PETITION TO ESTABLISH RIVER JUNCTION VITICULTURAL AREA

The proposed River Junction Viticultural Area is in southern San Joaquin County, at the western edge of San Joaquin Valley (also known as the Central Valley) and the southernmost edge of the Sacramento - San Joaquin River Delta (the "Delta"). It occupies a low area adjacent to and northeast of the confluence of Stanislaus River with San Joaquin River, and it includes part of River Junction Reclamation District No. 2064. The area is entirely within the statutory Delta as defined in California State Water Code, section 12220. Within the Legal Delta, it is considered to be part of the Delta Uplands. The proposed area consists of nearly 1,300 contiguous acres, of which 740 are currently planted to grapes, mostly Chardonnay.

Differences in topography, microclimate, and soils separate the River Junction Viticultural Area from the surrounding areas. The proposed area is a shallow, southwest-facing topographic bowl, bounded southwest, south, and east by the confluence of the Stanislaus River with the San Joaquin River; north by a river terrace bench; and northwest by a natural drainage division. These boundaries are exaggerated by levees and raised roadbeds, which enhance the area's locally distinct microclimate.

The enclosed Geographical Analysis, summarized for your convenience in this petition, presents detailed evidence that the River Junction Viticultural Area is a geographically unique grape-growing region under the definition set forth in 27 CFR 4.25a (e) (1). In order to enable wineries to designate grapes originating from this unique area, so that consumers may make informed decisions as to the wines they purchase, it is appropriate that the River Junction area be recognized as an American Viticultural Area. Therefore, it should be established as "River Junction," an American Viticultural Area in accordance with 27 CFR Part 9.

Respectfully submitted,

Ronald W. Mc Manis

The Delta

In the San Francisco - San Joaquin River Delta, the Sacramento River, draining south, and the San Joaquin River, draining north, merge to drain west via a narrow opening through the Coast Ranges into Suisun / San Francisco Bays. Nearly one-half the total state runoff passes through the Delta Estuary system. Water and sediment are derived from the Central Valley, the Coast Ranges to the west, Klamath Mountains to the north, and Sierra Nevada Mountains to the east.

The Delta is usually divided into several parts, including a northern delta dominated by the Sacramento River; a western delta at the confluence of the Sacramento and San Joaquin Rivers; a southern delta dominated by San Joaquin River; an eastern delta influenced by Consumnes and Mokelumne Rivers; and a central delta wherein all component river channels mix. The proposed River Junction Viticultural Area is in the southern delta.

The Delta has a Mediterranean climate (a climate strongly influenced by maritime conditions which produce warm winters and cool summers). However, due to its inland location, Delta climate is also subject to continental weather patterns, which are characterized by uniformly hotter, drier summers and cooler, wetter winters, especially in the southern delta. These extremes can be particularly marked in the Delta because the Coast Ranges block most summer storms from inland areas, while winter storms, which usually arrive from the west, often remain locked within the Central Valley between the Coast Ranges and Sierra Nevadas.

Local wind patterns result from interplay between prevailing maritime breezes and inland air movement due to solar heating of Central Valley air masses. During times of warmer weather, this interplay results in the pulling in of late afternoon cooling westerlies, the "Delta Breeze," which can reduce temperatures by 30°F in two hours.

Because the Delta is nearly flat, subtle topographic differences create small local areas differing environmentally from surrounding areas in terms of slope, wind exposure, higher or lower temperature extremes, drainage rates, and soil types. A few of these tracts are exclusively river-formed, including old overbank deposits, oxbows, flood basins, or terraces, some of which may have resulted from the extensive flooding of the late 1800's. In many cases, however, man-made features such as levees, drainage canals, and certain roads, have exaggerated natural topographic expressions and thereby increased local microclimatic extremes. Since many of these cultural

enhancements have been in place since the 1800's, they have become as permanent a part of the landscape as any natural feature—possibly more so.

It is important to note that in many cases artificial levees were simply man-made levees constructed on top of natural ones when the natural ones could no longer satisfactorily contain river flows. The need to raise the levees resulted from two factors; (1) increased settlements in the Delta, which made flood control more imperative, and (2) the deleterious impacts of human use on the Delta environment, such as silting riverbeds and subsidence of land due to water table depletion. For example, near the end of the last century, hydraulic gold-mining in the Sierras delivered nearly one billion cubic yards of sediment into rivers draining into the Delta, raising local river bottoms as much as 30 feet and exacerbating the seasonal flooding in the area.

The effects of local topography and the continuous interaction of continental and maritime air masses create a varied climate within the Delta watershed. Annual precipitation in the Delta varies greatly, ranging from about 60 inches in the wettest areas to less than 10 inches in the driest areas.

Delta History

The Delta is a distinctive estuarine environment where freshwater and tidal ocean water meet. Based on tidal influence, geomorphology, and native vegetation, the Delta is an inland coastal environment. Estuaries are among the richest, most productive ecosystems on Earth and include diverse natural habitats and micro-environments.

The tremendous fertility of Delta Estuary soils was recognized early in the settlement of California. Historically, the Delta was a vast marshland with adjacent uplands that underwent periodic flooding from winter rains and spring snow melt. Since 1850 over 90 percent of those wetlands have been reclaimed for agriculture, and have been administered by a variety of private individuals, public agencies, and Reclamation Districts.

Native Americans utilized the Delta area for at least 10,000 years, prior to invasion by Spain. Local archeological sites are at least 5,000 years old. As late as the 1800's the Stanislaus - San Joaquin confluence area was inhabited by the Miwok. In 1810 Spanish forces explored the southern delta, and by 1820 British and French fur trappers had arrived. In 1832 the Hudson Bay Company established local camps.

Following secularization of the Spanish Missions during the Mexican Period (1812 - 1846), large local land grants were given to Mexican citizens. In 1841, the first band of eastern overland immigrants crossed the Sierras, journeyed down the Stanislaus River, and headed north to Sutter's Fort. In the 1840's local land use, among land grant recipients and homesteaders, was primarily cattle grazing on upland grasslands, and the marshes were avoided. River commerce developed, by 1847 steamboats appeared on the Delta, and the Stanislaus River had regularly scheduled steamboat service.

Following U.S. acquisition of California from Mexico, the presence of gold was announced in 1848, resulting in an enormous influx of miners and settlers. Settlers soon realized that feeding the gold miners was more profitable than gold mining: for instance, locally-grown watermelons sold for $5 each, in gold-based 1849 dollars. Wheat was grown by 1850, and local agriculture increased to meet regional demands. Truck crops and orchards became extremely profitable.

Following the Federal Swamp and Overflow Act of 1850, wetlands title was transferred to the State of California with provision that proceeds from land sale would finance reclamation. Early reclamation efforts in the Delta consisted of artificial levees created with hand tools, and were less than

successful. Farming was difficult, but high yields encouraged further reclamation efforts.

By the 1860's over 160,000 people, about half the state population, lived within the Delta drainage, and by the 1880's much wheat was grown locally. By the turn of the century power dredges were available and reclamation districts appeared, leading to permanent local land-use for agriculture. In the 1960's the Army Corps of Engineers began major levee improvements and reclamation. As of 1992, 586,000 acres in San Joaquin County were used for irrigated crops and pasture, of which about 132,000 acres were in use for fruit and nut crops. In recent years fruits, including wine grapes and table grapes, have become major local crops.

RIVER JUNCTION VITICULTURAL AREA

Distinguishing physical features

The proposed River Junction Viticultural Area is a discrete local tract in the southern delta that is unique in topography, soils, and microclimate.

Name evidence

The name "River Junction" refers to the junction of Stanislaus River with San Joaquin River. The name is in prominent use within the proposed viticultural area, undoubtedly because of the significant prehistoric, historic, and ongoing influence of the rivers' confluence on the immediate area.

The name River Junction has been applied to several features in the proposed area. It is currently used as a road name for River Junction Farms Road (shown on the Ripon and Vernalis U.S.G.S. Quadrangles). Reclamation District No. 2064, in which the proposed viticultural area is located, bears the name River Junction Reclamation District. As this district was formed in the 1920's or earlier, the name River Junction dates back at least that far. The name is also used for River Junction Farms Subdivision No. 2 (filed October 15, 1925) within River Junction Reclamation District (see Figures 7, 8, and 9 in the Geographical Analysis showing the varios uses of the place name River Junction).

Topographical evidence in support of proposed boundaries

Southeast and west boundaries. The River Junction Viticultural Area is bounded on the west by relatively steep slopes and the San Joaquin River, and is bounded on the south and east by gentle, nearly flat topography and the Stanislaus River. The area is locally unique in terms of topography: its gentle, persistent southwest slope and higher boundaries form a shallow, slightly tilted bowl about 18 - 25 feet elevation at the center. Original natural boundaries to the west, south and east have been exaggerated by engineered, permanent levees that range from about 35 - 42 feet elevation Figures 5 and 6 in the Geographical Analysis show a transect through the River Junction Viticultural Area and illustrate the elevation differences that distinguish it.

Northern boundary. The northern boundary of the area is an abrupt, natural elevation change at about the 29 - foot contour, delineated by Division Road. Physical evidence indicates that Division Road was placed on the upper side of a pre-existing, natural river terrace boundary. The topographic change marked by the road exactly follows geologic and soil type boundaries

extending from the east to the center of section 7, T3S, R7E and westward to Airport Way. The natural extension of Red Bridge Slough to the northwest (see U.S.G.S. Vernalis Quadrangle) is further evidence that this boundary is a natural river terrace.

Northwest boundary. The northwest boundary of the River Junction Viticultural Area is delineated by Airport Way, a subtle natural high that is exaggerated by the raised roadbed. Elevation ranges from about 29 - 35 feet. Available geologic and historic evidence strongly supports the conclusion that, like Division Road, Airport Way follows a natural topographic high.

The 1925 reclamation map (Figure 8 of the Geographical Analysis) shows two separate sloughs draining from the Airport Way / Division Road intersection: one, called Red Bridge Slough on this historic map, drains southeast through the River Junction Viticultural Area, while the other (unnamed) slough drains northwest. Both of these sloughs today follow the same drainages as they did in 1925, but the northwest slough is now called Red Bridge Slough (U.S.G.S. Vernalis Quadrangle), and the southeast slough is unnamed (U.S.G.S. Ripon Quadrangle). These two sloughs coincide with occurrences of Merritt soils, which fan out to the northwest and southeast of the Airport Way / Division Road intersection—further evidence that the intersection of Airport Way and Division Road has historically sat on naturally higher topography, from which the soils accumulated downslope in two directions.

Climatic evidence in support of the proposed boundaries

Climatologically, the southern delta is more modified by inland weather patterns than other parts of the Delta—experiencing more extreme high and low temperatures—although still receiving maritime influence. The River Junction Viticultural Area is at the boundary between coastal and continental weather influence. It is subject to little rainfall (10 - 11 inches per year), and at its southernmost part lies within the rain shadow of the Coast Ranges to the west. This is the driest part of the Delta, and can be considered as arid to semiarid with coastal influence (Figure 4 of Geographical Analysis).

As would be expected of a topographical depression, the local microclimate of the River Junction Area is singular. The River Junction Viticultural Area is distinctively cooler than the immediate surrounding area within the southern delta. Temperature data from 1995 and 1996 were recorded by a weather station located near the center of the River Junction Area, at Rivercrest Vineyards. The monthly-averaged data show that minimum temperatures are consistently slightly cooler than elsewhere in the region, especially in summer (This data is displayed over several pages, as average temperatures and as

Degree Days, in Table 2 in the Geographical Analysis). Average high temperatures are similar to Antioch and Lodi, which are significantly closer to the Bay and would be expected to experience more coastal cooling. Average low temperatures are generally the coolest among all sites shown. Significantly, minimum August temperatures are 2° - 5°F cooler than surrounding areas.

The Degree Days shown on the last page of Table 2 have been adjusted to long term averages and show the River Junction area to be the coolest, in terms of viticultural climate support, of all the Delta areas shown—including Antioch and Lodi.

Grapes grown here are also subject to seasonally later frosts (as pointed out by Cook and Lider 1972). (Note: values shown are monthly averages, not absolute minimums or maximums.)

Geological evidence in support of the proposed boundaries

The River Junction Viticultural Area is adjacent to and immediately north of the confluence of Stanislaus with San Joaquin River. It is a shallow, southwest-facing topographic bowl. Field observations reveal that it consists entirely of surficially exposed river channel deposits (areas where the geologic parent material is found on the surface), and mostly granitic, alluvial soils derived from those deposits.

The stream sediment deposits in the southern delta are mapped by geologists as "Recent river channel deposits." (The descriptor "Recent" is a geological term referring to a geological formation less than 10,000 years old.) In the southern delta area these Recent river alluvial sediments are restricted to the narrow band of the Stanislaus and San Joaquin River channels, as illustrated by the blue band in Figure 3 of Geographical Analysis.

San Joaquin River is shallower, warmer, slower, and hence more nutrient rich than is the Sacramento. The waters of the southern delta have more dissolved solids and a higher salinity than those of the northern delta. Although drainage from the Coast Ranges and upstream parts of the Central Valley contribute, the principal tributary streams of the San Joaquin, including the Stanislaus, originate in the Sierra Nevada Range to the east. Thus, the Sierras are the major contributor to the river alluvium which is the parent material of the soils along the San Joaquin River.

The mountains of the Sierra Nevadas are primarily comprised of granite rock, and the granite is exposed throughout much of the Range. Rivers draining the

Sierras cut through this rock and transport particles downstream, so most rivers feeding the San Joaquin are granite-rich in their sediment load. This sediment, mixed with other sediments from the Sierra foothills, is transported down-drainage from the various confluent rivers, and mixes with other sediments acquired by the San Joaquin farther upstream. Thus, the Recent channel deposits, including the deltaic fan and terraces of Stanislaus River, contain much granitic sands, along with various other mixed rock grains and whatever organics the tributary streams have contributed. Alluvial fans which generally contain a high percentage of granitic sands are found at the mouths of the tributary rivers and can extend to the far side of the San Joaquin River.

The geologic substrate of Recent river channel deposits has formed granite-rich, relatively sandy alluvial soils belonging to the Grangeville - Merritt - Columbia group, which are high in available minerals. One of these soil types, the Grangeville fine sandy loam, is not locally found outside the proposed viticultural area. The River Junction Viticultural Area is apparently the only local area where bottomland soils of the Grangeville - Merritt series have been planted to grapes, and lack of comparable local areas suggests it will remain so.

Soils evidence in support of proposed boundaries

Formation and distribution of local soils. The River Junction Viticultural Area contains soils that are generally grouped as alluvial, and which formed on the geologic parent material of Recent river channel deposits that are exposed in, and partly define, the Area. Soils that formed on the stream channel deposits are derived from these deposits, are similar to one another in nature, and are characteristic of the parent sedimentary deposits. These soils are identified as "Recent alluvial floodplains soils" and "delta and floodplains soils" in the U.S. Department of Agriculture soils reports for San Joaquin and Stanislaus counties.

Where the Stanislaus joins the San Joaquin, bounding topography is steeper to the west and flatter to the east, thus restricting the westward limits of soils. West of the San Joaquin, northeast facing slopes limit alluvial soils to an area only about 1/2 mile or less in width. These soils, primarily Merritt - Columbia - Dello series and Dospalos - Bolfar complex, are bounded west by basin soils of the Willows - Pescadero series and terrace soils of the Capay series. Conversely, east of the San Joaquin, flatter topography has allowed alluvial soils to accumulate to a width of 1 to 1 1/2 miles.

South of the Stanislaus there are mostly Columbia - Temple series soils, bounded by basin soils of the Waukena - Fresno association, and alluvial fan soils of the Modesto - Chualar group that extend eastward.

North of the Stanislaus, elevation is slightly higher than to the south, and topography is nearly flat but includes subtle northwest-facing and more strongly expressed southwest-facing slopes. Here the alluvial soils reach 1 - 1/2 miles in width and are composed of Merritt - Grangeville - Columbia series with lesser amounts of Dello and Egbert soils. They are bounded to the east by terrace soils groups, primarily of the Delhi - Veritas - Tinnin series.

Unique soil composition of proposed area. The River Junction mix of soils (described in tabular form in Table 1 of the Geographical Analysis) differs from the surrounding areas. Among the total soils, nearly one-half are sandy types, and about one-fourth of the total is fine sandy loam of the Grangeville series. Soil types include about 25% Grangeville fine sandy loam; about 50% Merritt silty clay loam; nearly 25% Columbia fine sandy loams; and less than 1% Veritas silty clay loam. None of the surrounding areas have nearly as high a ratio between sandy loam to clay loam soils. Grangeville sandy loam is unusual in this part of the southern delta: the single other local occurrence is west of San Joaquin River, 1 1/2 miles northwest, and is less than 11 acres in extent.

The Grangeville and Columbia series are formed in alluvium derived from granitic rock sources and the Merritt series is formed in alluviums from mixed rock sources. The Grangeville, Merritt, and Columbia series of soils are characterized as "prime farmland." These soils are all very deep, less well drained, and have moderate to high water capacity; permeability ranges from moderately slow in the Merritt series to rapid in the Columbia and Grangeville series. They occupy nearly flat areas at low elevation and are occasionally flooded. They are exceedingly fertile soils that are capable of supporting wine grapes, almonds, tomatoes, sugar beets, wheat and other crops. Grapes have been grown on Columbia soils, but apparently, in San Joaquin County at least, have not been previously grown on bottomlands with Grangeville and Merritt.

Soil samples collected on-site on October 2, 1997 include one sample from each of the dominant units (the locations from which samples were taken are shown on Figure 11). Brief low-power microscopic analysis from each of these samples indicated similar texture and composition. All samples contained abundant angular quartz grains and mica flakes, indicating granitic origin. These soils are mineralogically young and should be expected to be very high in available minerals.

Comparisons with surrounding areas. The River Junction Viticultural Area is clearly distinct from all potentially comparable adjacent local tracts, including the Red Bridge Slough, Walthall Slough, and Northeast areas. These four areas are shown in Figure 11 of the Geographical Analysis.

As would be expected of deposits formed along rivers, downstream alluvial soils have a wider distribution than does their parent alluvial substrate (due to stream transport), while upstream the derived soils are less widely distributed than the underlying stream channel deposits. This principle is illustrated in Figure 3 of Geographical Analysis, which shows the distribution of alluvial soils in red and the distribution of the underlying parent material in blue.

In the River Junction Area, derived alluvial soils strictly overlap (do not extend beyond) their parent Recent river deposits. The strict relationship between the channel deposits and their derived soils in the proposed area results in a strikingly distinct northern boundary for the River Junction Viticultural Area. The abrupt sediment and soil change to other sediments and soils to the north and east is sufficiently distinct that the boundary is easily identified on the State Geologic Map at scale 1:250,000, and the San Joaquin County general soils map at scale 1:380,160.

The location of these soil changes correspond to the location of a strongly expressed terrace (distinct change in elevation) which angles northwest from the Stanislaus near its mouth. Its upper side is nearly exactly followed by Division Road (see Table 1 and Figures 3 and 11 of the Geographical Analysis). This terrace probably marks the highest flood stage in historically recent times, and suggests that soils in the area are probably derived from Stanislaus River alluvium. This would explain the distinctively high granitic content of these soils as compared with the surrounding area.

Red Bridge Slough area. In the Red Bridge Slough area (north of the proposed area's boundary following Airport Way), overlap of alluvial soils with parent channel deposits is less exact and the soils are restricted to the west of the Slough. This tract has a slight northwest slope, and based on field observation is wetter than the River Junction Viticultural Area. It has no strongly expressed northern or eastern boundaries, and thus would have less temperature extremes than the River Junction Viticultural Area due to the absence of topographic enclosure.

The Red Bridge Slough area has different soils than the proposed River Junction Viticultural Area. It contains about 35% Columbia loam. At its center it includes 10% Egbert silty clay loam. No Grangeville sands are present. The tract is part of River Junction Reclamation District No. 2064, recorded as River

Junction Farms subdivision no. 3 (1925). Durham Ferry State Recreation Area occupies about 20% of the tract, and the remaining part is essentially flat at 20 -25 feet elevation. (Figures 7, 8, and 11; Table 1).

Walthall Slough area. Southeast of Walthall Slough (located north of the Red Bridge Slough area), the relationship between channel deposits and derived soils is obscure: here the soils occupy a larger expanse than do the underlying stream deposits. They include nearly 40% Columbia soils and about 20% Dello clay loam. No Grangeville sands are present. Topographically, this area is essentially flat to slightly northwest-sloping. In terms of soils and the microclimate that would be inferred from the flat and open topography, it is completely different from the River Junction area (Figure11; Table 1).

Northeast area. To the northeast, Recent river alluvium still underlies the soils, but here soils include about 20% Veritas and Manteca series. No Grangeville sands are present. Otherwise, the Merritt and Columbia soils percentages are comparable to the River Junction Area. However, this area is higher and flatter, averaging about 30 - 35 feet elevation, and has no distinct topographic boundaries; therefore it undoubtedly has less temperature extremes than the River Junction Area. This area comprises about 195 acres of the original River Junction Farms subdivision no. 2 (Figures 7, 9, and 11; Table 1).

Historic and Current Use of Area

The earliest settlement in San Joaquin County was located just outside River Junction Viticultural Area, approximately 1 1/2 miles north of the mouth of the Stanislaus River, just north of Division Road. This town was established in 1846 by a group of Mormon families.

The historic site of San Joaquin City, established in 1849, is west of San Joaquin River and about .4 miles SSW of the northwest corner of the River Junction area. (It was founded on the west bank of San Joaquin River as a riverboat terminal, between two ferry crossings as shown on Figure 10 of the Geographical Analysis; due to a shift in the location of the river since then, this site is no longer at the river's edge.)

The northwest corner of the area was also the site of Durham Ferry, where gold miners crossed the San Joaquin en route to the Sierras. As might be expected from its slightly higher topography, Airport Way (aka Durham Ferry Road) apparently was a historic road or trail striking northeast from Durham Ferry (Figure 10).

Following the Federal Swampland Act of 1850, reclamation of wetlands was begun. The area was designated as a State Reclamation District, River Junction Reclamation District No. 2064. Subdivision survey maps were filed in 1922 for Bret Harte Gardens subdivision, and 1925 for River Junction Farms subdivision no's. 2 and 3 (Figures 7 and 8). Since reclamation, use of the River Junction area has been primarily agricultural. Recent crops have included asparagus, tomatoes, almonds, alfalfa, corn, and wine grapes. The area was also used for limited livestock grazing and dairying.

Present agricultural use of the area is primarily 700 acres of Chardonnay grapes. An additional 40 acres are planted to Cabernet grapes. Corn, alfalfa, and tomatoes are also grown. Aside from wine grapes, the only other permanent crop in the area is a single almond orchard (Figure 12). The large vineyard, owned by RJM Enterprises, has riparian water rights and currently pumps from the San Joaquin. As of 1996, permanent crops grown north of Division Road, outside the River Junction area, include about 40 acres of almonds and walnuts (two separate parcels), and 10 acres of grapes located a mile to the northeast (information supplied by Richard Cocke of the California Department of Water Resources in a personal communication December 11, 1997: see Figure 12; Appendix 3).

BOUNDARIES

The proposed River Junction Viticultural Area is north of the confluence of Stanislaus River with San Joaquin River, in the south part of the southern delta of the Sacramento—San Joaquin River Delta, and in southern San Joaquin County, California. It is in T3S, eastern R6E / western R7E on the U.S.G.S. Ripon Quadrangle and Vernalis Quadrangle. It is between 37°39'30" - 37°41'15"north latitude, and 121°13'00" - 121°16'00" west longitude. It occupies the southern one-third of California State Reclamation District 2064 (the River Junction Reclamation District) and is coextensive with River Junction Farms subdivision no. 2, except it does not include 195 acres at the northeast corner of that subdivision.

The proposed area includes approximately 1,293 contiguous acres (about 2 square miles). Maximum dimensions are roughly 2 miles east - west by 1 1/4 miles north - south. Boundaries are as follows: west and south by the San Joaquin River; south and east by the Stanislaus River; north by an old river terrace shelf delineated by Division Road; and northwest by a drainage boundary enhanced and delineated by Airport Way (Figures 7 and 9). The portion of the Stanislaus River which constitutes part of the boundary of the proposed River Junction Viticultural Area also marks the legal boundary of the San Francisco - San Joaquin River Delta.

The proposed viticultural area is located entirely within San Joaquin County, California. Boundaries are on two U.S.G.S. 7.5' series topographic maps, the Ripon Quadrangle (1969, photorevised 1980, revised 1994) and Vernalis Quadrangle (1991). The beginning point is near the center of the eastern edge of the "Vernalis" map, T3S, R6E, at the intersection of Airport Way with the San Joaquin River levee, approximately 50-75 feet north of Benchmark 35.

1. From the beginning point, follow the levee along the San Joaquin River and then along the Stanislaus River, southeasterly through sections 18 and 19 (T3S, R7E) on the "Ripon" map, then northeasterly through sections 20 and 17 (T3S, R7E) and approximately 200 feet into the south part of section 8 (T3S, R7E), to the closest point between Stanislaus River and Division Rd.

2. Thence northwest approximately 200 feet to Division Road.

3. Thence along Division Road, in a westerly and northerly direction to the intersection of Division Road with Airport Way, in section 7, R7E at the R6E boundary.

4. Thence southwest along Airport Way to the beginning point.

GEOGRAPHICAL ANALYSIS OF THE RIVER JUNCTION AREA, STANISLAUS RIVER AT SAN JOAQUIN RIVER, SAN JOAQUIN COUNTY, CALIFORNIA: A PROPOSED VITICULTURAL AREA

Submitted to
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INTRODUCTION

SCOPE.– Analysis of an existing vineyard tract and adjacent lands, southernmost San Joaquin county, California, was undertaken for Compliance Service of America, LLC, Santa Rosa, California, to determine if these lands are unique in terms of a proposed viticultural area. This report addresses site geology, geomorphology, soils, and microclimate in regional and local context. The proposed River Junction Viticultural Area is described in detail, and appears to be sufficiently distinct that it be proposed an American Viticultural Area.

ACKNOWLEDGMENTS.– I thank Michael A. McElhiney, U.S. Department of Agriculture, Natural Resources Conservation Service, for providing references including draft copies of soils reports and maps; Ron McManis for courtesies extended during field analysis; and Janelle Wakeman and Sara Schorske for field assistance and thoughtful discussion. Dena Freed drafted Table 1, Dyana Nedra assisted with graphics, and Mike Norton provided maps and photocopies. Richard Cocke provided preliminary local agricultural land-use data (personal communication to J. Wakeman).

METHODS.– Published references provided topographic, geologic, soils, climatologic, and historic data. Draft and unpublished reports were consulted. Local climatologic data were provided by R. McManis and are records from a weather station located near the center of Rivercrest Vineyards. The site and surrounding area were observed on October 2, 1997. Four soil samples (on-site and off-site) were collected and briefly examined microscopically at low power magnification, and voucher samples (field numbers RBGN 1997-7 to RBGN 1997-10) are deposited with the Geology Department, California Academy of Sciences, San Francisco, as CAS 0000000. Soils percentages were calculated by transferring published soils-map data to a grid system (one square = .92 acre; squares containing mixed types were scored positive for the dominant type). In Figure 6, vertical exaggeration is the same as on the U.S.G.S. topographic maps, from which the Figure was plotted and traced.

LOCATION.– The study area is in Northern California, within the Central Valley (Great Valley) physiographic province. It is at the western edge of San Joaquin Valley, at the southernmost edge of the Sacramento - San Joaquin River Delta. It occupies a low area adjacent to and northeast of the confluence of Stanislaus River with San Joaquin River. This area is located between 37°39′ - 37°45′ north latitude and 121°12′ - 121°18′ west longitude. It is in T2S/T3S, R6E/R7E, mapped on the Ripon Quadrangle (1969, revised 1980, 1994) and Vernalis Quadrangle (1991), U.S.G.S. 7.5′ series (topographic). This is in southern San Joaquin County, and it includes part of River Junction Reclamation District No. 2064. The area is entirely within the southwest part of the statutory Delta (California State Water Code, section 12220) and is part of the Delta Uplands (Department of Water Resources 1987: fig. 4) and part of the San Francisco Bay / Delta Estuary. (Note: The State Water Code defines the estuarine environment as "a coastal water body where ocean water is diluted by outflowing freshwater" (Figures 1, 2, 4).)

DELTA OVERVIEW.— The Delta is part of the San Francisco Bay / Sacramento - San Joaquin Delta Estuary, a region where freshwater and tidal ocean water meet. Based on tidal influence, geomorphology, and native vegetation, the Delta is a true estuary and thus is an inland coastal environment. Here the Sacramento River, draining south, and the San Joaquin River, draining north, merge to drain west via a narrow opening through the Coast Ranges into Suisun / San Francisco Bays. Nearly one-half the total state runoff passes through the Delta Estuary system. Water and sediment are derived from the Central Valley, the Coast Ranges to the west, Klamath Mountains to the north, and Sierra Nevada Mountains to the east. Because of its drainage constriction, the Sacramento - San Joaquin Delta narrows before reaching the sea and its growth has been in an upstream direction, rather than as the more normal configuration of an outward fan, expanding toward its mouth. Thus it is characterized as a "reversed delta" since the deltaic formation is inland of the enclosed bay at its mouth. This unusual configuration obscures its true nature: the Sacramento - San Joaquin Delta is the largest river delta on the west coast of North America, and is one of the 60 largest river deltas on Earth. See Bergen and others (1991); Herbold And Moyle (1989).

The present Delta was formed after inundation of San Francisco Bay, which began about 10,000 years ago due to rapid sea-level rise from latest Pleistocene glacial melting. Because of its reversed nature, sediment deposition has been within the Delta itself rather than seaward of its mouth, so although the Delta itself is geologically quite young, its sediments are exceedingly deep, and in some places reach 100 feet thick. This suggests inland deltaic sediments are accumulating on a subsiding trough between two tectonic blocks (discrete chunks of the earth's crust). See Bergen and others (1991); G.-Naidu and Alvarez (1993); Herbold and Moyle (1989).

Estuaries are among the richest, most productive ecosystems on Earth and include diverse natural habitats and microenvironments. The tremendous fertility of Delta Estuary soils was recognized early in the settlement of California. Historically, the Delta was a vast marshland with adjacent uplands that underwent periodic flooding from winter rains and spring snowmelt. Since 1850 over 90 percent of those wetlands have been reclaimed for agriculture, and have been administered by a variety of private individuals, public agencies, and Reclamation Districts. Between 1853 and 1884 hydraulic gold-mining in the Sierras delivered nearly one billion cubic yards of sediment into rivers draining into the Delta. Local river bottoms were raised as much as 30 feet, and much material was carried farther downstream to be deposited in the Delta and in Suisun / San Francisco Bays. Widespread flooding resulted until hydraulic mining practices were stopped by a Federal Court injunction. Presently, the Delta encompasses 1,153 square miles and includes nearly 700 miles of sloughs and channels; it also includes about 1,100 miles of artificial levees (with associated "coast line") which protect about 700,000 acres of reclaimed marshland and adjacent uplands. Although present water management practices have resulted in the Delta now being primarily a freshwater system, annual summertime incursions of saline

water still occur. See Bergen and others (1991); Herbold and Moyle (1989).

Within the Delta, California's Mediterranean climate is strongly influenced by maritime conditions (warmer winters and cooler summers). However, due to its inland location, Delta climate is also subject to continental weather patterns with more extreme temperature values. Generally it has uniformly hotter and drier summers, and cooler, wetter winters. These extremes can be particularly marked because the Coast Ranges block most summer storms from inland areas, while winter storms, which usually arrive from the west, often remain locked within the Central Valley between the Coast Ranges and Sierra Nevadas. Local wind patterns result from interplay between prevailing maritime breezes and inland air movement due to solar heating of Central Valley air masses. During times of warmer weather, this interplay results in the pulling in of late afternoon cooling westerlies, the "Delta Breeze", which can reduce temperatures by 30°F in 2 hours. Because the Delta is transitional between coastal and inland extremes, effects of local topography and the continuous interaction of continental and maritime air masses create a varied climate. Within the Delta watershed, annual precipitation varies greatly, ranging from about 60 inches in the wettest areas to less than 10 inches in the driest areas. See Bergen and others (1991); Herbold and Moyle (1989).

SOUTHERN DELTA AREA.— The Delta is usually divided into several parts including a northern delta dominated by the Sacramento River; a western delta at the confluence of the Sacramento and San Joaquin Rivers; and a so-called eastern delta, which is further divided into a southern delta dominated by San Joaquin River; an eastern delta influenced by Consumnes and Mokelumne Rivers; and a central delta wherein all component river channels mix (Herbold and Moyle 1989). This reflects the major components of the Delta: south-flowing Sacramento and north-flowing San Joaquin Rivers have created their own individual deltas which merge and are then truncated by combined river drainage westward toward Suisun Bay (Hill 1975).

San Joaquin River is shallower, warmer, slower, and hence more nutrient rich than is the Sacramento. Due to dynamics of agricultural water circulation within the Delta, the southern delta has higher electrical conductivities (e.g., salinity), from more dissolved solids, than does the northern delta, and is similar to saline areas of the western delta. Species distribution and chlorophyll concentrations of phytoplankton (floating plants) reflect distinction of southern delta waters. See Herbold and Moyle (1989).

The San Joaquin River drainage, and hence the southern delta, primarily is fed from the Sierras, although the Coast Ranges and Central Valley contribute. Within the San Joaquin Valley, the San Joaquin River channel is asymmetrically placed closer to the base of the Coast Ranges to the west, where bounding topography is relatively steep, than to the Sierras to the east, where adjacent valley topography is more gently sloping (Hinds 1952). This steep western and gentle, poorly defined eastern valley topography (Figure 6) probably reflect the tectonic factors which confine the San Joaquin River placement; the river

apparently occupies a subsiding trough related to ongoing Coast Ranges uplift.

The river channels and deltaic fans associated with San Joaquin tributary rivers predate inception and formation of the present Delta, since they existed prior to inundation of San Francisco and Suisun Bays. It is likely some of these fans, and their river mouths, have been in place at least 2 - 3 million years, depending on timing of Coast Ranges uplift and consequent placement of San Joaquin River. Growth of the channels and mouths of the tributary rivers is an ongoing geologic process presently curtailed by means of artificial levees, so that sediment replenishment and channel widening depend on levee failures. Prior to levee construction, tributary streams such as Stanislaus River would have created their own low, natural sediment levees, and would occasionally have occupied more extensive terraces at, and downstream from, their confluence with the San Joaquin, especially during times of flooding. Where they dropped sediment at their mouths and lowest terraces, the tributary streams formed characteristically low, wide fans. Typically, within their fans the rivers created braided channels as they meandered through their own deltaic deposits.

This pattern of long term stream sediment deposition is mapped by geologists as "Recent {=Holocene, less than 10,000 years old} river and major stream channel deposits" on the California State Geologic Map Series (Rogers 1966). In the southern delta area these sediments are restricted to the Stanislaus and San Joaquin River channels. They are bounded to the west, west of San Joaquin River, by "Pleistocene non-marine sedimentary deposits including the Riverbank Formation", and to the east (north and south of the Stanislaus) by "Recent basin and other Recent alluvial fan deposits" (Figure 3).

The principal tributary streams of the San Joaquin, including the Stanislaus, originate in the Sierra Nevada Range to the east. The Sierra Nevadas are an uplifting granite batholith (crystallized magma chamber) from Earth's interior, and the granite is surficially exposed throughout much of the Range (Bateman and Wahrhaftig 1966; Hill 1975). Rivers draining the Sierras cut through this rock and transport particles downstream, so most rivers feeding the San Joaquin are granite-rich in their sediment load. This sediment, mixed with other sediments from the Sierra foothills, is transported down-drainage from the various confluent rivers, and mixes with other sediments acquired by the San Joaquin farther upstream. Thus, the Recent channel deposits, including the deltaic fan and terraces of Stanislaus River, contain much granitic sands, various other mixed rock grains, and whatever organics the tributary streams have contributed.

Although these are soils in the strict sense because they support rooted plants, they are also a sedimentary rock unit and could be expected to be sandier and less organic in their composition. In this sense they can be considered mineralogically "fresher" because they do not reflect long periods of decomposition (older deposits are constantly covered by fresher ones). However, chemical alteration of feldspars and micas within the granitics can be expected to have added significant amounts of clay minerals to these deposits. Soils that formed on the stream channel deposits are derived from them, are similar to one another in nature, and are characteristic of the parent sedimentary

deposits. These soils are identified as "Recent alluvial floodplains soils" and "delta and floodplains soils" in the U.S. Department of Agriculture soils reports for San Joaquin and Stanislaus counties (Arkley 1964; McElhiney 1992; Ferrari and McElhiney in preparation). As would be expected of surficial deposits derived from substrate, these soils have a wider downstream distribution than that of the parent alluvium, while upstream alluvial deposits do not necessarily include the derived soils (Figure 3).

Climatologically, the southern delta is more modified by inland weather patterns, although it still receives maritime influence. It is subject to little rainfall, and at its southernmost part lies within the rainshadow of the Coast Ranges to the west. This is the driest part of the Delta, and can be considered as arid to semiarid with coastal influence (Figure 4).

STANISLAUS - SAN JOAQUIN RIVER CONFLUENCE AREA.— Where the Stanislaus joins the San Joaquin, bounding topography is steeper to the west and flatter to the east. West of the San Joaquin, northeast facing slopes restrict alluvial soils to about 1/2 mile or less width. These soils, primarily Merritt - Columbia - Dello series and Dospalos - Bolfar complex, are bounded west by basin soils of the Willows - Pescadero series and terrace soils of the Capay series (McElhiney 1992; Ferrari and McElhiney in preparation). Conversely, east of the San Joaquin, flatter topography has allowed alluvial soils to accumulate to a width of 1 - 1 1/2 miles. South of the Stanislaus these are mostly Columbia - Temple series soils occupying a slight, persistent, west-facing slope (U.S.G.S. Ripon Quadrangle 1969; Westley Quadrangle 1969). Here the alluvial soils are bounded by basin soils of the Waukena - Fresno association, and alluvial fan soils of the Modesto - Chualar group that extend eastward (Arkley 1964). North of the Stanislaus, elevation is slightly higher than to the south, and topography is nearly flat but includes subtle northwest-facing and more strongly expressed southwest-facing slopes. Here the alluvial soils reach 1 1/2 miles in width and are composed of Merritt - Grangeville - Columbia series with lesser amounts of Dello and Egbert soils. They are bounded to the east by terrace soils groups, primarily of the Delhi - Veritas - Tinnin series (McElhiney 1992).

Soils of the Merritt - Grangeville - Columbia series are deep, moderately to finely textured, and are derived from granite and other rock sources. They occupy nearly flat areas at low elevation and are occasionally flooded. They are exceedingly fertile soils that have traditionally supported wine grapes, almonds, tomatoes, sugar beets, wheat and other crops. See Arkley (1964); McElhiney (1992); Ferrari and McElhiney (in preparation). These soils formed in place from their parent alluvium, which in turn resulted from river deltaic and overbank deposits. A strongly expressed terrace which angles northwest from the Stanislaus near its mouth probably preserves an older flood-stage cut from that river, marking the highest flood stage in historically recent times, so associated soils are probably derived from Stanislaus River alluvium.

HISTORICAL REVIEW. — Prior to invasion by Spain, Native Americans utilized the Delta Area for at least 10,000 years. Local archeologic sites are at least 5,000 years old. As late as the 1800's the Stanislaus - San Joaquin confluence area was inhabited by Miwok people. In 1810 Spanish forces explored the southern delta, and by 1820 British and French fur trappers had arrived. In 1832 the Hudson Bay Company established local camps. Following secularization of the Spanish Missions during the Mexican Period (1821 - 1846), large local land grants were given to Mexican citizens. In 1841, the first band of eastern overland immigrants crossed the Sierras, journeyed down the Stanislaus River, and headed north to Sutter's Fort. In the 1840's local land use, among land grant recipients and homesteaders, was primarily cattle grazing on upland grasslands, and the marshes were avoided. River commerce developed, and by 1847 steamboats appeared on the Delta and the Stanislaus River had regularly scheduled steamboat service. Following American acquisition of California from Mexico, presence of gold was announced in 1848 and resulted in an enormous influx of miners and settlers. Settlers soon realized that feeding the gold miners was more profitable than gold mining: for instance, locally-grown watermelons sold for $5 each, in gold-based 1849 dollars. Wheat was grown by 1850, and local agriculture increased to meet regional demands. Truck crops and orchards became extremely profitable. See Arkley (1964); Bergen and others (1991); Powers (1976); Romito (1992).

Following the Federal Swamp and Overflow Act of 1850, wetlands title was transferred to the State of California with provision that proceeds from land sale would finance reclamation. Early reclamation efforts in the Delta consisted of artificial levees created with hand tools, and were less than successful. Farming was difficult, but high yields encouraged further reclamation efforts. By the 1860's over 160,000 people, about half the state population, lived within the Delta drainage, and by the 1880's much wheat was grown locally. By the turn of the century power dredges were available and reclamation districts appeared, leading to permanent local land-use for agriculture. See Bergen and others (1991); Romito (1992).

As of 1992, 586,000 acres in San Joaquin County were used for irrigated crops and pasture, of which about 132,000 acres were in use for fruit and nut crops. In recent years fruits, including wine grapes and table grapes, have become major local crops (Romito 1992).

RIVER JUNCTION AREA

INTRODUCTION. – The proposed River Junction Viticultural Area is a discrete local tract in the southern delta that is unique in topography, soils, and microclimate. Because the Delta is nearly flat, subtle topographic differences create restricted, often poorly expressed areas differing environmentally in terms of slope, wind exposure, higher or lower temperature extremes, drainage rates, and soil types. A few of these tracts are river-formed and include old overbank deposits, oxbows, flood basins, or terraces, some of which may have resulted from the extensive flooding of the late 1800's. The entire Delta has been intensively modified for 150 years, and many reclamation projects predate early maps. Thus, any local geographic assessments will include features that may be partly or wholly cultural in origin. Many of these, including levees, drainage canals, and certain roads, are exaggerated natural topographic expressions that have increased local microclimatic extremes. Since many of these cultural enhancements have been in place since the 1800's, it is likely they will endure into the foreseeable future.

The River Junction Viticultural Area is adjacent to and immediately north of the confluence of the Stanislaus with the San Joaquin River. It is a shallow, southwest-facing topographic bowl. It consists entirely of surficially exposed Recent river channel deposits (areas where the geologic parent material is found on the surface), and mostly granitic, alluvial soils derived from those deposits. The strict relationship between the channel deposits and their derived soils results in a strikingly distinct northern boundary for the River Junction Viticultural Area. The abrupt sediment and soil change to other sediments and soils to the north and east is sufficiently distinct that the boundary is easily identified on the State Geologic Map at scale 1:250,000 (Rogers 1966), and the San Joaquin County general soils map at scale 1:380,160 (McElhiney 1992). Probably this boundary is the edge of a former terrace cut by Stanislaus River. Its upper side is nearly exactly followed by Division Road (Table 1; Figures 3, 7).

USE OF THE NAME "RIVER JUNCTION."– The name River Junction is currently used as River Junction Farms Road on the U.S.G.S. Ripon Quadrangle (1969) and Vernalis Quadrangle (1991). The name is also in use for River Junction Reclamation District No. 2064, a State of California Special District dating from at least 1925. River Junction Reclamation District includes Bret Harte Gardens subdivision, filed October 11, 1922. Since this subdivision assumes reclamation within the District, it seems likely that River Junction, as a District name, dates at least to 1922. The name is also used for River Junction Farms subdivision no. 2 (filed October 15, 1925) within River Junction Reclamation District (Figures 7, 9). Origin of the name, undoubtedly, was in allusion to the confluence, or junction, of the Stanislaus River with the San Joaquin River.

EXTENT.– The River Junction Viticultural Area, as identified herein, is north of the confluence of Stanislaus River with San Joaquin River, in the south part of the southern delta of the Sacramento–San Joaquin River Delta, southern San Joaquin County, California. It is in T3S, eastern R6E / western R7E on the U.S.G.S. Ripon Quadrangle (1969) and Vernalis

Quadrangle (1991). It is between 37°39'30" - 37°41'15" north latitude and 121°13'00" - 121°16'00" west longitude. It occupies the southern one-third of California State Reclamation District No. 2064 (the River Junction Reclamation District) and is the same as River Junction Farms subdivision no. 2, except it does not include 195 acres at the northeast corner of that subdivision. Maximum dimensions are roughly 2 miles east - west by 1 1/4 miles north - south, and the Area includes approximately 1,293 contiguous acres (about 2 square miles). Boundaries are natural, and natural with cultural enhancement, and are: west and south by San Joaquin River; south and east by Stanislaus River; north by an old river terrace shelf delineated by Division Road; and northwest by a drainage boundary enhanced and delineated by Airport Way (Figures 7, 9).

PREVIOUS WORK.— A brief study of part of the River Junction Viticultural Area was conducted by Cook and Lider (1972) and included observation of backhoe trenches on property now occupied by RJM Vineyards. Encountered soils were referred to the Columbia series and found to be deep, very fertile, and well drained. Cook and Lider (1972) described this tract as sloping gradually west, " ...[In] a low lying area...more subject to frost..." (Appendix 1).

TOPOGRAPHY.— The River Junction Viticultural Area is an interesting tract bounded west by relatively steep slopes and the San Joaquin River, and bounded south and east by gentle, nearly flat topography and the Stanislaus River. Locally, the Area is unique in terms of topography: it has a slight, persistent southwest slope and is higher at its boundaries, so that the Area is a shallow, slightly tilted bowl about 18 - 25 feet elevation at the center. Original natural boundaries to the west, south and east have been exaggerated by Project levees (engineered, permanent levees) that range from about 35 - 42 feet elevation (Figure 6).

The northern boundary of the area is an abrupt, natural elevation change at about the 29 - foot contour, and delineated by Division Road. Division Road was clearly placed on the upper side of a pre-existing, natural river terrace boundary, because the topographic change exactly follows Recent river channel deposits, from the east to the center of section 7, T3S, R7E (Rogers 1966), and the general soils types change along the same contour, extending westward to Airport Way (McElhiney 1992). Further evidence that this is a river terrace is the natural extension to the northwest of Red Bridge Slough (U.S.G.S. Vernalis Quadrangle), although the slough is not bounded by strong eastern topography.

The northwest boundary of the River Junction Viticultural Area is delineated by Airport Way, a subtle natural high that is exaggerated by the raised roadbed. Elevation ranges from about 29 - 35 feet. Historically, in the 1800's, a lake occupied the intersection of Division road with Airport Way (Figure 10). A smaller lake, .6 miles south on the same map (Brotherton 1982) is now utilized as a reservoir on RJM Vineyards land. The 1925 reclamation map (Figure 8) refers to two separate "Lake Avenues," each of which is near one or the other lakes shown on Brotherton's map (Figure 10). The reclamation map also shows an older road / property line closely following the current roadbed of Division Road, probably following contour. More importantly, the

reclamation map shows two separate sloughs draining from the Airport / Division intersection: one, called Red Bridge Slough, drains southeast through the River Junction Viticultural Area, while the other unnamed slough drains northwest. Both of these sloughs today follow the same drainages as in 1925, but the northwest slough is now called Red Bridge Slough (U.S.G.S. Vernalis Quadrangle), and the southeast slough is unnamed (U.S.G.S. Ripon Quadrangle). The northwest drainage, current Red Bridge Slough, is probably related to the elevated lake shown on Brotherton's map (Figure 10). These two sloughs are also marked by occurrences of Merritt soils, which fan out to the northwest and southeast of the Airport / Division intersection (McElhiney 1992: map sheets 30, 31), suggesting higher topography on which the soils accumulated downslope in two directions. Thus, available geologic and historic evidence strongly suggests Airport Way follows a natural topographic high.

SOILS.– The River Junction Viticultural Area contains soils that are generally grouped as alluvial, and which formed on the geologic parent material of Recent river channel deposits that are exposed in, and partly define, the Area. The River Junction mix of soils is locally unique (Table 1). Less than 13 acres at the northeast corner of the Area consist of Veritas silty clay loam, comprising less than 1 percent of the total. Among the total soils, nearly one-half are sandy types, and about one-fourth is fine sandy loam of the Grangeville series. Grangeville sandy loam is unusual in this part of the southern delta: the single other local occurrence is west of San Joaquin River, 1 1/2 miles northwest, and is less than 11 acres in extent (McElhiney 1992: map sheet 30). The other dominant soils in the Area are Columbia fine sandy loams and Merritt silty clay loam. The Grangeville and Columbia series are formed in alluvium derived from granitic rock sources and the Merritt series is formed in alluvium from mixed rock sources (Arkley 1964; McElhiney 1992). These soils are all very deep, less well drained, and have moderate to high water capacity; permeability ranges from moderately slow in the Merritt series to rapid in the Columbia and Grangeville series (McElhiney 1992). The Grangeville, Merritt, and Columbia series of soils are characterized as "prime farmland" (McElhiney 1992: table 6). Grapes have been grown on Columbia soils, but apparently, in San Joaquin County at least, have not been previously grown on bottomlands with Grangeville and Merritt soils (McElhiney 1992: table 7).

Soil samples collected on-site on October 2, 1997, include one sample from each of the dominant units (Figure 12). Brief low-power microscopic analysis from each of these samples indicated similar texture and composition. All samples contained abundant angular quartz grains and mica flakes, indicating granitic origin. These soils are mineralogically "fresh" and should be expected to be very high in available minerals.

MICROCLIMATE.– The River Junction Viticultural Area is within a region that is in itself unique: in the Delta Area, this part of the southern delta is semiarid with coastal influence. The southern delta is more continental in climate than portions of the Delta closer to the Bay;

thus it experiences more extreme high and low temperatures. It also gets less rainfall (10 - 11 inches per year), than most of the Delta Area (Figure 4). Within the southern delta, the River Junction Viticultural Area is distinctively cooler than the immediate surrounding area.

As would be expected based on topography, the local microclimate of the River Junction Area is singular. Temperature data for 1995 and 1996 were recorded from a weather station located near the center of the River Junction Area, at Rivercrest Vineyards. The monthly-averaged data show that minimum temperatures are consistently slightly cooler than elsewhere in the region, especially in Summer. Significantly, minimum August temperatures are 2° - 5° F cooler than surrounding areas. [Conversely, maximum temperatures are regionally consistent except for a significant Fall peak averaging 2° - 4° F warmer than surrounding areas (Table 2).] Consequently, grapes grown here are subject to seasonally later frosts (as pointed out by Cook and Lider 1972), cooler summer temperatures, and seasonally later highs than elsewhere locally. In Table 2, temperatures are averaged for each month and therefore do not show absolute minimum / maximum values.

LOCAL COMPARISONS.— The River Junction Viticultural Area is clearly distinct from all potentially comparable adjacent local tracts, including the Red Bridge Slough, Walthall Slough, and Northeast areas. In the River Junction Area, derived alluvial soils strictly overlap (do not extend beyond) their parent Recent river deposits, and include about 25% Grangeville fine sandy loam (including 2% Grangeville clay loam); about 50% Merritt silty clay loam; nearly 25% Columbia fine sandy loams; and less than 1% Veritas silty clay loam (Table 1). Distinct topographic boundaries of the River Junction Viticultural Area result in a locally extreme microclimate (Table 2).

In the Red Bridge Slough area north of Airport Way, overlap of alluvial soils with parent channel deposits is less exact and the soils are restricted to the west of the Slough. This tract has a slight northwest slope, and based on field observation is wetter than the River Junction Viticultural Area. The area has no strongly expressed northern or eastern boundaries. Durham Ferry State Recreation Area occupies about 20% of the tract, and the remaining part is essentially flat at 20 - 25 feet elevation. It contains about 35% Columbia loam; at its center includes 10% Egbert silty clay loam; and has no Grangeville sands. This is part of River Junction Reclamation District No. 2064, recorded as River Junction Farms Subdivision No. 3 (1925). It has different soils, is visually wetter, and undoubtedly has less temperature extremes than the River Junction Viticultural Area due to the absence of topographic enclosure (Figures 8, 11; Table 1).

Southeast of Walthall Slough, in T2S, R6E, the relationship between channel deposits and derived soils is obscure: here the soils occupy a larger expanse than do the underlying stream deposits. They include nearly 40% Columbia soils and about 20% Dello clay loam. No Grangeville sands are present. Topographically, this area is essentially flat to slightly northwest-sloping. In terms of soils and the microclimate that would be inferred from the flat and open topography, it is completely different from the River Junction area. (Figures 5, 11; Table 1).

To the northeast, Recent river alluvium still underlies the soils, but here soils include about 20% Veritas and Manteca series, and no Grangeville sands. Otherwise, the Merritt and Columbia soils percentages are comparable to the River Junction Area. However, this area is higher and flatter, averaging about 30 - 35 feet elevation, and has no distinct topographic boundaries; therefore it has less temperature extremes than the River Junction Area. This area comprises about 195 acres of the original River Junction Farms subdivision no. 2 (Figures 7, 9, 11; Table 1).

HISTORIC AND CURRENT USE OF AREA.– The historic site of San Joaquin City, established in 1849, is west of San Joaquin River and about .4 miles SSW of the northwest corner of the River Junction Area. San Joaquin City was a riverboat terminal, and its site is designated as California Historical Landmark No. 777, dedicated November 3, 1962. The northwest corner of the Area was also the site of Durham Ferry, where gold miners crossed the San Joaquin en route to the Sierras. As might be expected from its slightly higher topography, Airport Way (aka Durham Ferry Road) apparently was a historic road or trail striking northeast from Durham Ferry (Figure 10).

Following the Federal Swampland Act of 1850, reclamation of wetlands was begun. The Area was designated as a State Reclamation District, River Junction Reclamation District No. 2064. Subdivision survey maps were filed in 1922 for Bret Harte Gardens subdivision, and 1925 for River Junction Farms subdivision no's. 2 and 3 (Figures 7, 8). Since reclamation, use of the River Junction Area has been primarily agricultural. Recent crops have included asparagus, tomatoes, almonds, alfalfa, corn, and wine grapes. The Area was also used for limited livestock grazing and dairying.

Present agricultural use of the Area is primarily 700 acres of Chardonnay grapes. An additional 40 acres are planted to Cabernet grapes. Corn, alfalfa, and tomatoes are also grown. Aside from wine grapes, the only other permanent crop in the Area is a single almond orchard (Figure 12). The large vineyard, owned by RJM Enterprises, has riparian water rights and currently pumps from the San Joaquin. As of 1996, permanent crops grown north of Division Road, outside the River Junction area, include about 40 acres of almonds and walnuts (two separate parcels), and 10 acres of grapes located a mile to the northeast (Richard Cocke, California Department of Water Resources, personal communication, December 11, 1997: see Figure 12; Appendix 3).

The River Junction Area is bounded south and west by Stanislaus and San Joaquin Rivers, and is protected from flooding by Project or Direct Agreement levees, re-engineered to currently acceptable standards by the U.S. Army Corps of Engineers, 1961 - 1967. Nevertheless, the San Joaquin levee failed in the wet winters of 1983 and 1997. Failure was essentially at the same location, upstream from the natural constriction at Durham Ferry. Following the 1997 break, varying depths of new river soils were deposited on Rivercrest Vineyards, and no damage occurred to existing planted vines except in the immediate proximity of the break (Ron McManis, personal communication, October 2, 1997).

SUMMARY AND CONCLUSIONS

The proposed River Junction Viticultural Area is located at the southern edge of the Sacramento - San Joaquin River Delta. It is at the boundary between coastal and continental weather influence in a semiarid environment. Thus it has greater temperature extremes than areas to the north. The proposed Area is a shallow, southwest-facing topographic bowl, bounded southwest, south, and east by the confluence of the Stanislaus with San Joaquin River; north by a river terrace bench; and northwest by a natural drainage division. These boundaries are exaggerated by levees and raised roadbeds, which enhance the Area's locally distinct microclimate. It has later frosts, much cooler summer temperatures, and later seasonal heat than elsewhere in the vicinity. The River Junction Viticultural Area rests entirely on a restricted geologic substrate of Recent river alluvium which has formed granite-rich, relatively sandy alluvial soils belonging to the Merritt - Grangeville - Columbia group, and which are high in available minerals. One of these soil types, the Grangeville fine sandy loam, has no other significant local occurrence. This is apparently the only local area where bottomland soils of the Grangeville - Merritt series have been planted to grapes, and lack of comparable local areas suggests it will remain so. The River Junction Viticultural Area consists of nearly 1,300 contiguous acres, of which about 740 are currently planted to grapes, mostly Chardonnay. Topographic, microclimatic, and soils differences separate it from adjacent or proximate local areas. The context of mineral-rich soils in combination with late season "frost kiss;" cooler mid-season temperatures; and a late season, high temperature "kick" logically suggest that any fruit-producing crop grown in the River Junction Area, including wine grapes, should be distinctive in terms of relative sugar content and acidity, and therefore in aroma and flavor.

In order to enable wineries to designate grapes originating from this unique Area, so that consumers may make informed decisions as to the wines they purchase, it is appropriate that the River Junction Area be recognized as an American Viticultural Area.

As is shown herein, the River Junction Viticultural Area is a geographically unique grape-growing region under the definition set forth in 27 CFR 4.25a (e) (1). Therefore, it should be established as "River Junction," an American Viticultural Area in accordance with 27 CFR Part 9.

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16. U.S.G.S. Ripon Quadrangle. 7.5' series (topographic), 1969 (revised 1980, 1994), scale 1:24,000.

17. U.S.G.S. Vernalis Quadrangle. 7.5' series (topographic), 1991, scale 1:24,000.

18. U.S.G.S. Westley Quadrangle. 7.5' series (topographic), 1969, scale 1:24,000.

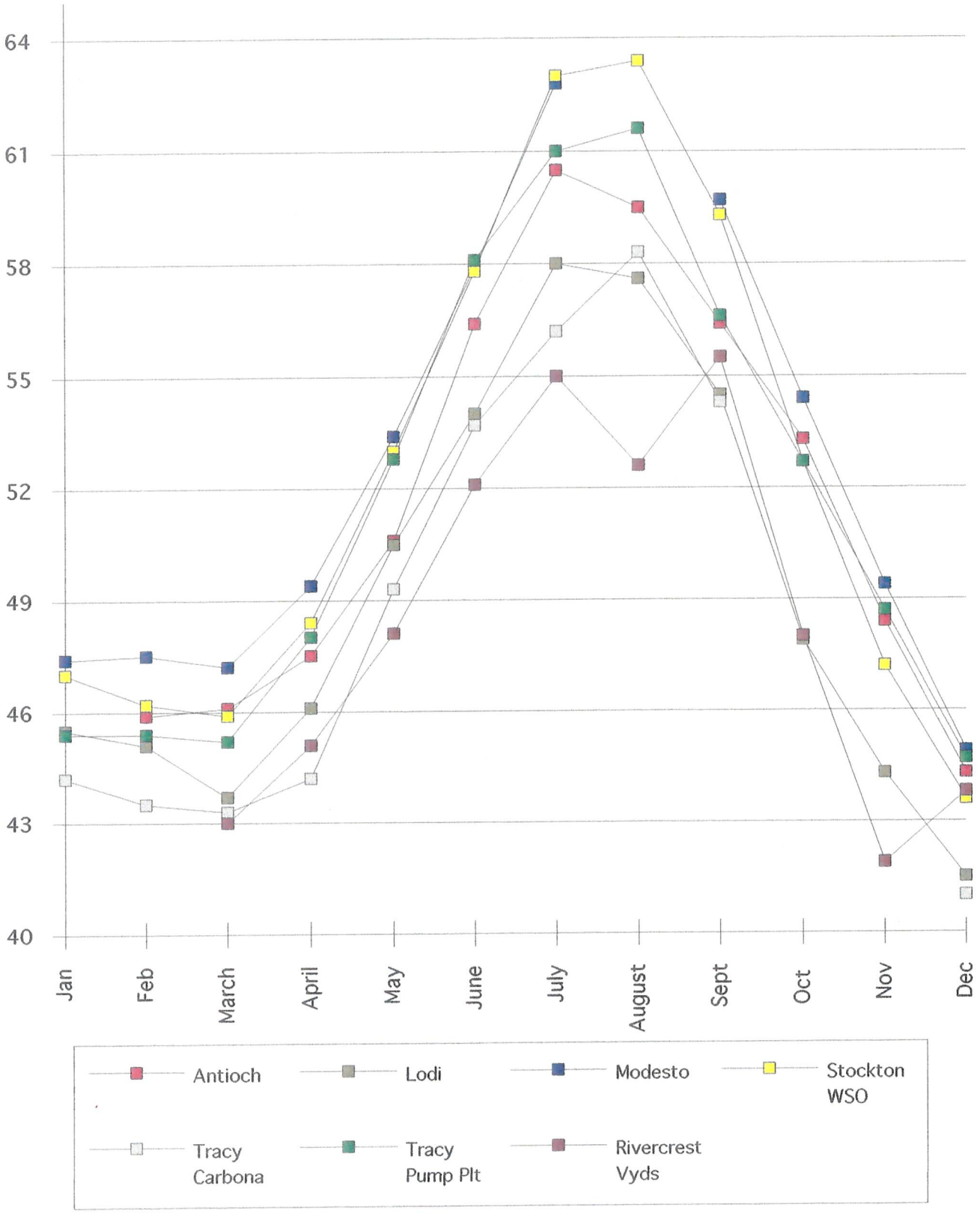
Table 1. Soils of River Junction and vicinity, expressed as total percent per area. Ratios rounded to nearest tenth.

	Grangeville fine sandy loam	Merritt silty clay loam	Columbia fine sandy loam	Veritas silty clay loam	Manteca fine sandy loam	Egbert silty clay loam	Dello clay loam	Grangeville clay loam	Standing water or drainages	Ratio, sandy loam to clay loam
River Junction	23	49	22	1	—	—	—	2	3	.9 : 1
Red Bridge Slough	—	52	35	—	—	10	—	—	4	.6 : 1
Northeast Area	—	47	28	10	9	—	—	—	6	.6 : 1
Walthall Slough	—	40	38	—	—	—	18	4	—	.6 : 1

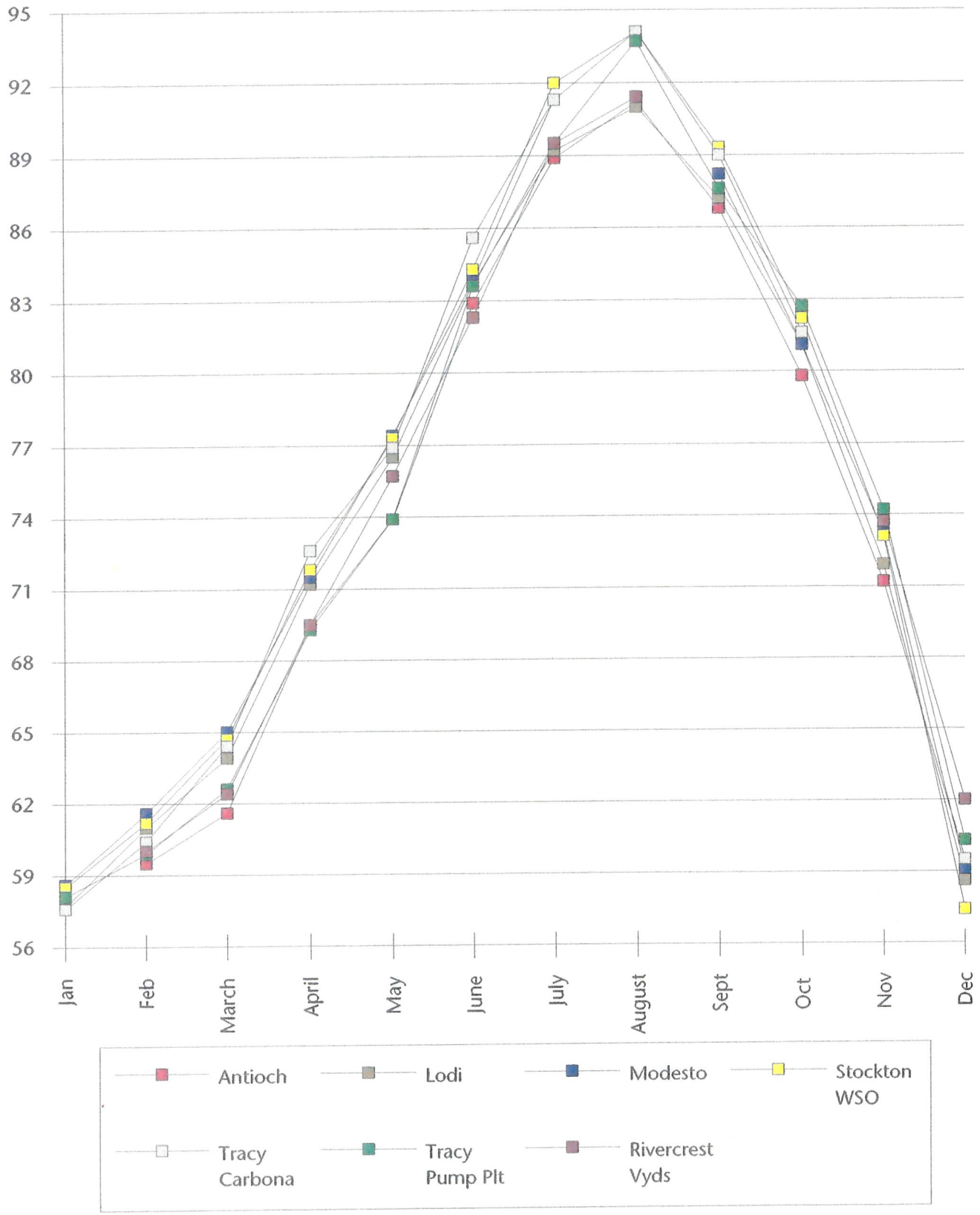
Table 2. Temperature data, 1995/1996, Rivercrest Vineyards and surrounding area

Note: temperatures are averaged for each month and therefore do not show absolute minimum / maximum values.

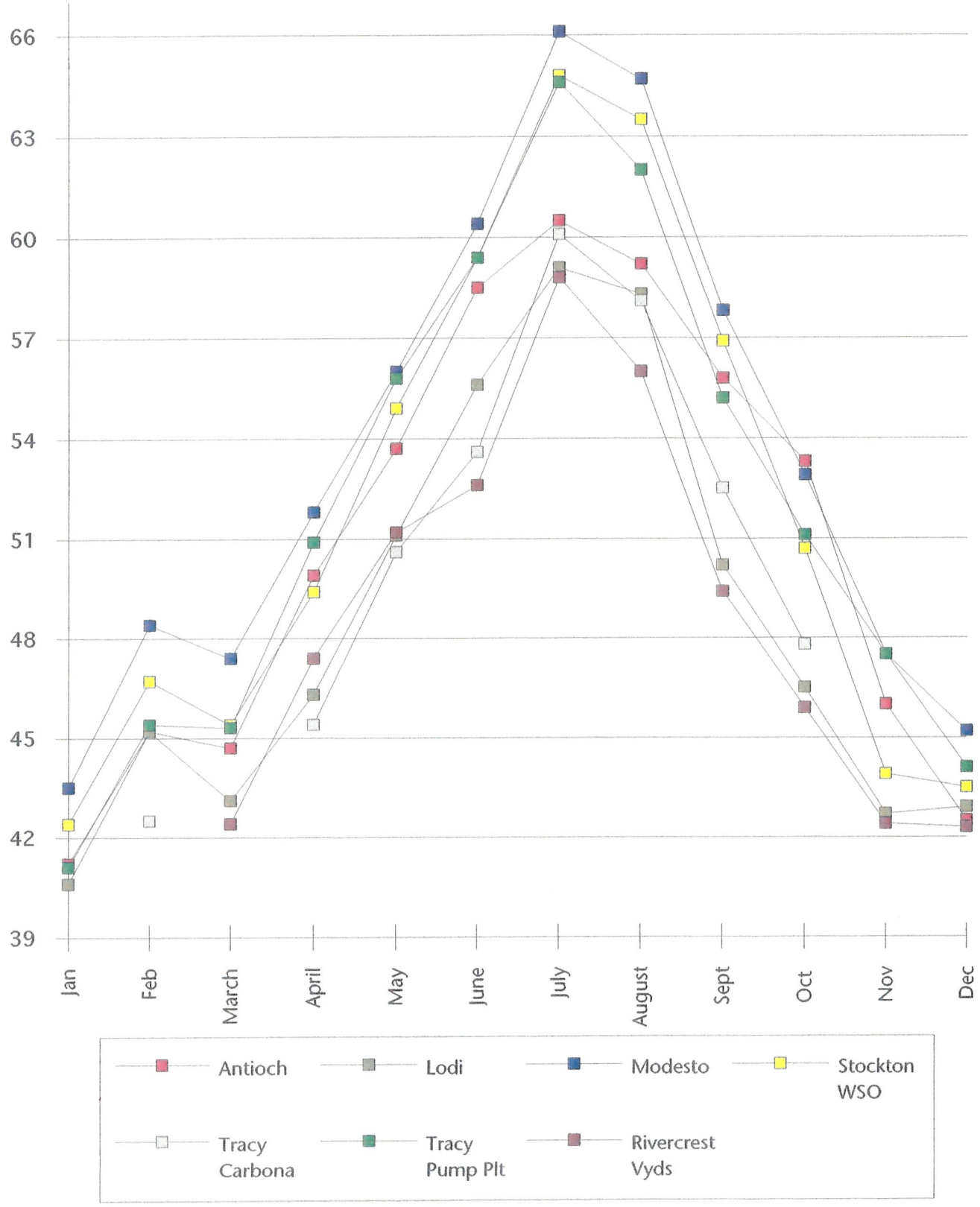
1995 min temps



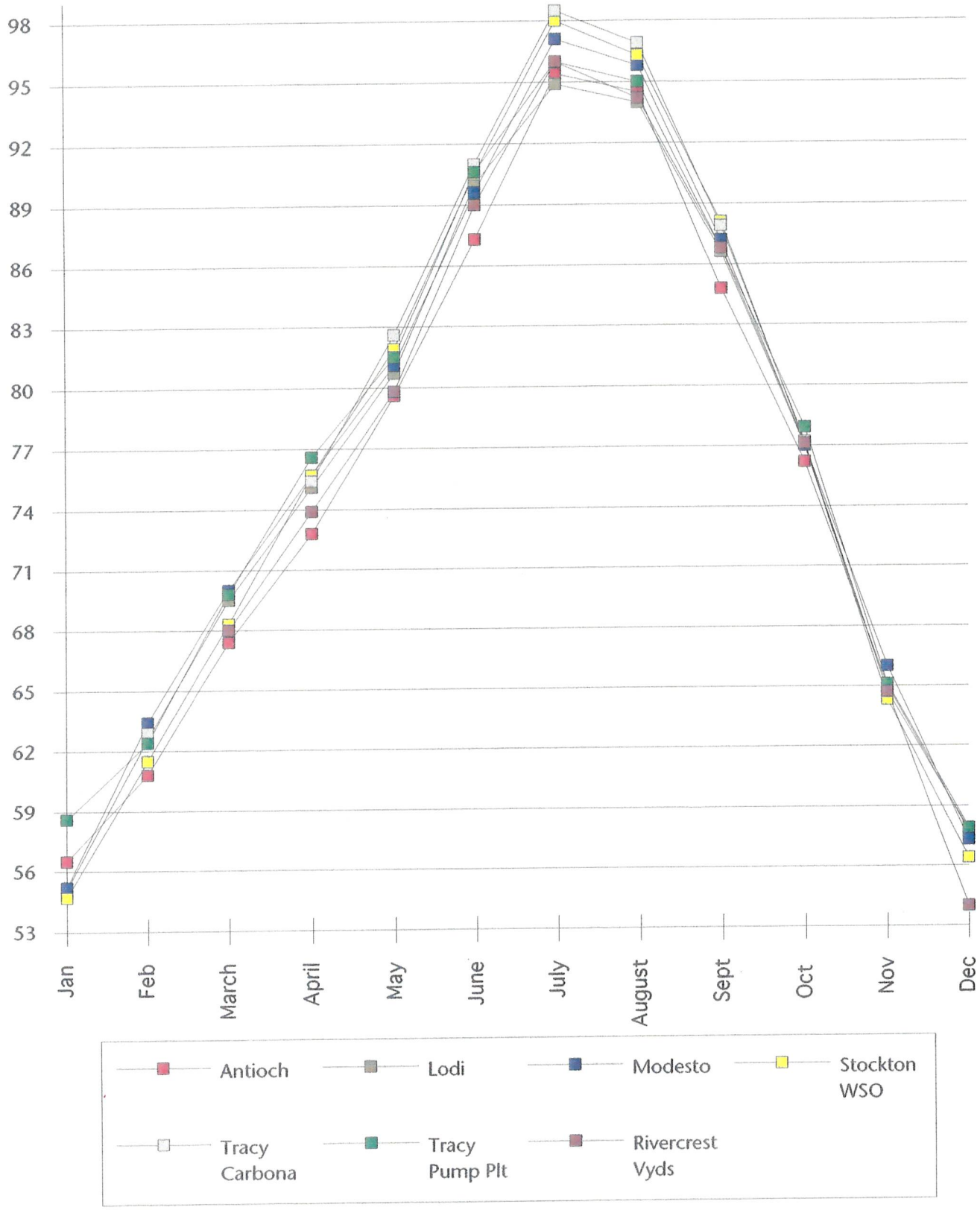
1995 max temps



1996 min temps



1996 max temps



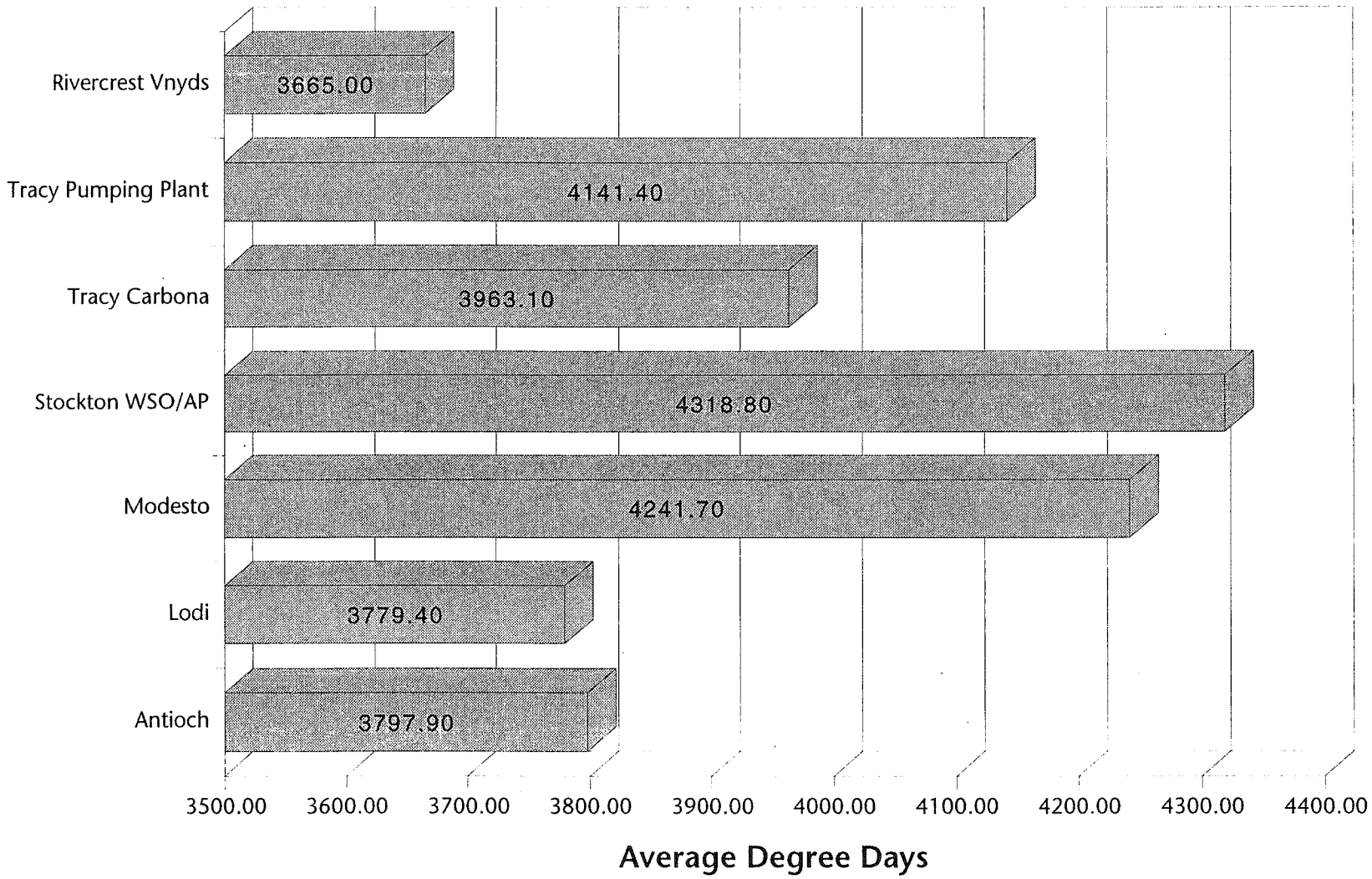

Rivercrest Vnyds
3665.00
Tracy Pumping Plant
4141.40
Tracy Carbona
3963.10
Stockton WSO/AP
4318.80
Modesto
4241.70
Lodi
3779.40
Antioch
3797.90
3500.00
3600.00
3700.00
3800.00
3900.00
4000.00
4100.00
4200.00
4300.00
4400.00
Average Degree Days

FIGURE 1. Delta area and study area site location

FIGURE 2. Sacramento - San Joaquin River Delta

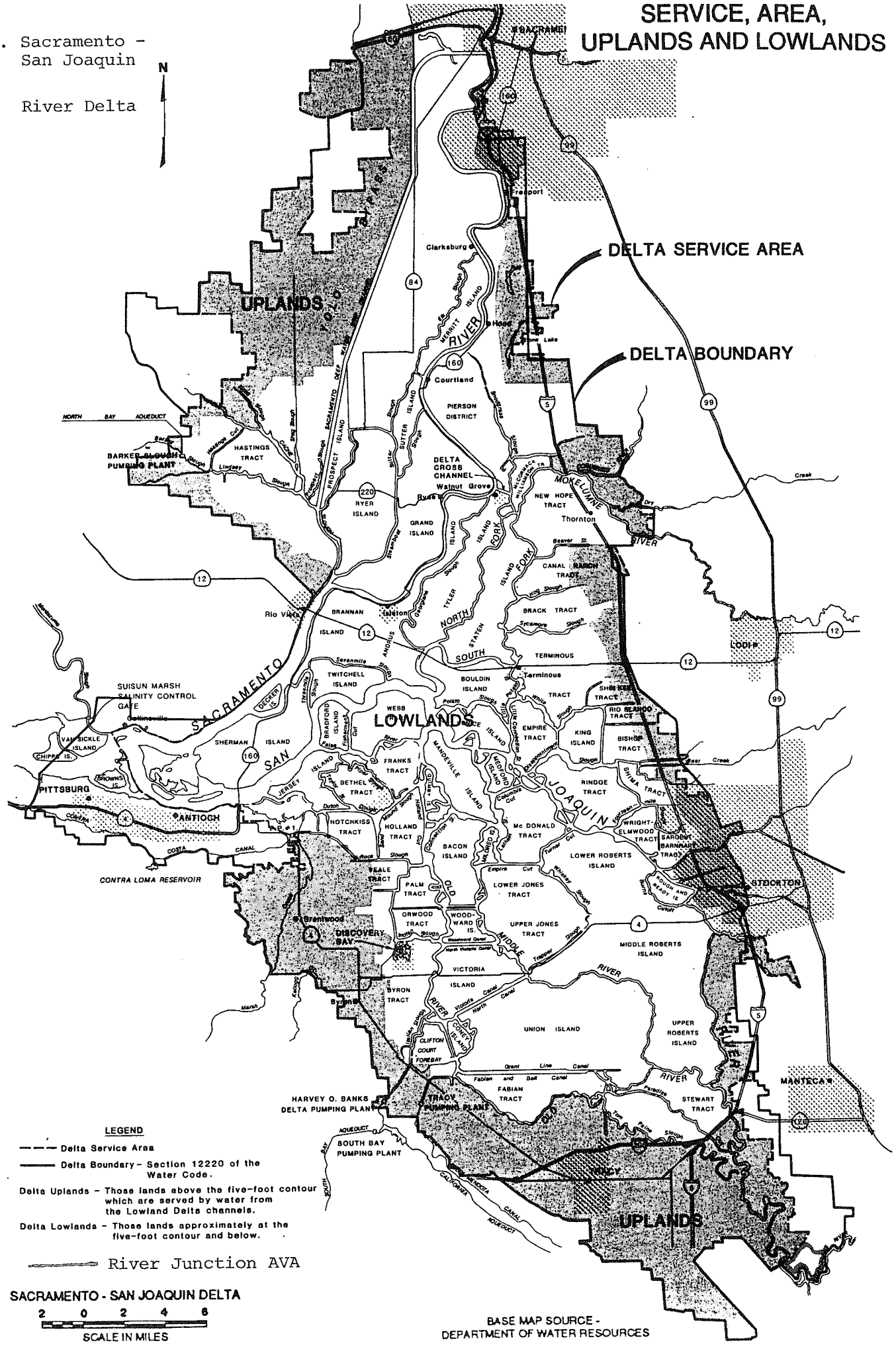


FIGURE 3. Geology and soils

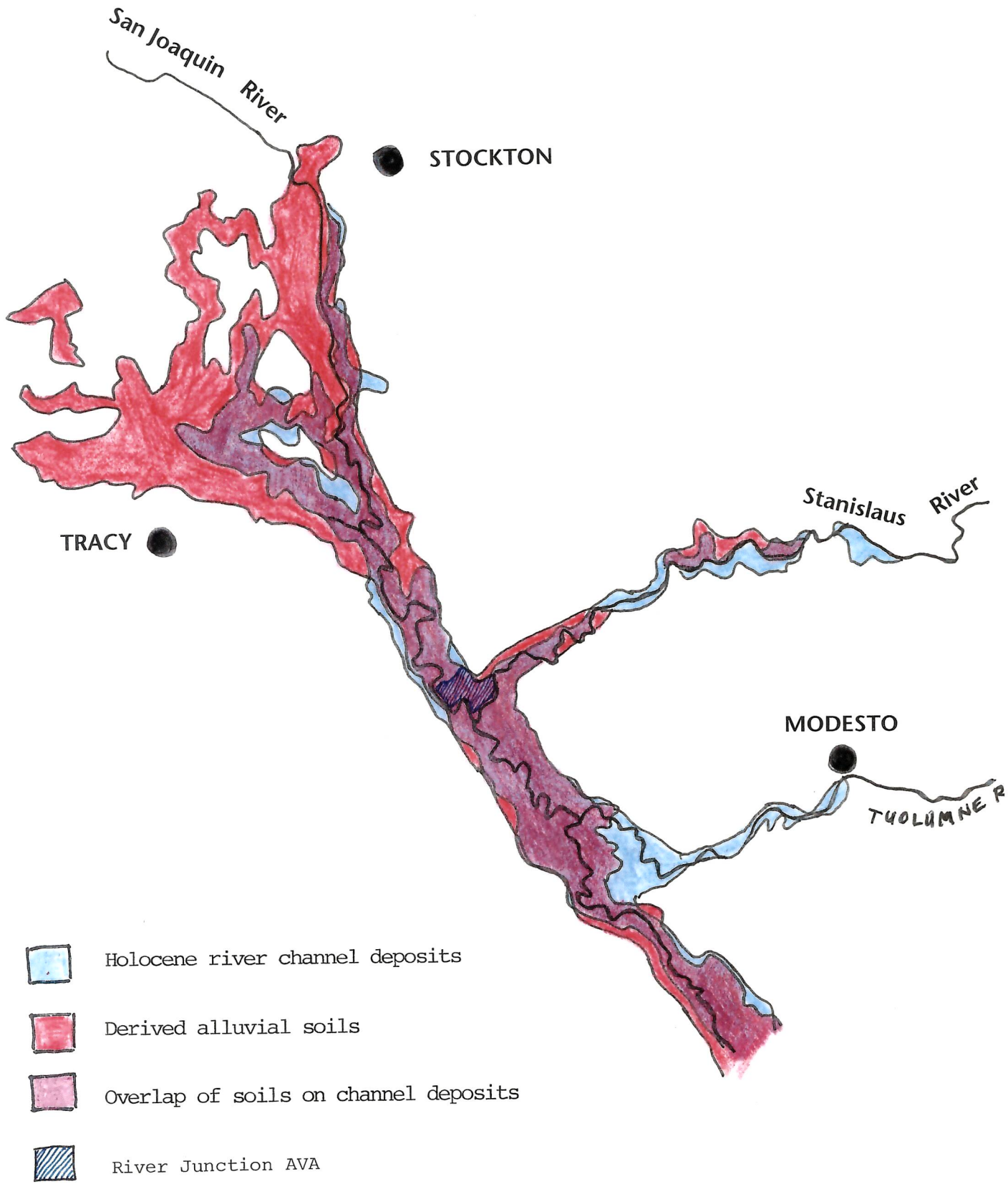
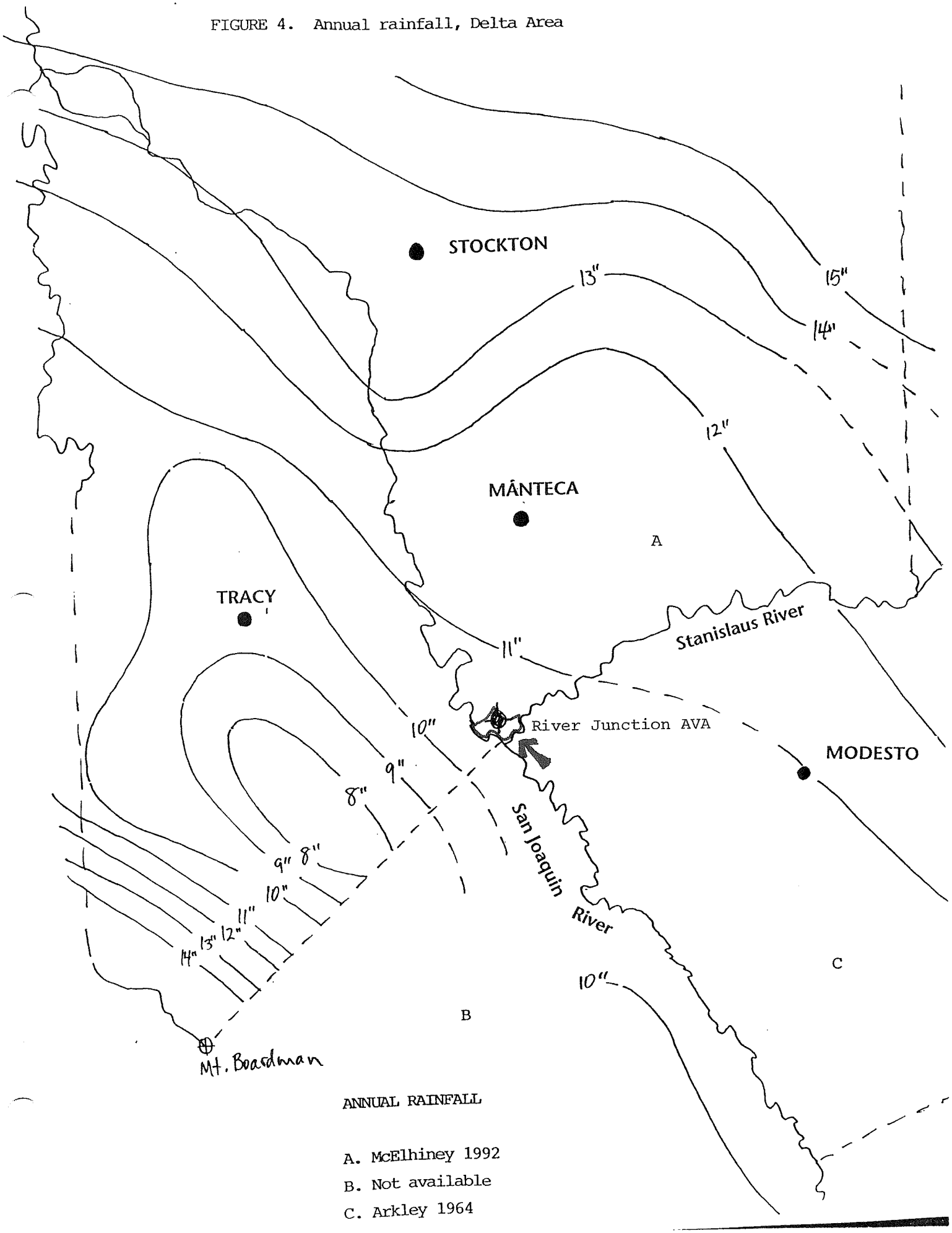


FIGURE 4. Annual rainfall, Delta Area



ANNUAL RAINFALL

A. McElhiney 1992

B. Not available

C. Arkley 1964

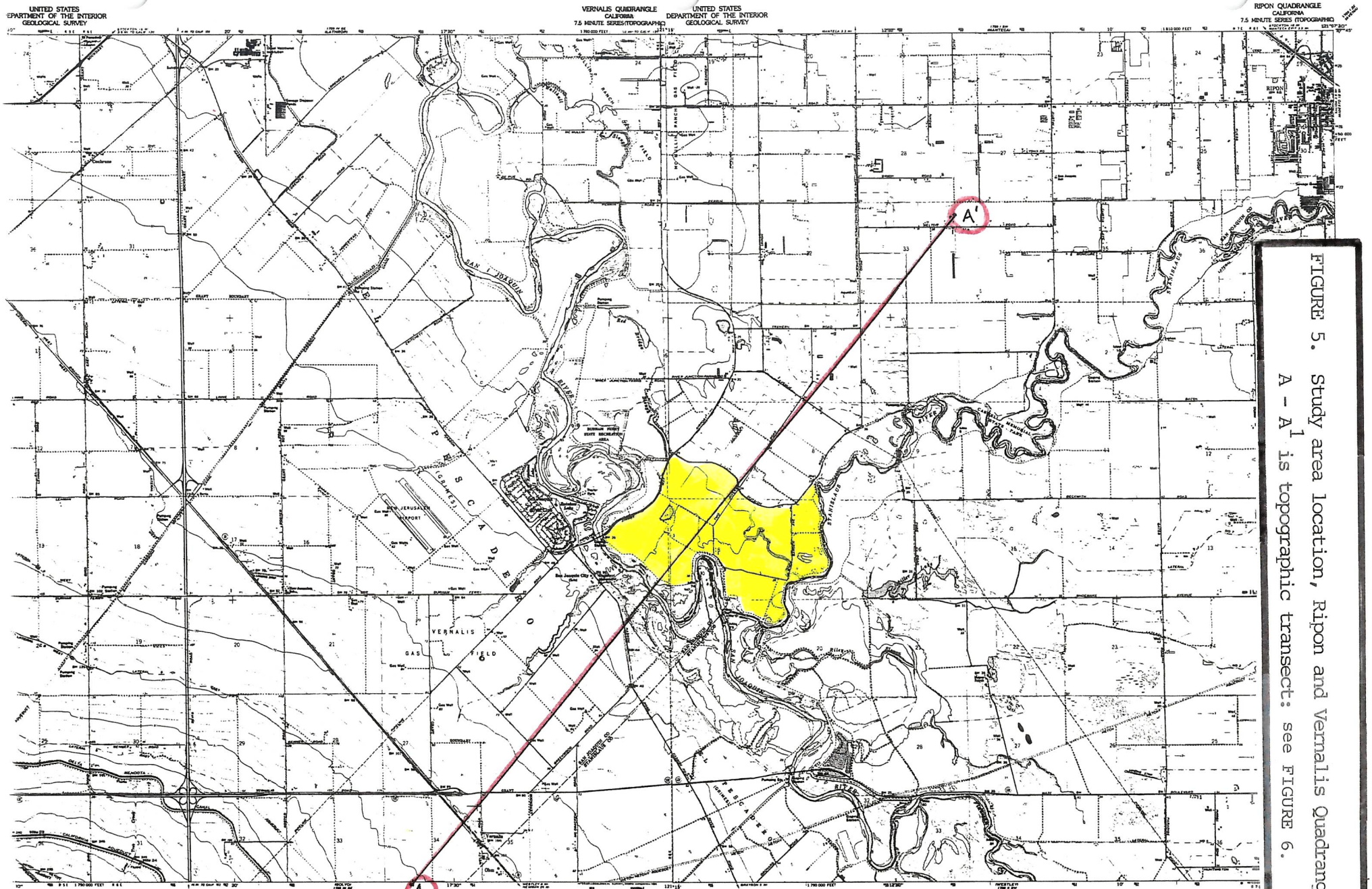


FIGURE 5. Study area location, Ripon and Vernalis Quadrangles
A - A[1] is topographic transect: see FIGURE 6.

FIGURE 6. Topographic Transect through
River Junction Area.
See Figure 5 for location

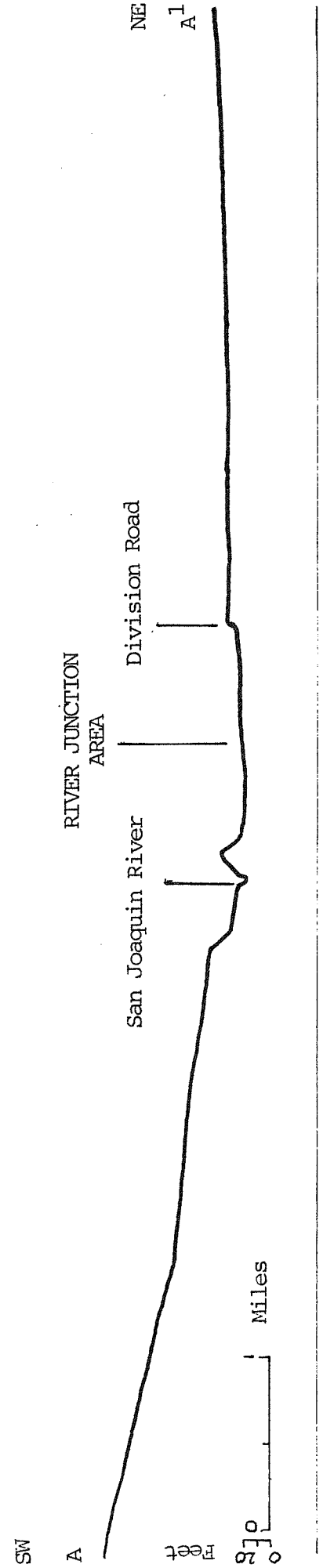
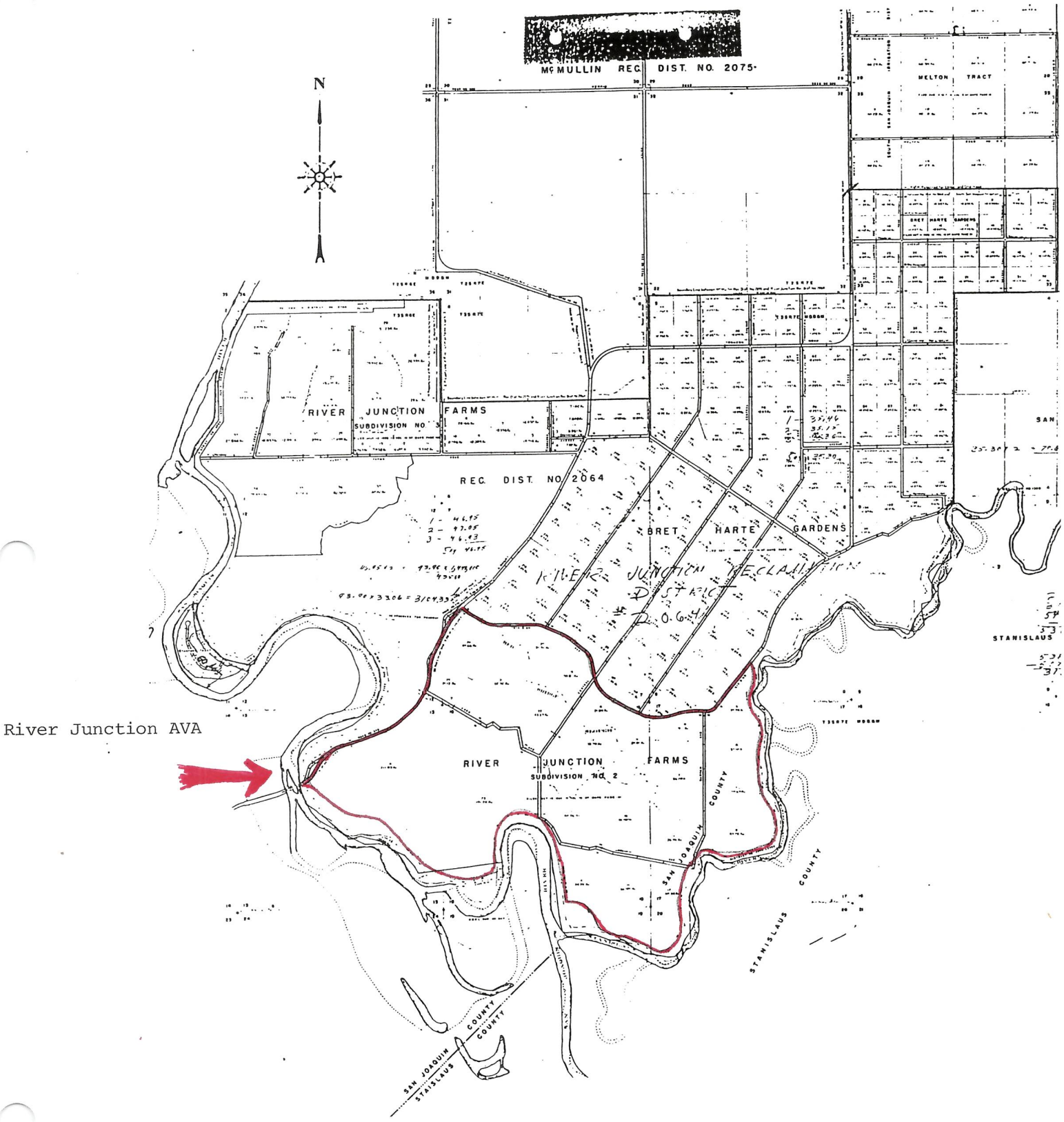


FIGURE 7. River Junction Reclamation District



River Junction AVA

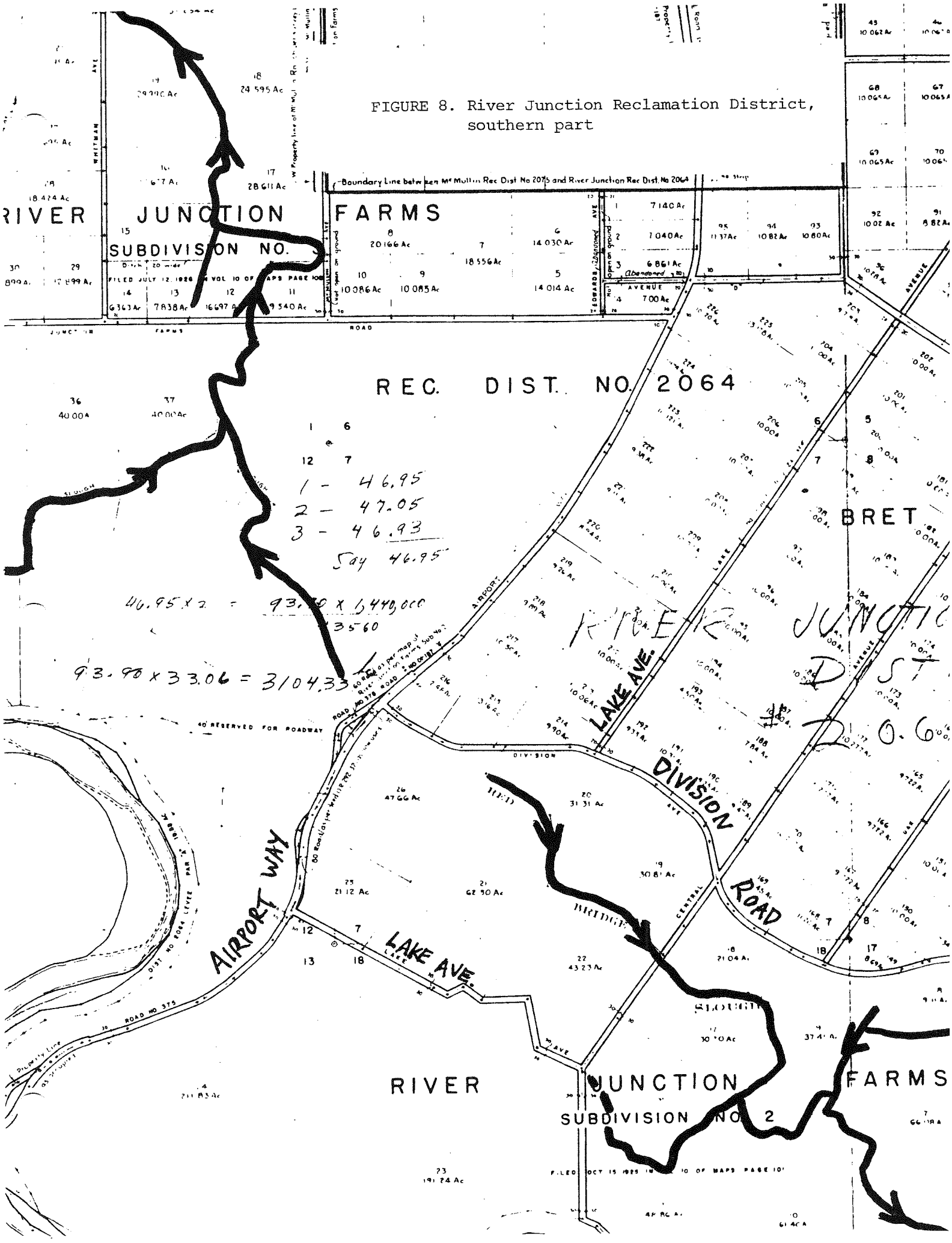


FIGURE 8. River Junction Reclamation District, southern part

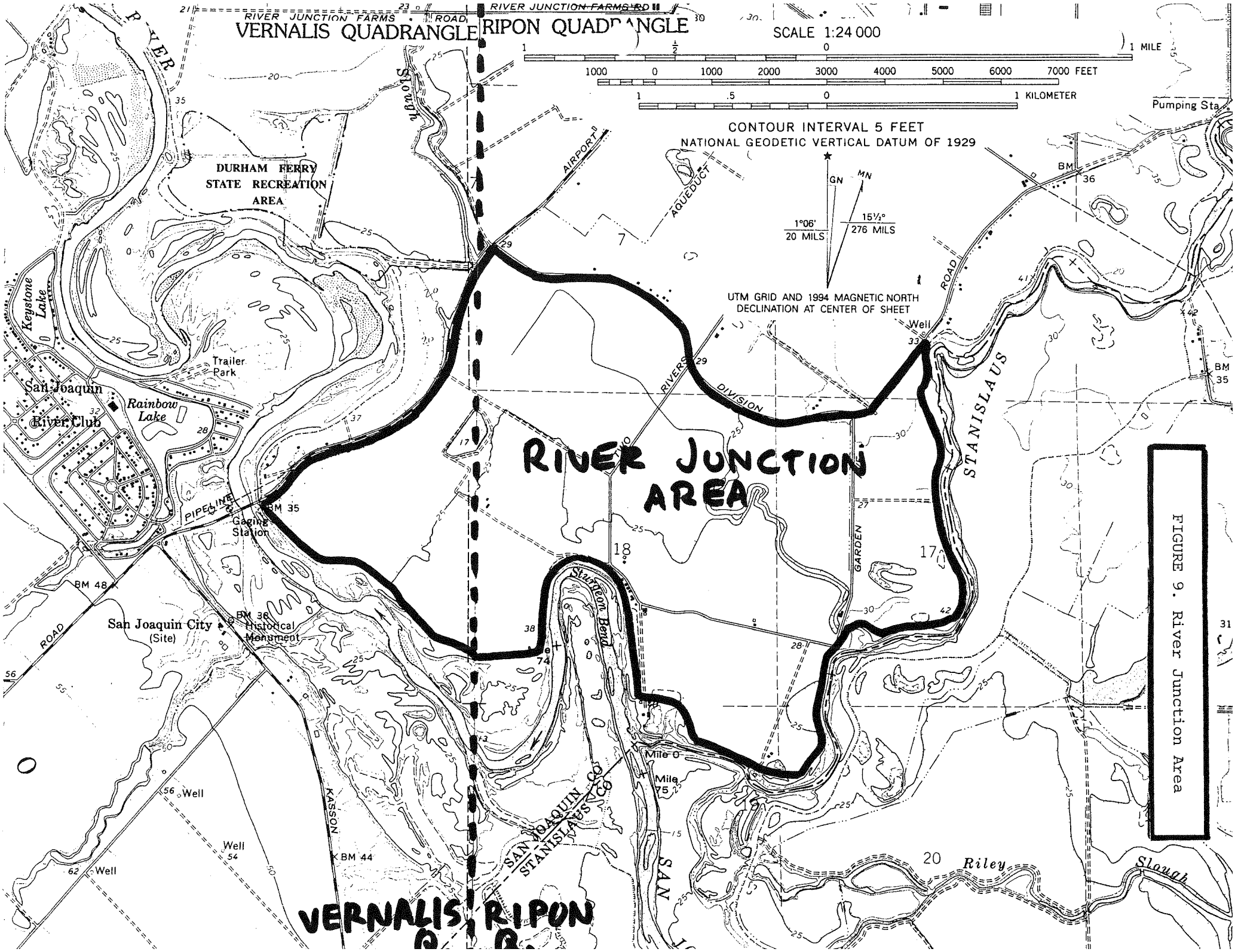
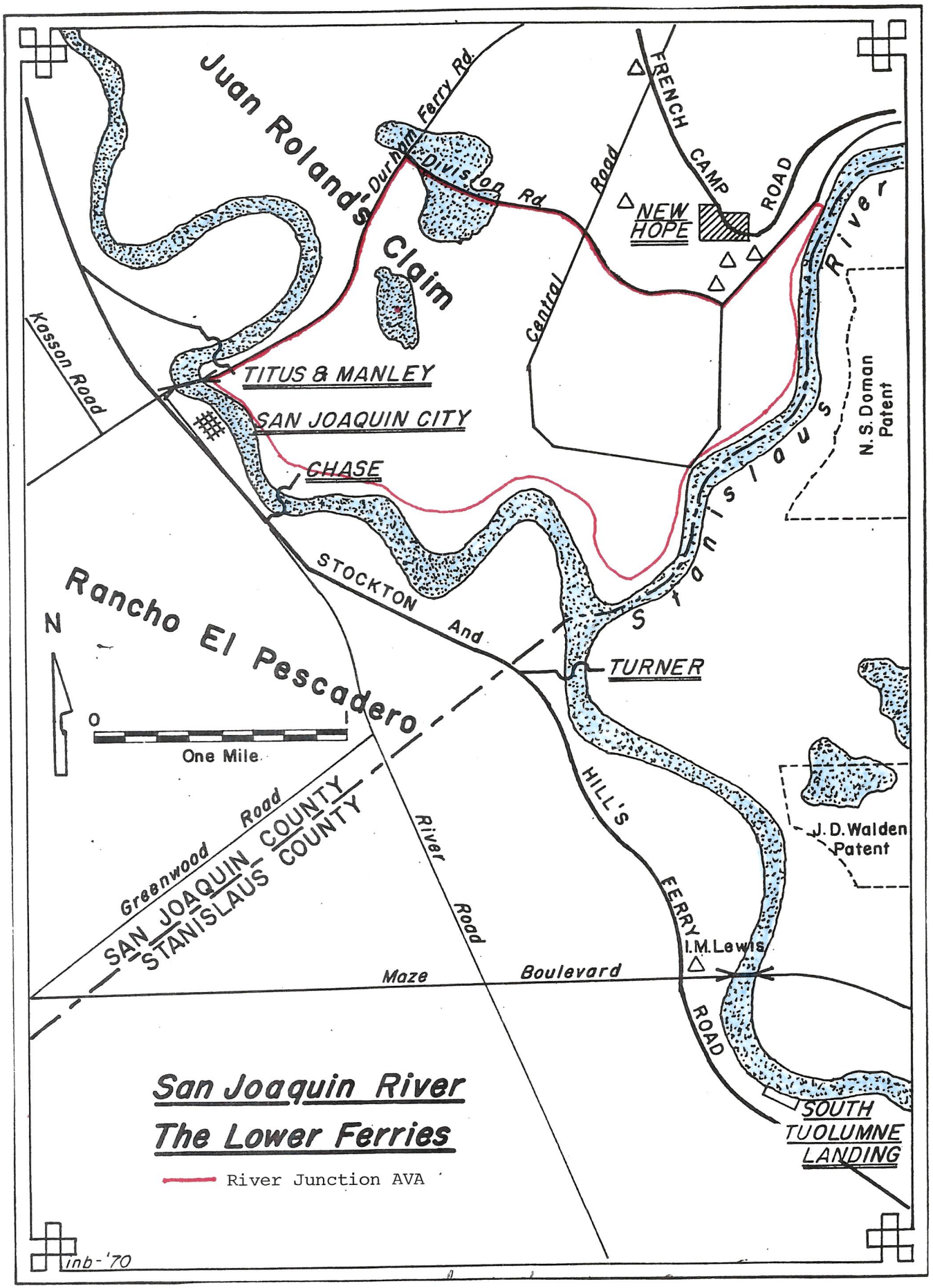


FIGURE 9. River Junction Area

FIGURE 10. River Junction Area in 1800's. From Brotherton 1982



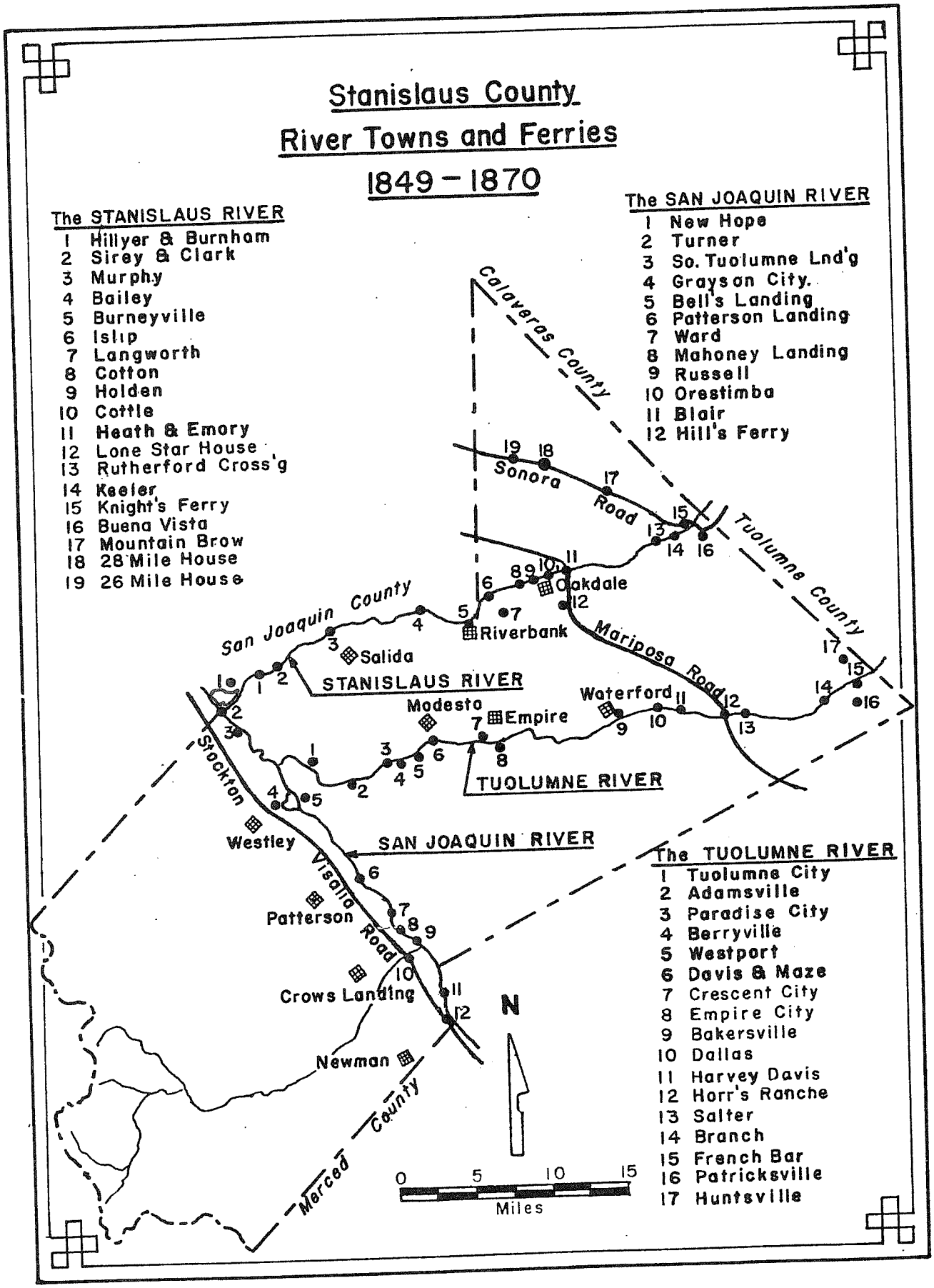

Stanislaus County
River Towns and Ferries
1849 – 1870
The STANISLAUS RIVER
1 Hillyer & Burnham
2 Sirey & Clark
3 Murphy
4 Bailey
5 Burneyville
6 Islip
7 Langworth
8 Cotton
9 Holden
10 Cottle
11 Heath & Emory
12 Lone Star House
13 Rutherford Cross'g
14 Keeler
15 Knight's Ferry
16 Buena Vista
17 Mountain Brow
18 28 Mile House
19 26 Mile House
The SAN JOAQUIN RIVER
1 New Hope
2 Turner
3 So. Tuolumne Lnd'g
4 Grayson City.
5 Bell's Landing
6 Patterson Landing
7 Ward
8 Mahoney Landing
9 Russell
10 Orestimba
11 Blair
12 Hill's Ferry
Calaveras County
Sonora Road
Tuolumne County
Oakdale
Riverbank
San Joaquin County
Salida
STANISLAUS RIVER
Mariposa Road
Waterford
Modesto
Empire
Stockton
TUOLUMNE RIVER
Westley
SAN JOAQUIN RIVER
Visalia Road
Patterson
Crows Landing
Newman
Merced County
N
0 5 10 15
Miles
The TUOLUMNE RIVER
1 Tuolumne City
2 Adamsville
3 Paradise City
4 Berryville
5 Westport
6 Davis & Maze
7 Crescent City
8 Empire City
9 Bakersville
10 Dallas
11 Harvey Davis
12 Horr's Ranche
13 Salter
14 Branch
15 French Bar
16 Patricksville
17 Huntsville

FIGURE 11. Soils types: River Junction Area
Red Bridge Slough Area
Northeast Area
Note voucher soil sample locations

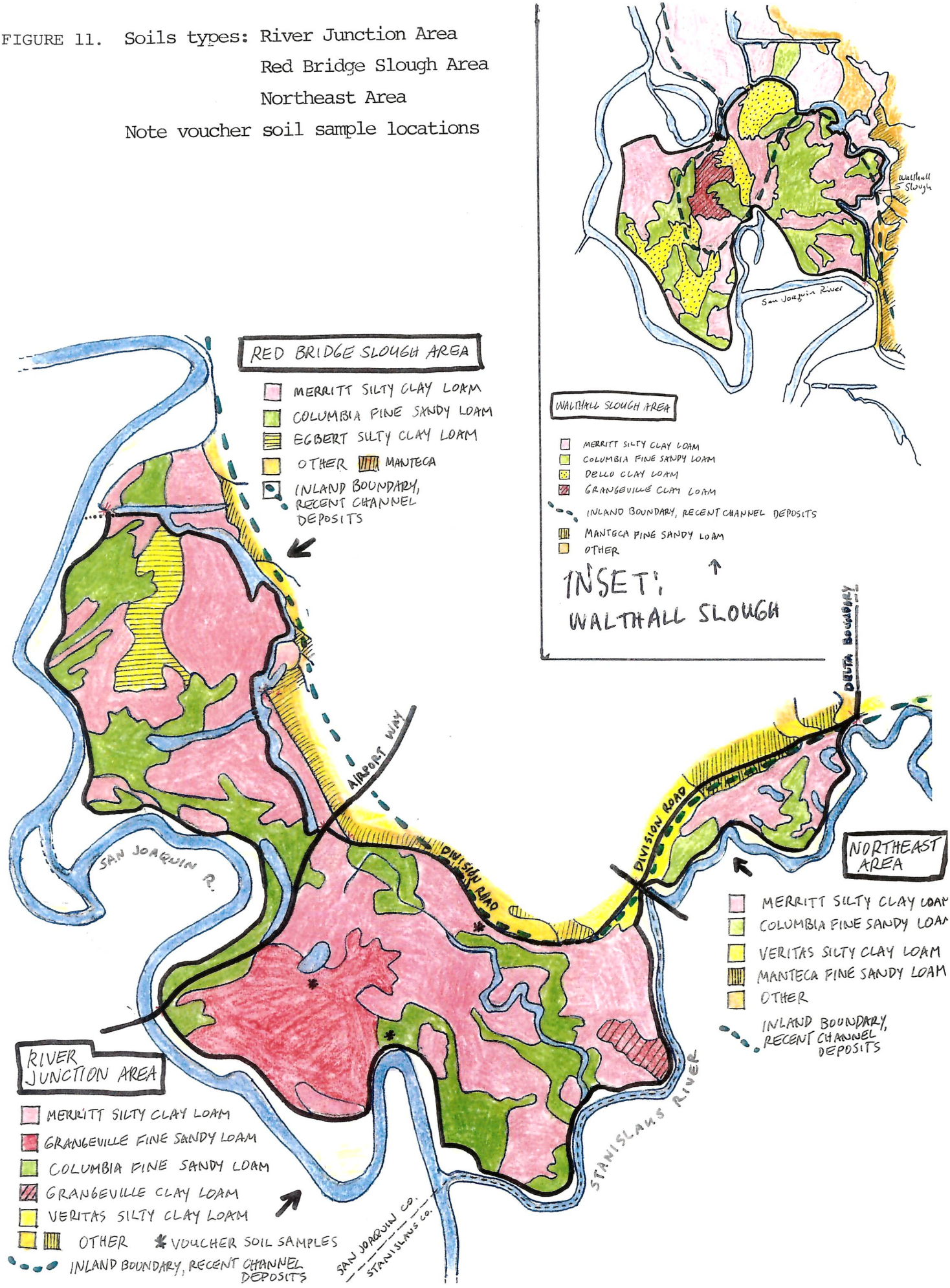
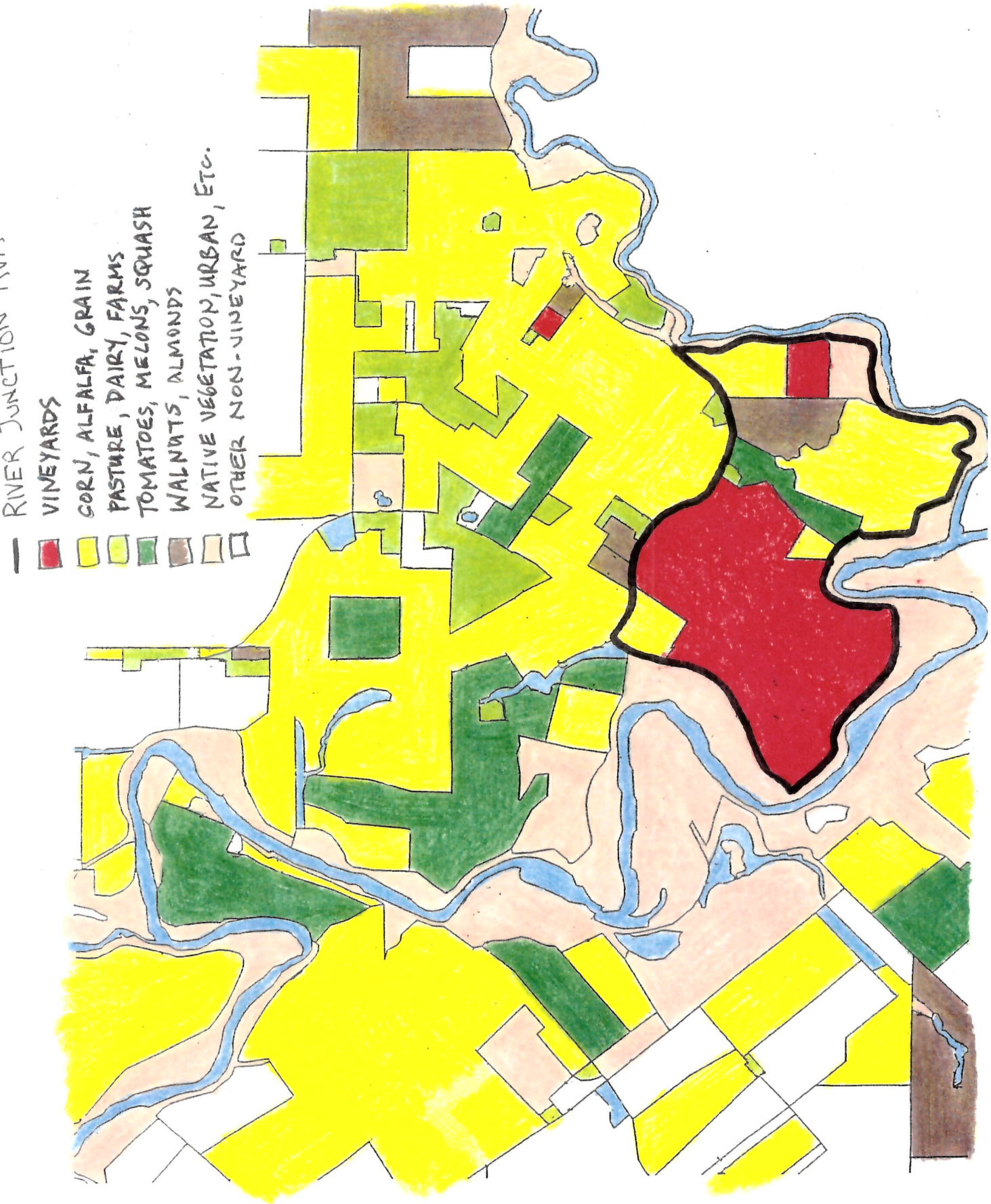


FIGURE 12. River Junction Area and vicinity: current agricultural use.
After Cocke, personal communication



APPENDIX I. Cook and Lider Report, 1972

n Joaquin
52

REPORT ON "MORESCO" PROPERTY

The block of land in question lies in the immediate northeast quadrant of the conflux of the Stanislaus and San Joaquin rivers. The University of California "Soils of San Joaquin County," dated 1952, sheet 43, describes the predominant soil type of this block as Columbia silty clay loam. As such, the soil should be neutral in pH, alluvial in nature, have good surface and good subsurface drainage, be nearly level in natural state, and have a high degree of natural fertility -- an excellent soil! The Storie rating should be close to 100 after slip-plowing. Untreated, free from alkali, and on light side, its Storie rating should be about 95.

On October 17, 1972 a back-hoe was employed to examine the soil in depth. This equipment is capable of making a 3-foot wide slot up to 9 - 10 feet in depth, with undisturbed side walls. My examination of 7 such openings distributed over the open land areas showed the soil map to be quite accurate and the soil surprisingly free from high or "perched" water table. Only in the northwest corner with Sacramento silty clay was free water encountered--and this was at 9 - 10 feet--150 yards from drainage pond.

This soil should be very fertile--good, deep soil which has been heavily fertilized for row crops for about ten years.

Except for a small, 15-20 pounds of Nitrogen per acre immediately after planting (applied around individual vines), this land, planted to grapes, should not receive any general fertilizer for at least the first 5-10 years! It may be advisable as the situation develops to apply some micro-nutrients such as zinc and boron, but these should not cost more than $10/acre per year for materials and labor.

The soil is excellent, subject to mixing or slip-plowing to erase the layering effect. Every effort should be made to do as much of this as possible before heavy winter rains. If, because it is too late to slip-plow in November, 1972, the other areas then must wait for dry weather in 1973, we suggest that a crop such as barley be planted--as a small income return, but more important, to help dry out the soil <u>early</u> in 1973 so that the soil can then be slip-plowed and prepared for planting of potted plants.

Further, if any money-saving arrangement can be worked out on the 130 acres of current 3-year-old asparagus, we strongly recommend that this be done in a way to reserve this 130 acres for planting of newly developed varieties which should be available in Spring of 1974.

One potential danger in this area is the likelihood of Spring frosts with subsequent crop loss for the year of occurrence. Obviously, since the land lies in an angle at the joining of two rivers, it is a low-lying area, therefore more subject to frost hazard than higher elevations (cold air flowing to the

lowest areas). On the positive side, the land slopes gradually to the West, allowing good air drainage, and there are no trees to block this downward flow. Nevertheless, the nearest two weather stations are about ten miles NW (at Tracy) and SE (at Modesto); neither exactly typical of this location. Of course, Spring frosts can be essentially prevented (barring a very unusually cold period) by the installation of over-head sprinklers. This would not be necessary until the vines are of fruiting age, about the third winter after planting. However, the pros and cons of this cost must be weighed against the cost and risk factors. We would strongly recommend the investment in weather station equipment comparable to that of the official stations at Tracy and Modesto -- to be installed no later than January, 1973. This may cost as much as 4-5 hundred dollars; however, the data which can be obtained over a 2-3 year period can be used to compare with long-term data of the two before-mentioned stations in the decision whether or not to install a frost-prevention sprinkler system in the third year after planting.

VARIETY CONSIDERATIONS

In this temperature zone it would be desirable to grow the heavier producing, later-maturing varieties. However, with the obvious industry trends towards increased sales of table wines, those varieties which could be used either as blends in varietal wines or directly as varietal types would be most highly recommended.

Economic projections of industry trends during the next ten years are extremely difficult to make. However, from vineyards in this intermediate valley district, the strongest demand appears to be for dry red table wine types which meet the basic specifications mentioned above. The following recommendations are based on this assumption.

Regardless of the varieties chosen for the planting, it is firmly recommended that all vines be established from a virus-free source of stock. It is fortunate that the program sponsored by the FPMS of the University of California at Davis has progressed to the place where there is an available supply of clean stock from several nurseries in California and only these sources should be approached in obtaining vines for the planting.

In the economic considerations mentioned above, red wine varieties should be heavily favored over white wine types. The total acreage should be divided, perhaps with 75 to 80 percent planted to red wine types, 10 to 15 percent reserved for commercial trials with new introductions that are just now appearing in California vineyards.

VARIETIES TO BE CONSIDERED FOR PLANTING:

Red Wine Types

Ruby Cabernet

Barbera

Petite Sirah

Gamay

Carignane

Rubired

Zinfandel

Tinta Madeira

White Wine Types

French Colombard

Chenin blanc

Sauvignon blanc

Orange Muscat

James A. Cook

JAMES A. COOK, PH.D.
PROFESSOR OF VITICULTURE

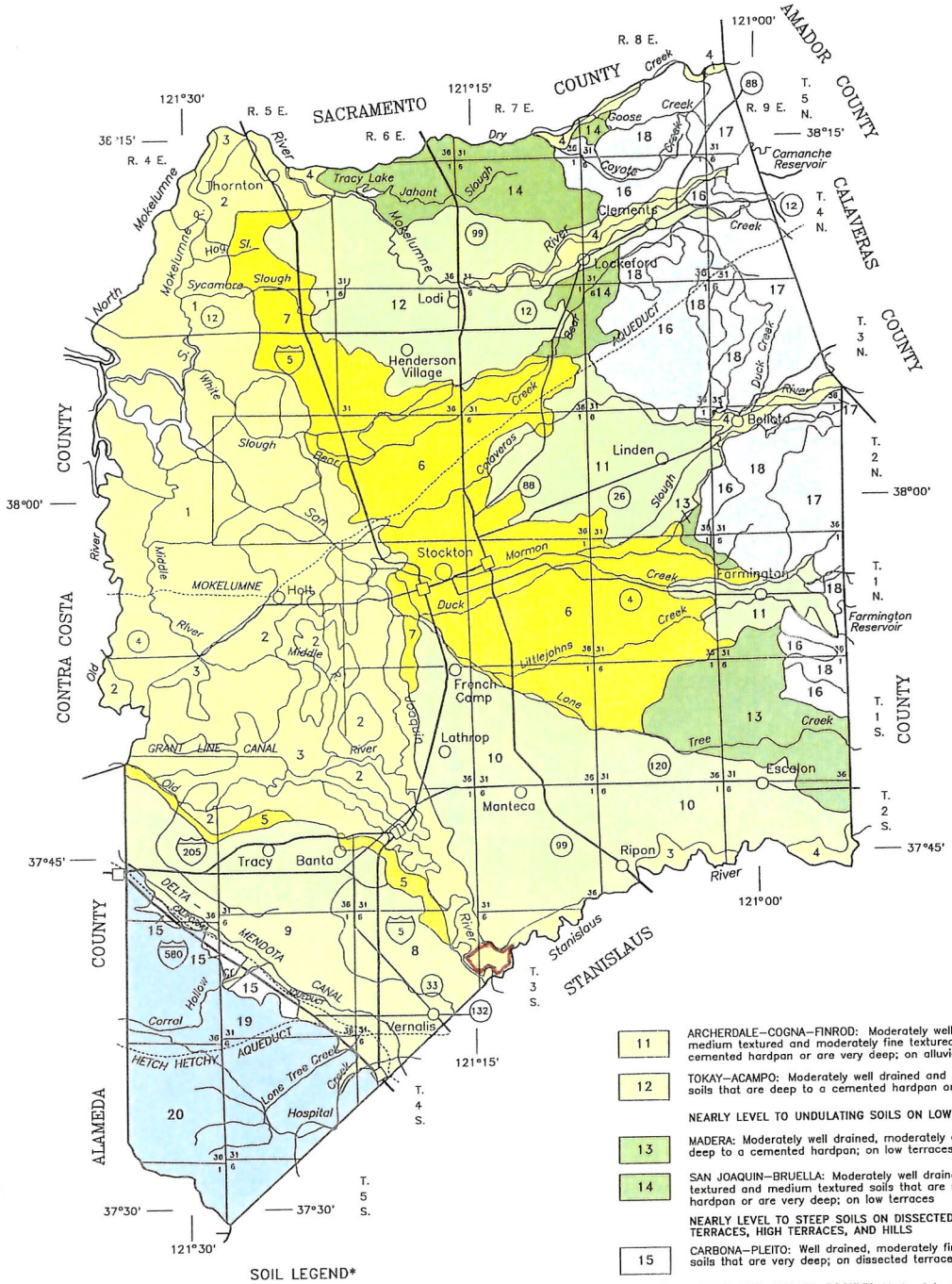
Lloyd A. Lider

LLOYD A. LIDER, PH.D.
PROFESSOR OF VITICULTURE

APPENDIX II. Geologic and soils maps

- San Joaquin County soil quadrangles
- San Joaquin County General Soil Map
- Eastern San Joaquin County General Soil Map
- Western San Joaquin County General Soil Map (in preparation)
- Geologic map, portion covering proposed area

Walthall
Slough
JOAQUIN
RIVER
Bridge
AIRPORT
WAY
water
water
KASSON
ROAD
SAN
JOAQUIN
RIVER
JOAQUIN CO.
STANISLAUS



SECTIONALIZED TOWNSHIP

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

SOIL LEGEND*

NEARLY LEVEL SOILS ON DELTAS AND FLOOD PLAINS

1 — RINDGE–KINGILE–RYDE: Very poorly drained, organic soils and very poorly drained, highly organic, moderately fine textured, mineral soils, all of which are very deep and have been partially drained; on deltas and flood plains

2 — PELTIER–EGBERT: Poorly drained, highly organic, moderately fine textured soils that are very deep and have been partially drained; on deltas and flood plains

3 — MERRITT–GRANGEVILLE–COLUMBIA: Poorly drained and somewhat poorly drained, moderately coarse textured and moderately fine textured soils that are very deep and have been partially drained or drained; on flood plains

4 — COLUMBIA–VINA–COYOTECREEK: Somewhat poorly drained and well drained, moderately coarse textured and medium textured soils that are very deep and are subject to flooding or protected by levees; on flood plains

NEARLY LEVEL SOILS IN BASINS AND ON BASIN RIMS

5 — WILLOWS–PESCADERO: Poorly drained, moderately fine textured and fine textured, saline–sodic soils that are very deep and have been partially drained; in basins

6 — JACKTONE–HOLLENBECK–STOCKTON: Somewhat poorly drained and moderately well drained, fine textured soils that are moderately deep and deep to a cemented hardpan and that have been drained in some areas; on basin rims and in basins

7 — GUARD–DEVRIES–RIOBLANCHO: Poorly drained and somewhat poorly drained, moderately coarse textured and moderately fine textured soils that are moderately deep to a cemented hardpan or are very deep and that have been drained in most areas; on basin rims

NEARLY LEVEL SOILS IN INTERFAN BASINS AND ON ALLUVIAL FANS, LOW FAN TERRACES, STREAM TERRACES, AND DUNES

8 — CAPAY: Moderately well drained, fine textured soils that are very deep and have been subject to artificial wetness; mainly in interfan basins

9 — CAPAY–STOMAR–ZACHARIAS: Moderately well drained and well drained, moderately fine textured, gravelly moderately fine textured, and fine textured soils that are very deep; in interfan basins and on alluvial fans and stream terraces

10 — DELHI–VERITAS–TINNIN: Moderately well drained to somewhat excessively drained, coarse textured and moderately coarse textured soils that are deep to a cemented hardpan or are very deep; on dunes, alluvial fans and low fan terraces

11 — ARCHERDALE–COGNA–FINROD: Moderately well drained and well drained, medium textured and moderately fine textured soils that are deep to a cemented hardpan or are very deep; on alluvial fans and low fan terraces

12 — TOKAY–ACAMPO: Moderately well drained and well drained, moderately coarse textured soils that are deep to a cemented hardpan or are very deep; on low fan terraces

NEARLY LEVEL TO UNDULATING SOILS ON LOW TERRACES

13 — MADERA: Moderately well drained, moderately coarse textured soils that are moderately deep to a cemented hardpan; on low terraces

14 — SAN JOAQUIN–BRUELLA: Moderately well drained and well drained, moderately coarse textured and medium textured soils that are moderately deep to a cemented hardpan or are very deep; on low terraces

NEARLY LEVEL TO STEEP SOILS ON DISSECTED TERRACES, FAN TERRACES, HIGH TERRACES, AND HILLS

15 — CARBONA–PLEITO: Well drained, moderately fine textured soils that are very deep; on dissected terraces

16 — COMETA–SAN JOAQUIN–ROCKLIN: Moderately well drained, moderately coarse textured soils that are moderately deep to weakly cemented sediments or a cemented hardpan; on dissected terraces

17 — PENTZ–PARDEE–KEYES: Moderately well drained and well drained, moderately coarse textured and gravelly medium textured soils that are shallow to sandstone, conglomerate, or a cemented hardpan; on hills and high terraces

18 — REDDING–YELLOWLARK: Moderately well drained, gravelly medium textured soils that are moderately deep and deep to a cemented hardpan; mainly on fan terraces and high terraces

ROLLING TO VERY STEEP SOILS ON UPLIFTED, DISSECTED TERRACES AND MOUNTAINS

19 — CALLA–CARBONA–WISFLAT: Well drained, moderately coarse textured and moderately fine textured soils that are very shallow, shallow, deep, and very deep; on uplifted, dissected terraces and mountains

20 — GONZAGA–HONKER–VALLECITOS: Well drained, medium textured and gravelly medium textured soils that are shallow and moderately deep; on mountains

* Texture terms in the descriptive headings refer to the surface layer of the major soils in the map units.

Compiled 1990

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
REGENTS OF THE UNIVERSITY OF CALIFORNIA
(AGRICULTURAL EXPERIMENT STATION)
CALIFORNIA DEPARTMENT OF CONSERVATION

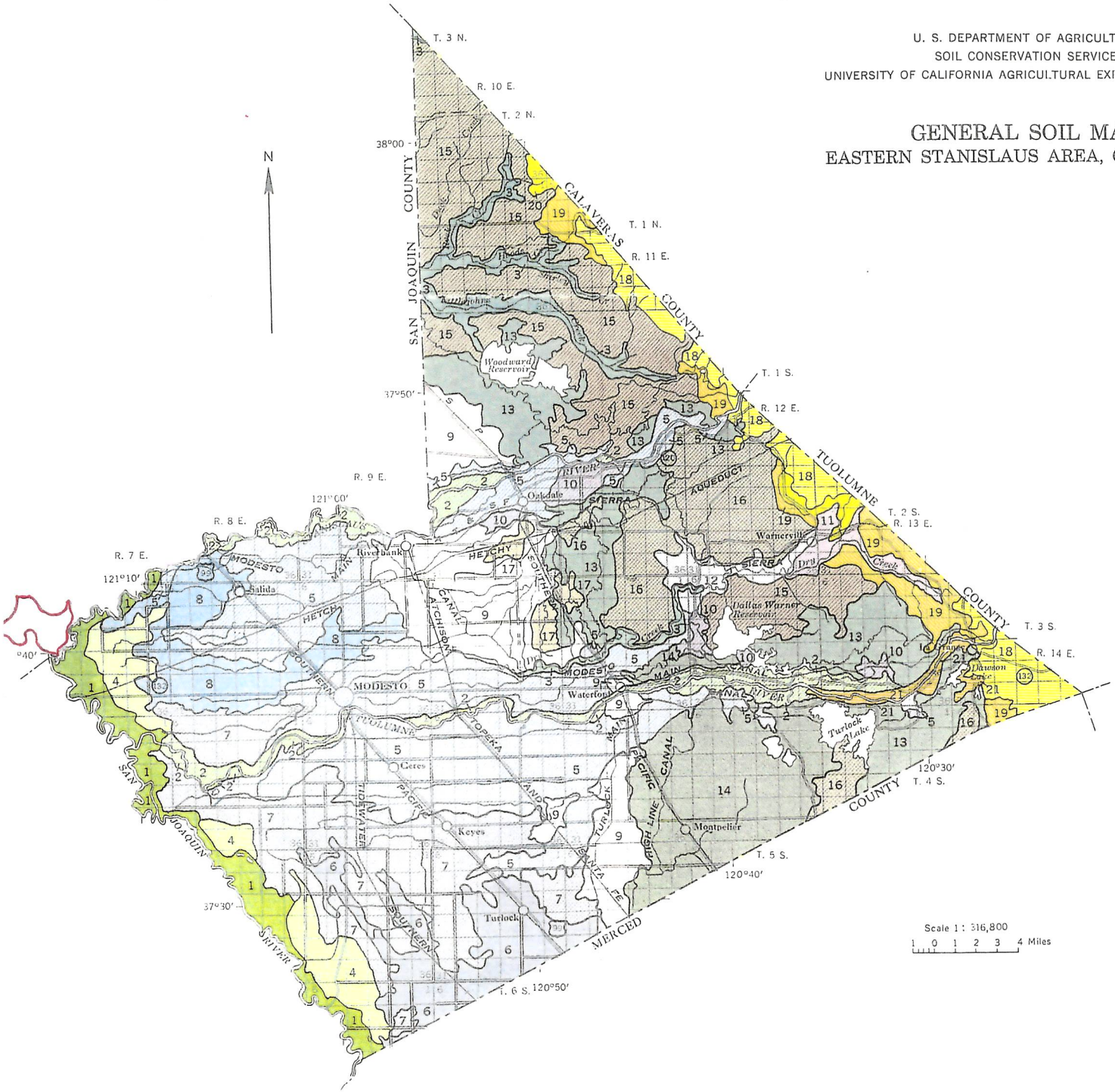
GENERAL SOIL MAP
SAN JOAQUIN COUNTY, CALIFORNIA

Scale 1:380,160

0 2 4 6 8 10

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
UNIVERSITY OF CALIFORNIA AGRICULTURAL EXPERIMENT STATION

GENERAL SOIL MAP
EASTERN STANISLAUS AREA, CALIFORNIA



SOIL ASSOC

SOILS OF THE RECENT ALLUVIAL FLOOD PLAINS

1 — Columbia-Temple association: Deep, imperfectly drained to poorly drained soils on the San Joaquin River flood plains.

2 — Grangeville-Tujunga association: Deep, well-drained to imperfectly drained soils on the Stanislaus and Tuolumne River flood plains.

3 — Honcut-Wyman association: Deep, well-drained to moderately well drained soils on flood plains and low terraces of Dry Creek and other minor streams.

SOILS OF THE BASIN LANDS

4 — Waukena-Fresno association: Saline-alkali soils of the basin lands.

SOILS OF THE YOUNG ALLUVIAL FANS

5 — Hanford (Ripperdan)-Tujunga association: Deep, well-drained soils on alluvial fans of the Stanislaus and Tuolumne Rivers.

6 — Hilmar-Delhi association: Deep, wind-modified, coarse-textured soils on alluvial fans of the Stanislaus and Tuolumne Rivers.

7 — Dinuba-Hanford association: Moderately deep to deep, well drained to imperfectly drained soils on fans of the Stanislaus and Tuolumne Rivers.

8 — Modesto-Chualar association: Deep, slowly permeable soils in the flat area between the fans of the Stanislaus and Tuolumne Rivers.

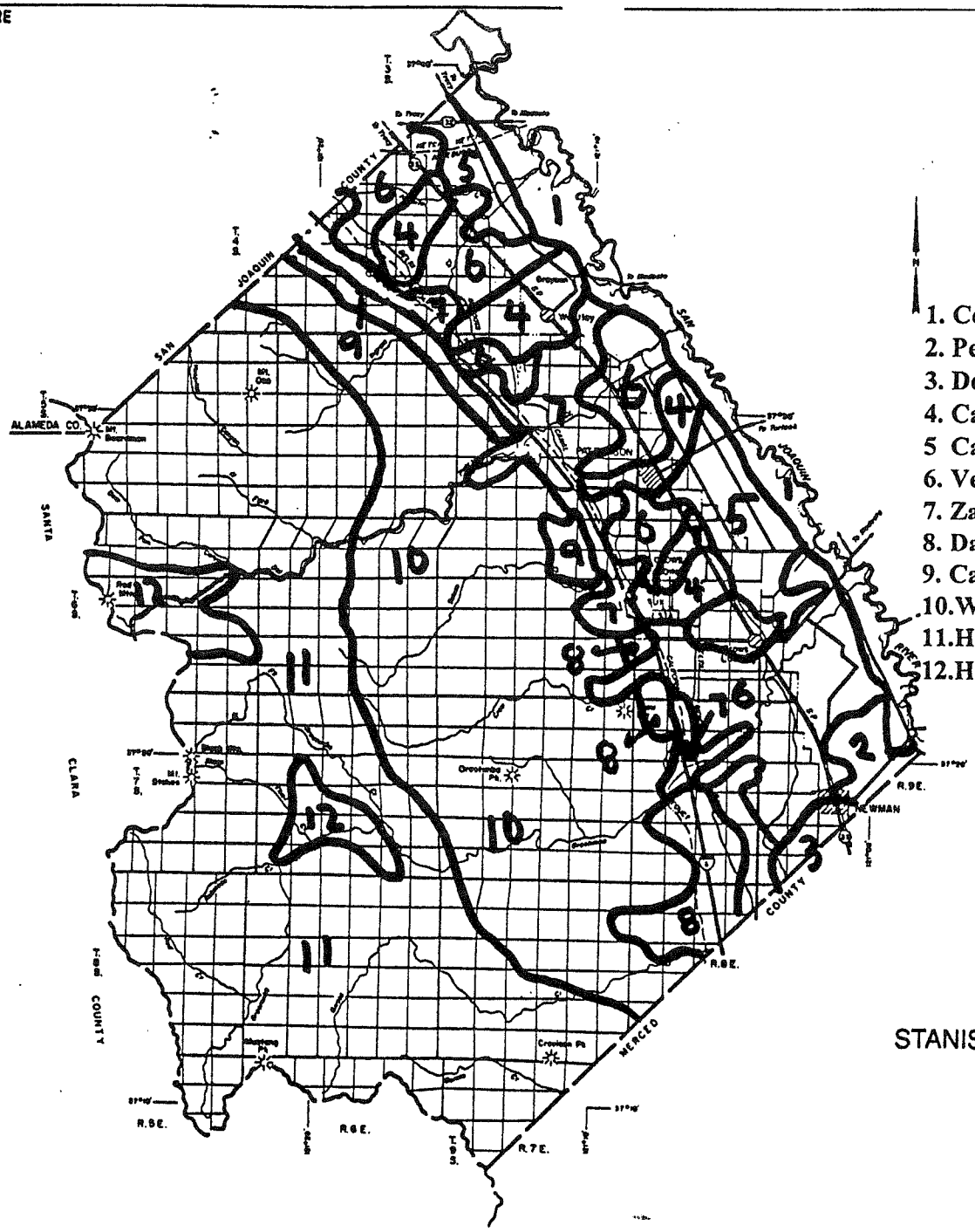
SOILS OF THE LOW ALLUVIAL TERRACES AND MODERATELY OLD FANS

9 — San Joaquin-Madera association: Hardpan soils on moderately old fans and terraces.

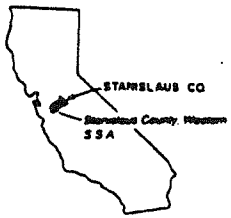
10 — Snelling association: Deep, well-drained, moderately permeable soils on moderately old fans and terraces.

11 — Ryer-Yokohl association: Deep, well-drained, slowly permeable or hardpan soils on moderately old terraces along Dry Creek.

12 — Paulsell association: Deep, clay soils on lacustrine deposits in Paulsell Valley.



1. Columbia-Merritt-Xerofluvents Associatic
2. Pedcat
3. Dospalos-Dosamigos Association
4. Capay
5 Capay-El Solyo-Vernalis Association
6. Vernalis-Zacharias-Elsalado
7. Zacharias-Stomar Association
8. Damluis
9. Carbona-Calla Association
10. Wisflat-Arburua-Rock outcrop Associatio
11. Honker-Gaviota-Gonzaga Association
12. Hentine-Henneke Association



LOCATION MAP

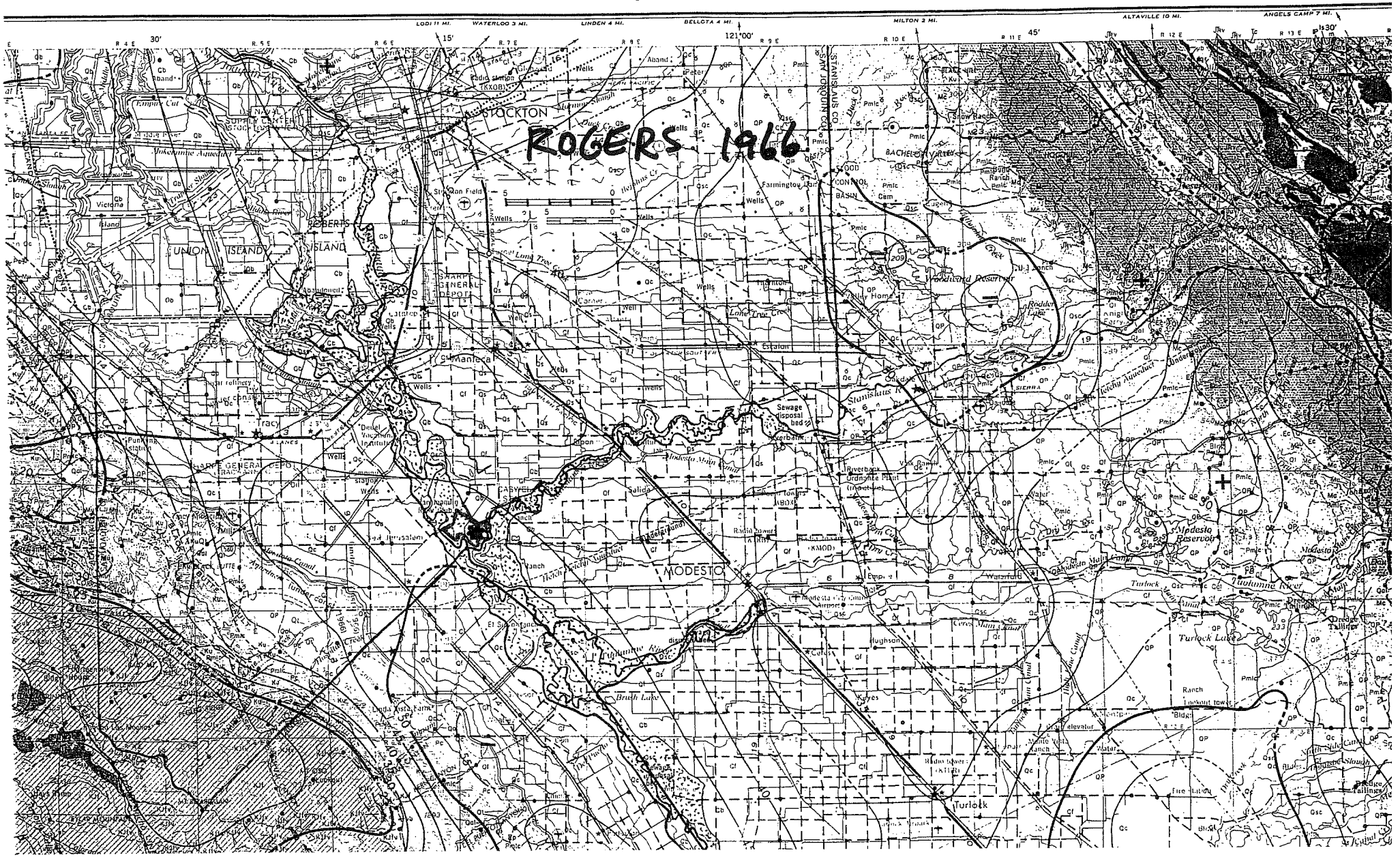
GENERAL SOILS MAP
TENTATIVE
STANISLAUS COUNTY, WESTERN PART
SOIL SURVEY AREA 642

STANISLAUS COUNTY, CALIFORNIA

OCTOBER 1989

SOURCE USDA-SCS-PORTLAND OREGON

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF CONSERVATION



APPENDIX III. Current agricultural use (R. Cocke, personal communication)

State of California | DEPARTMENT OF WATER RESOURCES | The Resources Agency

FAX COVER SHEET

Sara, call me Janelle

TO: Janelle Wakeman	FROM: Richard Cocke
Organization: CSA	Organization: DWR CENTRAL DISTRICT
Location (Building/Room Number):	Location (Building/Room Number): 3251 S STREET
FAX Number: 707-541-3999	FAX Number: [redacted]
Telephone Number:	Telephone Number: [redacted]
Total Number of Pages Sent (including fax cover sheet): 3	Date: 12/11/97

COMMENTS:

The maps show land use in 1996. They are preliminary and subject to revision.

Codes for land use parcels:

V = Vineyard
F6 = Corn
T9 = Squash, Melons
T15 = Tomatoes
P1 = Alfalfa
P3 = Pasture
(G) = Grain double cropped
D12 = Almonds
D13 = Walnuts
V-Y = Young Vineyard
G-F = Fallow grain land

NV = Native Vegetation
NW = Water Surface
NR3 = Riparian Vegetation
UC4 = Campground
51 = Farmstead
53 = Dairy
UR = Urban Residential

If I missed any, give me a call.

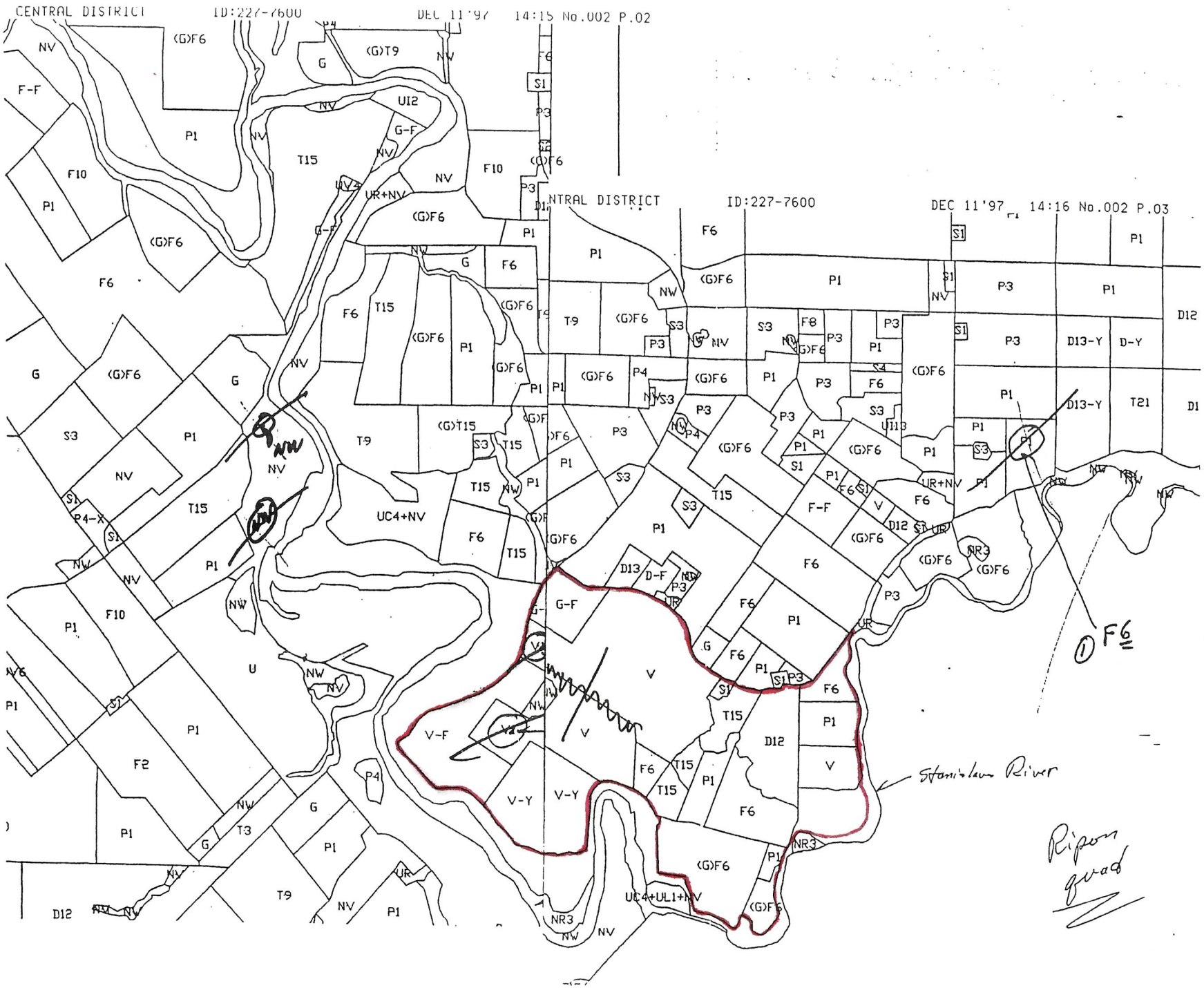
Sender (check if applicable):

Discard copy ☐ Yes ☐ No

Original letter to follow ☐ Yes ☐ No

If you do not receive all pages or have any problems with receiving this fax, please call _____

DWR 4210 (Rev. 10/95)


CENTRAL DISTRICT ID:227-7600 DEC 11'97 14:15 No.002 P.02
NTRAL DISTRICT ID:227-7600 DEC 11'97 14:16 No.002 P.03
F6
Stanislaus River
Ripon quad

TEL: 800-400-1353
FAX: 541-672-3775

POST OFFICE BOX 684
WILBUR, OREGON 97494

COMPLIANCE SERVICE *of* AMERICA, LLC

December 16, 1999

Richard Mascolo, Chief of Regulations
Bureau of Alcohol, Tobacco & Firearms
Market Compliance Branch
650 Massachusetts Ave., NW, Rm. 5400
Washington, DC 20226

Re: Petition to Establish River Junction Viticultural Area

Dear Mr. Mascolo:

I understand from Tim Devaney that you have requested additional evidence concerning name of the proposed River Junction AVA. Specifically, you wanted evidence that the name applies to a geographical feature, road, or delineated area within the proposed boundaries. I trust that the enclosed documents will satisfy your request.

The petitioner, Ronald W. McManis, owns a vineyard in the western half of the proposed viticultural area. He acquired the property in 1991 and 1993 from River Junction Vineyards and Two Rivers Farms, two commonly owned limited partnerships that had established vineyards there in the early 70's. A vineyard block map of his ranch (**"Enclosure 1"**) shows the historical ownership of the vineyards by the designations "R" (for River Junction Vineyards) and "T" (for Two Rivers Vineyards). As you can see, most of the ranch was known as River Junction Vineyards for 20 years before it was acquired by the petitioner. He changed the name primarily to distinguish the new proprietorship from the previous ownership.

Enclosure 2 is the grant deed for the limited partnership's acquisition of the River Junction Vineyard property from the Moresco family, its previous owner, in 1972. The legal description attached to the deed is quite difficult to follow. Parcel 1 and Parcel 2 conveyed by that deed comprise the vineyard blocks labeled"R" on Enclosure 1. Parcel 3, which was subsequently separated from the rest of the ranch, consisted of two small parcels located just outside the proposed viticultural area, namely Lots 169 and 170 in the northeast corner of the intersection of Division Road and Central Avenue. A copy of Figure 8 from

the Geographical Analysis submitted with the petition is enclosed **(Enclosure 3)** highlighting the location of these lots.

Enclosure 4 is correspondence from the California Dept. of Water Resources to the General Partner of River Junction Vineyards concerning easements for flood control levees. This correspondence is included as evidence because it confirms that the ranch was known to that state agency by the name River Junction Vineyards.

I will call you next week to confirm receipt of this package and discuss any questions you may have about the enclosures.

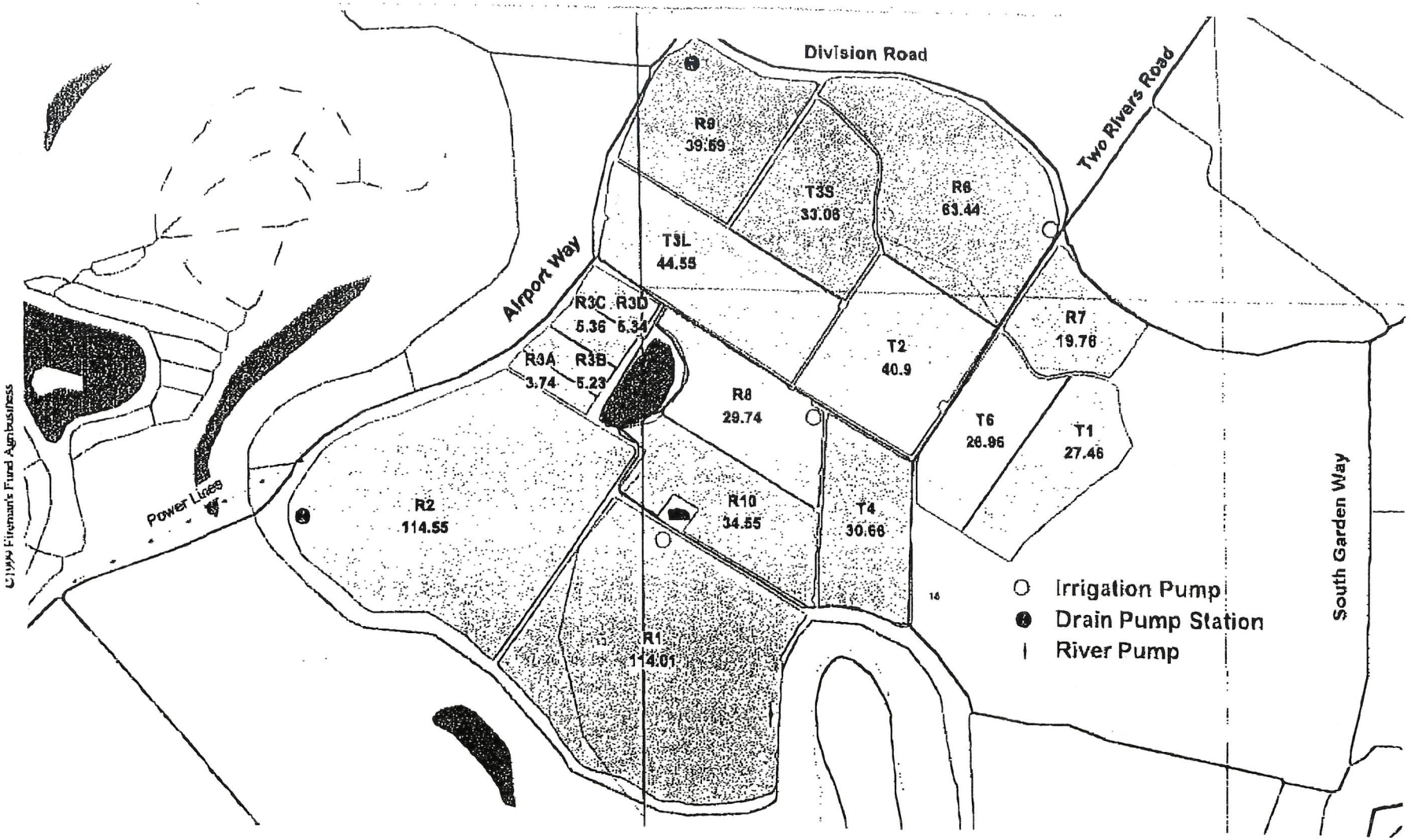
Happy holidays!

Sincerely,

Sara Schorske

Encl.

c: Mr. Ronald W. McManis, with enclosures



RIVERCREST & RIVEROAKS VINEYARDS

Fireman's Fund® AgriBusiness

Call Robert Aviña, Agent
1-800-742-8494
"GET MAPPED"
Lic. #OB17005

Chardonnay = 461.68
Zinfandel = 141.08

North on HWY 99,
At the Maze Blvd. / HWY 132 exit - head west
Turn right on Kasson Road,
Turn right on Airport Road,
Turn right on Division Road,
Turn right on Two Rivers Road

South on HWY 99,
Take the Austin Road exit,
On Austin Road, head south until you
Come to the stop sign at W. Ripon Road,
At W. Ripon Road, turn right,
Continue on W. Ripon Road until it
Dead-ends at Airport Way,
Turn left at Airport Way,
Continue on Airport Way for 4 - 5 miles,
Turn left on Division Road,
Turn Right on Two Rivers Road.

Continue on Two Rivers Road for 1 - 1.5 miles, turn right into the paved driveway.
Continue on the paved driveway until you reach the shop on the right side of the driveway.

Enclosure 1

Enclosure 2

(7)

Document No. 61464 Date December 28, 1972

STATEMENT OF TAX DUE AND REQUEST THAT STAMPS NOT BE MADE
A PART OF THE PERMANENT RECORD IN THE OFFICE OF THE COUNTY RECORDER
(Pursuant to Section 11934 R & T Code and Section 12 of S.J. County Ord. No. 1450)

George H. Chapman
San Joaquin County Recorder

Request is hereby made in accordance with the provisions of the Documentary Stamp Act that stamps be affixed to this form for later affixing to the accompanying document which names:

LOUIS MORESCO, JR. AND EVELYN MORESCO, his wife; and RAYMOND MORESCO AND JO ANNE MORESCO, his wife,
(Name of one grantor or lessor)

and

RIVER JUNCTION VINEYARDS, a limited partnership.
(Name of one grantee or lessee)

Property described in the accompanying document is located in

UNINCORPORATED AREA OF SAN JOAQUIN COUNTY.
(Show name of city or unincorp.)

The amount of tax due on the accompanying document is $ 726.00.

Stamps are affixed in said amount.

SAN JOAQUIN COUNTY 0580043 CALIFORNIA COUNTY DOCUMENTARY TAX DEC28'72 PB. 10830 726.00

FIRST STOCKTON TITLE COMPANY

[signature]
(Signature of party or agent)

Order No.
Escrow No.
Loan No.

WHEN RECORDED MAIL TO:

Grantee
132 N. Yosemite,
Oakdale, California 95361

COMPARED

INDEXED

61464	at – min. past 11 A. M.	DEC 29 1972	
Recorded at request of	FIRST STOCKTON TITLE COMPANY		
Official Records Of	BOOK 3722 PAGE 240	San Joaquin County	
Fees $ 6.00	GEORGE H. CHAPMAN, County Recorder		

SPACE ABOVE THIS LINE FOR RECORDER'S USE

MAIL TAX STATEMENTS TO:

Same as above

DOCUMENTARY TRANSFER TAX $.....

..... Computed on the consideration or value of property conveyed; OR

..... Computed on the consideration or value less liens or encumbrances remaining at time of sale.

Signature of Declarant or Agent determining tax – Firm Name

GRANT DEED

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

LOUIS MORESCO, JR. and EVELYN MORESCO, his wife; and
RAYMOND MORESCO and JO ANNE MORESCO, his wife

hereby GRANT(S) to

RIVER JUNCTION VINEYARDS, a Limited Parthership

the real property in the City of
County of San Joaquin , State of California, described as

See Exhibit "A" attached hereto and made a part hereof.

Dated December 14, 1972

Louis Moresco
Louis Moresco, Jr.

Evelyn Moresco
Evelyn Moresco

Raymond Moresco
Raymond Moresco

Jo Anne Moresco
Jo Anne Moresco

STATE OF CALIFORNIA
COUNTY OF San Joaquin ss.

On December 14, 1972
before me, the undersigned, a Notary Public in and for said State, personally appeared Louis Moresco, Jr., Evelyn Moresco, Raymond Moresco and Jo Anne Moresco
known to me to be the person s whose name s are subscribed to the within instrument and acknowledged that they executed the same.

WITNESS my hand and official seal.

Signature John A. Roscelli

NOTARY SEAL

JOHN A. ROSCELLI
NOTARY PUBLIC - CALIFORNIA
SAN JOAQUIN COUNTY
My commission expires Oct. 23, 1974

(This area for official notarial seal)

MAIL TAX STATEMENTS AS DIRECTED ABOVE

1002 (10/69)

EXHIBIT "A"

#6140

15208-B

D E S C R I P T I O N

That certain real property situated in the State of California, County of San Joaquin, described as follows:

PARCEL ONE:

Portions of Sections 12, 13 and 24, of Township 3 South, Range 6 East, and portions of Sections 7, 18 and 19 of Township 3 South, Range 7 East, more particularly described as follows:

LOTS 23 and 24 as shown upon Map entitled RIVER JUNCTION FARMS, SUBDIVISION NO. 2, filed for record October 15, 1925, in Vol. 10 of Maps and Plats, Page 101, San Joaquin County Records.

EXCEPT THEREFROM those portions of Lots 23 and 24, of said Subdivision, lying Northerly and Easterly of the following described line:

COMMENCING at the point of intersection of the centerlines of Durham Ferry Road (Airport Way) and Lake Avenue of said Subdivision and running thence South 30°59' West 7.29 feet; thence South 59°18'38" East 40.00 feet to the point of beginning of the herein described line, said point also lying in the East right of way line of said Durham Ferry Road; thence South 59°18'38" East 2491.5 feet; thence South 3°4'22" West 2111.9 feet to a point in the Southeasterly line of Lot 23 of said Subdivision, said point being the end of the herein described line, said point also bears the following five courses and distances from the Southeast corner of said Lot 23 at a point on the West right of way line of Central Avenue as shown on said Subdivision Map, 1) North 84°29' West 53.96 feet; 2) North 74°54' West 279.6 feet; 3) North 85°02' West 203.3 feet; 4) South 79°30' West 260.7 feet; 5) South 49°25' West 160.03 feet.

TOGETHER WITH portions of Lake Avenue lying Southerly and Westerly of the above described line, which has been abandoned by Instrument recorded August 11, 1969, in Vol. 3326, page 268, Official Records of San Joaquin County.

EXCEPT THEREFROM that portion of Lot 24 conveyed to the State of California for roadway, by Deed dated August 10, 1929, recorded September 14, 1929, in Vol. 292 of Official Records, page 321, San Joaquin County Records.

ALSO EXCEPT that portion of said land described in Deed to the Sacramento and San Joaquin Drainage District, recorded October 10, 1966, in Vol. 3080 of Official Records, page 435, and recorded January 25, 1966 in Vol. 3019 of Official Records, page 142, San Joaquin County Records.

- continued -

#61404

PARCEL TWO:

(A) All that certain tract of land lying North of the main channel of the San Joaquin River and South of a line described as follows:

BEGINNING at a point on the right bank of the San Joaquin River, South 8°34' West, 7010.7 feet from the West corner of Lot 51 of SUBDIVISION NO. 1 OF THE RIVER JUNCTION FARMS, INC., and running thence North 84°0' East, 1244.8 feet; thence South 24°56' East, 459.5 feet; thence North 79°15' East, 423.8 feet; thence North 79°51' East, 251.4 feet; thence North 59°57' East, 63.2 feet to a point on the right bank of the San Joaquin River.

EXCEPTING THEREFROM all that portion thereof which lies in Swamp and Overflowed Land Survey No. 947 of San Joaquin County.

ALSO EXCEPTING from the above all oil, gas and other hydrocarbons and minerals, as reserved in Deed from Bank of America National Trust and Savings Association, a national banking association, to Albert H. Tangemann and wife, recorded May 7, 1937 in Vol. 581 of Official Records, page 1, San Joaquin County Records.

ALSO EXCEPT that portion of said land described in Deed to the Sacramento and San Joaquin Drainage District, recorded October 10, 1966 in Vol. 3080 of Official Records, page 435, San Joaquin County Records.

(B) BEGINNING at a 1½" iron pipe set flush at the Northernmost corner of that certain tract of land conveyed by Ripon Land Company to Mary Smith, by Deed dated May 20, 1924, recorded in Vol. 558 of Book "A" of Deeds, page 115, San Joaquin County Records; and running thence along the Easterly and Northerly line of said tract, South 24°56' East, 459.5 feet; North 79°15' East, 423.8 feet; North 79°51' East, 251.4 feet; and North 59°57' East, 63.2 feet to the Northeasterly corner of said tract at a point on the right bank of the San Joaquin River; thence leaving said line of said tract of land and running Northerly and along said right bank of said river, North 3°44' West, 356 feet to a point in the prolongation Easterly of the Northernmost line of said tract, as conveyed to Mary Smith and from which a 2" by 3" witness stake marked W. P. and standing on the top of a levee bears South 84°0' West, 43.72 feet; and thence leaving said river running Westerly and along said prolongation South 84°0' West, 894 feet to the point of beginning, containing a gross area of 7.58 acres, more or less.

EXCEPTING THEREFROM all that part of that certain strip of land 150 feet wide lying within said 7.58 acre tract, as conveyed by River Junction Farms, Inc., to River Junction Reclamation District No. 2064, by Deed dated December 3, 1923, recorded March 1, 1924 in Vol. 2 of Official Records, page 217, which exception is more particularly described as follows:

A strip of land 150 feet wide lying to the left of the following described line:

BEGINNING at the Southernmost corner of the above described 7.58 acre tract and running thence North 79°15' East, 423.8 feet; North 79°51' East, 213.4 feet; North 39°06' East, 125.7 feet; and North 3°28' West, 297 feet, more or less, to a point in the Northerly line of said 7.58 acre tract; said exceptions contain 3.29 acres, more or less, leaving a net area conveyed of 4.29 acres, more or less.

Courses true variation 18°15' East, surveyed February 16, 1925 by F. A. Harmann, C.E.

EXCEPTING a small portion thereof lying in Swamp and Overflowed Land Survey No. 947, San Joaquin County.

EXCEPTING from the above all oil, gas and other hydrocarbons and minerals as reserved in Deed from Bank of America National Trust and Savings Association, a national banking association, to Albert H. Tangemann and wife, recorded May 7, 1937 in Vol. 581 of Official Records, page 1, San Joaquin County Records.

ALSO EXCEPT that portion of said land described in Deed to The Sacramento and San Joaquin Drainage District, recorded October 10, 1966 in Vol. 3080 of Official Records, page 435, San Joaquin County Records.

- continued -

CONTINUED

#61464

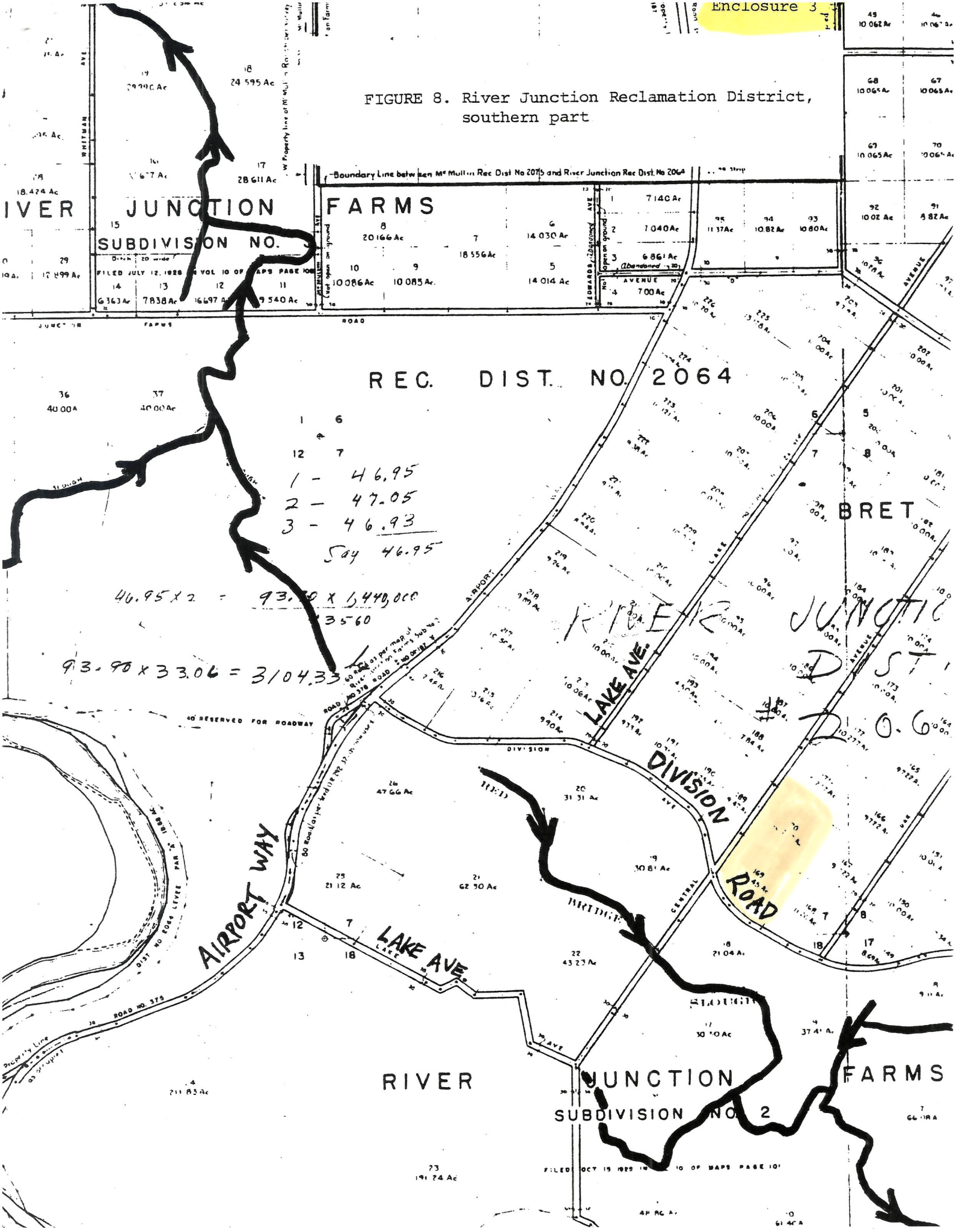
PARCEL TWO: (continued)
(C) All interest acquired by Eli Amsbaugh in the following described real property, by the issuance to him by the State of California of Swamps and Overflowed Land Certificates of Purchase No. 2037, dated January 5, 1865; Swamp and Overflowed Land Survey No. 947, being a fraction in the Northeast quarter of the Northeast quarter of Section 24, Township 3 South, Range 6 East, Mount Diablo Base and Meridian and in the fractional South half of the Southwest quarter of Section 18; and fractional North half of the Northwest quarter of Section 19, Township 3 South, Range 7 East, Mount Diablo Base and Meridian, particularly described in the field notes of said Survey, as follows:
BEGINNING at a point on the range line between Ranges 6 and 7, East, Township 3 South, 33.33 chains South from quarter section corner between Sections 13 and 18; and running from thence South on said range line, 10.32 chains to right bank of San Joaquin River and meander up said river on the right bank, South 36¼° West, 3.95 chains; South 62° East, 16.10 chains; North 71½° East, 24.62 chains; North 23¼° West, 21.26 chains; North 2 chains to Northern boundary; thence North 78¼° West, 4 chains; thence South 71° West, 23 chains to the place of beginning.
Run by true meridian magnetic variation 16° East, containing 74.04 acres, more or less, as same will be reserved by County Surveyor of San Joaquin County, California, for use of W. S. Kingsbury at State Land Office for purpose of issuing a patent thereon under full paid Swamp and Overflowed Land Certificate of Purchases. Said parcels fall in Sections 18 and 19, Township 3 South, Range 7 East and Section 13, Township 3 South, Range 6 East, Mount Diablo Base and Meridian.
EXCEPTING from the above, all oil, gas and other hydrocarbons and minerals as reserved in Deed from Bank of America National Trust and Savings Association, a national banking association, to Albert H. Tangemann and wife, recorded May 7, 1937 in Vol. 581 of Official Records, page 1, San Joaquin County Records.
ALSO EXCEPT that portion of said land described in Deed to the Sacramento and San Joaquin Drainage District, recorded October 10, 1966 in Vol. 3080 of Official Records, page 435, San Joaquin County Records.
(D) All interest acquired by Eli Amsbaugh in the following described real property by the issuance to him by the State of California of Swamp and Overflowed Land Certificate of Purchase No. 2037, dated January 5, 1865, being a small tract lying East of San Joaquin River in Northeast corner of Section 24, Township 3 South, Range 6 East, Mount Diablo Base and Meridian, formerly in Swamp Land Survey No. 947 as deeded to Mary Smith.
EXCEPTING from the above all oil, gas and other hydrocarbons and minerals as reserved in Deed from Bank of America National Trust and Savings Association, a national banking association, to Albert H. Tangemann and wife, recorded May 7, 1937 in Vol. 581 of Official Records, page 1, San Joaquin County Records.
ALSO EXCEPT that portion of said land described in Deed to The Sacramento and San Joaquin Drainage District, recorded October 10, 1966 in Vol. 3080 of Official Records, page 435, San Joaquin County Records.

PARCEL THREE:
Lot 169, and that portion of Lot 170, lying Southwesterly of irrigation ditch, as shown upon Map entitled, BRET HARTE GARDENS, filed for record October 11, 1922 in Vol. 10 of Maps and Plats, page 61, San Joaquin County Records.
EXCEPTING THEREFROM an undivided one-half interest in and to all gas, oil, minerals and other hydrocarbon substances located in and under the hereinabove described premises, as reserved in Deed recorded June 21, 1965 in Vol. 2956 of Official Records, page 179.
ALSO EXCEPT that portion of said land described in Deed to The Sacramento and San Joaquin Drainage District, recorded October 10, 1966 in Vol. 3080 of Official Records, page 435, San Joaquin County Records.

Excepting and reserving unto the grantors herein, their successors and assigns all oil, gas, hydrocarbons substances and minerals from the above described parcels.

Enclosure 3

FIGURE 8. River Junction Reclamation District, southern part



Enclosure 4

STATE OF CALIFORNIA — RESOURCES AGENCY EDMUND G. BROWN JR., Governor

DEPARTMENT OF WATER RESOURCES
P.O. BOX 388
SACRAMENTO
95802
(916) 445-9181

MAR 18 1981

OCT 9 1981

Mr. Gordon A. Batson
Sierra Vineyards, Inc.
P. O. Box 1228
Oakdale, CA 95361

Dear Mr. Batson:

Reclamation Board, San Joaquin River and Tributaries,
Parcel No. 11909-A,B, River Junction Vineyards

I have enclosed an original and one copy of a Grant Deed for Parcel No. 11909-A. The original Deed has two partnership acknowledgements attached. One may be used for your signature in Oakdale, and the other for Dan Emmett's signature in Los Angeles. Only the original Deed needs to be signed and notarized and returned to me; the copy is for your records.

Two prints of map No. 60-346, sheet 10 of 21 are included, showing Parcels 11909-A and B outlined in red.

An original and two copies of a Right of Way Contract are enclosed. This Contract covers payment for Parcel 11909-A, payment for the temporary use of Parcel 11909-B, which is now your new ditch, and reimbursement of your costs to relocate the sprinkler system and the vineyard trellis system. The original and one copy need to be signed and returned to me. The second copy is for your records.

In our conversation of March 11, 1981, you asked about types of ground cover to help control erosion by the new ditch. A "Coastal Bermuda" grass was recommended to me by a farmer who owns property along the Sacramento River in Glenn County. He said the grass is a fast-growing, low-maintenance type ground cover. It is also mentioned, as an acceptable ground cover in the enclosed Reclamation Board publication titled Levee Encroachment, Guide For Vegetation On Project Levees.

save water

According to our title report, there are five Deeds of Trust which affect Parcel 11909-A. It may take more time than usual to close the escrow, since partial reconveyances will be needed. We will therefore appreciate your help in returning the original Grant Deed and the original and one copy of the Right of Way Contract to me as soon as possible. A return envelope is enclosed for your convenience.

Sincerely,

William E. Gaddy

William E. Gaddy, Land Agent
Real Estate Branch
Division of Land and Right of Way

Enclosures

Certified Mail
Return Receipt Requested

RECORDING REQUESTED BY

WHEN RECORDED MAIL TO:

DEPARTMENT OF WATER RESOURCES
Division of Land and Right of Way
Real Estate Branch
1416 9th Street, Room 431
Sacramento, California 95814

(SPACE ABOVE THIS LINE FOR RECORDER'S USE)

Project: San Joaquin River and Tributaries

Parcel No.: 11909-A

File No.:

GRANT DEED

(Individual)

RIVER JUNCTION VINEYARDS,
a limited partnership

_____, hereinafter referred to as Grantor, grants to the SACRAMENTO AND SAN JOAQUIN DRAINAGE DISTRICT, acting by and through The Reclamation Board of the State of California, a public agency, all that real property in the County of San Joaquin, State of California, more particularly described as follows:

DWR 3460 (Rev. 6/74)

FEB 2 7 1981

All that certain parcel of real property being a portion of Lot 24 as said Lot is shown upon map entitled "River Junction Farms, Subdivision No. 2", filed for record October 15, 1925, in Volume 10 of Maps and Plats, page 101, San Joaquin County Records, County of San Joaquin, State of California, located in projected Section 13, Township 3 South, Range 6 East M.D.M., described as follows:

PARCEL 11909-A

Beginning at a point in the northeasterly boundary of Parcel 3610-A, said Parcel 3610-A being described in Grant Deed recorded October 10, 1966 in Book 3080 of Official Records, Page 435, San Joaquin County Records, said point being further located South 89° 47' 11" East 13.926 metres (45.69 feet) from the westerly terminus of a course described as North 89° 47' 11" West 201.15 feet in said Parcel 3610-A;
THENCE FROM SAID POINT OF BEGINNING leaving said boundary and along the following six (6) courses:

(1) North 46° 05' 16" West 99.560 metres (326.64 feet);
(2) North 49° 58' 04" West 123.219 metres (404.26 feet);
(3) North 41° 29' 15" West 31.861 metres (104.53 feet);
(4) North 29° 16' 25" West 25.247 metres (82.83 feet);
(5) North 21° 48' 59" West 28.776 metres (94.41 feet); and
(6) South 80° 20' 58" West 3.962 metres (13.00 feet) to the easterly boundary of Parcel 3610-H described in said Grant Deed;

thence along said easterly and northeasterly boundaries the following five (5) courses:

(1) South 09° 39' 45" East 44.583 metres (146.27 feet);
(2) South 45° 09' 44" East 30.276 metres (99.33 feet);
(3) South 49° 08' 28" East 180.985 metres (593.78 feet);
(4) South 43° 16' 31" East 50.128 metres (164.46 feet); and
(5) South 89° 47' 11" East 13.926 metres (45.69 feet) to the point of beginning, containing 0.267 hectare (0.66 acre) more or less.

All distances are shown in metres with the equivalent feet in parentheses. In case distances are in conflict, the distances in feet will control.

Bearings and distances in the above description are based on the California Coordinate System, Zone III.

Approved by
Fred V. Buel, Jr., L.S. 3487

Excepting therefrom and reserving unto the remaining lands of grantor, his successors and assigns which are contiguous to the real property herein described, without limitations, the water and riparian rights which are now appurtenant to said remaining lands which shall include the right to the enjoyment and use of the river for all useful purposes to which it may be put, including but not limited to all recreational uses, boating and fishing, together with a reasonable right of access for the exercise of said rights; and

Nothing excepted and reserved herein shall be considered a waiver of Sections 8700-8723 of the Water Code or of the police power of the State of California and grantee herein, and the exercise of the rights excepted and reserved above shall be subject to applicable Federal and State flood control regulations for the encroachment upon, and operation and maintenance of, the flood control project.

Grantor, for himself, his successors and assigns hereby waives any claims for any and all damages which will accrue to the remaining property of grantor by reason of its severance from that portion granted herein and the construction of the improvement in the manner presently proposed.

Executed on: _____

RIVER JUNCTION VINEYARDS
a limited partnership
By SIERRA VINEYARDS, Inc.,
GENERAL PARTNER

Signed and delivered in the presence of:

_____

GRANTOR(S)

STATE OF CALIFORNIA
..... County of ..... } ss.

On _____, 19___ before me, the undersigned, a Notary Public in and for the State of California, personally appeared _____ known to me to be the _____ President and _____, known to me to be the _____ Secretary of _____ the corporation that executed the within instrument and known to me to be the persons who executed the within instrument on behalf of said corporation, said corporation being known to me to be one of the partners of _____, the partnership that executed the within instrument, and acknowledged to me that such corporation executed the same as such partner and that such partnership executed the same.

WITNESS my hand and official seal.

[*Seal*] .....

.....
NAME (TYPED OR PRINTED)
Notary Public in and for the State of California

SUBSCRIBING WITNESS

STATE OF CALIFORNIA
..... County of ..... } ss.

On _____, 19___ before me, the undersigned, a Notary Public in and for the State of California, personally appeared _____ known to me to be the person whose name is subscribed to the within instrument as a witness thereto, who, being by me duly sworn, deposed and said; that he resides in the County of _____, State of California; that he was present and saw _____ known to him to be the _____ President and _____, known to him to be the _____ Secretary of _____ the corporation that executed the within instrument and known to him to be the persons who executed the within instrument on behalf of said corporation, said corporation being known to him to be one of the partners of _____, the partnership that executed the within instrument, and acknowledged to him that such corporation executed the same as such partner and that such partnership executed the same; and that affiant subscribed his name thereto as a witness to said execution.

WITNESS my hand and official seal.

..... [*Seal*]

.....
NAME (TYPED OR PRINTED)
Notary Public in and for the State of California

RIVER JUNCTION FARMS
SUBDIVISION NO. 2
LOT 24

(FORMERLY)
LOUIS MORESCO JR. & RAYMOND MORESCO
(FORMERLY COOK LAND & CATTLE CO.)

RIVER JUNCTION VINEYARDS

PARCEL NO. 11909-A
FEE PARCEL 0.66 AC.

PARCEL NO. 11909-B
TEMP. WORK AREA 0.45 AC.

PARCEL NO. 3610-A
FEE PARCEL 6.46 AC

PARCEL NO. 3610-C
FEE PARCEL 2.49 AC

PARCEL NO. 3610-G
ROAD R/W 1.44 AC.

PARCEL NO. 3610-H
FEE PARCEL 1.36 AC.

PARCEL NO. 3610-I
TEMP DETOUR R/W 0.66 AC.

~~PARCEL NO. 3610-J~~
~~FLOWAGE R/W 4.80 AC.~~

PARCEL NO. 3610-L
FEE PARCEL 1.33 AC.

DURHAM FERRY ROAD

PARCEL NO. 3610-G

PARCEL NO. 3610-I

PARCEL NO. 11909-A

PARCEL NO. 11909-B

PARCEL NO. 3610-H

PARCEL NO. 3610-C

MANTECA SPORTSMEN INC.

R D 2064

THE MANTECA SPORTSMEN, INC.
59 E-35-6A, Deed 3504
PARCEL NO. 3694

DURHAM FERRY BRIDGE

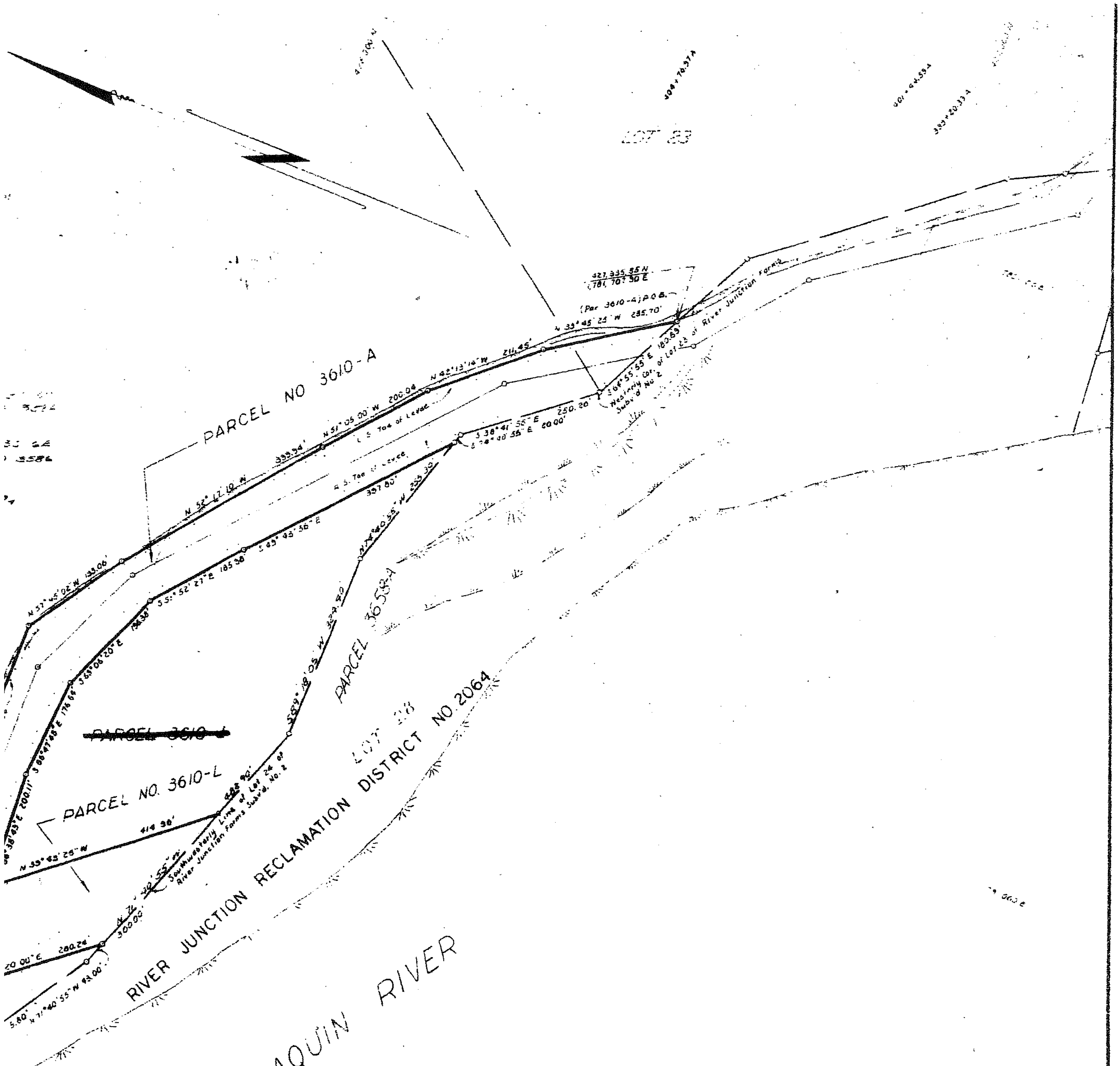


EXHIBIT B

PARCEL 3610 & 3694

GRAPHIC SCALE

SAN JOAQUIN COUNTY

State of California

THE RECLAMATION BOARD

S & S J D D VS.

BERTON F. GAROFALO, ET AL

RIGHT AND LEFT BANKS SAN JOAQUIN RIVER
STANISLAUS RIVER TO R D NO 2075
AND DURHAM FERRY RD TO SANTA CARBONA INTAKE

PREPARED: W. J. STICK HYDR ENGR

SUBMITTED: P. C. WALTERS SENIOR ENGR

APPROVED:

TR 2-976

SHEET