

“Crustbuster Fault” Exercise

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Nature of this exercise

“Crust-Busting Fault” are active or inactive, regional-scale faults with lengths commonly in range of hundreds of kilometers. There are many to choose from, globally, but make certain that your instructor affirms the choice, for you want to ‘own’ a fault for which the literature is strong!

Prepare a 6-page document with the following components:

Structure-Tectonic Map, hand drawn by you in ways that emphasize geometry and character of fault or shear zone. “Lump” rock formations into macro-tectonic units. Use accurate and conventional symbology. Cite sources.

Structure Section, hand drawn by you in ways that emphasize key relationships, and incorporate standard symbols and linework. Cite sources.

Fault Description, through bullet points, describing key physical and geometric attributes: shape, length, breadth, orientation, map pattern, associated structures, fault rocks, etc. Cite sources.

Kinematics, through bullet points, describing type of fault, magnitude of slip, direction of slip, sense of slip, nature of strain, rotations (if any), etc. Place in time frame. Include diagrams. Cite sources.

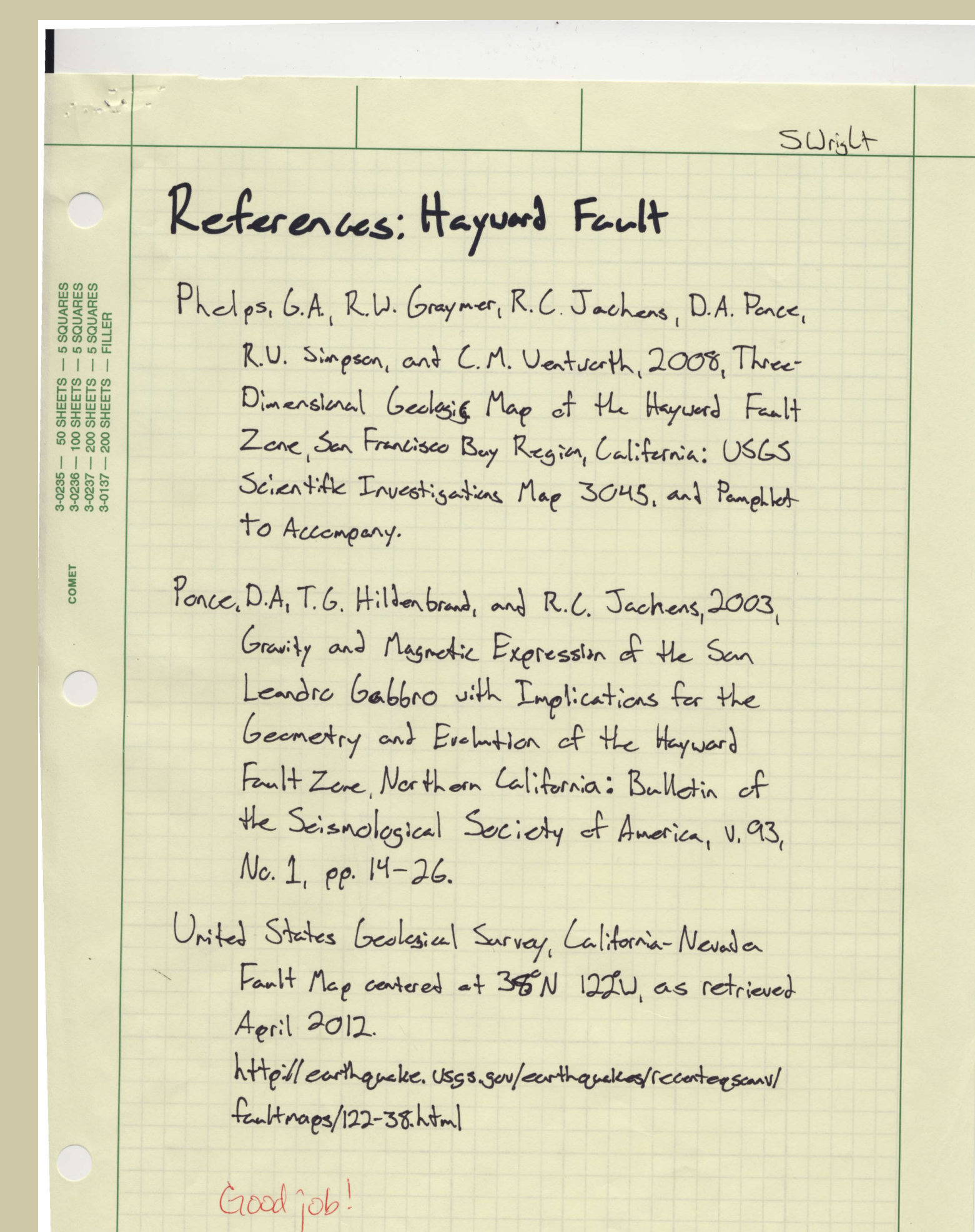
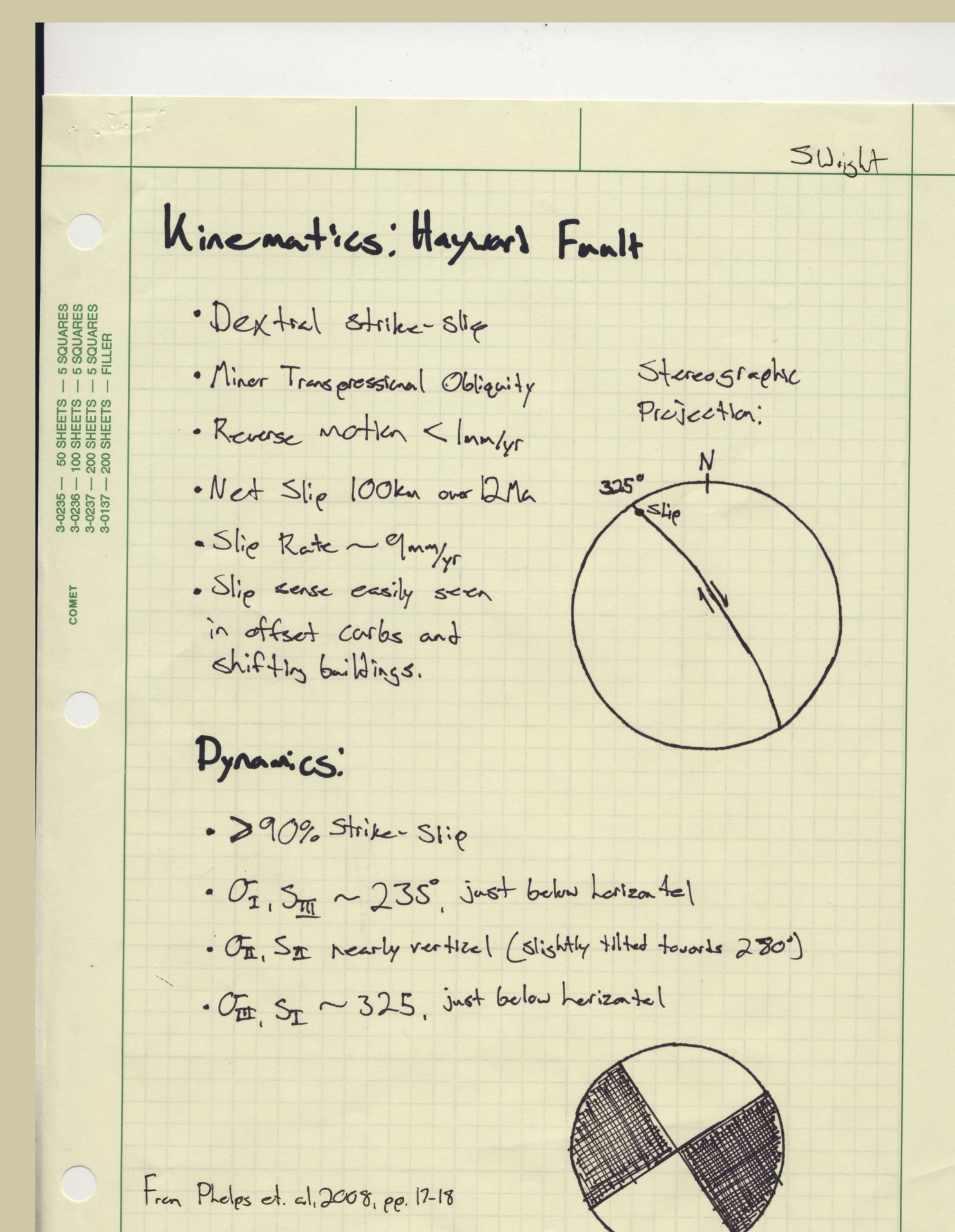
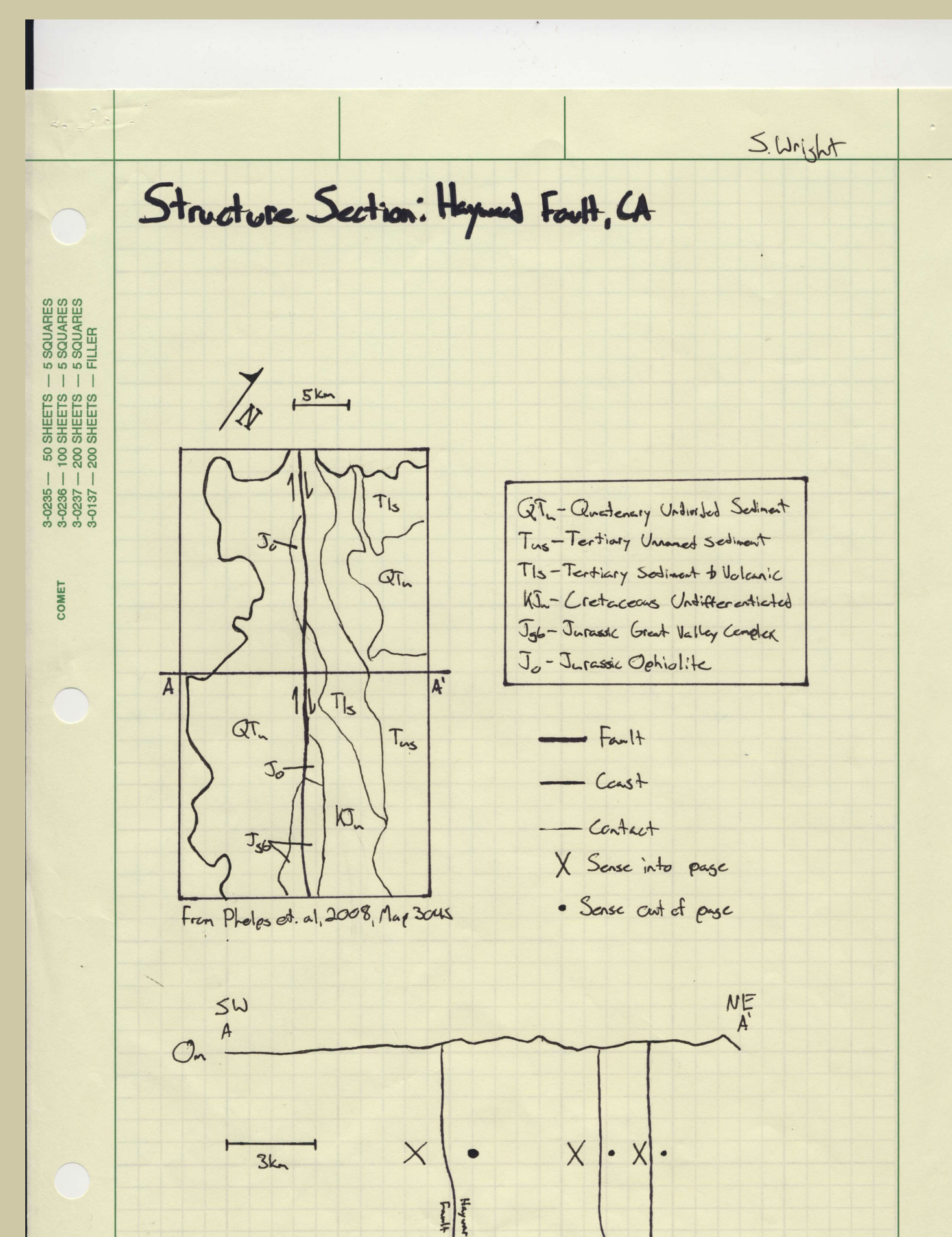
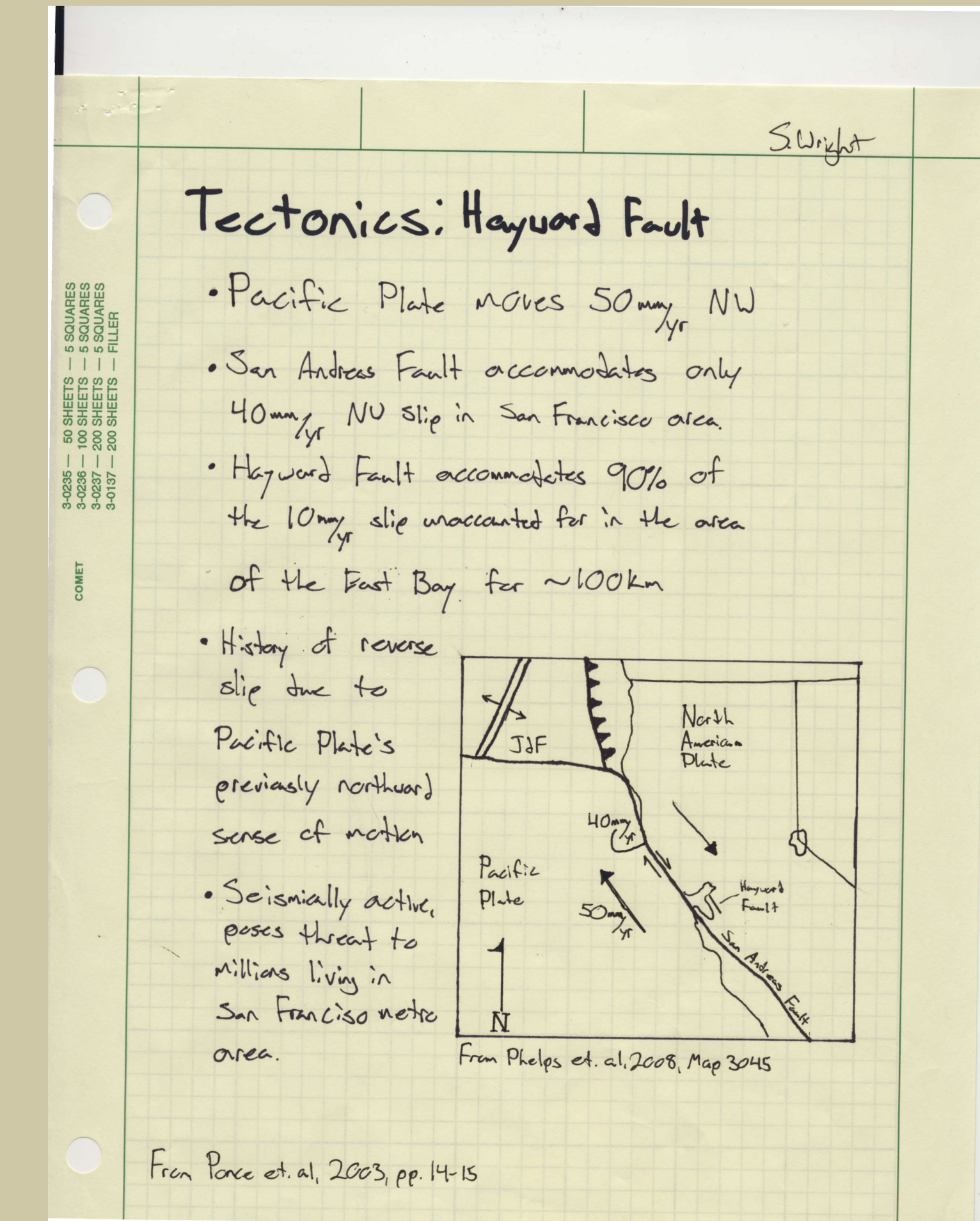
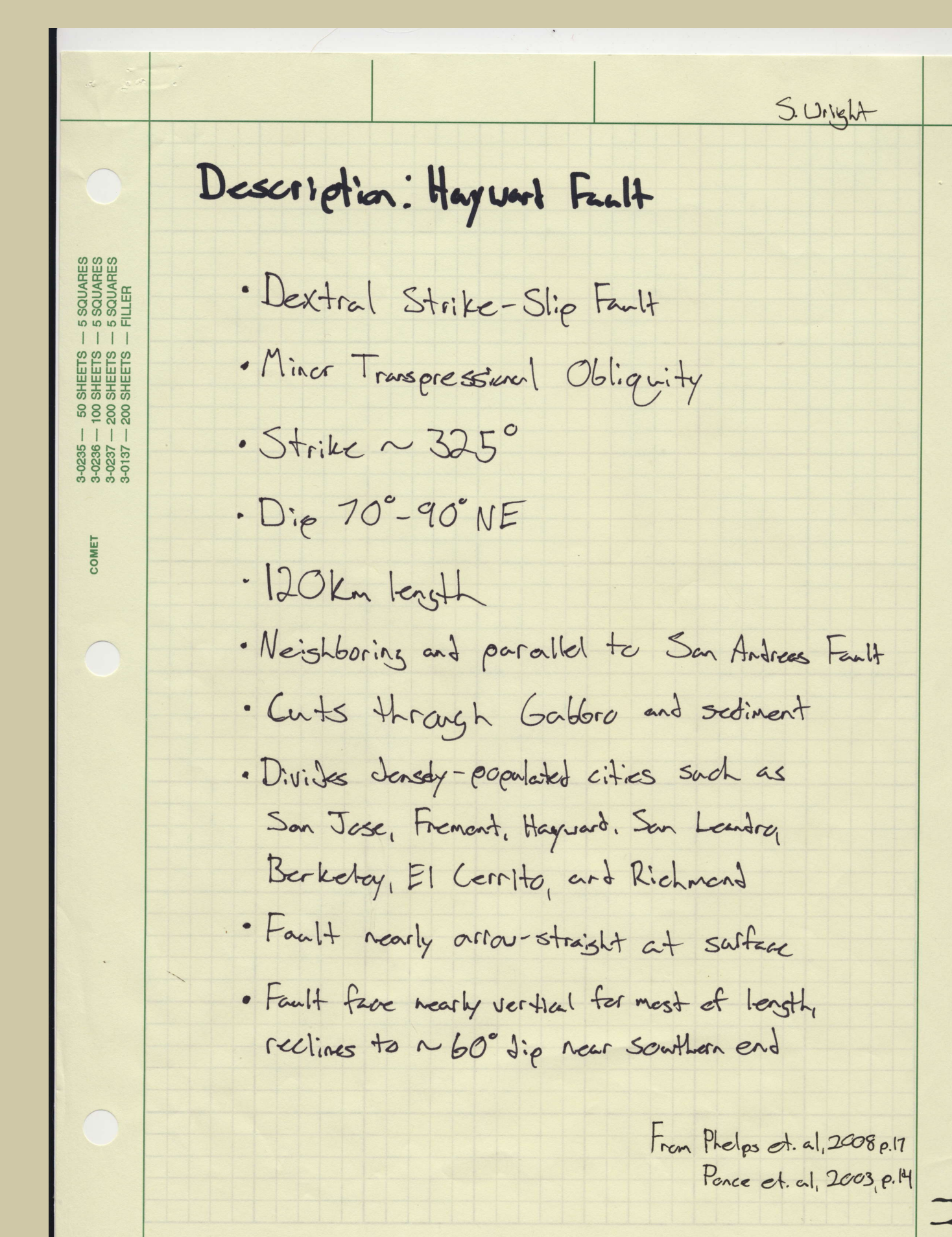
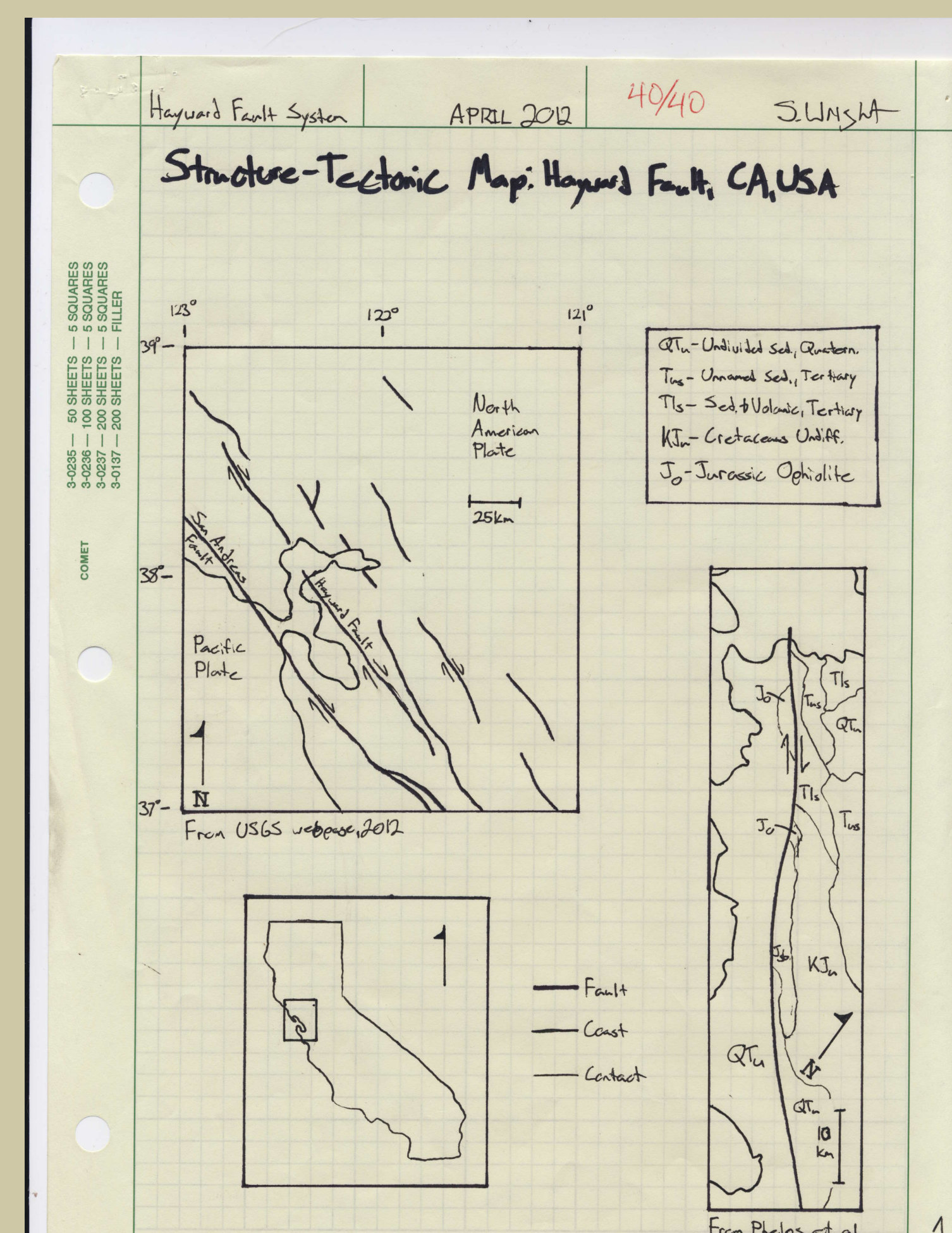
Dynamics and Mechanics, through bullet points, describing rheology, deformation mechanisms, principal stress directions. Cite sources.

Tectonics, in your own hand draw a map showing plate conditions that gave rise to your fault. In bullets, describe the progressive deformation.

References, using the journal *Geology* as guide to citing.

PRESENTATION: You will present your results in class, incorporating your 6-page report in power point or transparency form.

Hayward Fault Example, by Sean Wright



Listing of fault possibilities: Moine, Main Central Thrust, Main Frontal Thrust, Lewis Thrust, Keystone Thrust, Zagros Thrusts, Seattle Fault, Main Pamir Thrust, Chelungpu Thrust, Kettleman Hills Blind Thrusts, Whittier Fault, Sierra Madre Thrust, Santa Monica Fault, Oak Ridge Fault, Pine Mountain Thrust, McConnell Thrust, Sulfur Mountain Thrust, Hebrides Thrust, Glarus Overthrust, Santa Susanna Fault, Ventura Fold, Whipple Detachment Fault, Catalina Detachment Fault, Snake Range Decollement, South Mountain Detachment Fault, Southern Tibetan Detachment System, Wasatch Fault, East African Rift, Red Sea Rift, Baikal Rift, Afar Triangle, Laguna Salada Fault, Atacama Fault, Hurricane Fault, Gulf of Corinth Rifting, Mederes Massif, Tablelands Faults, Lost River Fault, Grand Teton Fault, Alpine Fault, Altyn Tagh Fault, Calaveras Fault, Yammouneh Fault, Anatolian Fault, Motagua/Poliochic Fault, Denali Fault, Altyn Tagh Fault, Karakorum Fault, Kunlun Fault, Red River Fault, Chaman Fault, Hayward Fault, San Andreas Fault (Northern Segment), San Andreas Fault (Creeping Segment), San Andreas Fault (Southern Segment), Newport-Inglewood Fault, Owens Valley Fault, Landers Shear Zone, Death Valley Fault Zone, Fish Lake Fault Zone, ...