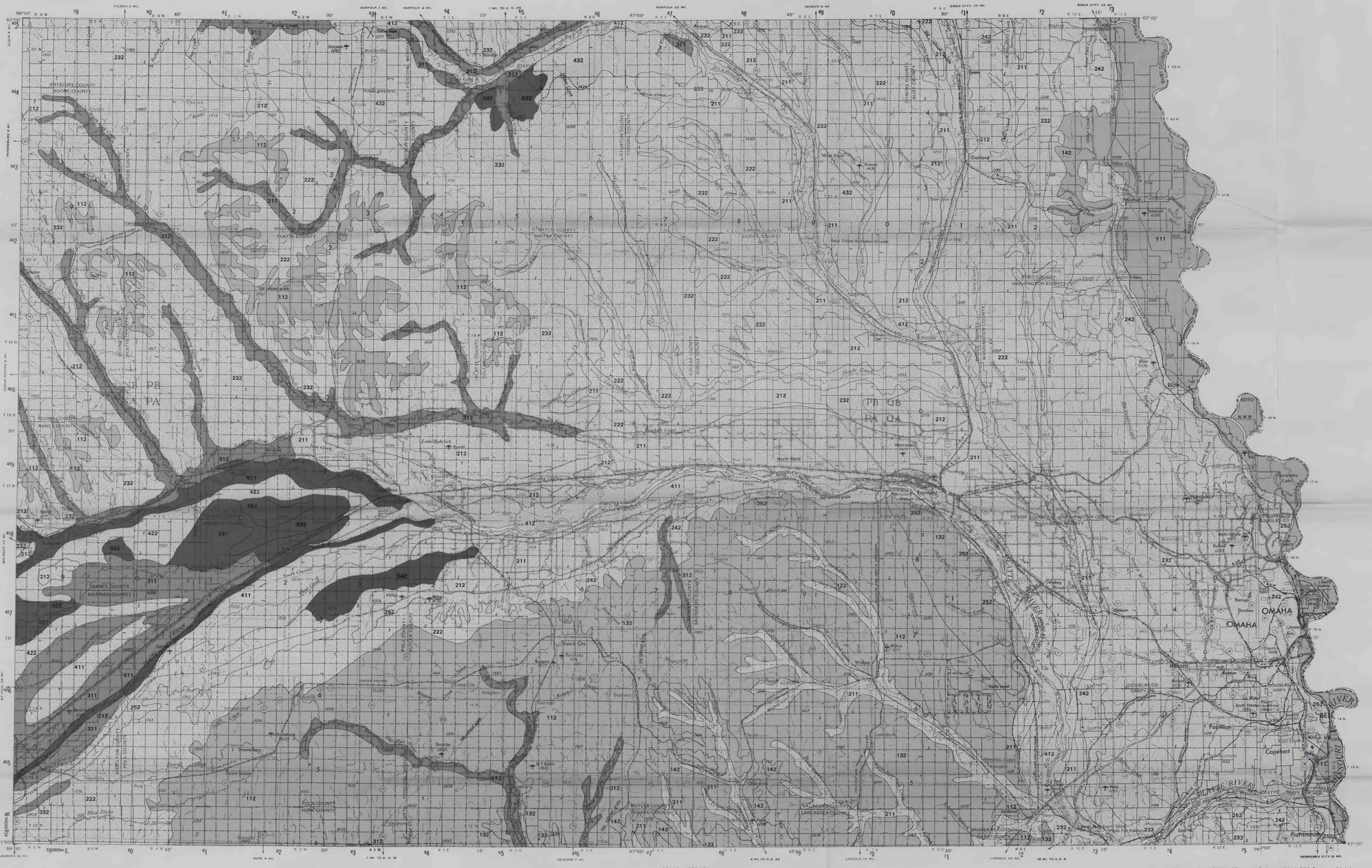
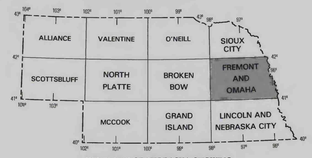



Map based on "General Soil Map of Fremont and Omaha areas, Nebraska," U.S. Department of Agriculture Soil Conservation Service and Conservation and Survey Division, University of Nebraska-Lincoln, (1978-82). Hydrologic characteristics derived from soil-properties data (U.S. Department of Agriculture Soil Conservation Service, 1978).




INDEX MAP OF NEBRASKA SHOWING AREA OF PLATE (SHADED)

# HYDROLOGIC SOIL GROUPS IN THE FREMONT AND OMAHA QUADRANGLES, NEBRASKA

## DESCRIPTIONS OF THE SOIL GROUPS

**111** Silty clays to silty clay loams with (a) permeabilities less than 1.0 inch per hour, (b) nearly level to very gentle slopes (maximum slopes 1 to 3 percent), and (c) depths to seasonal high water table less than 6 feet. These soils are predominantly on larger flood plains and are represented by the Albaton-Haynie and Luton-Forney associations.

**112** Silty clays to silty clay loams with (a) permeabilities less than 1.0 inch per hour, (b) nearly level to gentle slopes (maximum slopes 2 to 5 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are characteristic of the uplands and high terraces of the central and east-central areas of the State and are represented by the Belfore-Moody and Crete-Hastings associations.

**132** Clays to silty clay loams with (a) permeabilities less than 1.0 inch per hour, (b) nearly level to moderately steep slopes (maximum slopes 10 to 20 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are characteristic of uplands in the eastern areas of the State and are represented by the Hastings-Geary and Sharpsburg-Pawnee-Burchard associations.

**142** Silty clays to silty clay loams with (a) permeabilities less than 1.0 inch per hour, (b) very gentle to steep slopes (maximum slopes 20 to 30 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are most commonly formed in weathered shale and usually exhibit shallow soil development. They occur predominantly in the uplands of extreme northern and southeastern Nebraska and are represented by the Bufton-Orella-Norrest and Kipson-Benfield associations.

**211** Silty clay loams to silt loams with (a) permeabilities from 1.0 to 2.0 inches per hour, (b) nearly level to very gentle slopes (maximum slopes 1 to 3 percent), and (c) depths to seasonal high water table less than 6 feet. These soils occur on low terraces and flood plains and are represented by the Zook-Leshara-Wann and Kennebec-Nodaway-Zook associations.

**212** Silty clay loams to silt loams with (a) permeabilities from 1.0 to 2.0 inches per hour, (b) nearly level to very gentle slopes (maximum slopes 1 to 3 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are present on well-drained terraces and uplands in the central part of the State and are represented by the Hord-Hall and Holdrege-Hall associations.

**222** Silty clay loams to silt loams with (a) permeabilities from 1.0 to 2.0 inches per hour, (b) nearly level to strong slopes (maximum slopes 3 to 10 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are widely distributed throughout the State and are represented by the Holdrege and Keith-Alliance-Rosebud associations.

**232** Silty clay loams to loams with (a) permeabilities from 1.0 to 2.0 inches per hour, (b) very gentle to moderately steep slopes (maximum slopes 10 to 20 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are widely distributed and significant within the State and are represented by the Holdrege-Coly-Uly and Ulysses-Keith-Colby associations.

**242** Silty clay loams to loams with (a) permeabilities from 1.0 to 2.0 inches per hour, (b) gentle to steep slopes (maximum slopes 20 to 30 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are widely distributed within the State and are represented by the Coly-Uly-Holdrege and Monona-Ida associations.

**252** Silty clay loams to loams with (a) permeabilities from 1.0 to 2.0 inches per hour, (b) gentle to very steep slopes (maximum slopes that exceed 30 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are common in central and southwestern portions of the State and are represented by the Colby-Ulysses and Coly-Uly associations.

**311** Silt loams to fine sandy loams with (a) permeabilities from 2.0 to 5.0 inches per hour, (b) nearly level to very gentle slopes (maximum slopes 1 to 3 percent), and (c) depths to seasonal high water table less than 6 feet. These soils are present in the Platte and Missouri River flood plains and are represented by the Gibbon-Wann and Lawet-Wann-Lex associations.

**312** Silt loams to fine silty loams with (a) permeabilities from 1.5 to 5.0 inches per hour, (b) nearly level to very gentle slopes (maximum slopes 2 to 5 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are found in many parts of the State on well-drained bottomlands and terraces and differ from those in group 212 because of slightly higher permeabilities and lower topographic position. The Haverson-Tripp-Glenberg and Hobbs-Hord-Cozad are representative associations.

**332** Silt loams to fine sandy loams with (a) permeabilities from 2.0 to 5.0 inches per hour, (b) nearly level to moderately steep slopes (maximum slopes 10 to 20 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are common in transitional areas between the sandhills and silty uplands and are represented by the Kenesaw-Hersh and Ogiala-Jayern associations.

**411** Loams to fine sands with (a) permeabilities from 5.0 to 10.0 inches per hour, (b) nearly level to very gentle slopes (maximum slopes 1 to 3 percent), and (c) depths to seasonal high water table less than 6 feet. These soils are along flood plains and are represented by the Las-Las Animas-McCook and Lawet-Elsmere-Garnet associations.

**412** Fine sandy loams to fine sands with (a) permeabilities from 5.0 to 10.0 inches per hour, (b) nearly level to very gentle slopes (maximum slopes 1 to 3 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are on flood plains, differing from the 411 soils only in the depths to water table, and are represented by the Cass-Inavale and Glenberg-Barkard-Yockey associations.

**422** Fine sandy loams to fine sands with (a) permeabilities from 5.0 to 10 inches per hour, (b) nearly level to strong slopes (maximum slopes 3 to 10 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils occur on uplands, terraces, and footslopes in transitional areas between sandy and silty soils and are represented by the Bazile-Paka-Thurman and Jayern-Sarben-Valent associations.

**432** Fine sandy loams to fine sands with (a) permeabilities from 5.0 to 10.0 inches per hour, (b) nearly level to steep slopes (maximum slopes 10 to 20 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils occur on uplands and high terraces in transitional areas between sandy and silty soils and are represented by the Thurman-Boelus-Nora and Moody-Thurman associations.

**511** Fine sandy loams to fine sands with (a) permeabilities exceeding 10.0 inches per hour, (b) nearly level to very gentle slopes (maximum slopes 1 to 3 percent), and (c) shallow water tables with depths to seasonal high water table less than 6 feet. These soils are on flood plains and in Sand Hills valleys and are represented by the Gothenburg-Platte and Loup-Elsmere-Dunday associations.

**521** Loamy fine sands to fine sands with (a) permeabilities exceeding 10 inches per hour, (b) nearly level to strong slopes (maximum slopes 3 to 10 percent), and (c) shallow water tables with depths to seasonal high water table less than 6 feet. These soils occupy extensive subirrigated valleys within the Sand Hills region and are represented by the Els-Valentine-Ipage and Elsmere-Dailey associations.

**532** Loamy fine sands to fine sands with (a) permeabilities exceeding 10.0 inches per hour, (b) nearly level to steep slopes (maximum slopes 10 to 20 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are represented by the Jansen-Meadin and Valentine-Hersh associations.

**552** Loamy fine sands to fine sands with (a) permeabilities exceeding 10.0 inches per hour, (b) gentle to very steep slopes (maximum slopes exceeding 30 percent), and (c) depths to seasonal high water table exceeding 6 feet. These soils are the most prevalent upland soils of the Sand Hills and are represented by the Valentine and Valentine, hilly and rolling associations.

## HYDROLOGIC CHARACTERISTICS OF THE SOIL GROUPS

| Soil group | Average permeability of 60-inch soil profile (inches per hour) | Average permeability of least permeable horizon (inches per hour) | Average available water capacity (inches per inch) | Average maximum soil slope (percent) | Depth to seasonal high water table (feet) |
|---|---|---|---|---|---|
| 111 | 0.80 | 0.44 | .16 | 2 | <6 |
| 112 | .76 | .41 | .19 | 5 | >6 |
| 132 | .72 | .46 | .18 | 14 | >6 |
| 142 | .67 | .54 | .15 | 25 | >6 |
| 211 | 1.52 | .73 | .19 | 2 | <6 |
| 212 | 1.23 | 1.14 | .20 | 3 | >6 |
| 222 | 1.23 | 1.09 | .20 | 5 | >6 |
| 232 | 1.28 | 1.21 | .19 | 15 | >6 |
| 242 | 1.37 | 1.31 | .20 | 23 | >6 |
| 252 | 1.31 | 1.27 | .21 | 48 | >6 |
| 311 | 3.61 | .93 | .16 | 2 | <6 |
| 312 | 1.73 | 1.36 | .18 | 3 | >6 |
| 332 | 3.29 | 2.93 | .18 | 12 | >6 |
| 411 | 8.42 | 1.52 | .13 | 2 | <6 |
| 412 | 7.52 | 3.05 | .12 | 2 | >6 |
| 422 | 6.85 | 4.15 | .13 | 8 | >6 |
| 432 | 6.56 | 2.94 | .14 | 13 | >6 |
| 511 | 12.90 | 3.99 | .09 | 3 | <6 |
| 521 | 12.86 | 10.53 | .07 | 8 | <6 |
| 532 | 12.46 | 5.21 | .09 | 14 | >6 |
| 552 | 12.38 | 10.67 | .07 | 50 | >6 |