As people migrated west, forts were established along the main trails to protect them from the Indians or other misfortunes or distressful situations. The forts were strategically placed on or close to major rivers systems for an assured supply of water necessary for the troops and animals. All of the rivers in the state are east or southeast flowing in the Kansas (Kaw) River or Arkansas River drainage systems.

Ft. Leavenworth is on the Missouri River
Ft. Riley is on the Smoky Hill River
Ft. Harker (Ellsworth) was on the Smoky Hill River
Ft. Hays on Big Creek a tributary of the Smoky River
Ft. Wallace was on the Smoky Hill River
Ft. Larned and Ft. Dodge (Mann) on the Arkansas River
Ft Scott is on the Marmaton River

Before permanent buildings at the fort could be built, accommodations for the troops were in dugouts, sod huts, or tents. The first buildings often were of shipped-in lumber or adobe bricks before the more permanent fort buildings could be constructed. Usually the local ‘permanent’ material was quarried limestone (CaCO₃) or sandstone (SiO₂) rock, where building stone was available (Perazzo and Perazzo 2011; Risser 1960; Fig. 1).

Fort Leavenworth, established in 1827 along the Missouri River, served as the eastern terminus of the Santa Fe and Oregon/California trails, and is the oldest active army fort in operation west of the Mississippi River. The Fort Leavenworth also is the northern terminus of the Frontier Military Road that extends south to Fort Scott and on to Fort Gibson in Oklahoma. Between 1832 and 1834, the ‘Rookery’ was built as bachelor officer quarters, thus making it the oldest building in Kansas. The term ‘rookery’ referred to the bird colonels who were housed in this facility. Although the area around the fort is mainly Pleistocene glacial material, limestone from the Lansing Group bedrock was quarried on site for some of the fort buildings. The Iatan Limestone of the Pedee Group, Missourian Stage (Pennsylvanian in age) was used to construct an old stone wall preserved on the military reservation (Muilenburg 1953; Risser 1960; Fig. 2).

The site of the second oldest fort in the state Fort Riley was selected at the junction of the