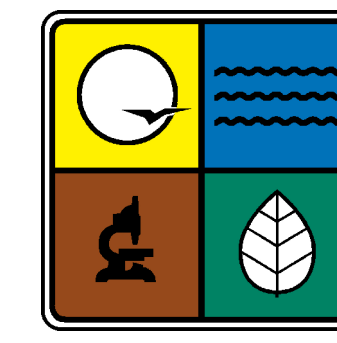


**SURFICIAL MATERIAL GEOLOGIC MAP OF THE FLORISSANT 7.5' QUADRANGLE
ST. CHARLES COUNTY, MISSOURI**

Geology and Digital Compilation by
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PHYSIOGRAPHY

The Florissant quadrangle includes part of the floodplain of the Missouri River and loess covered uplands. The floodplain is greater than two miles wide in this area with only a small portion residing on this quadrangle. The quadrangle lies within the Dissected Till Plains Section of the Central Lowland Province of the Interior Plains Physiographic Division. The lowest recorded elevation of slightly less than 410 feet mean sea level (msl) occurs along the edge of the Missouri River. The highest elevation on the quadrangle occurs on the loess covered uplands and is greater than 621 feet msl in the southern portion of the quadrangle. Total relief on the O'Fallon quadrangle is approximately 211 feet.

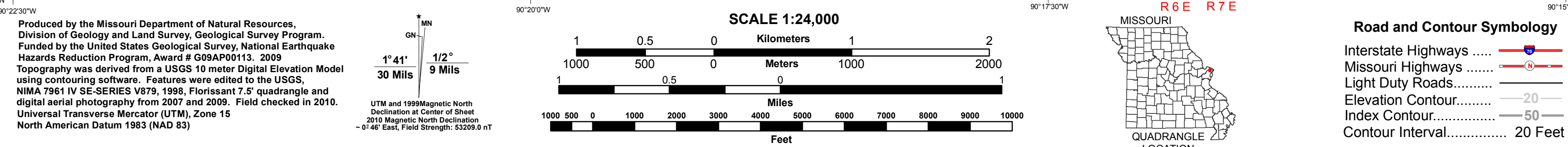
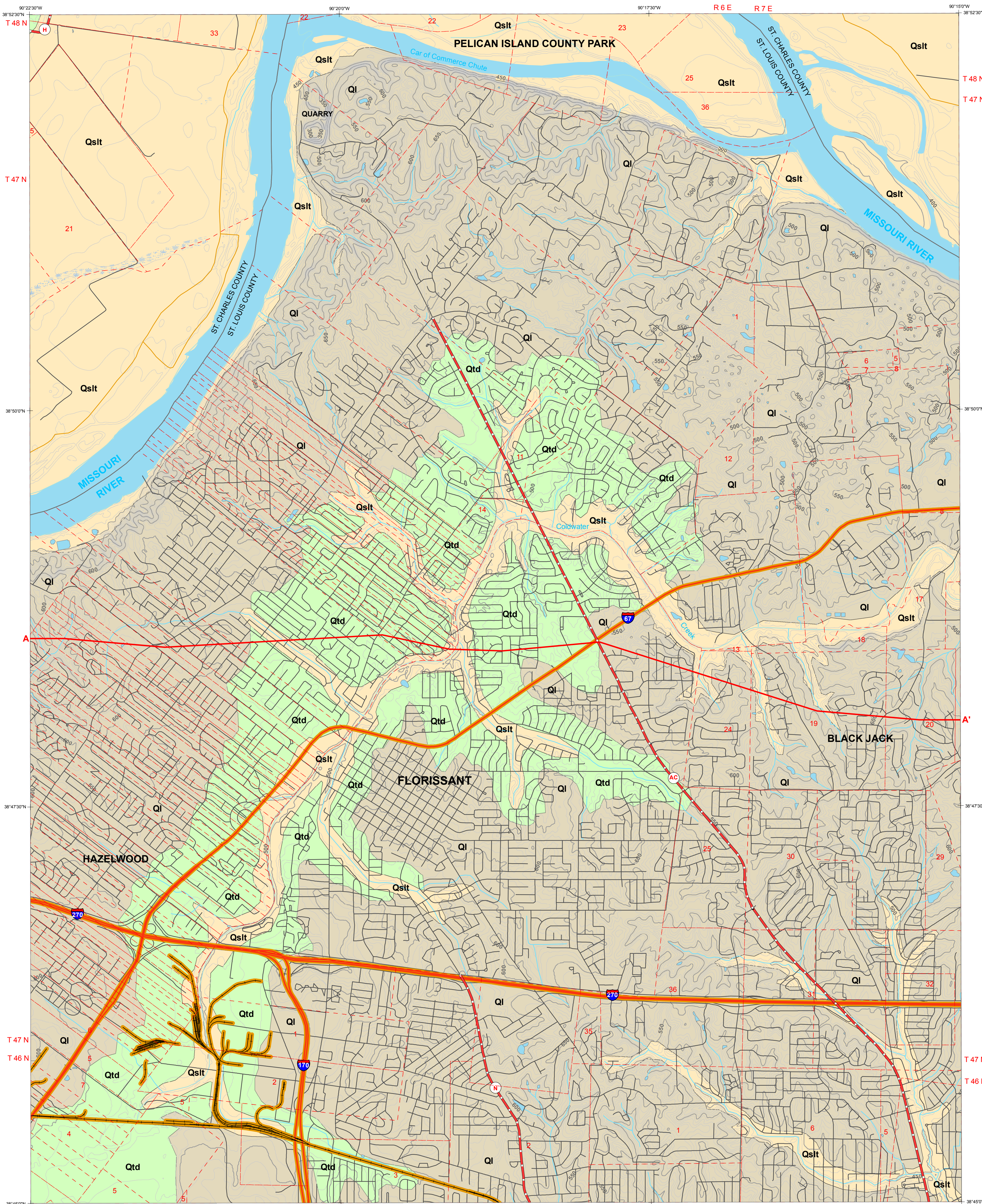
GEOLOGICAL OVERVIEW

The Florissant quadrangle is underlain by Paleozoic age limestone and shale. The majority of the quadrangle is underlain by the Burlington/Keokuk Formation and the Warsaw Formation. The bedrock in this area ranges from 290 feet msl to 450 feet msl. The bedrock is overlain by between 10 to 130 feet of surficial materials in the uplands and Missouri floodplain, respectively.

DESCRIPTION OF MAP UNITS

- AF** **ARTIFICIAL FILL** – This unit comprises artificially emplaced fill material and is composed of a mixture of heterogeneous clay, silt, sand and gravel in various quantities. This unit may reach 40 feet in total thickness and comprises the material for highway, railroad beds and waste water treatment facility fill. This artificial fill has typically been placed on undisturbed materials.
- Qsilt** **QUATERNARY SILT-CAPPED ALLUVIUM** – This unit has been deposited by the Missouri River. The approximate upper 15 feet of these deposits are composed predominantly of silt with variable amounts of clay and organic material. The material residing below the clay is predominantly sand and gravel to the top of bedrock. In the northern portion of the map the thickness of this unit reaches between 130 feet near the large river. The water table is approximately five to 15 feet below ground surface resulting in an interval of saturated sand and gravel greater than 100 feet thick. This unit is included in the cross sections as Quaternary silt-capped alluvium.
- Ql** **QUATERNARY LOESS** – This unit is a wind-blown deposit of silt and clayey silt with occasional pockets of clay, sand and gravel. The unit is composed of two separate loess layers, the Roxana below and the Peoria above (Goodfield, 1965). The total thickness of the two units may reach 50 feet. The Roxana is higher in clay content and may have a paleosol developed in the upper few feet. The contact between the two units forms a potential slide plane in areas of higher slope. The loess overlies Mississippian-age bedrock. The Mississippian units are limestone and shale, creating unique environments. Where the loess is thin, the limestone may be karstic. Where the underlying unit is predominantly shale, water will perch destabilizing the contact zone. Where the loess rests upon shale, the slide potential is increased.
- Qtd** **QUATERNARY TERRACE DEPOSIT** – The terrace deposits in the quadrangle are slightly different than previously mapped terrace deposits. All were deposited during fluvial events, leaving the terrace above low flow stage of the river. However, the terrace deposits in this quadrangle have a lacustrine signature of sensitive organic clays approximately 20 feet below the surface. After high stage flow dropped to normal, low lying areas within the terrace were filled with organic clay material. This zone has a very low shear wave velocity and underlies infrastructure in various locations.

A—A' Line locates the placement of the cross section with end line symbols.



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