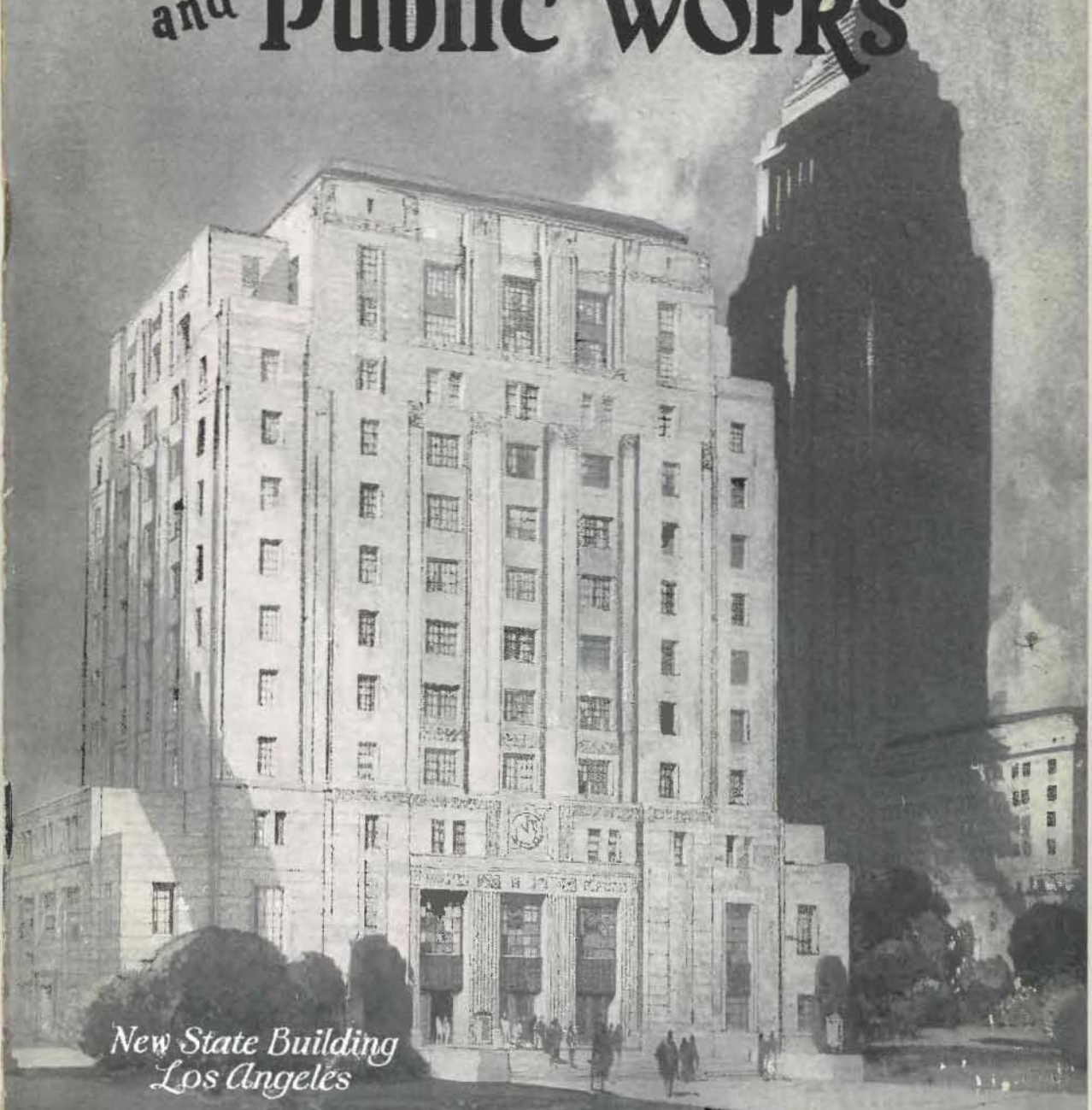


Vol. 9 # 3

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California Highways and Public Works



*New State Building
Los Angeles*

Official Journal of the Department of Public Works
State of California

MARCH

1931

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What Are Our State Highways Worth?

By EARL LEE KELLY, Chairman of the California Highway Commission

PROBABLY no governmental undertaking in California has contributed so directly to the development of California as has the State highway system.

It is a significant fact that the period of California's greatest growth parallels the period of its State highway building.

Thus the three bond issues totaling \$73,000,000 for the creation and construction of a State highways system were approved by the voters of California in the 1910-1920 decade. During this decade California experienced phenomenal population increase, the census for this decade showing a population growth for the State of 44.1 per cent over the preceding decade.

In the 1920-1930 decade, State highways were financed through unspent bond funds and gasoline taxes. The increase in the population of the State during this period was 65.7 per cent.

There were of course other factors entering into this great population growth. Well at the head of the list, however, stands the State highway system.

The contribution of the State highways to California growth and prosperity may be briefly summarized as follows:

1. The expenditures have been spread over the entire State, resulting in a balanced development of rural and urban areas.

2. The highways have facilitated as easy and economic movements of produce from farm to market, and of manufactured goods from maker to consumer.

3. The highways have encouraged a free flow of tourist travel into every part of the State. They have made recreation one of the principal and most profitable industries of the State, and have resulted in bringing untold millions of dollars of "outside" money annually into California.

4. The State highway system has effected directly the living and spending habits of every individual in California.

5. The State highways have "desecctionalized" California, and thus to a very large extent eliminated the lost motion and the lost values that inevitably accompany sectional strife and jealousy.

Not only has industry of every kind felt the stimulating influence of State highway con-



EARL LEE KELLY.

struction, but the social life of the State has also reflected this same influence.

I believe that some idea of the value that the people of California place upon their State highway systems can be gleaned if we would consider for a moment their sale value.

Their cost to date to the State has been \$238,815,782.

If we can invade the field of the impossible, and imagine that a monetary offer be made for California's State highways, with the condition attached that once sold, these roads should neither be duplicated nor be open to the use of the public, how much would we take for them?

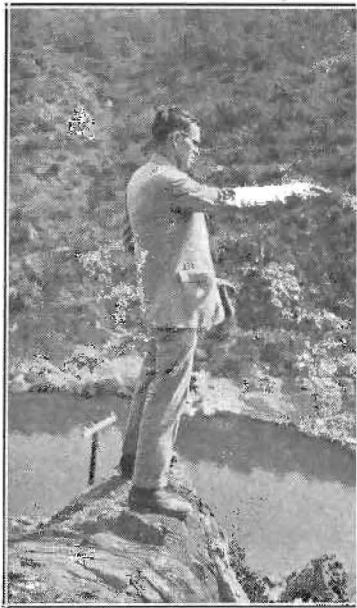
I can not conceive of an offer large enough to even tempt consideration for a moment.

The reason is that California and its State highways are now one, inseparable both in the thought and in the lives of its people. Without its State highways, California would not be California.

State Water Plan Recommendations Are Given Governor and Legislature

STATE ENGINEER EDWARD HYATT on March 4th transmitted to Governor Rolph and the Legislature the report of the State Water Plan.

The report recommends as an initial construction project to meet present needs.



EDWARD HYATT.

quin Valley.

A reservoir on the San Joaquin River at Friant, north of Fresno, with a canal leading northward therefrom into Madera County and another southward to the Kern River, with an additional unit south of Bakersfield.

The Colorado River aqueduct and the Santa Ana Ana control and conservation project. The capital cost of the plan is approximately \$374,000,000. The salt water barrier is not recommended.

The report is entitled "Bulletin 25, Report to the Legislature of 1931 on State Water Plans," and presents the conclusions of eleven other bulletins which deal with different phases of the Water plans in great detail. It covers the entire subject of the water resources of California, and is a report result-

ing from ten years of investigation of the State's water resources and problems of development. It gives the engineering, economic and legal phases of the developments recommended, but does not pass on methods of financing nor organization required to bring them into being. However, it does recommend a constitutional amendment relative to revision of eminent domain procedure, with respect to water rights and rights of way, to facilitate adjustment of water rights and rights of way necessary to execution of the proposed construction program.

WATER NEEDS OF STATE

The report analyzes the water supply and water needs in all parts of the State, and recommends major units of an ultimate State plan for complete conservation of its water supplies, and also an initial or immediate plan to relieve existing shortages.

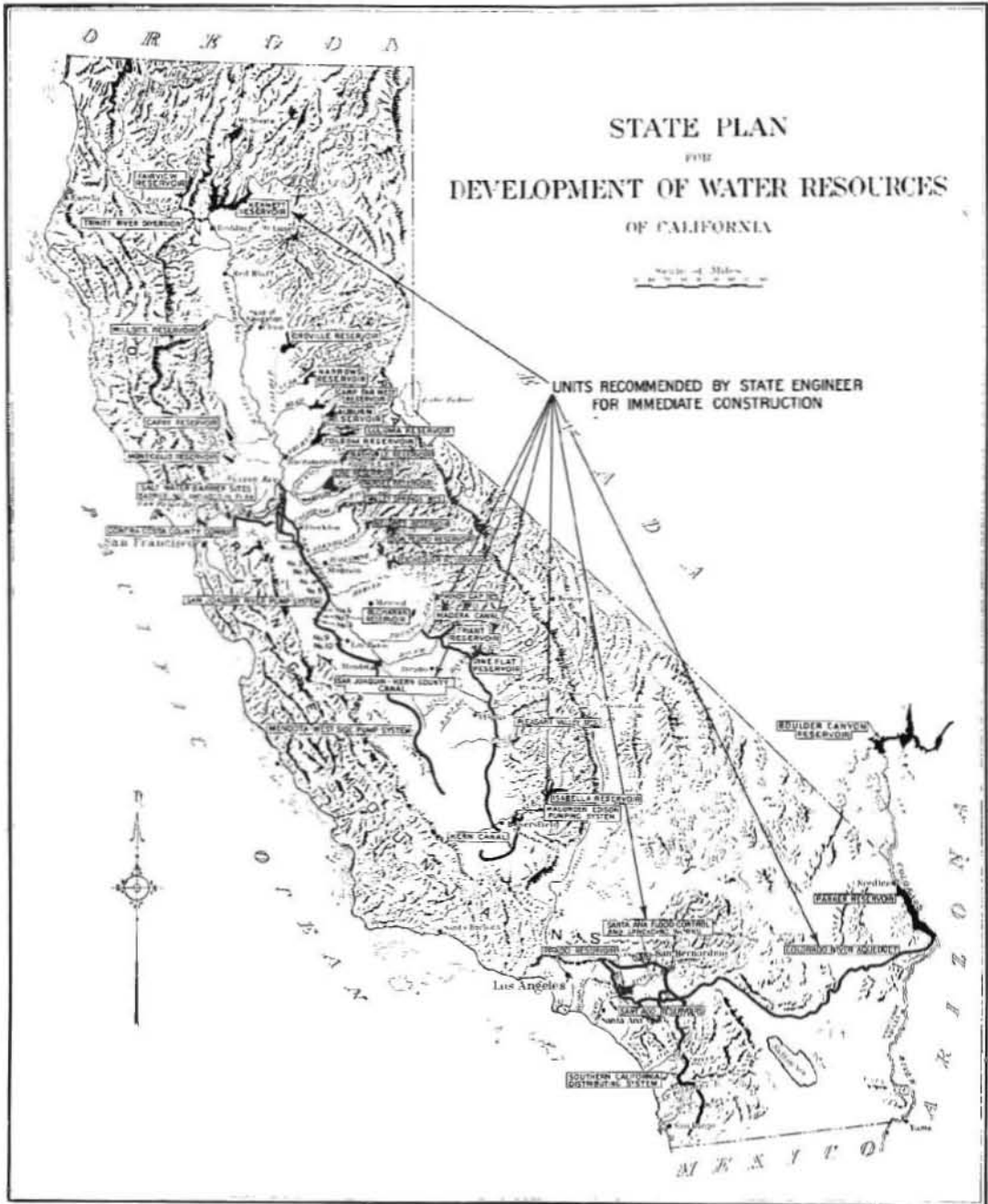
DEFICIENT WATER AREAS

The investigation has disclosed that there are three large and important areas of the State which are deficient in supply for their present needs. These are: the Sacramento-San Joaquin Delta and Upper San Francisco Bay region, the upper San Joaquin Valley, and the coastal counties of Southern California.

In the delta and bays the invasion of saline water is a problem needing immediate attention, while in the upper San Joaquin Valley there is a shortage of water on 400,000 acres, which if not relieved will result in abandonment of lands and in damage to the whole area.

In Southern California, and particularly in the Santa Ana Basin there is a serious overdraft on underground waters and along the coast this condition is resulting in the intrusion of saline water from the ocean, and there is the further problem of flood waste which if checked would give relief to that area.

The report states that in these three main sections of the State the need for an augmented water supply is vital and for their immediate relief recommends the \$374,000,000 construction program, including the Kennett



dam, the Friant reservoir with its north and south service canals, the agricultural and industrial conduit through Contra Costa County, the Santa Ana River flood control and conservation works, and the Colorado River aqueduct.

PLAN IS RESERVE PROJECTS

The plan recommended is essentially a relief

or rescue project for these major areas of California. It would meet the requirements of the lands now in pressing need because of insufficiency of water but would not provide for the irrigation of new lands, with consequent increase of the overproduction problem.

The report points out that there are many other places in the State in need of water, but

that investigations have either not been made in these sections or have not proceeded to the point where a plan could be designed. The three sections for which the plan would provide relief are the largest, most important and in the greatest need.

SACRAMENTO VALLEY WATER

The feasibility of transporting Sacramento River water into the San Joaquin Valley in the future is demonstrated conclusively in the report, which reveals that there is a large usable surplus of water in the Sacramento watershed, over and above the ultimate future needs of that area, even in the driest years.

SALT WATER BARRIER

In disapproving the salt water barrier as a unit for the program, the report states that the fresh water releases from Kennett reservoir, when constructed would control salinity in the delta, would provide irrigation water for that region, and also would meet the industrial needs of the territory adjacent to Suisun Bay, all at a cost less than half that required for equivalent service with a barrier.

COST OF VARIOUS PLAN UNITS

The plan as recommended by the State Engineer in the Sacramento and San Joaquin Valleys and upper San Francisco Bay area as an initial development would cost approximately \$158,900,000, of which \$19,000,000 need not be expended in immediate construction, but which should be included in the financing as an insurance feature. These deferred items are a channel across the delta to provide for carrying the Sacramento River water into the neighborhood of Stockton and dams and pumps to transport this water to the San Joaquin Valley.

COLORADO RIVER AQUEDUCT

The cost of the Colorado River aqueduct is given as \$198,600,000, and that of the Santa Ana River flood control and conservation project as \$16,200,000.

DETAIL OF COST ESTIMATES

The itemized cost estimate of the plan is as follows:

Great Central Valley:

Kennett reservoir	\$84,000,000
Sacramento - San Joaquin Delta cross channel (construction deferred)	4,000,000
San Joaquin pumping system (construction deferred)	15,000,000
Friant reservoir	15,500,000

Upper San Joaquin Valley conduits	29,900,000
Contra Costa County conduit	2,500,000
Rights of way, water rights and general expense	8,000,000

Sub-total Sacramento-San Joaquin Valley	\$158,900,000
--	---------------

Southern California:

Colorado River Aqueduct	\$198,600,000
Santa Ana River flood control and conservation works	16,200,000
Total Southern California	214,800,000
Total for State	\$373,700,000

SUMMARY OF CONCLUSIONS

The report of the State Engineer is summarized in the following conclusions:

1. A large surplus of water exists in the Sacramento River Basin over and above the ultimate needs of a total net irrigable area of 3,784,000 acres in the basin if the run-off were properly controlled and regulated. By the utilization of the physical works proposed herein for the Sacramento River Basin, including the Trinity River diversion, regulated supplies without deficiency in amount in any year and dependable in time could be made available in the principal streams to irrigate all of the net irrigable lands, 2,640,000 acres, in the Sacramento Valley, after allowing a gross diversion of 3,241,000 acre-feet with a net use of 1,945,000 acre-feet per year for the irrigation of a net area of 1,234,000 acres of foothill and mountain land in the Sacramento River Basin and further provide a flow into the Sacramento-San Joaquin Delta of 10,292,000 acre-feet per year on the average during the period of subnormal run-off, 1918-1928. Even in the driest year of record, 1924, there would have been 5,759,000 acre-feet of flow into the delta. After providing 1,200,000 acre-feet for the needs of the entire delta and 2,390,000 acre-feet for salinity control, there would still have been a 2,169,000 acre-feet in the driest year. (The Trinity Diversion proposes transportation of Trinity River water through a tunnel into the Sacramento River to augment the regulated flow of the Sacramento River from Kennett Reservoir under the ultimate plan for full conservation and development of the water supply of the Sacramento River Basin. However, it is not a unit in the initial development program.)

2. The invasion of saline water in the upper San Francisco Bay and Sacramento, San Joaquin Delta could be effectively and positively controlled to the lower end of the delta by fresh water releases from mountain storage reservoirs.

3. A salt water barrier located at any of the three typical sites investigated, below the confluence of the Sacramento and San Joaquin rivers would not be necessary or economically justified as a unit of the State Water Plan.

4. The industrial, municipal and agricultural developments of the upper San Francisco Bay region could be adequately and dependably supplied with their fresh water requirements from the fresh water controlled channels of the Sacramento-San Joaquin Delta at a cost of less than half that required for equivalent service with a barrier. The proposed

(Continued on page 26)

State Edifices in South Dedicated; Governor James Rolph is Chief Speaker

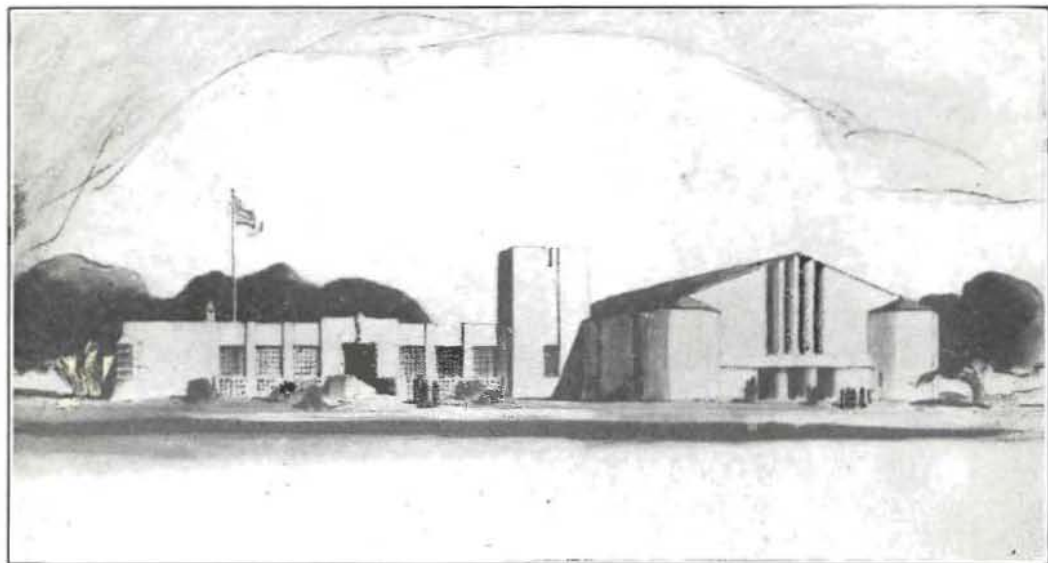
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WHILE some 2000 persons stood with heads uncovered Governor Rolph on Thursday, March 5th, sealed in its place the great granite corner-stone of the new State Building, now under construction in the Civic Center of Los Angeles. With a silver trowel he spread cement over the seams of the ponderous block, locking securely beneath it a copper box containing miscellaneous documents that will give to future generations a picture of Los Angeles as it is today.

gotten; days of depression will have passed and we will have ushered in a new day.

"Times are getting better daily—there is evidence on every hand. The railroads are carrying more freight and the steamships more cargo than they were thirty days ago. Yesterday Uncle Sam opened bids for construction of Boulder Dam—and the diversion of the Colorado River will bring new and greater prosperity to California by quenching the thirst of those arid lands and paving the way for vast industrial enterprises.

"And now, as I help to put this stone in place, I ask the blessing of God on the great State of California."



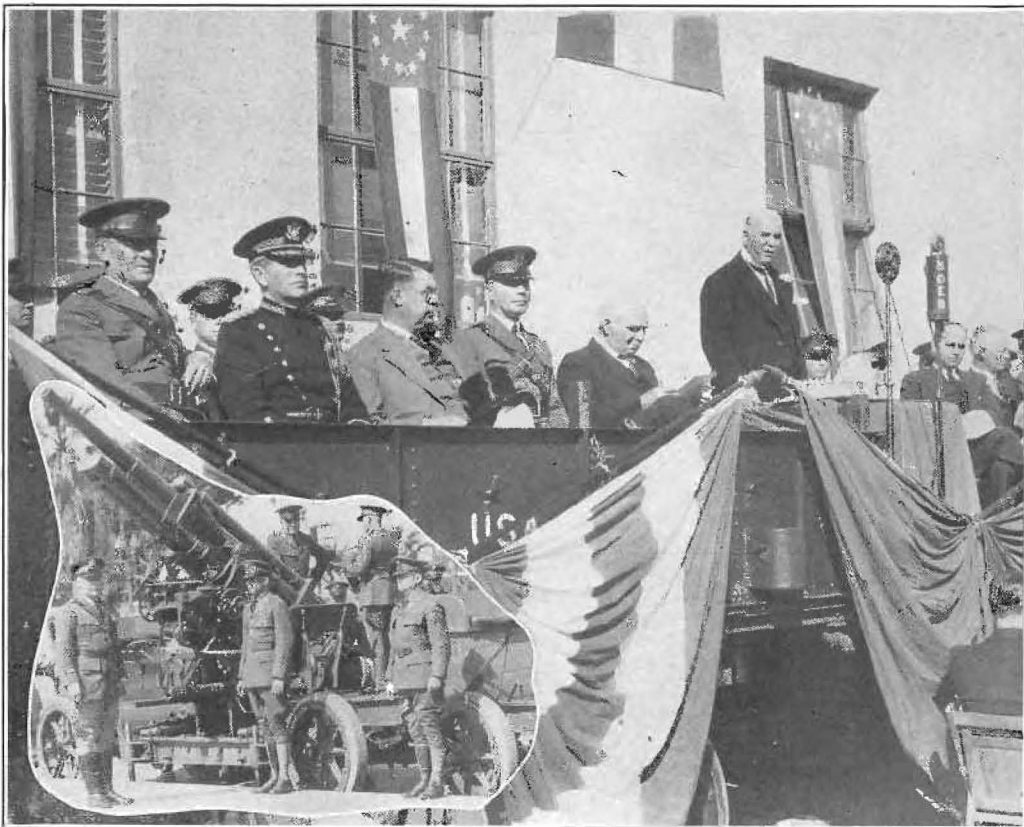
The New Armory at Long Beach

Encouragement for the immediate future was the keynote of Governor Rolph's address. In fact, during the course of it, he alluded to the stone as "the cornerstone of better times."

"We have witnessed in our lifetime many cornerstone layings such as this," he said, "but how often have we thought of the significance attaching to the laying of the corner-stone of this great universe by the Maker? And what lesson have we derived therefrom?"

"This is indeed a happy occasion, for it witnesseth another milestone in the completion of this mighty edifice of the people. * * * And may I tell you that the people of California have set aside \$5,200,000 for other State buildings; nine of which are to be erected in your midst. And with the commencement of work I am confident dull times will have been for-

In the copper container that now lies under the cornerstone are copies of the plans of the building, photographs of the architect's drawing, portraits of Governor Rolph, Lieutenant Governor Merriam, Director of Public Works Garrison and Mayor Porter; pictures of the State Capitol at Sacramento; copies of the State budget and Governor Rolph's inaugural address; yesterday's editions of all Los Angeles newspapers, copies of the Native Sons of the Golden West Magazine, the Grizzly Bear, and of the Women's Christian Temperance Union organ, the Signal, and thirteen telephone directories containing the names of all subscribers in Los Angeles County.



Governor Rolph Speaking at the Dedication of the Long Beach Armory; Seated to the right of Governor Rolph is Lieutenant Governor Merriam; others on the speaking stand (reading from left to right) are Col. Charles S. Lincoln, U. S. A.; Brigadier General Seth E. Howard, Adjutant General, N. G. C.; John Chamness, President, Long Beach Chamber of Commerce; Lieut. Col. Cross, U. S. A.

The inset is a view of the gubernatorial salute, fired in Governor Rolph's Honor, when he arrived in Long Beach.

The actual cornerstone laying was conducted under auspices of the Grand Parlor of the Native Sons of the Golden West.

The formal ritual read by the Native Sons brought out the fact that the sand, cement and water used in the process had been obtained from widely separated sections of the State, thus constituting "the very essence of her being."

John C. Austin, architect of the new building, presided on the speakers' platform, on which were seated State, county and city officials and a number of prominent laymen. After an invocation by Bishop Cantwell, brief addresses were given by Mayor Porter, Councilmanic President Sanborn, Henry W. Wright, chairman of the Board of Supervisors; J. A. H. Kerr, president of the Chamber of Commerce; Mrs. Lillie Dyer, founder of the Native Daughters of the Golden West; Chief Justice of the Supreme Court Waste and Associate Justice Seawell.

LONG BEACH ARMORY DEDICATED

On Saturday, February 21, 1931, at Long Beach two elaborate functions marked the dedication of the National Guard armory building recently completed in that city by the Division of Architecture.

The first of the two functions was a luncheon that was given in honor of Governor Rolph and Adjutant General Howard at the Pacific Ocean Club. The second was the formal dedication ceremonies.

The arrival of Governor Rolph at Long Beach was announced by a salute of seventeen guns.

The guests besides the Governor and the Adjutant General, included numerous high ranking officers of the Regular Army and of the National Guard. The large dining room of the club was filled to capacity with prominent citizens of Long Beach. Lieutenant Governor Merriam presided as toastmaster.

Owing to the shortness of time the speak-

(Continued on page 28.)

Highway Patrol Squads to Compete in Lowering California Motor Death Rate

HOPEFUL of making material reductions in the toll of deaths and accidents on the highways of California, the new management of the California Highway Patrol has hit upon an unique system for measuring the efficiency of the various county squads operating as units of the patrol.

Under the new plan each squad will be charged with the responsibility of keeping the death rate down in its respective territory and formal citations will be issued to each squad able to show a reduction in deaths at the end of each year over the previous year.

The squads showing a reduction at the end of each year will be placed upon an honor roll in the order of the amount of such reduction when related to other factors.

In determining the order in which the honor roll squads will appear consideration is given to the number of officers in the squad, the county area, the road mileage, population, and motor vehicle registration.

The efficiency of the men will thus be rated upon the decreases in the death rate shown rather than upon the number of arrests for motor vehicle violations.

The new management of the patrol hopes to stimulate a spirit of competition in this manner among the squads for high places on the roll.

The squad making the best record each year will be awarded place No. 1 on the roll and will be given a loving cup donated by the safety conference of the California State Chamber of Commerce.

This trophy will be presented the winning squad with appropriate ceremonies by Governor James Rolph, Jr., each year. It will become the permanent property of the squad winning it three times.

The initial awards for reductions in deaths in 1930 under 1929 put eighteen squads on the honor roll.

The Riverside County squad with a decrease in deaths of 33 per cent takes place No. 1 on the roll. The loving cup has been presented to Captain J. R. King and his squad and will remain in the custody of this squad unless won by some other squad next year.

The other seventeen squads appear on the honor roll in the following order:

Ventura, San Joaquin, Fresno, Kern, Merced, Del Norte, Butte, Imperial, Colusa, San Benito, Lassen, Sutter, Glenn, El Dorado, Solano, Sierra and Kings.

Ventura County had the same amount of deceases as San Joaquin but took second place because consideration was given to the greater percentage of decrease,

the smaller size of its squad, heavier traffic and other factors. Fresno and Kern counties showed equal reductions in deaths but the percentage of reduction being greater in the case of Fresno coupled with the fact that it has fewer patrolmen per mile of its highways gave that county its position above Kern on the roll.

It is significant to note that marked increases in deaths occurred in such counties as Trinity, Plumas, Nevada and Inyo, where, due to a shortage of men, little or no patrolling was possible during the year.

Neatly arranged citation certificates displaying the great seal of California and showing the position of each squad on the honor roll have been presented to each of the squads on the roll.

E. Raymond Cato, superintendent of the patrol and sponsor of the new plan has this to say for it:

"We hope by this system to put the men on their

MOTOR SQUAD HONOR ROLL

Award Number	County Squad	Squad Captain	Deaths		
			1929	1930	Reduction
1	Riverside	J. R. King	39	26	33
2	Ventura	S. M. Flynn	33	22	33
3	San Joaquin	L. S. Drais	56	43	23
4	Fresno	W. L. McCarty	51	41	19
5	Kern	L. F. Galyen	69	59	14
6	Merced	W. A. Burch	27	19	30
7	Del Norte	Edgar Huffman	8	2	75
8	Butte	G. C. Mitchell	11	7	36
9	Imperial	A. F. Oswalt	29	25	14
10	Colusa	D. Ins. R. L. Sheldon	10	7	30
11	San Benito	Chesley Joice	6	4	33
12	Lassen	A. W. Lamme	4	2	50
13	Sutter	G. W. Brown	3	1	67
14	Glenn	E. Breuss	2	0	100
15	El Dorado	E. A. Brewster	8	6	25
16	Solano	Frank Silva	20	18	10
17	Sierra	Insp. A. J. Ponta	2	1	50
18	Kings	A. J. Overstreet	15	14	7

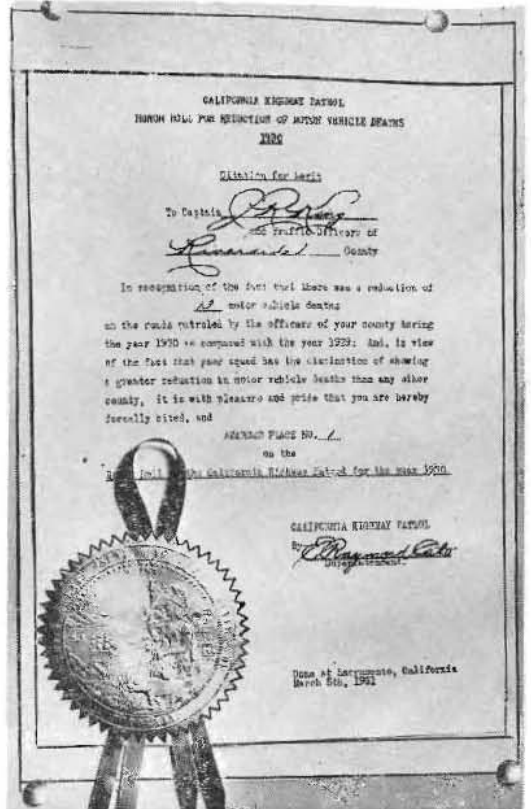
mettle, to create among them a sense of responsibility for the lives of the persons using the highways they patrol.

"It is a basic principle that the real purpose of all motor law enforcement is the protection of life and property. Using this as a conclusion, it follows that the real measure of the officer's efficiency is not the number of arrests he makes but the number of lives he is able to save.

"By stimulating a spirit of competition among the squads for high places on the honor roll it is our hope that the men may be induced to study traffic conditions in their respective districts and to take steps to eliminate traffic hazards thereby reducing accidents."

The citation system put into effect will be augmented by an improved system of record-keeping in the headquarters of the patrol at Sacramento. In this system will be kept the record of every person convicted of a major violation of the Motor Vehicle Act in the State and of every driver involved in a major accident.

It will thus be possible for the patrol to check against the habitual violator. When the same person is found to be involved in two or more accidents within a short period of time, the patrol will make an investigation to determine if the circumstances were merely coincidental or due to some basic fault of the driver. The same system will be employed in checking the records of persons convicted of two or more major violations within a short period.



A Citation for Merit.



The Riverside County Squad of the California Highway Patrol; Standing (left to right), Capt. J. R. King; Officers J. O. Linthicum, D. J. Jessup, C. W. West, Charles Gandy, George Baker, George Atkins, R. E. Dillou; second row, A. R. Hastings, B. F. Nelligan, S. R. Tyson, T. F. Wilson, G. R. Redwine, Gene Henderson, O. E. Townsend.

Closing the East-of-the-Sierras Gap

By F. G. SOMNER, District Engineer, District Nine

ON FEBRUARY 22d "Closing the Gap" in the State highway improvements, Mojave to Sherwin Hill in Mono County, distance 200 miles, was celebrated.

The celebration was held under the auspices of the High Sierras Recreational Association and took place in Red Rock Canyon in eastern

Kern County, 24 miles north of Mojave, a fitting place for the scene of this celebration and an appropriate section chosen to mark the completion in the last link in this thoroughfare. The completion on January 31, 1931, of the George Herz contract from Cineo to seven miles north of Ricardo,



F. G. SOMNER.

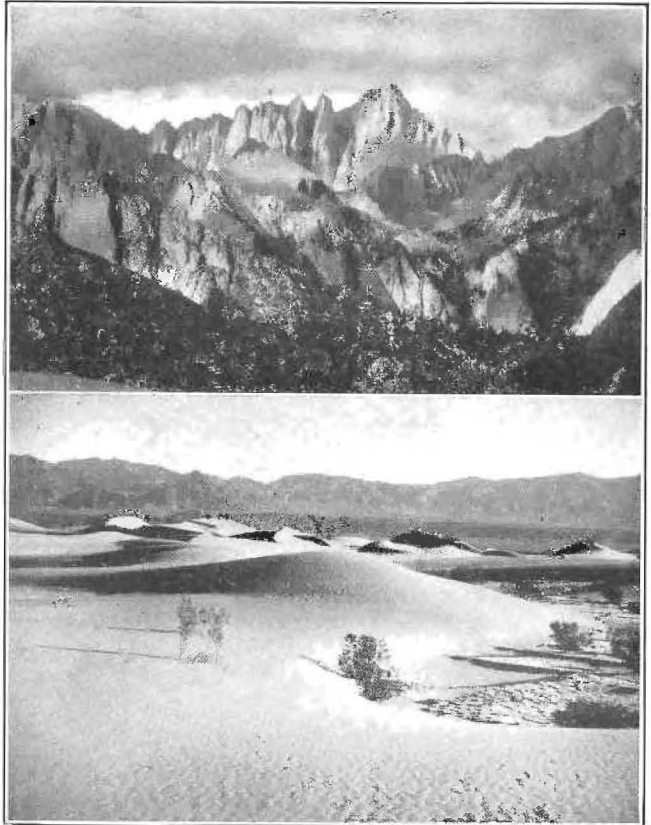
length 15 miles, sets at rest forever the terrors of Red Rock Canyon, the greatest barrier to travel within District IX, owing to the old road having occupied the floor of the canyon, subjecting travelers to the dangers of being caught in roaring currents from periodical cloudbursts originating within a vast drainage area at the head of the canyon. The new highway, 36 feet wide, is constructed on excellent alignment, well above the flood waters of the creek. Portions of embankments exposed to the flood have been protected by rock slope pavement well anchored below the creek bed.

State Highway Commissioner Harry A. Hopkins of Taft was the official representative of Governor Rolph at the celebration. Earl Lee Kelly, chairman of the Commission, was also present. Both commission-

ers addressed the gathering, extending the felicitations of Governor Rolph and the California Highway Commission upon the happy occasion that the day celebrated.

Above the canyon portions of Red Rock the creekbed widens, with consequent decrease of both velocity and depth of the flood waters, admitting of the crossing and recrossing of the waters in order to secure proper alignment. The crossings are accomplished by means of concrete paved dips. As a substitute for expensive bridges this type of construction was deemed advisable by reason of the freakish character of the cloudburst floods, including indeterminate flow, together with impending treacherous channel changes.

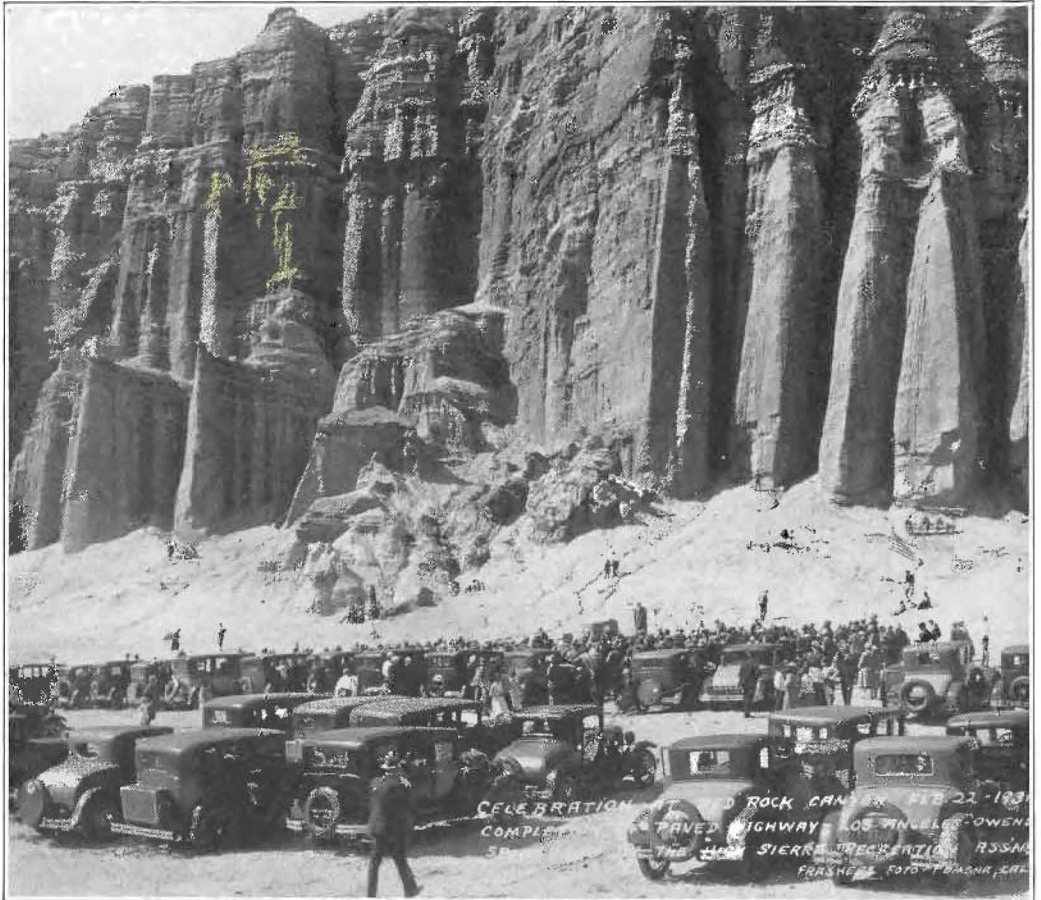
Red Rock is presided over by Rudolph



The highest and the lowest points in the United States: The upper view shows the summit of Mt. Whitney, elevation 14,496 feet; the lower view is in Death Valley, 310 feet below the sea level; both are served by the highway, of which this article tells.

Hagen, who has lived there some thirty years and who jealously guards from vandalism the fantasies of nature's handiwork engraved on the canyon's walls, intermingled with glistening and varying colors. The canyon is extremely popular as a week-end sojourn, the visitors gazing in awe at these tremendous formations. Much has been written of its scenic specialties, such as the White Chapel,

State Highway Department. Such conjectures were set aside by State Highway Engineer Purcell, who gave the assurance that the Organ Rock would not be disturbed by the highway construction. This monument of nature's handiwork stands intact but the injured little "Lady at the Organ" sits in mute appeal to the passersby for restoration of her former self.



View at the Dedication Ceremonies in Red Rock Canyon.

Sand Temple, Capitol Rock, Liberty Dome, Royal Gateway, etc. The Iron Canyon, a tributary from the west, affords equal attractions, a result of the most peculiar freaks of nature's erosions.

The outstanding scenic feature is the Organ Rock, with the "Lady at the Organ," now a pathetic figure, having been disfigured by vandals. Organizations interested in the preservation of nature's handiwork, and feeling that the erection of the State Highway in such close proximity to the Organ Rock would result in its destruction, made protests to the

THE LAST LINK

Route 23 of the California State Highway extends from Saugus, in Los Angeles County, to Markleville, county seat of Alpine County.

The "Closing the Gap" relates to the last link in the completion of a hard surfaced road constructed to modern standards on Route 23, from Mojave, distance 200 miles, to the Sherwin Hill summit in Mono County, entrance to the extensive recreational area, and far beyond.

When the first California State Highway fund of \$18,000,000 was created, effective

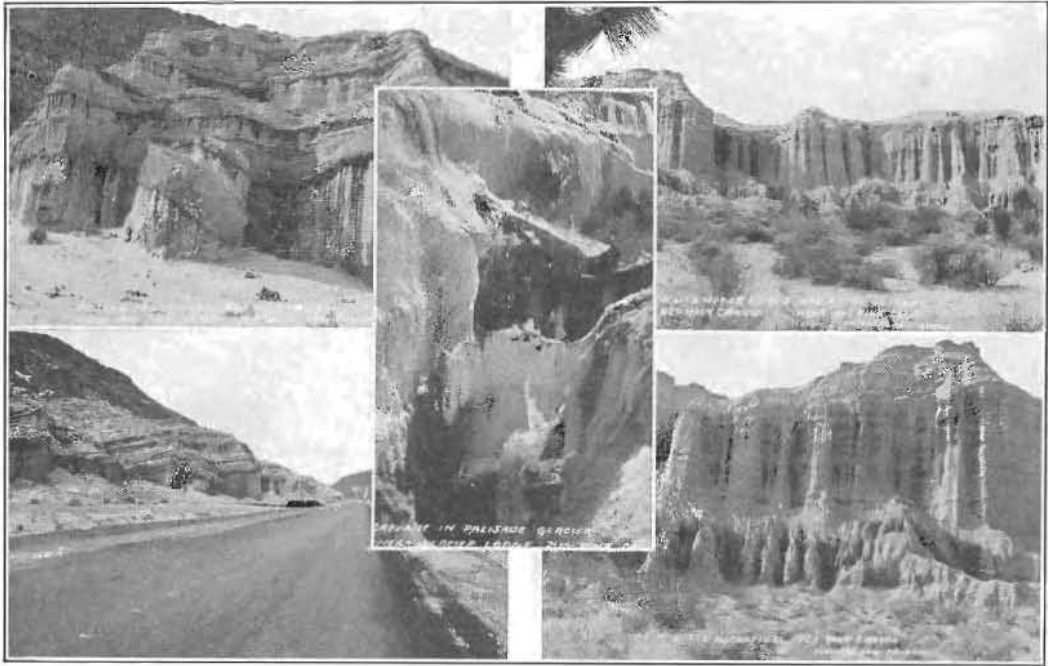
January 1, 1912, there were many demands for the limited allocation of funds to District Six, which covered an extensive mileage. Sand, interminable sand, was the problem east of the High Sierras, accompanied by narrow roadway, crooked alignment and poor drainage. It was imperative that the limited funds be devoted to removal of actual barriers to travel, and very little could be done in the way of permanent improvement. An eight-mile stretch of oiled macadam, together with eight miles of concrete pavement eight feet in width, comprised the hard surfaced roads at the creation of District Nine in October, 1923.

Very little relief was afforded by subsequent bond issues or the Two-Cent Gas Tax

an oiled rock surface. Between Sherwin Hill and George's Creek, ten miles north of Independence, distance 73 miles, the road mix method was employed, the work having been accomplished by day labor. From George's Creek north to Mojave, distance 124 miles, the plant mix method prevailed, and the work all done by contract, divided into eleven jobs, with strict adherence to the precepts of the Research and Material Departments insisted upon.

The roads were built at a reasonable expense. The result is a road reputed to be as fast as any in California.

The trip from Bishop to Los Angeles is no longer a task but a pleasure, and to be added



More views along the highway in Red Rock Canyon: At the upper left are the Pillars of Hercules; upper right, the White House Cliffs; lower left, The Organ Rock; lower right, the Worshippers; inset, Crevice in the Palisade Glacier, the farthest southwest glacier in the United States.

Measure enacted in 1923. The "two ruts in the sand," as the conditions then existing may best be described, received little attention prior to the One-Cent Gas Tax Measure in 1927. Meantime every effort was made to facilitate travel over the whole of the district, and despite the lack of funds a noticeable transition from very bad to easy travel conditions was effected.

"CALIFORNIA MIX" PAVEMENT

The type of pavement employed in the improvements is the well-known California Mix, consisting of a crushed rock base with

is the decreased cost of operating motor busses and freight lines, with corresponding reduction in tariffs.

"SOMETHING OF EVERYTHING"

"Something of everything" is nature's dispensation to the travellers along the State Highway from Mojave to the summit of Sherwin Hill, distance 200 miles. Across the Mojave Desert and through Red Rock Canyon, described in the first chapter of this narrative, and on to Indian Wells Valley. Try the bass fishing, quail and duck hunting at Little Lake, then through Rose Valley past

Cowan Station and Olancho. Look to the left when you reach Lone Pine, at snow capped Cathedral Peaks of the High Sierras, including towering Mount Whitney, the highest mountain in the United States, elevation 14,496 feet; continuing on alongside the Los Angeles city aqueduct and through Owens Valley, cultivated landscapes of hills and valleys, peaceful towns, including Independence, the county seat of Inyo County, and Big Pine.



State Highway Commissioner Harry A. Hopkins, who officially represented Governor Rolph at the Red Rock dedication.

Just to the west lies the Palisades Glaciers, notable as the most southerly glaciers of the United States. You have passed the Panamint Range on the right, bordering on Death Valley, lowest point in the United States, elevation—310 feet, wonderland of thrilling adventure, with all the attributes that make up desert appeal. Still along the base of the High Sierras and passing through Bishop, the metropolis of Inyo County; on twenty miles further, ascending the summit of Sherwin Hill, the gateway to the vast amphitheatre of recreational area, a wonderland of unsurpassed grandeur, known until a few years ago only to disciples of Isaae Walton and nimrods. Look in all directions, snow-capped Cathedral

COMMISSIONER REARDON TAKES PUBLIC WORKS REARDON TO TASK OVER FENCE

(From the Oakland Tribune)

Timothy A. Reardon, State Highway Commissioner and President of the San Francisco Board of Public Works, today is conflicting with himself over the repair of a worn out fence on Twin Peaks Boulevard.

According to the story, Reardon, as Highway Commissioner, inspected the worn out fence and decided that himself as President of the Board of Works should do something about it.

As President of the Board of Public Works, he told himself that he was too busy to attend to the job.

"I almost came to blows with myself," he said, "but anyway, the fence will be built. I've promised that to the State Highway Commissioner."

Peaks of the High Sierras, over the summit the famous Minarets overlooking the Thousand Islands at the head waters of the San Joaquin River, home of the golden trout. Also the Mammoth Lakes and thousands of other lakes and streams. This virgin country which man has done nothing to wreck, free from litter and stench, goes on and on as far as eye can see. Those "weary of the roar of the great cities, the fretful stir, unprofitable, and fever of the world" may spend a lifetime of vacation periods reveling each year in new scenes amidst the quiet of mountains, lakes and streams, and their slogan will ever be "See the High Sierras first."

So much for the recreational value of this improvement to the traveling public and commercial interests of Inyo and Mono counties. The closing of the gap is a not unworthy chapter in the epics of the accomplishments of the State Highway organization. Route 23 through eastern Kern County, Inyo and Mono counties furnishes the following interstate connections: From Big Pine to Goldfield, Nevada, via Oasis; from Bishop north to a connection with the Nevada Highway over the Montgomery Pass and on to the east and to the boundary between Mono County, California, and Nevada at the north limits of District IX. A connection extends from the Mono Basin over the Tioga Pass to the San Joaquin Valley, and also from a connection with the Sonora Road, 18 miles north of Bridgeport.

OF MILITARY IMPORTANCE

The relations between Route 23 and the munitions plant under construction at Haw-

(Continued on page 18.)

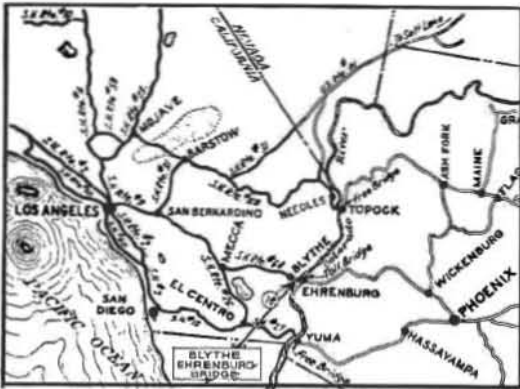
Will Buy Interstate Highway Toll Bridge

ANNOUNCEMENT that an agreement had been reached between California and Arizona and the owners of the Ehrenberg toll bridge over the Colorado River near Blythe in Riverside County for the joint purchase of this structure by the two states, was made on Saturday, March 7th, by Governor James Rolph, Jr.

Negotiations between the bridge owners and representatives of California and Arizona have been in progress in Sacramento for several days. California was represented in these negotiations by Colonel Walter E. Garrison, director of the Department of Public Works, and State Highway Engineer C. H. Purcell. Arizona was represented by State Highway Engineer W. W. Lane. These negotiations were instituted upon instructions from Governor Rolph, following a conference that Governor Rolph held with Governor Hunt of Arizona, and are a phase of the announced policy of Governor Rolph to foster



View of Ehrenberg Bridge.



Map showing location of Ehrenberg Bridge.

and promote a closer friendship with and cooperation between California, Arizona and other neighboring states.

The acquisition of this bridge by California and Arizona will eliminate the present unhappy situation of travelers into California coming from the east via Phoenix being compelled to pay a toll upon their first entrance into California. State highway officials here stated that under the agreement the bridge would be a free structure by September 1st.

Both California and Arizona contemplate spending large sums of money out of their present budgets on roads leading to this

bridge. The expenditures proposed by Arizona were from Federal funds. Objection was made by the Federal government to the fact that the highway upon which the expenditures were to be made lead to a privately owned toll bridge. Under the agreement completed today these objections will be withdrawn and Arizona permitted to undertake the proposed improvements. These improvements consist in general of a relocation of a large part of the highway from Phoenix to the Colorado River. This work will transform the present desert road into a high speed, well aligned highway. California is relocating its highway leading to this bridge in many places and converting it into a fine, modern road.

Governor Rolph and the people of California are overjoyed at the renewal of friendship between Governor Hunt and the people of Arizona.

WEBSTER IS WRONG AGAIN

Draftsman: A man who puts his ideas on paper for the boss to change.

Checker: A man with a blue pencil but no conscience.

Tracer: A slave, who, knowing himself, never understands what the draftsman thinks he knows.

Last but not least.

Engineer: A mechanical (?) genius who spends his time thinking up ideas which he refuses to recognize when he meets them on a drawing.—*Professional Engineer.*

Text of Report of Governor Rolph's State Water Conservation Committee

THE following is the text of the report made to Governor Rolph by his Water Conservation Committee upon its return on February 23d from Washington, D. C., where it conferred with President Hoover and members of Congress relative to the California State Water Plan. Attached to the report is also the text of the Committee's address to President Hoover.

The complete text of these reports is found herein:

REPORT TO GOVERNOR ROLPH

Sacramento, February 24, 1931.

HONORABLE JAMES ROLPH, JR.,
Governor of the State of California,
State Capitol,
Sacramento, California.

MY DEAR GOVERNOR:

The committee appointed by you to proceed to Washington, D. C., to confer with officials of the United States on the California State Water Plan, begs leave to submit the following report:

Membership of Committee.

The personnel of the committee was:

Colonel Walter E. Garrison, Director of Public Works, Chairman.

Edward Hyatt, State Engineer.

Major A. M. Barton, Chief Engineer, State Reclamation Board.

W. B. Mathews, General Counsel, Metropolitan Water District.

State Senator B. S. Crittenden, Chairman Legislative Water Committee.

State Assemblyman Robert P. Easley, Member State Legislative Water Committee.

W. M. Wiley, Secretary Kern County Water Commission.

Objectives.

The first recommendation of the California Joint Federal-State Water Resources Commission, whose report was presented in January, was that "a Commission authorized to represent the State be appointed to go to Washington and endeavor to come to a definite understanding with the executive department of the Federal Government" on these matters.

While the main objectives of your committee were well expressed in this report, the committee also had in mind the arranging, if possible, for an inspection on the ground of the California water project by subcommittees or members of Congress next summer, and for the transmittal to Congress and making public by the Army Engineers the report of the War Department on this project. Minor objectives were conferences with many Federal departments relative to cooperation with the State in various matters not directly connected with the water plan, if time permitted.

Appointments with the President, the Secretary of the Interior, members of Congress and others were made before leaving California.

Conference with President Hoover.

The committee arrived in Washington February 16th, and met with President Hoover that morning. We were very cordially received by the President and presented to him your message of greeting. After an opening statement, a brief written resume of the mission of the committee and of the California Water Plan was presented. This statement covers the entire subject and a copy is attached to this report as Exhibit A.

Conferences With Other Federal Officials.

During the next two days your committee

RECOMMENDATIONS

The following recommendations were made to Governor Rolph upon the return of his Water Conservation Committee from Washington, D. C.:

1. Immediate action by the California Legislature as recommended in the Federal-State report, in putting before the people of California the three constitutional amendments necessary for the execution of the plan. Detail of those amendments are given on page fifteen of the Federal-State report.

2. The informing of Congress of the water problems of California and the proposed plan by Congressional inspection trips, by furnishing to it data and information, and in all other ways possible.

3. Close and continuous contact with all Federal agencies interested.

Conferences With Other Federal Officials.

During the next two days your committee

called upon Dr. Ray Lyman Wilbur, Secretary of Interior; Dr. Elwood Mead, Commissioner of Reclamation; General George B. Pillsbury, Assistant Chief of Engineers, War Department; the Board of Engineers of the War Department, consisting of seven members; and officials and engineers of these and other executive departments.

Your committee also discussed the California Water Plan with Senators Johnson and Shortridge. A meeting was arranged with the California house delegation, which was attended by all California members except Congressman Clarence Lea, who was sick, at which meeting the whole plan was explained with the aid of a relief map sent to Washington for this purpose.

Your committee also called on Congressman Murphy, of Ohio, chairman of the Interior Department Subcommittee on Appropriations, relative to having his committee inspect the California water project next summer.

Final Conference President Hoover.

Before leaving Washington another meeting with the President was arranged, attended by Director of Public Works Garrison and State Engineer Hyatt, at which the progress made was explained to him. As before we were most graciously received.

Accomplishments.

The pressing water needs of California and the project to relieve present shortages with Federal-State cooperation as recommended in the joint Federal-State report were competently presented to both executive and legislative branches of the United States Government. In the executive departments a clear understanding of our water problems was found and effective cooperation received. Our congressional representatives, while helpful in every way possible, seemed unadvised of the plan and took the view that California must press the plan locally and enact the necessary constitutional amendments before definite action could be had from the United States.

Senators Johnson and Shortridge assured us that they would jointly request the Senate to appoint a Senate committee to inspect the area involved during the coming summer and report its findings to the next Congress, provided, that the report of the Army Engineers of the War Department is presented to Congress during the present session. The War Department has assured us that its report will be given to Congress before its adjournment, March 4th.

The California House Delegation passed a

resolution requesting all Congressmen visiting California during next summer, to avail themselves of the opportunity of investigating the California Water Conservation Plan. Congressman Murphy assured us that he and his subcommittee would visit California during the summer of 1931 and would devote at least four days to the inspection of this project. Dr. Wilbur, Secretary of the Interior, stated that he would accompany this committee during a part of that time. Dr. Elwood Mead, Commissioner of Reclamation, also signified his intention of accompanying this committee during its inspection of the project.

It is desired particularly to point out the importance of the report of the War Department and the progress made in expediting its transmittal to Congress. As soon as this report reaches Congress it is not only publicly available, but is officially before the Congress for action. Due to the telegrams sent by yourself, the assistance of our Senators and Congressman, and by the appearance of this committee before the Assistant Chief Engineer and the Board of Engineers, we believe that this report will reach Congress and the California Legislature promptly and afford material basis for action by the Legislature during its second session.

Conclusions.

Your committee believes that the recommendations of the Federal-State Commission have been carried out as far as possible at this time. With the information and assurances received by your committee from the executive and legislative departments of the United States the way is open for the State of California, through its Legislature, to proceed further by preparing and submitting to the vote of the people of the State the constitutional amendments necessary before the State can act.

In arranging for inspection of the project by congressional committees and members and by expediting the War Department report, much has been accomplished. The executive departments are well informed and are sympathetic to Federal cooperation on the California Water Plan. Congress, on the other hand, is not informed and much educational work will be necessary. Close and continuous cooperation between the State and Federal departments, both executive and legislative, will be necessary to put the plan into execution.

Recommendations.

1. Immediate action by the California Legislature as recommended in the Federal-State report, in putting before the people of

California the three constitutional amendments necessary for the execution of the plan. Detail of these amendments are given on page 15 of the Federal-State report.

2. The informing of Congress of the water problems of California and the proposed plan by Congressional inspection trips, by furnishing to it data and information, and in all other ways possible.

3. Close and continuous contact with all Federal agencies interested.

Other Accomplishments of Trip.

While in Washington it was possible to take up with various Federal departments many other matters of interest to California, particularly those affecting the Department of Public Works and the Reclamation Board. Conferences were held with officials of the Federal Power Commission; U. S. Geological Survey, both water resources and topographic branches; National Forest Service; Department of Agriculture; and War Department.

Arrangements were made whereby a \$5,000 additional Federal allowance will be made available during the present year for stream gaging in California, and a commitment secured for an allowance of \$100,000 for topographic mapping in California during the next biennium, contingent on being matched by the State, as compared to \$35,000 formerly obtained. Other important decisions, impossible of determination by correspondence were also arrived at. In view of the multiplicity of cooperative interests of the State and the United States along those lines, and the availability of Federal assistance, it is also recommended that much closer contact between State and Federal departments on these matters be maintained in the future than has been had in the past.

Accompanying this report are three exhibits as follows:

Exhibit A—Statement to President Hoover, February 16, 1931.

Exhibit B—Report of California Joint Federal-State Water Resources Commission.

Exhibit C—Small Map of California Water Plan as recommended by the State Engineer.

Respectfully submitted,

WALTER E. GARRISON,
Director of Public Works,
Chairman of Committee.

ADDRESS TO PRESIDENT HOOVER

The text of the committee's address to President Hoover, follows:

Willard Hotel, Suite 836,

Washington, D. C., February 16, 1931.

To the President of the United States.

Subject: *California Water Resources Commission*.
Members of the Commission:

Col. Walter E. Garrison, Director of Public Works,
Chairman.

Edward Hyatt, State Engineer.

Maj. A. M. Barton, Chief Engineer, State Reclamation Board.

W. B. Mathews, General Counsel, Metropolitan Water District.

State Senator B. S. Crittenden, Chairman Legislative Water Committee.

State Assemblyman R. P. Easley, Member Legislative Water Committee.

W. M. Wiley, Secretary Kern County Water Commission.

MR. PRESIDENT:

This Commission is here to ask your advice and help concerning a program of California water development, and as to how the United States can be interested in this subject which we think is of National importance.

Mr. President, I know that there are few, if any, men who personally know more about the California water situation than yourself, and, therefore, the engineering presentation need take but little of your time. We have heard and read your past public expressions regarding such great water storage projects as are proposed in California.

The California Water Plan has passed the visionary stage and is now definitely up for decision and a very potent factor in such progress has been your own interest and help in initiating the California Joint Federal-State Water Resources Commission and appointing thereon able and qualified representatives of the Federal departments concerned.

This Commission's report was made to you and to the Governor of California early in January and the first recommendation of the report was as follows:

First, that a Commission authorized to represent the State be appointed to go to Washington and endeavor to come to a definite understanding with the executive department of the Federal government as to the terms upon which it will recommend to Congress that Federal aid be extended, and also endeavor to arrange for the introduction in Congress of bills in conformity with such understanding. The importance of this can not be over-emphasized. There is reason to believe that there is in process of formulation a new policy with respect to the Federal relationship to the states as to water development. A Federal Commission is now studying this very question. Here there is a project most carefully investigated both by State and Federal agencies which should go ahead and to which any new policy to be adopted may well be related.

I may say, Mr. President, that Governor Rolph is keenly aware of the importance of water problems in California and in his inaugural address in January said that he stood ready as Governor to do everything in his power toward finding a practical solution of these pressing problems. Therefore, Mr. President, this delegation representing the whole State of California is here at the direction of Governor Rolph to follow up the report of the Federal-State Commission and to attempt to obtain information which will permit the California Legislature, which will meet again this month, to take the necessary forward steps.

As you well know, Mr. President, the main water problem in California is water shortage, shortage during summer and fall in many places and all year in others. The second problem is flood control. There is enough water to fill all requirements and what is needed and what must be had is regulation and distribution. The character of water problems differs somewhat in different sections, but all parts of the State have such problems.

The California Water Plan as recommended by the Federal-State Commission is essentially a relief project. It does not propose irrigation of new lands with consequent increase of the overproduction situation, but is limited to the relief of developed areas, facing retrogression or abandonment, unless help can be obtained. Relief is possible but only with the assistance of both the State and the United States.

The most pressing urgency in which the aid of the Federal government is believed justified and necessary is that in the Southern San Joaquin Valley. Here the stream flow is small and irrigation from wells

(Continued on page 30.)

Highway Moved to Save Historic Landmark

By L. E. McDougall, District Office Engineer

SOME 70 or 80 years ago there was built as a ranch house on the Rancho de Rios near San Miguel in San Luis Obispo County a two-story adobe building which was recently threatened with destruction in the widening of the main Coast Highway. As this was generally a reconstruction project, the survey crew were following the present pavement most of the way and due to the proximity of this adobe, which has stood close to the highway and partly on the right of way



View of Historic Caledonia Inn.

since the road was paved, it was evident that the widening could not proceed without the destruction of this old building as the railroad adjoined the highway on the opposite side.

It is the policy of the Division of Highways to conserve natural scenery areas and historical landmarks, and as soon as the matter was brought to the attention of the District Office, ways and means of preserving this edifice were studied. It was suggested that a retaining wall might be constructed under the front of the building, or that the building be moved back, but upon investigation of the structure, it seemed doubtful whether either of these methods could be carried out without seriously endangering the old adobe toward which time and the elements had not been too kind. It was finally decided that the only way of being certain of retaining intact this old landmark would be to curve the highway around in back of it which could be done without seriously sacrificing alignment. The future highway will therefore go to the west

of the building instead of following the present course.

Discussion by local and State-wide organizations when they were fearful of the destruction of this old building brought forth some interesting facts regarding this adobe and its connection with the early history of California.

The date of the building of this former ranch house is variously given as 1835 to 1858, but investigation would seem to discredit the earlier date. At that time a Spaniard, Senor Rios and his American partner, Mr. Reed, were the owners of the rancho south of San Miguel and even laid some claim to the mission with the result that adobe bricks from the ruins of the old mission were used to construct this two-story ranch house with walls twenty-four inches thick.

Some time early in the sixties, this ranch was purchased by George Butchart, a Scotchman, who turned the adobe into a roadside tavern and patriotically named it the "Caledonia Inn." It was made a regular stop for the stages and continued for at least the next twenty years to be a popular hostelry. When the railroad was built to San Miguel, the Caledonia Inn undoubtedly knew its most stirring scenes and events as the heads of some of the bandit gangs at various times made their headquarters here.

The first school in this section was held in one end of the inn, while at the other end was the barroom so essential to roadhouses of those days.

For many years, it was more or less abandoned during which time vandalism of various sorts brought destruction to portions of the old inn, but there still remain some of the handmade doors and casements, hand-hewn beams still support the second floor and roof and the typical balcony on the front is intact. The tile roof was taken down years ago, and now adorns a millionaire's bungalow in Catalina Island—so report has it.

So, though many a modern house or building may fall before the march of progress in the construction of highways throughout the State, every effort is made to preserve for future generations the few remaining landmarks connected with the earlier history of the State.

Accident Record of Young Drivers Alarming High

MORE rigid enforcement of the operator's license law to curb reckless youths operating motor vehicles has been recommended to the courts and the various police departments of the State and the California Highway Patrol by the Bureau of Research, Statistics and Traffic Safety of the Patrol.

This follows a study of accident statistics made by the bureau indicating that youths between the ages of 14 and 19 are involved in twice as many accidents as would be the same number of older drivers.

A study of the records for the first six months of 1930 shows boys of this age group were responsible for more than 1600 accidents involving death or injury to themselves and others.

The bureau believes that if the reckless youth persists in endangering his life and the lives of others there is only one thing to do and that is to cancel his license.

Reports of accidents among this group of drivers show a greater variety of surprising causes than in many of the groups of older drivers.

"The immature youth is inclined to be indiscreet and often does the most irrational and unusual things in his driving," the bureau's report said.

"The courts can aid materially in effecting a correction by promptly revoking or suspending the youthful driver's license in flagrant cases. After the license has been revoked, the courts should demand substantial proof from each driver whose license has been revoked that he has not driven a motor vehicle during the period in which his license was suspended.

"Unless a youth can drive as prudently and as carefully, as an adult, he should not be permitted to drive."

CLOSING THE EAST-OF-THE SIERRAS GAP

(Continued from page 12.)

thorne, Nevada, are set forth in an article by W. G. Scott, a member of the American Society of Military Highways, who played an important part in the promotion of State highways east of the High Sierras. In a comprehensive report on the proposed Military Highway from the munitions plant at Hawthorne to tidewater, he dwells upon its relations to Owens Valley as follows:

"As to the importance to Owens Valley of a highway between the munitions base and

tidewater open all the year, the advantage both to the naval depot and to the valley are so self-evident that little need be said. Allowances must be made for several distinct classes of traffic; that resulting from active operations by Los Angeles at the Mono Basin and other sources of water supply; traffic that will be inevitable between the naval depot and tidewater; commercial traffic by motor truck along the route; the stream of motor buses both ways; stage traffic and the possibilities of an increased traffic; important traffic occasioned by hydroelectric systems. All of these features point to the absolute necessity of a distinct two-way traffic system, which will place the towns of Owens Valley on one of the most important highways of America.

DREAMS OF FUTURE REALIZED

The closing of the gap is the bright spot in the lives of the people of this country. The dreams of many years of a smooth thoroughfare reaching for 200 miles along the base of the High Sierras has been realized, resulting in a tendency of a better understanding of the citizenship with each other, with corresponding closer relationship in both social and business life. There is sure to come a closer bond of understanding and neighborliness between Inyo and Mono counties and the southland.

This sportsman's paradise and remarkable scenic area unsurpassed is an everlasting heritage. The thoroughfare, which increases in popularity from year to year, will play a greater part from now on in the lives and happiness of the citizenship of Inyo and Mono counties.

Thus endeth the story of the "Closing the Gap." Fate will some time decree that the writer shall leave these parts, whether the journey be long or short, but his sojourn can be looked upon with great satisfaction. It has increased his respect and confidence in men, and sad will be the parting from a people virile, of high character and appreciative qualities, whom one learns to be fond of and enjoy.

It lies where Nature spread it,
Bringing gladness to our eyes,
Like a jeweled flame of tapestry
Beneath the azure skies;
The Owens Valley below it,
Where creeks and rivers swirl,
Just the High Sierras stretching
Down the middle of the world.

Revised classic: Hush, little ash dump, don't you cry—you'll be a golf course by and by.—Virginia Pilot.

Governor Rolph Tells Legislature Progress of Public Works Program

AT THE reconvening of the Legislature in its second session, Governor Rolph submitted the following report to the State Legislature, showing the progress made in advancing the State highway and State institutional building program:

In accordance with my request to the Department of Public Works, that all public works be speeded up as a measure of affording a larger measure of employment to labor and a larger market to business, very substantial progress has been made in making these policies immediately effective. This is true both in construction and maintenance operations of the Division of Highways, and in the building activities of the Division of Architecture.

Generally speaking, the State highway situation may be summarized as follows: State highway projects financed from the July 1, 1931-June 30, 1933, budget have been advanced as follows:

4 contracts awarded, total.....	\$491,200
3 projects now advertised for bids, total	1,011,500
32 projects to be advertised for bids April 1st, total	4,976,000
Grand total of advanced highway construction program	\$6,478,700

In addition to the construction, the specific State highway maintenance program has been advanced as fast as seasonal conditions permit. This specific maintenance program includes such work as spraying roadside vegetation; dust oiling; contract and day labor work for furnishing rock for base reinforcement and oil surfacing.

The cost of this work, which will be well under way by April 1st, will approximate \$577,500.

By May 1st a program of specific shoulder improvement on sections of highway in Imperial and Riverside counties will be started, expenditures upon which will approximate \$256,000.

It should be noted that this specific maintenance program is in addition to routine maintenance work and upkeep upon the State highways, which totals nearly \$300,000 per month.

Special unemployment relief work upon the State highway system is affording employment to 3056 men. Of this number 1200 men are employed in the five unemployment relief labor camps; 175 men are employed on the special relief projects out of Monterey, the men living in Monterey; 1681 men are employed on the special relief maintenance crews. These latter men work on the basis of three days a week.

It is of interest to note that a careful check made on the men employed on the Monterey project showed an average of four dependents to each man employed.

Detailed information as to the construction and specific maintenance program is attached to this report.

The State institutional building program also has been advanced in a most gratifying manner. I feel that the detailed progress reports attached hereto fully justifies the action of the Legislature in acceding to

the request made by me during the first half of the legislative session that the State Institutional Building Bills be passed in emergency preference order.

The following summary gives the status of building construction projects handled since January 5, 1931, by the Division of Architecture, Department of Public Works:

1. Total work put under way in field.....	\$ 973,185
2. Total work pending contracts being executed	307,000
3. Total work now being advertised for bids	294,000
4. Total work drawings under way.....	2,464,000
5. Total work awaiting securing of sites or information	1,424,000
6. Two projects awaiting appointment of architects in private practice.....	50,000
Total value of projects.....	\$5,512,185

MECCA-BLYTHE TOLL BRIDGE ACQUISITION

Upon my instructions, the Department of Public Works has thoroughly investigated the stability, the suitability, and the value of the Blythe toll bridge. Engineers of both states and the bridge company participated in this investigation, which has just been completed. A full report of the findings of this investigation will soon be ready for submission.

The importance of this structure as a part of the interstate highway system of California and Arizona was such that I felt it my duty to personally contact the Governor of Arizona and other officials of that state regarding this bridge. I found their attitude in this matter to be extremely cordial and agreeable. The State of Arizona is willing to cooperate with California to the fullest extent. Officials of that state expressed their willingness to participate to the amount of 50 per cent of a fair and just cost; the cost to be determined by joint action of the highway department engineers of the respective states and the bridge company.

The bridge company officials on their part have expressed their willingness to sell the bridge at a fair price. By agreement with Arizona officials, Colonel Garrison, Director of the Department of Public Works, and State Highway Engineer C. H. Purcell, have entered into negotiations with the bridge officials.

In connection with the bridge, it will be necessary to add to the State highway system a piece of now existing county road adjacent to the bridge, and about four miles long.

The reports and proposed methods of purchase will be completed in ample time for the Legislature to take action during the present session.

The acquisition of the bridge by California and Arizona will eliminate the present unhappy situation in which travelers from the East find themselves compelled to pay a toll at their first entrance into California.

In order that a complete picture may be shown, I might further state that this bridge crosses the Colorado River at a point near Blythe. The desirability of making it a free structure to travel can be seen in the fact that it forms a direct interstate connection between Route 64 (Mecca to Blythe State highway) in California and the Wickenburg-Ehrenburg

road in Arizona. It forms an important gateway into California for transcontinental traffic through Phoenix from the East.

The states of California and Arizona contemplate, in their present budgets, to spend large sums of money on the roads leading to this bridge. The state of Arizona proposes to relocate a large part of the present road between Phoenix and the Colorado River. In so doing, it will transform the present desert road into a high speed, well aligned highway. Likewise, California is relocating its Route 64 in many places and transforming this important road into a high speed highway. The budget for the 1931-1933 biennium carries an appropriation of \$300,000 for this road. It is certain this route is destined to become one of the most important and heavily traveled roads leading into southern California and Los Angeles from the East, and that traffic over this route will be increased to many times its present travel.

DETAILED REPORT OF ADVANCED PROJECTS—DIVISION OF HIGHWAYS

Attached is a list of the projects included in the advanced program of the Division of Highways:

CONTRACTS AWARDED.

State Highways

Redwood	148-foot timber bridge across Mark West Creek, Sonoma County; \$22,200.
Carmel-San Simeon	Grading 8.6 miles, Rocky Creek to San Remo Divide, Monterey County; \$100,000.
Valley Route	Concrete paving 7.8 miles, Stockton to Calaveras R. and Harney Lane to Houston School, San Joaquin County; \$284,000.
Redwood	Grading portions, Arnold to Pepperwood School, Mendocino County; \$85,000. Total work under contract, \$491,200 WORK ADVERTISED.
Bayshore	Concrete bridge across San Francisco Creek, San Mateo County.
Valley Route	Bituminous treated shoulders, 30.3 miles, Grapevine to Bakersfield, Kern County.
Redwood	Grading and surfacing 13.5 miles, Pepperwood School to Little Dann Creek, Mendocino County. Total work now advertised ----- \$1,011,500

WORK TO BE ADVERTISED BY APRIL FIRST

Carmel-San Simeon	150-foot concrete arch bridge across Garapata Creek, Monterey County.
San Diego-El Centro	Concrete paving 9.3 miles, La Posta Creek to Tecate Divide, San Diego County.
Coast Route	Grading and concrete pavement, 11.1 miles, 2 miles east of Salinas to north boundary, Monterey County.
Red Bluff-Susanville	Rock surfacing, 7.3 miles, Dales to Paynes Creek, Tehama County.
Saratoga-Blooms Mills	Grading and surfacing 3.5 miles, Waterman Switch to Saratoga Gap, Santa Clara County.
Bayshore	Concrete paving, 3 miles, Burlingame to San Mateo, San Mateo County.
San Diego-El Centro	Grading and paving 0.5 of a mile, east of El Cajon, San Diego County.
Arroyo Seco	Grading 5.1 miles, 4 miles north of La Canada and Colby Canyon, Los Angeles County.
East of Sierras	Grading 14.2 miles, Bridgeport to Sonora Junction, Mono County.
Coast Route	140-foot concrete bridge across Carnadero Creek, Santa Clara County.
Redwood	Bituminous macadam surface 10.1 miles, Loleta to Eureka, Humboldt County.

Nevada City Lateral	Grading 1.4 miles, Wise Power House to Auburn, Placer County.
Coast Route	Asphalt paving 3.7 miles, Wignmore to Los Alamos, Santa Barbara County.
Valley Route	Asphalt pavement 12.1 miles, Goshen to Kingsburg, Tulare County.
Redwood	Grading near County line, Mendocino County.
Pacific Highway (West Side)	Grading and graveling 4 miles, Williams to 4 miles south, Colusa County.
San Marcos-Sequoia Park	Oil rock shoulders, 0.3 of a mile, Plaza Garage to 0.3 of a mile west-erly, Tulare County.
Valley Route	Grading 5.2 miles, Canton Creek to Piru Creek, Los Angeles County.
Coast Route	30-foot asphalt pavement, 3.2 miles, Serra to San Clemente, Orange County.
San Diego-El Centro	Bridge and concrete pavement, approaches, across Boundary Creek, San Diego County.
El Centro-Yuma	Asphalt pavement widening 20.9 miles, Highline Canal to Sand Hills, Imperial County.
Redwood	Bridge across Bel River at Dyer-ville, Humboldt County.
Alturas Lateral	Crushed gravel surfacing 66.1 miles, Fall River to Hat Creek, Shasta and Lassen counties.
Pacific Highway	Bridge across Clear Creek, Shasta County.
Feather River Lateral	Grading 1.2 miles Spanish Creek to Keddie, Plumas County.
Placerville-Tahoe	Paving 0.4 of a mile, Placerville city limits to Clark and Main Streets, El Dorado County.
Placerville-Tahoe	Paving 6.8 miles, Brighton to Mills, Sacramento County.
Pacific (East Side)	Bridge across Coon Creek, Placer County.
Stockton-Santa Cruz	Bridge across Walker Slough, San Joaquin County.
Stockton-Santa Cruz	Bridge across Homestead Canal, San Joaquin County.
Valley Route	Paving 7 miles, Turner Station to Stockton, San Joaquin County.
Placerville-Tahoe	Oil surfacing 1.6 miles, Placerville to railroad crossing, El Dorado County. Total to be advertised by April 1st-----\$4,976,000 Grand total of contracts awarded, work now being advertised, and work to be advertised by April 1st-----\$6,478,700

SPECIFIC MAINTENANCE PROJECTS

In addition to the routine maintenance work of upkeep to the State highways which totals nearly \$300,000 each month, the Maintenance Department is making every effort to advance the specific program as fast as the seasonal conditions of the road will permit.

The spraying of roadside vegetation is already under way in some sections and will be well completed during March. This work will cover some 1150 miles and represents an expenditure of \$80,000.

Specifications are being prepared covering the dust oiling work, which is one of the important seasonal programs from a motorist's point of view. This type of work is programmed for 1040 miles of roadway and 330 miles of shoulders at an expenditure in excess of \$300,000. The greater part of this work should be advertised and under way the latter part of April, although road and weather conditions must always be considered in this work.

Preliminary reports are prepared and specifications

under way for contract and day labor work for furnishing rock for base reinforcement and oil surfacing. The base reinforcement, etc., is estimated to cost \$225,000 and the armor coat and oil processing work about \$160,000. Approximately one-half of the rock will be produced under contract, and work will be under way as soon as contracts can be let, which should be by the middle of April. The balance of the rock will be purchased from commercial plants and hauled with rented or State-owned equipment. The oil work will follow the production of the rock, and is planned to start by May 15th. In addition to this work plans are under way for shoulder improvement in Imperial and Riverside counties totaling \$256,000. This work should start about May 1st.

DETAILED REPORT OF ADVANCED PROJECTS—
DIVISION OF ARCHITECTURE

In the preliminary paragraphs of this statement, a summary was given showing a total of \$5,512,185 in State building projects, which have been advanced in accordance with the administration's program. The following pages show the detail upon which the foregoing summary was based:

STATUS OF PROJECTS BEING HANDLED BY THE DIVISION OF ARCHITECTURE—1929 APPROPRIATIONS

1. Hospital building, Stockton State Hospital	\$92,000 00
Industrial building, Stockton State Hospital	22,500 00
Work under way in field.	
2. Physical education building, San Diego State Teachers College	10,000 00
Work under way in field.	
3. Unit for infirm patients, Patton State Hospital	45,000 00
Work under way in field.	
4. Dormitories and kitchen, School for Deaf	285,000 00
Work under way in field.	
5. Hospital building, Pacific Colony	98,000 00
Administration building, Pacific Colony	26,000 00
Industrial building, Pacific Colony	10,000 00
Bids received February 17, 1931.	
6. Administration building, California Institution for Women	100,000 00
Two ward buildings, California Institution for Women	106,000 00
Drawings 90 per cent complete.	
7. Pathological laboratory, Agnews State Hospital	80,000 00
Drawings started.	
8. Science building, Santa Barbara State Teachers College	110,000 00
Drawings 15 per cent complete.	
9. Warehouse, San Quentin State Prison	50,000 00
Work under way in field.	
10. Laundry building, San Quentin State Prison	45,000 00
Drawings 70 per cent complete.	
11. Cannery building, Folsom State Prison	20,000 00
Drawings completed.	
Work under way in field.	
12. Remodel old administration building, Folsom State Prison	20,000 00
Drawings 20 per cent complete.	
13. Ward building, Pacific Colony	55,000 00
Drawings 20 per cent complete.	
14. Office building at San Luis Obispo, Division of Highways	43,000 00
Drawings 100 per cent complete, but must be revised to reduce the cost of project.	
15. Ward unit, Southern California State Hospital	320,000 00
Drawings 100 per cent complete. Must wait for confirmation of site title or selection of new site.	
16. Miscellaneous minor construction work	56,185 00
Work under way in field.	

Chapter

19-31	1. Ward unit No. 2, Agnews State Hospital	\$320,000 00
	Work under way in field.	
20-31	2. Completion of ward No. 7, Mendocino State Hospital	60,000 00
	Contracts awarded.	

Chapter

22-31	3. Night employees' building, Norwalk State Hospital	37,000 00
22-31	Day employees' building, Norwalk State Hospital	33,000 00
22-31	Physician's residence, Norwalk State Hospital	8,000 00
23-31	4. Addition to Infirmary Unit, Patton State Hospital	40,000 00
	Drawings completed.	
	Will start construction immediately by day's labor.	
24-31	5. Employees' building, Stockton State Hospital	35,000 00
	Bids received Feb. 10, 1931.	
28-31	6. Employees' building and garages, Pacific Colony	54,000 00
	Drawings completed.	
	Bids to be received March 3, 1931.	
30-31	7. Cottage for boys, Whittier State School	40,000 00
	Drawings completed.	
	Bids to be received February 24, 1931.	
25-31	8. Live stock unit No. 2, Agricultural Park, Sacramento	140,000 00
	Drawings completed.	
	Bids to be received March 3, 1931.	
25-31	9. Poultry building, Agricultural Park, Sacramento	60,000 00
	Drawings completed.	
	Bids to be advertised February 27, 1931.	
17-31	10. Guards' cottages, Folsom Prison	25,000 00
	Drawings completed.	
	Work under way in field.	
10-31	11. Completion of gymnasium, San Jose State Teachers College	40,000 00
	Drawings 99 per cent complete.	
48-31	12. Club building, San Diego State Teachers College	15,000 00
48-31 &	Scripps cottage, San Diego State Teachers College	11,000 00
Gift Fund	Drawings 85 per cent complete.	
9-31	13. Dormitory building, California Polytechnic School	40,000 00
	Drawings 50 per cent complete.	
19-31	14. Attendants' building, Agnews State Hospital	90,000 00
	Drawings 20 per cent complete.	
49-31	15. Completion of auditorium, Chico State Teachers College	30,000 00
	Drawings 20 per cent complete.	
17-31	16. Cell block foundation, Folsom State Prison	25,000 00
	Drawings 20 per cent complete.	
28-31	17. Ward building, Pacific Colony	46,000 00
	Drawings 20 per cent complete.	
21-31	18. Remodel dining room and kitchen, Napa State Hospital	40,000 00
	Remodel amusement hall, Napa State Hospital	15,000 00
	Drawings started.	
57-31	19. Completion of San Francisco State Building	210,000 00
	Drawings 40 per cent complete.	
6-31	20. Rifle range at Oakland, California National Guard	7,500 00
	Work in field to start at once.	
4-31 &	21. Detention building, California Institution for Women	106,000 00
248-31	Drawings started.	

STATUS OF PROJECTS TO BE HANDLED BY ARCHITECTS IN PRIVATE PRACTICE—1931 APPROPRIATIONS

Chapter

S. B. 190	1. Dairy unit, Preston School of Industry	\$40,000 00
	Architect appointed: Russell Guerne de Lappe.	
	Conference held in State Architect's office and at Preston School. Instructions given. Preliminary studies being made. Project involves purchase of land.	
8-31	2. Library building, Fresno State Teachers College	125,000 00
	Architects appointed: Swartz & Ryland.	

Chapter			Chapter		
	Conference held in State Architect's office and at Fresno State Teachers College. Instructions given. Preliminary studies being made. Project involves purchase of land.			Architect appointed February 12, 1931: Frederick H. Eley. Conference held in State Architect's office and conference being held today at Narcotic Hospital, instructions to be given and preliminary studies will commence immediately.	
12-31	3. Gymnasium units, San Diego State Teachers College. Architect appointed: William H. Wheeler.	155,000 00	23-31	12. Dairy unit, Patton State Hospital. Architect appointed February 13, 1931: G. Stanley Wilson. Conference held in State Architect's office and conference being held today at Patton Hospital, instructions to be given and preliminary studies will commence immediately.	25,000 00
24-31	4. Remodel kitchen building, etc., Stockton State Hospital. Architect appointed: Peter L. Sala.	65,000 00	22-31	13. Ward building, Norwalk State Hospital. Architect appointed February 11, 1931: Gilbert Stanley Underwood Co.	75,000 00
15-31	5. Training school, Humboldt State Teachers College. Architect appointed: Franklin T. Georgeson.	170,000 00	28-31	14. Ward building and dairy unit, Pacific Colony. Architects appointed February 11, 1931: Walker & Eisen.	60,000 00
10-31	6. Science building, San Jose State Teachers College. Architect appointed: Ralph Wyckoff.	202,000 00	6-31	15. Armory at Pasadena, California National Guard. Architects appointed February 11, 1931: Bennett & Haskell.	50,000 00
11-31	7. Primary unit and dining room, California School for Deaf. Architect appointed: Charles F. B. Roeth.	242,000 00	20-31	16. Ward building, Mendocino State Hospital. Architect selected February 17, 1931: Martin A. Sheldon.	90,000 00
5-31	8. Hospital unit, Veterans' Home. Architect appointed: Frederick H. Meyer.	500,000 00	13-31	17. Additional classrooms, San Francisco State Teachers College. Architect appointed February 17, 1931: S. Helman.	100,000 00
6-31	9. Armory at Yuba City, California National Guard. Architect appointed: Charles F. Dean.	25,000 00	16-31	18. Training school, Santa Barbara State Teachers College. Architect appointed February 19, 1931: Wm. A. Edwards.	70,000 00
14-31	10. Library and classrooms, Chico State Teachers College. Architect appointed: Chester Cole.	117,000 00	6-31	19. Armory at Salinas, appointment not made.	35,000 00
7-31	11. Superintendent's cottage and ward buildings, State Narcotic Hospital.	55,000 00	29-31	20. Cottage for boys, Sonoma State Home. Architects appointed: Powers & Ahnden, San Francisco.	75,000 00

(Continued on page 25.)

Commission States Policy Relative to Highway Additions

AT THE meeting of the California Highway Commission on February 26th, upon unanimous vote of the members of the Commission, the following statement of policy was issued to the press:

"The California Highway Commission at its meeting on January 29, 1931, passed a resolution by unanimous vote approving and endorsing Senate Bill No. 46 providing for the orderly addition of highways after proper engineering study to the secondary State highway system.

"It is the opinion of the California Highway Commission that additions of highways to the State system in an orderly manner after proper study and consistent with the financial ability of the State to improve and maintain its roads, is imperative if the State highway system is to be adequately developed and protected.

"The California Highway Commission accordingly reaffirms its support of Senate Bill No. 46 and its companion measure in the Assembly, and expresses the hope that these measures will be enacted into law without amendment."

NEWSPAPER COMMENT ON HIGHWAY MATTERS

Plans For Roadside Buildings.

This is from the *Santa Barbara News*:

Free architectural assistance will be given by the county planning commission to property owners who are planning commercial buildings along the State or county highways outside of the incorporated cities of the county, according to L. Deming Tilton, executive officer of the Commission.

Some weeks ago the Commission announced free architectural assistance to ranchers who were planning to build new homes or remodel old ones. The announcement aroused interest among property owners interested in other development in the rural parts of the county and their inquiries led to the offer of assistance in building store structures and other commercial improvements.

It is Tilton's hope that by establishing a high type of rural architecture in the county its development can be influenced and eventually the rural part of the county may become as famous as Santa Barbara city for attractive and harmonious architecture.

"The Rocks" Protected

The following item is from the *Watsonville Register*:

With the view of reassuring residents of this vicinity of the intention of the Highway Commission to preserve the natural beauty of "The Rocks," scenic spot on the Watsonville-San Juan road, in the proposed highway routing through that section, L. H. Gibson of San Luis Obispo, District Engineer of the

HIGHWAY COMMISSIONERS PRESENT GOVERNOR WITH MINIATURE OF CAPITOL

(United Press News Article)

A tiny wooden shack, painted blue and gold and equipped with a miniature dome, is California's State Capitol whenever Governor Rolph goes to his ranch in San Mateo County.

The building was donated to the Governor by members of the State Highway Commission after the Governor had presented the State with a strip of land through his property for the Bayshore highway.

It is now equipped with lights, heat and telephone, and one of the Governor's ranch hands has painted a large sign, reading, "Governor's Office," above the entrance.

State Highway Commission, was in the city yesterday with John T. Porter for a conference with the Pajaro Valley Chamber of Commerce and newspapermen.

According to Gibson, considerable misunderstanding has arisen as to the fate of "The Rocks" in the proposed highway construction, as a result of which F. E. Barney of Gilroy, a "Rocks" property owner, is said to have circulated a petition in Gilroy and vicinity to have the road routed to the north, missing "The Rocks" entirely.

"Regardless of what has been said or done," said Gibson, "our purpose is to put the road through in a manner that will in no way mar the beauty of the spot. The proposed route will follow practically the same course as the existing road, in keeping with the necessity of straightening out curves and filling in. The route we favor follows along the edge of oak groves without destroying them and scratches only one rock on the whole route."

Gibson expressed himself as opposed to the petition advocating a routing north of "The Rocks."

"By following such a course," he said, "The Rocks" would be shut off from view from the road entirely, which we do not believe would coincide with the wishes of the majority of interested parties in this vicinity."

Highway Bottle Breakers Fined.

The *Pacific Palisades* prints the following article:

Throwing glass bottles from a moving automobile upon a public highway endangering the lives and property of other people is an expensive pastime when apprehended.

Dana C. Henry, 1332 Sixth Street, Venice, found that out when he was taken in to Malibu Justice Court on a complaint sworn to by James A. Stauff, in charge of the Maintenance Department of the State Highway. Henry pleaded guilty to the charge, and inasmuch as the bottle contained liquor Judge Webster fined him \$50.

Highway Tree Planting.

The *Indio Date Palm* publishes the following article:

E. W. Campbell, who has been in the service of the State Highway Department during the past two

years, is in charge of the planting of trees in the three counties of San Bernardino, Riverside and Imperial. Of late he has been giving personal attention to the planting of Arizona ash along the highways in the Coachella Valley. The Arizona ash is said to be a very fine tree, and is adapted to this location.

* * * * *

Order Wings Built on L. A. State Building.

State Finance Director Rolland A Vandegrift announced tonight he has directed John C. Austin, Los Angeles architect, to proceed with plans for wings of the Los Angeles State Building now in process of construction.

This is in line with the Finance Director's belief that a material saving to the State can be effected by building the proposed wings along with the main structure, instead of waiting until a later date, as previously had been planned. He estimated the saving at \$200,000.

* * * * *

To Rebuild Famous Pioneer Highway Sections.

The following article is from the *Placer Gold* at Loomis:

The State Highway Commission is planning to get to work early on all road work as an aid to the unemployment situation, and one of the first pieces of work will be on the course of more than a mile of the historic Auburn Ravine, where gold was first discovered in this county.

It was at the head of Auburn Ravine Forks, just about where the new highway will end, that Claude Chana in May, 1848, found gold in the Auburn district. At that time what is now known as Auburn was called Wood's Dry Diggings.

The finding of gold by Chana started the mining boom that resulted in the founding of the city of Auburn.

* * * * *

Highway Worker Injured.

The *Redding Searchlight* prints the following article, which illustrates the peril of highway building:

A broken right arm and a wrenched back were suffered by Earl E. Miller, powder man for the State Highway Commission, when he slipped on a bluff near Ingot and was struck by a rock as he fell. Miller was employed on construction work near Ingot.

* * * * *

Congress Saves Scenic Spots in Orange County.

Passage of the bill introduced by Congressman Phil D. Swing to reserve for public ownership all rocks, reefs, pinnacles and small islands off the Orange County coast, was announced here today in a telegram from Con-

Maintenance Men Are Commended for Aid in Accident

The following letter received by State Highway Engineer C. H. Purecell, from C. G. Bulli of Los Angeles is self explanatory. The letter reads:

I want to take this opportunity as a disinterested bystander of expressing my sincere appreciation of the very fine work done by your foreman, Mr. V. S. Ver Bryck, whom I understand is foreman of a San Bernardino division.

I happened to be instrumental in summoning aid for two boys who skidded on a wet pavement and went over the embankment from Cajon Pass. It just so happened that the house where I called was the residence of Mr. Ver Bryck. He summoned his crew in a most skillful, expeditious manner, got the car up the seventy-five foot embankment to the highway, straightened it out, adjusted the boys' lights, etc., so they could continue on their trip into Los Angeles. This was done to help these two 16-year-old boys and without any pay or reward to Mr. Ver Bryck whatsoever.

I think it is unjust that such a splendid spirit of community helpfulness and such a fine impression of the duties of his office should go unnoticed, even though as I say, the gentleman is an entire stranger to me. It materially increased my already warm admiration for the efficiency and personnel of the State Highway Department.

A MOTORIST'S PRAYER

One enthusiastic motorist apparently believes that safety driving rules are applicable for all of life's conduct, it is indicated in a communication reaching the Automobile Club of Southern California. This motorist suggests that the following prayer be pasted on all windshields where the driver might constantly have it in view:

"O, Lord, teach us to drive through life without skidding into other people's business. Preserve our brake lining, that we may stop before going too far. Help us to hear the knocks in our motors and close our ears to the clashing of other people's gears. Keep alcohol in our radiators and out of our stomachs. Absolve us from the mania of trying to pass the other fellow on a narrow road. Open our eyes to the traffic signs and keep our feet on the brakes. Amen."

The motor vehicle industry of the United States and the various affiliated enterprises employed a total of 4,700,000 persons last year.

gressman Swing to Postmaster T. E. Stephenson, Santa Ana, says the *Anaheim Bulletin*.

The bill passed the Senate with minor amendments, in which the house concurred today, Swing's message said, and the bill now will go to President Hoover for his signature.

The measure was prepared after private parties attempted to assert ownership of certain rocks along the coast at Laguna Beach.

CALIFORNIA HIGHWAYS AND PUBLIC WORKS

Official journal of the Division of Highways of the Department of Public Works, State of California; published for the information of the members of the department and the citizens of California.

Editors of newspapers and others are privileged to use matter contained herein. Cuts will be gladly loaned upon request.

COLONEL WALTER E. GARRISON.....Director
GEORGE C. MANSFIELD.....Editor

Address communications to California Highways and Public Works, P. O. Box 1103, Sacramento, California.

Vol. 9 MARCH, 1931 No. 3

Motor Violators' Record To Be Kept By Highway Patrol

COMplete records will be kept hereafter by the California Highway Patrol of all persons convicted in California of major violations of the Motor Vehicle Act.

These records will be kept in alphabetical order thus enabling the patrol to keep a check on the habitual violator by noting each new offense committed.

The records will be taken from abstracts of convictions forwarded to the patrol by court officers as provided under section 156 of the act. Should two or more major violations by the same person be recorded within a short period, the patrol will make an investigation and either warn the offender or cause his license to be canceled.

A similar system of records covering drivers involved in major accidents was inaugurated some time ago and is functioning satisfactorily, it was announced.

Working under the supervision of Superintendent E. Raymond Cato, the Bureau of Statistics is now checking the records of the 119,879 convictions of violations or forfeitures of bail reported during 1930. The officials estimate this is about 80 per cent of the total number of convictions during the year, many Justices and court officers failing to report their abstracts as required by law.

Of the total reported, 49,300 were from Los Angeles County courts, 7835 from Alameda, 6697 from San Diego and 5631 from Riverside.

Court officers were urged to assist in increasing the efficiency of the new records by reporting all convictions as required by the act.

Iowa built 1000 miles of road in 1930.

GOVERNOR ROLPH TELLS LEGISLATURE PROGRESS OF PUBLIC WORKS PROGRAM

(Continued from page 22.)

Chapter			
29-31	21.	School and gymnasium, Sonoma State Home.....	40,000 00
		Architects appointed: Powers & Ahnden, San Francisco. Appointment made February 20, 1931.	
31-31	22.	Superintendent's residence, Industrial Home for Adult Blind.....	15,000 00
		Appointment not made. Director of Finance requests no action to be taken until advised.	
20-31	23.	Laundry building, Mendocino State Hospital.....	60,000 00
		Architect appointed: Chas. E. Perry, Vallejo. Appointment made February 20, 1931.	

A REAL EXPERT WITNESS

A young foreigner was being tried in court and the questioning by the lawyer on the opposite side began.

"Now, Laszky, what do you do?"

"Ven?" asked Laszky.

"When you work, of course," said the lawyer.

"Vy, work—"

"I know," said the lawyer, "but what at?"

"At a bench."

"Oh!" groaned the lawyer. "Where do you work at a bench?"

"In a factory."

"What kind of a factory?"

"Brick."

"You make bricks?"

"No; de factory is made of bricks."

"Now, Laszky, what do you make in that factory?"

"Eight dollars a week."

"No, no! What does the factory make?"

"I dunno; a lot of money, I think."

"Now listen! What kind of goods does the factory produce?"

"Oh," said Laszky, "good goods."

"I know; but what kind of good goods?"

"The best."

"The best of what?"

"The best there is."

"Of what?"

"Of dose goods."

"Your honor," said the lawyer, "I give up!"

CHINA'S HIGHWAY PROBLEM

With more than four hundred million people living in an area somewhat larger than the United States, China has only 35,000 miles of road, with only about 2000 miles paved. In the whole country there is less than 8000 miles of railroad and only 30,000 motor vehicles.

Chinese engineers who attended the recent International Road Congress in Washington presented the situation as a problem of world importance. Handicapped by lack of funds, China faces the necessity of getting food through to starving millions.

Government funds are so limited that the national program as now laid out calls for only 25,000 miles of main roads in a period of twenty years.

The average retail price of passenger automobiles sold in the United States during 1930 was \$800.

STATE WATER PLAN RECOMMENDATIONS ARE GIVEN GOVERNOR AND LEGISLATURE

(Continued from page 4.)

Contra Costa County conduit will adequately and economically serve the present needs.

5. The water supply in the San Joaquin River Basin is insufficient to meet the ultimate water requirements in that basin. Importation from the Sacramento River Basin, the logical course of a supplemental supply, would be required for full development. By the utilization of the physical works proposed herein, including underground storage capacity in the upper San Joaquin Valley, and operated in conjunction with the physical works in the Sacramento River Basin, an adequate and dependable supply could be made available to all the net irrigable lands in the lower San Joaquin Valley, 1,810,000 acres and all the good lands (classes 1 and 2), 3,135,000 acres in the upper San Joaquin Valley, after allowing 688,000 acre-feet annually for the irrigation of 246,000 acres of net irrigable area in the eastern foothills, a total net irrigable area of 5,191,000 acres.

6. There are approximately 402,000 acres of highly developed irrigated land in the upper San Joaquin Valley which are overdrawing the water supply locally available. In order to prevent retrogression in this region, supplemental water must be imported from an outside source. These lands have not the financial capacity to bring in such a supply.

7. The construction of the works proposed herein for the Santa Ana River Basin would save about 90 per cent of the water now wasting into the ocean.

8. The units proposed for initial development in the Great Central Valley could not be financed from revenues which could be obtained from the sale of water and electric energy. Income from other sources must be obtained in order to finance the development.

9. Many interests would be substantially benefited through the consummation of the Great Central Valley and San Francisco Bay project. If these benefits were assessed to those interests benefited, sufficient income might be derived therefrom to carry the additional financial burden not capable of being carried by revenues from the sale of water and electric energy.

10. The flood control and navigation benefits which would result from the operation of the units of the initial development in the Great Central Valley would be so substantial that financial participation may well be expected from the Federal government.

11. The execution of a State water plan under the present status of the law, might be long delayed by injunction suits by many claimants in many courts and might be made utterly burdensome by awards of excessive compensation in condemnation proceedings. A constitutional amendment should be drawn to provide a revised law of eminent domain administered by an agency having State-wide jurisdiction and properly constituted and empowered so that those entitled to compensation could be speedily and fairly provided for without undue difficulty, delay, or expense in the prosecution of the plan.

SUPPORTING BULLETINS

Six of the supporting appendices to the final report also were transmitted with it to the Governor and the Legislature. These were:

Bulletin 28A, "Industrial Survey of Upper San Francisco Bay Area."

Bulletin 31, "Santa Ana River Basin."

Bulletin 32, "South Coastal Basin."

Bulletin 33, "Rainfall Penetration and Consump-

Accidents at Grade Crossings in 1930 Decrease 6 Per Cent

GRADE crossing accidents in California decreased 6 per cent, and the casualties resulting from such accidents were 10 per cent less during 1930, than in 1929, President Clyde L. Seavey of the Railroad Commission has announced.

This record is remarkable, President Seavey points out, in view of the fact that there was an increase of approximately 20 per cent in the number of traffic accidents of all kinds occurring on the highways of the State during 1930.

In pointing out that the number of grade crossing accidents and casualties during 1930 did not keep pace with the sharp increase shown by general highway accidents, President Seavey made the following statement:

"The decrease in grade crossing accidents and casualties during 1930 may be attributed to a number of reasons, such as additional protective devices at grade crossings by order of the Commission, more careful observation by drivers of vehicles of the provisions of section 114 of the Motor Vehicle Act, which requires motorists to stop before crossing railroad tracks when a danger signal is displayed, indicating the immediate approach of a train; or to the general education and special work of various public and civic organizations which are making special drives to reduce all classes of highway accidents. However, the reduction in grade crossing accidents alone is an indication that our work is bearing results."

According to a report filed with the Railroad Commission by Joseph G. Hunter, transportation engineer of the Commission, there were 2755 grade crossing accidents during 1930, resulting in 204 deaths, and the injury of 877 persons. In 1929 the grade crossing accidents numbered 2929, with 213 persons killed and 993 injured. These figures include all grade crossing accidents, whether at public or private crossings, or accidents occurring between crossings.

According to records compiled by the State Division of Motor Vehicles the number of traffic accidents increased from 26,921 in 1929, to 31,019 in 1930. The number of persons killed in motor accidents increased from 2244 in 1929, to 2384 in 1930, while the number of persons injured in highway accidents jumped from 35,443 in 1929, to 41,237 in 1930. The number of vehicles involved in accidents in 1930 showed a new high record of 47,965, as against 40,877 in 1929.

tive Use of Water in Santa Ana River Valley and Coastal Plain."

Bulletin 34, "Permissible Annual Charges for Irrigation Water in Upper San Joaquin Valley."

Bulletin 36, "Cost of Irrigation Water in California."

Of the seven reports sent to the Governor and the Legislature, four are printed and available to the public at this time. These are numbers 28A, 31, 32 and 34. Bulletin 25 is expected to be received from the printing office in about ten days.

Courtesy of Highway Patrol Wins Praise From Motorists Aided

AUTO SHOW EXHIBIT APPRECIATED

From James A. Myers of Oakland: This is just a note commending the very interesting and excellent exhibit of the State Highway Patrol at the Automobile Show at the Civic Auditorium in San Francisco, under the direction of District Inspector Charles Reade and Captain Arthur O'Connor. I also noted during the time I spent there, the courteous attention given to the public by the several officers in attendance at the exhibit. I trust that next year may give us an opportunity for a similar inspection of State work.

AID GIVEN AUTOIST

From E. L. Jameson, Redding: Jointly with my wife, I wish to extend my kindest thanks to the California Highway Patrol for the courtesies extended to my wife by J. R. Franck, who so kindly brought her home to Redding, sick, when the car she was riding in was broken down and unable to come further.

KINDNESS TO INJURED DOG

From Mrs. D. F. Spangler, Encinitas: We want your Bureau to know that your officers are not only rendering assistance to human beings, but to "our four-footed friends" as well, and we wish to heartily commend the action of Officer H. N. Coates of Oceanside, for the humane service rendered when he found our police dog "Princess Pat" seriously injured, on the highway near Encinitas.

To the passing public, she was "only a dog" and they had neither time nor inclination to render assistance, but to Officer Coates she was "somebody's pet" and suffering, and could not voice her complaint that she had two badly broken legs, to the people who stopped, looked at her and only said "Poor dog." Due to this officer's timely aid, Princess Pat is recuperating in the hospital and joins us in most sincere appreciation of your efficient organization.

COURTEOUS WARNING BRINGS THANKS

From Mark A. Hall, Los Angeles: On January 17th, I was driving with my family south on the highway leading from Santa Ana to Balboa. I failed to notice, until too late, a 15-mile zone sign, and ran past it at a speed in excess of that rate. Presently I was accosted by Traffic Officer Bradfield, No. 169, who called my attention to the violation.

Officer Bradfield was very courteous, but at the same time showed a commendable zeal in cautioning me against violations of the law. I wish to commend him both for his politeness and his efficiency. If all officers would adopt such an attitude in the performance of their duty, I am sure that motorists as a class would be more cooperative in obeying the law.

AIDED WINTER SPORTS CARNIVAL

From F. E. Wadsworth, Superintendent of Recreation Camps and Playgrounds, Los Angeles County: I want you to know that we, of the Los Angeles Big Pines Recreation Camp, greatly appreciate the fine cooperation your motorcycle officers gave us during the Fifth Annual Winter Sports Carnival, in handling the traffic over the Cajon Pass and Lone Pine Canyon.

We had in excess of 30,000 people during this carnival and as far as we can learn, the traffic was handled without an accident. A great part of this is due to the fine work your men did in patrolling the roads and I want you to thank each and every one of them for me. Assure them that they are always welcome at the Big Pines Camp and we are glad to have them drop in at any time.

From Leonard Taylor, Sacramento: Last Monday, while motoring, I had some trouble with my distributor at Del Paso Park, and discovered a broken part.

At that time a highway patrolman came along and stopped to inquire of my trouble and then very gladly offered to procure one part which was broken at Roseville as he was on his way there, and bring it back with him, which he did for me.

I did not ask his name but got his star number, so I wish to thank Patrolman No. 89 for his very kind attention shown me and to comment on the efficiency of your State highway patrolmen.

From Joseph M. Murphy, Portland: I am writing you in regards to one of your officers, Mr. John S. Shopper. On February 2d, 1931, I was coming from Greenville, California, to Red Bluff, California, and about two miles south of Mineral I met with a little car accident on account of the icy roads, run off the highway and struck a tree.

A car passed me and went on by, and he met Mr. Shopper some few miles down the road. And reported the accident to him. In a few minutes Mr. Shopper drove up in his car and gave me first-aid, as I had quite a severe cut on my right hand. He then took me in his car and drove to Mineral where I had the garageman come and pull my car back on the road, and I got into Red Bluff all right.

I feel that I owe this to Officer Shopper, as he certainly gave me some wonderful help in the predicament I was in. And I would like to have you let him know his help and courtesy, to the extent that his superior officer should know about same.

STATE-WIDE CONTEST FOR BETTER ROADSIDE BUILDINGS SUGGESTED

(From the Santa Barbara News.)

The proposal for a state-wide architectural competition for roadside commercial structures, which was made some time ago by the planning committee of the Community Arts Association, has been received enthusiastically by individuals and organizations in all parts of California, according to Miss Pearl Chase, chairman of the branch.

The Santa Barbara chapter of American Institute of Architects has approved the proposal and an announcement of the competition will be published and distributed up and down the coast.

The state highways throughout California, attracting, as they do, hundreds of thousands of tourists every year and millions of motorists, have developed property fronting on them into valuable commercial sites. The plans committee of the local association appreciates that commercial development of this property will continue to increase as the population of the state grows. It hopes that by this competition prospective builders of roadside establishments will be convinced that an attractive building is a great commercial value and important to the success of any roadside venture.

New York established the first state highway department in 1891.

STATE EDIFICES IN SOUTH DEDICATED; GOVERNOR JAMES ROLPH IS CHIEF SPEAKER

(Continued from page 6.)

ing at the luncheon was confined to the address by the Governor. Governor Rolph captured the gathering with a characteristic address, which combined good humor and optimism with a close analysis of present conditions.

At the close of the Governor's address the assemblage adjourned to the Armory building at California Avenue and Seventh Street for the formal dedication ceremony. An improvised platform was occupied by the Governor and his party, and a large audience occupied chairs arranged in the open court at the rear of the building.

Lieutenant Governor Merriam continued as presiding officer, and at once introduced Governor Rolph who delivered the dedicatory address.

Governor Rolph was followed by General Howard whose address dealt with the National Guard and its various aspects.

Following General Howard several guests including State Architect George B. MacDougall were called on for brief remarks.

Major Harris of the National Guard of Long Beach, who with his coworkers is largely responsible for obtaining the armory, was presented and in turn presented to the assemblage various members of his organization.

Architecturally the Long Beach armory represents a free military design clearly expressive of its purpose. Its large drill hall is emphasized as the important unit of the plan. It is connected to the wing containing clerical and other offices by the interposition of a dignified and vigorous tower.

The building is of reinforced concrete. The exterior of the rough concrete walls has been tooled to produce a very rugged texture and an effect specially appropriate to a building having a military function. The building has a capacity for four companies of the National Guard, the drill hall itself being 71 by 98 feet. There is a basement extending through the entire area of the office wing. The grounds about the building are being landscaped. The cost of the building with its equipment is approximately \$150,000. The fine corner property which constitutes the site was provided free of cost to the State by the city of Long Beach.

This building is the first of a group of comparatively small armory buildings soon to be erected throughout the State. Financial pro-

March 1st Report Shows Snow Light on Mountain Courses

THE March report of the Division of Water Resources' monthly bulletin of snow and precipitation data furnishes the results of snow surveys made in the latter part of February at the "key" snow courses throughout the state and presents all of the available data to March 1st from those precipitation stations of the U. S. Weather Bureau, state, districts, and public utilities located in the mountainous portions of the various stream basins.

The water content of the snow as determined at the various snow courses on March 1st of this year in per cent of the water content on March 1, 1930 varies throughout the Sierra from 50 to 95 per cent and by stream basins is as follows: Upper Sacramento and McCloud (one course) 55 per cent; Feather (2 courses) 50 per cent; Yuba (4 courses) 75 per cent; American (3 courses) 70 per cent; Mokelumne (2 courses) 70 per cent; Stanislaus (3 courses) 65 per cent; Tuolumne (6 courses) 70 per cent; Merced (6 courses) 95 per cent; Mono (2 courses) 60 per cent; Upper San Joaquin (one course) 95 per cent; Kings (one course) 70 per cent.

In those few areas where snow surveys have been made a sufficient number of years to permit the development of "normals" the water content of the snow in per cent of the normal water content for the entire season (as of April 1st) is found to be: Yuba Basin (3 courses) 50 per cent; American and Mokelumne Basins (one course each) 45 per cent; Mono Basin (2 courses) 30 per cent; Upper San Joaquin Basin (one course) 40 per cent.

In the South Yuba Basin the records permit a comparison between this year's snow and that in 1924, the driest year of record. An average of two courses in this area indicates a water content of the snow on March 1, 1931, amounting to 145 per cent of the water content on March 1, 1924.

The data from the precipitation stations show the average precipitation to March 1st in per cent of the normal to the same date varying throughout the state from 50 to 85 per cent and by stream basins as follows: Upper Sacramento, McCloud and Pit, 50-60 per cent; Feather and Yuba, 55 per cent; American, 60 per cent; Mokelumne, 65 per cent; Stanislaus, 80 per cent; Tuolumne and Merced, 65 per cent; Mono, 60 per cent; Upper San Joaquin, 55 per cent; Owens, 50 per cent; Kings, 55 per cent; Kaweah, 65 per cent; Kern, 70 per cent; Santa Ana and Los Angeles, 75 per cent; and San Gabriel, 85 per cent.

vision has already been made for other armories at Pasadena, Salinas and Yuba City and additional similar projects at San Jose and Fresno are under consideration.

The importance and dignity of the National Guard is by this practical means getting continuously increasing recognition from the State.

Data is Asked on Grade Crossing Cost Distribution Practices In Other States

FOR the purpose of obtaining comprehensive information as to the policies and practices of other states in the protection of grade crossings, and as to how the cost of such protective equipment and construction is provided for, the Transportation Division of the Railroad Commission has sent a questionnaire to all regulatory bodies having jurisdiction over grade crossings throughout the country.

The object of the Commission is to ascertain how California compares with other states in this important work. An important feature of the questionnaire is an inquiry as to the apportionment of the cost of grade crossing protective work between the railroads and the political subdivisions, and especially in the case of grade separations.

In transmitting this questionnaire the Commission enclosed answers to the various questions as they relate to California conditions, showing the number of grade crossings in the State with special protective devices, and the general policies of the Commission in handling grade crossings and grade separation problems.

The following data in regard to California is furnished in the questionnaire:

Number of crossings protected with wigwags: with audible signals, 1,563; without audible signals, 36.

Number of crossings protected with flashing lights: with audible signals, 7.

Number of crossings protected by rotating stop-flash light signals: with audible signals, 3.

In the absence of an agreement between the parties the expense of constructing and maintaining grade crossings and installing protective devices generally is apportioned by the Commission between the railroad and the interested political subdivision as follows:

<i>At existing crossings:</i>	<i>Railroad</i>	<i>Political subdivision</i>
Cost of improving or widening a crossing -----	100% of crossing proper	-----
Cost of installing protective devices -----	100%	-----
Cost of maintaining protective devices -----	100%	-----
<i>At new crossings—railroads over highways:</i>		
Cost of constructing the crossing -----	100%	-----
Cost of maintaining the crossing -----	100%	-----
Cost of installing protective devices -----	100%	-----
Cost of maintaining the protection -----	100%	-----

<i>At new crossings—highways over railroads:</i>		
Cost of constructing the crossing -----	-----	100%
Cost of maintaining the crossing -----	100%	-----
Cost of installing protective devices -----	-----	100%
Cost of maintaining the protection -----	100%	-----

The cost of grade separations in California is apportioned in most cases, except when covered by an agreement between the parties, as follows:

<i>At existing grade crossing to be separated:</i>	<i>Railroad</i>	<i>Political subdivision</i>
Cost of constructing the separation -----	50%	50%
Cost of maintaining the separation -----	-----	-----
	Track and supporting structure	Remainder
<i>At new grade separations—New railroad and existing Highway:</i>		
Cost of constructing the separation -----	100%	-----
Cost of maintaining the separation -----	-----	-----
	Track and supporting structure	Remainder
<i>At new grade separations—New highway and existing railroad:</i>		
Cost of constructing the separation -----	25%	75%
Cost of maintaining the separation -----	-----	-----
	Track and supporting structure	Remainder
<i>At locations where existing separations are to be enlarged or improved:</i>		
Cost of construction -----	50%	50%
Cost of maintenance -----	-----	-----
	Track and Supporting structure	Remainder

IT'S ALL IN THE STATE OF MIND

If you think you are beaten, you are;
If you think that you dare not, you don't;
If you'd like to win, but you think you can't
It's almost a "cinch" you won't.
If you think you'll lose, you've lost,
For out in the world you'll find
Success begins with a fellow's will,
It's all in the state of mind.

Full many a race is lost
Ere even a step is run,
And many a coward fails
Ere even his work's begun.
Think big, and your deeds will grow,
Think small and you'll fall behind.
Think that you can and you will;
It's all in the state of mind.

If you think you're outclassed, you are;
You've got to think high to rise;
You've got to be sure of yourself before
You can ever win a prize.
Life's battles don't always go
To the stronger or faster man.
But soon or late the man who wins
Is the fellow who thinks he can.

—Clipped.

He: Yes, I changed schools.
She: Oh! I'm so glad. I never did like engineers, for they always leave blueprints on your neck.—
Aggievator.

TEXT OF REPORT OF GOVERNOR ROLPH'S STATE WATER CON- SERVATION COMMITTEE

(Continued from page 16.)

has badly overdrawn or exhausted the underground water supplies. In this area about 400,000 acres now under irrigation of a high type and supporting a large population are seriously short of water, and it is estimated in the Federal State report that unless new water can be brought in 200,000 acres of highly developed land worth \$50,000,000 and producing crops of an annual value of more than \$20,000,000, must largely go back to desert conditions. The Commission finds the Sacramento-San Joaquin relief project economically sound and goes on to state:

The Commission reached this conclusion without giving weight to the sentimental consideration that relief is essential if a large, highly developed and heretofore prosperous section is to be preserved. But that consideration is entitled to weight. Putting aside the loss of labor and capital already invested, it is not possible for these sections to go back in a large part to their original desert condition without a great toll of human misery and suffering. This misery and suffering will just as surely be present as if the calamity were one of earthquake or flood, and the occasion is as truly one which justly calls for governmental assistance if the communities themselves can not bear the burden alone. In this case we believe they can bear the burden, if this burden is thrown on all the portion of the State benefited and not entirely on the lands directly assisted. Even if this were not so, our recommendation would still be that the project was one worthy of State and Federal aid.

In Tulare County, about the center of this distressed area, some 10,000 acres have already been abandoned and assessed valuations are decreasing.

We believe, Mr. President, that a project of this kind, economically sound, involving no material increase in production, but rescuing 400,000 acres of valuable irrigated land from depreciation or destruction should be of more interest to the United States than an entirely new land project.

New water can best be brought into the Southern San Joaquin Valley by means of the storage of an equivalent amount in the Sacramento water shed. This brings us to new areas of distress with different problems.

While the Sacramento drainage produces more water than the Colorado and far more than the ultimate needs of its own basin, in its present unregulated condition the summer flow has dropped so low that salt water from Suisun Bay has worked up the channels of the Sacramento-San Joaquin Delta. This condition has resulted in curtailing irrigation to some extent and in endangering the whole delta section of over 300,000 acres of extremely fertile lands which produce crops valued annually at \$30,000,000, as well as creating a fresh water shortage in the industrial section along Suisun Bay. This situation has been brought about by several causes, chiefly upstream diversions for irrigation. For the same reason navigation has been badly impaired in the upper Sacramento River and more so in the San Joaquin River above the delta. At the same time flood control is a necessity in the Sacramento Valley and there is an existing project under way at this time to cost \$51,000,000 in which the United States, the State, and local interests each pay one-third.

The Government of the United States is as we feel directly concerned in the solution of the pressing water

problems of these areas, particularly because of its interest in navigation, flood control, reclamation and the rescue of existing developments from threatened destruction.

For ten years past the State has studied these water problems in great detail, and a general Sacramento-San Joaquin Valley plan to best overcome them has been presented. This plan has been reviewed by the best engineers of California, and by the engineers of the War Department and the Reclamation Bureau and there is substantial agreement as to its being the best solution.

Large storage on the Sacramento River at Kennett near the head of the valley would be provided. The stored water when released would flow down the river to the Delta and be available for transmission into the San Joaquin Valley. Storage would be necessary on the San Joaquin River at Friant, 30 miles north of Fresno, from which point a high line canal would be taken south 157 miles to the Kern River.

This plan, if executed, would solve all of the problems mentioned and have other advantages. It would materially assist navigation and flood control on both rivers, would eliminate the salinity trouble and would rescue and relieve the southern San Joaquin Valley from the destructive effect of water shortage.

This project is estimated to cost about \$160,000,000 total. The construction of certain items essential to the program costing approximately \$20,000,000 can possibly be safely deferred some years, however, the entire program should be authorized at one time.

Revenues from sale of water are calculated on the basis of the reasonable ability of the lands to pay and from sale of power at competitive prices. While these revenues are large they are not sufficient to meet the total annual costs, and the Federal State Commission concluded that the project could not be undertaken without State and Federal aid.

Basing computations on an interest rate not to exceed 3½% the project was found economically sound if all benefits direct and indirect were taken into consideration. The Commission then stated:

It is manifest that the Federal government alone can obtain money at 3½ per cent interest. It may well be that it can obtain or be willing to advance the money at a less rate of interest. It may also be that the Federal government will be willing to advance funds for construction of certain portions of the project without interest.

The Commission recommended that the project be financed and built by the United States and operated by the State as far as practicable, the State of California to guarantee the United States payment of interest and principal as due, less such amount as the United States would contribute on account of flood control and navigation. The difference between the annual costs and the revenues would be taken care of within the State.

The conclusions of the State reports are now completed. Reports are under way by the War Department and Bureau of Reclamation which we understand will be available shortly.

Mr. President, we are seeking your counsel and advice on all phases of this subject. Advice at this time will be particularly valuable since the California Legislature reconvenes late this month, will adjourn in April, and will not meet again until 1933. Without better information relative to the participation of the United States in this project than is now available it is doubtful if much can be accomplished in the 1931 Legislature.

We have available detailed information and would be happy indeed to explain any items further.

Washington, D. C., February 16, 1931.

Budgeting Is Urged for Highways

WASHINGTON, D. C.: In order to successfully carry out the mandate of the people in the great enterprise of road building, state highway officials are turning their attention more closely than ever to the proper budgeting of highway expenditures. This they conceive to be the first and most essential step toward keeping the road dollar at work where it logically belongs.

First, the necessary capital for highway construction, and second, the best and most effective and far-reaching use of that capital, according to a bulletin issued by the American Association of State Highway Officials, is the goal set for the new period upon which road builders are now entering.

At the recent annual meeting of State highway officials at Pittsburgh, the bulletin states, the matter of proper budgeting of highway expenditures was taken up as one of the important subjects for consideration and definite action.

A highway budget, it was agreed, should be defined as the total annual amount available for expenditures in each state for highway purposes, and should be adjusted to meet the annual requirements of maintenance and construction contemplated. Further, all road improvements should be made on a basis of present and probable early future earning capacity. No public works should be measured by immediate financial return, though this should be a major consideration in the selection of the character of improvement.

The wide variance in the present status of highway development in the several states, members of the Association agreed, prevents the adoption of uniform policies for securing the funds necessary for the annual budget. Generally speaking, however, these principles may be set forth as follows:

"States in the initial stage of highway development should issue bonds to defer that portion of the annual charge for construction which would overburden either the property or the road user.

"States where original construction programs are well under way can, in the main, finance normal new construction from current funds, utilizing bond issue funds to defer the cost of special projects.

"States where original construction is

largely completed are concerned chiefly with maintenance and reconstruction, and should depend on current funds save in cases of emergency.

"State highway bond issues should be serial in form and should mature over a period not exceeding 30 years.

"Highway bonds issued by a political subdivision of a state should be serial in form and should mature over a period not exceeding 20 years.

"Serial maturities should be arranged so that the annual requirements of principle and interest will be as nearly uniform as practicable.

"Sound financing requires that the retirement of state bonds, as well as the interest thereon, be provided for from the receipts of motor vehicle license fees and gasoline taxes, but the full taxing power of the state should be authorized to guarantee the principle and interest, not only as a provision in case of failure of these special levies, but also to secure a lower rate of interest from the purchasers of the bonds."

The above statements constitute the revised principles of highway administration and finance and may be taken as a safe guide for such work as may come up in the various states.

SOME COMPARISONS

Recent announcement of the crossing of the continent from New York to Los Angeles by "Cannonball" Baker in 60 hours and 51 minutes, reducing the previous record time by almost seven hours, suggests a comparison. The first trip between the same cities in an automobile was made in 1903 by Tom Fetch and required 61 days.

There were less than 25,000 automobiles in the country 25 years ago, while today there are more than 26,000,000. There were 155,000 miles of improved road a quarter of a century ago, of which but 144 miles had a high type of surface; today there are more than 600,000 miles of improved highway and another 500,000 miles of usable dirt road.

A new watchman had been employed to sit up nights by the road construction job and see that nobody made away with the red lanterns or other paraphernalia. When he was due to be relieved after his first night on the job, the foreman approached and asked him if everything was all right.

"Well, boss," said the new hand modestly, "I don't want to brag about myself, but I don't think I've done so bad for a beginner. I checked up on everything just before you came, and there's only one thing missing—the steam roller."

Romance for the Civil Engineer

By FRED GRUMM, Engineer of Surveys and Plans

TO A LARGE number of people there is a certain romance connected with engineering. In literature, other than the technical, the engineer is often clothed in glamorous surroundings more or less exaggerated as measured by the author's knowledge of such things. Aside from the exact and scientific nature of the work and methods, there is for many, however, a fascination about engineering work. Exploration, reconnaissance and investigation in new country, the search for feasible routes and favorable conditions necessary toward effecting new development of various kinds, such as highways, railroads, reclamation of land and water, power development, perhaps furnishes the most likely opportunity for the engineer in the development of his romantic urge. This may account for the particular attraction which the survey party offers to the younger engineer.

The surveys of our state highways, especially in new locations and in the heavier mountain areas, are an attractive endeavor for those of us who have the romantic turn sufficiently strong to survive the effect of time and the more prosaic and tedious work. Not only the newness of both country and experience constitute the attraction, but also the difficulties and hazards which the work entails. The difficulties are a challenge to the more venturesome, and overcoming them while contending with the hazards offers a sense of superiority and achievement.

The survey line often leads across and through deep, rugged canyons, over high mountains or runs along precipitous cliffs. Swift and dangerous streams must be crossed. Densely wooded or brushy country is encountered. The lives of several survey party members have been lost in recent years where such conditions prevailed. Crawling for three or four hours on hands and knees through growth so dense that a flashlight is necessary is an experience not soon forgotten. Hanging on the side of a 300-foot cliff taking measurements with only the unsteady support and security of a rope from above should provide

WHAT THE PICTURE SHOWS

Lines indicate some surveying problems and perils along the Feather River Highway, now in course of construction.



a thrill for anyone. Forging a swift treacherous stream of ice-cold water up to the waist on slippery granite rock or shifting sand brings fleeting thoughts of the insecurity of life.

The Horseshoe Bend section of the Kings River Canyon is so inaccessible that to properly carry on the survey it was necessary to first construct miles of trail up the canyon. The deep, rapid waters rush through this canyon between vertical walls sometimes rising to several hundred feet. Even the most venturesome and ambitious young "S. I." up in the Feather River Canyon will have had an opportunity to cut his eye teeth before he gets a chance to negotiate the famous "Onion Peel" cliffs.

To many of our engineers this hazardous feature of the work is appealing, to others just something in the course of a day's work. All of it is to one end: to accumulate the data and facts which will lead to the proper, economic road improvement to serve the traveler. These preliminaries are only incidental to the more prosaic work, the drudgery, the infinite detail study, the close application of attention and care necessary to produce the finished product.

Romance? Yes, we have it in our highway work. To those who know and understand the methods, there often comes a vision, as we drive along some spectacular road, of those who came before, who struggled with the wilderness, its difficulties and dangers, doing their share to provide the safe, wide way we now traverse in comfort.

HOW READING CAN HELP YOU

"Link up reading and action—that is the efficient way to read. Lord Kelvin bought a book on Heat, by a French scientist—Fourier—and it changed his whole life and led to many of his great discoveries. Faraday bought a book on chemistry and became the founder of the present Electrical Age. Westinghouse bought an English magazine and found an article on compressed air that gave him the idea of his air-brake that is now used in all the railways of the world. Henry Ford, too, bought a magazine and saw an article on 'Horseless Carriages' that started him on his way to become the most successful of all manufacturers. The man who does not read, in these days of quick changes and irresistible progress, drops behind and becomes an obsolete and insignificant unit in his trade. Reading is a ladder. You must read if you want to climb."—Herbert N. Casson.

"So you asked Geraldine to marry you?"
 "Yes, but I didn't have any luck."
 "Why didn't you tell her about your rich uncle?"
 "I did. Geraldine's my aunt now."—*Humorist*.

"Sambo, I don't understand how you can do all your work so quickly, and so well."
 "I'll tell you how 'tis, boss. I sticks de match ob enthusiasm to de fuse ob energy—and jes natchurally explodes, I does."—*Nashville Tennessean*.

Architects Named To Prepare Plans for Institution Buildings

ADDITIONAL architects since the announcement in the February issue of CALIFORNIA HIGHWAYS AND PUBLIC WORKS have been appointed by Colonel Walter E. Garrison, director of the Department of Public Works, to prepare plans for buildings in state institutions. This is in accordance with the policy of Governor Rolph to speed up the construction of public buildings as a means of bettering business and increasing employment. Appointments made between February 15th and March 15th and the buildings for which they will prepare plans are as follows:

Gilbert Stanley Underwood Co., Ltd., Los Angeles; Ward Building at farm, Norwalk State Hospital; Appropriation, \$75,000.

Walker & Eisun, Los Angeles; Dairy unit and patients farm cottage, Pacific Colony, Spadra; Appropriation, \$75,000.

Bennett & Haskell, Pasadena; National Guard Armory, Pasadena; Appropriation, \$50,000.

Martin A. Sheldon, San Francisco; Ward for untidy, Mendocino State Hospital, Talmage; Appropriation, \$90,000.

Sam Heiman, San Francisco; Additional classrooms, San Francisco State Teachers College; Appropriation, \$100,000.

Wm. A. Edwards, Santa Barbara; Training School, Santa Barbara College; Appropriation, \$70,000.

Powers and Abnden, San Francisco; School and Gymnasium, Sonoma State Home; Appropriation, \$40,000.

Charles E. Perry, Vallejo, Laundry Building, Mendocino State Hospital; Appropriation, \$60,000.

Guy Koepp, Salinas and Carmel; New Armory, Salinas; Appropriation, \$35,000.

ADVERTISING

A lion met a tiger
 As they drew beside a pool.
 Said the tiger, "Tell me why
 You're roaring like a fool."
 "That's not foolish," said the lion,
 With a twinkle in his eyes;
 "They call me king of all the beasts
 Because I advertise."
 A rabbit heard them talking
 And ran home like a streak;
 He thought he'd try the lion's plan,
 But his voice was but a squeak.
 A fox, come to investigate,
 Had luncheon in the woods.
 So when you advertise, my friend,
 Be sure you've got the goods.
 —*Metropolitan Mirror*.

On the old-fashioned, narrow highways, just wide enough for two cars to pass, many a time a couple of cars would collide. But now they're building highways much wider, enabling three or four cars to smash at one time.—*Judge*.

Progress Report of Activities

in the

Division of Water Resources

AS OF MARCH 1, 1931

EDWARD HYATT, Chief of Division

Irrigation District
Activities



Applications for
Approval of
Dams

Flood Control and
Reclamation



Reductions in Re-
quests for Water
Permits

IRRIGATION, WATER STORAGE DISTRICTS

Returns have been received from about one-third of the questionnaires sent out to irrigation districts requesting information for the purpose of assembling and correlating data relating to the activities of California irrigation districts during 1930.

Conferences were held with officials of the Hot Springs Irrigation District, Modoc County, the El Camino Irrigation District, Tehama County, and the Linden Irrigation District, San Joaquin County, for the purpose of consulting on matters connected with the economic operation of these districts.

The Richvale Irrigation District, Butte County, voted favorably on January 24 for a bond issue in the amount of \$515,000. Funds are provided in this issue for the purchase of an interest in the water rights and irrigation system of the Sutter-Butte Canal Company, a public utility serving a large area of land in Butte and Sutter counties.

The following matters were referred to the California Bond Certification Commission and favorable action taken by the Commission at its meeting held on February 7, 1931:

1. Approval of an expenditure by the Carpenter Irrigation District, Orange County, in the amount of \$17,960.58 for preliminary work on Santiago Creek storage dam.

2. Approval of an expenditure by the Serrano Irrigation District, Orange County, in the amount of \$17,297.98 for preliminary work on the Santiago Creek storage dam.

The Lindsay-Strathmore Irrigation District, Tulare County, has been given consent to enter into an agreement for the purpose of acquiring certain water rights necessary to the district.

FLOOD CONTROL AND RECLAMATION

MAINTENANCE OF SACRAMENTO AND SAN JOAQUIN DRAINAGE DISTRICT

Maintenance clearing of timber in the by-passes has been completed for the season as the money available has been exhausted. All of the major repair work to structures in the by-passes has been completed. The maintenance force has been reduced to eight men exclusive of pump operators, and they are engaged in miscellaneous routine maintenance such as inspecting bridges and structures and making minor repairs, cleaning drainage ditches, etc. The drainage pumps have been operated for short periods during the recent storms.

FLOOD CONTROL PROJECT MAINTENANCE—BANK PROTECTION

All jobs of bank protection designed to protect against floods of the current winter have been completed. The last job completed was done in cooperation with Levee District No. 3 in Glenn County at a cost of \$1,400.

SACRAMENTO FLOOD CONTROL PROJECT

No actual construction work is now under way by this Department in connection with the flood control project construction. Plans and estimates are being prepared for project units to be constructed in the future.

The deputy in charge of flood control and reclamation attended one meeting of the Reclamation Board and one meeting of the Flood Control Construction Committee.

EMERGENCY FLOOD CONTROL AND RECTIFICATION OF RIVERS

Bank protection work at Twitchell Island in cooperation with Reclamation District 1601 has been completed. Fourteen hundred tons of quarry rock riprap were placed in a length of 600 feet at the junction of Seven Mile and Three Mile sloughs.

Arrangements have been completed for channel rectification work at the mouth of Little River in Humboldt County in cooperation with the Little River Redwood Company and the county of Humboldt. This work is designed to restore the mouth of the river to its original position and is estimated to cost \$5,025.

Funds have been provided for rectification work on the San Jacinto River near San Jacinto in cooperation with various landowners and the county of Riverside, amounting to \$3,150. A fence barrier supported on driven steel pipes, about 2100 feet long, will be constructed, the work to commence at once.

MOKELUMNE RIVER

The work of improving the flood channel of the Mokelumne River in collaboration with San Joaquin County has been discontinued. A small levee 1000 feet long on the McCauley Estate has been completed, eliminating a choked condition. The channel is now clear and in fairly good condition to receive the possible winter floods. About \$8,000 has been expended on this work by the State and county.

RUSSIAN RIVER JETTY

Repairs to the jetty structure have proceeded with funds furnished by the Division of Fish and Game. The quarry and railroad have been operating during the entire period placing additional rock in the jetty wall. The damage sustained by the structure during the winter storms consisted of breaking away of about

150 feet of track and timber wall, and damaging to some extent about 100 feet additional. The rock placed in the jetty originally is still in place and will be effective in completing the wall. In fact, the storms have improved this portion of the work by settling the rock to a foundation which will probably be permanent. An additional sum of \$22,500 has been made available for this work under chapter 60, Statutes of 1931, passed as an emergency measure. An average of twelve men has been employed during the past period.

SANTA MARIA RIVER

The county of Santa Barbara has contributed an additional \$1,000 for work on the Santa Maria River, making a total fund of \$10,000 of which \$7,750 has been expended in clearing the channel of tree growth to a width of 375 feet for the length of six miles. No work is now under way, but the balance of the money will be expended in the near future in additional clearing and channel rectification.

FLOOD MEASUREMENTS AND GAGES

The streams of the Sacramento and San Joaquin valleys have not yet reached a stage which would require flood measurements. All preparations for this work are complete and all gages maintained by this Division are now in operation.

DAMS

During this period the activities have been directed toward final inspection of existing dams with a view to their approval. Supervision has also been maintained on the construction and repairs of dams.

To date 742 applications for approval of existing dams are on file; 59 applications for approval of plans and specifications for construction or enlargement, and 128 applications for approval of plans for repairs or alterations of dams.

Applications received for approval of plans for repair or alteration:

Dam	Owner	County
Porter Estate	B. F. Porter Estate	Los Angeles
Toreson	F. W. and Mrs. J. V. Caldwell	Modoc
Upper Twin Lake	G. B. Day Estate and Plymouth Land and Live Stock Company	Mono
Lower Twin Lake	Hunewill Land and Live Stock Company, et al	Mono
Dexter Creek	Wm. Symons	Mono
Silva Flat	Homer C. Jaek	Lassen
Sardine Lake	Archibald Farrington	Mono
Orr Creek	Pacific Gas and Electric Company	Placer

Plans approved for construction:

The plans and specifications for the Santiago Creek Dam in Orange County, under the joint ownership of the Serrano and Carpenter Irrigation Districts and The Irvine Company were approved.

Plans approved for repair or alteration:

Dam	Owner	County
Antioch	Town of Antioch	Contra Costa
Culbertson	Pacific Gas and Electric Company	Nevada
Lower Feeley	Pacific Gas and Electric Company	Nevada
Middle Lindsay	Pacific Gas and Electric Company	Nevada
Upper Feeley	Pacific Gas and Electric Company	Nevada
Bear River	Pacific Gas and Electric Company	Nevada and Placer
Dexter Creek	Wm. Symons	Mono
Los Serranos	Davidson Investment Company	San Bernardino

A great number of existing dams have been critically examined both as to design and actual construction conditions and have been found to meet the requirements of safety. Certificates of approval on these dams will be issued shortly.

WATER RIGHTS

APPLICATIONS TO APPROPRIATE

Twenty-six applications to appropriate were received during January, 1931. Sixteen applications were canceled and nine were approved. Fourteen permits were revoked and thirty licenses were issued.

Among the permits issued was one to Linden Irrigation District allowing the appropriation of 154 cubic feet per second and 40,000 acre-feet per annum by storage on Calaveras River for the irrigation of 12,330 acres in San Joaquin, Stanislaus, and Calaveras counties, at an estimated cost of \$105,000 and two to the Southern Sierras and Nevada-California Power Companies allowing the appropriation of 4999 acre-feet for power purposes by storage on Green Lake and Bishop Creek in Inyo County, at an estimated cost of \$70,000.

ADJUDICATIONS

Stanislaus River (Alpine, Calaveras, San Joaquin, Stanislaus and Tuolumne counties). In accordance with the provisions of Section 36d of the Water Commission Act, a Certificate of Water Right was issued to each owner of a right as set forth in the decree entered in the Stanislaus River Adjudication Proceedings.

Shasta River (Siskiyou County). Case pending in the Superior Court of Siskiyou County.

Whitewater River (San Bernardino and Riverside counties). Case pending in the Superior Court of Riverside County awaiting developments in regard to the proposed All American Canal from Colorado River.

North Cow Creek (Shasta County). Case pending in the Superior Court of Shasta County, awaiting the Court's pleasure in placing it on the calendar.

Oak Run Creek (Shasta County). Case pending in the Superior Court of Shasta County awaiting the entry of a decree in the North Cow Creek case.

Clover Creek (Shasta County). Case pending in Superior Court of Shasta County awaiting the Court's pleasure in placing it on the calendar.

Butte Creek (Siskiyou County). Case pending in the Superior Court of Siskiyou County awaiting action by the parties involved.

Los Alamos Creek (Santa Barbara County). Special effort was made during the month to secure the remaining signatures to the stipulation for consent judgment. Action by the referee is being deferred awaiting word from the parties involved.

Davis Creek (Modoc County). Two exceptions to the report of referee in the Davis Creek case have been filed, and will be heard by the Superior Court of Modoc County on February 24, 1931.

Mill Creek (Modoc County). The report covering the administration of the tentative schedule of allotments which was authorized for the 1930 season has been completed and is in the hands of the State Printer.

Deep Creek (Modoc County). The Report on Water Supply and Use of Water on Deep Creek and Tributaries has been completed. This report covers the results of the field investigation made by the Division during the 1930 irrigation season and is being circulated among the Deep Creek water users prior to a conference to be held at Cedarville on March 17, 1931.

Franklin Creek (Modoc County). The tentative schedule of allotments for trial distribution during the 1931 irrigation season has been completed and will be submitted to the Franklin Creek water users at a conference to be held at Alturas on March 16, 1931.

WATER DISTRIBUTION

Reports on water master service for the 1930 irrigation season were completed for Little Shasta and Lower Shasta rivers (Siskiyou County) and Soldier Creek (Modoc County).

CALIFORNIA COOPERATIVE SNOW SURVEYS

During the early part of the last month a field trip was made to Yosemite, Sequoia, and General Grant national parks, for the purpose of instructing the new men of the Park Service to be used on the surveys during the present season. The standard methods for making the surveys were demonstrated at representative snow courses.

The office work during the past month on this project has comprised the compilations necessary to keep all precipitation and snow survey records to date, and the correspondence and computations required in the preparation and publication of the first monthly bulletin of snow survey and precipitation data. Arrangements were made with all cooperating agencies so that snow surveys were made the latter part of January at all of the key courses and the results of these surveys and the data to February 1st from all those precipitation stations of the U. S. Weather Bureau, the State, districts, and public utilities located in the mountainous portions of the various stream basins, have been incorporated in the monthly bulletin which was placed in the mail on February 10th.

It is to be noted that the main survey of all snow courses as a basis for forecasts of stream flow is made in the latter part of March and the present surveys cover only selected or key courses to furnish data in the nature of a progress report. The bulletin presents the results of the snow surveys and affords an opportunity for comparison with the snow pack as shown by the surveys of February 1, 1930, the latter being the first season of the State's entry upon work of this character. In some instances where snow surveys were made for a period of years prior to 1930 by agencies now cooperating with the State, it has been possible to develop tentative "normals" and in these cases the water content of the snow as measured at the first of February is given also in percentage of these seasonal normals.

In so far as generalizations for entire stream basins can be made from the as yet somewhat scattered and limited snow courses, the surveys indicate a water content of the snow on February 1st of this year in per cent of the water content at the same time last year, as follows: Upper Sacramento and McCloud (one course) 60 per cent; Pit (one course) 80 per cent; Feather (3 courses) 50 per cent; Yuba (3 courses) 105 per cent; American (3 courses) 90 per cent; Mokelumne (one course) 60 per cent; Stanislaus (3 courses) 85 per cent; Tuolumne (6 courses) 75 per cent; Merced (6 courses) 100 per cent; Mono (2 courses) 55 per cent; Kings (2 courses) 80 per cent; Kaweah and Kern (one course each) 85 per cent.

Reviewing the data from the precipitation stations, the precipitation to February 1st in per cent of normal is shown for the various stream basins about as follows: Upper Sacramento, Pit and McCloud, 60 per cent; Feather and Yuba, 55 per cent; American, 60 per cent; Mokelumne, 65 per cent; Tuolumne and Merced, 70 per cent; Mono (one station) 60 per cent; Upper San Joaquin and Kings, 60 per cent;

Kaweah, 65 per cent; Kern, 75 per cent; Owens—one station on Bishop Creek 85 per cent—Upper Valley (one station) 50 per cent—Lower Valley (3 stations) ranging from 10 to 50 per cent; Santa Ana, 70 per cent; San Gabriel and Los Angeles (Mt. Wilson Station only—January data for other stations not available to date) 60 per cent.

SACRAMENTO-SAN JOAQUIN WATER SUPERVISOR

The work of the past month under this project has been confined chiefly to the computations necessary in the preparation of the report for the 1930 season covering all diversions, stream flow, return flow, etc., throughout the Sacramento-San Joaquin territory. The small amount of field work has included regular salinity observations, tide gage maintenance, and maintenance of tanks being used in a determination of the consumptive use of water of aquatic plants.

The salinity sampling has continued at thirty-one stations and tide gages have been maintained at eight points between Collinsville and Sacramento. The following are comparative salinity and stream flow data for 1930 and 1931.

Station	Salinity in parts of Chlorine per 100,000	
	January 30, 1931	January 30, 1930
Bullhead Point -----	850	380
O. & A. Ferry -----	61	5
Collinsville -----	9	4
Antioch -----	6	5
Jersey -----	6	6
Emmaton -----	2	3
Webb Pump -----	5	8

Station	Discharge in second-feet	
	February 13, 1931	February 13, 1930
Sacramento River at Sacramento ----	11,200	26,200

WATER RESOURCES

VENTURA COUNTY INVESTIGATION

Work on this investigation has continued throughout the month. The placing of a better grade of registers at several of the important gaging stations referred to in last month's report is being done by the United States Geological Survey in conformity with the arrangements made by this Division for the placing of these registers.

SOUTH COASTAL BASIN INVESTIGATION

While not as yet fully under way considerable progress has been made in organizing this work during the past month and there are now ten engineers and geologists employed, mainly on two phases of the work, one being a digest of well measurements and coordination of the well measurements in progress and the other a study of the geology of the underground basins. A beginning has also been made in getting the quality of underground water through an agreement as yet not entirely completed in detail, between the Department of Agriculture and this office, whereby the laboratory of the department at Riverside is made available for analyses of samples. The work is to be done by the State but under the advice of the department and with the expectation that the scientists of the department will make interpretation of the results.

MOJAVE RIVER INVESTIGATION

This has progressed in a routine way during the month and the new work on determining evaporation and transpiration of water along the Hood plains of

the river has been started in cooperation with the Division of Agricultural Engineering, U. S. Department of Agriculture. A progress report to September 1, 1930, has been written and will be available shortly. This of course incorporates only data and interpretation of such data.

NAPA VALLEY INVESTIGATION

Measurements of stream flow were made on Napa River, Rector Creek and Conn Creek. A reconnaissance was made of Dry Creek, Mill Creek, North Fork Napa River, and Carneros Creek in search of possible reservoir sites. A site on upper Dry Creek was the only one found which merits further study. Gages have been installed on Rector Creek, and it is expected a fairly accurate record of the discharge of that stream will be available at the close of the year.

SANTA CLARA VALLEY INVESTIGATION

A progress report covering this investigation was completed and mailed to interested parties early in the month. In addition thereto, a member of the staff attended a public meeting in San Jose called for the purpose of discussing the state and local water problems. No field work was required during the month because of the fact that rainfall was insufficient to start the streams flowing.

PIT RIVER (MODOC AND LASSEN COUNTIES)

Routine field work was continued throughout the month. All water stage recorders were overhauled and adjusted in order to assure their proper operation.

Copies of the Progress Report on Pit River Investigation for the year ending September 30, 1930, were distributed to the Boards of Supervisors of Modoc and Lassen Counties, the Hot Springs Valley Water Users Association, the Big Valley Water Users Association, and to each member of the Permanent Committee of Pit River Investigation. The Permanent Committee has called a meeting of all interested parties to be held at Lookout on February 25 for a discussion of the contents of the report and other matters pertaining to the investigation.

WATER RESOURCES REPORTS

Rapid progress is being made upon the completion of reports of the water resources investigation covering a State water plan for the coordination, development, conservation and utilization of the water resources of the State as provided in Chapter 832 of the Statutes of 1929. Practically the entire staff of the Division formerly engaged on investigations in the Sacramento and San Joaquin Valleys, salt water barrier and salinity conditions has been concentrated upon the preparation of these reports covering the results of investigations made by the Division of Water Resources.

MISCELLANEOUS ACTIVITIES

1. A continuation of the check being made in connection with the investigation of lands riparian to the Sacramento and American rivers has indicated that the first figures reached for the riparian acreage will be reduced by about 25%. The reduction is due to further data afforded as to the original Spanish Grants, Swamp and Overflow Surveys, and Land Office patents, and to severance due to railroad rights-of-way held in fee simple rather than as easements.

2. A field trip was made during the past month by representatives of the State, the U. S. Army Engineers and the U. S. Geological Survey to locate gaging stations in the San Joaquin Valley. Locations were made on the San Joaquin River near Vernalis, and Newman, and on Oristimba Creek near Newman. The

Newman station has been maintained previously by staff gage and the Vernalis station by weekly recorder. The new installations will provide for long period water registers. The station on Oristimba Creek is entirely new. Locations were inspected at the debouchure of Los Banos and Banoche creeks, but suitable sites were not found. This work is a part of the program for the location of some eighteen new gaging stations and the installation of recorders at eighteen old stations throughout the Sacramento-San Joaquin drainage basin in accordance with a Federal-State Cooperative Agreement.

STATE HIGHWAY PROGRESS REPORT

as of March 1, 1931.

C. H. PURCELL, Chief.

During the past period, contracts have been awarded, work advertised and plans and specifications commenced as shown in the following table:

Work placed under contract.....	\$1,477,000
Contracts pending—projects advertised.....	2,573,000
Work anticipated to be advertised during March	5,086,300

Total

\$9,136,300

PROJECTS COMPLETED

The contracts which have been completed and accepted during the past four weeks include the following:

San Bernardino—Barstow Highway: A new bridge has been erected across the Mojave River near Victorville. This bridge was placed on an improved alignment of the highway at the river crossing; the grading of the approaches to the structure having been completed in November of last year. The structure consists of one 270-foot steel truss span, five 51-foot and one 48-foot reinforced concrete girder spans, and has a clear roadway width of 34 feet. The new bridge replaced the old inadequate 250-foot span built by the county, some twenty years ago, on an inferior standard of alignment. The bridge and approaches were constructed at a cost of \$146,800.

Valley Route: On the Ridge Route in Los Angeles County, 12.5 miles of State highway has been widened and straightened by the paving of crescent shaped areas, adjacent to the existing concrete pavement, with bituminous macadam. This project was located at the southerly end of the Ridge Route between Castaic School and fourteen miles north, on the Los Angeles to Sacramento artery. The crescent shaped areas were the result of the continuous work of the State's highway forces in cutting back the mountain sides on the many blind curves of this mountain highway. The actual effect of placing these crescent sectors adjacent to the existing pavement is to straighten the alignment of the highway generally. The cost of this paving amounted to \$148,400.

East of Sierras Highway: On the Mojave-Owens Valley Road 15 miles, from Cinco to seven miles north of Ricardo, in Kern County, has been graded and surfaced with oil treated crushed rock. This project brings the last unimproved section between Mojave and the Owens Valley to a high standard of grade and alignment, with an adequate type of surfacing and carries the improvement to within five miles of Independence. Traffic is now afforded some 200 miles of

improved highway through Kern and Inyo Counties to recreational areas of the Sierra Nevada with the hazards of desert travel minimized and distance and time materially decreased. The section just completed passes through the weird and scenic Red Rock Canyon, a favorite winter recreation spot for many people from Southern California cities. This project was completed at a cost of \$277,900, much attention being given to desert drainage problems and protection of the roadbed from damage by cloudbursts.

Walker Pass Highway: The progress on another State Highway, in Kern County, which leads into the Owens Valley is noted by the completion of a contract for placing an 18-foot oil treated crushed rock surface on 14 miles of the Kern River Road between Cottonwood Creek and Democrat Springs. This surfacing cost \$147,800. The Kern River Road extends from Bakersfield to the Owens Valley via Walker Pass. The present improvement completes the surfacing of this road from Bakersfield to Democrat Springs. Until the time when this road is adequately constructed through the pass the bulk of traffic will remain recreational in character, travel being between Bakersfield and the various resorts in Kern River Canyon.

Redwood Park Highway: The construction of a graded roadbed 24 feet wide on two and a half miles of the beautiful mountain road which traverses California Redwood Park in Santa Cruz County was completed at a cost of \$136,600. This work was located between Waterman Switchback and Saratoga Gap and it is planned to complete the grading and surface the entire distance between these two points this year. Recently completed construction on the Skyline Boulevard and its lateral connections makes this Redwood forest accessible to one and one-quarter million people within less than three hours driving time.

Bay Shore Highway: The continued progress on construction of the Bay Shore Highway is noted by the completion of the paving with 40 feet of Portland cement concrete that portion of this route through South San Francisco. The five miles immediately south of this project was recently paved and the distance from Broadway in Burlingame to Fifth Avenue in San Mateo will be advertised for bids in the near future. The cost of the paving through South San Francisco amounted to \$103,500. Another step in pushing this alternate route down the peninsula from San Francisco to San Jose is accomplished by the advertising on February 11th of a project for the construction of a reinforced concrete girder bridge composed of three 27-foot spans and having a clear roadway width of 100 feet. This new structure will connect San Mateo and Santa Clara Counties by spanning San Francisquito Creek at Palo Alto.

BID OPENINGS

Bids were opened during the past four weeks on the following projects:

National Old Trails: The continued improvement of the trans-continental highway which enters California at Needles is noted by the opening of bids for the construction of a graded roadbed 36 feet wide and placing an oil treated crushed rock surfacing 20 feet wide along a new alignment 29 miles long between Essex and one mile south of Klinefelter. The cost of this section of this desert road will be \$548,000. A reinforced concrete overhead crossing over the tracks of the Santa Fe Railroad about two miles east of Essex was advertised for bids on February 11. Work on this route has been steadily pushed eastward from San Bernardino and by the completion of the present

project, this desert highway will present a modern standard of alignment and grade from San Bernardino to 11 miles from Needles.

Valley Highway: Bids for the reconstruction of nearly eight miles of the Los Angeles to Sacramento Highway, between Stockton and Houston School were opened on February 21, 1931. This project calls for the placing of a Portland cement concrete pavement 20 feet wide and widening the roadbed to 36 feet. The pavement will be placed on the graded roadbed between Stockton and Cherokee Station which was constructed on a revised alignment in 1927. At Cherokee Station this improvement will connect with the southerly end of the recently completed seven miles of concrete pavement between Cherokee Station and Harney Lane. From Harney Lane, through Lodi to Houston School, the old county road is to be regraded and paved with Portland cement concrete. With the completion of this project, which will cost \$284,000, this important arterial will present a wide, modern, high-speed highway from Stockton to Sacramento.

HIGHWAY BIDS AND AWARDS FOR MONTH OF FEBRUARY

COLUSA COUNTY—Between Maxwell and the north boundary, 1.5 miles to be surfaced with pit run gravel. Dist. III, Rt. 7, Sec. C. A. Teichert & Son, Sacramento, \$12,446; D. McDonald, Sacramento, \$11,049; contract awarded to Harms Bros. Galt, \$9,715.

PLUMAS COUNTY—Between Paxton's and Keddie, 0.7 of a mile to be graded (line change), Dist. II, Rt. 21, Sec. B. F. C. Coats, Sacramento, \$52,663; Hemstreet & Bell, Marysville, \$51,433; Larsen Bros., Galt, \$55,200; Granfield, Farrar and Carlin, San Francisco, \$61,810; Finnell Co., Sacramento, \$53,475; H. H. Boomer, San Francisco, \$69,966; Young & Son, Berkeley, \$64,129; Chigris & Sutsos, San Francisco, \$52,968; W. H. Hauser, Oakland, \$51,518; Chas. N. Chittenden, Napa, \$67,753; contract awarded to Morrison-Knudsen Co., Boise, Idaho, \$48,791.

SAN BERNARDINO COUNTY—Between 1½ miles east of Essex and 1 mile SW. of Klinefelter, grading and oil surfacing. Dist. VIII, Rt. 58, Sec. LMN. Jahn and Bressi Construction, Los Angeles, \$557,412; George Herz & Co., San Bernardino, \$521,325; Allied Contractors, Inc., Omaha, Nebraska, \$692,067; K. F. Knapp, Oakland, \$554,073; Isbell Const. Co., Carson City, Nevada, \$599,084; New Mexico Construction Co., Albuquerque, N. M., \$644,603; Hemstreet & Bell, Marysville, \$606,687; Merritt Chapman & Scott Corporation, San Pedro, \$559,814; A. Teichert & Son, Inc., Sacramento, \$567,324; Contract awarded to H. W. Rohl Co., Los Angeles, \$496,246.

SONOMA COUNTY—About 4½ miles north of Santa Rosa, timber bridge across Mark West Creek, consisting of six 19-ft. spans, two 16-ft. spans, surfaced with Portland cement concrete approaches and bridge. Dist. IV, Rt. 1, Sec. B. A. T. Howe, Santa Rosa, \$22,743; W. C. Colley, Santa Rosa, \$23,455; Ralph Hunter, Sacramento, \$19,551; Fred J. Maurer, Eureka, \$22,255; Smith Bros., Eureka, \$22,791; J. W. Hoopes, Sacramento, \$21,287. Contract awarded to Peter McHugh, San Francisco, \$19,366.

SAN JOAQUIN COUNTY—About 7.7 miles to be graded and paved with Portland cement concrete between Stockton and ½ mile north of Houston School (two sections, part between Stockton and Lodi and the other between Lodi and Houston School). Dist. X, Rt. 4, Sec. C D. Clark & Henery Co., San Francisco, \$274,521; N. M. Ball, Porterville, \$264,817; Fredrickson & Watson Const. Co., Oakland, \$264,700;

Basich Bros. Construction Co., Torrance, \$256,197; Hanrahan Company, San Francisco, \$252,602; C. W. Wood, Stockton, \$260,058. Contract awarded to Jahn & Bressi Construction Co., Los Angeles, \$249,598.

ARCHITECTURAL AWARDS FOR MONTH OF FEBRUARY

AGNEWS STATE HOSPITAL—Ward Unit No. 2 at Farm, contract for general work awarded to J. F. Shepherd, San Francisco, \$194,500; contract for electrical work, same building, to Guilbert Bros. Electric Company, San Jose, \$7,229; contract for plumbing, heating and ventilating work, same building, to Hateley and Hateley, Sacramento, \$40,572.

MENDOCINO STATE HOSPITAL—Talmage Ward No. 7, contract for general work, to A. Nelson, San Francisco, \$41,435; contract for electrical work, same building, to Decker Electrical Company, San Francisco, \$826; contract for plumbing and heating, same building, to Ukiah Plumbing and Heating Company, Ukiah, \$7,171.

PACIFIC COLONY—Spadra Girls' Industrial Building, Administration Building, Hospital Building, contract for general work to Louis A. Geisler, Huntington Park, \$76,574; contract for plumbing, heating and ventilating work, same buildings, to Cooney and Winterbottom, Los Angeles, \$15,495; contract for electrical work, same buildings, to Baty Electric Company, Long Beach, \$4,100.

STOCKTON STATE HOSPITAL—Cottage for employees, contract for general work to Samuel Eyre, Tracy, \$19,339; contract for electrical work, same building, to Hild Electric Company, Stockton, \$1221; contract for plumbing and heating work, same building, to Jos. C. Black, Stockton, \$6,600.

DAM APPLICATIONS AND APPROVALS

Applications for approval of dams built prior to August 14, 1929, filed with the State Department of Public Works, Division of Water Resources during the month of February, 1931.

LASSEN COUNTY—McArthur Dam No. 256. Rodrick McArthur, McArthur, owner; wooden dam, 8 feet above streambed with a storage capacity of 500 acre-feet, situated on Pit River tributary to Sacramento River in Sec. 26, T. 38 N., R. 7 E., M. D. B. and M., for diversion purposes for irrigation use.

SAN JOAQUIN COUNTY—Gilmore Dam No. 571. Dan N. Gilmore, Linden, owner; earth dam, 20 feet above streambed with a storage capacity of 505 acre feet, situated on Unnamed Creek tributary to Mormon Slough in Sec. 9, T. 2 N., R. 9 E., M. D. B. and M., for storage purposes for irrigation use.

ORANGE COUNTY—Orchard Reservoir No. 794. Mrs. Susanna Bixby Bryant, Los Angeles, owner; earth dam, 24 feet above streambed with a storage capacity of 20 acre feet, situated on Santa Ana River in Sec. 28, T. 3 S., R. 8 W., S. B. B. and M., for storage purposes for irrigation and domestic use.

LASSEN COUNTY—Bieber Dam No. 254. E. G. Babcock, Bieber, owner; timber crib dam, 5 feet above streambed with a storage capacity of 100 acre feet, situated on Pit River tributary to Sacramento River in Sec. 22, T. 38 N., R. 7 E., M. D. B. and M., for storage and diversion purposes, for irrigation use.

LASSEN COUNTY—Fulcher Dam No. 156 3. West Side Irrigation Company, Bieber, owner; crib dam, 16 feet above streambed with a storage capacity of 50 acre feet, situated on Pit River tributary to Sacramento River in Sec. 3, T. 38 N., R. 3 E., M. D. B. and M.

SOLANO COUNTY—Lake Madigan Dam No. 14-2. City of Vallejo, Vallejo, owner; earth fill dam, 85 feet above streambed with a storage capacity of 1806 acre-feet, situated on Wild Horse Valley Creek tributary to

Green Valley Creek in Sec. 4, T. 5 N., R. 3 W., M. D. B. and M., for storage purposes for municipal use.

SOLANO COUNTY—Lake Frey Dam No. 14-3. City of Vallejo, Vallejo, owner; earth dam, 71 feet above streambed with a storage capacity of 983 acre-feet, situated on Wild Horse Valley Creek tributary to Green Valley Creek in Sec. 9, T. 5 N., R. 3 W., M. D. B. and M., for storage purposes for municipal use.

Applications for approval of plans and specifications for repair or alteration of dams filed with the State Department of Public Works, Division of Water Resources, during the month of February, 1931.

LASSEN COUNTY—Silva Flat Dam No. 232. Homer C. Jack, Bieber, owner; earth dam, situated on Juniper Creek tributary to Pit River in Sec. 23, T. 36 N., R. 9 E., M. D. B. and M.

MONO COUNTY—Sardine Lake Dam No. 533 2. Archibald Farrington, Mono Lake, owner; rock dam, situated on Walker Creek in Sec. 15, T. 1 S., R. 25 E., M. D. B. and M.

PLACER COUNTY—Orr Creek Dam No. 97-42. Pacific Gas and Electric Company, San Francisco, owner; rubble dam, situated on Orr Creek tributary to Dry Creek in Sec. 18, T. 13 N., R. 8 E., M. D. B. and M.

SHASTA COUNTY—Lake Grace Dam No. 97-92. Pacific Gas and Electric Company, San Francisco, owner; earth dam, in Sec. 4, T. 30 N., R. 1 E., M. D. B. and M.

Plans and specifications for the construction or enlargement of dams approved by the State Department of Public Works, Division of Water Resources, during the month of February, 1931.

SHASTA COUNTY—Garner No. 1 Dam No. 222. G. L. Childs and A. P. Waller, Manton, owners; earth dam, 21 feet above streambed with a storage capacity of 34 acre-feet, situated on dry ravine tributary to Digger Creek in Sec. 8, T. 30 N., R. 2 E., M. D. B. and M., for storage purposes for recreation use.

Plans for the repair or alteration of dams approved by the State Department of Public Works, Division of Water Resources, during the month of February, 1931.

NEVADA AND PLACER COUNTIES—Bear River Dam No. 97-11. Pacific Gas and Electric Company, San Francisco, owner; gravity dam, situated on Bear River tributary to Yuba River, in Sec. 22, T. 15 N., R. 9 E., M. D. B. and M.

MONO COUNTY—Dexter Creek Dam No. 532. Wm. Symons, Laws, owner; earth dam, situated on Dexter Creek.

SAN BERNARDINO COUNTY—Los Serranos Dam No. 808. Davidson Investment Company, Long Beach, owner; dry rubble dam, situated on Orr Creek tributary to Dry Creek, in Sec. 18, T. 13 N., R. 8 E., M. D. B. and M.

LOS ANGELES COUNTY—Lower Franklin Dam. No. 6-14. City of Los Angeles, Los Angeles, owner; earth dam, located in Sec. 12, T. 1 S., R. 15 W., S. B. B. and M.

PLACER COUNTY—Orr Creek Dam No. 97-42. Pacific Gas and Electric Company, San Francisco, owner; dry rubble dam, situated on Orr Creek tributary to Dry Creek, in Sec. 18, T. 13 N., R. 8 E., M. D. B. and M.

LASSEN COUNTY—Silva Flat Dam No. 232. Homer C. Jack, Bieber, owner; earth dam, situated on Juniper Creek tributary to Pit River, in Sec. 23, T. 36 N., R. 9 E., M. D. B. and M.

ANYTHING TO ACCOMMODATE

Owing to a big rush of job printing and for lack of space, a number of births and deaths will be postponed till next week.—*Steelville Ledger*.

An infernal machine is the one that ambles along the middle of the road in front of you at about ten miles an hour.

WATER APPLICATIONS AND PERMITS

Applications for permits to appropriate water filed with the Department of Public Works, Division of Water Resources, during the month of February, 1931.

MONO COUNTY—Application 6883. O. P. Dyar, 325 South Los Robles, Pasadena, California, for 150 gallons per day from Unnamed Stream tributary to Lake George and Owens River. To be diverted in Sec. 17, T. 4 S., R. 27 E., M. D. B. and M., for domestic purposes. Estimated cost, \$50.

CONTRA COSTA COUNTY—Application 6884. Associated Oil Company, c/o Humphrey, Searls, Doyle and McMillan, Attys., Standard Oil Bldg., San Francisco, California, for 20,000 gallons per minute from Hastings Slough tributary to Suisun Bay. To be diverted in Sec. 11, T. 2 N., R. 2 W., M. D. B. and M., for industrial purposes. Estimated cost, \$30,000.

SISKIYOU COUNTY—Application 6885. W. A. Sargent, Dorris, California, for 2.0 cubic feet per second from Cottonwood Creek tributary to Lower Klamath Lake. To be diverted in Sec. 7, T. 47 N., R. 2 E., M. D. B. and M., for irrigation purposes on 160 acres. Estimated cost, \$50.

SISKIYOU COUNTY—Application 6886. W. S. Hart, L. I. Herrington, John Tiedemann and G. D. Jones, c/o W. S. Hart, 520 K St., Sacramento, California, for 800 gallons per day from Unnamed Spring tributary to Kelsey, thence Scott, thence Klamath River. To be diverted in Sec. 21, T. 44 N., R. 11 W., M. D. B. and M., for domestic purposes.

BUTTE COUNTY—Application 6887. Shelley E. Lee, Biggs, California, for 3.0 cubic feet per second from Lateral "A," Reclamation District 833 tributary to Butte Creek and Sacramento River. To be diverted in Sec. 18, T. 18 N., R. 2 E., M. D. B. and M., for irrigation purposes on 160 acres.

HUMBOLDT COUNTY—Application 6888. C. H. Barkdull, 3646 36th Avenue South, Seattle, Washington, for 25 cubic feet per second from 6 or 7 small streams, tributary to South Fork of Trinity River. To be diverted in Sec. 24, T. 5 N., R. 5 E., H. B. and M., for mining and domestic purposes.

TRINITY COUNTY—Application 6889. Donald K. Can and Joseph O'Donnell, c/o Donald K. Can, Burnt Ranch, California, for 1.0 cubic foot per second from Gray Creek tributary to Trinity River. To be diverted in Sec. 32, T. 6 N., R. 6 E., H. B. and M., for mining purposes. Estimated cost, \$500.

LASSEN COUNTY—Application 6890. Western Pacific Railroad Company, Mills Bldg., San Francisco, California, for 0.4 cubic foot per second from Horse Creek, to be diverted in Sec. 15, T. 35 N., R. 7 E., M. D. B. and M., for industrial and domestic purposes. Estimated cost, \$18,700.

EL DORADO COUNTY—Application 6891. N. L. Apollino, Camino, California, for 0.044 cubic foot per second from Bush Creek, to be diverted in Sec. 4, T. 10 N., R. 11 E., M. D. B. and M., for irrigation and domestic purposes on 5 acres. Estimated cost, \$400.

SUTTER COUNTY—Application 6892. Andreae C. H. Schmidt, c/o Lawrence Schilling, Attorney, Yuba City, California, for 1.1 cubic feet per second from Feather River tributary to Sacramento River, to be diverted in Sec. 11, T. 14 N., R. 3 E., M. D. B. and M., for irrigation purposes on 81.65 acres. Estimated cost, \$1,500.

SAN DIEGO COUNTY—Application 6893. Harry E. Causey, Aguanga, California, for 5 gallons per minute from Unnamed Spring tributary to Temecula Creek, thence Santa Margarita River, to be diverted in Sec. 20, T. 9 S., R. 2 E., S. B. B. and M., for irrigation and domestic purposes on 2 acres. Estimated cost, \$300.

STANISLAUS COUNTY—Application 6894. E. B. Henry, Route 3, Box 947, Modesto, California, for 0.7 cubic foot per second from Tuolumne River tributary to San Joaquin River, to be diverted in Sec. 7, T. 4 S., R. 8 E., M. D. B. and M., for irrigation and domestic purposes on 58 acres. Estimated cost, \$1,000.

TUOLUMNE COUNTY—Application 6895. W. C. Lehane, P. O. Box 94, Modesto, California, for 280 cubic feet per second from Stanislaus River, tributary to San Joaquin River, to be diverted in Sec. 10, T. 1 S., R. 12 E., M. D. B. and M., for irrigation purposes on 100,000± acres.

INYO COUNTY—Application 6896. Leo Kikut,

Olanca, California, for 2 cubic feet per second from Small Spring to be developed, tributary to Owens Lake watershed, to be diverted in Sec. 36, T. 18 S., R. 36 E., M. D. B. and M., for irrigation and domestic purposes on 80 acres.

SAN BERNARDINO COUNTY—Application 6897. Mrs. Effel Rudy, Fenner, California, for 0.2 cubic foot per second from Fenner Spring, to be diverted in Sec. 28, T. 8 N., R. 18 E., S. B. B. and M., for domestic purposes.

EL DORADO COUNTY—Application 6898. United States El Dorado National Forest, Placerville, California, for 800 gallons per day from Unnamed Stream tributary to Lake Tahoe, to be diverted in Sec. 21, T. 13 N., R. 17 E., M. D. B. and M., for domestic and fire protection purposes. Estimated cost, \$100.

EL DORADO COUNTY—Application 6899. United States El Dorado National Forest, Placerville, California, for 800 gallons per day from Doana Springs tributary to Lower Echo Lake, to be diverted in Sec. 2, T. 11 N., R. 17 E., M. D. B. and M., for domestic purposes. Estimated cost \$150.

EL DORADO COUNTY—Application 6900. United States El Dorado National Forest, Placerville, California, for 3200 gallons per day from Bryant Creek tributary to South Fork of American River, to be diverted in Sec. 15, T. 11 N., R. 17 E., M. D. B. and M., for domestic and fire protection purposes. Estimated cost, \$500.

KERN COUNTY—Application 6901. Sophus D. Gunderson, Brown, California, for 0.25 cubic foot per second from Grapevine Canyon and seven springs or seepages tributary to Grapevine Canyon, to be diverted in Secs. 14, 15 and 23, T. 25 S., R. 37 E., M. D. B. and M., for irrigation, domestic and stock watering purposes.

Permits to appropriate water issued by the Department of Public Works, Division of Water Resources, during the month of February, 1931.

EL DORADO COUNTY—Permit 3653, Application 6797. Issued to G. E. White, Woodland, California, February 5, 1931, for 200 gallons per day from Forni Creek, in Sec. 24, T. 11 N., R. 16 E., M. D. M., for domestic purposes. Estimated cost, \$50.

SUTTER COUNTY—Permit 3654, Application 6670. Issued to H. S. Fasig and W. H. Saylor, Knights Landing, California, February 5, 1931, for 3.46 cubic feet per second from Sacramento River, in Sec. 14, T. 13 N., R. 1 E., M. D. B. and M., for irrigation on 276.81 acres. Estimated cost, \$4,000.

INYO COUNTY—Permit 3655, Application 6508. Issued to W. B. Gray, Beatty, Nevada, February 18, 1931, for 5.0 cubic feet per second from (1) Jail Spring, (2) Birch Spring and (3) Tuber Spring, in (1) and (2) Sec. 21, (3) Sec. 9, T. 20 S., R. 45 E., M. D. B. and M., for mining and domestic purposes.

PLUMAS COUNTY—Permit 3656, Application 6800. Issued to S. E. Colburn and A. E. Banks, Crescent Mills, California, February 19, 1931, for 1 cubic foot per second from Unnamed Spring, in Sec. 35, T. 26 N., R. 9 E., M. D. B. and M., for power and domestic purposes. Estimated cost, \$2,000.

SAN DIEGO COUNTY—Permit 3657, Application 6845. Issued to Division of Highways, Department of Public Works, Sacramento, California, February 19, 1931, for 0.012 cubic foot per second from La Posta Spring in Section 6, T. 17 S., R. 6 E., S. B. B. and M., for recreational purposes.

COLUSA COUNTY—Permit 3658, Application 6847. Issued to Mary E. Porter Gleason, Grimes, Calif., February 19, 1931, for 1.92 cubic feet per second from Sacramento River in Section 7, T. 14 N., R. 1 E., M. D. M., for irrigation on 153.58 acres. Estimated cost \$2,515.

MONO COUNTY—Permit 3659, Application 6742. Issued to Sarita Mining & Power Company, Bridgeport, Calif., February 19, 1931, for 1 cubic foot per second from Masonic Creek and 15 springs in Sections 15 and 16, T. 6 N., R. 26 E., M. D. M., for mining and domestic purposes. Estimated cost \$750.

MONO COUNTY—Permit 3660, Application 6759. Issued to Alley Age Products Company, Ltd., Whittier, California, February 24, 1931, for 3 cubic feet per second from Laurel Lakes, in Sec. 29, T. 4 S., R. 28 E., M. D. M., for power purposes. Estimated cost, \$1,200.

DEL NORTE COUNTY—Permit 3661, Application 6446. Issued to C. J. Dumbolten, Holland, Oregon, February 25, 1931, for 12 cubic feet per second from West Fork Althouse Creek, in Sec. 32, T. 19 N., R. 6 E., H. M., for mining purposes. Estimated cost, \$1,000.

STATE OF CALIFORNIA
Department of Public Works

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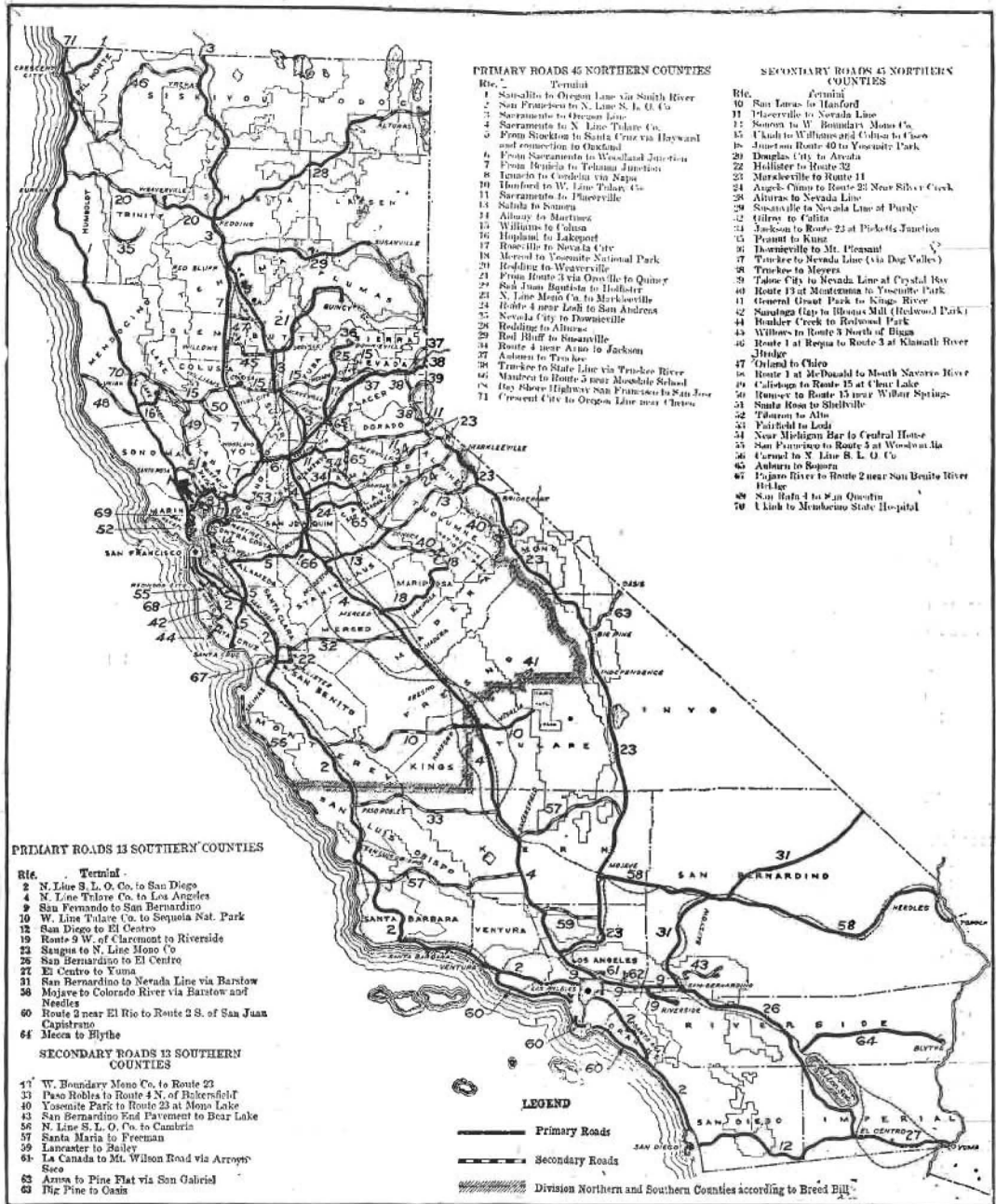
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RIGHTS OF WAY**

C. C. CARLETON, Chief

DIVISION OF PORTS

Port of Eureka—William Clark, Sr., Surveyor
Port of San Jose—Not appointed
Port of San Diego—Edwin P. Sample

STATE HIGHWAYS IN CALIFORNIA SHOWING THE PRIMARY AND SECONDARY ROAD SYSTEMS AND THE DIVISION OF THE STATE UNDER THE BREED BILL.



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