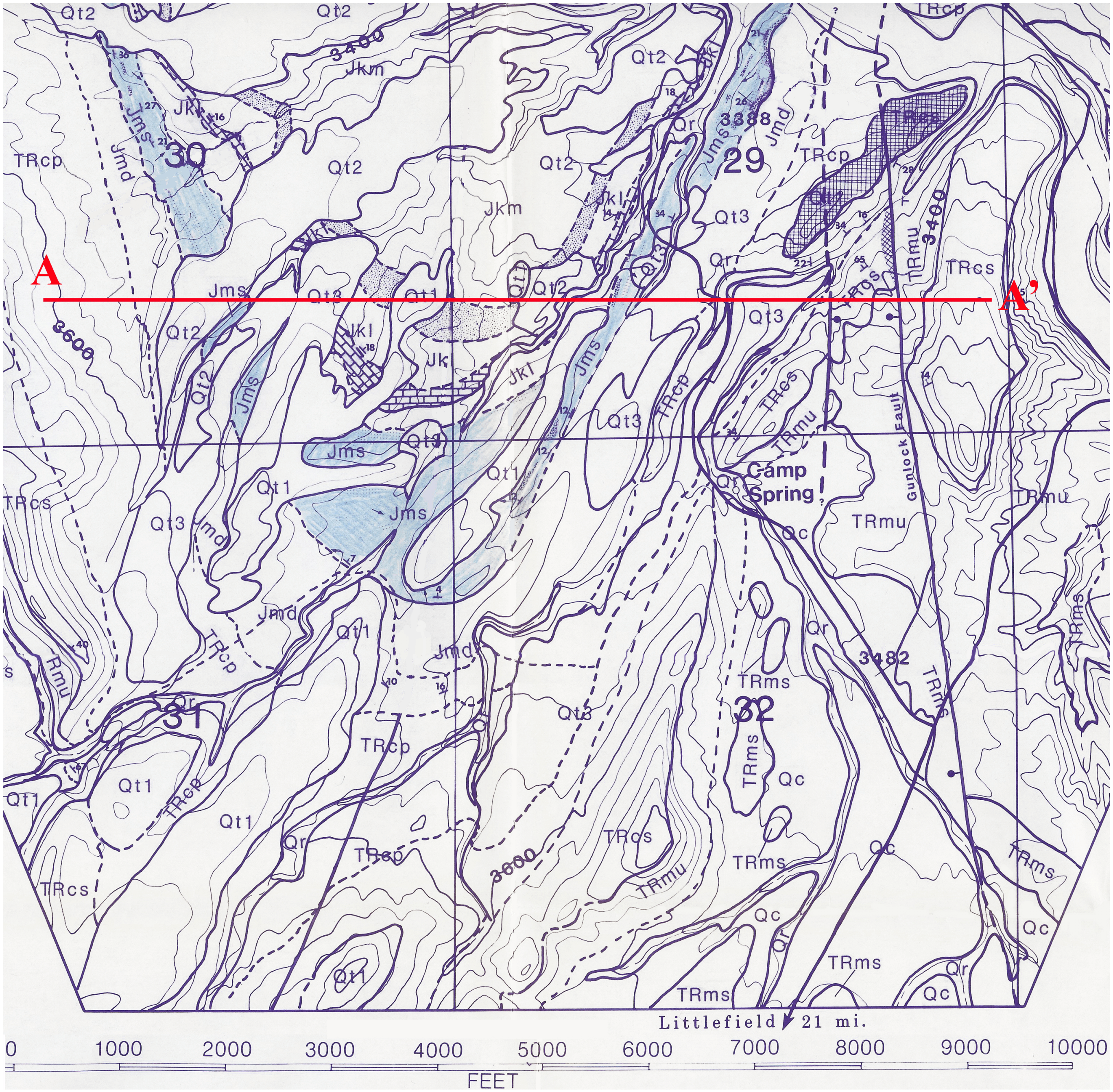
LAB EXERCISE 20 - GEOLOGIC MAPPING

Name:	Course ID:

Geologic maps are a geologist’s best friend. They depict the exposed surface geology. Formations and similar units are color coded to aid in identification and interpretation. The map below is an incomplete geologic map of the Shivwits area in far Southwestern Utah. A legend for the different rock formations and their geologic ages is also given.



The early Jurassic Springdale Sandstone Member of the Moenave (Jms) formation is shaded blue. Complete the geologic map by color shading all formations / members present with some differing colors of your choice. *(Hint: Mesozoic aged rocks are often colored in variations of blue or green shades)*. Use the same color scheme for the map explanation and in your cross sectional profile. Quaternary terrace deposits are often unconsolidated and horizontal, covering the underlying ancient lithologies. After completion of map, explanation legend and cross section, answer the questions listed below:

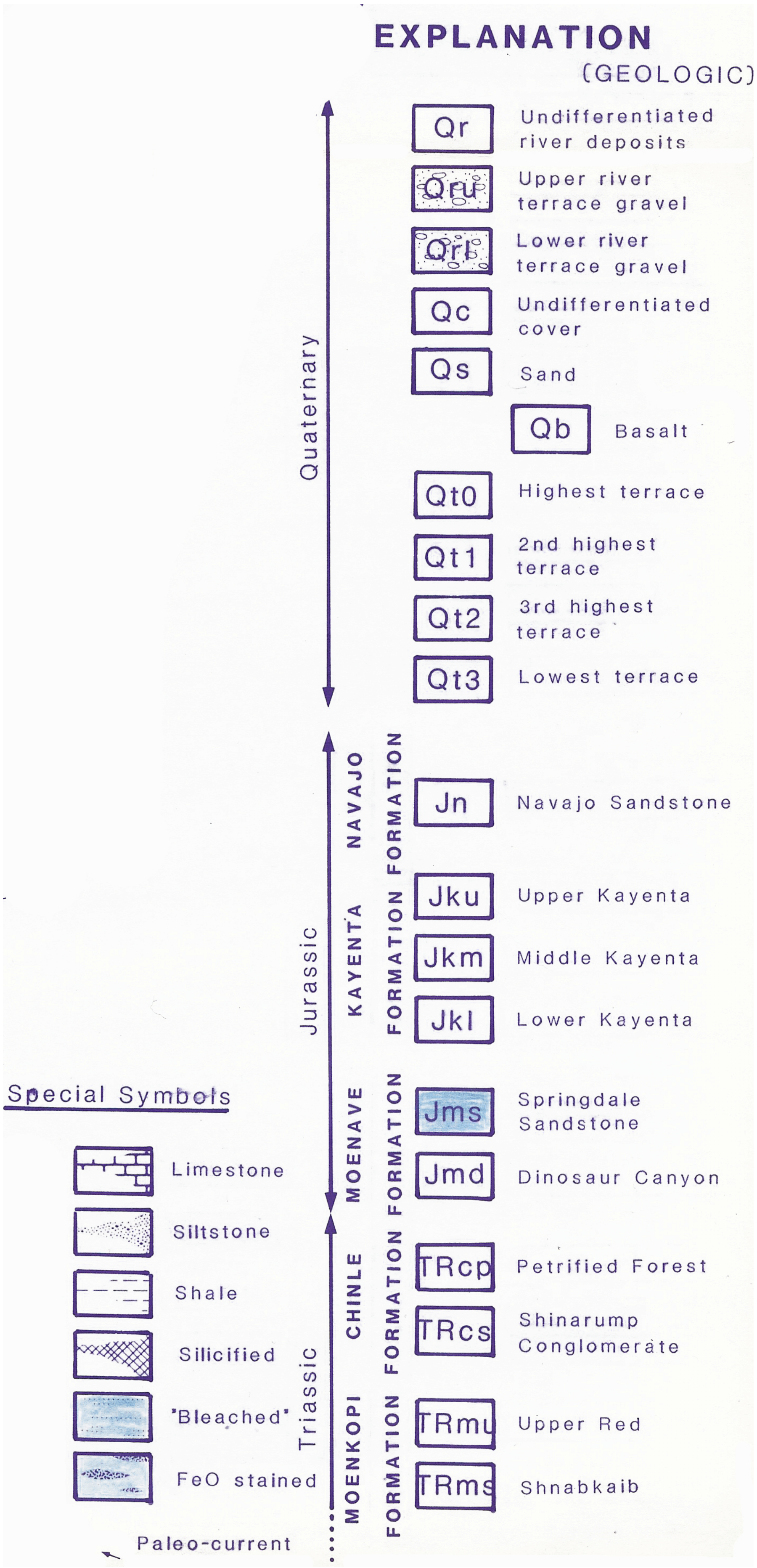
Guided by the stratigraphy given in the "Explanation," mark all possible unconformities with thick red lines on the map.

Complete the cross sectional profile A - A' as indicated on the geologic map. The contour interval is 40ft. Transfer not only elevation points but mark and transfer formation boundaries as well. Pay attention to strike and dip symbols and show extent of formations in the sub surface as much as possible.

From the map topography and the unit names, identify the possible lithologies and record them on the "Explanation" next to the appropriate unit.

What geologic structure is present on the map?

Briefly state the suggested geologic history of the area. (In 5 sentences or less.)



EXPLANATION

(GEOLOGIC)

Quaternary		Qr	Undifferentiated river deposits
		Qru	Upper river terrace gravel
		Qrl	Lower river terrace gravel
		Qc	Undifferentiated cover
		Qs	Sand
		Qb	Basalt
		Qt0	Highest terrace
		Qt1	2nd highest terrace
		Qt2	3rd highest terrace
		Qt3	Lowest terrace
Jurassic	NAVAJO FORMATION	Jn	Navajo Sandstone
	KAYENTA FORMATION	Jku	Upper Kayenta
		Jkm	Middle Kayenta
		Jkl	Lower Kayenta
	MOENAVE FORMATION	Jms	Springdale Sandstone
		Jmd	Dinosaur Canyon
Triassic	CHINLE FORMATION	TRcp	Petrified Forest
		TRcs	Shinarump Conglomerate
	MOENKOPI FORMATION	TRmu	Upper Red
		TRms	Shnabkaib

Special Symbols

▦	Limestone
░	Siltstone
☰	Shale
▩	Silicified
▤	'Bleached'
▒	FeO stained
←	Paleo-current