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CALIFORNIA

HIGHWAYS AND PUBLIC WORKS

*Pioneer State Highway
at Windy Cliff
in Kings River Canyon*

Official Journal of the Department of Public Works
AUGUST 1936

CALIFORNIA HIGHWAYS AND PUBLIC WORKS

Official Journal of the Division of Highways of the Department of Public Works, State of California

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\$5,917,525 of Gas Tax Allocated to Cities for Last Fiscal Year

By NEWTON PRATT

Assistant Engineer of City and Cooperative Projects

WITH the apportionment of gas tax revenue for the fiscal year ending June 30, 1936, complete, the incorporated cities of California will receive \$5,917,525.07 for this period according to the official apportionment recently announced by the Department of Public Works through the Division of Highways.

Of this amount, \$3,350,101.11 is provided for expenditure upon designated State highway routes within municipalities, while the remaining \$2,567,423.96 will be expended upon streets of major importance other than State highway routes.

This apportionment, combined with \$5,291,693.72 allotted to the cities from gas tax revenue accrued during the preceding 1933-1935 biennium, brings the cities a total subvention from the gas tax to date of \$11,209,218.79, exclusive of State highway funds appropriated by the California Highway Commission for expenditure within municipalities.

Considered upon a biennial basis, the cities will receive approximately \$6,748,800 more when the concluding apportionment of the current biennium is made next April.

The apportionment was made under laws enacted by the Legislature of 1935 and represents the net proceeds of $\frac{1}{2}$ cent of the gas tax, of which $\frac{1}{4}$ cent is allotted for State highway routes and $\frac{1}{4}$ cent is allotted for streets of major importance.

While the law allots an equal amount, or $\frac{1}{4}$ cent of

the gas tax for each purpose, the apportionment for State highways for the last fiscal year is necessarily greater than the amount allocated for other city streets due to the effective date of the enactment covering the latter apportionment occurring on September 15, 1935, subsequent to the July or initial quarterly apportionment thereby depriving this allotment of the revenue accruing from the first quarter.

As the allocation for State highways was originally created by the 1933 Legislature with August 21, 1933, as the effective date, this legislation had the priority to share in the July and succeeding three quarterly apportionments of the fiscal year.

The 1935 legislation as coded under sections 194 to 203 of the Streets and Highways Code was nominally an amendment, or more practically an extension, of the original enactment under Chapter 767, Statutes of 1933, whereby the Department of Public Works was charged with the duty of expending $\frac{1}{4}$ cent of its 2-cent share of the gas tax upon designated State highway routes

within the incorporated cities of the State upon a proportionate population basis.

The amendment continued this allocation under section 203 and allotted an additional $\frac{1}{4}$ cent of gas tax revenue under section 194 of the Streets and Highways Code for expenditure upon streets of major importance other than State highway routes.

How \$5,917,525 Gas Tax Was Divided Among Highway Districts*

District Headquarters	State Highway	Streets of Major Importance
District I -----Eureka -----	\$24,403 85	\$18,691 63
District II ----Redding -----	16,184 22	12,406 44
District III ----Marysville -----	121,173 89	92,814 43
District IV ---San Francisco---	1,080,382 15	827,859 36
District V ---San Luis Obispo---	69,701 47	53,414 48
District VI ---Fresno -----	114,761 11	87,901 02
District VII --Los Angeles----	1,564,068 14	1,198,624 31
District VIII San Bernardino	104,113 54	79,913 23
District IX ---Bishop -----	905 26	693 37
District X ----Stockton -----	89,903 40	69,105 90
District XI ---San Diego-----	164,504 08	125,999 79
Grand totals-----	\$3,350,101 11	\$2,567,423 96

* Allocations to cities in each highway district shown on pages 16-19.

Angeles Crest Link Completed by U. S. Bureau

By RALPH C. MYERS
Assistant District Office Engineer

A NEW LINK in the scenic Angeles Crest Highway has just been finished by the United States Bureau of Public Roads, bringing the completion of this route another step nearer its ultimate realization. The construction of this portion by the U. S. Bureau of Public Roads was done in accordance with a cooperative agreement between the Federal Government and the State of California.

Beginning at the Foothill Boulevard in La Canada the Angeles Crest Route extends up the Arroyo Seco

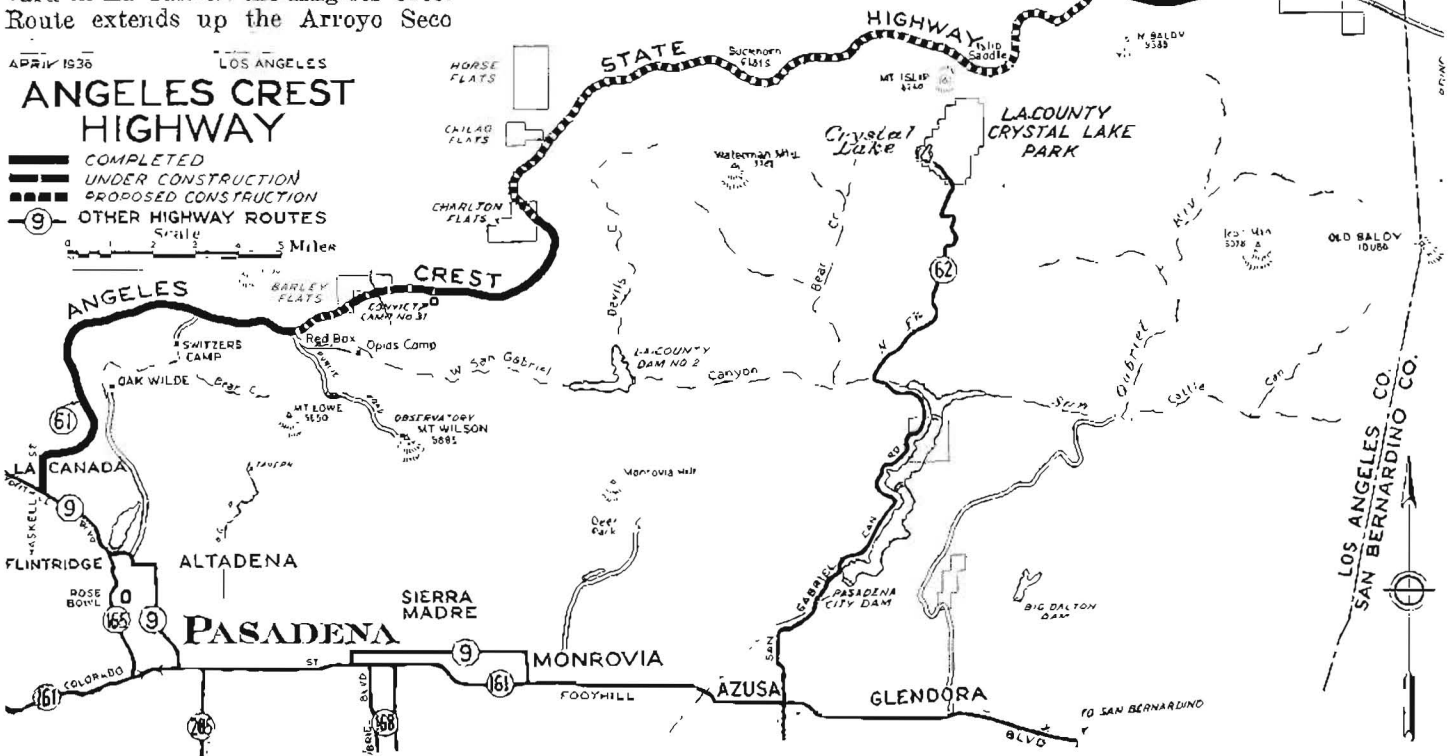
Aside from the 40 per cent saving in distance, an added advantage of the new route will be that it traverses territory far more scenic and more heavily timbered than either of the present routes.

The contract recently completed under the supervision of the U. S. Bureau of Public Roads extended from Tujunga Saddle near State Convict Camp No. 31, northeasterly for 4.1 miles to Charlton Flats, and covered construction in a hitherto

road to Red Box via Barley Flat, it is nevertheless built to the standards set for the route and is an integral part of the Angeles Crest Highway.

JOINS STATE PROJECT

Joining this section on the west is a project 2.92 miles in length, which is being constructed by the State with prison labor from San Quentin Prison. The portion to be constructed by prison labor will, in



and is projected through the mountains with the easterly terminus in Los Angeles County Park at Big Pines, a popular recreational area now accessible only by way of Palmdale or San Bernardino.

SAVES 43 MILES TRAVEL

Both of these routes are indirect as compared to the proposed Angeles Crest Route, the shortest present routing from Los Angeles to Big Pines being 107 miles in length, while the distance by the Angeles Crest Highway will be approximately 64 miles, a saving of 43 miles.

isolated portion of the Sierra Madre range, lying northerly of Pasadena, a section which has been accessible only by a narrow, steep and tortuous forest service road which was not open to the public.

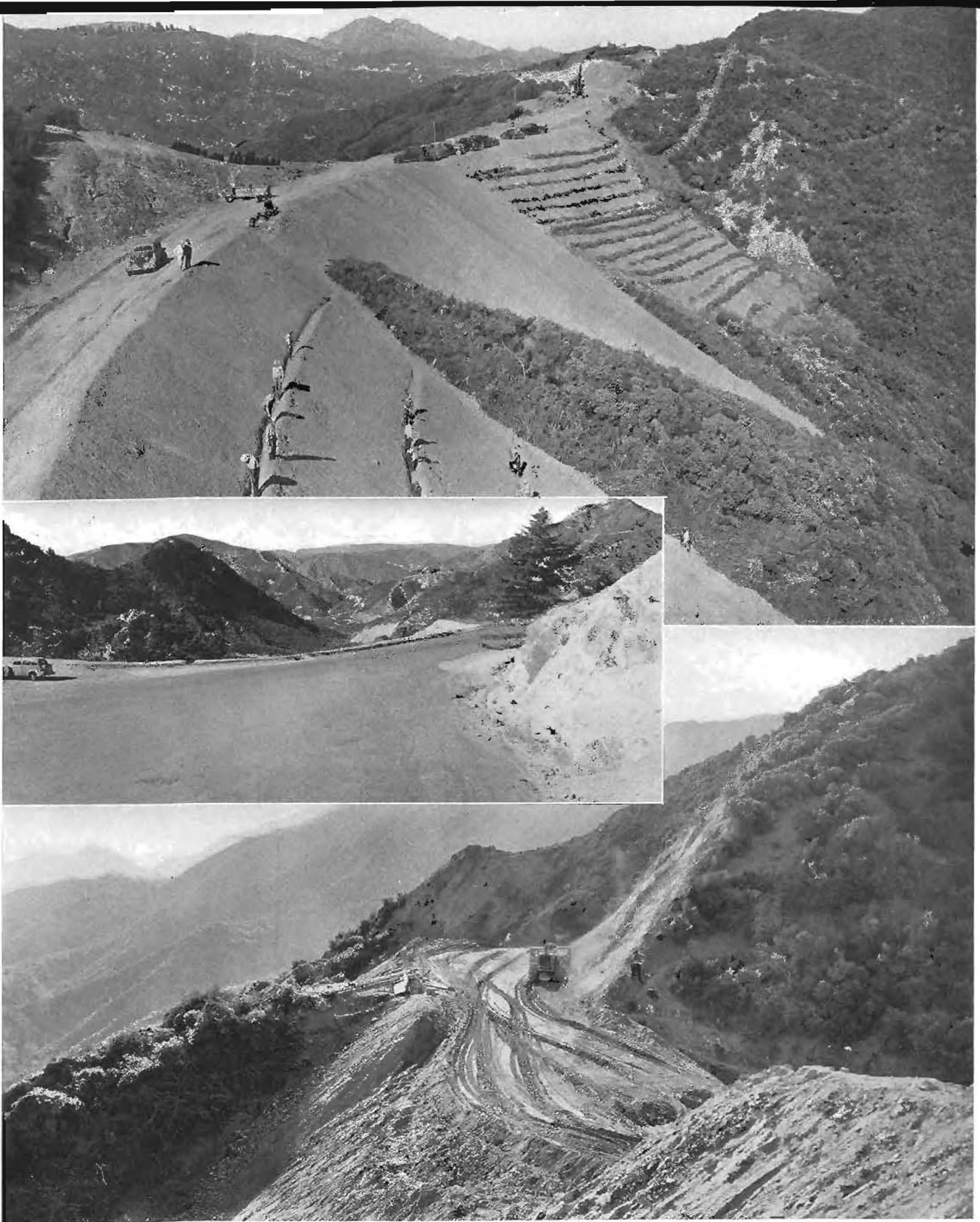
The greater part of the bureau's contract involved heavy grading, the construction of the 30-foot roadway necessitating 324,000 cubic yards of excavation. The cost of this U. S. Government contract was approximately \$230,000, and although it does not at present connect directly with the rest of the Angeles Crest Route, except by temporary forest service

time, be joined on its westerly extremity with the completed portion of the route at Red Box by a 1.3 miles section which is proposed to be placed under contract in the near future by the U. S. Bureau of Public Roads, using U. S. Forest highway funds.

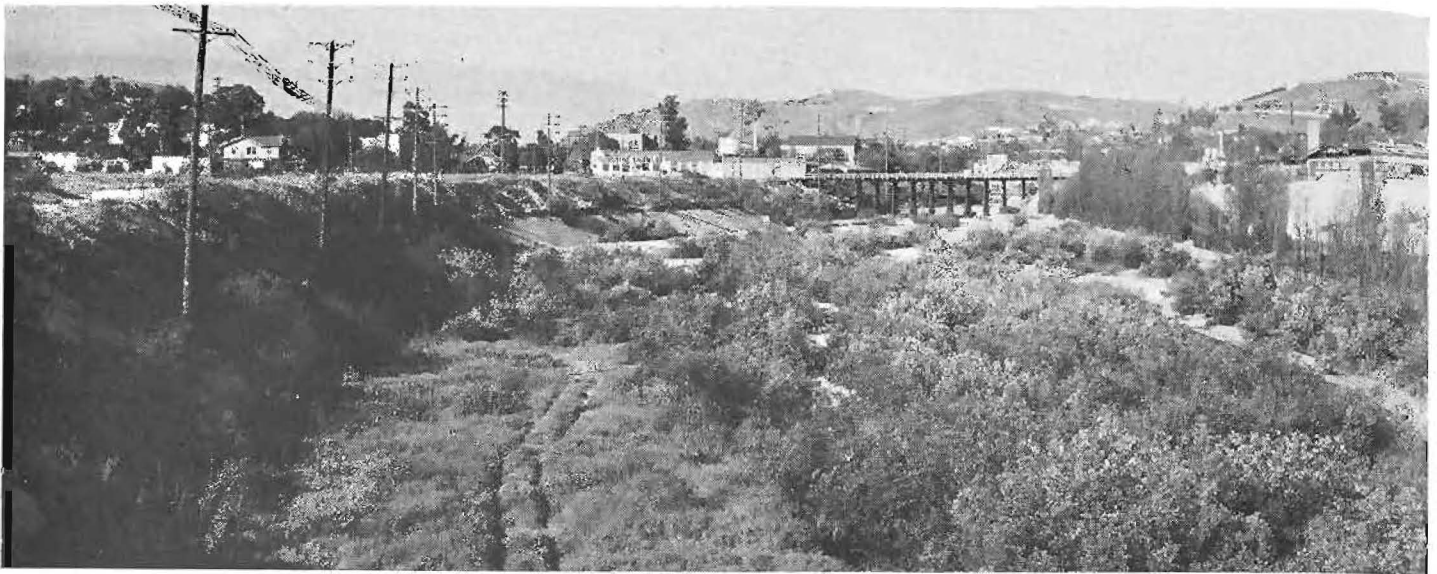
It is planned to continue work with this convict labor for a section of nearly three miles in length extending from the end of the recently completed U. S. Bureau of Public Roads contract westerly toward La Canada.

In addition to the use of convict

(Continued on page 26)



Construction scenes on a new link of the Angeles Crest Highway recently completed by the U. S. Bureau of Public Roads are shown in the upper and lower pictures. Extensive planting operations are seen under way, at top, to prevent erosion on fill slopes. The rough, precipitous character of this section of the Sierra Madre mountain range lying north of Pasadena is shown in the bottom picture where equipment is at work constructing a fill. The center inset shows a completed portion of the highway.



View of proposed Arroyo Seco Parkway location looking up stream from Avenue 26, Los Angeles, toward Pasadena. Bridge in center of picture is Cypress Avenue bridge of Union Pacific Railroad. Route of proposed parkway follows along left side of wheel tracks in foreground.

ARROYO SECO PARKWAY WILL INCLUDE A SIX MILE DOUBLE LANE DEPRESSED ARTERIAL

By S. V. CORTELYOU, District Engineer

WITH the commencement of construction of the North Figueroa Street viaduct in Los Angeles and development of plans for necessary highway work by the State Division of Highways and the three cities involved, the long dreamed of Arroyo Seco Parkway in the cities of Los Angeles, South Pasadena and Pasadena approaches realization.

The parkway will provide a direct nine-mile highway link between the business districts of Los Angeles and Pasadena, and will serve Highland Park, South Pasadena, San Marino and Altadena, and other northern and northeastern sections of Los Angeles County.

PARKWAY JOINS VIADUCT

The great \$578,420 viaduct, 883 feet long, being built from the north portal of the most northerly of the four Figueroa Street tunnels over the railroad tracks, Los Angeles River and San Fernando Road is designed as the southern terminus of the picturesque parkway, which for 4.5 miles will follow the Arroyo Seco and three miles farther to a connection with Colorado Street, State Route 161, in Pasadena, at Broadway.

Plans for the parkway call for a minimum ultimate width of eighty feet, with a thirty-four-foot roadway at either side of the central parking.

The proposed parkway leaves Figueroa Street between the north end of the Figueroa Street viaduct and Avenue 22.

DRIVEWAYS SEPARATED

The parkway section, with the double driveway with a separate lane for traffic in each direction, will extend from this point near Avenue 22 to Glenarm Street at the south end of Broadway in Pasadena, a distance of approximately six miles.

From Glenarm Street the route follows northerly to Colorado Boulevard by way of Broadway, which is 90 to 100 feet wide. Broadway is now improved adequately to take care of the large volume of traffic which will use this route.

At the southerly end, traffic which uses the parkway will have easy access into and through the center of Los Angeles by way of the Figueroa Street tunnels and Figueroa Street. Access to the business center

will also be had by way of Castelar Street, Broadway, North Spring, and other streets.

CONTINUOUS TRAFFIC FLOW

This double-laned parkway will provide the quickest, most convenient and safest means for vehicular traffic to flow between Los Angeles and points to the northeast. The saving in time to motorists is based not upon the traffic flowing at unduly high speeds, but upon its ability to flow continuously at reasonable speeds without the usual delays caused by intersecting streets.

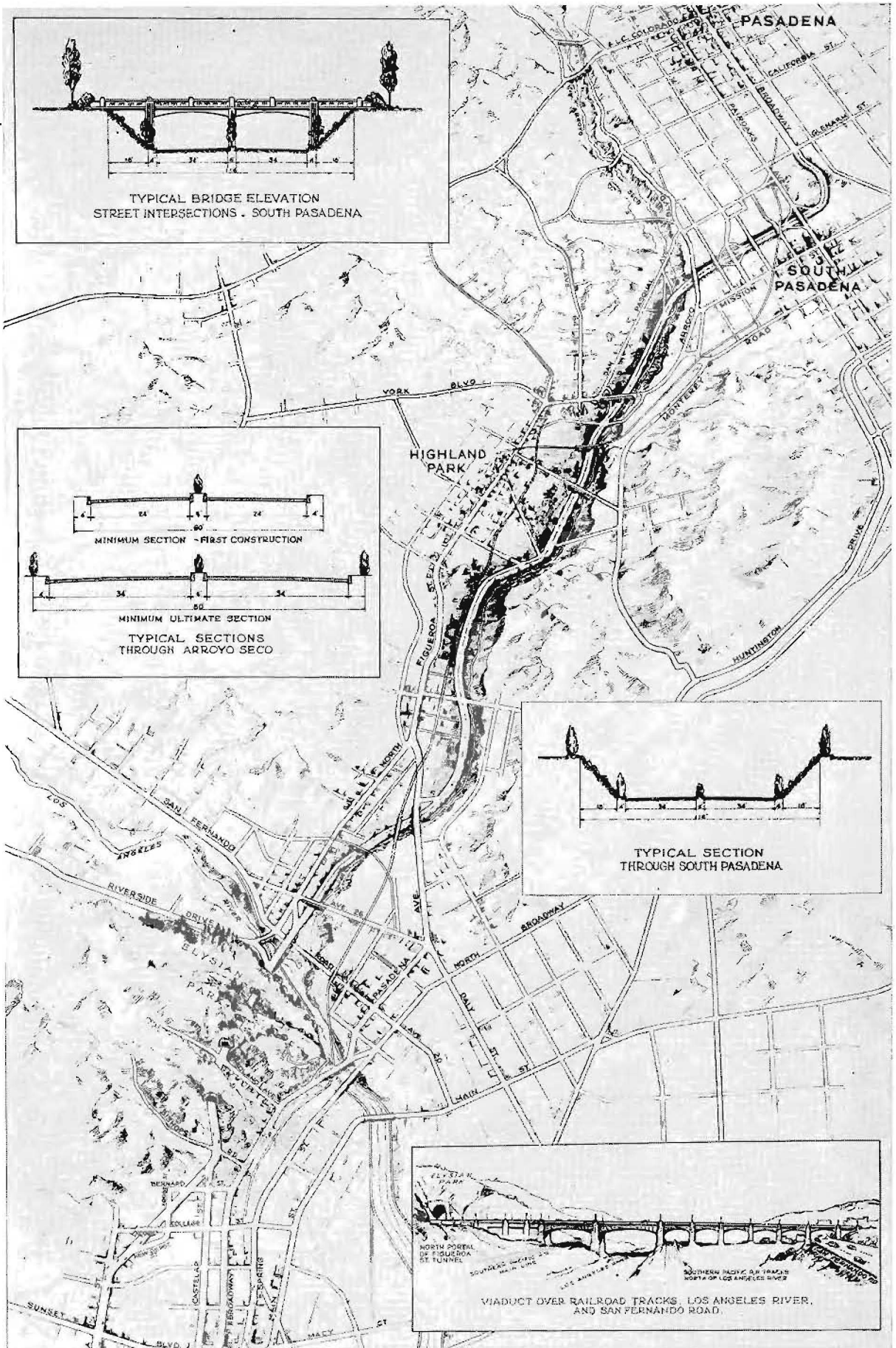
In the six-mile section between Avenue 22 and Glenarm Street there are only two streets that cross the parkway at grade: Avenue 52 and Hermon Avenue, both of them comparatively unimportant. In addition to these two streets, access to the parkway between Avenue 22 and Glenarm Street is proposed at Loretto Street, Avenue 36, Avenue 43, Avenue 57, Shults Street, Salonica Street, and Hough Street in Los Angeles, and at Orange Grove Avenue and Fair Oaks Avenue in South Pasadena.

At the two latter points the present

(Continued on page 25)

This bird's-eye view of the proposed Arroyo Seco Parkway shows the course the projected quick traffic road will follow from the Figueroa Street tunnels in the city of Los Angeles along the depressed channel of the Arroyo Seco to South Pasadena and connecting with Broadway leading into Pasadena.

Construction of the viaduct over railroad tracks, the Los Angeles River and San Fernando Road approaching north portal of the Figueroa Street tunnel is now in progress under supervision of the State Department of Public Works. The new highway will facilitate traffic between Los Angeles and Pasadena and northern and northeastern sections of Los Angeles county.



Courtesy Automobile Club of Southern California

How San Marcos Pass Saved California to U. S.

ON A KNOLL overlooking Sisquoc Valley in Santa Barbara County is a little gray church and back of it, is a small cemetery in which sleeps the man, Benjamin Foxen, whose discovery of San Marcos Pass on the route of the present State highway through the Santa Ynez Mountains changed the destiny of California, and prevented this State from becoming a British colony.

Some 25 miles southwest a splendid State highway such as this man never visioned winds through Gaviota Pass, and twenty miles south as the crow flies is San Marcos Pass through which a scenically beautiful State highway recently completed, at a cost of \$420,000, ascends the Santa Ynez Mountains along Foxen's pioneer trail and leads to fertile valleys beyond wherein lived the man who rests at Sisquoc and where came to him ninety years ago the opportunity to decide the fate of California.

Sisquoc, Gaviota Pass and San Marcos Pass loom large in the history of the Golden State and the modern highways that now link them once were rugged trails over which this man tramped in his pioneering and whose knowledge of them had much to do with the success of American occupation of California.

SAVED FREMONT'S BATTALION

It was Benjamin Foxen who saved John C. Fremont and his ragged, march-weary battalion from annihilation in Gaviota Pass and showed him the way through San Marcos to a bloodless conquest of Santa Barbara during Christmas week in 1846, a victory that some historians believe forestalled the armed annexation of California by the British.

Of the many thousands of motorists that each year travel over El Camino Real, the Coast Highway between San Francisco and Los Angeles, and the San Marcos Highway, few give a thought to the historical importance of Gaviota gorge, "The Pass of the Gulls," and of San Marcos Pass, which was the salvation of Fremont and, perhaps, of California.

Fewer still realize that a few miles from these two great roads is the little

gray church of Sisquoc and its cemetery where rest Benjamin Foxen and many of his kinsfolk and friends of long ago, and that nearby is a monument of enduring granite erected in honor of the memory of General Fremont and Foxen.

SHRINE FOR PILGRIMAGES

The people of Santa Barbara County know and they are making of the church a shrine to which annual pilgrimages will be made. Several such pilgrimages already have been made. The last one was on June 20th and the number of persons participating has given rise to hopes that the little house of worship, planned by Benjamin Foxen and to which Franciscan Mission friars were wont to go many years since to preach to their flocks, to celebrate marriages and baptisms and to bury the dead, will in the future become a cherished historical landmark.

Inspired and led by R. E. Easton of Santa Barbara, a group of citizens of Santa Barbara County on July 30, 1933, rededicated the old Sisquoc chapel. Franciscan padres from Old Mission Santa Barbara took part in the services singing a sonorous old Spanish mass brought to California by Fr. Junipero Serra and his brother friars. With Frank J. McCoy and C. L. Preisker of Santa Maria, Father Augustine Hobrecht of Mission Santa Barbara, Daniel A. Sattler of Santa Barbara and Robert A. Wickenden of Los Alamos, a grandson of Foxen, Easton determined to make the memorial ceremonies an annual event and three pilgrimages under his guidance have been made to the Sisquoc church.

The chapel and its three-acre churchyard and cemetery have been presented to the public by the Santa Maria branch of the Security First National Bank of Los Angeles.

This year, as he did the year before, Father Augustine preached the sermon at the old chapel and with him were choristers and priests from his mission. In keeping with early California traditions, Easton each year is host at a barbecue on his ranch in Sisquoc Valley.

Isolated for so long, neglected for decades, the tiny church of Sisquoc, now reached by excellent paved State roads, has been restored and enters upon a new era deserving of the reverence of a great State.

For years before he died, Foxen had desired to erect a church on his Rancho Tinaquic in the valley of the Sisquoc in order that those of the Catholic faith on the widely scattered ranches of the district might have a place to worship God. He did not live to see his dream materialize. He died in 1874. But knowing his wishes in the matter, the Catholic families who had been his neighbors built the little church in 1875.

Lumber for it was hauled 35 miles inland from Point Sal by Fred Foxen, a son of Benjamin, and he and his brother, Thomas, and Chris Clausen, a carpenter, erected the church.

HISTORIC MONUMENT ERECTED

The following year, the coffin containing the remains of Benjamin Foxen was taken from its grave in the valley and removed to the church cemetery overlooking the vast domain that once was his. Foxen had been a seafaring man before he settled in California and a tall marble shaft, carved to represent a broken ship's mast, was placed at the head of his last resting place. On the tombstone is this simple inscription:

"Benjamin Foxen. Born in England in 1796. Died February 19, 1874."

Down Foxen Canyon, winding away from the little church to Zaca and its junction with the Coast Highway, is a monument of another sort, an imposing granite pile. On it is a bronze plate with these stirring words:

SANTA BARBARA COUNTY
Dedicates This Monument To
JOHN C. FREMONT BENJAMIN FOXEN
The Pathfinder The Pioneer

NEAR THIS SITE
ON THE FOXEN RANCHO IN 1846
ENCAMPED AN AMERICAN FORCE
UNDER LT. COL. FREMONT. WARNED
BY FOXEN OF AN AMBUSH IN GAVIOTA
PASS AND GUIDED BY HIM ON
CHRISTMAS DAY OVER THE SAN
MARCOS PASS, THE AMERICANS
TOOK SANTA BARBARA WITHOUT
BLOODSHED. THREE WEEKS LATER,
JANUARY 13th, 1847, CALIFORNIA WAS
CEDED TO THE UNITED STATES

Erected by the
Pioneer Section of the Minerva Library
Club, Susan E. Lincoln, Chairman
Santa Maria, California
1926

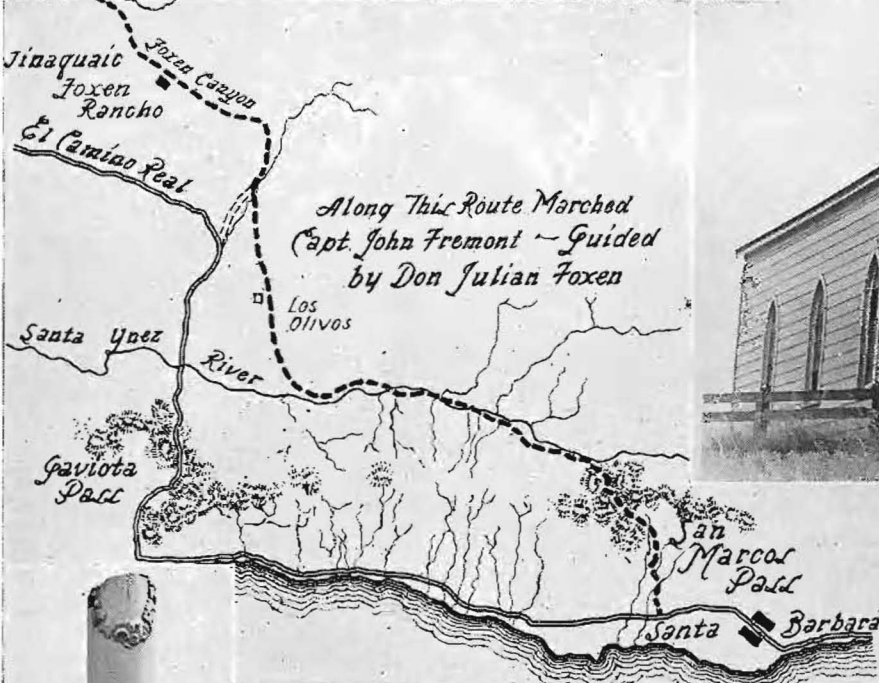
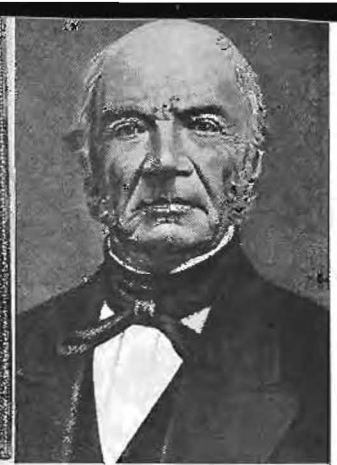
(Continued on page 8)



SANTA BARBARA COUNTY
 JOHN C. FREMONT THE PATH-FINDER
 BENJAMIN FOXEN THE PIONEER

NEAR THIS SITE
 ON THE FOXEN RANCHO IN 1848
 ENCAPMED AN AMERICAN FORCE UNDER
 LT. COL. FREMONT, WARNED BY FOXEN
 OF AN AMBUSH IN GAVIOTA PASS
 AND GUIDED BY HIM ON CHRISTMAS DAY
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ERECTED BY THE
 PIONEER SECTION OF THE MINERVA LIBRARY CLUB
 ESSON, S. LINCOLN, CHAIRMAN
 SANTA MARIA, CALIFORNIA
 1925



Scenes and characters figuring in dramatic story of San Marcos Pass and Gaviota Pass. Upper row—Gaviota Pass in 1912. Inscription on Fremont-Foxen monument and Benjamin Foxen. Center row—Sketch map of old Foxen ranch and route over which Foxen guided Fremont to San Marcos Pass. Restored Sisquoc church. Lower row—Monument at grave of Foxen. Section of new San Marcos Pass State Highway. Mrs. Maria Antonia Foxen Cooper, daughter of Foxen; Benton Fremont, grandson of John C. Fremont; Mrs. Matilda Foxen Carteri, daughter of Foxen, at Fremont-Foxen memorial monument.



San Marcos Pass relocation construction presented much tough going for highway builders through rugged terrain of Santa Ynez Mountains.

HOW SAN MARCOS PASS SAVED CALIFORNIA TO THE UNITED STATES

(Continued from page 6)

In Santa Barbara County today are many descendants of Benjamin Foxen. All revere his memory. His grandson, Robert Wickenden, and the latter's wife, Mrs. Ida Wickenden, delight to relate stories about the pioneer hero which they heard as children from Grandpa and Grandma Foxen.

The story of Benjamin Foxen, inextricably a part of the history of Fremont and his conquest of California, is one of absorbing interest and always will bear repetition.

TOOK SPANISH WIFE

Foxen came to California as a sailor from England in 1827 and settled at Goleta on the Santa Barbara coast not far from where the San Marcos State Highway leaves El Camino Real for the route over the Santa Ynez Mountains. Here, as a partner of Don Jose de la Guerra y Noriega, he engaged in trading and shipbuilding. He married Eduarda Osuna, descended from the Counts of Osuna of Spain. They were married in Mission Santa Barbara and Foxen was baptized in the faith of his wife, the padres giving him the baptismal name of William Domingo Foxen. But throughout his life he was called by his friends and neighbors Don Julian.

Foxen obtained a large grant of

land known as Rancho Tinaquaic and built an imposing adobe ranch house at the head of Foxen Canyon. An Englishman by birth and bound to the Californians by his marital ties, Foxen held aloof from the contest for California waged between the Russians, British and Americans.

To Rancho Tinaquaic one dreary day in late December, 1846, came Lieut. John C. Fremont with a battalion of ragged, starving buckskinned soldiers and Indian guides. Fremont was marching south to capture Santa Barbara. He had been directed to the Foxen ranch by William Goodwin Dana, father of Don Juan Francisco Dana of Nipoma. Juan Dana died last July 27th at the age of 98 years. Only a few weeks before he had celebrated his birthday surrounded by friends to whom he recounted memories of Fremont, who often had held him in his lap when he was a lad and Fremont stopped at the Dana ranch.

PLAN TO AMBUSH FREMONT

It was Fremont's intention to stop at Tinaquaic, rest his troops and horses and fill their stomachs, and then march south through Gaviota Pass to Santa Barbara. Now, Foxen, through his wife, knew of the plans of the Californians to wipe out the Americans in Gaviota gorge.

"The Pass of the Gulls" then was

a narrow defile between high rock cliffs. A wagon barely could pass between the granite walls. Fremont's mounted men would have had to pass two abreast through the gorge. The Californians and their Indian supporters were assembled here in hiding. They planned to let Fremont's battalion enter the pass and then by blasting with gunpowder hurl the cliffs down upon them. Had the Gringo soldiers gone this way to Santa Barbara they would have been wiped out to a man.

Foxen was well aware of this plan. Torn between love for his wife and her people and what he believed to be his duty to the doomed Fremont, Foxen kept the Americans at his ranch for days, feeding them well, and providing them with hides and material wherewith to fashion new clothes and foot gear. A sincere affection for each other sprang up between Fremont and the pioneer.

BRITISH WANTED CALIFORNIA

Somewhere off shore two British men-of-war were heading for Santa Barbara, and historians say that negotiations had been entered into between the Californian leaders and the English for the surrender of Santa Barbara and California. It is difficult to overestimate the disaster to American ambitions that would have resulted had Fremont and his men been annihilated in Gaviota Pass.

Finally, Fremont was ready to start for Santa Barbara. He was not aware of the fate that awaited him in Gaviota Pass. He believed that there was no other way to reach Santa Barbara, which he expected to take in

(Continued on page 30)



Grade separation under construction at Calwa, near Fresno, on U. S. 99, is 1740 feet over all with cantilevered sidewalks.

Calwa Overpass Will Assure Safety for U. S. 99 Traffic

COMPLETION of the Calwa Overpass late in September will eliminate another dangerous highway grade crossing. The site of this overpass is some three miles south of Fresno where The Atchison, Topeka, and Santa Fe main line crosses U. S. Route 99. High board fences and buildings obscured the view of approaching trains and created virtually a blind crossing. Heavy fogs in the winter added to the hazard.

The approaches to the crossing for several miles in either direction are straight and level stretches encouraging higher traffic speeds than are normally encountered at other main line crossings.

Traffic count on this section of highway has been well over 8000 cars a day. Railroad traffic during the greater part of the year is normally twelve trains daily, but during the peak fruit season in September and October some seventy to eighty trains a day are operating or switching back and forth over the crossing. As a result of this heavy schedule, the trav-

eling public suffered no end of annoyance and delay and at times cars were often backed up as much as a mile on either side of the intersection.

The need for a grade separation at Calwa was recognized back in May, 1929, when preliminary surveys for a structure were undertaken, but due to lack of funds no action was taken on the project until in 1935, under the Emergency Relief Appropriation Act, the Works Program grade crossing fund was created, and through the California allotment of this fund, the present separation was made possible.

Plans were drawn and bids called for on December 4, 1935, and the contract was awarded in January, 1936.

The roadway over the Calwa Overpass is forty-four feet wide and is bordered on each side by a cantilever sidewalk. Ample space is provided for four lanes of traffic. The overall length of the structure is 1740 feet, the approaches being made on 5 per cent grades with connecting vertical curves and insuring a sight distance of 600 feet.

The superstructure consists of twenty-eight forty foot reinforced concrete girder spans, five skewed spans adjacent to the railroad span, and one central skewed steel span over the railroad which is long enough to provide room for an additional future track. It was originally planned to rest the column footings on timber piles, but after a series of borings and bearing tests, it was determined that piles were unnecessary, thereby effecting a considerable saving in the cost of the project. During construction, traffic was handled on a twenty-three foot detour just west of the structure.

NEW METHODS USED

Several innovations in construction methods and procedure were used in the building of the overpass. The ordinary timber falsework was replaced on this project by especially constructed steel falsework trusses. These trusses were used in the erection of the twenty-eight standard spans and made possible a very accurate

(Continued on page 14)

Pan-American Highway a Great Mexican Achievement

By

EARL LEE KELLY
Director of Public Works

THE Pan-American Highway between Laredo, Texas, and Mexico City, recently completed by the Department of Public Works of the Government of Mexico, is a road that measures up to the best modern standards of highway construction in the United States.

On the occasion of the recent official dedication of the highway, Thos. H. MacDonald, Chief of the U. S. Bureau of Public Roads, expressed himself as most favorably impressed with the high standard of construction, particularly through the difficult mountain area between Tamazunchale and Pachuca.

Almost every conceivable obstacle involved in the making of highways was encountered and overcome by engineering skill in the 765 miles of roadbed stretching from the Rio Grande to the capital of Mexico.

COST UNDER \$20,000,000

Mountains were scaled on easy grade, rivers and streams bridged and jungle growth leveled with machetes in the hands of sweating laborers in order to create one of the greatest highways in the Western Hemisphere.

For sheer scenic beauty the Pan-American Highway rivals any motor road in the world. It required more than ten years to build it and the cost was only sixty-two million pesos. That is less than twenty millions of American dollars. Cheap man power made it possible to accomplish the gigantic task for that amount of money.

It is said that the 1,610,000 cubic yards of broken stone that was used in the foundation of the 765 miles of highway were cracked by hand by an army of Mexican toilers.

An example of the magnitude of certain portions of the job is apparent between Tamazunchale and Jacala, a distance of sixty-four miles. Preliminary surveys of this section required three years of work by engineers and hundreds of Mexican laborers.

CHISELED OUT OF CLIFFS

Between these two points and for forty miles south of Jacala the high-

way, thirty feet wide, was chiseled out of almost solid, perpendicular rock cliffs. Surveyors with their transits were lowered down the sides of these cliffs with ropes and when actual construction began laborers with picks and shovels worked with ropes tied about them and securely fastened to trees high above. For this one stretch more than 4,000,000 cubic yards of material, most of it rock, was excavated by hand.

When we viewed this stretch of completed road I was reminded of the job that our own Division of Highways is doing on the Feather River Highway, particularly at Grizzly Dome, that monumental pile of granite in the Feather River Canyon along the face of which will run the new highway.

REPRESENTED GOVERNOR MERRIAM

It was my pleasure to represent Governor Frank F. Merriam and the State of California as a member of the American delegation which last month participated with official representatives of the Mexican and Guatemalan governments in the inauguration of the Mexico City-Laredo Highway. With George T. McCoy, Assistant State Highway Engineer, I joined the American delegation, headed by Vice President John Nance Garner, at Laredo on July 1st.

The Mexican and Guatemalan delegates assembled at Nuevo Laredo across the Rio Grande. Following a breakfast tendered us by the Chamber of Commerce of Laredo we went to the center of the International Bridge, the boundary line, and there met the delegations from the two southern republics. An address of welcome was delivered by General Eduardo Hay, Secretary of Foreign Relations, representing the President of Mexico, to which Vice President Garner responded.

At the conclusion of the speech making, a Mexican band played our national anthem and an American band rendered the national anthem of Mexico after which the combined party proceeded to Nuevo Laredo, where entertainment and refreshments were offered. At 11 o'clock on

the morning of July 1st a caravan of automobiles carrying the delegations and Mexican officials and preceded by a motorcycle squadron headed south for Monterrey, which we reached at 2 o'clock in the afternoon.

Monterrey is 145 miles distant from the Mexican custom house at Laredo and the first 45 miles of the highway runs in a true and straight line, tempting drivers to speed, but the limit is 50 miles an hour.

CLIMBED EASY GRADIENT

Between Laredo and Sabinas Hidalgo, 75 miles south, lies one of the richest sections of farm land imaginable and we were told that ninety per cent of it remains untouched by the plow. Charmed by the level plain we had traversed, we were hardly prepared for the sudden change in the terrain beyond Sabinas Hidalgo.

Without realizing it we suddenly found we had ascended to 3000 feet above sea level and below us lay a beautiful panorama of the level plain we had left, dotted with lofty hills. Quite as abruptly we dropped down the grade, passed through a rugged canyon and were in Monterrey.

Here the mayor of the city received us and after welcoming ceremonies we were taken on a sightseeing tour. The delegations had dinner and enjoyed a serenade at Chipinque that night as guests of the Governor of the State of Nuevo Leon. Departure was taken from Monterrey at 9 o'clock the following morning.

Monterrey is an industrial city, producing steel, flour, glass, cotton goods and other commodities, and its mills are in striking contrast to the mountains and plains surrounding it.

LOW MOUNTAIN GRADES

Leaving Monterrey the motoring visitor gains the impression that stiff mountain climbing lies ahead. However, the highway follows low grades through the range and there is a stretch of 178 miles of almost level pavement to Ciudad Victoria. The country and the people along this section of highway are primitive, thatched huts, oxcarts and crude farm

(Continued on page 24)



Delano Underpass recently opened to traffic on U. S. 99 provides four 10-foot traffic lanes.

Another Dangerous Grade Crossing Eliminated

By W. J. DEADY
Resident Engineer

SEPARATION of grades of the Southern Pacific Railroad and the Golden State Highway at Delano, thirty miles north of Bakersfield, has recently been completed by the State Division of Highways.

The project involves a complete realignment, 0.97 mile in length, of which 0.20 mile is within the city limits. The improvement provides concrete surfacing with sweeping curves and easy grades, in keeping with modern highway practice.

The old crossing at the south entrance to Delano had long been considered one of the most dangerous and undesirable railroad crossings on the San Joaquin Valley route. Its location at the throat of the city, together with the 400 foot radius curves on either side of the tracks, made it hazardous even for light traffic. Travel on this road is particularly heavy, due to its proximity to Los Angeles, the Kern County oil fields, and the numerous farms of the Wasco district. The traffic count on this road was 4000 cars daily in 1935, which more than justified the separation of grades.

The project was jointly financed from State Highway funds and Federal aid for the elimination of

grade crossings. The city of Delano also participated, with a portion of its gas tax allotment.

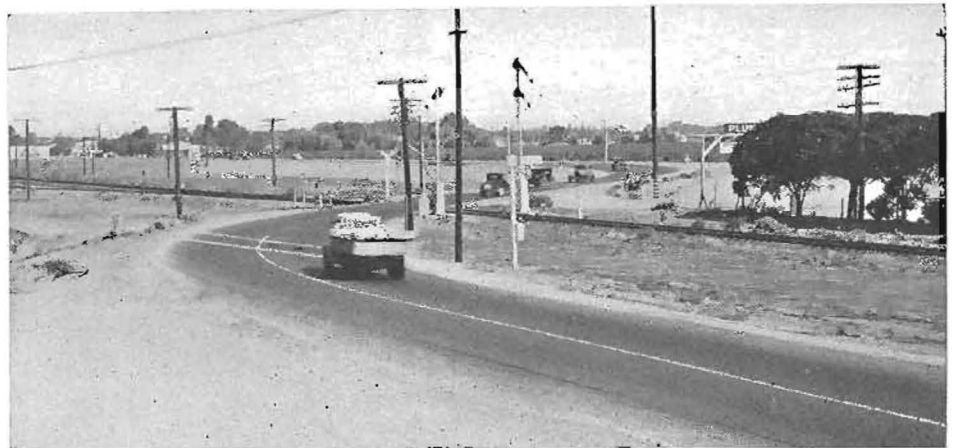
FOUR TRAFFIC LANES

The new structure consists of two "U" type gravity abutments and wings with plate girder superstructure. A width of forty-six feet, face to face of abutments, provides for

four ten-foot lanes of traffic and two three-foot sidewalks. Minimum vertical clearance is fifteen feet. The pavement of the realignment consists of Portland cement concrete 0.55 foot thick. It is forty feet wide through the major portion of the new line, narrowing down to twenty feet at the extreme ends to connect with the existing twenty foot pavements.

Slopes of the depressed portion are blanketed with four inches of slope paving, with parapet walls and dykes

(Continued on page 25)



Old "S" grade crossing had 400-foot radius curve approaches.

State Highway Officials to Convene in California

By C. H. PURCELL, State Highway Engineer

ONE-TENTH of the national income of the United States comes from the business created by automobiles rolling over highways.

This means that one-tenth of all pay rolls of all gross earnings, of all dividends, of all profits of all the industries in the United States spring from the automobile and its use on the American highways.

This single fact and its ramifications are cited to give Californians a thumbnail analysis of the importance of the guests that California will have within the State between December 7th and 10th of this year, 1936.

For these guests are the officials that control America's greatest publicly-owned utility—the automobile highway. The official name of the convention is the American Association of State Highway Officials, who administer 432,282 miles of State roads throughout this country upon which 25,000,000 automobiles are annually operated, buying gasoline, renting garage space, requiring steel, aluminum, leather, hair, wood and all manner of products from all manner of industries and types of business.

IN NATIONAL SPOTLIGHT

Seat of the convention will be San Francisco, one of America's foremost convention cities. Two features of this convention will receive the spotlight of national attention.

One of them will be the work of the United States Bureau of Roads and the Department of Agriculture, for this agency is the fountain head of highway construction in America.

The second feature of this highway meeting in San Francisco will be the opinions expressed by the national highway officials and authorities upon the unusual highway connections which are ending the isolation of this historic Pacific Coast city, which highways are known as the San Francisco-Oakland Bay and Golden Gate bridges.

To some extent the San Francisco convention of the American Association will be a laboratory of highway investigation. For in San Francisco the highway officials can put civic transportation into a test tube, so to speak, and examine it in the process of making. The San Francisco-Oakland Bay Bridge will have been in operation, we trust, for more than a month when the American highway officials come to California.

OLD AND NEW CONTRASTS

They will be able to note the changing reactions of the metropolitan San Francisco to the end of its isolation. Evidence of old inconveniences of boat travel should still be everywhere apparent, and evidences of new growth and development as a result of improved transportation should also be beginning to show signs of budding.

Californians are loyal to their highways and are often ones to boast about them and elevate them beyond their true comparative value. I fear that our California road boosters may receive some shocks, if our guests are frank and candid. Californians will learn that we are not quite in the first rank of highway construction, many of our roads being obsolete and overworked by traffic much greater than they were ever intended to bear.

But we do not fear these honest criticisms of these experts. For it will have a salutary effect. The State Division of Highways has never ceased telling the California Legislature, the Governor, and the people of the State, that our State is especially dependent upon highways and that we are not in California breaking any records for investments in good roads.

We expect, however, some commendation from our fellow highway builders for the methods and technique by which we build and main-

(Continued on page 28)

Toll Plaza Details at Business End of the Bay Bridge

IMPORTANT features of the great San Francisco-Oakland Bay Bridge are the Administration Building and Toll Plaza erected on the Key Route fill approximately 3500 feet east of the bridge end on the Oakland side.

It is here that all automobile and truck tolls will be collected and headquarters for the bridge patrol and administrative officers will be situated. Here also will be located the control board of the bridge's great electric system.

The administration building itself is three stories high including the basement. It is 185 feet long overall and 70½ feet at its greatest width.

With an exterior finish of terracotta, the building is made entirely of concrete, steel, and aluminum.

BULLET-PROOF ROOM

It houses a garage, where tow cars and other facilities will be kept; a first-aid room; locker rooms for the bridge patrol and other employees; a drafting room and offices for the carrying on of the administrative work of the bridge. Also it will house a bullet-proof room where toll collections will be temporarily deposited.

On the wall opposite the desk sergeant a giant micarta board will be installed. On this board has been carved an exact reproduction of the entire bridge and its approaches. Tiny lamps will indicate the position of each light as it is on the bridge. This is the control board, and it is so arranged that the desk sergeant at one glance can tell whether the lights are operating efficiently on the giant structure or not.

When one of the lights on the bridge goes out, it means that its tiny understudy on the board also goes out. Also indicated on the board are the fog bells and aerial beacons.

Police telephones and fire boxes on the bridge are also connected to the office of the desk sergeant.

There will be twelve lanes for automobile traffic and four lanes for truck traffic.

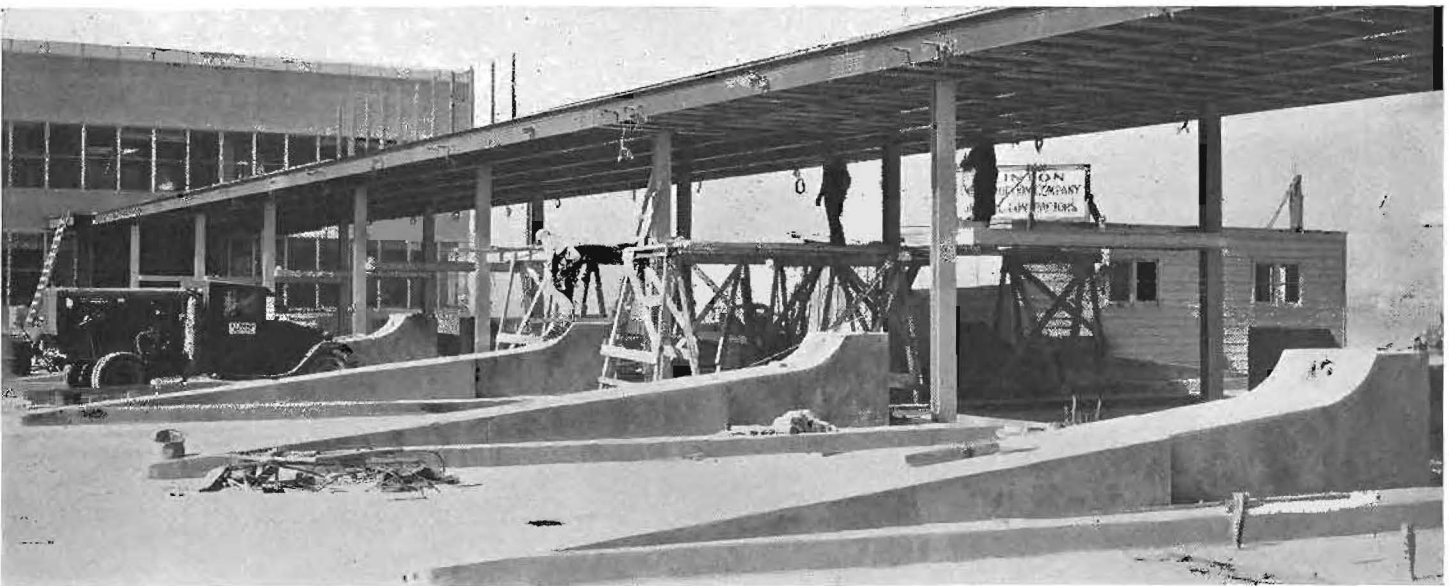
Several methods of registering tolls and automobiles passing through the toll booths have been devised.



Administration Building and Toll Booths of San Francisco-Oakland Bay bridge are located on a spacious plaza at Oakland end.



Headquarters for Bridge Patrol, executive offices and a garage are housed in 3-story and basement Administration Building 185 feet long by 70½ feet wide, built entirely of concrete, steel and aluminum.



As sixteen lines of traffic pass under this canopy each toll payment will show on lighted indicator for driver's benefit.

When an automobile passes into the toll booth it will cross over an indicator that will register it per axle on a tape in the toll collector's machine. At the same time the collector will register on the machine an arbitrary number that will have been given to

that particular type of car with that particular number of passengers. This arbitrary number will show in lights on a glass indicator above the booth, thus permitting an inspector to check up on the accuracy of the collector.

Meanwhile, for the benefit of the motorist, the amount of his toll will appear in lights on a sidewalk indicator outside the toll booth. Thus as accurate a check as possible will be kept of the number of passengers crossing in motor cars over the bridge.

SUMMER TRAFFIC COUNT SHOWS 10% INCREASE OVER 1935

By T. H. DENNIS
Maintenance Engineer

THE volume of traffic carried by the State highways steadily increases. This is shown in the annual summer count taken on Sunday and Monday, July 12th and 13th.

The July count of 1936 registered a gain of 15.3 per cent over the similar period of 1935. This exceptionally heavy increase was due in considerable measure to the unusual traffic attracted by the San Diego Exposition, as was noted in the last report.

This year we find the total traffic on the State highways has increased approximately 10 per cent over the heavy movement recorded in 1935 and has been confined to no one section of the State, nor has there been any unique circumstance or occasion that could be said to have had an exceptional influence on highway traffic.

The count was made in the regular manner, covering the sixteen-hour period from 6 a.m. to 10 p.m. each day, and segregating the traffic by hourly periods into the following classifications: California automobiles, foreign automobiles, light trucks, heavy trucks, trailers, buses and horse-drawn.

While some slight changes have been made in adding new stations or in relocating or discontinuing former stations, the comparative percentages in all cases have been drawn from stations identical for the 1935 and 1936 counts.

The comparisons for the various groupings are as follows:

Per Cent Gain or Loss for 1936 Count as Compared with 1935

	1936	
	Sunday	Monday
All Routes	+ 7.58	+10.55
Main North and South		
Routes	+ 5.41	+ 9.75
Interstate Connections	+11.75	+ 9.88
Laterals Between Inland and Coast	+10.83	+14.94
Recreational Routes	+ 6.60	+ 7.61

The gain or loss of traffic volume for State Highway Routes 1 to 80, inclusive, which constitute the basis for the foregoing summary, is shown in the following tabulation:

Route	Terminal	1936	
		Per cent gain or loss Sunday	Monday
1. Sausalito-Oregon Line		6.72	19.38
2. Mexico Line-San Francisco		1.73	4.09
3. Sacramento-Oregon Line		15.50	11.74

Route	Terminal	1936	
		Per cent gain or loss Sunday	Monday
4. Los Angeles-Sacramento		7.11	14.58
5. Santa Cruz-Jc. Rt. 65 near Mokelumne Hill		12.48	14.98
6. Napa-Sacramento via Winters		19.72	20.93
7. Crockett-Rod Bluff		9.82	20.38
8. Ignacio-Cordella via Napa		9.47	18.51
9. Rt. 2 near Montalvo-San Bernardino		13.03	16.18
10. Rt. 2 at San Lucas-Sequoia National Park		2.08	11.33
11. Rt. 75 near Antioch-Nevada Line via Placerville		13.12	6.20
12. San Diego-El Centro		0.15	1.81
13. Rt. 4 at Saffold-Rt. 23 at Sonora Jc.		5.44	11.02
14. Albany-Martinez		9.07	20.33
15. Rt. 1 near Calpella-Rt. 37 near Cliso		7.89	19.79
16. Hopland-Lakeport		3.96	14.28
17. Rt. 3 at Roseville-Rt. 15, Nevada City		5.22	12.39
18. Rt. 4 at Merced-Rt. 40 near Sequoia		2.39	12.10
19. Rt. 2 at Fullerton-Rt. 25 at Beaumont		10.14	11.09
20. Rt. 1 near Arcata-Rt. 83 at Park Boundary		18.15	15.91
21. Rt. 3 near Riovale-Rt. 20 near Chilcoot via Quincy		31.84	16.39
22. Rt. 56, Castroville-Rt. 29 via Hollister		16.19	18.14
23. Rt. 4 at Tunnel Sta.-Rt. 11, Alpine Jc.		10.37	15.54
24. Rt. 4 near Lodi-Nevada State Line		4.96	26.06
25. Rt. 37 at Colfax-Rt. 83 near Sattley		9.24	25.07
26. Los Angeles-Mexico via San Bernardino		16.83	12.41
27. El Centro-Yuma		0.39	0.96
28. Redding-Nevada Line via Alturas		41.47	29.48
29. Peanut-Nevada Line near Purdy's		27.32	46.66
31. San Bernardino-Nevada State Line		12.81	12.94
32. Rt. 56, Watsonville-Rt. 4 near Califa		12.70	16.07
33. Rt. 56 near Cambria-Rt. 4 near Famoso		8.08	2.76
34. Rt. 4 at Oak-Rt. 23 at Pickett's Jc.		15.46	16.38
35. Rt. 1 at Alton-Rt. 20 at Douglas City		42.41	3.36
37. Auburn-Truckee		6.46	16.18
38. Rt. 11 at Mays-Nevada Line via Truckee River		14.42	10.05
39. Rt. 38 at Tahoe City-Nevada State Line		10.98	12.00
40. Rt. 13 near Montezuma-Rt. 76 at Benton		5.78	13.82
41. Rt. 5 near Tracy-Kings River Canyon via Fresno		26.00	34.32
42. Redwood Park-Los Gatos		9.76	13.83
43. Rt. 60 at Newport Beach-Rt. 31 near Victorville		3.73	3.46
44. Boulder Creek-Redwood Park		7.27	4.74
45. Rt. 7, Willows-Rt. 3 near Biggs		16.19	6.95
46. Rt. 1 near Klamath-Rt. 3 near Cray		11.92	15.56
47. Rt. 7, Orland-Rt. 29 near Morgan		5.63	7.77
48. Rt. 1 N. of Cloverdale-Rt. 56 near Albion		11.27	4.01
49. Napa-Rt. 15 near Sweet Hollow Summit		10.83	9.62
50. Sacramento-Rt. 15 near Wilbur Springs		7.13	7.08
51. Rt. 8 at Shellville-Sebastopol		14.87	2.38
52. Alto-Tiburon		7.20	17.19
53. Rt. 7 at Fairfield-Rt. 4 at Lodi via Rio Vista		6.54	9.50
54. Rt. 11 at Perkins-Rt. 65 at Central House		13.25	33.77
55. Rt. 5 near Glenwood-San Francisco		20.79	20.00
56. Rt. 2 at Las Cruces-Rt. 1 near Fernbridge		10.32	11.82
57. Rt. 2 near Santa Marie-Rt. 23 near Freeman via Bakersfield		2.98	13.43

Route	Terminal	1936	
		Per cent gain or loss Sunday	Monday
58. Rt. 2 near Santa Margarita-Ariz. Line near Topeck via Mojave and Barstow		24.32	20.26
59. Rt. 4 at Bailey's-Rt. 43 at Lake Arrowhead		3.06	6.80
60. Rt. 2 at Borra-Rt. 2 at El Rio		5.20	1.44
61. Rt. 4 S. of Glendale-Rt. 59 near Phelan		1.25	1.29
62. Rt. 171 at Northam-Rt. 61 near Crystal Lake		3.63	4.45
63. Big Pine-Nevada State Line		19.42	16.56
64. Rt. 2 at San Juan Capistrano-Blythe		6.88	3.84
65. Rt. 18 near Mariposa-Auburn		30.60	33.71
66. Rt. 5 near Mossdale-Rt. 13 near Oakdale		5.79	2.33
67. Pajaro River-Rt. 2 near San Benito River Bridge		10.60	25.64
68. San Jose-San Francisco		10.89	13.21
69. Rt. 5 at Warm Springs-Rt. 1, San Rafael		0.07	16.44
70. Ukiah-Talmage		16.00	3.37
71. Crescent City-Oregon Line		10.79	18.94
72. Weed-Oregon Line		39.01	38.06
73. Rt. 29 near Johnsterville-Oregon Line		29.02	47.03
74. Napa Wye-Cordolla via Vallejo and Benicia		5.65	8.27
75. Oakland-Jc. Rt. 65 at Alta-ville		8.24	18.48
76. Rt. 125 at Shaw Ave.-Nevada State Line near Benton		18.85	14.34
77. San Diego-Los Angeles via Pomona		2.40	0.23
78. Rt. 12 near Descanso-Rt. 49 near Marsh Field		1.64	5.00
79. Rt. 2, Ventura-Rt. 4 at Castaic		13.27	11.63
80. Rt. 51, Rincón Creek-Rt. 2 near Zaca		0.96	5.94

COMPLETION OF THE CALWA OVERPASS

(Continued from page 9)

control of deck grades, prevented cracking, and saved time and lumber in erection.

High early strength cement was used in pouring the decks in order to make possible quicker stripping times and provide maximum use of the steel falsework trusses. A giant duraluminum adjustable screed float forty-two feet long, which could easily be handled by two men on each end, made deck finishing easier, faster, and more accurate. All the concrete for the job was batched at a central mixing plant in Fresno and hauled to the site in transit mix trucks.

As a controlling factor in obtaining a high strength of concrete accurate control in the mixing of water was maintained with the use of an electrical sand moisture determinator at the transit mix plant.

The construction of the Calwa Overpass gave employment to many local residents. The cost of this project will total approximately \$216,000.

'Only Golden Rule Will End Death Toll on Highways'

—Gov. Frank F. Merriam

A summary of the California Vehicle Code, 1935, compiled by the Department of Motor Vehicles, is off the press and is being distributed by Director Ray Ingels.

Only matter directly applicable to operators of motor vehicles has been selected from the statutes in preparing the summary. This was done in order to simplify the laws for drivers and, consequently, educate operators to the necessity of good driving for their own safety and the protection of the public.

In a foreword, Governor Frank F. Merriam explains the reason for the publication of the booklet in these words:

"Death can be ruled off the highways only through one process—the individual effort of each operator of a motor vehicle!

"Recognition of this fact brings us to the realization that only one rule can be laid down to eliminate the appalling toll of Death rampant on the highways, an adaptation of the Golden Rule to operation of motor vehicles—drive as you would have others drive.

"California, through its Department of Motor Vehicles and publication of this book, desires to help its citizens to drive as they would have others drive to the end that Death and Injury be driven from the highways."

INVENTS RAIN ALARM

Maintenance Superintendent C. T. Warren of District VII tells a story about one of his crew foremen who has invented an ingenious device to roust himself out of bed when a storm of rain blows up and the highways become unexpectedly slippery and dangerous. He has attached to the eave of his home an empty coffee can so balanced that when rain water pours into it the can falls upon two contact points completing an electric circuit that rings a bell in his bedroom. When this occurs, the foreman gets up, dresses and goes out into the wet night to patrol his sections of road.

CITIES MUST SUBMIT BUDGETS FOR GAS TAX EXPENDITURES

(Continued from page 1)

While the amendment affirmed the provisions of the original act denying expenditure of the funds for any purpose not of direct benefit to vehicular traffic, the apportionment for streets of major importance is contradistinguished by permissive expenditure upon city streets other than State Highways, and by direct payment of the money to the cities by the Division of Highways in quarterly apportionments, upon the warrant of budgets of proposed expenditures submitted by the cities annually to the Department for approval.

An important qualification of such budgets is the expenditure upon streets commanding prominence as major traffic arterials. This condition precludes indiscriminate expenditures upon streets which are restrictive of general traffic service. Other conditions of the law require the proposals to be sound both economically and in engineering judgment, with a full appreciation of traffic demands, under penalty of disapproval by the Department.

Under section 203 of the code which provides the allocation for State highways, the Division of Highways is obliged to assure the expenditure of funds apportioned under this section for the fullest benefit of State highway routes, with the further discretionary privilege of delegating the obligation to cities competently equipped to conduct such expenditures.

This privilege was endorsed by the Director of Public Works and was immediately pronounced upon inception of the law as the Department's administrative policy. No detraction has been made from this policy, and the cities enjoy a free choice in the selection and performance of work to be done within the limitations prescribed by law of which adequate provision for maintenance of State highway routes takes precedence and improvements, logically, are given second consideration.

STATE FUNDS ADVANCED

The funds allocated for State highways under section 203 and previously under Chapter 767, are paid to the cities in reimbursement for dele-

gated work already performed and immediately upon billing of the Department by the cities.

In the majority of cases, particularly in the case of improvement projects, this procedure requires the Department to advance money from the cash balance of the State Highway Fund before the gas tax has been collected and actually apportioned to this fund.

Under the provisions of section 198 the revenue for streets of major importance is disbursed when and with the quarterly apportionments made by the State Controller.

Of the apportionment for State highways, \$2,685,595.61 has been actually paid to and expended by the cities during the past fiscal year, while the actual disbursement of $\frac{1}{4}$ cent funds for streets of major importance to the cities for the same period was \$1,994,757.79. The remaining \$572,666.17 of the latter apportionment includes amounts being accumulated upon the authorization of certain cities for expenditure at a future date, and the apportionments to cities which have not submitted a budget of proposed expenditures.

CITIES IGNORE LAW

Although the law is quite explicit on the latter point and operates to restrain the Department from paying money to a city until a budget has been submitted and approved, knowledge of this clause among the cities does not appear to be quite general. Many inquiries are received from cities which have not submitted budgets asking the Department why the apportionments have not been paid.

In the accompanying tabulation, the respective annual apportionment for the fiscal year ending June 30, 1936, is given as accruing to each city.

The tabulation includes the amount accrued under section 203 for expenditure upon designated State highway routes, and the amount accrued under section 194 for expenditure upon streets of major importance other than State highway routes.

(Continued on page 16)

GASOLINE TAX APPORTIONMENTS TO THE C

DISTRICT I

County	City	State Highways (Section 203)	Streets of Major Importance (Section 194)
Del Norte	Crescent City	\$1,343 45	\$1,028 98
Total Del Norte County		\$1,343 45	\$1,028 98
Humboldt	Arcata	\$1,334 84	\$1,022 40
	Blue Lake	433 50	332 02
	Eureka	12,303 47	9,423 59
	Ferndale	694 38	531 85
	Fortuna	967 74	741 23
	Trinidad	83 57	64 01
Total Humboldt County		\$15,817 50	\$12,116 10
Lake	Lakeport	\$1,029 46	\$788 49
Total Lake County		\$1,029 46	\$788 49
Mendocino	Fort Bragg	\$2,360 40	\$1,807 90
	Point Arona	300 70	230 32
	Ukiah	2,440 07	1,868 92
	Willits	1,112 27	851 92
Total Mendocino County		\$6,213 44	\$4,759 06
Total District I		\$24,403 85	\$18,691 63

DISTRICT II

Lassen	Susanville	\$1,069 70	\$812 42
Total Lassen County		\$1,060 70	\$812 42
Modoc	Alturas	\$1,826 16	\$1,398 71
Total Modoc County		\$1,826 16	\$1,398 71
Plumas	No Incorporated Cities		
Shasta	Redding	\$3,271 12	\$2,605 45
Total Shasta County		\$3,271 12	\$2,605 45
Siskiyou	Dorris	\$595 18	\$455 86
	Dunsmuir	2,038 59	1,561 42
	Etna	296 02	226 74
	Fort Jones	235 89	180 67
	Montague	396 01	303 31
	Mt. Shasta	788 09	603 62
	Yreka	1,705 48	1,316 75
	Total Siskiyou County		\$6,055 26
Tehama	Corning	\$1,075 55	\$823 79
	Red Bluff	2,747 03	2,104 04
	Tehama	148 40	113 66
Total Tehama County		\$3,970 98	\$3,041 49
Total District II		\$16,184 22	\$12,406 44

DISTRICT III

Butte	Biggs	\$361 64	\$276 99
	Chico	6,218 13	4,762 65
	Gridley	1,516 05	1,161 19
	Oroville	2,888 42	2,212 33
	Total Butte County		\$10,984 24
Colusa	Colusa	\$1,852 75	\$1,265 89
	Williams	664 69	509 10
Total Colusa County		\$2,317 44	\$1,774 99
El Dorado	Placerville	\$1,813 65	\$1,389 13
Total El Dorado County		\$1,813 65	\$1,389 13
Glenn	Orland	\$933 38	\$714 91
	Willows	1,580 89	1,210 85
Total Glenn County		\$2,514 27	\$1,925 76

DISTRICT III—Continued

County	City	State Highways (Section 203)	Streets of Major Importance (Section 194)
Nevada	Grass Valley	\$2,981 35	\$2,283 50
	Nevada City	1,328 61	1,017 62
Total Nevada County		\$4,309 96	\$3,301 12
Placer	Auburn	\$2,078 44	\$1,591 94
	Colfax	712 34	545 60
	Lincoln	1,635 57	1,252 73
	Rocklin	565 49	433 13
	Roseville	5,018 40	3,843 74
	Total Placer County		\$10,010 24
Sacramento	North Sacramento	\$1,637 92	\$1,254 53
	Sacramento	73,225 60	56,085 65
Total Sacto Co. (Portion)		\$74,863 52	\$57,340 18
Sierra	Loyalton	\$653 76	\$500 73
Total Sierra County		\$653 76	\$500 73
Sutter	Yuba City	\$2,815 77	\$2,156 68
Total Sutter County		\$2,815 77	\$2,156 68
Yolo	Davis	\$970 88	\$743 63
	Winters	699 84	536 02
	Woodland	4,344 87	3,331 64
Total Yolo County		\$6,015 59	\$4,611 29
Yuba	Marysville	\$4,501 33	\$3,447 70
	Wheatland	374 12	286 55
Total Yuba County		\$4,875 45	\$3,734 25
Total District III		\$121,173 89	\$92,814 43

DISTRICT IV

Alameda	Alameda	\$27,363 33	\$20,958 38	
	Albany	6,693 01	5,126 38	
	Berkeley	64,133 14	49,121 47	
	Emeryville	1,824 59	1,397 51	
	Hayward	4,319 34	3,308 31	
	Livermore	2,436 17	1,865 93	
	Oakland	221,873 97	169,939 83	
	Piedmont	7,289 76	5,583 44	
	Pleasanton	966 18	740 03	
	San Leandro	8,947 18	6,862 91	
	Total Alameda County		\$345,846 67	\$264,894 19
	Contra Costa	Antioch	\$3,348 86	\$2,696 90
		Concord	878 70	673 03
		El Cerrito	3,022 75	2,315 22
Hercules		306 18	234 51	
Martinez		5,274 59	4,073 48	
Pinole		610 02	487 23	
Pittsburg		7,506 12	5,749 16	
Richmond		15,694 10	12,020 58	
Walnut Creek		792 01	606 62	
Total Contra Costa County		\$37,433 33	\$28,836 71	
Marin	Belvedere	\$390 53	\$299 12	
	Corte Madera	802 16	614 40	
	Fairfax	2,284 64	1,749 88	
	Larkspur	969 32	742 43	
	Mill Valley	3,252 39	2,491 10	
	Ross	1,058 35	810 63	
	San Anselmo	3,631 98	2,781 84	
	San Rafael	6,265 78	4,799 14	
	Sausalito	2,864 20	2,193 77	
Total Marin County		\$21,519 35	\$16,482 31	

TIES FOR FISCAL YEAR ENDING JUNE 30, 1936

DISTRICT IV—Continued

County	City	State Highways (Section 203)	Streets of Major Importance (Section 194)
Napa	Calistoga	\$781 07	\$598 25
	Napa	5,027 76	3,850 91
	St Helena	1,235 66	946 42
Total Napa County		\$7,044 49	\$5,395 58
San Francisco	San Francisco	\$495,508 08	\$379,524 29
Total San Francisco Co....		\$495,508 08	\$379,524 29
San Mateo	Atherton	\$1,034 14	\$792 08
	Bay Shore	897 46	687 39
	Belmont	777 56	597 65
	Burlingame	10,364 83	7,938 73
	Daly City	6,479 55	5,046 21
	Hillsborough	1,477 01	1,131 29
	Lawndale	288 22	220 75
	Menlo Park	1,760 53	1,348 44
	Redwood City	6,999 98	5,361 49
	San Bruno	2,819 68	2,159 68
	San Carlos	884 18	677 22
	San Mateo	10,507 93	8,050 01
	South San Francisco	4,837 18	3,704 94
	Total San Mateo County..		\$49,128 25
Santa Clara	Alviso	\$297 58	\$227 93
	Gilroy	2,735 32	2,095 06
	Los Gatos	2,474 45	1,895 25
	Morgan Hill	709 22	543 21
	Mountain View	2,583 79	1,979 00
	Palo Alto	10,595 22	8,199 28
	San Jose	45,151 80	34,611 58
	Santa Clara	4,922 33	3,770 16
	Sunnyvale	2,416 63	1,850 97
	Willow Glen	3,254 73	2,492 89
	Total Santa Clara County..		\$75,241 07
Santa Cruz	Santa Cruz	\$11,243 56	\$8,611 77
	Watsonville	6,695 12	5,169 45
Total Santa Cruz County..		\$17,938 68	\$13,781 22
Sonoma	Cloverdale	\$592 82	\$454 06
	Healdsburg	1,793 35	1,373 58
	Petaluma	6,439 96	4,932 55
	Santa Rosa	8,307 49	6,362 95
	Sebastopol	1,376 25	1,054 11
	Sonoma	765 46	586 29
Total Sonoma County		\$19,275 33	\$14,763 54
Total District IV.....		\$1,068,935 25	\$819,059 05

DISTRICT V

Montrey	Carmel	\$1,765 22	\$1,352 03
	King City	1,158 33	887 20
	Montrey	7,139 79	5,468 58
	Pacific Grove	4,341 20	3,325 05
	Salinas	8,136 51	6,260 06
	Soledad	463 96	355 36
Total Monterey County ...		\$23,005 01	\$17,648 28
San Benito	Hollister	\$2,934 50	\$2,247 62
	San Juan Bautista	602 98	461 84
Total San Benito County..		\$3,537 48	\$2,709 46
San Luis Obispo	Arroyo Grande	\$696 71	\$533 63
	Paso Robles	2,009 70	1,539 29
	San Luis Obispo	6,464 17	4,951 10
Total San Luis Obispo Co.		\$9,170 58	\$7,024 02

DISTRICT V—Continued

County	City	State Highways (Section 203)	Streets of Major Importance (Section 194)
Santa Barbara	Lompoc	\$2,222 16	\$1,702 01
	Santa Barbara	26,254 21	20,108 88
	Santa Maria	5,512 03	4,221 83
Total Santa Barbara Co....		\$33,988 40	\$26,032 72
Total District V.....		\$69,701 47	\$53,414 48

DISTRICT VI

Fresno	Coalinga	\$2,226 83	\$1,705 59	
	Clovis	1,027 89	787 30	
	Firebaugh	395 23	302 72	
	Fowler	914 64	700 55	
	Fresno	41,025 46	31,424 71	
	Kingsburg	1,032 59	790 89	
	Parlier	440 52	337 41	
	Reedley	2,022 20	1,548 86	
	Sanger	2,317 44	1,774 99	
	San Joaquin	127 32	97 52	
	Selma	2,379 93	1,822 88	
	Total Fresno County.....		\$53,910 05	\$41,293 40
	Kern	Bakersfield	\$20,319 62	\$15,563 39
Delano		2,055 79	1,574 59	
Maricopa		836 52	640 72	
Taft		2,688 46	2,059 17	
Tehachapi		574 87	440 31	
Total Kern County.....		\$26,475 26	\$20,278 18	
Kings	Corcoran	\$1,380 94	\$1,057 71	
	Hanford	5,489 37	4,204 47	
	Lemoore	1,092 72	836 94	
Total Kings County.....		\$7,963 03	\$6,099 12	
Madera	Chowchilla	\$661 56	\$506 71	
	Madera	3,643 72	2,790 83	
Total Madera County.....		\$4,305 28	\$3,297 54	
Tulare	Dinuba	\$2,318 23	\$1,775 61	
	Exeter	2,097 18	1,606 29	
	Lindsay	3,029 00	2,320 00	
	Porterville	4,142 03	3,172 50	
	Tulare	4,848 13	3,713 32	
	Visalia	5,672 92	4,345 06	
Total Tulare County		\$22,107 49	\$16,932 78	
Total District VI.....		\$114,761 11	\$87,901 02	

DISTRICT VII

Los Angeles	Alhambra	\$23,019 78	\$17,631 53
	Arcadia	4,074 07	3,120 45
	Avalon	1,481 71	1,134 88
	Azusa	3,755 40	2,876 37
	Bell	6,157 98	4,716 57
	Beverly Hills	13,613 32	10,426 85
	Burbank	13,014 24	9,967 99
	Compton	9,775 91	7,487 66
	Covina	2,166 69	1,659 54
	Culver City	4,427 91	3,391 47
	Claremont	2,123 74	1,628 63
	El Monte	2,717 37	2,081 31
	El Segundo	2,736 10	2,095 66
	Gardena	5,501 87	4,214 05
	Glendale	49,001 40	37,531 62
	Glendora	2,156 54	1,651 76
	Hawthorne	5,151 96	3,948 04
	Hermosa Beach	3,748 03	2,869 20
	Huntington Park	19,207 37	14,711 49
	Inglewood	16,377 52	12,815 04

(Continued on page 18)

GASOLINE TAX APPORTIONMENTS TO CITIES

(Continued from page 17)

DISTRICT VII—Continued

County	City	State Highways (Section 203)	Streets of Major Importance (Section 194)
Los Angeles— Continued	La Verne	2,233 87	1,710 99
	Long Beach	111,248 17	85,280 70
	Los Angeles	968,940 39	742,170 24
	Lynwood	5,719 80	4,380 97
	Manhattan Beach	1,477 01	1,131 29
	Maywood	5,306 60	4,064 49
	Monrovia	8,505 88	6,514 90
	Montebello	4,294 35	3,289 17
	Monterey Park	5,003 55	3,832 36
	Pasadena	59,568 85	45,658 20
	Pomona	16,249 44	12,445 93
	Redondo Beach	7,300 69	5,591 83
	San Fernando	5,910 38	4,526 93
	San Gabriel	5,687 39	4,366 61
	San Marino	2,913 40	2,231 46
	Santa Monica	29,013 74	22,222 48
	Sierra Madre	2,772 81	2,123 77
	Signal Hill	2,290 11	1,764 06
	South Gate	15,334 03	11,744 79
	South Pasadena	10,724 13	8,213 93
	Torrance	6,615 15	5,284 91
	Vernon	991 19	759 18
	West Covina	690 48	549 79
Whittier	11,577 07	8,867 22	
Total Los Angeles County..	\$1,480,575 49	\$1,134,872 31	
Orange	Anaheim	\$8,598 69	\$6,588 50
	Brea	1,901 91	1,456 73
	Fullerton	8,482 46	6,496 96
	Huntington Beach	2,882 16	2,207 53
	Laguna Beach	1,547 30	1,185 13
	La Habra	1,775 38	1,359 82
	Newport Beach	1,720 71	1,317 95
	Orange	6,300 13	4,825 45
	Placentia	1,254 39	960 78
	San Clemente	520 98	399 03
	Santa Ana	23,683 70	18,140 04
	Seal Beach	902 91	691 57
	Tustin	723 28	553 98
Total Orange County	\$60,294 00	\$46,183 47	
Ventura	Fillmore	\$2,259 65	\$1,730 73
	Ojai	1,146 61	878 23
	Oxnard	4,909 04	3,759 98
	Santa Paula	5,820 56	4,458 13
	Ventura	9,062 79	6,941 46
Total Ventura County	\$23,198 65	\$17,768 53	
Total District VII	\$1,564,068 14	\$1,198,624 31	

DISTRICT VIII

Riverside	Banning	\$2,149 51	\$1,646 38
	Beaumont	1,040 39	796 87
	Corona	5,481 58	4,198 50
	Elsinore	1,054 45	807 63
	Hemet	1,745 69	1,337 08
	Perris	595 95	456 46
	Riverside	23,194 76	17,765 55
	San Jacinto	1,051 32	805 23
Total Riverside County	\$36,313 65	\$27,813 70	
San Bernardino	Chino	\$2,435 39	\$1,865 33
	Colton	6,259 52	4,794 35
	Needles	2,455 09	1,880 89
	Ontario	10,609 32	8,125 99
	Redlands	11,073 28	8,481 35
	Rialto	1,282 52	982 32
San Bernardino	30,002 98	23,149 77	

DISTRICT VIII—Continued

County	City	State Highways (Section 203)	Streets of Major Importance (Section 194)
San Bernardino	Upland	3,681 19	2,819 53
—Continued	Total San Bernardino Co..	\$67,799 89	\$52,099 53
	Total District VIII	\$104,113 54	\$79,913 23

DISTRICT IX

Inyo	Bishop	\$905 26	\$693 37
Total Inyo County	Total Inyo County	\$905 26	693 37
Mono	No Incorporated Cities		

DISTRICT X

Alpine	No Incorporated Cities		
Amador	Amador City	\$133 56	\$102 31
	Jackson	1,566 06	1,199 49
	Plymouth	287 91	205 20
	Sutter Creek	791 22	606 01
Total Amador County	Total Amador County	\$2,758 75	\$2,113 01
Calaveras	Angels Camp	\$714 69	\$547 40
Total Calaveras County	Total Calaveras County	\$714 69	\$547 40
Mariposa	Hornitos	\$48 42	\$37 09
Total Mariposa County	Total Mariposa County	\$48 42	\$37 09
Merced	Atwater	\$716 25	\$548 59
	Dos Palos	556 91	556 37
	Gustine	793 57	607 82
	Livingston	627 20	480 39
	Los Banos	1,464 51	1,121 71
	Merced	5,519 06	4,227 22
Total Merced County	Total Merced County	\$9,677 50	\$7,542 10
Sacramento	Isleton	\$2,121 09	\$1,738 51
Total Sacto Co. (Portion)	Total Sacto Co. (Portion)	\$2,121 09	\$1,738 51
San Joaquin	Lodi	\$5,301 93	\$4,060 90
	Manteca	1,260 64	965 56
	Stockton	37,462 61	28,693 73
	Tracy	2,990 73	2,290 69
Total San Joaquin County	Total San Joaquin County	\$47,015 91	\$36,010 88
Solano	Benicia	\$2,275 26	\$1,742 69
	Dixon	781 06	598 24
	Fairfield	883 40	676 62
	Rio Vista	1,022 43	783 10
	Suisun	706 87	541 42
	Vacaville	1,215 35	930 87
	Vallejo	11,448 90	8,900 31
Total Solano County	Total Solano County	\$18,331 27	\$14,073 25
Stanislaus	Ceres	\$766 23	\$586 88
	Modesto	10,822 39	8,291 70
	Newman	991 19	759 18
	Oakdale	1,649 63	1,263 50
	Patterson	706 89	541 43
	Riverbank	627 20	480 39
	Turlock	3,339 86	2,558 09
	Total Stanislaus County	Total Stanislaus County	\$18,903 39
Tuolumne	Sonora	\$1,779 28	\$1,362 80
Total Tuolumne County	Total Tuolumne County	\$1,779 28	\$1,362 80
Total District X	Total District X	\$101,350 30	\$77,906 21



California Highway Commission in session with three recently appointed members present. Left to right: Julien D. Roussel, secretary; William T. Hart, Paul G. Jasper, Harry A. Hopkins, chairman; H. R. Judah and Philip A. Stanton.

DISTRICT XI

County	City	State Highways (Section 203)	Streets of Major Importance (Section 194)
Imperial	Brawley	\$8,153 62	\$6,245 10
	Calexico	4,919 98	3,788 36
	Calipatria	1,213 79	929 67
	El Centro	6,587 57	5,045 62
	Holtville	1,373 13	1,051 72
	Imperial	1,517 62	1,162 39
	Westmoreland	1,152 87	883 02
Total Imperial County		\$24,918 58	\$19,085 88
Riverside	Blythe	\$796 69	\$610 21
	Indio	2,031 57	1,556 04
Total Riverside County		\$2,828 26	\$2,166 25
San Diego	Chula Vista	\$3,021 96	\$2,314 61
	Coronado	4,237 33	3,246 49
	El Cajon	820 13	628 16
	Escondido	2,672 06	2,046 60
	La Mesa	1,962 84	1,503 40
	National City	5,702 61	4,367 80
	Oceanside	2,743 60	2,102 24
	San Diego	115,596 71	88,539 36
Total San Diego County		\$136,757 24	\$104,747 66
Total District XI		\$164,504 08	\$125,999 79

A careful motorist is one who avoids not only the wet spots in the roads but the wet spots along it.

Highway Board Completed

By JULIEN D. ROUSSEL, Secretary

For the first time in twenty months a full membership was present at the meeting of the California Highway Commission in Long Beach on July 10th.

An illness of almost two years' duration had prevented Commissioner Philip A. Stanton from attending sessions and during that period there were several changes in the personnel of the commission.

"We have missed your wise counsel and guidance and are happy you are back with us again," Chairman Harry A. Hopkins told Mr. Stanton in opening the meeting.

When Mr. Stanton took his seat he found a huge floral piece standing behind his chair. It was sent by the Los Angeles Chamber of Commerce, of which Mr. Stanton was one of the founders.

NEW APPOINTEE INTRODUCED

Attending were Commissioners Hopkins, Stanton, H. R. Judah, Paul G. Jasper and William T. Hart. It was Mr. Hart's first meeting, he having been appointed by Governor Frank F. Merriam to succeed the late Charles D. Hamilton of Banning.

(Continued on page 23)

RELOCATION OF U. S. 40 SOUTH OF VACAVILLE NEARING COMPLETION

By C. J. TEMBY, District Office Engineer

THE GRADING and paving with asphaltic concrete of the relocated section of State Highway between 3.7 miles north of Fairfield and 0.6 mile south of Vacaville is making satisfactory progress and will be finished this month.

This project, commonly referred to as the Orchard Line Change, improves a heavy traffic route, U. S. 40, between Sacramento and the Bay region. Its completion will eliminate a section of existing road composed of poor alignment and grades. The curvature on the present road totals approximately 866 degrees, compared with the curvature on the proposed alignment of 114 degrees,

wide by six-tenths of a foot thick at the center, increasing to 75 hundredths thick in the outer 2 feet at the edge.

The earthwork on this project was through adverse soil, chiefly adobe, having a high shrinkage value, which made it necessary to provide a sub-grade treatment of selected material to form a cushion between the native soils and the pavement. For this purpose, a selected material blanket, approximately 1 foot in thickness underneath the pavement and extending for the full width of the roadbed, was constructed.

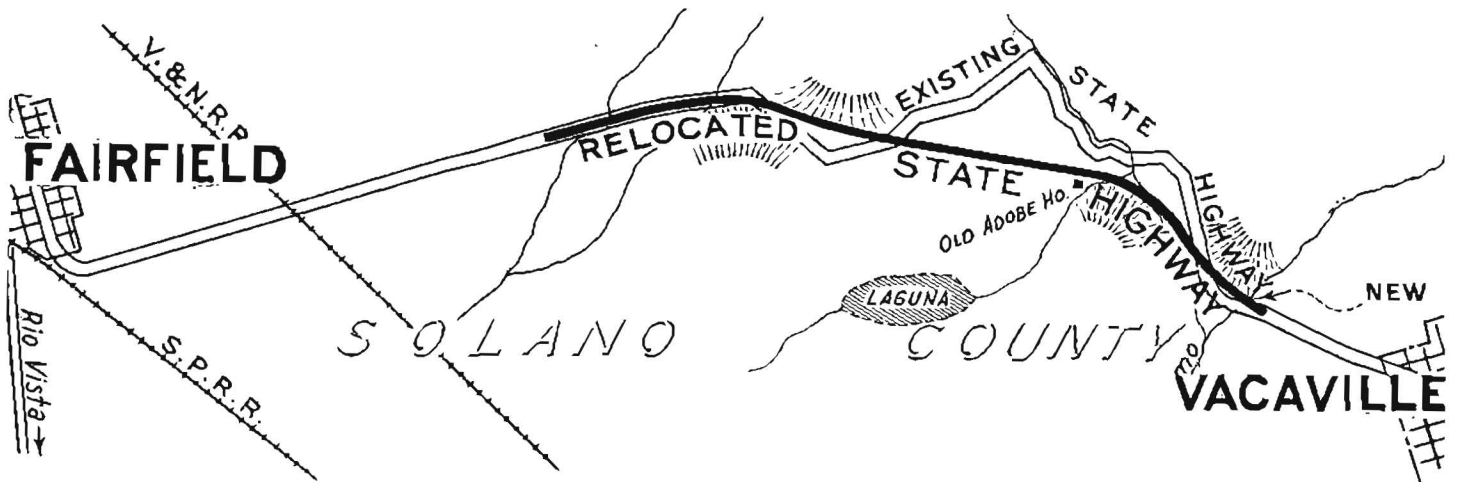
The selected material was obtained from local source, a hill about 0.5

existing old bridge, which was quite a landmark to the public using the highway in this vicinity.

The construction of this highway will represent an expenditure of about \$191,700 and is being financed from State highway funds and Federal funds under the control of the U. S. Bureau of Public Roads.

The contractor has established his paving plant on a railroad siding near the easterly boundaries of Vacaville. At this plant, a 3000 pound mixer is used and the pavement hauled by a fleet of trucks to the site of the work.

The contract progress to date has been satisfactory. It is expected that



Map showing "Orchard Line Change," the relocated section of highway between Fairfield and Vacaville compared with existing crooked route.

making a reduction of 752 degrees or more than two complete circles.

GRADES AND CURVES REDUCED

The maximum grade of the existing road was approximately 7 per cent as compared to the maximum on the proposed project of 5 per cent.

In addition to the reduction in curvature and grades, the new project will effect a saving of approximately 3500 feet or nearly three-quarters of a mile in distance. The minimum radius curve will be 3800 feet, while the minimum on the old road is 300 feet.

The new road is graded to a standard 36-foot roadbed and is being paved with asphaltic concrete 20 feet

mile north of the town of Vacaville. This section required approximately 43,000 cubic yards of imported borrow. The grading required about 97,000 cubic yards of unclassified roadway excavation. The paving will require approximately 18,800 tons of asphalt concrete.

In addition to the grading and paving it was necessary to construct a new bridge across Alamo Creek, about 0.6 mile south of Vacaville, or at the northerly end of the project. This new bridge consists of a reinforced concrete structure on steel piles.

The completion of this road on new alignment and over the new bridge, requires the removal of the

at the present rate all paving will be completed this month and the balance of the miscellaneous work on the road should be completed within about two week thereafter.

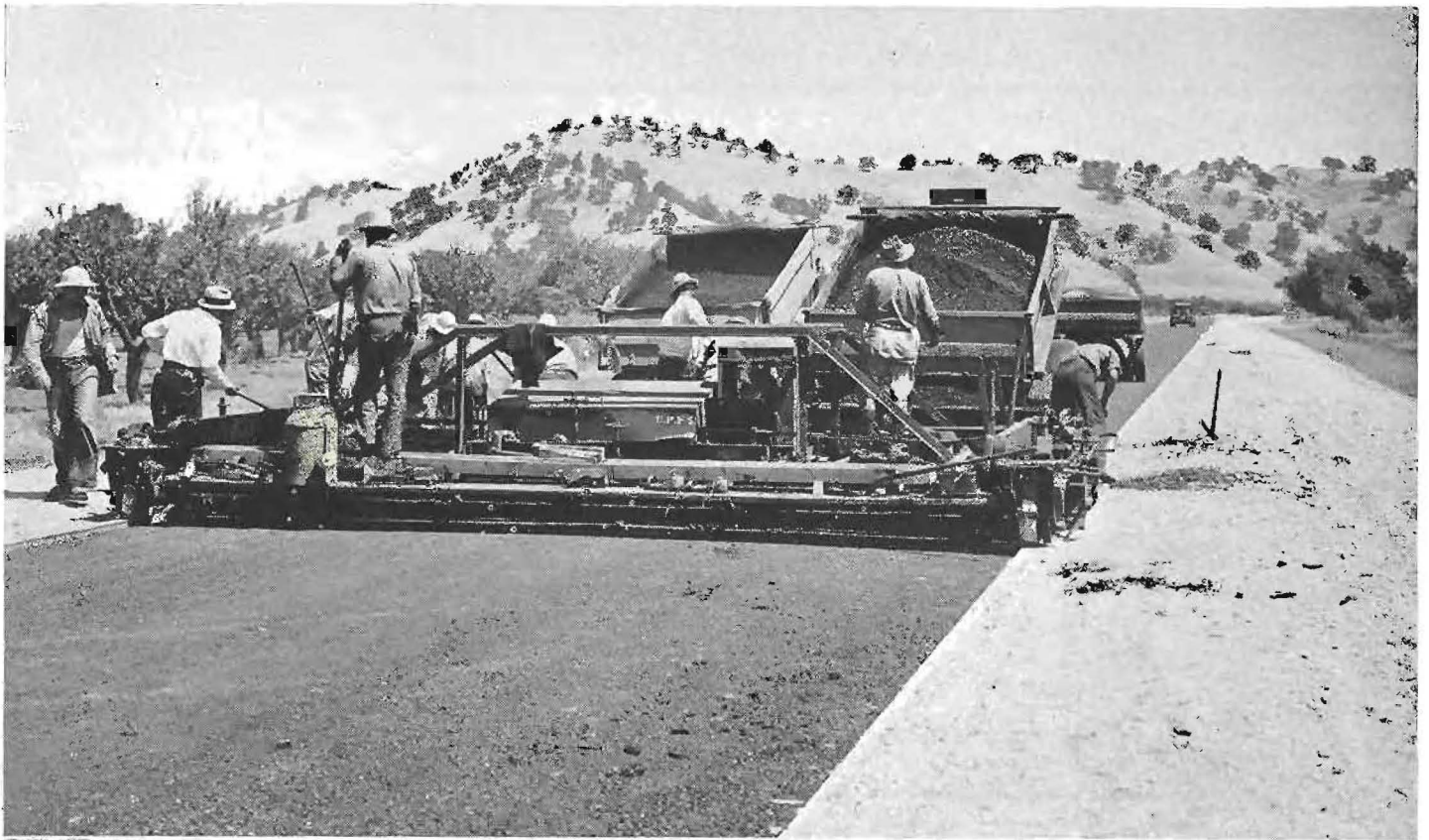
They say a Scotchman from Aberdeen is putting off buying an atlas until world affairs look a little more settled.

Mrs. Smythe-Browne was making the final arrangements for her elaborate reception.

"Bridget," she said to her old servant, "for the first thirty minutes after six o'clock I want you to stand at the drawing-room door and call the guests' names as they arrive."

Bridget's face lit up.

"Very well, ma'am," she replied. "I've been wantin' to do that to some of your friends for years."



Busy scenes on the Fairfield-Vacaville relocation of U. S. 40 showing equipment placing 20-foot asphaltic concrete pavement. At top, trucks dumping into spreader boxes and mechanical finishing machine in operation. Center, equipment rolling finishing course. At bottom, close-up of spreader box finishing machine.



In the Field With the Old Timers

COMES now an applicant for membership in the Old Timers' Club of the State Division of Highways who is an old timer in truth.

He is T. A. Bedford of Sacramento headquarters of the Division of Highways and he becomes head man of the

and Orient Railroad in Oklahoma, Texas and Mexico.

Mr. Bedford was riding range in Texas when a survey party of the Kansas City, Mexico and Orient Railroad stopped at the ranch where he was employed. He and the chief of

"I don't know anything about the work," Bedford replied.

"Well," said the chief of party, "if you can punch cattle you can punch a track laying crew for me in Mexico."

And so Bedford quit the range and signed up, and has been engineering



Tough reconnaissance work on Old Oregon Trail over Scott Mountain in 1912. T. A. Bedford with horse in center foreground.

club. His credentials, an identification card issued by the original California Highway Commission, show that he was appointed Division Engineer attached to Division 11, Redding, on December 9, 1911.

With the exception of ten months when he was in Cuba in 1928-29, Mr. Bedford has been continuously with the State in highway work since the date of his first appointment.

Cowpuncher in Texas, railroad man in the Lone Star State, Mexico, California and Oklahoma, a county surveyor in Texas and road builder in California, Mr. Bedford has had a varied experience. Born in Texas, March 9, 1870, he was reared on a cattle ranch there. His first engineering job was as head chainman with a survey party in Texas in the spring of 1886. From 1895 to 1901 he was county surveyor of Knox County, Texas. For eight years from 1901 he was chief of party and division engineer of the Kansas City, Mexico

party became friends and the latter one day asked him:



T. A. BEDFORD

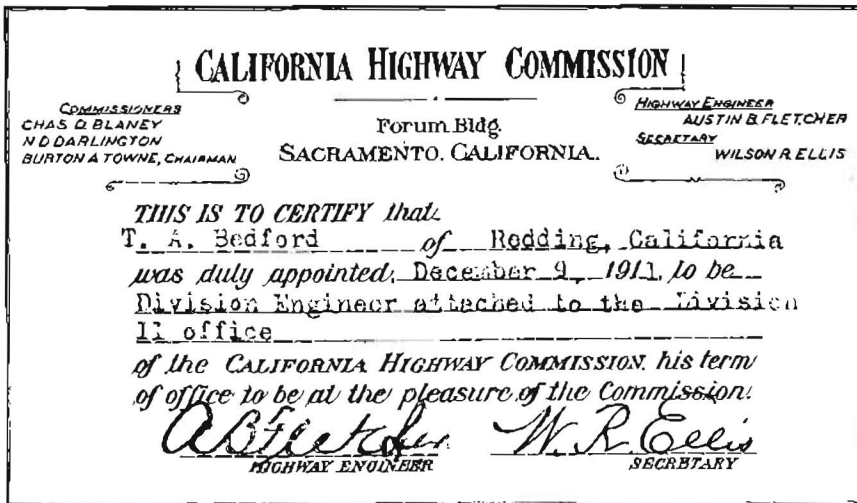
"How would you like to become an engineer?"

ever since.

From 1908 to 1911, Mr. Bedford was deputy highway engineer for the San Diego County Highway Commission. Like a number of other men who attained responsible positions with the California Highway Commission, Mr. Bedford met in San Diego Austin B. Fletcher, who was to become State Highway Engineer in 1911 and later the first director of the State Department of Public Works. He came into State service with Mr. Fletcher.

Mr. Bedford's first assignment under Mr. Fletcher was as Division Engineer at Redding. He spent two years there surveying and locating the Pacific Highway from Redding to the Oregon line, the laterals from Redding to Alturas, from Red Bluff to Susanville and the Trinity lateral from Redding to the coast.

Of those years Mr. Bedford relates: "In the early days of State highway work, especially in Division II,



T. A. Bedford's card shows he was appointed to engineering staff December 11, 1911, making him head man in Old Timers' Club to date.

which embraced the most northern part of the State, a great deal of difficult and hazardous reconnaissance work was necessary.

"It required a great deal of energy and no small amount of good luck to complete a survey trip sometimes.

"Practically all of my reconnaissance trips were made alone. Fewer people got into less trouble that way. I had several close calls.

"In 1912 a very fine young horse was bought up in Modoc County for my use. He was six years old, a dark gray, tall, trim and rather wild. He tried to unload me more than once but didn't succeed. His energy was unbounded and he could do 45 miles over mountain trails in one day. Old Flip, that was his name, and very appropriate, died only last year at the age of 29, his hair white with age, after 23 years in the service of the State. He was, however, practically retired, on a pension I guess, during the last two years of his life.

"Most of the reconnaissance had to be made on foot. Many people around Redding thought that the Redding-Alturas lateral should follow the Pit River Canyon on a "water grade," whatever that is. Roscoe J. Anderson, an attorney at Redding, insisted on seeing that route. Roscoe did well but when we reached the Big Bend country, he came so near the end of his career on one of the bluffs overhanging the Pit that when we got on level ground we headed for home. Only Roscoe can do the story justice.

"Both the North Fork and Middle Fork of the Feather River had to be scouted out and on foot. The McCloud River, Sacramento and Shasta canyons had to be studied as well as the Old Oregon Trail over

Scott Mountain. About the most interesting of all was a 45-mile motorboat trip down the lower Klamath River with its many rapids all of which we ran except one."

Mr. Bedford was transferred to District 1 in 1923 where he remained until 1928, when he obtained a leave of absence and went to Cuba for ten months. Upon his return in 1929 he was assigned to Central Headquarters in Sacramento to study the entire State highway system. He is there today piling up more years of service with the Division of Highways.

CREW MAN INJURED

Protecting the motoring public sometimes has its hazards for the men of the Maintenance Department. Just recently on the Coast Highway, north of Ventura, a crew under Foreman D. MacDougall of El Rio was removing mud, which had washed down on to the pavement. It was 2 o'clock in the morning. With flares burning, an abundance of red lanterns set out and with flagmen stationed at either end of the barricades, a motorist came along at a high rate of speed, ran by the flagman and, cutting over to the wrong side of the road, crashed into the rear of one of the Division of Highway cars with such force as to fling it upon George Rhodes, a member of MacDougall's crew. Rhodes suffered a concussion of the brain and a broken leg and was unconscious for a week. He is, fortunately, recovering.

First Chappie: "My brother thinks a football coach has four wheels."

Second Chappie: "Ha! Ha! And how many wheels has the bally thing?"

Highway Officialdom Eager for Message of Chief MacDonald

(Continued from page 12)

tain highways, for we are ever learning and ever striving to keep in the foremost of the ranks of practical highway construction engineers. However, the most of our delegates will find their keenest interest in the words of Thoms H. MacDonald, Chief of the Bureau of Roads, because the future of highways for the next few years depends upon the policies of the Federal Government.

This is true because Federal aid is so necessary, especially when as in California, so much State highway funds are taken by counties, cities and other political subdivisions. Chief MacDonald has intimated that he will have important information to impart to highway builders of America at this meeting.

Any industry so progressive as that relating to the automobile can not nap and all the progressive highway officials in the United States will be in attendance when Chief MacDonald chooses to announce the Government road policy for the ensuing years.

Arrangements for this great meeting are being handled by Harry A. Hopkins, Chairman of the California State Highway Commission and the engineers of the State Department of Public Works as well as the Director thereof, Earl Lee Kelly.

HIGHWAY COMMISSION AGAIN COMPLETE

(Continued from page 19)

During the illness of Mr. Stanton former State Senator Ray Ingels of Mendocino succeeded Dr. W. W. Barmham of Yreka as commissioner on May 21, 1935. Mr. Ingels became Director of the Department of Motor Vehicles in August, 1935, thereby creating a vacancy on the board. On July 24, 1935, Charles D. Hamilton succeeded Frank A. Tetley on the commission. Mr. Hamilton died suddenly April 24, 1936.

On May 6, 1936, Governor Merriam named Mr. Jasper of Fortuna to fill the vacancy caused by the resignation of Mr. Ingels and appointed Mr. Judah of Santa Cruz to succeed Timothy A. Reardon of San Francisco, who resigned. In July, Mr. Hart was appointed to succeed Mr. Hamilton.

Pan-American Highway Cuts Through Lush Tropical Jungle

(Continued from page 10)

implements contrasting with the factory city of Monterey.

In Victoria, with its 400-year-old cathedral, its ancient cabs and drowsing natives, our party lunched as the guests of the Governor of the State of Tamaulipas. We departed in the late afternoon for Villa Juarez where we were entertained at dinner and where we remained over night.

THROUGH TROPICAL JUNGLE

After leaving Victoria the visitor is impressed with the lush tropical jungle through which the Pan-American Highway passes, a route that was cleared with machetes. Here thousands of parrots and tropical birds chatter in the trees and if the motorist from the States inquires he will learn he has crossed the Tropic of Cancer and is in the Tropical Zone.

South of Victoria the highway crosses a number of bridges over tropical rivers and streams and runs through a country that has changed little in thousands of years. Here live the descendants of the ancient Huastecs and they live much as their forefathers did. However, the new highway is destined to change this primitive land and the lives of its natives.

AMERICAN MONUMENT DEDICATED

We left Villa Juarez at 8 o'clock on the morning of July 3d for Chapulhuacan, where we lunched and from which we departed in the afternoon for Zimapan. Here we had dinner, enjoyed a serenade and fireworks and dance and remained over night. Early the following morning the trip was resumed and we arrived at Pachuca before noon, participating in the laying of the cornerstone of the monument dedicated by the American colony to the people of Mexico in honor of the inauguration of the Mexico City-Laredo Highway.

Leaving Tamazunchale, the altitude of which is about 330 feet, the motorist on the new highway will again be impressed with the easy grade which leads up into the mountains so suddenly that it comes as a distinct surprise to look back and down and see

far below a silver ribbon that is the Moctezuma River. It is the road between Tamazunchale and Jacala that will attract the attention of engineers. Here, indeed, engineering skill accomplished wonders.

AWED BY SOENIC GRANDEUR

The road climbs steadily to an elevation of 6000 feet and the scenic beauty of the mountains and jungles awes one with its grandeur.

At Pachuca our party was welcomed by State and city officials and we lunched as the guests of the Governor of the State of Hidalgo. We departed for Mexico City in the afternoon.

American motorists who travel the new highway to Mexico City doubtless will ever after remember with delight the road from Jacala to the Mexican capital, a distance of 166 miles.

At Jacala the elevation is about 4800 feet. Ahead to the south are towering mountains and one is inclined to doubt that a highway runs through them. But the Pan-American Highway does and leads the motorist up to an elevation of 8200 feet before dropping down into Mexico City.

We arrived at Atzacualco on the evening of July 4th where, after a ceremony during which the keys to the City of Mexico were presented to our party, we entered the capital. A dance at the American Club given that night by the American Chamber of Commerce, the American Colony and the American Legion was the beginning of a three-day round of entertainment for the visiting delegates.

The American delegation returned to Laredo by train vividly impressed with the magnificent highway it had seen and convinced that soon thousands of motorists will be rolling down to Mexico City from the United States fully justifying the ten years of arduous labor which made possible the Pan-American Highway.

"Shall I take you to the zoo?"
"No, if they want me, they'll come after me."—*Siwashier*.

Federal Aid For Secondary Roads

Provision in the Hayden-Cartwright bill for Federal aid for secondary and farm-to-market roads is one of the most important developments in national highway legislation. The handicap of dirt roads is a serious cost factor in the marketing of farm products, and in many mining operations. In this day of the automobile, mudless roads are a necessity. They must not only be mudless, but they must be aligned to accommodate modern motor traffic.

Stimulation of construction of modern feeder roads is a wise national policy. Not only is it welcomed by all thinking people, but it will prove so popular that the \$25,000,000 per annum set up in present legislation will be expanded in the future.

Federal aid for feeder roads is the natural outgrowth of Federal aid for primary roads. As in the case of primary roads, the feeder roads will be under the broad jurisdiction of the U. S. Bureau of Public Roads, which will set up standards with which specifications and construction must comply. And again, as in the case of primary roads, the Federal funds must be matched by local funds. This, too, is a wise policy.

The benefits of Federal aid for feeder roads will be far reaching.—*Highway Builder and Engineer*.

2,245,042 MOTOR VEHICLES REGISTERED IN SIX MONTHS

With 2,245,042 motor vehicles "tagged" in the first six months of this year, Gov. Frank F. Merriam announced collection of registration fees has provided an apportionment of \$6,295,526 for construction and maintenance of roads and highways.

Of the total apportionment, \$3,147,763 will go to the 58 county governments for road development. A like sum will be made available to department of public works for State highway projects.

A man on trial for his life was being examined by a group of alienists. Suddenly one doctor jumped up and shouted at him: "Quick, how many feet has a centipede?" The man came back in a dry, dry voice: "Gad, is that all you have to worry about?"—*Troy (N. Y.) Times-Record*.



Location of proposed Arroyo Seco Parkway through Victory Park, Los Angeles, showing paved stream channel at left of picture.

Streets Cross Above Depressed Parkway

(Continued from page 4)

design is arranged so that there will be no left-hand turn across lanes of traffic, which is a very desirable feature from the standpoint of safety and noninterference with traffic.

The proposed depressed parkway through South Pasadena will enable all through traffic to pass through that city without using any of its surface streets, eliminating the hazards and interference with local traffic. All the existing streets in South Pasadena (Arroyo Drive, Grand Avenue, Orange Grove Avenue, Prospect Avenue, Meridian Avenue, Fremont Avenue and Fair Oaks Avenue) will be carried across the depressed parkway on ornamental bridges which will be at the grade of the existing street and will be the same width between curbs as the existing street with the sidewalks additional.

More persons will be enabled to enjoy the long, narrow strip of park in the Arroyo Seco by the construction of this parkway than would ever get benefits from the park in any other way.

Because of the safe and quick access which the Arroyo Seco Parkway would provide to the center of Los Angeles, the areas contiguous to and served by the parkway will naturally become more desirable from a residential standpoint. As a conse-

quence, land values will be enhanced, and the local business centers, which get their support almost entirely from the local residents, will receive the impetus which would come from increased population in the adjacent territory.

Upon recommendation of the officials and interested citizens of the cities of Los Angeles, South Pasadena and Pasadena, the last State Legislature designated this Arroyo Seco Parkway as a secondary highway in the State Highway System. This action makes the project eligible to receive allotments from the city's share of the gasoline tax in the three cities mentioned, and funds have already been set aside by the cities of Pasadena and South Pasadena for starting work on surveys, plans and acquisition of rights of way.

The city of Los Angeles, with emergency Federal funds, has already done a large amount of work in constructing a paved channel to take care of the Arroyo Seco drainage between Avenue 52 and San Pascual Street in South Pasadena. In connection therewith they have graded a considerable portion of the roadbed for the Arroyo Seco Parkway.

The Los Angeles officials expect this WPA project to continue, and are hopeful that the entire channel will be paved within the coming year.

Because of the fine spirit of cooperation existing between officials of the three cities, of the county of Los Angeles, of the State and the Federal Government, an unexpected amount of progress already has been made on the project.

Subway Drained by Two Automatic Pumps

(Continued from page 11)

at the top. The three foot sidewalks on both sides consist of a four inch reinforced concrete surface. The sidewalk and curb extend through the depressed portion. The drainage of the subway section is handled by a series of catch basins, a sump, and two five inch automatic electric pumps.

The pavement is protected from capillary action that might cause the rise of water-soluble salts that attack concrete, by a seal of Grade "E" asphalt placed one foot below subgrade. This membrane also shuts out surface waters from any expansive subgrade soils that lie below the pavement. The section between the seal and the subgrade is backfilled with selected imported borrow.

PROJECT COST \$124,000

A concrete well on either side of the project permits possible future removal or repairs to the pipe line. The 8" carrier pipe is also encased in a 12" pipe as an insurance against breakage of the line and flooding of the depressed portion with hot oil.

This project provided for approximately 32,000 man-hours of labor.

The total cost of the project was \$124,000, which covered the contract payment, State furnished materials, railroad work, and other incidental expenditures.

Angeles Crest Road Opens Mountain Area Close to Metropolis

(Continued from page 2)

labor, which is employed principally in clearing right of way grading and erosion control work, considerable power equipment, such as power shovels, trucks and tractors, will be used, thereby speeding up the work.

The highway from Foothill Boulevard at La Canada to Red Box is 12.7 miles in length and has been constructed by the State Division of Highways in successive units, starting in 1929 at Haskell Avenue in La Canada and being completed to Red Box late in 1934. The construction of the 1.3 mile section which is planned as a connection between the convict work and Red Box should be completed during the summer of 1937.

EASIER COUNTRY AHEAD

With this improvement the Angeles Crest Highway will be graded in a northeasterly direction from the Foothill Boulevard at La Canada to Charlton Flats, a distance of 21 miles. A contract has already been completed by the U. S. Bureau of Public Roads from Big Pines westerly and a connection eventually will be made with the portion under construction from La Canada.

The portion yet to be constructed, after present projects have been completed, will be over easier country, but at a high elevation, extending from Charlton Flats through Chilao Flats, Buckhorn Flats, Mt. Islip Saddle, and connecting with the end of the five-mile completed section just north of New Mt. Baldy.

OPENS MOUNTAIN AREA

This route is through extremely scenic territory and will open up for recreational purposes the largest mountain area within easy access of the densely populated Los Angeles metropolitan district.

The Angeles Crest Highway from La Canada to Big Pines Park will be about 46 miles in length. The total cost of the 25 miles already constructed, or under construction, is approximately \$2,500,000, with 21 miles of this route yet to be completed.

The value of this highway to the more than two million residents of the metropolitan area of which Los Angeles is the center, can hardly be estimated.

Relocation Eases Curves and Grades on Big Pines Road

By A. EVERETT SMITH, Assistant Highway Engineer

CONSTRUCTION of modern roads leading to recreational centers is one of the responsibilities of the State in the development of the California highway system, and as a unit in this phase of development in Southern California, the Division of Highways is pushing work forward toward the completion of satisfactory routes from the metropolitan districts to Los Angeles County Park at Big Pines in the Sierra Madre Mountains.

Construction of the Angeles Crest Route, which will be the main approach from the west to this popular recreational spot has been under way for some time and many miles have been completed. As the completion of this 64-mile route will take some time, the Division of Highways now has under way the construction on new alignment and grade a short stretch of highway connecting the

park with the San Bernardino-Lancaster highway at the head of the Cajon Valley.

EASY CURVES AND GRADES

This new highway winds its way on easy curves and grade up Wild Horse Canyon, over Sheep Creek Summit, across Sheep Creek and along Swarthout Creek to Big Pines. Lying wholly within National Forest boundaries, the route rises from an elevation of 4686 feet near its eastern terminus to an elevation of 5855 feet at Big Pines.

Construction of the new location covers a distance of $4\frac{3}{4}$ miles and will provide a highway which is a vast improvement over the old road. The maximum grade is 6.3% and the minimum radius of curvature is 1000 feet, whereas the old road has 7 miles of excessively steep grades where cars now toil up in second or low gear. The central twenty feet of the 30-foot graded roadbed on the new road will be oil treated.

THROUGH ROUGH CANYONS

Under the supervision of Resident Engineer C. V. Kane, construction on this route is well advanced; rough grading and a 50-foot span, reinforced concrete bridge over Sheep Creek being complete. Road oiling operations are now in progress and it is expected that the work will be completed by the end of the month.

The thousands who annually visit the Big Pines area for both summer vacations and outings and winter sports activities will appreciate this new and modern highway cut through the rough canyons of this portion of the Sierra Madre, bordered with picturesque Joshua trees, Pinyon pines and, at the terminus, the large pines of Los Angeles County Park.

It is said that the tiger has a more harmful bite than the lion.

Somebody must have gone to great pains to find that out.

"I'd like a couple of hard boiled eggs to take out," said the young fellow to the girl at the lunch counter.

"All right," replied the waitress with a smile, "you'll have to wait. Mamie and I don't get off until 10."

"Great Work and the Whole State Profits from It"

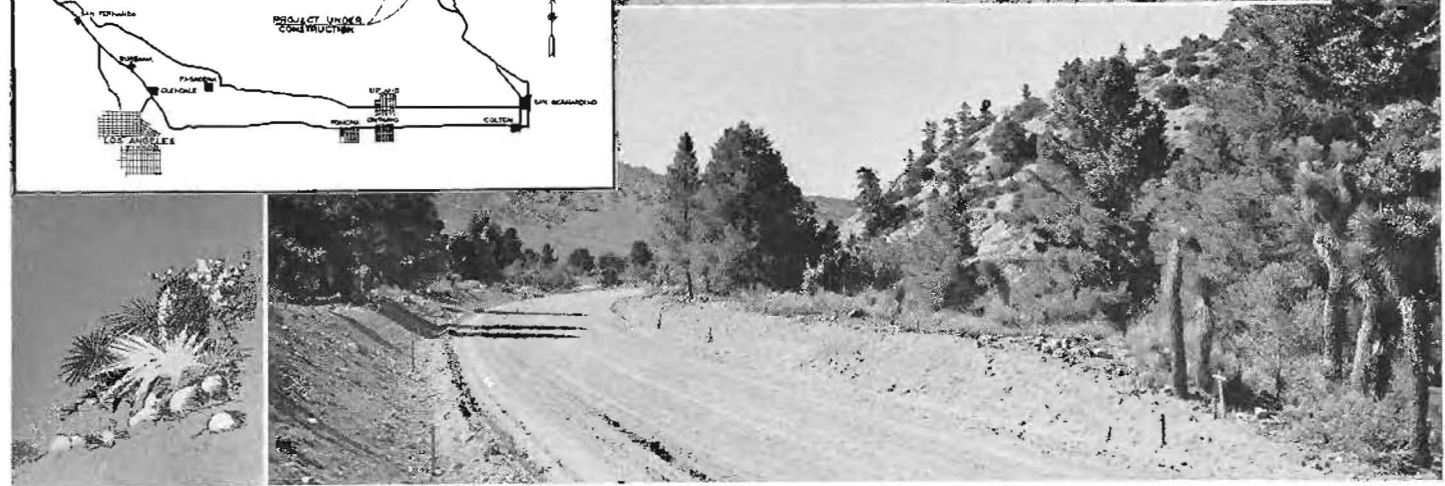
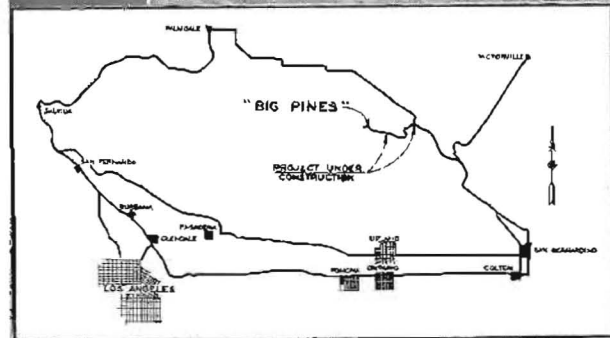
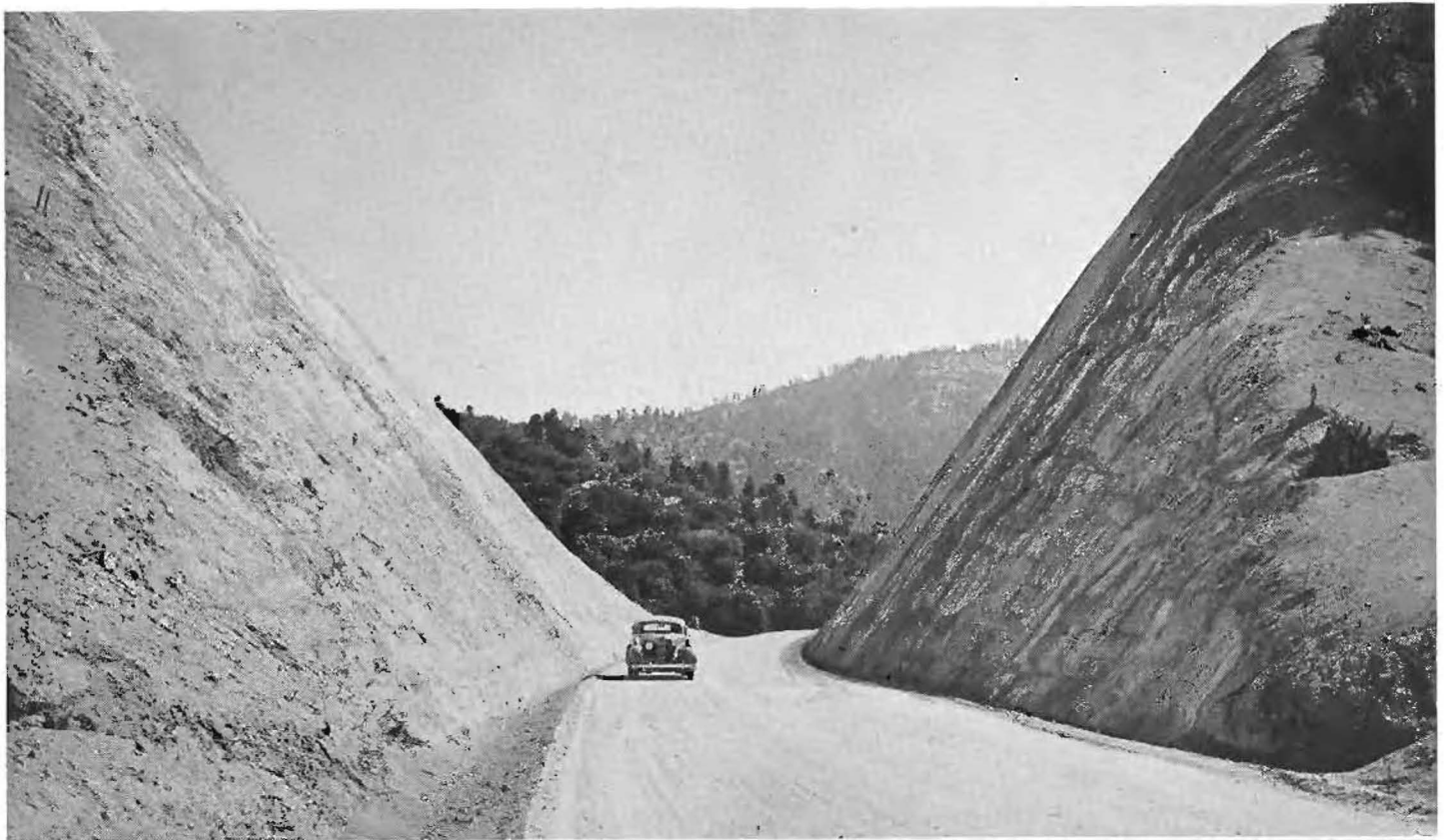
Better, safer roads! That is a policy diligently pursued by the California Highway Commission.

Improvements most recently announced will benefit Orange County and motorists who travel the Coast Highway from Seal Beach to Newport, and who drive the Santa Ana Canyon road.

More than \$300,000 will be spent on those projects, with the result that the Coast Boulevard between the points named will have a four-lane width.

The canyon route will have better pavement and new bridges on the section now contracted. All told, about 11 miles of road will be made more serviceable and more safe.

It is a great work; and the whole State profits from it.—
Pasadena Star-News.



Scenic views along new highway connecting Los Angeles County Park at Big Pines with the San Bernardino-Lancaster highway at head of Cajon Valley. Inset map shows where project is under construction. Pictures show rough grading complete before oiling. Upper photo exemplifies type of cuts necessary to eliminate dangerous grade on old highway shown in background of center picture. Lower picture reveals easy grade of new highway.



Announcement that cooperative bank protective work on flood control projects by the State and Federal government is about to be resumed and the progress of preliminary investigations preparatory to starting construction on initial units of the Central Valley Project are included in the following monthly report of the State Engineer together with news of the irrigation districts, dam applications, water distribution, topographic mapping and other activities of the Department of Water Resources.

Among interesting details are results of a research in methods of runoff forecasting showing an error of only ten per cent from actual runoff figures.

IRRIGATION DISTRICTS

Districts that have recently received approval of the Reconstruction Finance Corporation for loans include the Anderson-Cottonwood District which has been offered \$282,500 for refinancing its outstanding bonded indebtedness, and the Richvale District which will receive \$113,500 to purchase water rights and build canals for a 2000 acre tract that will be added to the district.

Continued activity in the formation of new irrigation districts in San Joaquin Valley is evidenced by the filing of three more petitions with the board of supervisors of Tulare County. Copies of organization petitions that were presented by the proposed Lindmore, Ivanhoe and Exeter irrigation districts have been filed with the State Engineer.

In addition to matters previously reported, the following petitions were acted upon by the District Securities Commission at the last regular meeting held in San Francisco, June 12, 1936:

Application of Big Springs Irrigation District for approval of the first refunding issue of bonds in the amount of \$26,000 for certification by the State Controller was granted.

Requests of Waterford Irrigation District and Santa Caronna Irrigation District for consent to execute agreements with bondholders, waiving the statute of limitations for a period of two years, were approved in so far as consent of the commission was necessary.

FLOOD CONTROL AND RECLAMATION

Relief Labor Work

Work has been continued on clearing of the Feather River channel above Marysville in Yuba County and the Sutter By-pass above Long Bridge. An average of 85 relief laborers have been employed. A new application has been submitted for a WPA project to clear in the Feather River channel.

Bank Protection Program

The cooperative program for bank protection work by the State and Federal Government is about to be resumed, and the program for the current year is awaiting approval in the Division Engineer's office. Several field examinations have been made at the places where work is to be performed.

Sacramento Flood Control Project

This Division is now engaged in raising the concrete walls of the Clara Packer pumping plant about six miles above Colusa on the west side. This work is being done in connection with the reconstruction of the river levee, which is now complete up to that plant.

The moving and rearranging of buildings and other improvements on the levee right of way on the Boggs and Watt ranches between Colusa and Princeton have been continued.

SUPERVISION OF DAMS

Application for alteration of the Lafayette dam in Contra Costa County was filed on June 25, 1936, by the East Bay Municipal Utility District. This application was approved on July 6, 1936.

Application for alteration of the Huntington Lake dam in Fresno County was filed on July 3, 1936, by the Southern California Edison Company, Ltd.

Application for the repair of Lake Fordyce Dam in Nevada County was approved on June 27, 1936. This dam is owned by the Pacific Gas and Electric Company.

Application for the repair of the Silver Lake Dam of the city of Los Angeles was approved on July 8, 1936.

Accelerated progress is being made on the construction work now under way on the O'Shaughnessy, West Valley, Sheffield, Lake Hodges, Caljaco, San Gabriel No. 1, Grant Lake and Arata dams.

Practically all dams in the northern part

of the State have been inspected and contacts made and arrangements completed for repairs and alterations made necessary by the heavy runoffs of the last season.

The usual maintenance and operation inspections have been made as well as the necessary inspections of repair and alteration and construction work under way.

WATER RIGHTS

Supervision of Appropriation of Water

Thirty-two applications to appropriate water were received during June; 13 were denied and 19 were approved. In the same period 6 permits were revoked and 17 passed for license.

Inspections were made preliminary to the issuance of licenses, or revocation upon the ground of failure to comply, in Kern, Los Angeles, San Bernardino, Tehama, Modoc, Lassen, Plumas, Sierra, Nevada and Placer counties.

Water Distribution

Water master service in the following districts was continued throughout the month: Owl, Soldier, Emerson, Cedar, Deep and Mill Creek Water Master Districts (in Surprise Valley, Modoc County); New Pine, Davis, and Franklin Creek Water Master Districts (in Goose Lake Valley, Modoc County); South Fork of Pit River, Pine Creek, Hot Springs Valley and Big Valley Water Master Districts (in Modoc and Lassen counties); Shasta River Water Master District (in Siskiyou County); Hat, Bunney and Cow Creek Water Master Districts (in Shasta County).

SACRAMENTO-SAN JOAQUIN WATER SUPERVISION

During the past month the activities of this office have been toward securing data from which to tabulate a report showing the diversions, return flow, stream flow and acreage irrigated in the Sacramento-San Joaquin territory. Three engineers are in the field securing these data.

A mimeographed report of this work for 1935 has been completed and is being mailed to interested parties.

A marked decrease in stream flow was noted during the past month and it can be expected that a corresponding increase of salinity soon will be noted in the delta.

For the purpose of comparison with other years the following salinity data are presented.

Salinity

Station	1932		1933		1934		1935		1936	
	Max.	7/14	Max.	7/14	Max.	7/14	Max.	7/14	Max.	7/14
Point Orient.....	1720	1360	1800	1490	1840	1770	1720	1480	---	1440
Bullshead Point.....	1320	630	1380	800	1640	1360	1260	800	---	060
O and A Ferry.....	620	54	900	340	1200	700	540	136	520	70
Antioch.....	400	2	580	34	960	440	290	10	260	9
Collinsville.....	166	2	380	84	760	620	88	20	80	8
Jersey.....	150	1	280	11	670	200	86	3	75	2
Rio Vista.....	28	1	130	---	520	70	12	---	6	2

* Estimates, from April Bulletin of California Cooperative Snow Surveys.

COOPERATIVE SNOW SURVEYS

The past month has been devoted exclusively to continuing, in the office, the research work in methods of runoff forecasting. The effects of all modifying factors have been investigated and of these, that of precipitation during the April-July period, alone has been evaluated. Insufficient data are as yet available to justify assigning numerical values to any of the other factors and their effect will for some time to come have to be allowed for in a general way.

As a result of this study new curves for forecasting the runoff by means of the April 1st snow pack measurements have been drawn up for all basins. The following tabular summary shows for the 45 subdivisions of the 15 major basins of the western slope of the Sierra the maximum divergence between actual runoff and that forecast from these new curves.

Indicated Error of Forecast

All Years 1930-1936 Inc. (7 years)

	Number of basins
Under 10 per cent.....	14
10 to 20 per cent.....	10
Over 20 per cent.....	14
More data needed.....	7

The years 1931 and 1934 were almost record dry years and in such years accurate forecasts are found to be very difficult. If these years be eliminated it is found that for the remaining years the tabulation becomes as follows showing that in more than half the basins the error would be only 10% or less.

Indicated Error of Forecast

	Number of basins
Under 10 per cent.....	25
10 to 20 per cent.....	9
Over 20 per cent.....	4
More data needed.....	7

To further reduce the discrepancies between forecasts and actual runoff new courses appear desirable in twelve of the basins, and because of popular demand several courses should be established in three basins not covered by the present program.

FEDERAL COOPERATION—TOPOGRAPHIC MAPPING

Office work was completed during June on the Paynes Creek Quadrangle in Tehama County and progress was made on the field work in connection with Tobias Peak Quad-

rangle in Kern and Tulare counties and San Bernardino No. 4 Quadrangle in San Bernardino County. Field work was initiated on the Downieville No. 1 Quadrangle, a new Federal sheet in Plumas County. The advance sheet of Eureka Quadrangle covering an area in Humboldt County is now available. This is published on the scale of 1:48,000, the contour interval 25 feet.

The final quadrangle sheet of Dudley Ridge in Kings County is also available. This is published on the scale of 1:31,680 and contour interval of 5 feet, and embraces a portion of Kettleman Hills area.

The Red Mountain Quadrangle sheet which was done by Los Angeles County in cooperation with the Geological Survey is now available. This is published on the scale of 1:24,000, contour interval 25 feet and covers an area in the northwest part of the county, in the vicinity of Elizabeth Lake and San Francisquito Canyon.

The final sheet of Bell Quadrangle, now available, was done by Los Angeles County in cooperation with U. S. Geological Survey. It is a cultural revision of a sheet previously published. The scale is 1:24,000, contour interval 25 feet, and covers a portion of Los Angeles County in the vicinity of Vernon, Montebello and Downey.

WATER RESOURCES

South Coastal Basin Investigation

Good progress has been made in the field and office on the South Coastal Basin Investigation during the present month.

San Luis Rey River Investigation-San Diego County

The investigation and survey of the San Luis Rey River in San Diego County being made by the Division of Water Resources in cooperation with W.P.A., city of Oceanside, county of San Diego and Carlsbad Mutual Water Company, has been resumed after a temporary suspension owing to lack of W.P.A. funds. This work is for the purpose of securing data and preparing plans for flood control, rectification of the river channel and the conservation and utilization of the waters of the San Luis Rey River.

Central Valley Project

The United States Bureau of Reclamation is exerting every effort to complete, at an early date, the preparation of plans preparatory to starting construction on the initial units of the project. Preliminary investigations and exploration work have been carried on during the month at Kennett and Friant dam sites and surveys continued along the Contra Costa conduit and Friant-Kern canal by the United States Bureau of Reclamation. Appraisers are working in

California Is Justly Proud of Her Good Roads, Says Editor

(From Monterey Park Progress)

It would be hard to find a State which has more and better highways, in proportion to the population, than California. We have some of the best right here in Monterey Park. Our citizens have paid considerable sums for them—and are still paying. But they are glad they have the highways; the roads are worth the money spent on 'em.

As while on this subject it is right to say much praise should be given to the Division of Highways of the California Department of Public Works for its great accomplishments in recent years. Many local people can remember when most of our thoroughfares were dirt roads—dusty in summer, muddy in wet winters. The California Progress Review of San Francisco remarks:

“Now that we have these broad, smooth highways extending in every direction over the vastness of California, we sometimes forget what long years of public effort, hope and sacrifice it took to build them.

“Mere muddy trails they were, at first. Then by 1913, when California boasted 100,000 autos, the ‘good roads movement’ began. Political candidates rose to power or fell ingloriously over the issue of good roads. Newspapers carried on fighting campaigns for good roads.

“Today we have them—the best in the world. They have cost us more than a billion dollars, and twenty-five years of toil. But they were built by and for the public, and California is justly proud of them.”

“Do you wish the court to understand that you refuse to renew your dog license?”

“Yes, your honor, but—”

“We want no ‘buts.’ The license has expired.”

“Yes, and so has the dog.”

Man blames Fate for other accidents but feels personally responsible when he makes a hole in one.

the field evaluating lands and necessary rights of way for the construction of the project. The State Department of Public Works and all State agencies interested are assisting the United States Bureau of Reclamation in every way possible in order to facilitate the early commencement of construction work on the initial units of the Central Valley Project.

FOXEN PERSECUTED FOR AID GIVEN FREMONT

(Continued from page 8)

pitched battle. Determined to prevent the impending slaughter, Foxen at last revealed to Fremont the scheme of the Californians.

Fremont was discouraged. Michael J. Phillips has written in his book, "A Pathfinder Without Fame," of that momentous scene when Foxen exposed to Fremont the plan of the Californians. Phillips says that Fremont had exclaimed:

"Two days from here through Gaviota Pass and the road is open to Santa Barbara."

FOXEN REVEALS PLOT

"It is open when you reach the Pacific," said Foxen, "but if our friends, the Californians, have their way you will never reach it, nor one of your men."

"What do you mean?"

"Here, all but through the pass, where the creek winds beside the trail, the walls are high and straight. There is a defile for more than a rifle shot where two horses can not travel abreast. It is worst by the Indian's Face, for the road turns sharply. You could make no speed."

"The Indian's Face?" interrupted the soldier.

"Yes. The great profile of a chief which the Lord has chiseled in the rock. It sticks out over you like a ship's figure-head. Well, Fremont, the tops of the cliffs hemming you in are covered with loose rocks. They are from the size of your head to the displacement of a fair-sized bark. There is where the Californians are waiting for you.

"Those from the north have been hovering on your flanks, as you know, since you came into this country. Messengers have brought every man who can ride and shoot from Santa Barbara. They line the Pass of the Gulls for a mile. Trains of powder will be laid to the biggest rocks. When your army is inside the defile, the powder will be lighted above and below, blocking it with the rocks that will rain down.

"And there you are, trapped! They will kill you all by rocks or rifle fire. You can not escape if you enter the pass, for when you leave your camp the scouts on those mountains will cut ahead of you on fast horses to give the word. They will beat you to Gaviota by hours—by a day."

"How do you know all this?"

The Englishman shrugged his broad shoulders.

"They are like children in many ways," he explained. "They talk it in the corners, and my boys catch a word here and there. The women tell my wife. Why, I could write the log of it for you."

"There is no way around Gaviota?" Fremont asked.

"No way, Fremont."

"My Indians," said Fremont, "could climb those look-out hills and take the sentinels. There would be no one to carry the word to Gaviota."

Don Julian shook his head.

ONLY WAY OUT

"The Californians are not such fools. They have scouts at the mouth of the pass a long way from the Indian's Face who, afoot on paths that even I do not know still would take the word as you crossed the valley of the Santa Ynez. No, Fremont, the Pass of the Gulls is closed to you."

The soldier's voice trembled with emotion when he spoke.

"Don Julian, I may not turn back. I must go on. I can not tell you how much it means if I should fail. There must be another way to the south. If I can get to Santa Barbara and Los Angeles, Mexico's grip is broken on all of California."

Don Julian rose leisurely and stretched his ponderous frame as he smiled.

"There is another way, Fremont. I did not say there wasn't. Look you—"

And he spoke rapidly for five minutes. When he had finished, Fremont's eyes were sparkling with jubilation and resolve.

What Benjamin Foxen had told Fremont was that he knew another way to Santa Barbara—through San Marcos Pass—that the Californians would not be expecting him that way; that the Americans could march into Santa Barbara at daylight; that they would find there only women and children and old men at mass, and that he could take the city without bloodshed.

And so Foxen and his son Guillermo, then a lad of seventeen, guided Fremont through San Marcos on Christmas Day, 1846. A cold rain was falling. Foxen and his son helped the Americans drag their cannon up precipitous mountain sides. At the top of the pass, Foxen left Fremont and the latter, with Guillermo showing the way, entered Santa Barbara.

CAPTURED SANTA BARBARA

The situation was exactly as Foxen had said it would be. The inhabitants of Santa Barbara who were not at Gaviota Pass awaiting their prey, were in church. They emerged in astonishment to find their town captured. Not a shot was fired. Fremont raised the Stars and Stripes. History had been made with the help of Benjamin Foxen. The conquest of California, so far as Santa Barbara was concerned, was concluded. There was nothing the British men-of-war could do about it.

Benjamin Foxen's allegiance to the Americans cost him dearly. In "A Community History of Santa Barbara," written by Laurence L. Hill and Marion Parks, there is this account of the penalty Foxen paid for aiding Fremont:

"Don Julian Foxen appeared at the time to the disappointed Californians as nothing less than an execrable traitor. Primitive justice of the old days was enforced, and he paid a dear price for his aid to Fremont and the cause of American possession of California.

"Three times he was burned out of his home in Foxen Canon. His herds of cattle and horses were repeatedly stampeded from Rancho Tinaquaic, until at last the rancho was forced to retire from his beautiful canon and live in a less isolated region for seven years after the conquest.

BUILT STAGE ROAD

"Gradually the situation mended, of course, and Don Julian was enabled to return to a life of peace and comfort on the Rancho Tinaquaic.

"Some years later, it was Don Julian who directed again the opening of the road through San Marcos for a stagecoach route. Over Fremont's trail they built a wagon road."

Along the steep slopes of the Santa Ynez Mountain range immediately north of the city of Santa Barbara, the historic old San Marcos Pass Road was reconstructed by the Division of Highways, largely on new alignment. The motorist now has available an alternate route of easy grades and curves, some ten miles shorter than the Coast Highway.

Known as State Route No. 80, the San Marcos Pass Road was taken into the State system in 1931. It extends northerly from the Coast Highway at a point about two and one-half miles west of Santa Barbara City and follows up a steep ridge on the southern slope of the Santa Ynez Range. Crossing the top of the range through San Marcos Pass, the road thence follows down the Santa Ynez River Valley and through the small communities of Santa Ynez and Los Olivos, rejoining the Coast Highway at Zaca, about fifty miles north of Santa Barbara.

GAVIOTA GORGE WIDENED

Affording a mountain shortcut route, this road also serves a large and popular vacation and recreational area for the residents of Santa Barbara and vicinity. From points high up on the mountain range, the motorist is afforded delightful views of Santa Barbara and neighboring communities and looking westward, across

(Continued on page 32)

Highway Bids and Awards for July, 1936

ALAMEDA COUNTY—Between 1.9 miles north of Irvington and Alvarado, about 6.0 miles to be surfaced with plant-mix surfacing. District IV, Route 69, Section A. Hanrahan Company, San Francisco, \$55,856; Pacific States Construction Co., San Francisco, \$53,445; Chas. L. Harney, San Francisco, \$50,459; Eaton & Smith, San Francisco, \$46,527; Union Paving Co., San Francisco, \$47,504; Independent Construction Co., Ltd., Oakland, \$45,719. Contract awarded to Jones & King, Hayward, \$37,425.60.

BUTTE COUNTY—Between Biggs Road and Chico, about 1.8 mile widen portions ex. rd. bed construct ex. run base bdrs., gr. line pl. mix surf. District III, Route 3, Section B, C. Pacific States Construction Co., San Francisco, \$117,239; Larsen Bros. and Harms Bros., Sacramento, \$99,547. Contract awarded to A. Teichert & Son, Inc., Sacramento, \$97,736.70.

CONTRA COSTA COUNTY—Furnish and apply plant-mix surface between county road to Byron and easterly boundary, 4.1 miles. District IV, Route 76, Section D. Ransome Co., Emeryville, \$11,722; C. C. Wood, Stockton, \$11,700; C. L. Harney, San Francisco, \$13,377; Hanrahan Co., San Francisco, \$13,787; Pacific States Constr. Co., San Francisco, \$10,884; E. A. Forde, San Anselmo, \$10,035; Wood & Bevanda, Stockton, \$18,597. Contract awarded to Lee J. Immel, Berkeley, \$9,506.

EL DORADO COUNTY—About 1½ mile north of Meyers, about 0.6 mile to be graded and surf. and rd. mix surf. trmt. applied Const. reinf. conc. bridge. District III, Route 38, Section A. E. T. Lesure, Oakland, \$71,695; Larsen Bros. & Harms Bros., Sacramento, \$53,797; Heafy-Moore Co., Oakland, \$68,662. Contract awarded to J. V. Galbraith & Don A. Canevari, Santa Rosa, \$50,102.32.

KERN COUNTY—A reinforced concrete bridge across North Fork Kern River, 0.7 mile north of Isabella, 2-47-10' and 3-60' spans on concrete piers and 0.35 mile roadway to be graded and treated with liquid asphalt. District VI, Route 142, Section F. Heafy-Moore Co., Oakland, \$58,321. Contract awarded to Parish Bros., Los Angeles, \$52,426.

KERN COUNTY—Between 3 and 4 miles northeast of Taft, 0.4 mile to be graded and surfaced with road-mix surfacing on crusher run base. Timber bridge to be constructed. District VI, Route 140, Section A. Rexroth & Rexroth, Bakersfield, \$86,941. Contract awarded to John Jurkovich, Fresno, \$36,096.

LOS ANGELES COUNTY—Between Palmdale and 14.3 miles westerly. About 14.3 miles road mix surface treatment to be applied to existing shoulders. District VII, Route 23, Sections D, E. C. W. Wood, Stockton, \$????; Southern California Roads Co., Los Angeles, \$20,531; J. E. Haddock, Ltd., Pasadena, \$22,631; Oilfields Trucking Co., Bakersfield, \$20,958; Kovacevich & Price, Inc., Southgate. Contract awarded to A. S. Vinnell Co., Los Angeles, \$19,237.50.

LOS ANGELES COUNTY—Between Palmdale and Lancaster, 7.1 miles to be surfaced with road-mix surfacing. District VII, Route 23, Section F. Oswald Bros., Los Angeles, \$20,805; Southern California Roads Co., Los Angeles, \$17,687; A. S. Vinnell Co., Los Angeles, \$18,255. Contract awarded to J. E. Haddock, Ltd., Pasadena, \$15,372.50.

LOS ANGELES COUNTY—25th Street between Palos Verdes Coast Highway and Patton Avenue, about 2 miles to be graded,

surf. with imp. sel. mtl. and Class "B" seal coat applied. District VII, Route feeder. Southern California Roads Co., Los Angeles, \$161,721; United Concrete Pipe Co., Los Angeles, \$205,705; Oswald Bros., Los Angeles, \$171,708; C. R. Butterfield, San Pedro, \$158,951; C. O. Sparks & Mundo Eng. Co., Los Angeles, \$160,538; Dimmitt & Taylor, Los Angeles, \$159,642; Sully-Miller Cont. Co., Long Beach, \$184,503. Contract awarded to R. E. Campbell, Los Angeles, \$141,286.75.

LOS ANGELES COUNTY—Rosemead Boulevard between Longden Avenue and Fairview Avenue, about 1.0 mile to be graded and paved with P. C. Conc. District VII, Route 168, Section C. Match Bros., Elsinore, \$53,908; Oswald Bros., Los Angeles, \$60,294; George R. Curtis Pav. Co., Los Angeles, \$56,753; C. O. Sparks & Mundo Engineering Co., Los Angeles, \$55,407; Griffith Co., Los Angeles, \$54,328. Contract awarded to J. E. Haddock, Ltd., Pasadena, \$53,824.50.

LOS ANGELES COUNTY—Between Calabasas School and Brent Jct., about 2.2 miles to be graded and surfaced with pl. mix surf. District VII, Route 2, Section C. Geo. J. Bock Co., Los Angeles, \$115,631; Oswald Bros., Los Angeles, \$138,852; C. G. Willis & Sons, Inc., Los Angeles, \$133,310; Gibbons & Read Co., Burbank, \$121,895; J. E. Haddock, Ltd., Pasadena, \$120,085; Griffith Co., Los Angeles, \$121,110; C. F. Robbins, Los Angeles, \$115,058. Contract awarded to C. O. Sparks & Mundo Engineering Co., Los Angeles, \$110,330.50.

MENDOCINO, HUMBOLDT, DEL NORTE COUNTIES—At various locations, 21.5 miles, road-mix surfacing to be furnished and stockpiled. District I, Route 48, Section C; D. I.; C. G.; A. Contract awarded to Chas. Harlowe, Jr., Oakland, \$68,750.35.

MODOC and SISKIYOU COUNTIES—Between 1.7 miles southeast of Tule Lake and Oregon state line. About 5.2 miles long. Penetration oil treatment to be applied. District II, route feeder. Dunn & Baker, Klamath Falls, Ore., \$7,835; Hayward Building Mtl. Co., Hayward, \$8,911. Contract awarded to Lee J. Immel, Berkeley, \$7,535.

MONO COUNTY—At grade crossings near Chalfant, Hammil, and 2.5 miles south of Benton, 1.8 miles in length to be graded and surfaced with road-mix surface treatment. District IX, Route 76, Section A, B. Leo F. Piazza, San Jose, \$12,560; A. S. Vinnell Co., Los Angeles \$14,256. Contract awarded to Basich Bros., Torrance, \$12,167.50.

RIVERSIDE COUNTY—At Temecula River about 8 miles north of San Diego county line, const. tim. br. with conc. deck and gr. and apply rd. mix surf. trmt. District VIII, Route 78, Section B. V. R. Dennis Const. Co., San Diego, \$34,823; B. G. Carrol, San Diego, \$34,506. Contract awarded to C. F. Robbins, Los Angeles, \$29,694.

RIVERSIDE COUNTY—Between 1½ miles north of Moreno and 2½ miles west of Beaumont, about 6.8 miles in length, seal coat to be applied. District VIII, Route 19, Section D. A. S. Vinnell Co., Los Angeles, \$5,935; Match Bros., Elsinore, \$5,766; Oswald Bros., Los Angeles, \$5,960; Geo. Gardner & Sons, Redlands, \$5,531. Contract awarded to R. E. Hazard & Sons, San Diego, \$5,376.

SAN BERNARDINO COUNTY—Between San Bernardino and Highland, about 3.8 miles in length, liquid asphalt, SC-2 to be furnished and applied to the shoulders.

District VIII, Route 190, Section C. Regal Oil Co., Long Beach, \$1,176; Gilmore Oil Co., Los Angeles, \$1,148; Paulsen & March, Inc., Los Angeles, \$1,138; Lambs Transfer Co., Long Beach, \$1,204. Contract awarded to Morgan Bros., Huntington Park, \$1,080.75.

SAN BERNARDINO COUNTY—Between Verdmont and 0.8 mile westerly about 0.8 mile to be graded and surfaced with pl. mix surf. District VIII, Route 31, Section A. Match Bros., Elsinore, \$16,482. Contract awarded to George Herz & Co., San Bernardino, \$15,033.20.

SAN BERNARDINO COUNTY—Between 2½ miles west and ¼ mile east of Java, 2.8 miles to be graded and treated with liquid asphalt and construct timber pile trestle. District VIII, Route 58, Section N. Match Bros., Elsinore, \$49,927; Miracle Co., San Diego, \$44,738. Contract awarded to Basich Bros., Torrance, \$44,243.70.

SAN DIEGO COUNTY—Between Lake Hodges and Escondido, 3.6 miles to be graded and surfaced with plant-mix surfacing. District XI, Route 77, Section B. Daley Corporation, San Diego, \$88,716; V. R. Dennis Const. Co., San Diego, \$93,381; Basich Bros., Torrance, \$92,482. Contract awarded to R. E. Hazard & Sons, San Diego, \$86,213.50.

SAN FRANCISCO-OAKLAND BAY BRIDGE—Tile lining Yerba Buena Tunnel of San Francisco-Oakland Bay Bridge. Malott & Peterson, San Francisco, \$57,989; American Art Tile Co.-Rigney Tile Co., Oakland, \$59,131; Art Tile & Mantel Co., San Francisco, \$63,680; Danton-Fratessa, Ltd., San Francisco, \$64,691. Contract awarded to Superior Tile Co., Oakland, \$55,113.87.

SAN LUIS OBISPO COUNTY—Bridge across Santa Maria River, one-half mile north of Guadalupe to be redecked. District V, Route 56, Section E. R. D. Patterson, Santa Barbara, \$15,808; F. C. Stolte Co., Alameda, \$15,700. Contract awarded to John Fesler, Santa Maria, \$14,480.

SAN LUIS OBISPO COUNTY—At San Juan Creek, about 38 miles east of Santa Margarita, existing bridge to be removed, new steel and timber bridge to be constructed and road approaches to be graded. District V, Route 58, Section C. Contract awarded to F. C. Stolte Co., Alameda, \$7,180.

SAN MATEO COUNTY—Between Farrallone City and Rockaway Beach, 5.9 miles to be graded and road-mix surface treatment applied. District IV, Route 56, Section D. Union Paving Co., San Francisco, \$393,768; Wood & Bevanda, Stockton, \$391,249; Geo. Pollock Co., Sacramento, \$361,191; Utah Construction Co. & Paul J. Tyler, San Francisco, \$446,143; Lewis Const. Co., Los Angeles, \$399,188; Isbell Const. Co., Reno, Nevada, \$442,605; A. Teichert & Son, Inc., Sacramento, \$358,937; D. McDonald, Sacramento, \$465,875; Guy F. Atkinson Co., San Francisco, \$407,312. Contract awarded to John Carlin, Granfield, Farrar & Carlin, San Francisco, \$326,264.

SANTA BARBARA COUNTY—Between Zaca and Los Alamos, about 7.7 miles in length, road-mix surface treatment to be applied to existing shoulders. District V, Route 2, Section C. Oilfields Trucking Co., Bakersfield, \$8,872; John Fesler, Santa Maria, \$10,918. Contract awarded to A. S. Vinnell Co., Los Angeles, \$8,861.60.

SHASTA COUNTY—Between Four Corners and 7 miles northerly. District II, Route 83, Section D-E. Hayward Building Material Co., Hayward, \$3,042; L. J. Immel, Berkeley, \$3,112.20. Contract awarded

(Continued on page 32)

Predicts Forty Per Cent More Cars on Highways

UPON the extension and improvement of the highway systems of the Nation depends the extent of the expansion of the automobile industry, and to a large degree the prosperity of the country and additional increases in employment.

This is the opinion of C. L. McCuen, president and general manager of a large automobile manufacturing company, as published in the San Francisco Chronicle.

"Our highway program is far behind the program of the automotive industry," he said. "There still remain hundreds of thousands of miles of unpaved roads carrying heavy traffic. There still are narrow roads, dangerous grades, unsafe and narrow bridges, short visibility, unsafe turns, traffic congestion in busy cities, and a thousand and one other highway problems.

IMPROVEMENTS NECESSARY

"In recent years the number of motor vehicles on the Nation's highways has increased tremendously. Great strides have been made during this time in improving our roads. But the number of cars has increased out of all proportion to highway improvements.

"And in the next quarter century our motor vehicles will increase another 40 per cent, if present predictions prove accurate.

"To care for this additional traffic, the cities and states, aided by the Government, must widen and resurface all main traveled roads which do not come up to the standard. They must widen and rebuild curves. They must build an infinitely larger number of railroad grade separations, construct a large number of two-lane roads approaching the larger cities, and rebuild and resurface an enormous number of city streets.

CALL FOR GOOD ROADS

"In cities of large population we must see an increasing construction of overhead highways, eliminating crossings entirely, and effectively speeding

German Design for Junctions With Auxiliary Roads

The present design of the German motor roads includes junctions with auxiliary roads at intervals of from $6\frac{1}{2}$ to $12\frac{1}{2}$ miles. The design of the junction depends upon the importance of the road which crosses the arterial motor road. Where a main road crosses, two curved approach slopes are provided. The motor roads generally consist of two 24-ft. 6 in. roadways separated by a central strip 16 ft. 6 in. wide. A raised island strip 11 ft. 6 in. wide is provided at the outer margin, separating the motor road from an auxiliary roadway 20 ft. wide.

Vehicles about to enter the motor road must proceed for some distance in full sight along the auxiliary roadway. The minimum radius of curvature on the motor roads is 2,625 ft. At the junctions, the minimum radius for exits from motor roads is 164 ft. and for entrances, where traffic is necessarily slower, the minimum radius is 82 ft. These curves have additional widths of 10 ft. for two-way approaches and 5 ft. for one-way approaches. The normal width of the one-way approach (not on curves) is 13-ft. roadway and 5-ft. footway; the two-way approach has a 20-ft. roadway and two 5-ft. footways. The approach gradients are 1 in 40 to 1 in 20, the actual junctions being kept level.—*Road Abstracts 1936.*

up traffic. We must build more and more by-passes. We must do our best to eliminate ditches along the highways.

"In short, there must be a concentrated effort on the part of all public officials to improve country highways and city roads to a point where the growing number of motor vehicles will not mean an increase in accidents or increasing traffic congestion.

"Good roads affect not only the automobile, oil and allied industries. They play a large and important part in the fortunes of the farmers, the manufacturers, and the business men."

Highway Bids and Awards for July, 1936

(Continued from page 31)

to C. F. Fredericksen & Sons, Lower Lake, \$2,995.20.

SHASTA COUNTY—Between Shaverley Saw Mill and Montgomery Creek, about 2.6 miles long. To be surfaced with road-mix surfacing. District II, Route 28, Section B. Contract awarded to Lee J. Immel, Berkeley, \$10,700.

SISKIYOU COUNTY—Between Grizzly Peak and $\frac{1}{4}$ mile east of McCloud, about 12.5 miles in length, Class C. Seal Coat. District II, Route 83, Section B. Contract awarded to Hayward Building Material Co., Hayward, \$5,139.

TEHAMA COUNTY—Between Route 3 and 1.5 mile east of Dales, about 13.4 miles to be surfaced with crusher run base and plant-mix surfacing (M.C. type). District II, Route 29, Section A. Isbell Construction Company, Reno, Nevada, \$178,884; Hemstreet & Bell, Marysville, \$185,320; Hanrahan Company, San Francisco, \$199,853. Contract awarded to A. Teichert and Son, Inc., Sacramento, \$156,780.

VENTURA and LOS ANGELES COUNTIES—Between Somis and 1 mile east of Simi (Ven-9-B,C) and between Gastric Jet and 2.4 miles west (L.A. 79-A) about 16.2 miles surf. parts with pl. mix surf. and appl. surf. trmt. to shldr. on portions. District VII, Routes 9, 79 Section A, B, C. Geo. R. Curtis Paving Co., Los Angeles, \$76,402; Oswald Bros., Los Angeles, \$71,658; Southwest Paving Co., Roscoe, \$74,329. Contract awarded to Griffith Co., Los Angeles, \$64,348.20.

VENTURA COUNTY—Br. over Conejo Creek, 2.5 miles east of Camarillo, to be widened. District VII, Route 2, Section B. R. R. Bishop, Long Beach, \$23,879; Contracting Engrs., Inc., Los Angeles, \$28,631; Byerts & Dunn, Los Angeles, \$23,911; Sparks & Mundo, Los Angeles, \$25,078; J. E. Haddock, Ltd., Pasadena, \$27,696; C. F. Robbins, Los Angeles, \$21,061. Contract awarded to Robt. D. Patterson, Santa Barbara \$20,868.18.

YOLO COUNTY—Between Woodland and Knights Landing, about 11.38 miles of existing bituminous surfacing to be planed. District III, Route 87, Section A. J. R. Reeves, Sacramento, \$7,522; A. Teichert & Son, Inc., Sacramento, \$9,690; Hanrahan Co., San Francisco, \$16,830. Contract awarded to Asphalt Pavement Planing Co., Oakland, \$6,630.

YUBA, COLUSA, SUTTER, YOLO, PLACER, SACRAMENTO COUNTIES—At various locations in District III, 37 miles seal coat to be applied to existing roadbed. District III, Routes 3, 6, 7, 15, 17, 87, 100, Section A, B, C, D. Hayward Building Material Co., Hayward, \$18,689; Lee J. Immel, Berkeley, \$19,372. Contract awarded to E. A. Forde, San Anselmo, \$17,488.89.

GAVIOTA PASS ROAD WIDENED

(Continued from page 30)

the ocean, he may behold the distant Santa Barbara Islands.

Highway construction in Gaviota Gorge originally was performed in 1915 and served adequately until the increase in volume of traffic on the Coast Route, known as U. S. Route 101, demanded reconstruction. This was completed during October, 1931.

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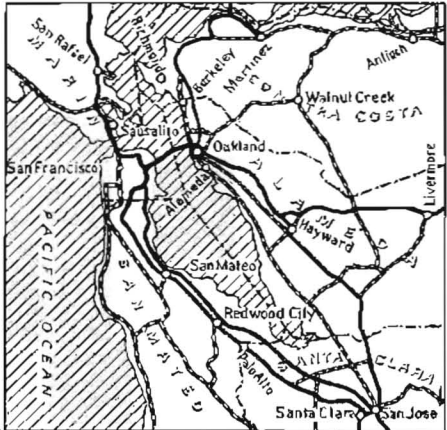
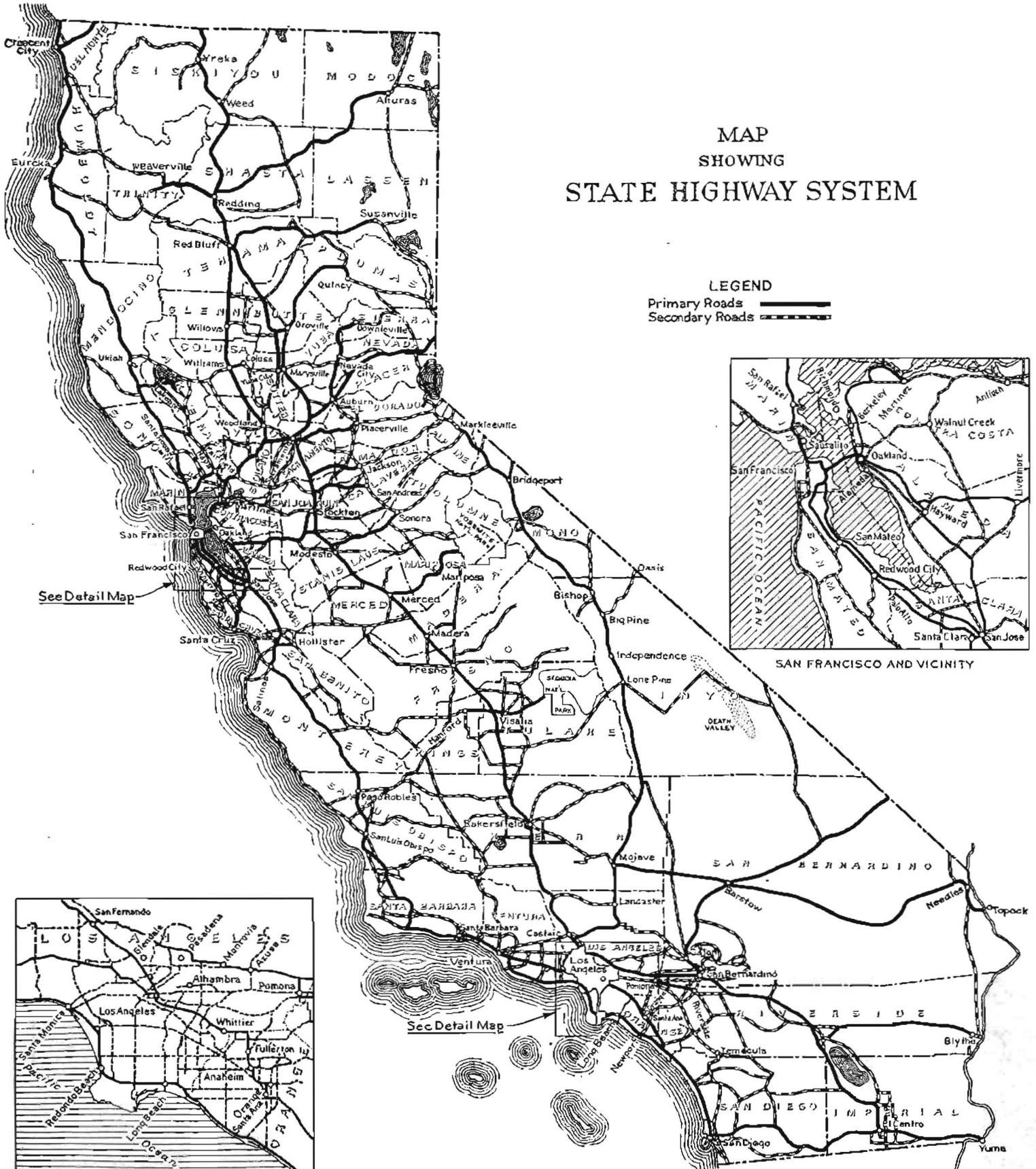
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