U.S. Department of the Interior
U.S. Geological Survey

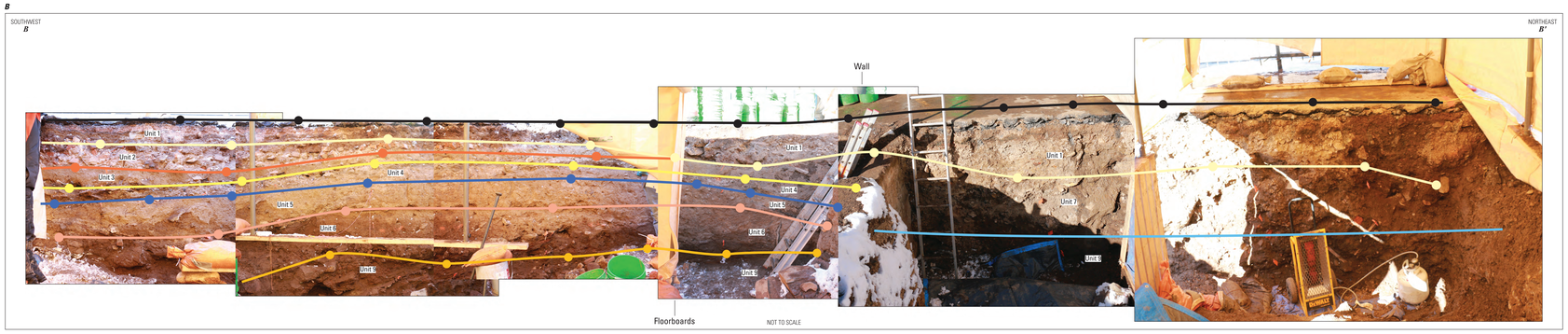
Prepared in cooperation with the
City of Deadwood, South Dakota

Scientific Investigations Map 3459
Pamphlet accompanies map

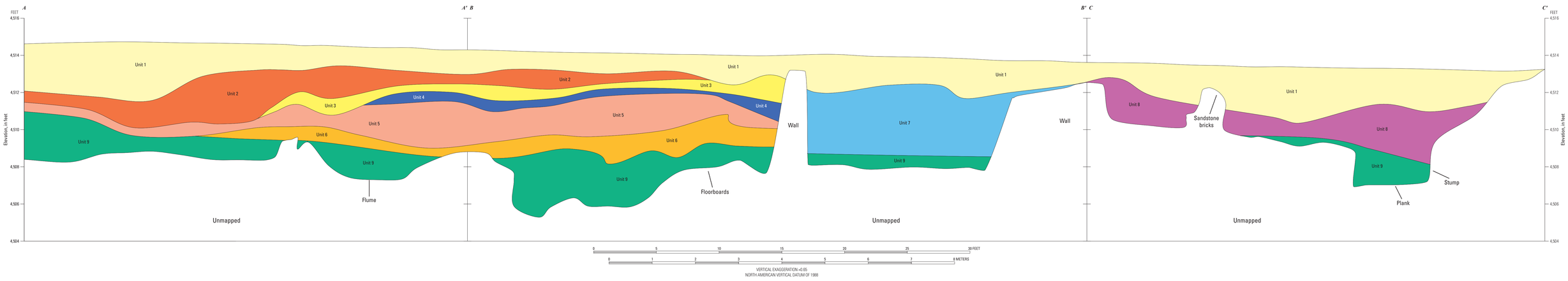
A

C

B



D



E

DESCRIPTION OF MAP UNITS

General stratigraphy	General name	Stratigraphic description
	Engineered fill	Light to dark brown; clay to coarse-grained silt matrix; fine- to coarse-grained sand; fine to very coarse pebbles (0.1 to 2.5 inches in diameter); cobbles and boulders (3 to more than 6 inches in diameter); no effervescence; clay and silt grains are mostly quartz, feldspar, and organic material with some iron minerals; most pebbles are angular quartz and weathered metamorphic rocks (primarily schist) with uniform size (about 1 inch in diameter); cobbles and boulders are weathered metamorphic rocks (schist) and sandstone (likely Cambrian- and Ordovician-age Deadwood Formation); well-rounded and poorly sorted silt and sand; low cohesion; generally fines upward with no sedimentary structures and varies laterally; cultural fill (large bricks, plaster, and porcelain) content at the layer's base increases from west to east. Thickness ranges from 0.80 to 3.16 feet (ft).
	Cultural fill material	White to light gray to light brown; fine-grained silt to very coarse-grained sand; minor amounts of aggregated clay; silt and sand grains are mostly calcium carbonate with some quartz; white calcium carbonate precipitate strongly effervesces and likely is responsible for white and gray appearance; well-rounded and poorly sorted silt and sand grains; low cohesion; no gradation or sedimentary structures; some shards of glass, pieces of material, and wood chunks. Thickness ranges from 0.44 to 2.75 ft.
	Cultural fill cover	Light brown to brown; clay to fine-grained silt; fine to coarse pebbles; aggregated clay up to 1 inch in diameter; plant roots; no effervescence; silt and clay grains are mostly silica with organic material and minor amounts of iron; pebbles are quartz and metamorphic rock (schist); well-rounded and well-sorted clay and silt grains; subangular to angular and poorly sorted pebbles; roots throughout layer; clay and silt matrix has low to moderate cohesion; no gradation or sedimentary structures. Thickness ranges from 0.25 to 0.91 ft.
	Cultural fill material	Light brown to brown; fine-grained silt to very coarse-grained sand with some clay; very fine (0.10 inch in diameter) to coarse (1 inch in diameter) pebbles; no effervescence; silt and sand grains are mostly quartz, muscovite, biotite, potassium feldspar, and other iron minerals; pebbles are mostly quartz and metamorphic rock (schist); well-rounded to subangular and angular silt and sand grains; poorly sorted; subangular to angular and poorly sorted pebbles; silt and sand matrix has low cohesion; no gradation or sedimentary structures; shards of glass with pieces of porcelain, refined metal, brick, plaster, and wood of variable size (less than 2 inches in diameter). Thickness ranges from 0.22 to 0.74 ft.
	Cultural fill cover	Light brown to brown; clay to fine-grained silt with higher clay content than overlying artificial layers; fine (0.1-inch diameter) to medium (0.4-inch diameter) pebbles; very coarse pebbles (1.5-inch diameter) and fine cobbles (2.5-inch diameter) at the top of the layer; no effervescence; silt and clay grains are mostly silica with organic material and minor amounts of iron minerals; pebbles and cobbles are quartz and metamorphic rock (schist); well-rounded and well-sorted clay and silt grains; subangular to angular and poorly sorted pebbles; moderate cohesion; no gradation or sedimentary structures; shards of glass with pieces of porcelain, refined metal, brick, plaster, and wood of variable size (less than 1.5 inches in diameter) at the base of the layer. Thickness ranges from 0.38 to 2.50 ft.
	Fluvial deposits	Light orange to gray to light brown to brown; fine-grained silt to medium-grained sand with some clay; medium pebbles (0.5-inch diameter) to large boulders (6- to 10-inch diameter) at the base of the layer; no effervescence; silt and sand grains are mostly quartz, muscovite, biotite, potassium feldspar, and iron minerals; orange color is probably from oxidized iron mineral; pebbles to boulders are mostly quartz and metamorphic rocks (schist and phyllite); well-rounded to subangular and angular silt and sand grains; subangular to angular pebbles and boulders; low to moderate cohesion; generally fines upward with laminations (less than 0.1 inch) and cross bedding at the top; small burnt pieces of wood (less than 0.25-inch diameter) throughout the layer that disintegrate when removed. Thickness ranges from 0.63 to 1.94 ft.
	Undifferentiated fill	Light brown to dark brown to black; clay to coarse silt matrix; grain sizes ranging from clay to pebbles, cobbles, and boulders (less than 20 inches in diameter); no effervescence; clay, silt, and sand grains are mostly quartz, organic matter, muscovite, biotite, potassium feldspar, and iron minerals; pebbles, cobbles, and boulders are mostly quartz and metamorphic rocks (schist, phyllite); clay at the bottom of the layer has high organic content (dark brown to black color); well-rounded to subangular silt and sand grains; subangular to angular pebbles, cobbles, and boulders; poorly sorted; low to moderate cohesion; clay content and cohesion generally increase downward; no sedimentary structures; many human-made objects (glass, metals, porcelain) and burnt wood throughout the layer; small (less than 0.5 inch in diameter) to large (less than 20 inches in diameter) concrete fragments. Thickness ranges from 2.5 to 3.6 ft.
	Undifferentiated fill	Dark brown to black; clay to medium-grained silt matrix with some fine- to medium-grained sand; fine pebbles (0.25 inch in diameter) to large boulders (8 inches in diameter); no effervescence; clay, silt, and sand particles are mostly quartz, organic matter, muscovite, biotite, and iron minerals; fine pebbles to large boulders are mostly quartz and metamorphic rocks (schist, phyllite); well-rounded to subangular silt and sand grains; subrounded to subangular to angular large particles (fine pebbles to large boulders); poorly sorted; moderate cohesion; no grading or sedimentary structures; fewer human-made objects (glass, metals, porcelain) than layer 7; small (0.25 inch in diameter) to large (1.5 inches in diameter) sized pieces of concrete. Thickness ranges from 0.77 to 2.61 ft.
	Chinatown deposits	Dark brown to dark reddish brown; clay to fine-grained silt with some coarse sand; small cobbles (2- to 3-inch diameter) to large boulders (12- to 16-inch diameter) at the top of the layer; no effervescence; silt and sand grains are mostly quartz, muscovite, biotite, potassium feldspar, and iron minerals; cobbles to boulders are mostly quartz and metamorphic rocks (schist); well-rounded to subangular silt and sand grains; rounded to subangular cobbles and boulders; poorly sorted; low to moderate cohesion; cohesiveness increases downward; generally coarsens upward from small laminations (less than 0.1 inch) at the base to small cobbles and large boulders; many human-made objects (boot, basket, floorboard of a house). Thickness ranges from 0.29 to 2.60 ft.

F

AT1—Buried flume found in block A

G

AT2—Buried plank and stump found in block C

H

Base map modified from U.S. Geological Survey, South Dakota, and other digital sources, various dates.
Map projection: UTM, Zone 13 North.
Horizontal datum is North American Datum of 1983.
0 20 40 60 80 MILES
0 20 40 60 80 KILOMETERS

Base map copyright from Esri, 2020.
Map projection: UTM, Zone 13 North.
Horizontal datum is North American Datum of 1983.
0 5 10 15 40 FEET
0 2 4 6 8 10 METERS

Stratigraphic Units of Shallow Unconsolidated Deposits in Deadwood, South Dakota, Delineated by Real-Time Kinematic Surveys

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