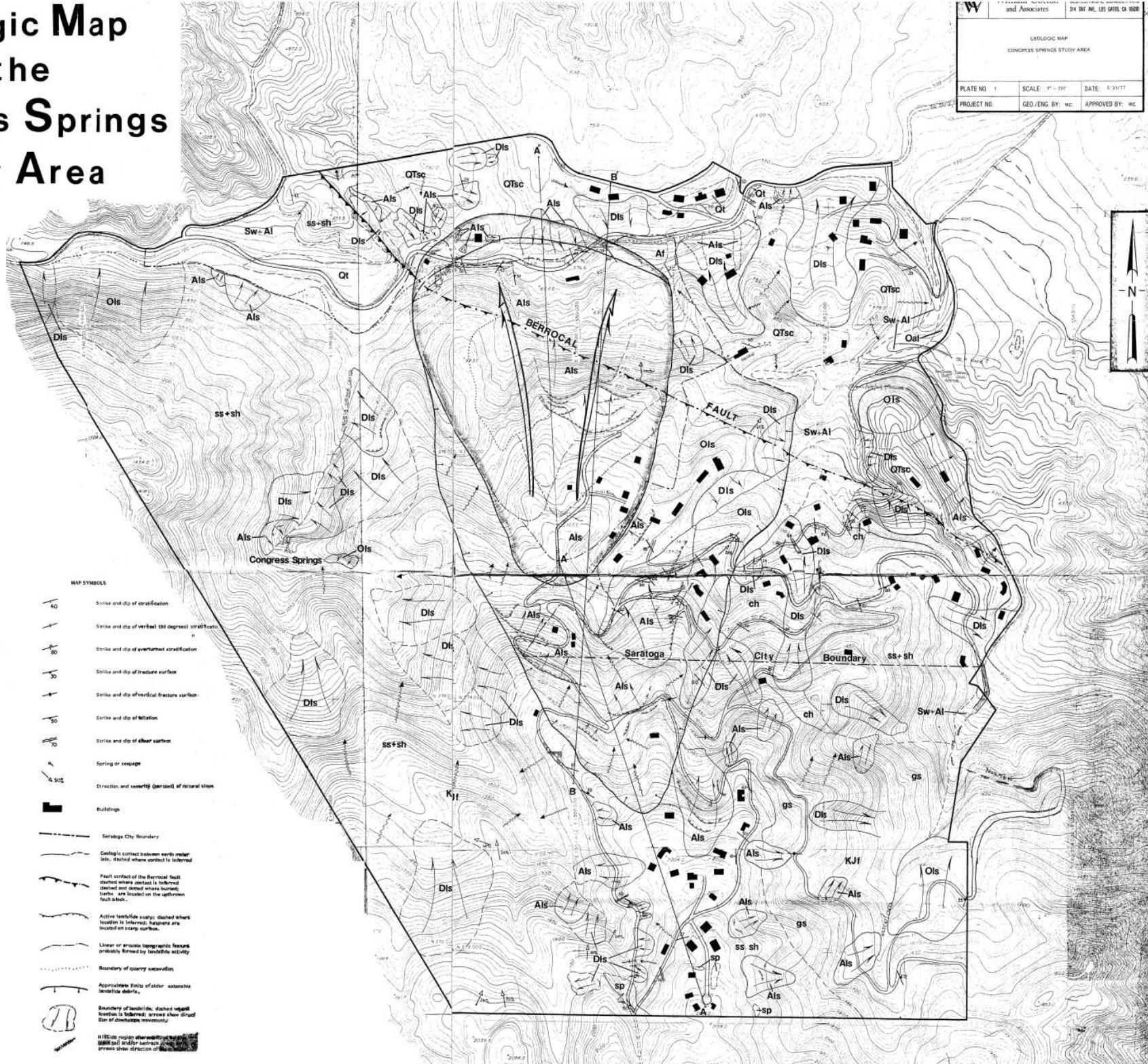


Geologic Map of the Congress Springs Study Area

GEOLOGIC MAP CONGRESS SPRINGS STUDY AREA		
PLATE NO. 1	SCALE: 1" = 100'	DATE: 5/20/77
PROJECT NO.	GEO./ENG. BY: WC	APPROVED BY: WC



- Af** ARTIFICIAL FILL
Broken rock materials derived from quarry operations, road construction, and other grading operations; predominantly composed of Franciscan sandstones and shales, debris, and sandstone and conglomerate of the Santa Clara Formation.
- Sw + Al** SLOPE WASH & ALLUVIUM
Unconsolidated deposits of boulders, gravel, sand, silt and clay that are found on lower slopes and adjoining valley floors.
- Als** ACTIVE LANDSLIDE
Actively or recently moving landslides with fresh, unvegetated scarps and broken ground, undisturbed depressions and recently disturbed man-made features or vegetation.
- Dis** DORMANT LANDSLIDE
Recently inactive landslides with well-vegetated and overgrown scarps, rounded to moderately sharp surface topography and undisturbed man-made features and vegetation.
- Ols** OLD LANDSLIDE
Relatively stable, inactive landslides with subdued irregular topography, low slope position, well established drainage system and undisturbed vegetation.
- Oal** OLD ALLUVIUM
Unconsolidated valley-floor deposits of gravel, sand, silt and clay representing older alluvium in fan and pre-fan slope deposits.
- Qt** TERRACE DEPOSITS
Unconsolidated, sheeted stream deposits of gravel, sand, silt, and clay along Saratoga Creek.
- QTsc** BEDROCK UNITS

- SANTA CLARA FORMATION**
Sandstone-siltstone, crudely stratified sequence of interbedded sandstone, siltstone, sandstone and siltstone. Bedrock exposures located in the hillsides north of Saratoga Creek. (Refer to a detailed geologic map and modern maps located to the east. This section represents the western limit of a broadly faulted, northwest-trending syncline and west of the folded (late Pleistocene) portion of the Santa Clara Formation. Along the Saratoga Creek channel the Santa Clara bedrock is involved in large-scale landslide activity and displays numerous circular and elliptical features characterized by rapid change in strike and steep dips.)
Slope stability of most of the Santa Clara bedrock is considered to be relatively low. The abundance of fine-grained rocks (i.e., mudstone, etc.) and the propensity for deep weathering of this bedrock provides the necessary ingredients for numerous but usually shallow slumps and earth flows.
- FRANCISCAN COMPLEX**
Predominantly composed of fine to coarse grained, massive to block bedded, fractured sandstone (i.e., graywacke) interlayered with highly sheared, clay shale, extensive sections of granitic gneiss, mafic volcanic rocks and chert and local exposures of serpentinite.
Common exposures exhibit bedrock that is highly broken and pervasively sheared. Where more coherent sections are found, the stratification is usually characterized by rapid changes in bedding over short distances. This structure and lithologic complexity has resulted primarily from the geologic environment in which the Franciscan rocks accumulated and their subsequent geologic history (i.e., oceanic trench deposits).
Slope stability within the Franciscan complex is characterized by numerous landslides of varying size, complexity and activity. The highly fractured nature of the Franciscan materials, the steep terrain and the past climatic and tectonic conditions have combined to produce very large landslide masses.

- ss+sh** Sandstone and Shale
- ch** Chert
- gs** Gneiss
- sp** Serpentinite

NOTE TO USERS
This map provides geologic data based on detailed ground reconnaissance conducted during the months of March, April and May, 1977. Interpretation of aerial photographs and a review of published and unpublished geologic reports and maps. It is designed primarily for use by geologists, engineers, and other professional earth scientists and is not intended as a substitute for detailed site investigations.
Where specific geologic features are shown on this map, field criteria were used to support their existence. However, absence of appropriate symbols (e.g., landslides, exposures, etc.) from any set of this map may not be used to prove the absence of those features.
Additional explanation and description of the units used on this map may be found in the report entitled "Geologic Reconnaissance of the Congress Springs Study Area May 1977" by W. C. Cotton and Associates.
An additional map entitled "Ground Movement Potential Map of the Congress Springs Study Area" has been prepared by interpretation of the geologic map and other information. The ground movement potential map is of greater interest to the non-technical user.

- MAP SYMBOLS**
- 40 Strike and dip of stratification
 - Strike and dip of vertical (90 degree) stratification
 - Strike and dip of overturned stratification
 - Strike and dip of fracture surface
 - Strike and dip of vertical fracture surface
 - Strike and dip of foliation
 - Strike and dip of shear surface
 - Spring or seepage
 - Direction and severity (degrees) of natural slope
 - Buildings
 - Saratoga City Boundary
 - Geologic contact between earth major units. Dashed where contact is inferred.
 - Fault contact of the Berrocal fault dashed where contact is inferred, dashed and dotted where bedrock units are located on the upthrown fault block.
 - Active landslide scarp; dashed where location is inferred. Features are located on scarp surface.
 - Linear or arcuate topographic feature probably formed by landslide activity
 - Boundary of quarry excavation
 - Approximate limits of active extensive landslide debris.
 - Boundary of landslide; dashed where location is inferred, arrow shows direction of movement.
 - Hillslope region where slope failure and/or erosion process show direction of movement.