STATE OF CALIFORNIA

STATE WATER RESOURCES CONTROL BOARD

In re: Draft Order WR 2009-0079-DWR)	TESTIMONY OF CHRIS
)	NEUDECK
)	
RUDY MUSSI, et al.,)	APN 131-170-03
, , ,)	

INTRODUCTION/QUALIFICATIONS

I am Christopher H. Neudeck, P. O. Box 844, Stockton, California 95201. I am a registered Civil Engineer in the State of California and have worked with the Delta Islands including flood control, drainage and irrigation for the past twenty-five (25) years. I am the District Engineer for numerous reclamation districts in the Sacramento/San Joaquin Delta (Delta) and I am familiar with the history of reclamation of lands in the Delta including the Upper Division of Roberts Island which is the area of concern in this proceeding. The engineering firm of Kjeldsen, Sinnock & Neudeck, Inc. of which I am a principal is the engineer for Reclamation District No. 544 which encompasses the area of concern and adjoining districts Reclamation District No. 17 and Union Island Reclamation Districts 1 and 2. I am very familiar with the area including the waterways, levees, drains and irrigation facilities. A statement of my qualifications is submitted as a separate exhibit.

My testimony involves two main areas. The first is the review and mapping of title and other documents. The second is a summary of the irrigation and drainage practices of the southern Delta, and how these practices evolved over time.

With regard to the first, I begin with the Chain of Title produced for the Mussi property by Central Valley Land Service Company. I understand the research and production of documents was done by Mr. Thurl Pankey, one of the principles of Central Valley Land Service Company and any of his associates.

The Mussi property is San Joaquin County Assessor's Parcel No. 131-170-03. The tax assessor parcel map showing this parcel is Exhibit 3A to this testimony. Hereinafter, I will refer to this property as either the "Parcel" or the "Mussi Parcel."

When mapping this Parcel, I have ignored any deeds or indentures which date prior to the Parcel being patented from the State of California per instructions by counsel. By way of patent dated November 24, 1876, the State of California patented a very large tract of land to Mr. J. P. Whitney. This large tract included the Parcel; see Exhibit 3B. For this and other relevant deeds, the exhibit includes our mapping of the deed.

On January 17, 1877, Mr. Whitney transferred a portion of the land patented to him to Mr. Morton C. Fisher; see Exhibit 3C. These transferred lands included the Parcel and were generally those lands east and south of what was known as High Ridge Levee/Duck Slough.

On March 15, 1877, Mr. Fisher transferred his lands to James Stewart, James Burton, and James King; see Exhibit 3D.

On April 28, 1891, Stewart, Burton and King transferred their lands to Mr. Joseph Vasquez; see Exhibit 3E. This transfer separated the parcel from any surface connection to the main waterways of the time, Middle River, San Joaquin River, Burns Cut-off, or Whiskey Slough. This Vasquez land (which included the Parcel) abutted what was then labeled as a "cross levee." However, earlier deeds described this line as "... the levee constructed along High Ridge and Duck Slough. .." see, for example, the language in Exhibit 3D. The last deed I have mapped created the parcel in its current size and is attached hereto as Exhibit 3F.

Of further note in this 1891 deed is the language "Together with all and singular the tenements, hereditaments and appurtenances thereunto belonging, or in any wise appertaining, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof."

The Vasquez land remained the same size as when it was first created until it was subdivided. This subdivision created two parcels, one of which is the Parcel; see Exhibit 3G. The Mussis became the owners of the Parcel by way of deed from Milton Welser, as Trustee (of his own Trust) dated June 7, 1999.

I have also prepared further exhibits which provide additional historical background and facts as they may relate to the Parcel.

Exhibit 3H includes the San Joaquin County Assessor's maps for the years 1876 through 1919, with the years 1877, 1878, 1909 and 1910 missing. These records are from the Micke Grove Historical Society, which is not aware of the locations of the "missing" maps. The map for 1876, shows a "blue" line along what was known as Duck Slough/High Ridge Levee; see Exhibit 3I. This line stretches from Burns Cut-off all the way to Middle River. Other documents confirm and/or suggest this was the route of Duck Slough on Roberts Island. Based on my expertise in mapping and reading maps, I believe this line indicates that Duck Slough had water in it at the time the tax assessor map was drawn.

I would like to note the method by which the levees, such as the "High Ridge Levee" were created. To create a new levee or improve a "natural" one, soil must be piled up. The easy and economical source of such soil was the immediate area around and near the levee site. Hence, dredges (or even hand labor) would remove soil in the vicinity of the levee site and would pile it up on the existing berm or levee. The "borrow pits" which were the sources for this soil were commonly located along the route of the levee. When the levee followed an old slough, it was common for the soil to be taken from the slough. The removal of soil deepened/widened the existing slough channel as soil was removed to build up the levee. We know that in this particular area, due to the depth to groundwater, digging a hole/trench/canal immediately results

in the channel filling with water seepage. When this was done to an existing slough, it created a larger source of open water fed from the main channel to which the slough connected.

In this case, we actually have a written source which confirms this enlargement of the slough abutting the Property. One of the early dredges (which were "floating steam shovels"), the *Sampson*, was actually used to create/improve the High Ridge Levee. The *Sampson* and its sister dredge the *Goliath*, were launched in 1875.

The <u>Sampson</u>'s first job was on Duck Slough and Burns' Cut-off levees of Roberts Island (FN), but the water was so low that the equipment could not make headway unless a channel 30 by 7 feet was dug.

The footnote from the above quote states:

The levee followed the right bank of the slough southwestward toward Middle River from the slough's outlet on Burn's Cut-off. The present Honker Lake Tract, the Pocket, and Roberts Island north of the Santa Fe right-of-way (including McDonald Island) would be north of the levee.

This quote is from *The Settlement Geography of the Sacramento-San Joaquin Delta*, *California*; at page 267. Exhibit 3J is the entire document, and Exhibit 3K is the subject page.

This description in the Settlement Geography confirms the process of using the slough itself as the borrow pit, and the deepening of the slough along High Ridge Levce; Duck Slough. Such deepening was necessary to transport the floating dredge which was improving the levee.

From this I conclude that from very early on (1875), Duck Slough (abutting the Parcel) was improved to the extent the Slough became a substantial waterway (with the very approximate dimensions of 30' wide by 7' deed').

Exhibit 3L is another of the Assessor's Maps, this one dated 1881-1882. As we can see, it includes a "blue" line along the dotted lines. I interpret these marks to be the Assessor's notation of both the High Ridge Levee and Duck Slough. Again, the Parcel abuts these features.

Exhibit 3M is the Map of a Portion of Roberts Island dated 1883 (owned by M. C. Fisher and produced by Tucker & Smith, Civil Engineers, Stockton) This map shows a hashed line which represents a levee (labeled "Cross Levee") from Burns-Cutoff (a portion of the San Joaquin River south of Rough and Ready Island) running, generally, southwest down to Middle River. In addition to the dashed levee line, there is also a solid line running along the same route. This line indicates a smaller waterway (as opposed to the larger waterways indicated by two solid lines). Thus we have an interior island slough which connects the San Joaquin River to Middle River. This supports the conclusion that the blue line on the 1876 Assessor's parcel map indeed represents a waterway. This slough and levee are the dividing line between Middle Roberts and Lower Roberts. Again, the Mussi Parcel abuts High Ridge Levee/Duck Slough.

Exhibit 3N is the California State Engineer Department Topography and Irrigation Map of San Joaquin County, dated 1886. This map shows Duck Slough running from Township 1 North, Range 5 East, Section 12, Mount Diablo Baseline and Meridian to Township 1 North, Range 5 East, Section 27 Mount Diablo Baseline and Meridian. The Parcel is in the middle of Section 27 and abuts the Duck Slough line on this map.

Exhibit 3O is the 1894 Stockton-Bellota Drainage District map produced by the California Commission of Public Works This map also shows Duck Slough extending from Burns Cut-off.

Exhibit 3P is the USGS Holt Quadrangle Map of 1911. This map includes coloring of known waterways. As can be seen, the USGS noted that a waterway existed in this same Duck Slough, with water reaching also down into Section 27. It is evident from the countours marking depressions along the east side of High Ridge Levee that a wet slough was present along the length of the High Ridge Levee, although not all portions of the slough were drawn with blue ink on the 1911 USGS Holt Quadrangle Map of 1911.

Exhibit 3Q is the Map of California Delta of the Sacramento and San Joaquin Rivers compiled by Captain Weathers and Captain Petzinger, and dated 1921. This map is important because it locates a major interior island slough that appears to open/connect to Middle River. This large slough does not reach the Parcel, but it is very near to it, reaching from Middle River northward to the old site of the Kingston School (founded no later than 1881). Confirming this large interior island slough, is the 1941 Map of Lands Served by Woods Irrigation Company attached hereto as Exhibit 3R. As we can see, even as late as 1941, there was a significant interior island slough in this location, meaning that water was available for use on the lands in the area. This slough, according to the 1941 map runs all the way to Trapper Slough.

Exhibit 3S is the *Denny's Pocket Map of San Joaquin County*, dated 1913. Besides showing cities and Sections, the map's legend indicates it also identifies "Roads, Private Roads, Railroads, Electric Railroads, Creeks and Ravines, *Canals*, and County Boundary Lines" (emphasis added). Clearly identified as a "canal" or "canals" are lines which follow Duck Slough/High Ridge and the slough running to and past Kingston School. These are connected by a short east-west canal from the School's location to approximately where the USGS and State Engineer Department maps show water in Duck Slough.

This interconnection between the slough running up from Middle River to Kingston School and the old Duck Slough is confirmed by the 1976 Department of Water Resources Areal Geology Sacramento-San Joaquin Delta map, attached hereto as Exhibit 3T. This map clearly shows that the water from Middle River is connected to the water in the slough abutting the Property, even as late as 1976.

I conclude that the two sources of water (Duck Slough and the slough running past Kingston School) were connected to the Parcel. Based on the *Denny's Pocket Map of San Joaquin County's* (Exhibit 3S) use of the term "canal," this water was intentionally provided to the lands along these waterways. As we see, these sources of water run directly by, and abut the

Parcel. Any contrary conclusion is not supported by the facts. Since we know that the Kingston School slough existed through at least 1941, it is logical to conclude that water could be distributed through all the connecting canals.

I refer back to the description of the Sampson dredge's activities in building a levee along Duck Slough and its "creation" of a 30' wide by 7' deep channel to allow the dredge to float and be moved. The combination of designated waterways, enlarged waterways, interconnection with other waterways, canals and sloughs many years before the Parcel was separated from the main channels to many years after, the only reasonable conclusion is that the Property maintained a connection to the neighboring waterways and thus was **not** severed as of 1891.

For ease of reference, we have included Exhibit 3U which combines a number of references to water sources onto a map which also shows the outline of the Parcel.

I have also reviewed the testimony of Michael Robinson which indicates that the Parcel received water from Woods Irrigation Company sometime prior to 1925. He also states that in 1925, the current supply system was formalized, though it had functioned (supplied water to the Parcel) before that date.

The evidence for the Mussi Parcel is overwhelming. Not only do we have numerous sources showing Duck Slough having water in it well past the date the Parcel was separated off from the main channels, we have water in it at least as of 1911, then in 1913 (the Denny's Pocket Map) we have canals along Duck Slough and connecting to a slough that existed through 1941, and supply by Woods Irrigation Company up to the time the current system was installed. There can be little doubt the owners of the Parcel maintained a continuous connection to water for irrigation purposes from 1891 through the date of their current supply system used today.

The second part of my testimony deals with the historical irrigation and drainage practices of the area. Attached hereto as Exhibit 3V which is a copy of my testimony before this Board in the Term 91 ACL hearings held in February, 2003. I will only briefly summarize that testimony now, and can provide more detailed explanations/clarifications when called as a witness.

Briefly, the area in question, like much of the Delta was originally designated Swamp and Overflowed Lands during the original federal surveys of public lands in California. This designation was due to flooding that occurred during times of high flows on the San Joaquin, Sacramento, or other tributaries to the Delta. This regular process created innumerable waterways stemming from the main channels, including large sloughs, small sloughs, and smaller dendritic channels.

The banks of the channels were the natural high ground due to sedimentation of the materials carried by the high flows. The first farmers in the area used these high grounds locate their buildings and for farming. These farmers then attempted to construct levees to protect their lands from the high flows and to drain them (as necessary) for full reclamation. In this process, the natural high grounds along the sloughs and other channels were generally used as the foundation, or beginnings of the levee. This explains why many of the current surface features in

the area are not straight lines, but followed the meandering courses of current or historic waterways.

As levees were constructed around the lands in the Delta, interior channels were dammed at the point they intersected the levee. At these dams they installed sluice or flood gates so that they could regulate the water in the slough being severed by levee construction.

The flood gates were constructed for two main reasons. The slough was used to drain the lands as necessary. This was done by allowing seepage to fill the slough, and then open the sluice gate during the low tide. Under those conditions, the slough would drain into the main channel and the desired drainage of the land was accomplished. The second purpose of the sluice gate was for irrigation. By opening the gate during high tide or high flow conditions, the slough would fill with water. This water was either pumped out of the slough, allowed to flow over the lands via natural gradients, or simply held in the channel to sub-irrigate the lands. The method used depended of course on the topography, and the extent of the improvements the landowners had installed and operated. Whichever method was used, the farmers certainly took advantage of this system and these capabilities because the application of water vastly improves crop production and minimizes the vagrancies of weather and river flow.

Since the southern Delta is mostly higher elevation than the central Delta, the sluice gates on old sloughs were probably used for irrigation more than drainage. However, the southern Delta does have a high water table (directly connected to the water in the neighboring channels and the elevation of that water) and thus did require regular drainage.

As time passed, the farmers installed more modern and efficient systems, including pumps and the sluice gates were slowly replaced. They also eventually filled in the sloughs and so replaced them with smaller canals or pipelines.

This description of reclamation and irrigation practices in the Delta is not speculation. Besides the numerous historical references to these practices (both cited in my Term 91 testimony and in Mr. Nomellini's testimony) I have personally been involved in levee projects which have located, removed or filled in at least four (4) of these old sluice gates. In fact, I believe Mr. Nomellini's testimony identifies others still in operation. I have also had many conversations with local farmers who either knew of these gates and the practices I have referenced, or actually were involved in the operation of these gates.

There are other relevant circumstance pertaining to the Parcel. From both the USGS map referenced above and the materials cited/used by Mr. Lajoic, we see that the Parcel is at or below sea level, both as of the time it was separated from having a surface connection to the main channels through the present. This means that it was, and remains directly connected to the main channels of the Delta. When high flows or high tides occur, any old channel or slough fills to the same level as the neighboring channel. Before the Parcel was fully protected by levees, the water would inundate the land, both through surface and subsurface flow. After the construction of levees for reclamation purposes, the subsurface flows continue to saturate the reclaimed land.

This area in general, and the Parcel in particular, operate drainage systems to deal with this saturation.

As you can in Exhibit 3V (specifically section II., Exhibit "G") which is my testimony submitted in the Term 91 hearings, the surrounding groundwater is directly connected to the waters in the neighboring channels. As I stated in that proceeding:

This hydrologic conductivity is important to understand the local water supplies. The entire Delta is one big pool of water; some in the channel and some in the soils. There is no net difference in the amount of water in the Delta channels when local diverters take from neighboring channels, pump from shallow groundwater, or farm crops which draw from the shallow groundwater. Taking water from one place is virtually the same as from another. This is especially true during summer and fall months when the three tidal barriers are in operation as they hold high tide waters around Upper Roberts Island and thus prevent any depletion of the channel waters from causing low levels which might affect other diverters.

In conclusion, the pertinent records indicate that as the ownership of the Parcel changed over time, it was always either abutting a channel, or connected to a supply system which could deliver water to it.

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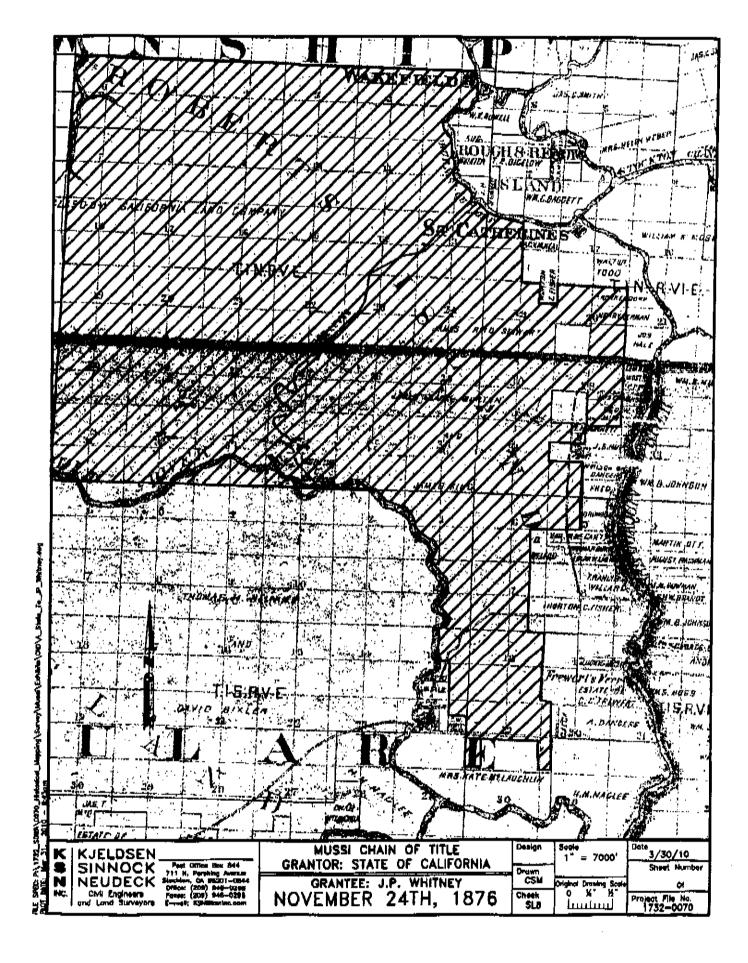
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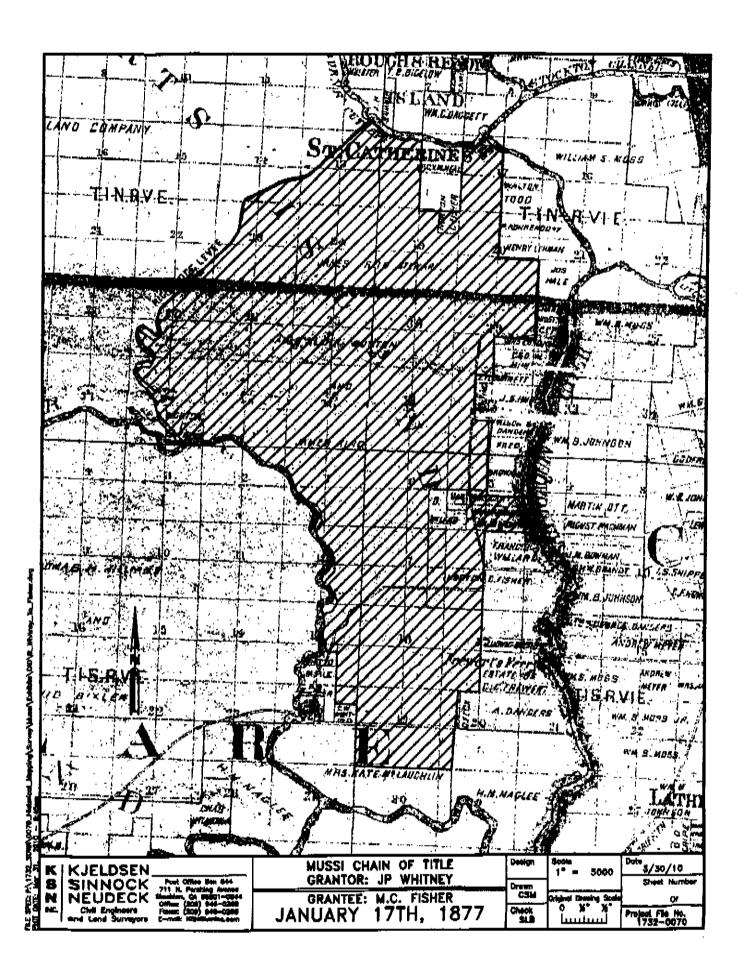
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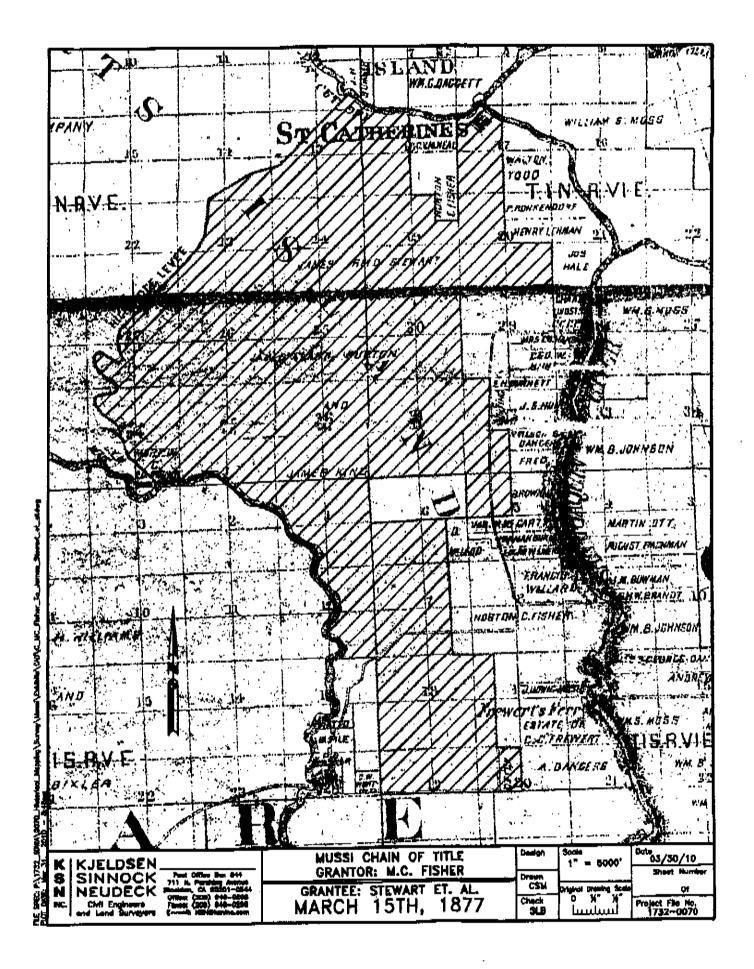
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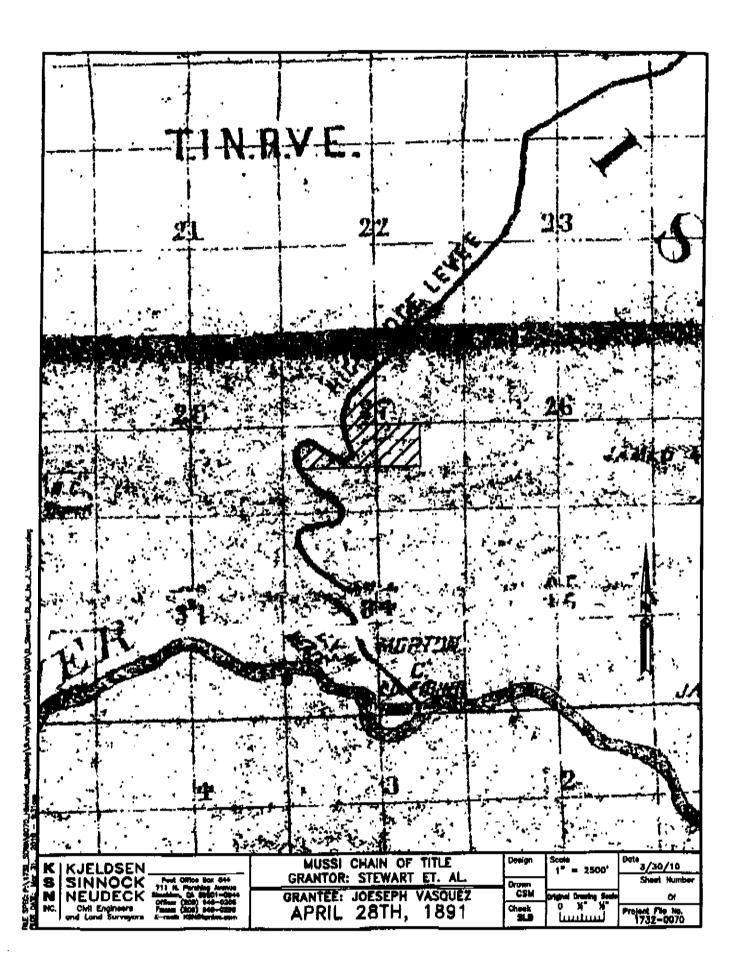
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	Carlotte Company
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The second secon	Annual Control of the



PARCHE III. The Morah 110.14 rock of Lot Winz (0) of MAF H PACIFIC CARCENS, according to the orficial the or Flet thereof filed for record October 6, 1925 in 761, 10 of Maps and Flate, wage 100, San Jauquin County Reserve.

EMBYT the that 217 1/2 feet thereof.

DEPARTMENT OF THE PART AFFAIRS OF THE STATE OF GALLPOSEIA (4001) li 516. 1. Purhaces Theres 7. Billioness

CEASE OF GALIFORNIA) GH. COUNTY OF MACHINERYOS

CA 1814 - day of JUL. 19 1880 before me, ARCA M. MCRYMBON, & Metery Public, personally appeared 030. A. CONTS, known to me to be the Applicant Manager of Fern and Mana Purchaser, tames to as to be the parter who executed the within instrument on behalf of the said Department of Votergas Affairs of the State of Sulffornia therein sears, and astmosterms to se that oues nepartment of Vetorans Affairs of the State of Galifornia executed the Same.

MINNESS of band and efficial seal the day and year in this constituents first above unitseas.

Assau M. Rebinson, Notery Public in and for suit County and State. (Mutery Seal)

SELTON Recorded at Requires of SECURITY TITLE YES. & GUAR. 30, FUE. 24 1950 at 40 min. past 11 s'elesk A. M., in Book of Orriotal Records Vol. 1805 page 495 men Josquin County Records. John D. Flaney, Recorder Peep \$1.70

TH THE SUPERIOR COURT OF THE SPANS OF CALIFORNIA TH AND YOU THE COUNTY OF BAN JOAQUES

FILES FOL. AL 1880 N.E.ORIMIN, Clark By HIM DAWNER, THEOTY

In the thitter of the Brists of John R. Vangum, who a testines wrote his pame JUST T. Vangum.

Tm. 20934 Dept. We. 1 DESCRIPTION OF PERSON NAMED OF STREET

MANA T. VARQUEE, the duly appointed, qualified, and acting exceptiviz of the last will and testionent of John B. Verquen, why countings wrote him name Jung W. Verquen, deciment, having haratorore remarred, presented and riled hereis her petition therein praying for the rinal distribution of onis untate; and

Said matter coming on regularly for happing on this day in eyes deperior court, it having bown first proven to the metinfaction of this Court that the Clerk of the Court, by tirtue of the authority is him vested, appointed this day on the day for the bearing of said putition and more due and legal notice of the time and place of buering thereof, for the time, in the manner. and in all respects so required by law; and

The Court having proceeded to the bearing of said potition and the proofs produced in support thoroug, and it appearing to the setterestion of the Court that efter the appointment and evalification of each ensembric and the insumes to her or lesters testamentary in the assumer of make estand, the county maries to two oraditors of and all persons buting claims against the said eminto to be published for the time, in the memory, and he required by law; and

That news then sta gamen has slaped since the days of the first publication of cate botios to eraditure, and mare than six mentus her assired place the admission to probest or talk will and the appointment and qualification of said encountrix and the insuesce to her of letters testamentary in the matter of talk estate; and

It appearing to the Court, the Court right that action to the wrottens of said deceased has been duly sives by ania executivin as by law required, and that a copy of said motion to eraditaria and the affidevit cheming the due publication has been filed with the clark of this downt as by lan poquiron; and

That after the appointment and qualifications of said executric, who duly made, returned to, and filed in talk deart a true and attract inventury and appreciament of all the property of said estable that had come to her population or imprisoned and

That all the darks of said estate and of said depointed and all terms that have attached to se

macrumd against said spines and the property thereof that are due and payable, and all sipaness of addiniping tion of and detate, have been pass, ambiguistics in adding and

that heretofers the inheritance to appealed opposited by the above-entitled Constitution in the his report herein fixing and determining the anomal of inheritance that due the state of deliformin from sold entities and my reason or serial leintly held property, real and property of the appropriate in the above-entitled antitor; that their report has by this doubt been confirmed and approved and only the paid and the consideration files havein; that the sold felatly held real property is described as religion:

That contain real property citates in the COUNTY OF SAN FOLGOTH, Means of delicerate, described as follows:

PARTEL II. A purtion of Section Totally-seven (27), Totally Sec (1) Worth, Amon five (5) East, Rount Diablo Bets and Meridian, and more particularly Securibed as follows:

The March 15 fact of the Northwest Quarter (NVE) of the Seuthaust Quarter (SDE) of Section tuenty-seven (27), and postions of the frontional part of the Kurta one-half of the Southwest despiter of maid Species 27 lying News and Empth of a cross leves aspersing the Middle and Lever Divinion of Robertz Island and the frantismed point of the Martheont quarter of said postion #7. lying South and Bast or said heres, all in Towaship Com (1), Horth, Bange Five (5) Bast, Mount District Rapp and testistics, and being more particularly described no Tollows: pogishing at a shoot axis set at the senter of said Section by (and in the senter of a drainings disch); these Back along the center line of said drainings sitch on the Worth line of said Marthmest Quarter of the Southeast Quarter of said Section 27, a distance or 1516.4 feet to a steel agle set at the Wortheast corner of mid Northwest Quarter of mid Southeast quarter of said Soction 27; these South OC-OF- Wees a distance of 18 feet to a point on the partition line between the lands or resophise V. Fances and John S. Valques (eats point being the Southeest corner of maid Tanques lands); therete West along said partition line (\$600)101 to and South OC-DY: West a distance of 18 feet from Soid North like of maid Forthwest Comptor of maid Southwest quarter of said Section 27) a distance of 1350.5 feet to a steel axis set at the partnerst sermer of the lands of seid found (Said axis being South 64'07' Best a distance of 54.4 feet from onic steel axis in the senter of said Section 27); thomso Bouth equor were along said partition line fold;) feet to a steel able set in the conver line of held loves (seld senter lise being slee the senter line of the County Head extled the Kingston Rend); these measuring the center line of maid laves to a stock asks were at the Northeast corner of agin fractional part of soid North west Quarter of agin Sention 27 lying South and Bast of maid lever; thegas leaving said lever, South 50-04' West along the fast line of mid fractional part of said Morthwest Quarter a distance of 1888,7 feet to the point of benjaming.

ENTERTIFIC A METER OF look 20 feet in width impediately goutting sold leves wenter line and lying Nowt one doubt thereof, soid strip having been heretofore deeded to you yeaquin County for content purposes.

MESERVING the right to use for draining purposes only that strip of the above described treet is root in witte and lying meet and destin or aforeseld line running bound \$4.94 beet and demonstring the united of destine my with well murchoses carner of the harvindesurabed treet.

ALSO un assemble for drainings purposes easy ever a strip of land 15 feet in width whose Rorth line is the South line or the above-drawribed reserved strip and which encount actuals the full length of main atrip.

The above departised percel of land contains vs.08 above more or lace. Title equired by Deck dated Navomber 8, 1880, recorded November 8, 1980 in Val. Nov or critical Records, Page 215.

PARCEL IX: As undivided essentials (L/S) interest in and to the sullening contribut your property, sixuate in the City of Stockies, exist doubty and Stock;

The Markh minety (80) fact of Lot Cas (1), in where Can (1) East of Contar Street, in the ansk city of Scotton. meanting to the Official May of Flat thereof.

PARCEL TALL ASSESSED IN COLUMN TO STREET AND ASSESSED IN CREEK TO A COLUMN ASSESSED IN CREEK TO A CALL CITY OF STREET, AND A COLUMN TO A CALL CITY OF STREET, AND A CALL CITY OF STREET

The West Allegte Address The Eve (2) is plack sig (4) as about upon the catities yronged will address association, filed for record January 24, 1870 is well a of these and Plate, page 44.

ADDRESS THEOREM The Page 4cm (10) feet and five (5) issues of paid upon 60 feet.

PARCEL TY: The full owing real property situate in said City of Stankspy, aggs County and Status. The Want minety (90) feet of let feur (4) in Black siz (4) an above upon map extitled STURTOW CITY HUMBERTAD ASSOCIATION, filed for record January 54, 1876 in Vol. 8 of Maps and Plats, page 44.

PARCEL Y: The following real property stance in said city of Stockess, said Granty and Status fan mant tag (10) feet five (5) inches of the Dens almosty (90) feet of Lot Teo (8) in Block Siz (6) so shown when map emission, strongers of McKertan Association, filed for record January 54,

(6) so seems upon may entition, property of the contraction absoluterion, filed for proper semanty 51,

PARKE, VI. The following real property situate in soil City of Stockton, anid Gausty and State.
The Mast fifty (50) feet of such of Lake two (2) and four (4) in Block oir (6) an about upon
hep entitled STORYON CITY EXHIBITIAN ARBONIATION, Filed for record Summery S4, 1870 in Vol. 2 of
Ways and Flats, page 44.

PARCES, VII: The following real property Situate in total City of Stateman, and Gonsty and States
All of Logs man (1) and three (3) in block three (8) so shown upon Map entitled STOCKTON CATH
ECHNOTIAN ASSOCIATION, filed for resert Jammary 34, 1870 in vel, 8 of Maps and Pints, page 44,

PARCES, VIII: The following real property situate in said City of Stockton, anti-County and State:
All of Logs five (5) and seven (7) in blank form (4) so shown upon Map entitled, STOCKTON CATT
ECHNOTIAN ASSOCIATION, filed for resert Jammary 34, 1870 in Vel, 8 of Maps and Pints, page 46, NonJamesin Gonaty Recents.

PARCES. IX: The fallowing real property situate in sold City of Pecchium, and Stunty and Stutter all of the eight (8) in Block five (8) so where upon Map entitled grounds Diff Schmarten absorbering, filed for record Sammery SA, 1875 in Vol. 8 of Main and Finte, Sage 44.

PARCH, 2: The taltiming one property situate in eath disy of summary, noid County and Shaunt The Houth thirty-three (88) fact or Lot Thirteen (18) in \$1000 Five (5) as shown upon hip excited artificial distribution administration, filed for record Juneary 84, 1670 in Vol. 2 of hips and Flats, page 44.

PAROM. II: The rollowing real property situate in rais City of Stocking, said County and State; All or Lat Fifteen (18) in Micak Piec (5) as shown upon the estimate property City SCHENFELD AMERICATION, filed for reaped Sanupy Aq. 1875 in Vol. 2 of Mana and Flate, page 44.

PARCE, MIT: The following real property withher in bold City of Stockers, and descript out State:

The Bast farty-two (42) fact of lot sixteen (10) to Slock five (5) as observable maps may continue,

STOCKION CITY EXCEPTION AMSOLICATION, Filed for record lensary 84, 1870 to Val. 2 of Maps and Plats.

THE ASSOCIATION OF THE CONTINUE AMSOLICATION, Filed for record lensary 84, 1870 to Val. 2 of Maps and Plats.

PARCES, NITE: The following real property situate in the dity of Stockton, anid County and State: Lot aim (5) in Which three (5) as shown upon May catified VISHER TRACT filed for record mappeness 64, 1888 in 761- 3 of these and Pinta, Page 25.

PARCES, XIV: The following real property sixtate in the City of Stanking, unit desert and State:
All of Lot mix (4) in Block eighty-cores (47) Scotts or musical citates. In the Sity of Stantian,
securding to the Official Map or Figt thereof.

PARCEL MY: The Pallacing real property structs in the City of Stockton, and County and Stocker The Rurth might (60) feet of Lot eight (8) in Sick One Hamilton Seventous (117) SOUTH OF MUNICIPAL CHARGES. In the City of Stockton, Asserting to the Official Map of Flat thereof.

PARCEL 171: The following year property altunes in the City of Stockton, and Councy and States The Mark 10 Year of the Sanda 75 feet of Lot Four (6): and the South 75 feet or Los ats (6) in Slock 150 Secret of Momens outstook in the City of Stockton, negarified by the Official May as Plat thereng, MORET THEREFOR the South Party (40) Fact (U. S. Standard Massure) on Semeribed in Dead to the City of Stanking, recurded April R. 1842 in 763, 769 of Official Records. Sage 140. Missate in the COUNTY OF SAMEA CHIS. State of Galifornia:

PARKER, EVII: That certain pince or parech of lend mitweet, lying and being is the power OF matter Office, State of California, more particularly described as follows:

Let 44 as shown and delineated on that curtein and by Mores Lake Park resorded as the 10th day of June, 1884, in Map Shock Md. page 4, in the Office of the Recorder of the County of Shate Office.

PARCHE XVIII: All that real property situate in the City of Santa Cross, County of Santa Cross, State of Coltrovate, and benefit and described as follows:

REIND Let 11 and the Morte nell of Lot 12 all 12 Slock "D" as mirbed and designated to the Map of "Seabright Building Lote made by T. W. Wright, Durveyor, for F. H. Moth" and Files res researd in the office of the County Resorder of anis County or Santa Cruz on Fully 10, 1804, in Map Book 5, at Page 61;

Thek hardedope the ementic herein filed the Federal Eviste Tax meture required herein with the Collector of Internal Sevense and paid the Federal Estate Tax on computed therein, but then the final electures thereby has not get been resolved from said Federal bevernment;

That the suspensy of mid option was part esperate property of the descended and part community property of the descents and his nurvivies wife, less T. Valquee:

That said excountrix has not riled herein any rimst second and report for the region that the

That John E. Varquers, the assessment errote his same Junk E. Varquers, that testate on the 22md day of July, 1849. In the County of the Cres, Rents of deliforate, and at the time of his Seath be use a regulate or the County of the Josephin, State of Galifornia;

That theresiter and on the Afth day of August, 1949, the last will and testament of said deceased too admitted to probate and in and by said last will and testament, he devised and become that distribute his sature as follows:

"I give, during and bequests all of my entants, whether the many be 190% of payments property, and whatepenever situate, to my wife, 490% T. YASCUER, absolutely and furever----

. That said extate is in equilities to be elemed and finally distributed, and the rest and residue of property on hand for distribution is an follows:

jurniture and furnishings of the late residence of the decedent of 419 E. Jackson street, Streeton. California:

Furniture and furnishings of summer home of the descript and his wife at Banta Gras, Collifornia;

Furniture and furnishings of rented bounce so follows: 4 rent house on morth othe of First St., between Sutter & Colifornia Streets, Stockers,

Brune an West side of Sutter Street between Charter Way and First Street.

Nouse on West side of Buster Street between Charter Way and First Street:

IT ID, TREMPORE, REMERT CHARREST, AND LOCKED, AND CONTROL that all of the property or said entate hereinbefore described, tegether with any end all other property and now known or discovered which belonged to said entate or said sectored or in which said automa or call described had any interest be, and the mane is largely, distributed to land T. Tableton. Speciality the forever.

IT IN PURISH COUNTY, ADDIDGED, AND DESCRIPT that if the property bertichedra described and distributed is incorrectly described, and property by its newwest description be, and the same is hereby, distributed as hereinteriors say forth.

IT IS FURNISH COMMUNIC, ADJUSCED, AND DESIGNED that wold exceptive pay up and deliver to the paper to when the cure is distributed the property begainstfore described as bereinbefore not furth, and that upon the protunting of antiorpotury proof thereof, and associate to discharged

4 ...

from all limbility to be hereefter insurred and time said estate by decreet postly and oldered.

Motor IN CRIM Superior Court this men day of July, 1880.

THE POSMOODING DESCRIPTION IS A COMMUNICATION OF THE CHICAGO OF THE OFFICE, ATTEMPT TOL., SS. 1950.

(B.O. SEAL)

R. E. GRANDE, COUNTY CLERK AND STREET OF THE SUFFERIOR COURT, IN AND PUB THE COUNTY OF SAM TOLOUTE, SEATE OF CALLFORNIA. BY SIGN BROWNS, AND P.

FRITTH RECEIPES OF REQUEST OF Butherford, Second, Sevelure & Pietrick, JUL. 26 1980 at 54 min.

PART IN Colony 7, M., in Book of Official Reserve, Vol. 1866 page 498 the Seconds South Schools.

Form \$4.00

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OFFICE OF THE BOARD OF DIRECTORS OF THE SOUTH SAN PARCET EMPLOYED DEPOSITOR

....

I hereby vertify that the attached Grant of Basesant was duly accepted and ordered recorded by the Burne of Directors of the South San Fonquin Irrigation District at their souting held July 25, 1830 and an recorded in Permanent Seconds of the said District in Thisse 18, Page 224.

(Gorp Seel) ATTEST: S. L. Steels (S. L. Steels) Sourcetary South See Josephia Irrigation Minterior A. Hill, Acet.

CRAFF UP LANGUAGE FOR SECRET OF RAY

IN COMPLEMENTION of the benefits to him derived, T. S. SINGHAM thes hereby great mate the SCOTE SAN JUNQUIN INTERACTION DISTRICT, a right of may for even ditch or pipeline in the SML of Section 18. Tecanhip & South, Mange S Mant, N.B.S.M., and more particularly deterribes as follows:

A strip of land 30 feet wide and 1000 feet long, being the Anal 50 feet of the Ment 60 feet of the Santh 1000 feet of the following deported property. Reginning at a point in the Morth lim of said Mantian LR, distant worth 50° LY: West 957.5 feet from the MR Corner of said Mention LR; themes Morth 50° LY: West 956.4 feet; themes Morth 50° LY: West 956.4 feet; themes Morth 504.2 feet to yount of ingining.

Sold right of way being a part of Brain \$80 of the South San Fenguin Irrigation District draining System and containing 0.78 Acres more or less and shown on Map in file 4-1-5-158 in the Office of the South San Funguin Lyngstian District at Mantess, California teacther with Fight of Laureus and agrees to and From Sole Strip of Land for purposes of Grantes.

IT IS A SCHOTTION of this Great that the Granton will construct, amintain and operate an acid right of may a Draignee Gasal belonging to the Granton berein and comprising a particular their general Drainings System,

THE GRAVIET is to use all due and proper care in the camptraption, maintenance and operation of said Drainege Canal so us to cause on little decays as possible to the sejectat lands of the Granter.

IN THE WEST that said presumps densi is abindomed as evidenced by a proper resolution passed by the Search of Directors of the Grantus burning, said strip of land berein granted shall be returned by the Orphics burning to the Openius, his being, successions or statigms.

THE CRANT OF EAGMEST shall complitude a coverent planting with the land traversed thereby and shall be blading upon the granter, his beire, successure and savigue.

IN WITHING WEIGHT, the Greater met berein set his time set sent this lott day of July, 1940. T. S. Binghot (T. S. Binghot)

STATE OF CALIFORNIA) AS.

On this Ison day of said it the year one themses also meeting and
fifty before we, lister ?. Brown, a Notery Public is not for the dealer of then identify appeared T. S. Singhes known to me to be the before where more is subscribed
in the within ignirument and he duly sekapaledged to so that he executed the same.



Check SLB

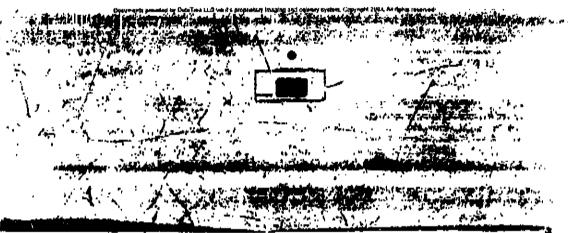
Project File No. 1732-0070

RES SPECEP\1732_SDRM\0070_Hetarical_Mapping\Survey\Mass\Exhibits\CAO\E-Vorquez_to_Hetr_dry PLOT DATE: Nor 31, 2010 — 848am

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When Restricted Mell Decembers and Yaz September To:	
Mr. and Mrs. Rudy Mt. Musel COUNTY	
129115 W.P	ı
XPN: 131-170-03 GRANT DEED	
husband and wife as joint tensate each as to an undivided as joint tensats husband and wife as joint tensate each as to an undivided as joint tensats the following described rest property in the CNy of Brockton Caundy of Sen Jesquin, State of Cofforms: SEE EXHIBY ONE ATTACHED HERETO AND MADE A PART HEREOF	Î
PATRUSTEE of the Milton Joseph Velescon	
DATED: June 7, 1899	
STATE OF CALISORNA (STATE OF CALISORNA ON THE STATE OF CALISORNA ON T	:
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name(s) trius subjections to the White instrument and	
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personts; amed, amentically the instruction;	
Witness my hard and office let.	ł
Signature	;
	!
MAR. TAX STATEMENTE AS DIRECTED ABOVE	

Exhibit 3G



828**85848384**

Order No. 120063

EXHIBIT "ONE"

A portion of Section Twenty-Seven (27), Township One (1) North, Range Five (5) East, Mount Glable Bess and Meridian and more perdoularly described as follows:

The North 15 feet of the Northwest Cuarter (NW 1/4) of the Southeast Cuarter (SE 1/4) of section Twenty-Seven (27), and pertions of the fractional part of the North one-half of the Southwest Cuarter of said Section 27; hing East and North of a cross leaves separating the middle and lower division of Roberts Island and the feations) point of the Northwest Cuarter of said Section 27, hing South and East of said leves all in Township One (1) North, Renge Pive (5) East, Mount Disbio Base and Maridian, and being more particularly described as follows:

Beginning et a staal side set at tije center of said Section 27 (and in the center of a drainage elicht; theree East elong the center line of said drainage click on the North Ene of said Northwest Cuerter of the Southeast Cuerter of said Section 27, a distance of 1319.6 feet to a steel said set at the Northeast Cuerter of said Section 27, a distance of 1319.6 feet to a steel said set at the Northeast Cuerter of said Section 27, and the partition line between the lands of Jasephine V. Jones and John E. Vesquez traid point being the Southeast corner of said Vesquez Lands: there West sings said partition fine (partitle) to and South 00 degrees 07 minutes West a distance of 1350,6 feet to a steel said set the Northwest corner of the lands of said Jones tesid ade being South 64 degrees 07 minutes West a distance of 24.4 feet from said steel said in the center South 64 degrees 07 minutes West along said partition line 2042.1 feet to a steel said act in the center line of said leves (and center line being said the penter line of the Courty road celled Kingston Road); thence magnifeling the center line of said leves to a steel said set in the center line of said leves to a steel said set the Northeast corner of said tractional part of said Northwest Querter of said Section 27 lying South and East of end leves; thence baseing said leves, South 60 degrees 04 minutes West slong the East line of said Inaction part of said Northwest Cuerter a distance of 1922.7 feet to the point of beginning.

Excepting a atrip of land 20 feet in width immediately abutting said leves center line and lying East and South thereof, said strip having been heretofore deeded to the Sen Josquin County for roadway purposes.

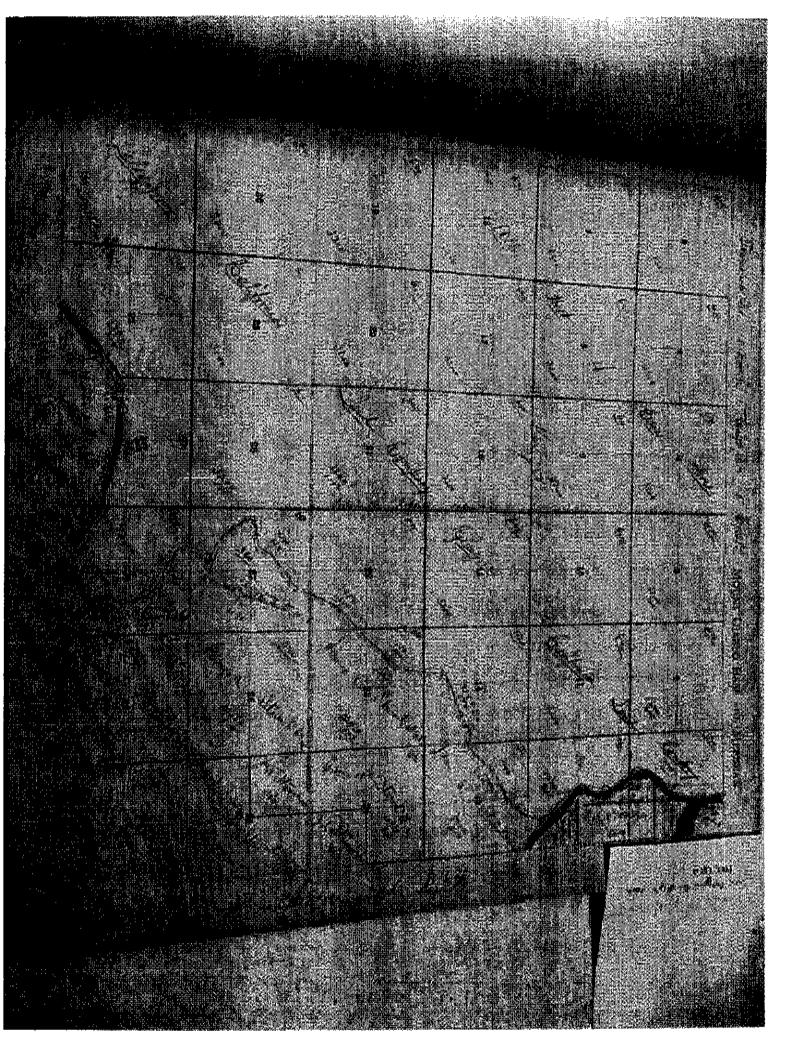
Ainc an excement for drainings purposes only over a strip of land 15 feet in width whose Horin tine is the South line of the above described reserved strip and which essement extending the full length of said strip.

Excepting therefrom, any parties of the herein described property which is or over was tidelends below the line of the natural animary high tide.

Assessor's Parcel No: 131-170-03

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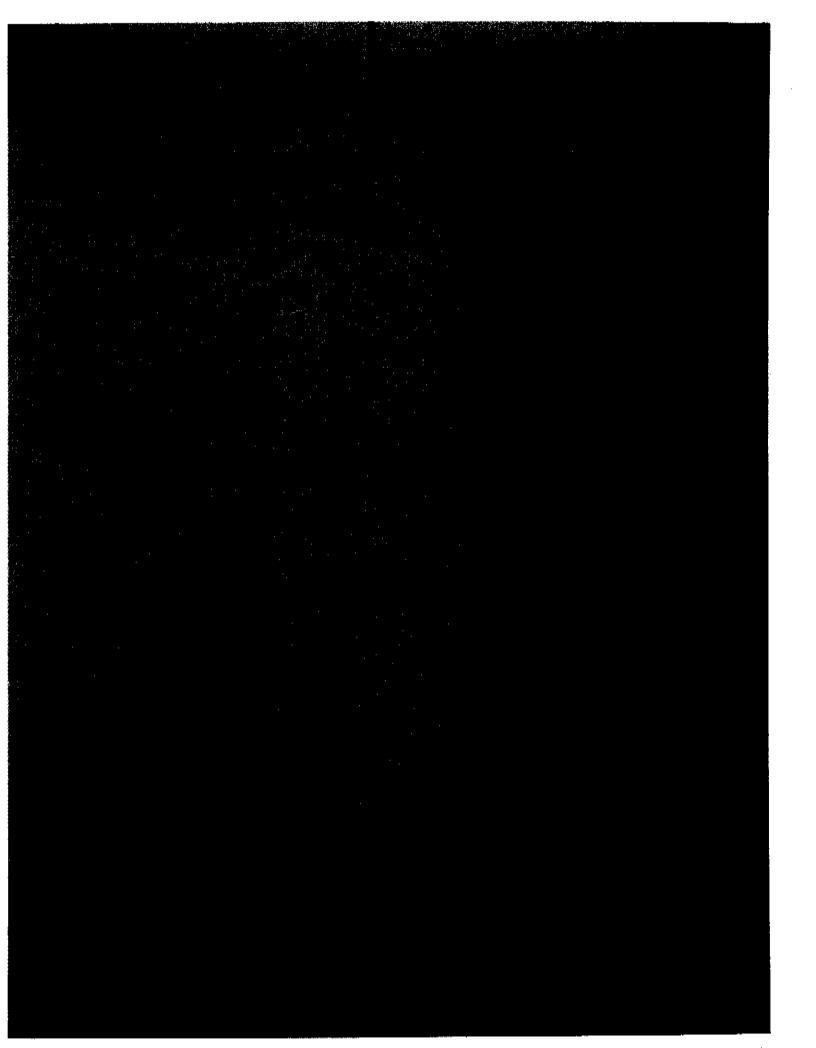
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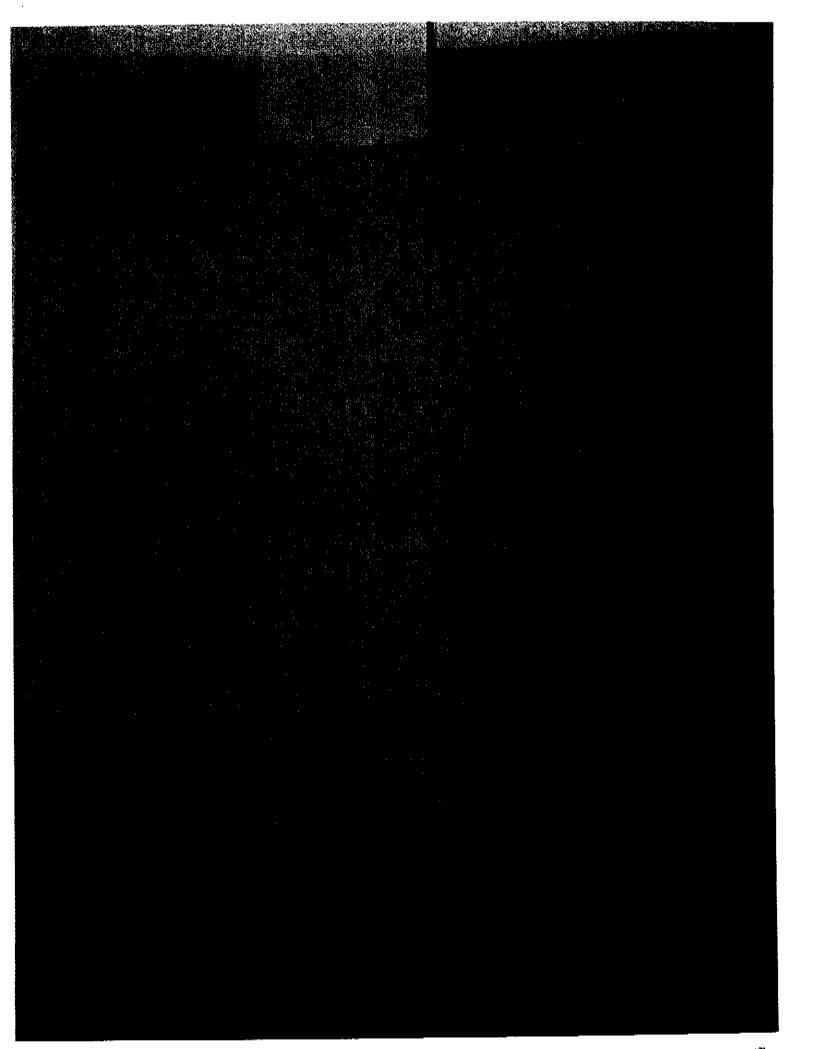
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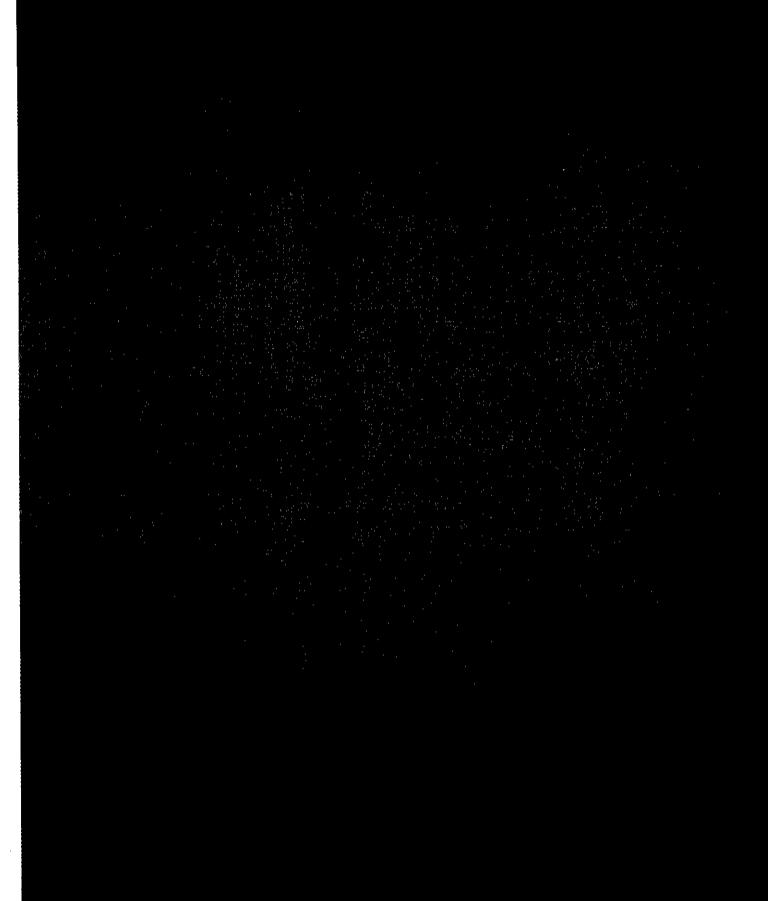


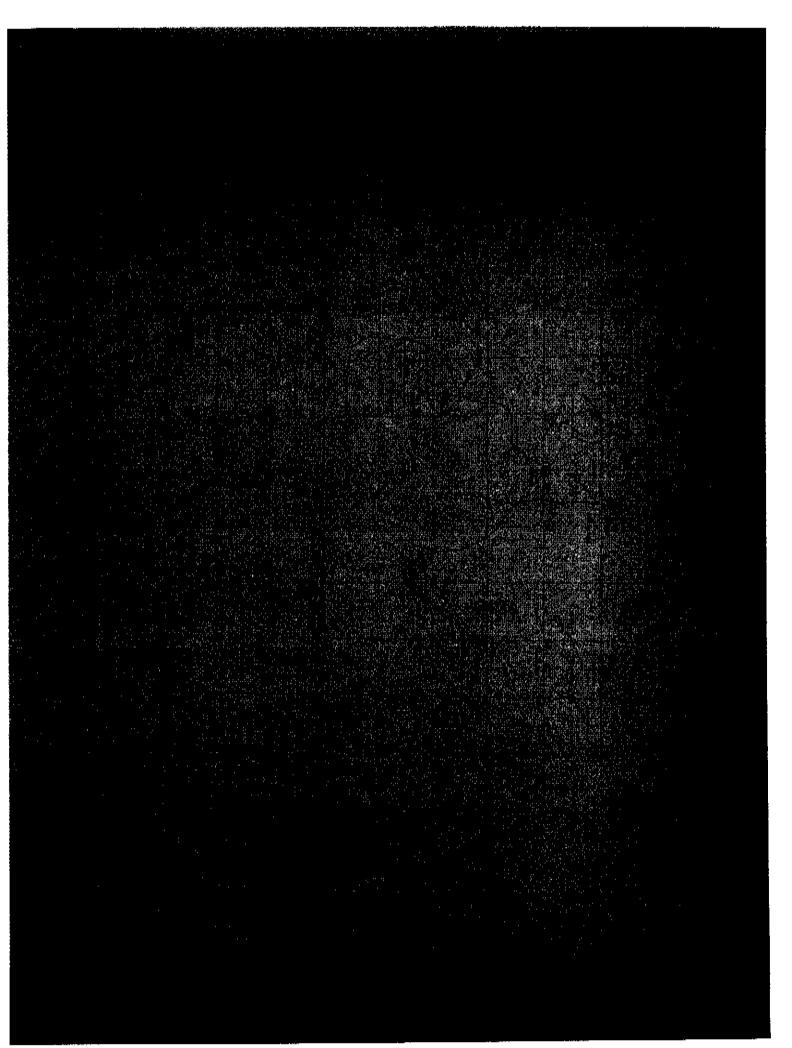
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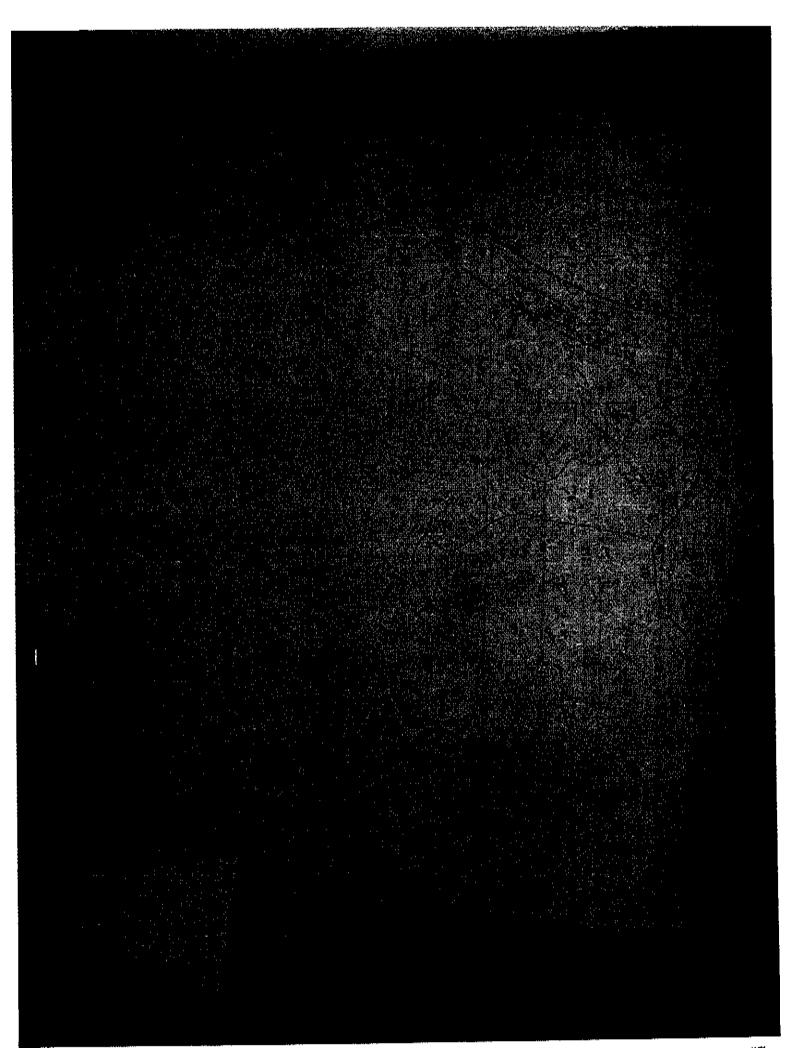
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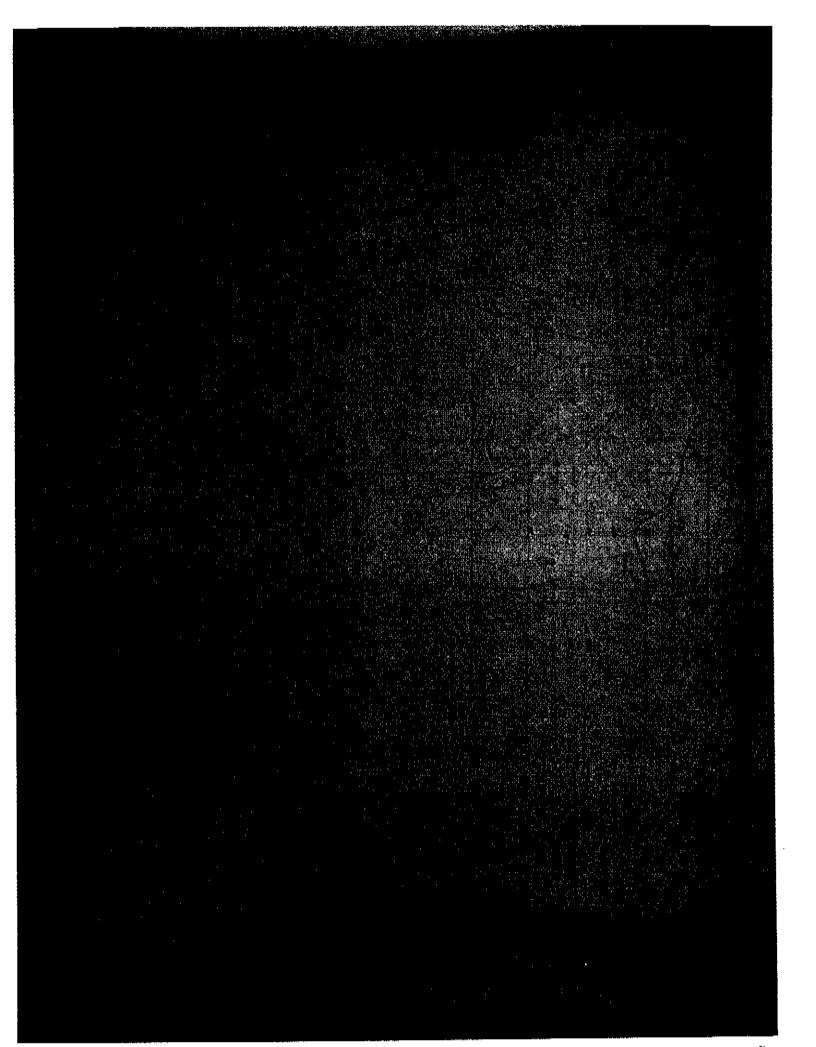


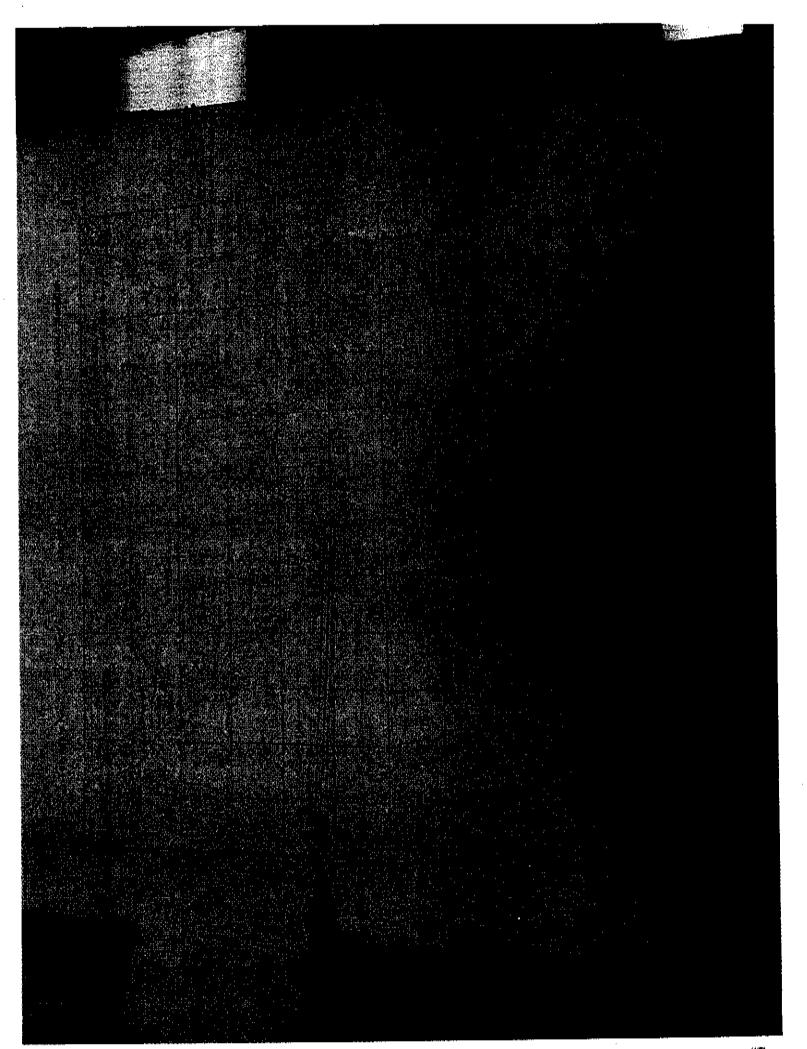


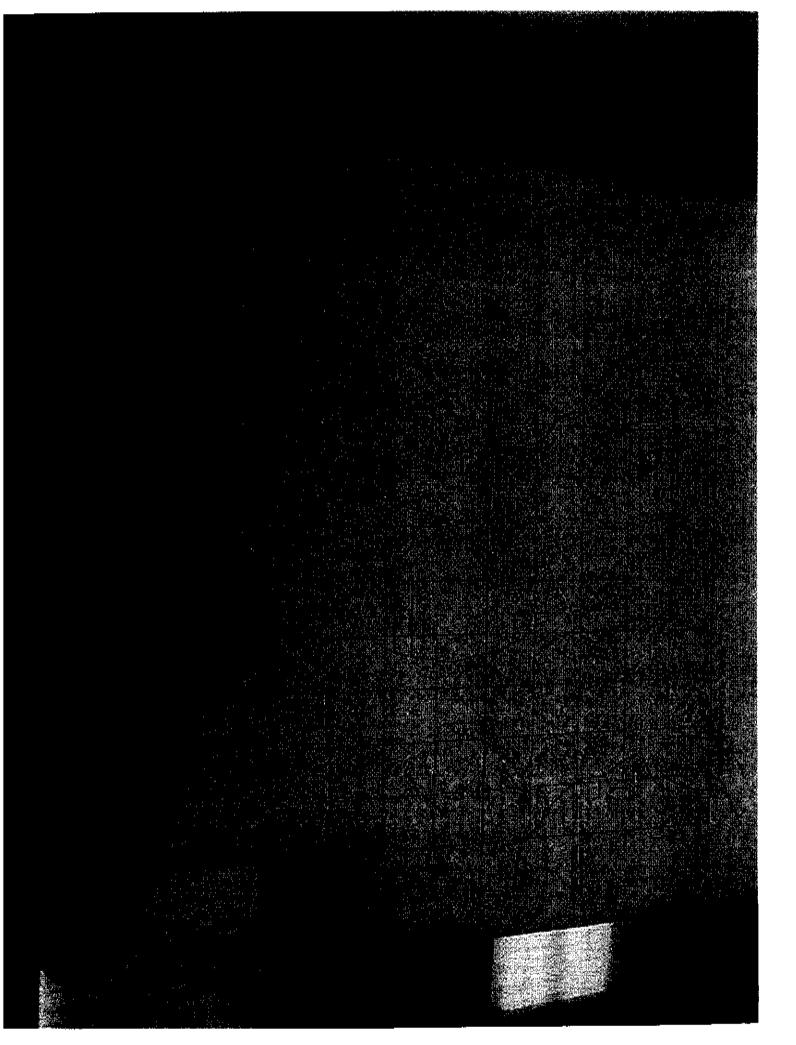


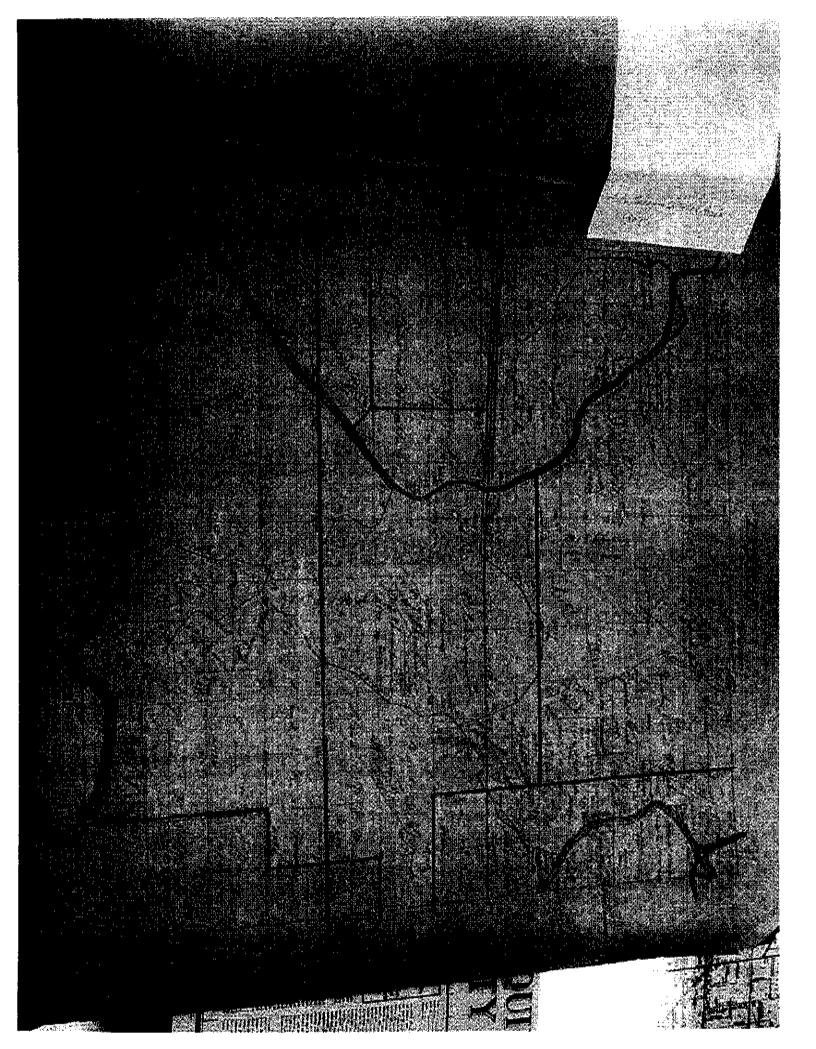


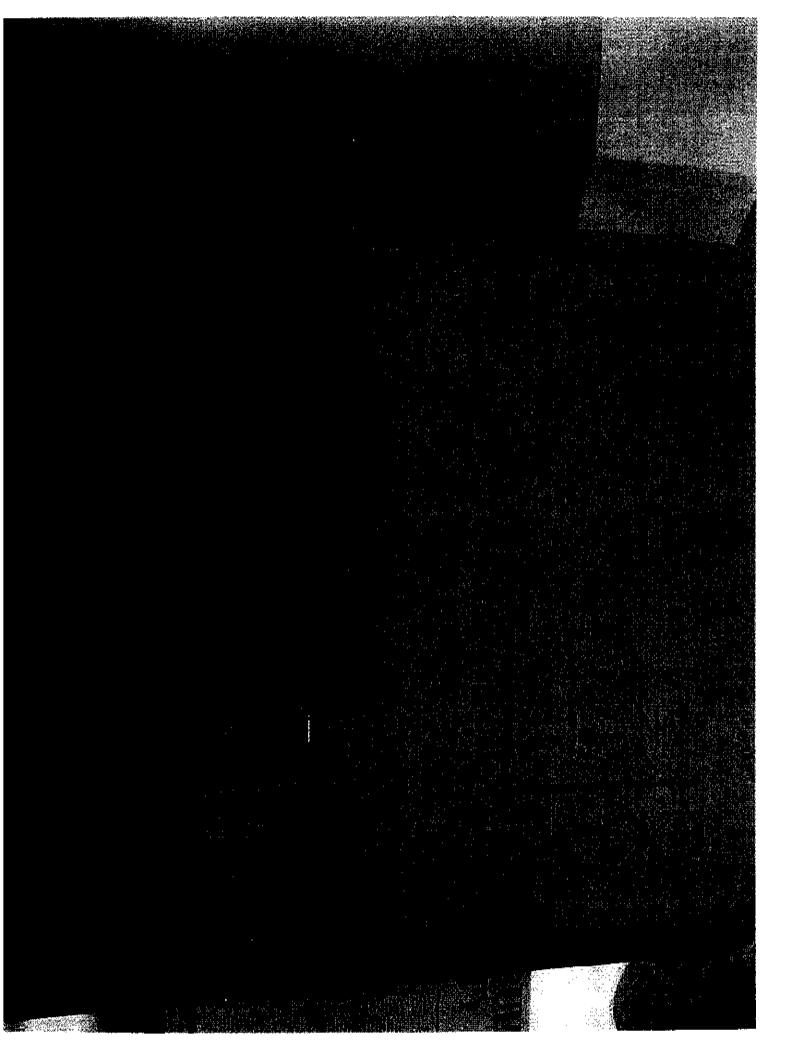


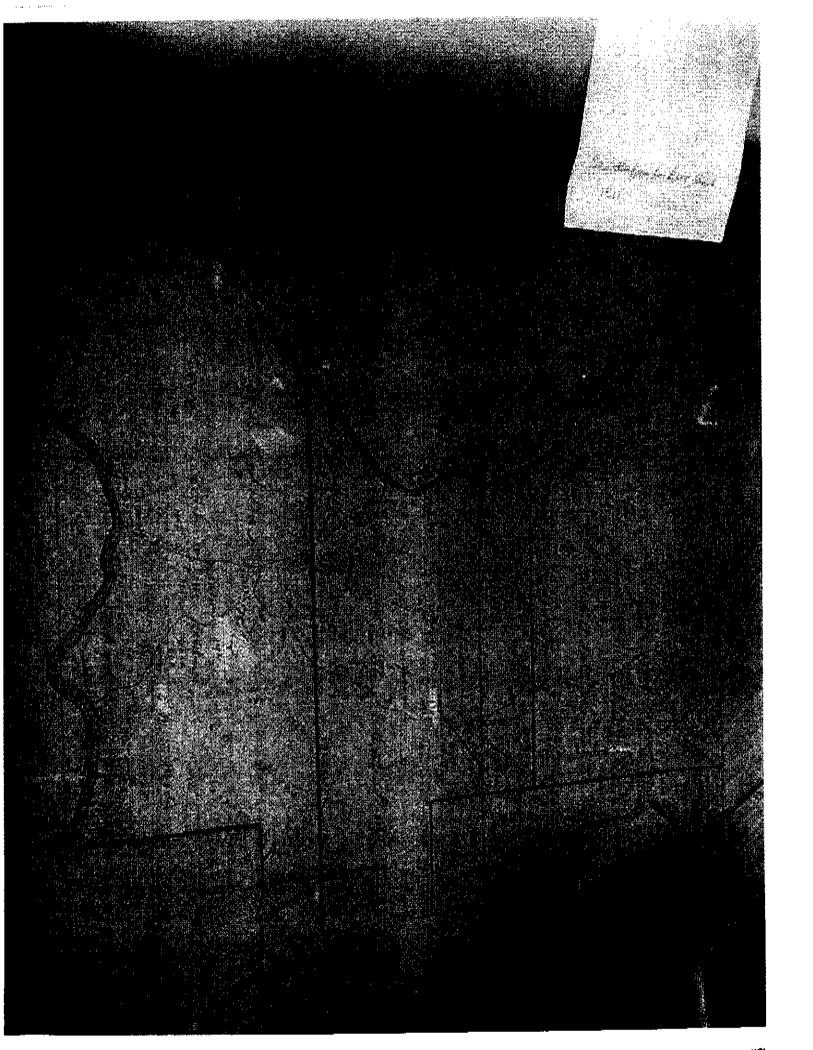


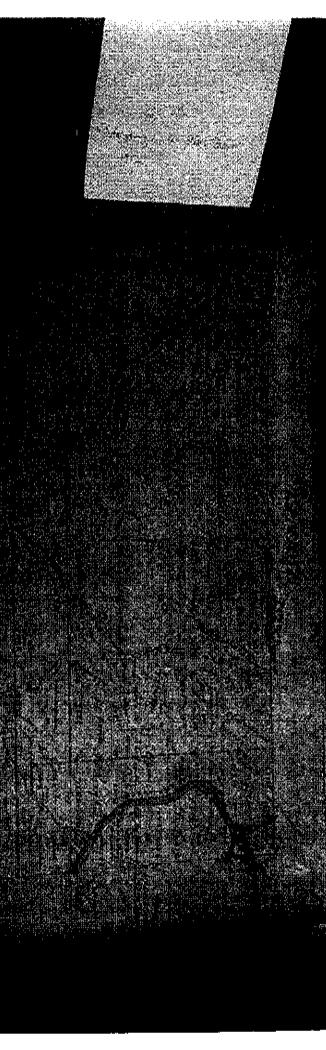




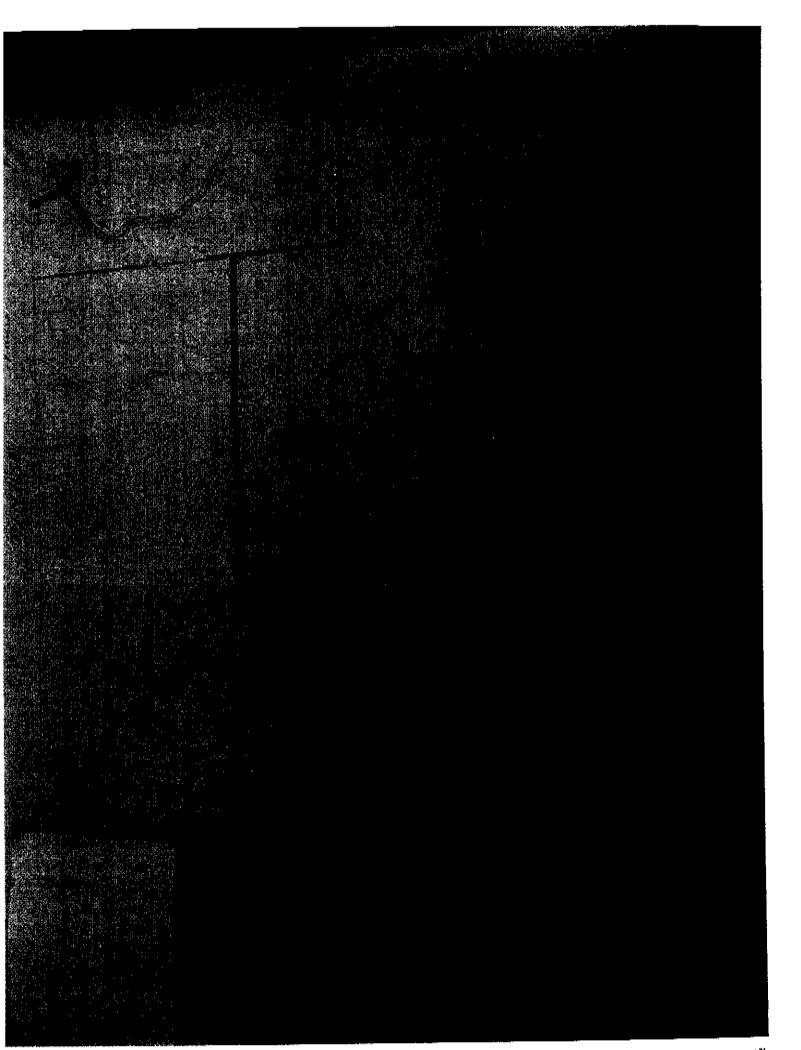


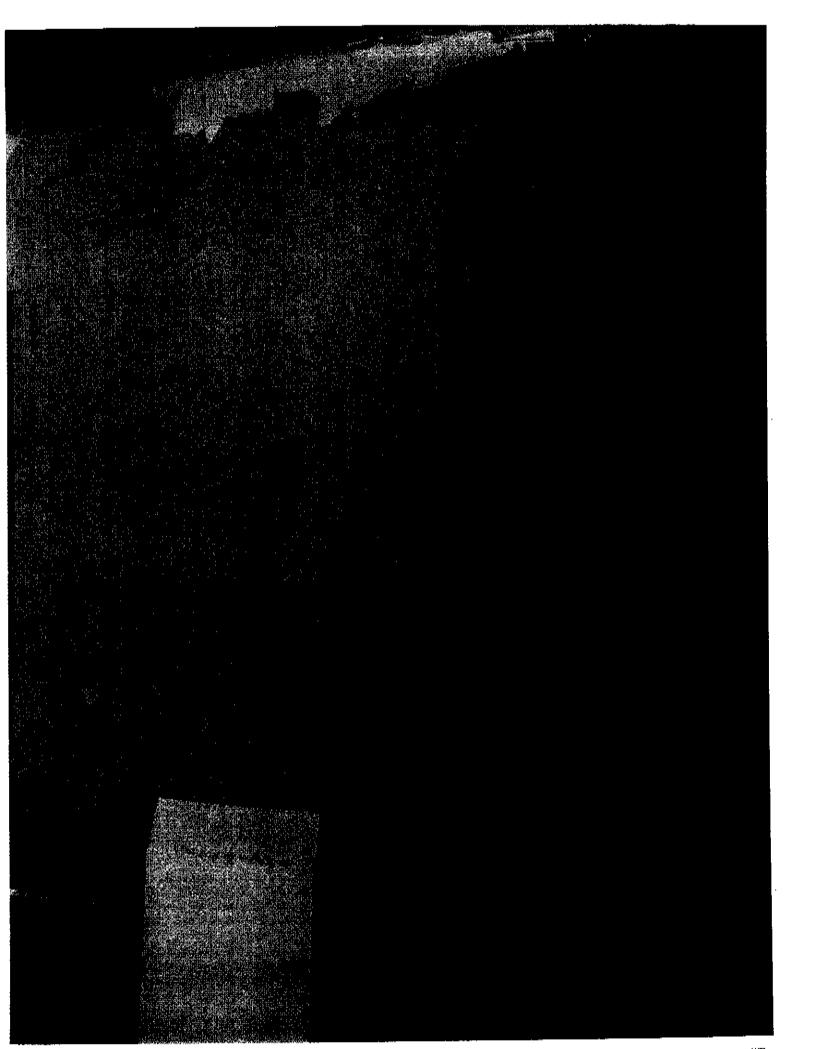


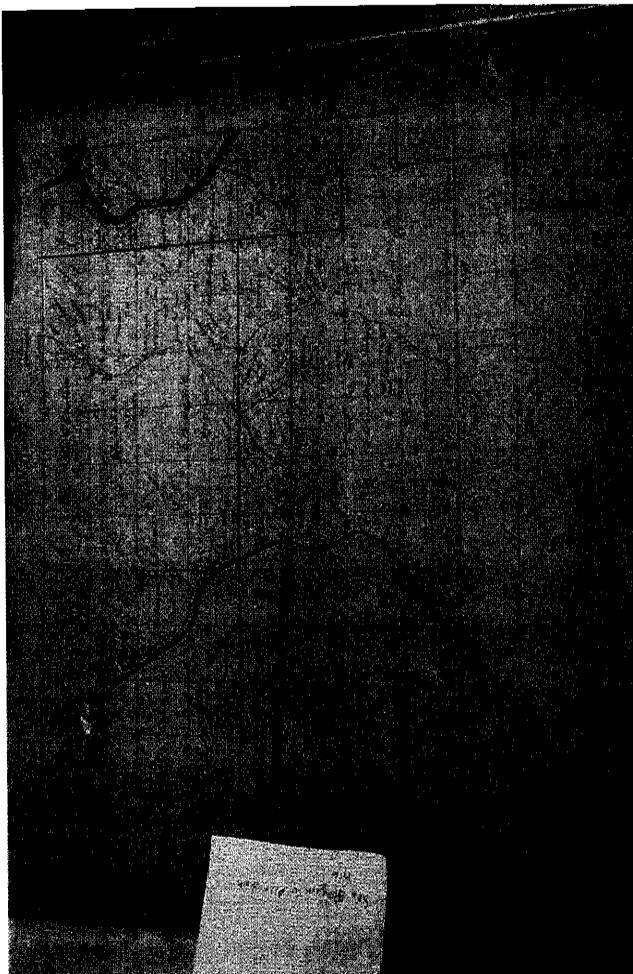


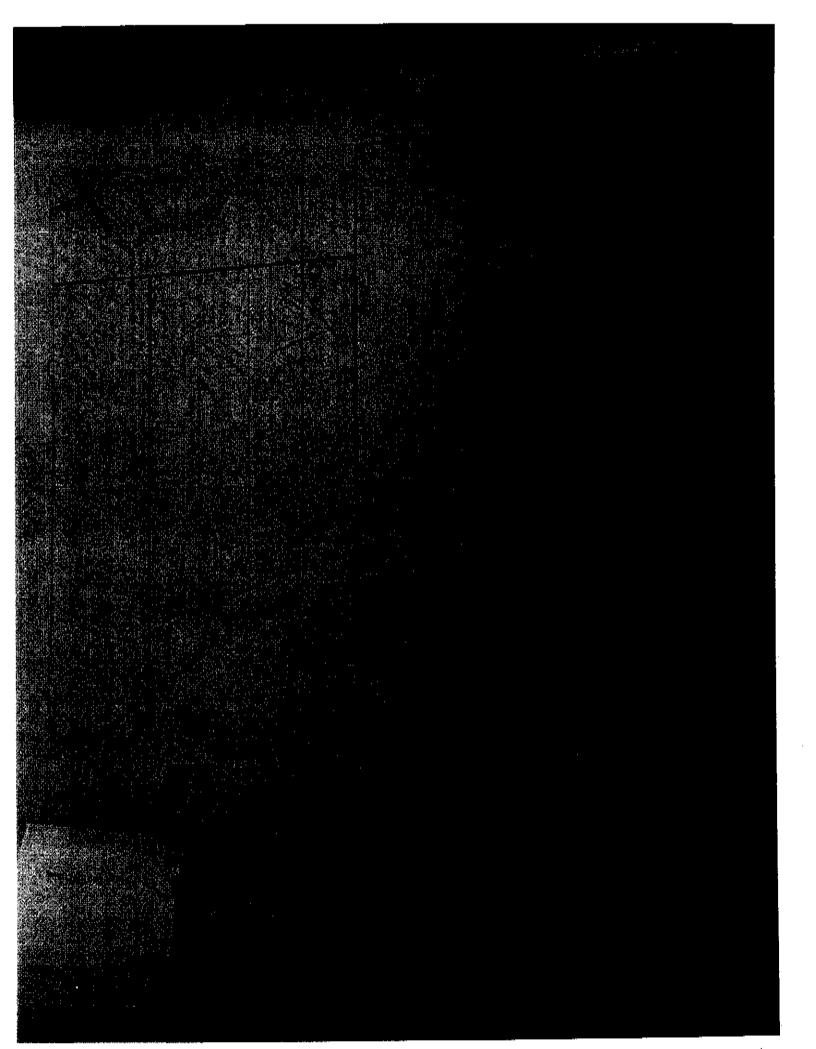














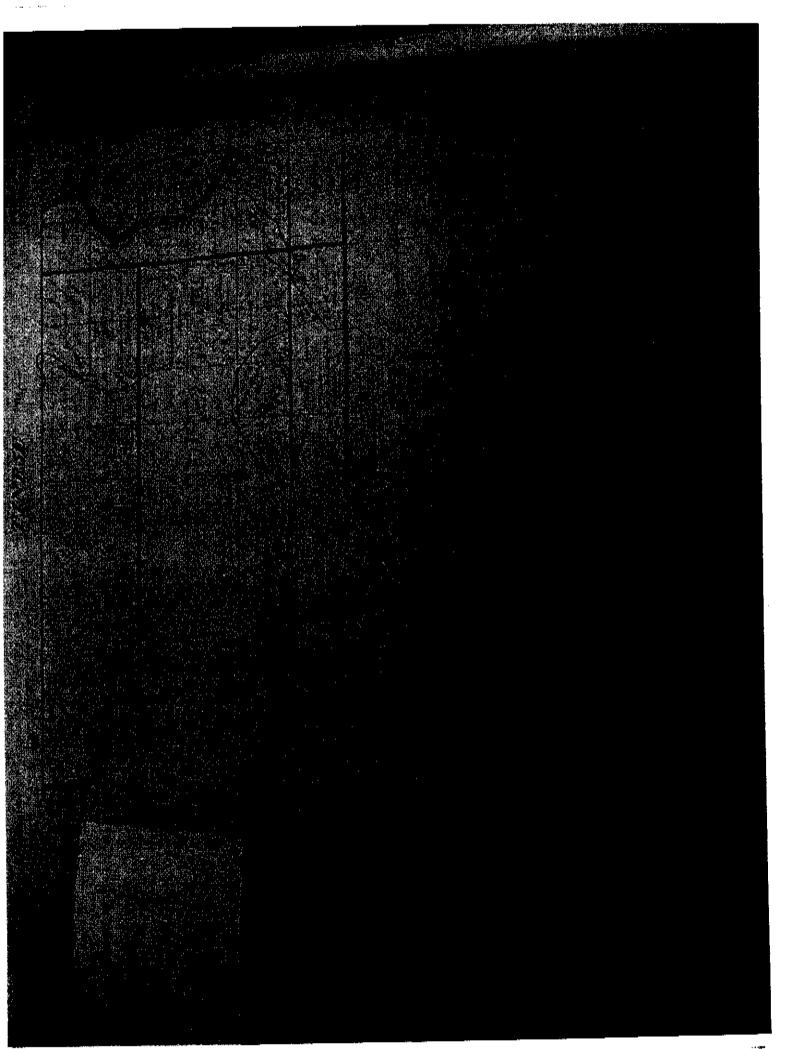


Exhibit 3J is attached on the CD

The Settlement Geography of the Sacramento-San Joaquin Delta, California

The Samson's first Job was on Duck Slough and Burna' Cut-off levees of Roberts Island, 27 but the water was an low that the equipment could not make headway unless a channel 30 by 7 feet was dug. The volume of material that had to be removed to keep the scow floating vastly exceeded the smount planned for the levee 28 Revertheless, the demonstration 364 resulted in urgent requests from leves builders in the Sadismento and Mokelumne river districts for assistance from the new dredges. One of the machines was tried at Staten Island early in 1876, but its boom was so short that to dump fill where it was wented required excavation into the natural banks of the Mokelumne. 29 In November 1876 one of these dredges was used in building a cross levee on lower Grand Island. The performance was more promising and was thought to be a successful demonstration of the utility of machinery for levee building. 30 The dredge did not, however, satisfy the requirement for a machine which would not weaken natural banks in the process of raising levees above them.

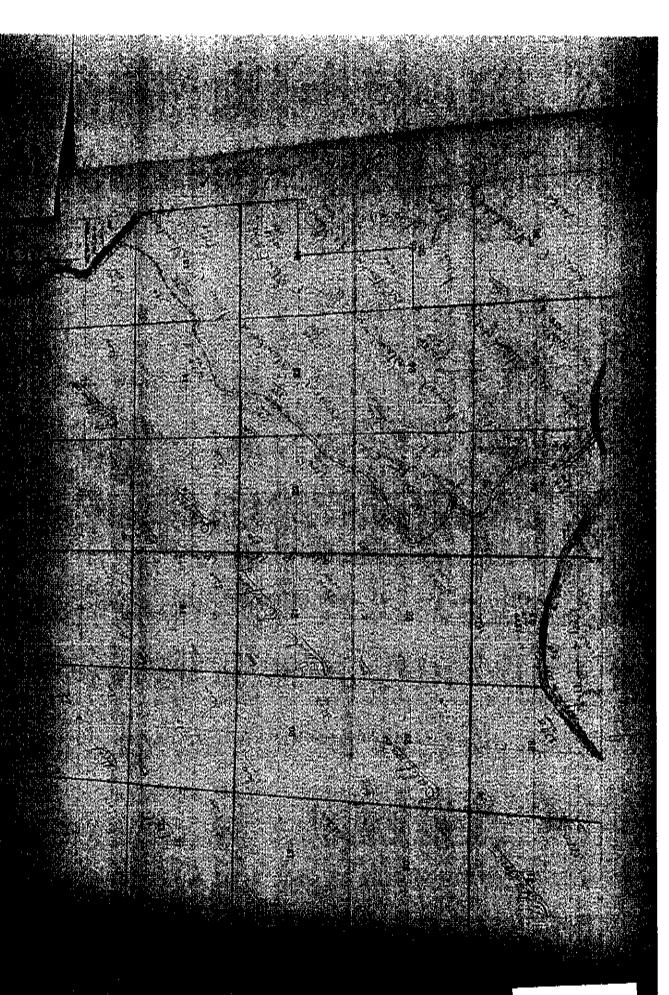
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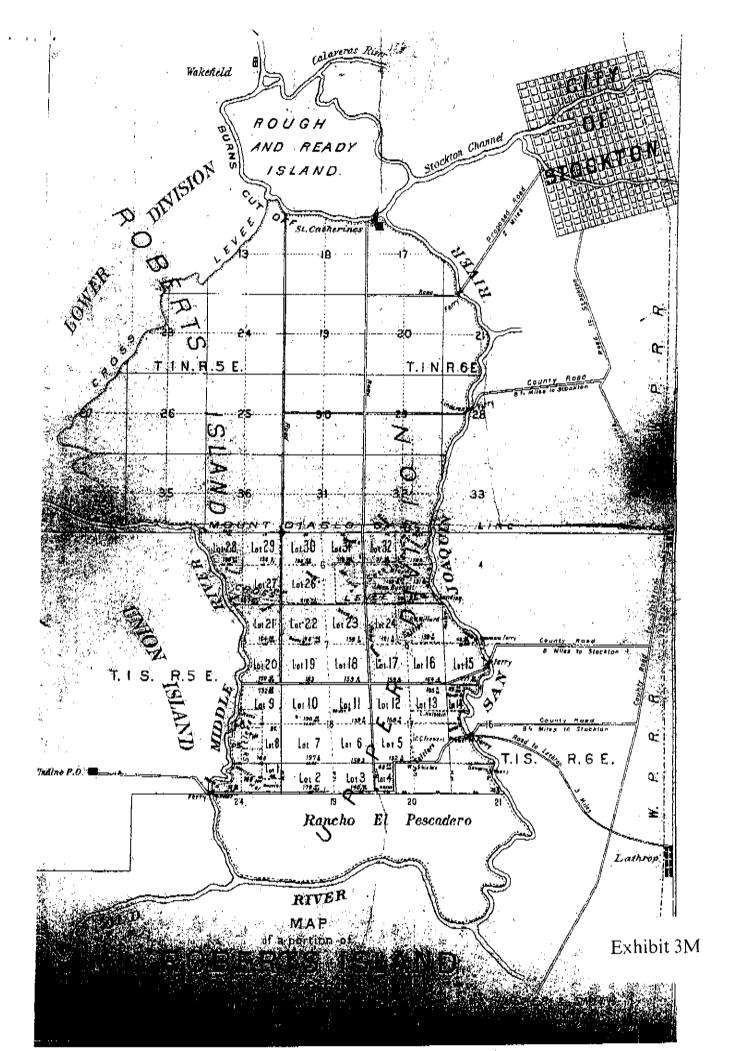
²⁷The levee followed the right bank of the slough southwestward toward Middle River from the slough's outlet on Burns' Cut-off. The present Honker lake Tract, the Procket, and Roberts Island north of the Santa Pe right-of-way (including MoDonald Island) would be north of the

²⁸ Reclamation of Roberts Island, 8MI, Nov. 20,

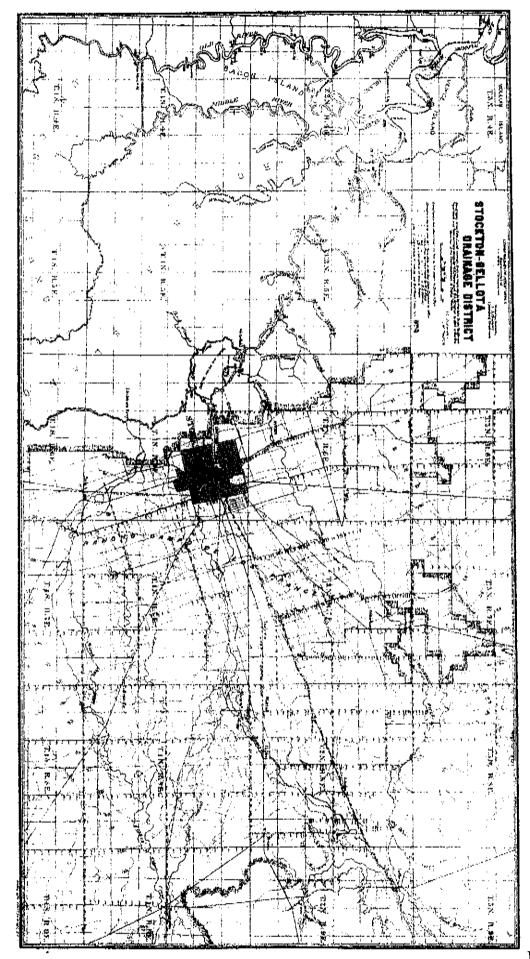
^{29°}Crops on the Lowlands, <u>SWI</u>, June 24, 1876, p. 51° Kew Contrivance, <u>1bid</u>., Nov. 18, 1876, p. 5.

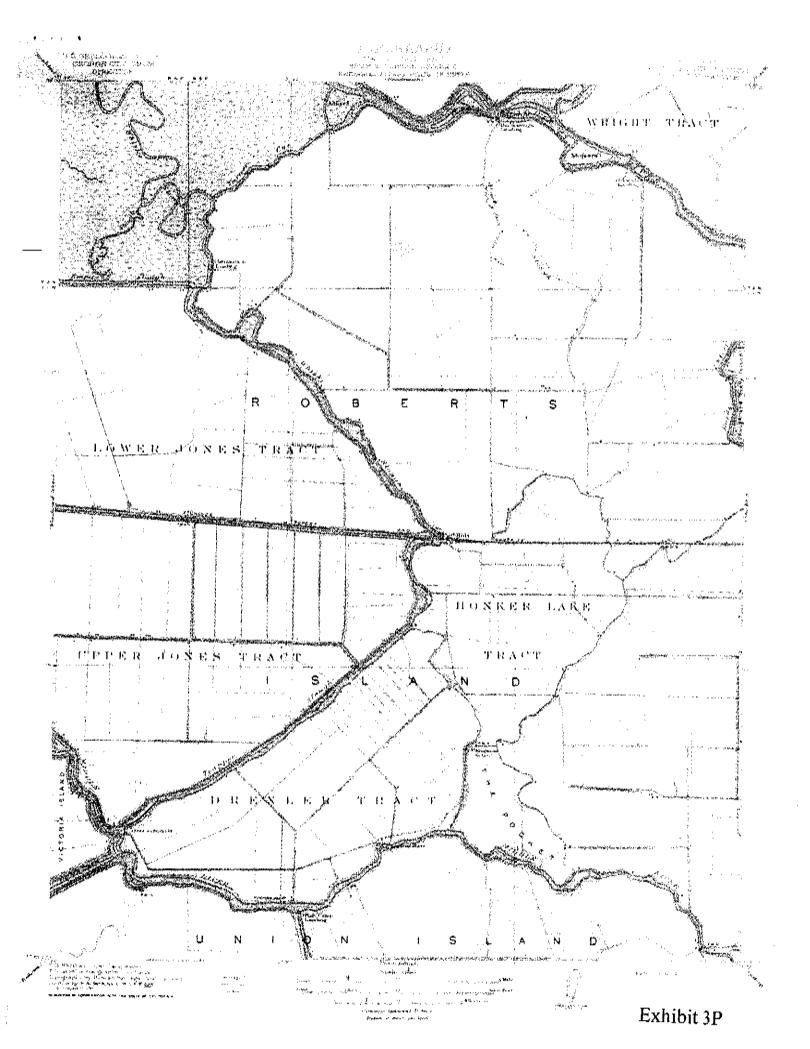
³⁰¹bid.; "Reclamation," 1bid., Nov. 11, 1876, p. 7; perce Taland, "1bid., Sept. 22, 1877, p. 7.

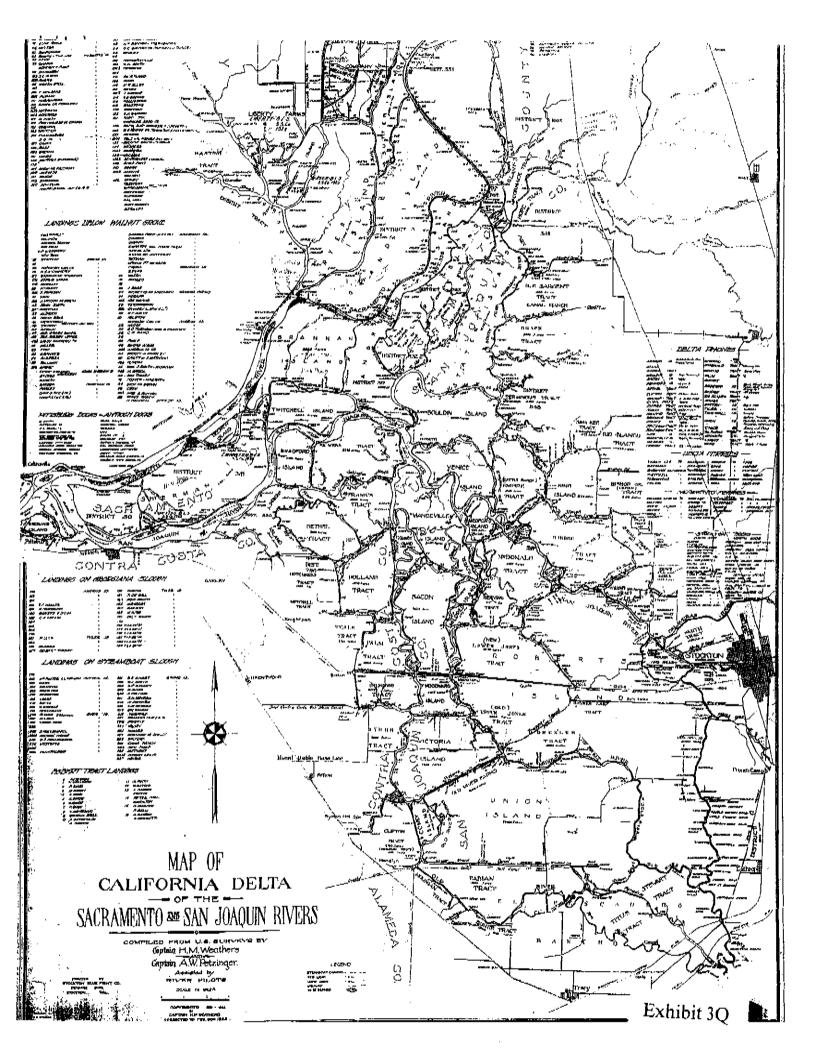


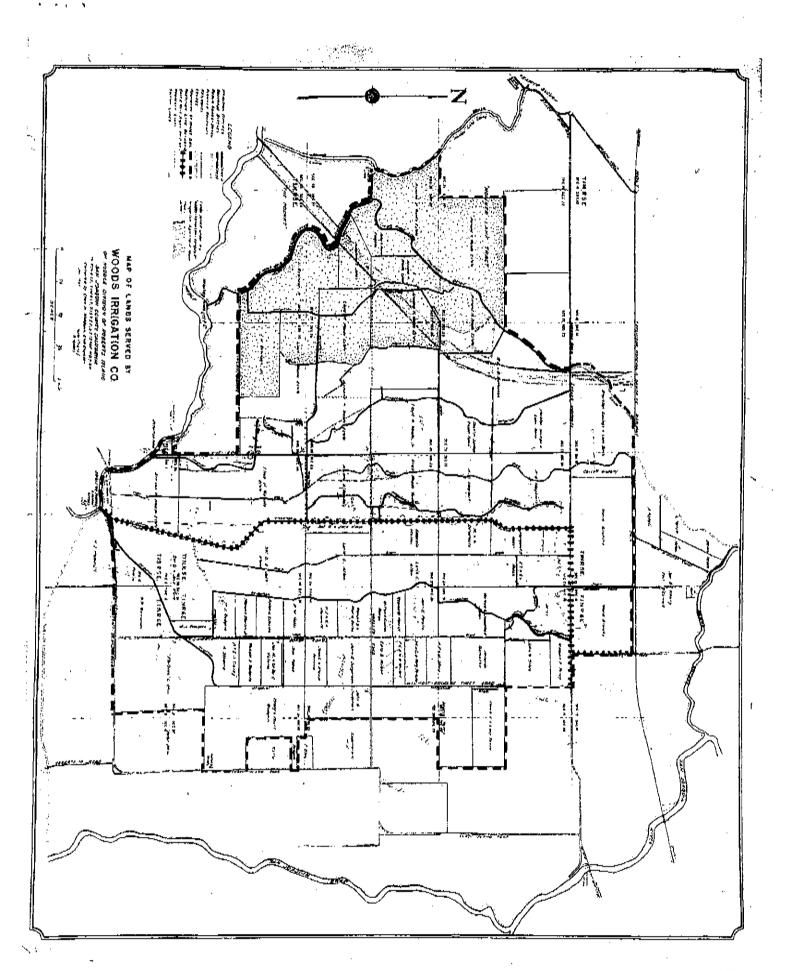


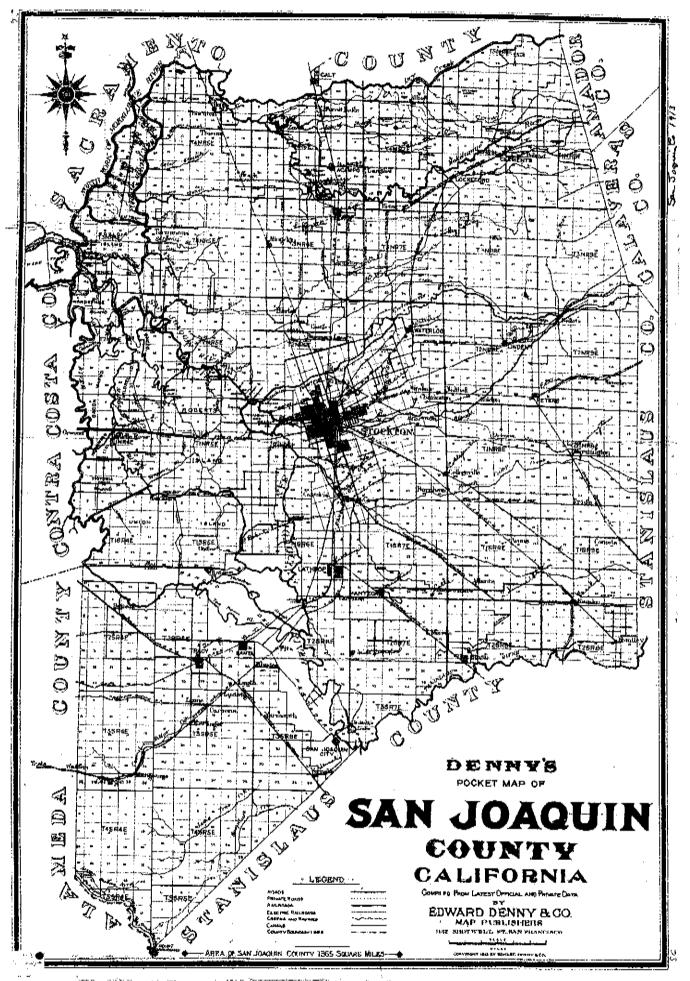












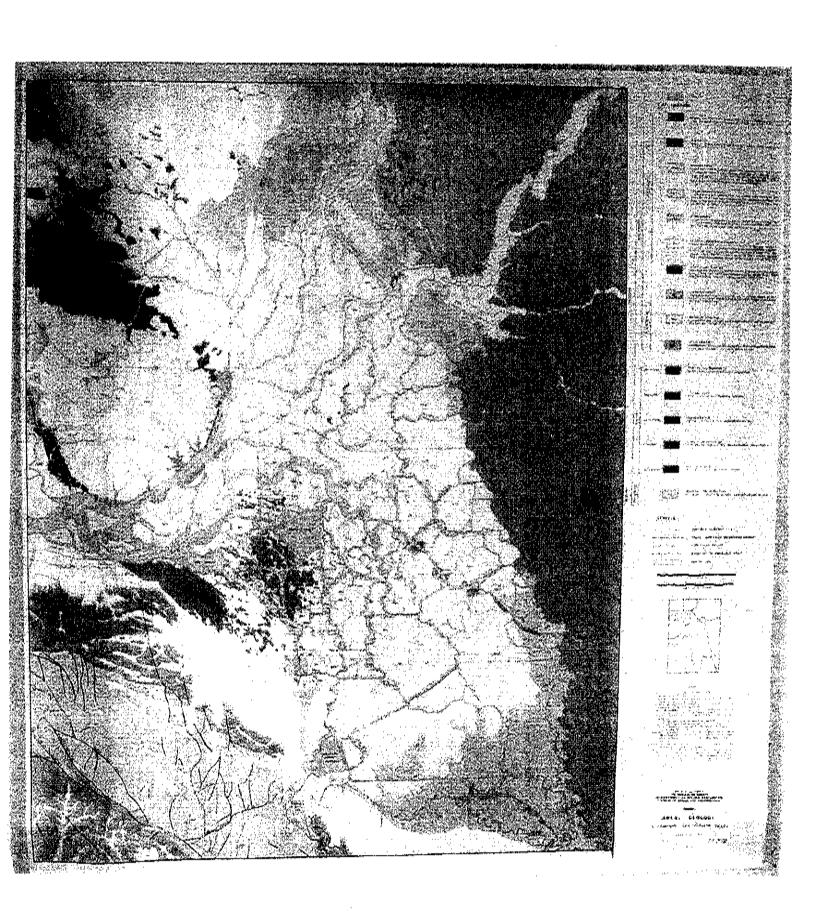




Exhibit 3U

TESTIMONY OF CHRIS NEUDECK

I am Christopher H. Neudeck, P. O. Box 844, Stockton, California 95201. I am a registered Civil Engineer in the State of California and have worked with the Delta Islands including flood control, drainage and irrigation for the past twenty (20) years. I am the District Engineer for numerous reclamation districts in the Sacramento/San Joaquin Delta (Delta) and I am familiar with the history of reclamation of lands in the Delta including the Upper Division of Roberts Island which is the area of concern in this proceeding. The engineering firm of Kjeldsen, Sinnock & Neudeck, Inc. of which I am a principal is the engineer for Reclamation District No. 544 which encompasses the area of concern and adjoining districts Reclamation District No. 17 and Union Island Reclamation Districts 1 and 2. I am very familiar with the area including the waterways, levees, drains and irrigation facilities. A statement of my qualifications is submitted as a separate exhibit.

I. The Sacramento/San Joaquin Delta of which the upper division of Roberts Island is a part is the area where the Sacramento River system and San Joaquin River system merge and interface with tidal water. At the early times most relevant herein (mid 1800's), the area was recognized as swamp and overflowed land. The area has been described as the "Holland of America" where the deltas of the two river systems overlap. Like the branches of a tree, the river systems merging in the Delta divided and redivided into hundreds and perhaps thousands of channels which then rejoined into a single channel passing through the Carquinez Straits. (Exhibit "A".) These dendritic channels distributed the sediments suspended in the river flow. Heavier particles such as sands would settle closest to the channels resulting in a bank or area adjacent to the channel which is higher than the adjoining land. These bank areas rimmed tidal swamps with a gradient falling away from the channels. The gradient has over time been intensified by oxidation and deflation of drained peat, compaction and burning. (See Exhibit "C," The Settlement Geography of the Sacramento-San Joaquin Delta, pages 290-294.)

Prior to the construction of levees, the river flow would pass over all of the lands and dendritic channels for a number of months of most years. The entire area comprised the bed of the river with a variable depth. Water would be shallowest over the channel bank area. During periods of low river flow, water would essentially flow only through the dendritic channels.

In order to reclaim the swamp and overflowed lands, levees and floodgates were constructed to drain the lands. Although initially piecemeal and relatively small scale, the reclamation process evolved into a large scale effort. As relevant to Upper Roberts Island, the large scale effort commenced prior to June of 1879 (See Exhibit "B", Daily Evening Herald, June 27, 1879.) Levees were eventually constructed along the major channels now called the San Joaquin River, Old River, and Middle River. I have seen references to Old River as Old San Joaquin River and to Middle River as the Middle San Joaquin River.

Consiguction of the levees involved crossing or damming a number of the dendritic channels of various sizes which commonly are referred to as sloughs. The common practice was to install floodgates (a conduit with a mechanism for closure) in the levees (dams) at the point of crossing to provide for drainage and/or irrigation. (See Exhibit "C", The Settlement Geography

of the Sacramento-San Joaquin Delta, pages 244 and 245, which describes the general practice of damming sloughs and installing sluiceways which I call floodgates.) The floodgates of course would be closed at times of high river flows. Many were equipped with flap gates on each end so that tidal pumping could be used to enhance drainage or irrigation. In the case of irrigation, the flapgate on the inside of the island would open on the incoming tide and close on the outgoing tide, thereby helping to maintain a full slough or ditch to improve the distribution of water to the various fields. Early floodgates included a variety of conduits. Some were rectangular pipes or boxes made of redwood, brick, or cement and others were riveted steel pipes or clay pipes. There are a number of floodgate and slough-type irrigation facilities still operating in the Delta. On Upper Roberts Island, all appear to have been replaced by irrigation pumps and pipelines and drainage pumps and canals. In some cases, drainage pumps discharge water into the irrigation pipelines which direct the water by way of backflow to the river.

Impacts on irrigation season water levels by water development and channel dredging, the need for more efficient irrigation and drainage practices and the desire to improve levee integrity are obvious factors which encouraged the shift from the slough and floodgate gravity systems to pumps, ditches and pipelines on Upper Roberts Island.

Exhibit "D" is a 1912 Topographic Map of Upper Roberts Island on which I have plotted what I believe are the dendritic channels in the area of Upper Roberts Island which abut the properties which are the subject of this proceeding. The channel locations are confirmed by aerial photos of the area on which the sedimentary soils deposited along the dendritic channels is reflected as the lighter colored area. (See, for example, Exhibit "E".) Although these channels do not at the present convey surface water to the subject properties, they do continue to serve as conduits for the river water to pass below the ground surface to such parcels. It is my opinion that such channels conveyed surface water to the subject parcels from at least 1850 until the time that replacement irrigation facilities were installed. As discussed hereinafter, there are still remnants of such channels, floodgates and other irrigation facilities which confirm the use of irrigation water and the lack of severance for the subject percels. The passage of time has tended to mask the existence of historic sloughs. Meandering roadways and property lines have been straightened, sloughs have been filled and replaced by ditches and pipelines and floodgates have been removed to reduce the threat of levec failure. Farmers have "squared up" and leveled their fields. In many cases, the upper portions of the slough sediments were removed and exported or mixed with adjoining soil to make farm field soils more uniform.

With minor exceptions, all of the lands within the upper division of Roberts Island have from the time of reclamation been devoted to farming. The need for and use of surface water for growing crops has always been of paramount importance. Extending back even before the time of patent of lands by the State, the landowners and farmers on Roberts Island including Upper Roberts Island were beneficially using the surface water to grow crops. While at first beneficial use was limited to the moisture gained from natural overflow of the land to be planted to crops irrigation with surface water soon followed.

"Some irrigating had been done earlier, but the practice does not appear to have become a common part of delta farming until the 1870's. Flood irrigation had been tried on small grain by 1871, but was given up because of the excessive

weed growth that resulted. For other crops land soaking before planting or flood irrigation were practices in use during the 1870's. Subirrigation prior to plowing and planting dates from the same decade; it was originally used for beans and potatoes or to encourage the growth of a volunteer hay crops. Since then subirrigation has been used on all growing crops.

Irrigation water was delivered to the backswamp land through tidal gates and drainage ditches in the 1870's. Filled mains backed water into field ditches of two- to four-foot depth; from these the water spread along the six-inch- to two-foot-deep laterals ("spud ditches") which were spaced at intervals of 65 to 85 feet. Seepage occurred in the peat soils. Water levels were controlled with dams across the ditches.

Water delivery systems independent of drainage ditches were in use by the latter 1870's. These systems were maintained by the farmer, only the drainage system being the responsibility of the reclamation districts. Water wheels, windmills, and low-head pumps were used on the higher alluvial banks where furrow and check irrigation were the rule. Gravity flow and siphons after the 1900's were used on the lower tracts. . . ." (Exhibit "C," The Settlement Geography of the Sacramento-San Joaquin Delta, pgs. 310 - 312.)

"The conversion of natural levees into farm land on Roberts Island may be credited to Chinese lessees who, at least by 1869, were establishing truck and fruit gardens on the San Joaquin River side of Roberts Island. South of Rough and Ready Island the cleared land had become an almost continuous series of 6- to 50-acre cultivated plots by 1875. The farmed strip stretched into the island 200 to 500 feet. Another 60-acre strip of cultivated levee was located on the west side of the island to the north of the Pescadero Grant line. Here and there along the levee were the homes and barns of a dozen white families, chiefly grain and bean farmers and stock owners. Scattered clusters of Chinese gardeners occupied the Grant land. Like the renters to the north, the Chinese raised onions, beans, and blackberries.

Once the land development companies began to reclaim the backswamps in the 1870's, the land use pattern changed. Extensive grain fields appeared over the interior of Roberts Island. The white lessees were mainland residents as well as island settlers. Most of the latter lived within a mile of the river; their houses occupied slight alluvial prominences amidst the grain fields. Some of their farm structures had been built by the land developers as base camps for the reclamation and land clearing crews. In addition to the expansion of grain fields over the interior of the island, an enlargement of bean and potato acreage occurred near the river, where the thrifty Chinese and Italians even planted on the artificial levee. A few small deciduous orchards were scattered around the higher periphery too." (Exhibit "C", The Settlement Geography of the Sacramento-San Joaquin Delta, pgs. 322-324.)

Attached hereto are copies of historic newspaper articles supporting the above.

Exhibit "F" is an article from the Daily Evening Herald for May 12, 1879, titled "A Trip to Roberts Island". In addition to the verification of the farming activities, the article reports the irrigation facilities and floodgate of Matthews & Lowry.

"Messrs. Matthews & Lowry, who own a portion of this section of the island, have placed a flume through the levee with the intention of establishing a thorough system of irrigation on their land, if they are successful in making this flume, which is quite a large one, capable of carrying several thousand inches of water, work."

The referenced flume appears to be located in the same area as the dendritic sloughs which I have identified along Old River.

Exhibit "B" is an article from the Daily Evening Herald for June 27, 1879, titled "Crops and Prospects on Roberts' Island". The article verifies crop production and further provides;

"Roberts Island is rapidly assuming the appearance of a settled and prosperous community. It requires no stretch of the imagination and no confidence in the improbable, to picture this Island as the most prosperous part of the county, and the very garden spot of the State."

The garden spot vision for the area confirms the lack of evidence of any intent of any of the landowners to abandon their rights to obtain water to grow crops.

II. I was also asked to investigate the relationship between the shallow subsurface water under Upper Roberts Island and those of the neighboring channels. I have extensive experience with this issue. Over the years of my engineering work in the Delta, I have dealt with flood waters, seepage, and drainage issues. I testified on this issue in the Delta Wetlands hearings before the Board.

For the area of concern, Upper Roberts Island, DWR has a recent study which resulted in that agency producing Exhibit "G" entitled "Reclamation District 544 Seepage Monitoring Study 2000 - 2001." This study confirms my prior conclusions that due to the subsurface soils, there is a direct connection between the shallow groundwater and the waters in the neighboring channels. When the river goes up, the groundwater goes up and vice-a-versa.

This hydrologic conductivity is important to understand the local water supplies. The entire Delta is one big pool of water; some in the channel and some in the soils. There is no net difference in the amount of water in the Delta channels when local diverters take from neighboring channels, pump from shallow groundwater, or farm crops which draw from the shallow groundwater. Taking water from one place is virtually the same as from another. This is especially true during summer and fall months when the three tidal barriers are in operation as they hold high tide waters around Upper Roberts Island and thus prevent any depletion of the channel waters from causing low levels which might affect other diverters.

I therefore conclude that if these four diverters which are the subject of this hearing were forced to shift to shallow wells for irrigation, or farm crops which had root zones reaching to the shallow groundwater, there would be no difference in the amount of water available in the surrounding channels.

III. I will now examine each of the four diverters' property separately. It is important to note my examination is also based on and includes the facts and conclusions stated earlier in my testimony regarding the history of Upper Roberts Island. I understand that the designation of riparian or pre-1914 rights is a conclusion to be made by this Board and/or the Courts. For my purposes, I have investigated to determine the facts relevant to the sociology, history, and engineering for the diversions which counsel informed me is relevant to the determination. Many of my exhibits are the patents, deeds, or other recorded documents contained in Mr. Pankey's exhibits of title documents. Of further relevance to these individual pieces of property are the facts stated earlier in my testing regarding the history of Roberts Island as well as the information contained in Exhibit "H" which includes biographical excerpts from the "History of San Joaquin County" dated 1923.

The Silva property is 169.92 acres. As we can see from the title documents, the Silva property was being purchased and sold before it was patented from the State. The early Deed (dated 1875) describes a large portion of upper and lower Roberts Island, including sections 1, 2, 12, and 13 in Township 1 South, Range 5 East, and portions of Sections 5, 6, 7, and Section 18 in Township 1 South, Range 6 East. The first map of Exhibit "P" has these sections highlighted and shows the property connected to Middle River (it is also connected to the San Joaquin River near Rough and Ready Island). By this date, substantial reclamation had been done, and as I stated earlier, the clear purpose of ownership was to farm the land.

The next deeds include the same acreage continuing the connection of property to Middle River and include such things as half interests being conveyed back and forth. During these times, there were typically floodgates connecting the sloughs to the waterways in order to irrigate the land of the island. Exhibit "J" includes a photo of an old floodgate just upstream and up slope of the Silva property. The control structure on the end of the floodgate is dated 1923, but the floodgate itself was likely in existence prior to that time.

The topographical maps indicate that water from this floodgate would indeed allow the periodic flooding and/sub-irrigation of the Silva parcel, the common practice during the era. The names on the deeds are those of farmers indicating use of land for farming; the price of over \$22,000 also indicating something other than bare, unused land.

The patent dated 1876 to Whitney also includes the Silva property (Township 1 South Range 6 East West one half, North East one quarter, and West half of South East one quarter of Section 6) which still retains a connection to Middle River. Deeds through 1891 continue to include Mr. Silva's property. The 1891 Deed from Easton to Woods now shows how the property is included in the description of lands that eventually becomes the Woods Irrigation District on Lower Roberts Island. The Deed clearly shows the continued connection to Middle River.

The next title document is dated 1909. We therefore have at least 37 years of probable farming on the land which as per my earlier testimony means that the organic soils have mostly been burned off leaving a more irregular landscape with the (now) high points being the areas along the sloughs. No evidence was found to indicate if or when the sloughs were no longer used for irrigation.

In 1909, the owner died and his estate is distributed through the court (Exhibit "K"). The property of the estate includes the Silva parcel and numerous farming equipment, draft animals, and other livestock.

Next we have two agreements each dated September 29, 1911. The first allows the owners to construct, operate, etc., canals for irrigation and drainage. This indicates to me the clear continuation of the application and use of water by farmers on the property. The next agreement is to actually provide the water to various parcels. This would indicate that the Woods Irrigation District had at least partially completed its delivery system using its current points of diversion on Middle River at a point just downstream of the old floodgate I have previously identified. (Exhibit "L.")

At the time of these agreements, the Silva property is described as Lot No. 22 of the Wilhoit-Douglass Tract. The agreement confirms my earlier conclusion by referencing portions of the property as "high lands" or lands along a slough. The agreement recognizes the ability to sub-irrigate or to pump water onto the land from the Woods irrigation facilities which follow a downstream slough with a lower elevation than the slough area of the Silva property. The reasonable conclusion is that the land was flooded from the sloughs and/or the identified floodgate when possible to assist grain production or promote grazing grasses.

A Deed dated 12/28/11 appears to the be first time the property is possibly disconnected from Middle River. In that Deed (Exhibit "M"), Lots 21 and 22 are transferred. It is important to note though that Lot 21 borders the main irrigation ditch of Woods Irrigation District; evidence which, along with the above-described agreements, shows intent to retain the ability to get water from Middle River. Additionally, there is no evidence that the right to receive water through the floodgate and slough was terminated. This same property (Lots 21 and 22) are transferred through a probate in 1915.

In November of 1915, there is a partition decree separating parcels 21 and 22. Of interest here is the fact that the person who gets parcel 22 also has an oral lease on Lot 21, which contains "tenant crops" (Exhibit "N"). It is likely that both parcels are therefore still under agriculture for at least pasture with flood irrigation when possible. We should note that the property still retains the ability to receive water from the Woods Irrigation District pursuant to the 1911 Agreement.

Next we have two documents recorded on the same day in August of 1941 (Exhibit "O"). One is a sale-purchase and the other is an agreement. The agreement allows the Silva property to install a pipeline over its neighbor to the west in order to get irrigation water from Middle River. The sale document requires the owner to finish leveling the property and irrigate that which he levels. Given the language contained in the document of "land not theretofore leveled and

irrigated," it is clear that the land was being irrigated before this time. This is also confirmed by my review of aerial photographs of portions of Roberts Island which show most of the Silva property under cultivation.

After 1941, the legal description changes slightly as the parcel had a lot line adjustment to resolve the issue of a barn on the property line. This slightly decreased the acreage of the Silva property.

My investigation confirms that since this 1941 agreement, the land has been continuously irrigated and farmed with crops of alfalfa, grain, tomatoes, asparagus, etc.

I therefore conclude the following:

- 1. The Silva property was originally part of a parcel abutting Middle River and at the time of disconnect, the intention of the owners to retain the ability to receive water from Middle River is clear and recorded by agreement;
- 2. Before and after reclamation of this portion of Roberts Island, the Silva property abutted an unnamed slough off of Middle River, which slough possibly also connected to the San Joaquin River; and
- 3. It appears that the land has been continuously supplied with water from Middle River since the mid-1870's through the present for irrigated farming

RATTO (Golden R. Inc.)

The Ratto property is approximately 55 acres located generally as the Northeast Quarter of the Northwest Quarter of Section 18 Township 1 South Range 6 East. It was included in the patent of 1876 from the State of California to Mr. Whitney (page 1 of Exhibit "P"). As before, this patent included large tracts of land on both Upper and Lower Roberts Island, which lands connected to both the San Joaquin River and Middle River.

Subsequent Deeds maintain the connection with the Middle River until 1891 when in 1891 the owners Stewart, et al., deeded to Small the current sized parcel, officially described in measurements in chains and links, but generally being the same Northeast quarter of the Northwest quarter referenced above. (See page 3 of Exhibit "P".)

Exhibit "Q" are selections from a book entitled, "The History of San Joaquin County" originally published in 1879. The first part of the Exhibit is a map which shows an interior island slough running up through sections 18 and 19 of One Township South Range 6 East. From the map, one would conclude that the Ratto parcel abuts the slough. To confirm this, I investigated early surveys and found one dated 1903 (Exhibit "R") which appears to be the same slough, but not reaching all the way to the Ratto property. This makes sense in that over time the sloughs were filled in and the ground itself farmed and irrigation practices moved from the use of sloughs to ditches and/or pipelines and eventually pump diversions closer to the main waterway. My investigation also confirmed that this slough had a floodgate used to regulate high flows and

tides in the slough to facilitate irrigation. The existence of the floodgate confirms that interior island farming using slough waters was occurring in this area.

A later survey in the San Joaquin County records shows that an irrigation ditch continues on from the 1903 surveyed slough, apparently along the tract of the slough referenced in the 1879 book; again confirming my earlier testimony about agricultural practices in that farmers typically used existing waterways for their irrigation.

Also in the 1879 book is an illustration of the property of M. C. Fisher. The illustration I believe includes the Ratto property. Although the illustration does not have the slough running north-south which appeared earlier in the book, it identifies a "Willow Slough" running approximately east west. The significance of this illustration is that it shows ongoing farming and a slough to the farm land. These confirm to me that at least as of the date of the illustration, the subject property is being farmed and irrigated in accordance with the agricultural practices of the day; well prior to being physically disconnected from Middle River. Grain crops and pasture appear to cover most all of the land. Also attached is Exhibit "S", a May 19, 1882, Article from the Daily Evening Herald which mentions a Willow Slough Dam, further confirming the use of these sloughs for irrigation.

I don't ascribe any real concerns for the failure of the drawing to show the north-south slough or the failure to show any irrigation improvements. The location of the cross levee and the proximity of the San Joaquin River both indicate the illustrator had a general but not perfect sense of the geography of the area. Nonetheless, I believe it is valuable evidence of ongoing practices at the time.

I next note that when the above-referenced owner Small died, his estate included farming equipment which would be used for the type of farming shown on the illustration, as well as livestock which would be raised for and used as power in the farming operation (see Exhibit "T"). I believe this is another clear indication of the ongoing farming practices of the day.

The next relevant title document is the grant of an easement in 1917 (Exhibit "U"). This document tells us that PG&E will indemnify for any damage to any "crops, cattle, stock..."

Though only a small reference, it constitutes the specific evidence of activity on the land, and I therefore conclude the property was still being irrigated and farmed via flood gates from sloughs. A later easement for PG&E in 1930 (Exhibit "V") also references the requirement to not interfere with the Grantor's use of the land for "agricultural purposes."

The next relevant documents include three Indentures dated 1964 whereby the owners of the Ratto property enter into agreements to confirm and allow the use of irrigation pipes, etc., to supply water to the subject property over neighboring parcels. Three documents were required as the water is passing over more than one other parcel in its connection to Middle River. Importantly, the one document (Exhibit "W") references that the right of way granted follows "an existing Irrigation Ditch . . ." and an "existing concrete irrigation pipeline." When I trace these existing improvements, I note that they abut the Ratto property. This indicates to me that the water ran to the property before this right-of-way was officially granted. Since it appears the

property was always farmed, the reasonable conclusion is that the documents memorialize an ongoing practice.

Subsequently, the current owner confirms that the property continues to be irrigated and farmed the crops of alfalfa, corn, safflower, wheat, etc.

I therefore conclude the following:

- The Ratto property was originally part of a parcel abutting Middle River and at the time of disconnect, the intention of the owners to retain the ability to receive water from Middle River or Old River is clear and continuous;
- Before and after reclamation of this portion of Roberts Island, the Ratto property
 abutted an unnamed slough off of Old River and likely one or more from Middle
 River as well (including Willow Slough);
- 3. It appears that the land has been continuously supplied with water from Middle River or Old River since the mid-1850's through the present for irrigated farming.

CONN

The Conn property consists of 161 acres, which includes a 41 acre parcel and a 120 acre parcel. This property was also deeded a number of times before being patented from the state. The two parcels were originally in two different patents.

The first Deed includes Sections 1, 2, 12, and 13 in Township 1 South Range 5 East and portions of Sections 5, 6, 7, and Section 18 in Township 1 South Range 6 East. As before, this shows the 41 acre Conn parcel being originally connected to Middle River and the San Joaquin River.

The next five Deeds and the title documents transfer the same gross acreage back and forth until 1876 when Mr. Whitney, the last grantee on these Deeds, got a patent from the State of California. As shown before (page 2 of Exhibit "X"), this patent includes large tracts of land on Upper and Lower Roberts Islands. With regards to the Conn property, the patent includes the west half, northeast quarter, and west half of southeast quarter of Section 6. This generally includes the 41 acre parcel and not the 120 acre parcel. Two subsequent Deeds transfer this smaller of the Conn parcels, but the language is slightly different for a portion of Section 6. The Deed describes the north half and southwest quarter whereas the patent described the west half and northwest quarter. Though different, those descriptions outline a similar portion of property. Both the Deeds and the patent include the west half of the southeast quarter which is the smaller of the Conn parcels. This property continues to be connected to Middle River.

In 1887, another patent covering the 120 acre parcel was issued. Page 4 of Exhibit "X" shows that a Mr. McCloud received a patent in 1887 of just the east half of the southeast quarter of Section 6 and the southwest quarter of the southwest quarter of Section 5 Township 1 South

Range 6 East. This describes the "L" shaped parcel of 120 acres which continues to this date. As per my earlier testimony, there was no use for these Roberts Islands' lands in the 1800's except for farming and animal husbandry. It appears that after the initial deeding of the property in the 1970's, Mr. McCloud had occupied and used the 120 acre parcel such that the last person deeded the property before patenting, did not seek or get that property in his patent. Again, Mr. McCloud had obviously occupied and put the land to use to support his claim. This in combination with other information leads me to conclude that the land was used for farming at least as early as the 1870's.

As previously stated, I have located interior island sloughs which connected the 120 acre parcel to the San Joaquin River (see Exhibit "D"). Given the location of neighboring sloughs, it is likely this slough also connected to Middle River. These were therefore the source of irrigation water for the property. Similarly, the small parcel was likely connected to Middle River and/or the San Joaquin also.

Relevant to these conclusions is the Declaration of Peter Ohm (Exhibit "Y") previously submitted to the Board in support of these four diverters. Mr. Ohm died last year, but his Declaration states that these parcels received water prior to 1914 and probably prior to 1900 via a terra cotta pipe connecting with the San Joaquin River. I have investigated the site and found a portion of the pipe to confirm Mr. Ohm's testimony. A picture is attached here to as Exhibit "P".

The piece of pipe corresponds to the current cross island levee which separates Upper Roberts from Lower Roberts Island, which has been referenced in many of the Deeds describing the Silva and Conn properties. The location of this piece leads me to conclude that the pipeline ran along this feature and thus likely supplied both the Conn parcels from their southern border, it being the up slope side. My investigation confirms that the use of a terra cotta pipe suggests pre-1900 installation. Generally, prior to 1900 various materials such as terra cotta and brick were used to earry water as they were cheaper and locally produced. Use of cement pipes being more common thereafter.

Nearby this site are the remnants of a pump diversion (also located on the map) which the landowner has left in place as "proof" of pre-1914 diversion and use of water. The materials used include cement piping and since the owner places its installation between 1900 and before 1914, further support is given to my dating of the terra cotta pipeline.

One additional confirmation of the irrigation and farming of this land is an 1887 Deed of the 120 acres (Exhibit "Z"). This Deed includes a notation of an existing crop to be harvested and split between the grantor and grantee.

Subsequent transfers combined the two parcels as well as property which included the Silva parcel as of 1951; all of which were owned by a party named Avila. Eventually there was some sort of lease agreement with a party named Silveria, a lawsuit, a bankruptcy, and a settlement agreement dated 1990. The settlement agreement confirmed and split the ownership of the Conn and Silva properties. For our purposes, I note that the settlement agreement requires the Deed to Mr. Conn's predecessor to include the language, "together with the appurtenant water rights and entitlements and a non-exclusive right to use all appurtenant irrigation and

drainage related easements" (Exhibit "AA"). I believe this clearly refers to the Saunders' (Exhibit "BB") easement for irrigation which is the current source/method by which the Silva and Conn properties receive water from Middle River. Apparently, the terra corta pipe was abandoned when a joint owner made an agreement to get water from Middle River. It is clear from the Ohm Declaration and the current owner's knowledge that the parcel was continuously irrigated most recently from Middle River and prior to that from the San Joaquin River.

Subsequently, the current owner confirms that the property continues to be irrigated and farmed the crops of alfalfa, tornatoes, safflower, wheat, etc.

I therefore conclude the following:

- 1. The smaller Conn parcel was originally connected to both Middle River and the San Joaquin River, but at the time of disconnect from those waterways, the intentions of the owners to retain the ability to receive water from the San Joaquin River is apparent. The fact that the original patent separated the other parcel from surrounding lands and the main waterways, and that it was done during ongoing farming indicates an intent to keep access to the water of the neighboring channels;
- 2. Before and after reclamation of this portion of Roberts Island, both the Conn parcels abutted an unnamed slough off of the San Joaquin River and probably also connected to a slough which connected to Middle River; and
- 3. The land has been continuously supplied with water from both the San Joaquin River or Middle River since the mid-1870's through the present for the purpose of irrigated farming.

PHELPS

The Phelps' property consists of three parcels, one of 156.65 acres, one of 76.35 acres, and one of 157.75 acres. These parcels also show decding before being patented from the state. The first Deed transferred two of the parcels to a Mr. Kidd in 1873 (see page 1 of Exhibit "CC"). My earlier testimony indicates these parcels were connected to a slough off of the San Joaquin River, and probably also off of Old River. The first patent (page 2 of Exhibit "CC") is to Mr. Kidd in 1874 and includes the west half of Section 8, and the east half of the west half of Section 17 of Township 1 South Range 6 East which generally describes two of the Phelps' parcels.

Mr. Kidd then deeded the property to Mr. Whitney who himself received a patent in 1877. This second patent (page 3A of Exhibit "CC") takes in Section 18 of Township 1 South Range 6 East which includes the third Phelps' parcel; all three now being owned by one person (Mr. Whitney) which at the time of this last patent, are connected to Middle River and the San Joaquin River.

All three parcels are subsequently transferred as part of a larger whole. In 1878, only the parcel in Section 18 is transferred to a Mr. Stewart disconnecting it from the rivers. In 1885, the

other two parcels are sold through a sheriff's sale to the Stockton Building and Loan Association (page 5 of Exhibit "CC"). All three parcels are then bought and sold separately until eventually combined under one owner.

Of importance is my conclusion that these lands were continued to be farmed throughout. At a location near the old Brandt Bridge (noted on Exhibit "D") on the San Joaquin River, there remains a brick pipe through the levee which in modern times was closed off and filled with cement. This brick pipe had a floodgate on it which again confirms the local farmer's efforts to control interior island flows for the benefit of agriculture. The common practices would indicate that the waters were used for either direct irrigation or subsurface irrigation. My investigation as well as the fact that the structure was of brick indicate to me that it was in use probably sometime in the 1890's and continuing thereafter. The irrigation off this brick pipe could have connected to the remains of the old sloughs nearby.

The various owners of these parcels are mostly well-known farming families of the area, again indicating the continued use of the land for agriculture.

The Phelps' parcels were eventually all acquired by the current Mr. Phelps' father. The final document of interest being the 1962 indenture which established the current method of delivering water to the property. The current owner confirms that the property continues to be irrigated and farmed with crops typically being of alfalfa, tomatoes, beans, wheat, cucumbers, asparagus, etc.

I therefore conclude the following:

- 1. The Phelps' property in Section 18, Township 1 South Range 6 East was originally connected to the San Joaquin River but at the time of disconnect, the intention of the owners to retain the ability to receive water from the San Joaquin is clear and continuous;
- Before and after reclamation of this portion of Roberts Island, the Phelps'
 property abutted an unnamed slough off of the San Joaquin River which slough
 also likely connected to Old River; and
- It appears that the land has been continuously supplied with water from the San Joaquin River since the mid 1870's through the present for irrigated farming.

Finally, I would like to note that my conclusions herein include my many years of experience in the Delta which has resulted in my exposure to many sources of people. It cannot be seriously asserted that anyone who owns and/or farms Roberts Island lands would intend through any sale a severance of the properties' ability to get water from the neighboring channels.