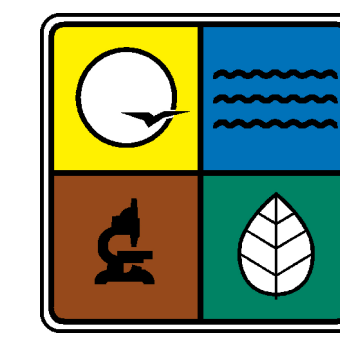


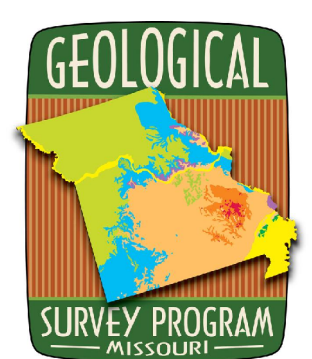
**SURFICIAL MATERIAL GEOLOGIC MAP OF THE CLAYTON 7.5' QUADRANGLE
ST. CHARLES AND ST. LOUIS COUNTIES, MISSOURI**

Geology and Digital Compilation by
David A. Gaunt and Travis Carr



2010

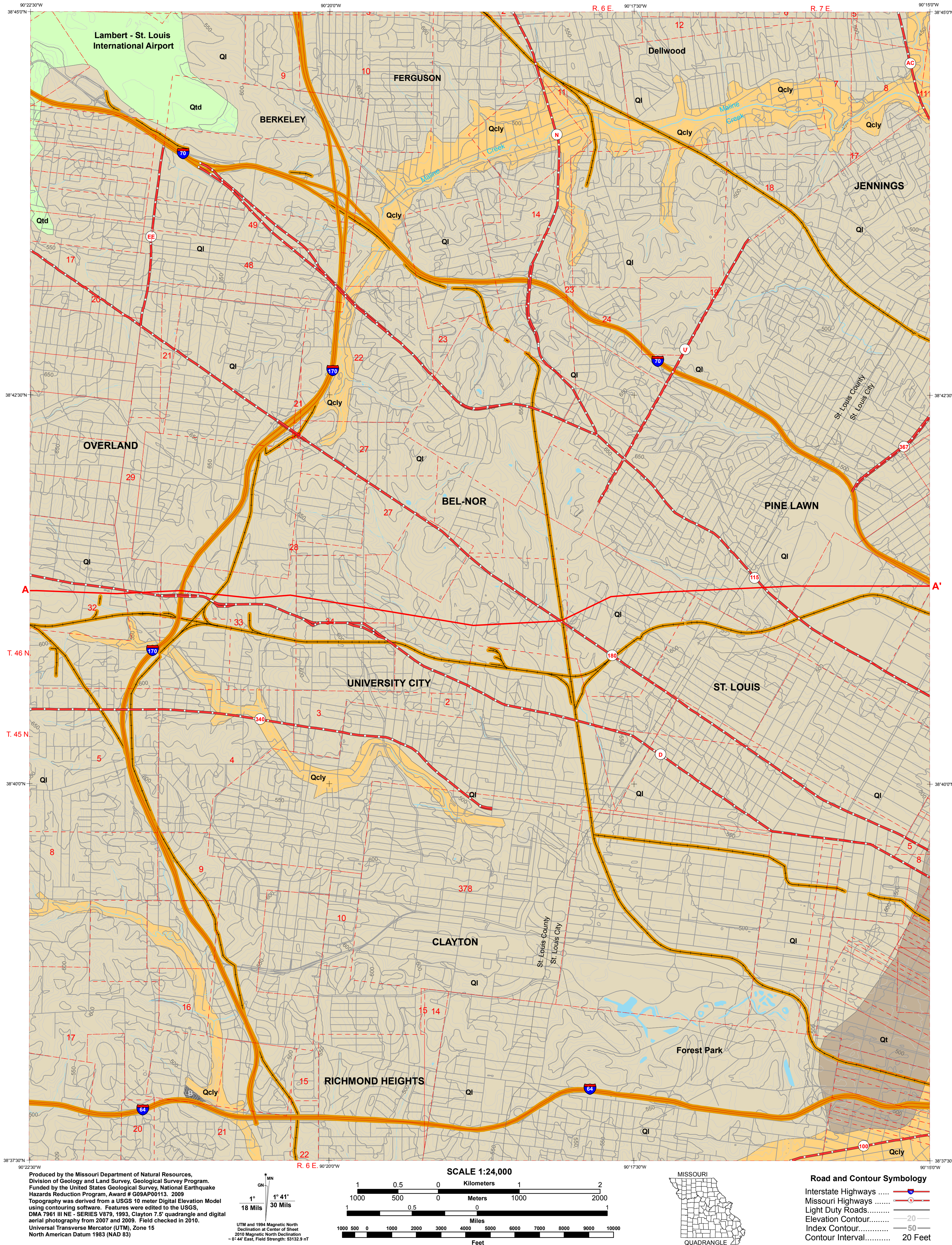
OFM-10-561-GS



**MISSOURI DEPARTMENT OF NATURAL RESOURCES
DIVISION OF GEOLOGY AND LAND SURVEY
GEOLOGICAL SURVEY PROGRAM
P.O. BOX 250, ROLLA MO 65402-0250
www.dnr.mo.gov/geology
573-368-2100**

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PHYSIOGRAPHY

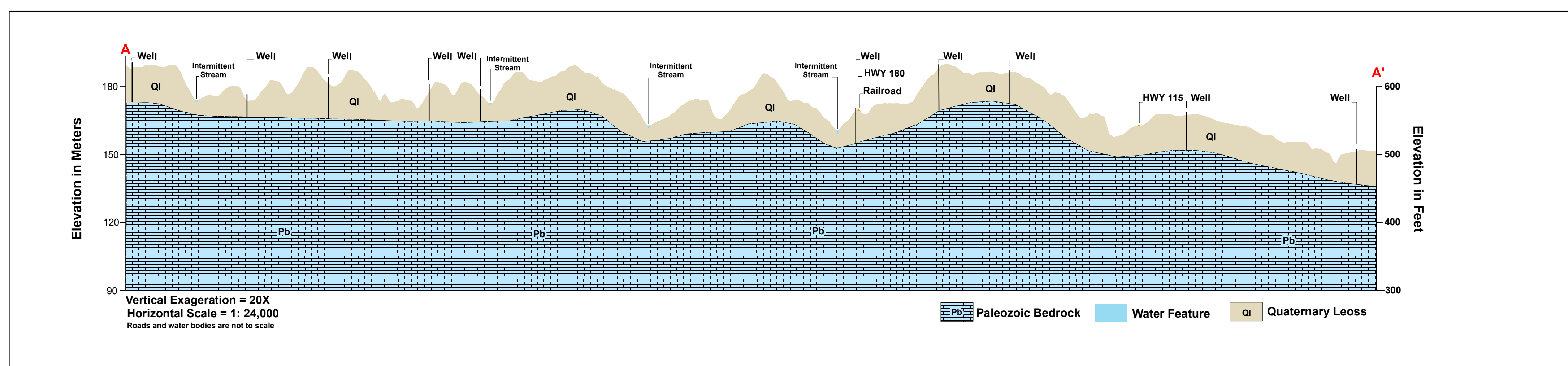
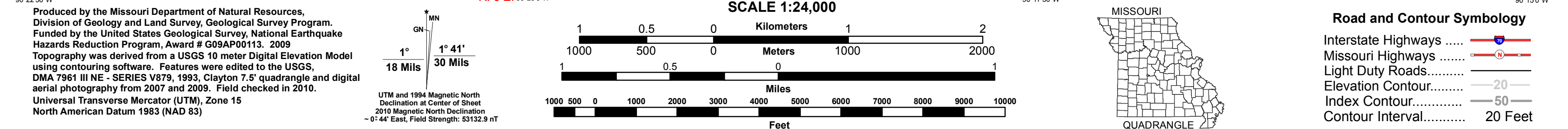
The Clayton quadrangle is highly urbanized built upon the loess covered uplands. The quadrangle lies within the Dissected Till Plains Section of the Central Lowland Province of the Interior Plains Physiographic Division. The lowest recorded elevation of slightly less than 460 feet mean sea level (msl) occurs in the Forest Park area. The highest elevation on the quadrangle occurs on the loess covered uplands and is slightly greater than 653 feet msl in the central portion of the quadrangle. Total relief on the Clayton quadrangle is approximately 187 feet.

GEOLOGICAL OVERVIEW

The Clayton 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 470 feet msl. The bedrock is overlain by between 10 to 80 feet of surficial materials.

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 and railroad beds, and waste water treatment facility fill. This artificial fill has typically been placed on undisturbed materials.
 - 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 80 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 high topographic relief. The loess overlies Paleozoic-age bedrock comprised of limestone and shale create two 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 many types of infrastructure.
 - B** **BEDROCK** – The bedrock in this area is Paleozoic-age limestone and shale. Bedrock is only exposed by urbanization and mining.
- A—A'** Line locates the placement of the cross section with end line symbols.



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