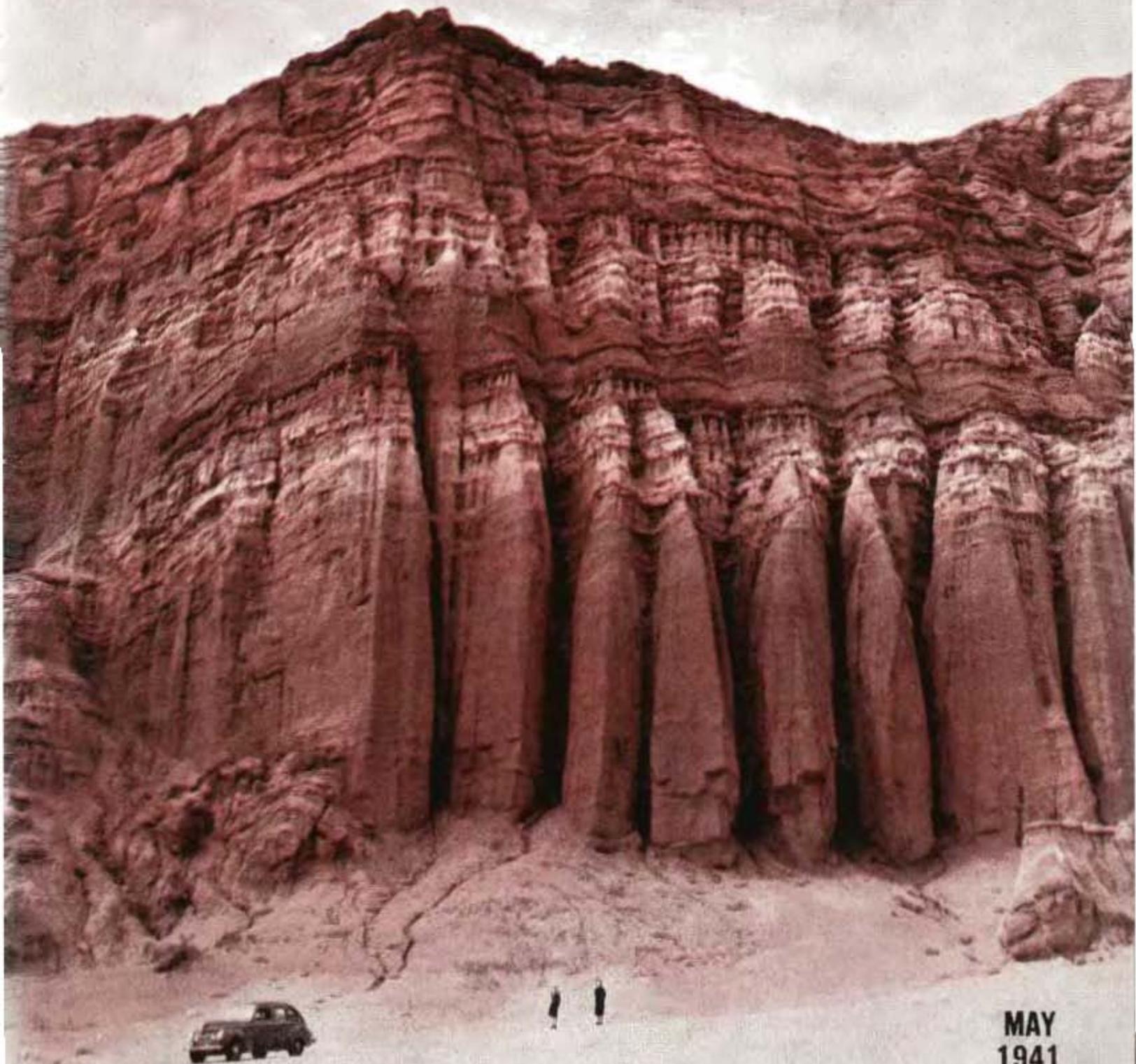


# CALIFORNIA

## HIGHWAYS AND PUBLIC WORKS



MAY  
1941

THE "KNEELING NUNS" OF RED ROCK CANYON (U.S. 6) KERN COUNTY  
(SEE ARTICLE IN THIS ISSUE)

Photo by John Steyer—Examiner, L.A.

# CALIFORNIA HIGHWAYS AND PUBLIC WORKS

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

FRANK W. CLARK, Director      C. H. PURCELL, State Highway Engineer      J. W. HOWE, Editor      K. C. ADAMS, Associate Editor

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# \$50,943,419 of Gas Tax Funds Allocated to Cities and Counties During 1939-41 Biennial Period

**A**PPORTIONMENT of gasoline tax revenues to counties and cities which became available in April for the last quarter of the current fiscal year reveals that the total allocations to counties and cities for the 1939-41 biennium ending June 30th will exceed by approximately four million dollars the funds appropriated to them for the preceding biennium.

There is available for apportionment for this fiscal year \$25,964,577 after refunds of \$4,811,557.70 and expenses (of the State Controller and Board of Equalization) amounting to \$201,668.87 are deducted.

Of the amount available for apportionment, the counties this year will receive \$17,309,718.53 as compared with \$16,652,561.22 last year.

Out of the gas tax revenues for the fiscal year, the Division of Highways under the law must give \$8,654,859.28 to incorporated cities, the State receiving 1½ cents of the 3-cent gas tax funds available for apportionment, the counties 1 cent and the cities ½ cent.

The total revenue subject to allocation actually is divided 50-50 between the State and the counties and cities combined.

There will be apportioned to the cities and counties for the fiscal year a total of \$25,964,577.81 as compared with \$24,978,841.82 apportioned to these subdivisions for the fiscal year which ended June 30, 1940 making a grand total of \$50,943,419 for the current biennium. The total for the 1937-39 biennium was \$46,818,669 showing an increase of \$4,124,750 to cities and counties for the current biennium.

The apportionment to counties is determined in the following manner:

1) Each county first receives a minimum of \$7,500.

2) The remainder is apportioned to the counties in the proportion that the registration of vehicles in each of

## Apportionment of Gas Tax Revenues

The distribution of gasoline tax revenues to the cities and counties of the State during the biennial period that began July 1, 1939, and will end June 30, 1941, was made as follows:

### For Year 1939 to 1940

One quarter cent for State Highways within cities .....	\$4,163,140.30
One quarter cent for streets of major importance within cities .....	4,163,140.30
One cent to counties based on motor vehicle registrations in each of 48 counties .....	16,652,561.22
<b>Total .....</b>	<b>\$24,978,841.82</b>

### For Year 1940-41

One quarter cent for State Highways within cities .....	\$4,327,429.64
One quarter cent for streets of major importance .....	4,327,429.64
One cent to counties based on motor vehicle registrations in each of 48 counties .....	17,309,718.53
<b>Total .....</b>	<b>\$25,964,577.81</b>

**Grand total for biennium ... \$50,943,419.63**

such counties bears to the total vehicles registered in the State.

Section 194 of the Streets and Highways Code requires that the net revenue from ¼ cent per gallon of tax or ¼ of the amount paid into the State Highway Fund be expended for the construction, improvement or maintenance of city streets of major importance other than State highways. The apportionment to the various cities of the State is made on the basis of population as determined by the last Federal census.

Section 203 of the Streets and Highways Code requires the expenditure of another ¼ cent of net revenues on State highway routes within cities. This apportionment to the several cities is also made on a population basis. Apportionments this year are based on the 1940 census figures.

With the April payment of the ¼ cent gas tax the sum of \$4,327,429.63 was distributed to the 285 incorporated cities in California for expenditure upon streets of major importance other than State highways for the fiscal year ending June 30, 1941.

This represents a gain of \$164,289.33 over the distribution of \$4,163,140.30 during the 1940 fiscal year or an increase of 4 per cent.

An equal amount was distributed for expenditure upon State highway routes within the limits of incorporated cities during the period July 1, 1940, to June 30, 1941.

A tabulation of the amounts allocated to each city during each of the fiscal years ending June 30, 1940 and June 30, 1941, respectively, for expenditure upon streets of major importance together with the amount apportioned for expenditure upon State highways in cities during the two-year period, will be found on pages 14, 15, 16 and 17. The amounts distributed to each of the counties will be found in another list to be published in an ensuing issue:



Redwood Highway on Eel River in Humboldt County damaged by flood waters where timber deflectors have been placed to protect bank

# Redwood Timber Deflectors Built as Bank Protection on Eel River

By WALDO H. CHASE, Resident Engineer

**T**HE recent construction of four large redwood timber deflectors and appurtenant structures on the Redwood Highway in recent flood control work on the Eel River in Humboldt County is of especial interest.

Three of these deflectors were erected at Greenlaw Bluffs, about five miles south, and one at Shively Bluffs, about ten miles south of Scotia, California, during the Fall and Winter of 1940-41, to repair damage caused by floods on the Eel River during the month of February, 1940, and to provide protection against future high water.

The State Highway through Greenlaw Bluffs was constructed in 1915 and reconstructed in 1934. In December, 1937, a section of this highway was damaged by floods and a contract was let for the construction

of a gravel embankment protected by sacked concrete riprap. During the flood of February, 1940, the river reached to within three feet of the maximum flood of 1915 and, while the recently constructed riprap withstood the flood, there was an excessive scour beyond the downstream limits of this work and sections of the highway were badly damaged.

#### EDDY DESTROYED BANK

It is considered that, due to the smooth surface of the riprap as compared with the natural river bank, the velocity of the stream was greatly accelerated and upon reaching the end of the riprap, where the tendency was to retard in velocity, a severe eddy was formed and the destruction of the bank was started.

Heavy rains had saturated the bank and it therefore melted away rapidly.

The damage at this location extended a distance of seven hundred feet along the highway.

At Shively Bluffs the extent of the damage covered a distance of approximately one hundred feet where the embankment broke back to an old mat of timber which had evidently been placed as a corduroy and was some twenty feet beneath the surface of the existing road surface. Water was seen to be flowing from around this old timber and it is considered that this condition contributed to the failure at this location.

After due consideration it was decided that the construction of large timber deflectors extending to foundations well below the stream bed, and lined with heavy galvanized chain wire mesh filled with coarse gravel would provide the most feasible protection for these locations.



Triangular timber deflectors protecting banks and Redwood Tree groups shown above. At bottom riprap section that successfully withstood flood currents.

The contract for this work was let on August 21, 1940, and, with the exception of plant-mixed surfacing and other minor items, the work was completed on January 31, 1941. It is contemplated that the surfacing will be completed this month.

#### REDWOOD LOGS USED

The excavation for the deflectors was carried to an elevation ten feet below the normal level of the river and the foundation grade was carried in steps, from two to four in number, to the inside or bank face of the deflectors.

In designing the timber deflectors the size of redwood logs to be used in the structures was limited to a minimum diameter of twenty-four inches. Logs were procured from several locations in the vicinity of the project, averaged twenty-seven inches in diameter and were exceptionally well graded.

The logs were framed at the site of the work and were erected by means of power hoists and tractors. One-inch galvanized steel drift pins were used at all joints, two being driven through each log to a minimum depth of twelve inches into the log beneath. Electric and air drills were used in setting all drift pins.

This method of drifting provided four pins at each joint as the alternate operations cause the drift pins to overlap those previously driven. Drift pins were driven flush with the top dap of the logs and countersunk where necessary to obtain the twelve-inch minimum penetration.

The placing of logs was started at the points of the deflectors and consisted first of a row of stretchers and proceeded in alternate tiers of headers and stretchers. The first logs to be placed on each succeeding step consisted also of stretchers.

#### TRIANGULAR IN SHAPE

The points of the deflectors were constructed in the shape of an equilateral triangle while the back portions were of rectangular shape. The headers in the rectangular portions were offset from the headers in the point in order to maintain a uniform succession of tiers throughout each structure.

The deflectors were completely lined with galvanized 9-gauge chain wire mesh with two-inch openings and were filled with screened gravel of two-inch minimum size. The wire mesh was

(Continued on page 24)



Pictures of deflector construction with 27-inch redwood logs from the foundation excavation to the completed structure filled with screened gravel of two-inch minimum size

# Carmody Recommends \$287,000,000 for National Defense Highway Work

CALIFORNIA will receive Federal aid in the amount of \$3,982,125 for construction of National defense highways if Congress approves recommendations for appropriations totaling \$287,000,000 for immediate defense highway construction, submitted to President Roosevelt by John M. Carmody, Federal Works Administrator.

In this connection, the California Division of Highways has estimated that there will probably be a total of about 300 miles of access roads designated in this State and that the approximate costs for construction and right of way to improve these roads will amount to about \$28,600,000. As most of this access mileage is situated off the State highway system, expenditures of State highway funds for right of way and improvements are prohibited by California statutes.

## LEGISLATURE CLEARS WAY

This is a problem with which the Department of Public Works and various counties of the State were greatly concerned but a bill passed by the State Legislature and signed by Governor Olson has now cleared the way for California to begin construction of access roads to numerous military camps, cantonment training fields and establishments as soon as Congress allocates the necessary funds.

Passed as an emergency measure, Senate Bill 679 empowers the Department of Public Works to enter into an agreement with the United States for the performance of the necessary right of way, acquisition and construction work on military roads even though such roads may not be on the State Highway System.

The department will be authorized to acquire right of way at the expense of the Federal Government and to convey title to the United States.

## SOME WORK UNDER WAY

The United States having requested the department to construct these roads, engineering studies on many of them are now in progress and the

State has actually begun work on some of them with WPA funds found available.

The Federal Government wishes to handle such projects in the same manner as the State handles county feeder road projects not on the State Highway System, that is, the State department does the work and obtains reimbursement from the Federal Government when the work is completed.

These military projects will differ from the feeder road projects in that the counties contributed part of the cost of the feeder roads whereas under this bill the Federal Government will provide the entire expense when the project is not on the State system.

## BASED ON SURVEY

Mr. Carmody based his recommendations to the President upon a survey of highway facilities from the viewpoint of National defense, made by the Public Roads Administration in collaboration with the Advisory Commission to the Council of National Defense and the War and Navy Departments.

The report urges an appropriation to the Public Roads Administration of not less than \$150,000,000 for access roads to military and naval reservations and defense-industry sites. This sum, the report says, should be available to pay all costs, including right of way, of roads in the vicinity of reservations and industrial sites when such roads are certified to the Federal Works Agency as essential by appropriate major defense agencies. It should also be made available, says the report, to pay the cost of constructing new sections of highway, replacing existing highway connections broken by necessary closure at reservations and industrial sites.

The Public Roads Administration recommends other appropriations as follows:

Twenty-five million dollars to be used for the improvement of roads which will be required regularly in the tactical maneuvers of the Army and for the reimbursement of the out-of-pocket costs to States and local governments for repairs necessitated by

the occasional use of roads for these purposes.

## \$100,000,000 FOR BRIDGES

One hundred million dollars to provide for the replacement of sub-standard bridges and the correction of other critical deficiencies of the strategic network at a desirable rate. This appropriation, says the report, should be prorated to the States on the existing Federal Aid basis and used solely for designated defense projects. It should be available, the report says, to pay all legitimate costs of the projects on a somewhat higher basis of Federal participation than the existing fifty-fifty basis, but otherwise should be expended under the provisions of the Federal highway legislation.

The Bridge Department of the Division of Highways estimates that nearly half the bridges on the military highway network in California will have to be replaced, widened or strengthened in order to bring them up to the standards required by the War Department. There are about 1,500 bridges on this network, 200 of which should be replaced and 500 more strengthened. The cost of this, exclusive of any road approach work, would amount to about \$12,000,000.

## EXTENSIONS THROUGH CITIES

The P.R.A. report submitted to President Roosevelt also urges an appropriation of twelve million dollars for the making of engineering surveys and plans for development of the strategic network, including the extensions of the system into and through municipalities and metropolitan areas; this appropriation to be prorated to the States and matched by them on the existing Federal Aid basis.

The Public Roads Administration recommends that to accomplish all necessary defense improvements, the Federal Highway Act should be amended to (1) authorize addition to the Federal Aid system of any

(Continued on page 19)



Scenic sector of U. S. 6 through weirdly eroded, colored sandstone cliffs of Red Rock Canyon on Mojave Desert

# Traffic Hazards Eliminated On U.S. 6 Highway In Kern County

By S. W. LOWDEN, Acting District Engineer

A SERIES of traffic hazards has been eliminated from the Los Angeles to Reno Highway on East-of-the-Sierra route in Kern County by means of the recent completion of a contract extending from twelve miles north of Mojave to Ricardo. Ten consecutive hazardous dips have been rendered innocuous except perhaps for the duration of periods immediately following the most unusual and serious of flash floods.

State Sign Route 23 (U. S. Route 6), constitutes in part the most direct highway leading from Los Angeles to Reno, following the easterly base of the Sierra-Nevada Mountains for 400 miles. It serves as the main out-

let to a vast region covering a large portion of eastern California, western Nevada, and major portions of the States of Oregon, Washington, Idaho and Utah.

The southerly portion of this route on which the improvement is located is on the highway leading to the westerly entrance of the Death Valley National Monument, and to the easterly entrance to the Yosemite National Park, also affording access to the High Sierra recreational regions.

#### RECREATIONAL TRAFFIC INCREASING

Until recently this route was of minor importance during the winter season. However, with the rapidly increasing recreational use being

made of the Inyo-Mono area, and the rapid strides being made in methods affording ease of access under the most adverse winter conditions, it is found that winter traffic is continuously increasing and that a reasonably uniform traffic flow is experienced throughout the year.

The nature of the terrain permits the construction of a highway to high standards with minimum grades and long, unobscured tangents which, together with the existence of but few small towns, results in what is possibly the highest sustained speed highway in the State on the 350 miles between Lancaster and the California-Nevada State Line near Minden, Nevada.

(Continued on page 20)



Views of sections of U. S. 6 Highway through Red Rock Canyon improved and made safer for traffic by elimination of dips. At top, dip replaced by fill and culvert. Center, a three pipe battery culvert and at bottom a triple box culvert

# Public Spirited Citizens Beautify A State Highway Parkway Strip

By W. F. AXTMAN, Asst. District Maintenance Engineer

**A**NOTHER public spirited citizen who should be known throughout our State of California is W. Carl Spencer of Costa Mesa in Orange County, for he is the man who is mainly responsible for the planting and beautification of the parkway strip down the center of Costa Mesa's business street and probably several other civic improvements of which he is too modest to tell.

This parkway planting at the present time extends for over one-half mile along State Route 55, Newport Boulevard, through the center of town and is from ten feet to fifty feet in width.

The area planted is on abandoned railroad right of way that in the earlier days carried the tracks of the Southern Pacific Company's line from Santa Ana to Newport but has since been acquired by the State of California as highway right of way. It now serves as a parking area and a separating parkway between the two sides of the divided business street.

## SUGGESTED NAME CONTEST

Mr. Spencer's interest in the civic affairs of the town commenced as soon as he arrived there as a rancher twenty-three years ago. It was then called "Harper," a small Orange County village thirty-five miles from Los Angeles, and three miles inland from Newport Beach, with a population of only a few hundred.

Situated as it was, near the sea but on a mesa high above the beach and favored with a delightful climate and fertile soil, Mr. Spencer felt that the town should have a more descriptive name. He, therefore, organized and headed a group of townspeople and went to work campaigning for a new name. A contest was held, a \$25.00 prize offered, and as a result the name "Costa Mesa" was chosen.

Thirteen years ago he started his city beautiful program. A committee was formed and community help solicited. To inaugurate the program

a benefit concert, sponsored by Mr. Spencer, was given at the school auditorium so that the citizens might contribute, if they wished, to the fund for beautifying and improving the old railroad right of way.

## STARTED WITH A CONCERT

The purpose of this first concert was printed on the program and read as follows:

"At last the movement is launched, a gesture which indicates that local civic pride is forming to accomplish definite results along the line of culture, harmony and beauty.

"That community scar, the Southern Pacific right of way, as every observant tourist (and some local citizens) has noted, has up to now been almost wholly under the supervision of General Neglect whose ugly duckling technique of landscaping consists in humps and hollows, weed patches, 'dead soldiers' and brick bats, totem poles and old bill boards.

"Your Beautification Committee thinks that General Neglect should be removed and, there being no life in him, embalmed and laid away for reference as a melancholy example of all around incompetence.

"Your Beautification Committee further proposes to employ Professor Art-Harmony and aides to transform this right of way scar into a thing of palms, shrubbery, hedges, lawns and flowers."

To the proceeds from this concert Mr. Spencer added funds of his own, as well as his time, and a block long section of the work was begun.

## STATE ACQUIRES PROPERTY

Plans for building a superhighway from Boston to Washington estimate the cost at \$253,000,000 for 405-mile length with 12 lanes in dense traffic regions.

Palms, shrubs and flowering plants were set out and when the first section was completed it was so thoroughly enjoyed by local residents and so warmly commended by visitors and tourists that later another section was planted. Still another portion was

improved in 1938 and today over one-half mile has been beautified. However, according to Mr. Spencer, his project is far from being completed for he has plans already prepared for still further planting in the future.

## ONE HUNDRED SHRUB VARIETIES

Besides many flowering plants, such as ivy leaf geraniums, marguerites, etc., over 100 varieties of shrubs and six varieties of palms are growing in profusion. Some of the palms have been donated by other public spirited citizens but Mr. Spencer has propagated many from seed. Even the rare Chinese Tung tree, from which tung oil is obtained, will be found there. This tree is covered with pink blossoms in the spring and adds an attractive bit of color to the park.

Mr. Spencer thoroughly enjoys his work. He devotes considerable time and money to it but feels repaid not only by the pleasure he receives from doing it, but by the pleasure and satisfaction it gives to local residents and visitors.

## 141 Cities Placed In Safety Honor Roll

For going through the entire year of 1940 without a single traffic fatality, 141 cities with populations between 5,000 and 10,000 have been placed on the honor roll of the National traffic Safety Contest.

The National Safety Council, which conducts the contest, announced that this marks a decrease of 38 cities from the 1939 honor roll.

Each of the cities will receive a certificate of commendation in recognition of its outstanding work in the traffic safety field. A total of 1,281 cities and 48 States were entered in the various divisions of the contest.

In California the following cities were listed: Corona, Orange, Martinez, Montebello, Coronado, Santa Maria, Santa Paula and Pacific Grove.



Views of parkway in Costa Mesa business street planted by public-spirited citizens. No. 4 shows how it looked before plantings

# New Divided Highway Channelizes Traffic at Palm Springs Junction

By A. EVERETT SMITH, Assistant Resident Engineer

**A**n eleven-mile project now under way, comprising construction of a 4-lane divided highway, begins at Banning in Riverside County and extends easterly on the combined U. S. Highways 60, 70 and 99 to the Palm Springs junction near Whitewater. It is a companion project to the one recently opened to traffic from Beaumont to Banning.

Like the Beaumont-Banning project, this one also utilizes the existing pavement for one-way traffic. Two new traffic lanes have been constructed to carry the opposing traffic, on a separate grade line with a dividing space

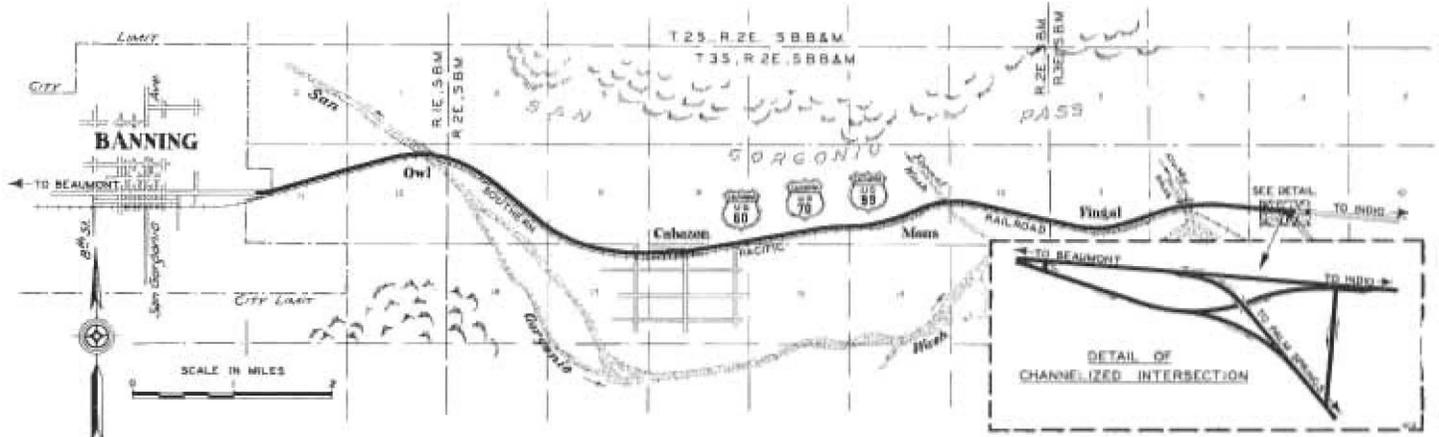
by rising volumes of truck and passenger traffic. This being a portion of the direct route between the Los Angeles Metropolitan Area and the Imperial Valley, it is used extensively as a trucking route.

Many of the truck units are of maximum legal dimension and weight capacities. Large volumes of transcontinental traffic converge on this route from State entrances at Blythe and Yuma. During winter and early spring seasons, recreational traffic is particularly heavy, due to desert winter resorts and scenic attractions.

The existing highway is on a grade

out interference from oncoming traffic. The west bound traffic will in general use the newly constructed portion of the highway while east bound traffic will use the existing pavement.

At the easterly terminus of the project a channelized intersection has been completed and opened to traffic. Previously, the Palm Springs to Los Angeles traffic crossed the Los Angeles to Indio traffic at grade. As both of these traffic movements are heavy in volume and fast in character, traffic congestion and the resulting danger element often resulted. This was especially apparent during winter months



Sketch map of new divided highway between Banning and Palm Springs Junction showing channelization detail

left between the old and the new dual lane roadbeds.

The principal features of this work consist, in general, of grading the new roadbed, placing a cement stabilized base and topping with plant-mixed surfacing. Five reinforced concrete bridges have been constructed, and a reinforced concrete grade separation structure was built at the east end of the job as a part of the channelized intersection at the Palm Springs junction.

Work was commenced May 15, 1940 and good progress has been made despite unusually heavy winter rains.

This project was designed to meet the ever increasing difficulties caused

descending easterly from an elevation of 2,220 feet at the east city limit of Banning to 1,260 feet at the Palm Springs junction. Heavily laden trucks west bound are forced to use lower gears resulting in slow speeds. Due to the difficulty involved in passing, these slow vehicles on a two-lane highway against opposing traffic, long lines of automobiles have in the past formed behind the trucks, thus impeding normal traffic flow and materially increasing traffic hazard.

The design of this project in providing two traffic lanes in each direction with an intervening dividing strip will permit the higher speed vehicles to pass the slower units with-

out interference from oncoming traffic when traffic to Palm Springs and the desert areas is the heaviest.

## HAS CHANNELIZATION SYSTEM

The new intersection system has separate channels for the various interchanges of traffic to provide a smooth uniform flow. A grade separation structure carries the traffic from Palm Springs over the east bound traffic on U. S. 99. A flashing light system has been installed at the ends of central dividing curbs where traffic is separated into the dual roadway sections.

In addition to the reinforced concrete grade separation structure five reinforced concrete girder bridges



At top. One way traffic channels separate Indio and Palm Springs traffic at junction point. Overhead structure at left carries Palm Springs northbound traffic. Center. Section of new one-way road-bed. Existing roadway on left. Bottom. Spreading cement stabilized base. Bulldozer pushes laden truck, spreads material while dumping and pulls timber drag behind

have been constructed across the main drainage channels leading from the San Gorgonio Mountains to the north. A total of 14 main spans plus four shorter cantilever spans were involved, and the total combined length of the bridges is 525 lineal feet.

Sacked concrete riprap was used at the ends of the San Gorgonio Wash Bridge and the Fornat Wash Bridge to protect the adjoining embankments from storm damage.

#### CEMENT STABILIZED BASE

A cement stabilized base was placed on the subgrade varying in thickness from six inches on the left adjacent to the dividing curb to nine inches at the shoulder line. The base material used here was similar to that covered in the March issue of this journal for the Beaumont-Banning project.

Local material obtained from a channel of the San Gorgonio Wash, was mixed with cement and water at a plant located adjacent to the wash, and transported to the street in dump trucks. The material was spread with a 95 horsepower tractor with a bulldozer attachment. Forward steel plate wings were placed at the ends of the bulldozer blade and mounted on wheels adjustable for height by means of screw jacks. The truck was pushed by the tractor and the material was spread to the required depth as it was dumped from the truck.

On this project, in contrast to the Beaumont-Banning project, a heavy



Sacked concrete riprap was placed at the ends of the bridge over San Gorgonio Wash to protect the adjoining embankments from storm damage

timber drag was pulled behind the bulldozer to shape the mixture preparatory to rolling. The drag was made of 6 by 6 inch timbers set diagonally across the roadway to the full width of the base. Shorter cross diagonals were set at an angle to the timbers to obtain a uniform distribution of the material.

Behind the drag a three-wheel roller followed by a pneumatic multi-tired roller was used to obtain compaction. A curing seal consisting of

Liquid Asphalt RC-1 was applied immediately after the rolling operations.

At present, the contractor is completing the placing of plant-mixed surfacing 0.21 foot in thickness over the stabilized base and shoulder.

The work is being performed by George Herz and Company, contractors. Mr. G. E. Malkson is the Resident Engineer.

### Five Thousand Men Work on International Road

Mexico's determination to hasten consummation of its long reach of the International Pacific Highway is manifest from the fact that the republic now has 5,000 men working thereon, reports the Automobile Club of Southern California. The great motor route links Fairbanks, Alaska, and Buenos Aires, Argentina.

Recent contracts awarded and on which construction is already progressing include: Tequila to Ixtlan, 51 miles; Ixtlan to Tuxpan, 116 miles; Tuxpan to Mazatlan, 155 miles; Mazatlan to Culiacan, 150 miles. These contracts call for grading, drainage structure installation, and surfacing with oil mix, a total stretch of 480 miles, including the Barrancas. The work must be accomplished in two years.

Completion of the contracts means development of 1,197 miles of the highway between Nogales and Mexico City.



Spreading cement stabilized base. Note forward steel plate wing on bulldozer blade is mounted on wheel with screw jack adjustment

# California Rights of Way Legal Procedure Cited as Exemplary

IN an address before the Association of Highway Officials of the North Atlantic States, L. E. Boykin, Chief of the Division of Highway Laws and Contracts of the U. S. Public Roads Administration on laws and procedure permitting immediate entry and possession of property required for rights of way use by State highway departments, Mr. Boykin made the following favorable comment on the methods and organization of the Division of Contracts and Rights of Way of the California Department of Public Works:

"It occurred to me that it would be helpful to bring to your attention a brief outline of the organizational set-up and of the legal authority and procedure in a few States to illustrate how they operate. In this connection, I have selected California as one State which should be of interest, for two reasons; first, because of its organizational set-up, and second, because its laws are such that it can and does obtain rights of way expeditiously.

"The Division of Highways of California is a part of the Department of Public Works of the State. It created a right-of-way office in 1926. Prior thereto right-of-way matters in most instances were handled by the counties in which improvements were to be undertaken.

#### STATE LEGAL SET-UP

"The organization set-up at that time has since increased in personnel and importance and is now administered as a part of the Division of Contracts and Rights of Way. The chief of that division is also chief counsel for the Division of Highways and, with a staff of attorneys functioning under him, handles all legal matters, including condemnation cases when they reach the courts.

"For the field work there are two supervising right-of-way agents, one for northern California and one for southern California. There are at present 11 district right-of-way agents, 30 right-of-way agents, 11 right-of-way engineers, 1 architectural engineer, and necessary sub-

ordinate and clerical employes, all attached to the 11 engineering districts into which the State is divided and subject to the general supervision of the district engineer in charge of each district. However, they function strictly as a right-of-way organization.

#### OUTSIDE APPRAISERS EMPLOYED

"Under the procedure followed in California the property owner usually meets only one representative of the State during right-of-way negotiations. This contact is made by the right-of-way agent. Prior to contacting the owner, however, an appraisal of the value of the property to be acquired is made by the right-of-way agent.

"When it is necessary to resort to condemnation, outside appraisers are employed and are used as expert witnesses when the case comes to trial. The engineer of surveys and plans always takes into consideration the matter of right-of-way costs and when such costs on proposed alternate alignments are ready for discussion the right-of-way agents are invited to participate.

"If negotiations fail to reach an agreement with the property owner the matter is presented to the California Highway Commission with request that it adopt a resolution authorizing condemnation of the property. Such resolution is required by the statute (Streets and Highways Code, SS 102, 103), which recites that it shall be conclusive evidence:

"(1) Of the public necessity of the proposed public improvement;

"(2) That such real property or interest therein is necessary therefor; and

"(3) That such proposed public improvement is planned or located in a manner which will be most compatible with the greatest public good and the least private injury.

#### COURTS GIVE PREFERENCE

"Upon the passage of such resolution the necessary legal papers for the filing of suit are prepared. The statute (Code of Civil Procedure, §

1243) requires that such suit shall be instituted in the Superior Court of the county in which the property sought to be taken is situated, unless such property should be situated in more than one county, in which event suit may be filed in either county and the county so selected shall be the proper county.

"The law provides (Code of Civil Procedure, § 1264) that all such proceedings shall be given preference by the courts over all other civil actions therein in the matter of setting the date for trial and in hearing the same, in order that all such actions shall be quickly heard and determined.

"A few days prior to the date set for trial the attorneys from the headquarters office of the division come to the district and hold pre-trial conferences with the district right-of-way personnel and witnesses, in final preparation for presentation of the case in court. In the meantime, however, the right-of-way agent continues his efforts to arrive at a settlement with the landowner, and in most cases an agreement is reached prior to the time set for trial.

"The State is authorized to take immediate possession and use of property upon commencing proceedings in court and giving such security in money deposited as the court may direct. It is the practice of the State to take possession immediately after filing the complaint in condemnation."

#### "Highway Mail Coach"

Uncle Sam's first "highway mail coach" is a success. This new service, which marks one of the most significant developments in mail transportation, has been operating for a month over a 140 mile route between Washington, D. C. and Harrisonburg, Virginia. Now two more trial routes are to be established.

Operated on the same basis as the railway mail service, the mails are carried on large bus-type trucks completely equipped with all facilities for sorting, handling and dispatch that are included in railway postal cars.

# Gasoline Tax Apportionments to Cities

(Continued from page 1)

CITY	STREETS OF MAJOR IMPORTANCE Section 194		STATE HIGHWAYS Section 203	CITY	STREETS OF MAJOR IMPORTANCE Section 194		STATE HIGHWAYS Section 203
	Fiscal Year Ending June 30, 1940	Fiscal Year Ending June 30, 1941	Biennium Ending June 30, 1941		Fiscal Year Ending June 30, 1940	Fiscal Year Ending June 30, 1941	Biennium Ending June 30, 1941
<b>District I</b>							
Del Norte County:				Colusa County:			
Crescent City .....	\$1,660.37	\$1,174.07	\$2,834.44	Colusa .....	\$2,042.66	\$1,968.28	\$4,010.94
Humboldt County:				Williams .....	838.86	701.16	1,540.02
Arcata .....	\$1,649.75	\$1,597.88	\$3,247.63	Totals .....	\$2,881.52	\$2,669.44	\$5,550.96
Blue Lake .....	535.76	433.28	969.04	El Dorado County:			
Eureka .....	15,205.96	14,690.94	29,896.90	Placerville .....	\$2,284.95	\$2,639.28	\$4,924.23
Ferndale .....	858.19	776.10	1,634.29	Glenn County:			
Fortuna .....	1,196.04	1,217.14	2,413.18	Orland .....	\$1,153.58	\$1,176.66	\$2,330.24
Trinidad .....	103.29	80.97	184.26	Willows .....	1,953.84	1,907.97	3,861.81
Totals .....	\$19,548.99	\$18,796.31	\$38,345.30	Totals .....	\$3,107.42	\$3,084.63	\$6,192.05
Lake County:				Nevada County:			
Lakeport .....	\$1,272.33	\$1,283.47	\$2,555.80	Grass Valley .....	\$3,684.67	\$4,910.76	\$8,595.43
Mendocino County:				Nevada City .....	1,642.04	2,106.09	3,748.13
Fort Bragg .....	\$2,917.24	\$2,786.58	\$5,703.82	Totals .....	\$5,326.71	\$7,016.85	\$12,343.56
Point Arena .....	371.65	322.17	693.82	Placer County:			
Ukiah .....	3,015.71	3,213.83	6,229.54	Auburn .....	\$2,568.76	\$3,456.75	\$6,025.51
Willits .....	1,374.64	1,399.75	2,774.39	Colfax .....	880.38	683.93	1,564.31
Totals .....	\$7,679.24	\$7,722.33	\$15,401.57	Lincoln .....	2,021.40	1,760.68	3,782.08
Totals District I .....	\$30,160.93	\$28,976.18	\$59,137.11	Rocklin .....	698.91	684.80	1,383.71
				Roseville .....	6,202.28	5,803.07	12,005.35
				Totals .....	\$12,371.73	\$12,389.23	\$24,760.96
<b>District II</b>				Sacramento County:			
Lassen County:				North Sacramento .....	\$2,560.07	\$2,629.81	\$5,189.88
Susanville .....	\$1,310.94	\$1,356.68	\$2,667.62	Sacramento .....	90,500.15	91,270.76	181,770.91
Modoc County:				Totals .....	\$93,060.22	\$93,900.57	\$186,960.79
Alturas .....	\$2,256.96	\$1,800.30	\$4,057.26	Sierra County:			
Plumas County:				Loyalton .....	\$807.99	\$796.79	\$1,604.78
None				Sutter County:			
Shasta County:				Yuba City .....	\$3,480.04	\$4,279.37	\$7,759.41
Redding .....	\$4,042.83	\$6,984.98	\$11,027.81	Yolo County:			
Siskiyou County:				Davis .....	\$1,199.91	\$1,440.24	\$2,640.15
Dorris .....	\$735.58	\$743.37	\$1,478.95	Winters .....	864.94	975.95	1,840.89
Dunsmuir .....	2,519.53	2,032.02	4,551.55	Woodland .....	5,384.64	5,717.03	11,101.67
Etna .....	365.88	392.79	758.67	Totals .....	\$7,449.49	\$8,133.22	\$15,582.71
Fort Jones .....	291.53	310.10	601.63	Yuba County:			
Montague .....	489.42	398.82	888.24	Marysville .....	\$5,563.22	\$5,724.77	\$11,287.99
Mount Shasta .....	1,026.14	1,393.73	2,419.87	Wheatland .....	462.40	427.24	889.64
Tulelake .....	289.60	676.19	965.79	Totals .....	\$6,025.62	\$6,152.01	\$12,177.63
Yreka City .....	2,124.70	2,140.54	4,265.24	Totals District III .....	\$151,148.29	\$155,354.38	\$306,502.67
Totals .....	\$7,842.38	\$8,087.56	\$15,929.94				
Tehama County:				<b>District IV</b>			
Corning .....	\$1,329.26	\$1,267.97	\$2,597.23	Alameda County:			
Red Bluff .....	3,395.08	3,293.93	6,689.01	Alameda .....	\$33,818.58	\$31,230.43	\$65,049.01
Tehama .....	183.41	150.74	334.15	Albany .....	8,271.96	9,899.91	18,171.87
Totals .....	\$4,907.75	\$4,712.64	\$9,620.39	Berkeley .....	79,262.70	73,689.02	152,951.72
Totals District II .....	\$20,360.86	\$22,942.16	\$43,303.02	Emeryville .....	2,255.02	2,171.56	4,426.58
				Hayward .....	5,338.31	5,802.29	11,140.60
				Livermore .....	3,010.87	2,485.10	5,495.97
				Oakland .....	274,215.96	260,279.06	534,495.02
				Piedmont .....	9,009.47	8,498.43	17,507.90
				Pleasanton .....	1,194.11	1,100.85	2,294.96
				San Leandro .....	11,076.77	12,577.11	23,652.88
				Totals .....	\$427,452.75	\$407,733.76	\$835,186.51
<b>District III</b>							
Butte County:							
Biggs .....	\$446.95	\$471.17	\$918.12				
Chico .....	7,685.04	7,999.70	15,684.74				
Gridley .....	1,873.71	2,013.93	3,887.64				
Oroville .....	4,346.90	3,808.19	8,155.09				
Totals .....	\$14,352.60	\$14,292.99	\$28,645.59				

# es for Biennium Ending June 30, 1941

CITY	STREETS OF MAJOR IMPORTANCE Section 194		STATE HIGHWAYS Section 203
	Fiscal Year Ending	Fiscal Year Ending	Biennium Ending
	June 30, 1940	June 30, 1941	June 30, 1941
<b>Contra Costa County:</b>			
Antioch	\$5,003.33	\$4,519.75	\$9,523.08
Concord	1,086.00	1,275.71	2,361.71
El Cerrito	3,735.85	5,286.32	9,022.17
Hercules	378.41	295.46	673.87
Martinez	7,656.06	6,357.90	14,013.96
Pinole	753.92	804.53	1,558.45
Pittsburg	9,276.87	8,200.39	17,477.26
Richmond	19,913.42	20,364.91	40,278.33
Walnut Creek	978.86	1,359.26	2,338.12
<b>Totals</b>	<b>\$48,782.72</b>	<b>\$48,464.23</b>	<b>\$97,246.95</b>
<b>Marin County:</b>			
Belvedere	\$482.67	\$393.65	\$876.32
Corte Madera	991.40	945.80	1,937.20
Fairfax	2,823.61	1,893.32	4,716.93
Larkspur	1,197.98	1,342.04	2,540.02
Mill Valley	4,019.65	4,175.13	8,194.78
Ross	1,308.03	1,508.29	2,816.32
San Anselmo	4,488.81	4,987.43	9,476.24
San Rafael	7,743.91	7,384.66	15,128.57
Sausalito	3,539.88	3,049.32	6,589.20
<b>Totals</b>	<b>\$26,595.94</b>	<b>\$25,679.64</b>	<b>\$52,275.58</b>
<b>Napa County:</b>			
Calistoga	\$965.33	\$968.20	\$1,933.53
Napa	6,213.86	6,667.14	12,881.00
St. Helena	1,527.17	1,514.32	3,041.49
<b>Totals</b>	<b>\$8,706.36</b>	<b>\$9,149.66</b>	<b>\$17,856.02</b>
<b>San Francisco County:</b>			
San Francisco	\$612,402.72	\$546,580.60	\$1,158,983.32
<b>San Mateo County:</b>			
Atherton	\$1,278.10	\$1,643.53	\$2,921.63
Bayshore	845.47	0.00	845.47
Belmont	964.37	1,058.64	2,023.01
Burlingame	12,809.99	13,730.49	26,540.48
Daly City	8,142.60	8,290.85	16,433.45
Hillsborough	1,839.94	2,366.23	4,206.17
Lawndale	356.22	304.93	661.15
Menlo Park	2,175.86	2,806.40	4,982.26
Redwood City	8,651.34	10,726.84	19,378.18
San Bruno	3,484.87	5,615.37	9,100.24
San Carlos	1,092.76	3,032.08	4,124.84
San Mateo	12,989.54	16,713.49	29,703.03
South San Francisco	5,978.31	5,710.13	11,688.44
<b>Totals</b>	<b>\$60,609.37</b>	<b>\$71,998.98</b>	<b>\$132,608.35</b>
<b>Santa Clara County:</b>			
Alviso	\$367.79	\$583.16	\$950.95
Gilroy	3,380.61	3,113.90	6,494.51
Los Gatos	3,058.18	3,098.40	6,156.58
Morgan Hill	876.53	873.44	1,749.97
Mountain View	3,193.33	3,399.03	6,592.36
Palo Alto	13,401.74	14,448.89	27,850.63
San Jose	60,454.82	58,967.93	119,422.75
Santa Clara	6,083.54	5,728.23	11,811.77
Sunnyvale	2,986.74	3,766.85	6,753.59
<b>Totals</b>	<b>\$93,803.28</b>	<b>\$93,979.83</b>	<b>\$187,783.11</b>
<b>Santa Cruz County:</b>			
Santa Cruz	\$13,895.99	\$14,553.98	\$28,449.97
Watsonville	8,341.47	8,173.82	16,515.29
<b>Totals</b>	<b>\$22,237.46</b>	<b>\$22,727.80</b>	<b>\$44,965.26</b>

CITY	STREETS OF MAJOR IMPORTANCE Section 194		STATE HIGHWAYS Section 203
	Fiscal Year Ending	Fiscal Year Ending	Biennium Ending
	June 30, 1940	June 30, 1941	June 30, 1941
<b>Sonoma County:</b>			
Cloverdale	\$732.69	\$696.86	\$1,429.55
Healdsburg	2,216.40	2,159.48	4,375.88
Petaluma	7,959.20	6,920.37	14,879.57
Santa Rosa	10,387.41	10,857.78	21,245.19
Sebastopol	1,700.93	1,598.74	3,299.67
Sonoma	946.03	997.49	1,943.52
<b>Totals</b>	<b>\$23,942.66</b>	<b>\$23,230.72</b>	<b>\$47,173.38</b>
<b>Totals District IV</b>	<b>\$1,324,533.26</b>	<b>\$1,249,545.22</b>	<b>\$2,574,078.48</b>

## District V

<b>Monterey County:</b>			
Carmel-by-the-Sea	\$2,181.67	\$2,443.76	\$4,625.43
King City	1,431.60	1,522.92	2,954.52
Monterey	8,824.12	8,686.22	17,510.34
Pacific Grove	5,365.32	5,382.81	10,748.13
Salinas	10,101.26	9,980.02	20,081.28
Solidad	573.41	741.65	1,315.06
<b>Totals</b>	<b>\$28,477.38</b>	<b>\$28,757.38</b>	<b>\$57,234.76</b>
<b>San Benito County:</b>			
Hollister	\$3,626.76	\$3,343.04	\$6,969.80
San Juan	745.25	584.02	1,329.27
<b>Totals</b>	<b>\$4,372.01</b>	<b>\$3,927.06</b>	<b>\$8,299.07</b>
<b>San Luis Obispo County:</b>			
Arroyo Grande	\$861.07	\$938.92	\$1,799.99
El Paso de Robles	2,483.81	2,622.92	5,106.73
Pismo Beach	1,156.72	0.00	1,156.72
San Luis Obispo	7,989.11	7,934.22	15,923.33
<b>Totals</b>	<b>\$12,490.71</b>	<b>\$11,496.06</b>	<b>\$23,986.77</b>
<b>Santa Barbara County:</b>			
Lompoc	\$2,746.38	\$2,910.62	\$5,657.00
Santa Barbara	32,447.80	30,112.34	62,560.14
Santa Maria	6,812.37	7,340.74	14,153.11
<b>Totals</b>	<b>\$42,006.55</b>	<b>\$40,363.70</b>	<b>\$82,370.25</b>
<b>Totals District V</b>	<b>\$87,346.65</b>	<b>\$84,544.20</b>	<b>\$171,890.85</b>

## District VI

<b>Fresno County:</b>			
Clovis	\$1,270.38	\$1,400.61	\$2,670.99
Coalinga	2,752.17	4,329.33	7,081.50
Firebaugh	488.46	606.42	1,094.88
Fowler	1,130.41	1,318.78	2,449.19
Fresno	52,524.06	52,872.76	105,396.82
Kingsburg	1,276.17	1,295.52	2,571.69
Parlier	544.46	668.44	1,212.90
Reedley	2,499.25	2,730.59	5,229.84
Sanger	2,864.15	3,460.18	6,324.33
San Joaquin	157.34	206.74	364.08
Selma	2,941.38	3,158.70	6,100.08
<b>Totals</b>	<b>\$68,448.23</b>	<b>\$72,048.07</b>	<b>\$140,496.30</b>
<b>Kern County:</b>			
Bakersfield	\$25,113.19	\$25,197.27	\$50,310.46
Delano	2,540.76	3,939.11	6,479.87
Maricopa	1,033.88	577.13	1,611.01
Shafter	1,252.95	1,083.63	2,336.58
Taft	3,322.68	2,760.75	6,083.43
Tehachapi	710.49	1,088.79	1,799.28
<b>Totals</b>	<b>\$33,973.95</b>	<b>\$34,646.68</b>	<b>\$68,620.63</b>

# Gasoline Tax Apportionments to Cities

CITY	STREETS OF MAJOR IMPORTANCE Section 194		STATE HIGHWAYS Section 203
	Fiscal Year Ending	Fiscal Year Ending	Section 203
	June 30, 1940	June 30, 1941	Ending
<b>Kings County:</b>			
Corcoran	\$1,706.72	\$1,802.02	\$3,508.74
Hanford	6,784.37	7,092.65	13,877.02
Lemoore	1,350.51	1,473.84	2,824.35
<b>Totals</b>	<b>\$9,841.60</b>	<b>\$10,368.51</b>	<b>\$20,210.11</b>
<b>Madera County:</b>			
Chowchilla	\$817.63	\$1,685.74	\$2,503.37
Madera	4,503.29	5,561.96	10,065.25
<b>Totals</b>	<b>\$5,320.92</b>	<b>\$7,247.70</b>	<b>\$12,568.62</b>
<b>Tulare County:</b>			
Dinuba	\$2,865.11	\$3,264.65	\$6,129.76
Exeter	2,701.34	3,344.77	6,046.11
Lindsay	3,743.57	3,787.51	7,531.08
Porterville	5,119.17	5,400.89	10,520.06
Tulare	6,000.53	7,114.20	13,114.73
Visalia	7,011.23	7,669.78	14,681.01
Woodlake	520.36	987.15	1,507.51
<b>Totals</b>	<b>\$27,961.31</b>	<b>\$31,568.95</b>	<b>\$59,530.26</b>
<b>Totals District VI</b>	<b>\$145,546.01</b>	<b>\$155,879.91</b>	<b>\$301,425.92</b>

## District VII

CITY	STREETS OF MAJOR IMPORTANCE Section 194		STATE HIGHWAYS Section 203
	Fiscal Year Ending	Fiscal Year Ending	Section 203
	June 30, 1940	June 30, 1941	Ending
<b>Los Angeles County:</b>			
Alhambra	\$28,460.35	\$33,538.08	\$61,988.43
Arcadia	5,035.19	7,857.57	12,892.76
Avalon	1,831.24	1,410.09	3,241.33
Azusa	4,641.33	4,486.96	9,128.29
Bell	7,610.70	9,702.65	17,313.35
Beverly Hills	16,824.83	23,104.97	39,929.80
Burbank	16,084.40	29,577.42	45,661.82
Claremont	2,624.74	2,633.26	5,258.00
Compton	12,082.13	13,952.74	26,034.87
Covina	2,689.43	2,626.37	5,315.80
Culver City	5,472.49	7,731.79	13,204.28
El Monte	3,358.41	4,088.13	7,446.54
El Segundo	3,381.58	3,219.86	6,601.44
Gardena	6,799.83	5,089.93	11,889.76
Glendale	60,561.26	71,135.01	131,696.27
Glendora	2,665.29	2,430.83	5,096.12
Hawthorne	6,367.34	7,117.64	13,484.98
Hermosa Beach	4,629.74	6,199.40	10,829.14
Huntington Park	23,738.56	24,676.99	48,415.55
Inglewood	20,678.44	25,939.78	46,618.22
La Verne	2,760.86	2,663.40	5,424.26
Long Beach	137,936.71	141,524.03	279,460.74
Los Angeles	1,197,570.46	1,295,763.58	2,493,334.04
Lynwood	7,069.15	9,459.75	16,528.90
Manhattan Beach	1,825.44	5,511.15	7,336.59
Maywood	8,133.91	9,243.54	17,377.45
Monrovia	10,512.50	11,031.78	21,544.28
Montebello	5,307.40	6,904.87	12,212.27
Monterey Park	6,183.93	7,348.49	13,532.42
Palos Verdes Estates	684.16	850.20	1,534.36
Pasadena	73,714.92	70,516.52	144,231.44
Pomona	20,082.82	20,276.17	40,358.99
Redondo Beach	\$9,022.99	\$11,277.28	\$20,300.27
San Fernando	7,304.68	7,833.44	15,138.12
San Gabriel	7,045.98	10,222.08	17,268.06
San Marino	3,600.70	7,041.83	10,642.53
Santa Monica	35,858.33	46,084.16	81,942.49
Sierra Madre	3,426.94	3,946.01	7,372.95
Signal Hill	2,830.36	2,742.65	5,573.01
South Gate	18,951.45	23,210.65	42,161.50
South Pasadena	13,254.05	12,366.07	25,620.12

CITY	STREETS OF MAJOR IMPORTANCE Section 194		STATE HIGHWAYS Section 203
	Fiscal Year Ending	Fiscal Year Ending	Section 203
	June 30, 1940	June 30, 1941	Ending
<b>Los Angeles County—Continued:</b>			
Torrance	8,527.77	8,570.79	17,098.56
Vernon	1,225.02	732.18	1,957.20
West Covina	962.44	923.40	1,885.84
Whittier	14,331.36	13,887.21	28,218.57
<b>Totals</b>	<b>\$1,833,651.61</b>	<b>\$2,016,450.10</b>	<b>\$3,850,101.71</b>
<b>Orange County:</b>			
Anaheim	\$10,631.23	\$9,501.96	\$20,133.19
Brea	2,350.60	2,211.19	4,561.79
Fullerton	10,483.53	8,994.59	19,478.12
Huntington Beach	3,562.09	3,219.86	6,781.95
Laguna Beach	1,912.33	3,841.78	5,754.11
La Habra	2,194.20	2,152.60	4,346.80
Newport Beach	2,126.63	3,822.83	5,949.46
Orange	7,786.39	6,805.82	14,592.21
Placentia	1,550.33	1,267.96	2,818.29
San Clemente	643.88	412.60	1,056.48
Santa Ana	29,270.89	27,496.31	56,767.20
Seal Beach	1,115.93	1,337.73	2,453.66
Tustin	893.91	820.90	1,714.81
<b>Totals</b>	<b>\$74,521.94</b>	<b>\$71,886.13</b>	<b>\$146,408.07</b>
<b>Ventura County:</b>			
Fillmore	\$2,792.72	\$2,801.23	\$5,593.95
Ojai	1,417.10	1,397.17	2,814.27
Oxnard	6,067.13	7,338.14	13,405.27
San Buenaventura	11,200.78	11,425.43	22,626.21
Santa Paula	7,193.68	7,740.42	14,934.10
<b>Totals</b>	<b>\$28,671.41</b>	<b>\$30,702.39</b>	<b>\$59,373.80</b>
<b>Totals District VII</b>	<b>\$1,936,844.96</b>	<b>\$2,119,038.62</b>	<b>\$4,055,883.58</b>

## District VIII

CITY	STREETS OF MAJOR IMPORTANCE Section 194		STATE HIGHWAYS Section 203
	Fiscal Year Ending	Fiscal Year Ending	Section 203
	June 30, 1940	June 30, 1941	Ending
<b>Riverside County:</b>			
Banning	\$2,671.08	\$3,337.01	\$6,008.09
Beaumont	1,285.82	1,901.94	3,187.76
Corona	6,774.72	7,549.19	14,323.91
Elsinore	1,303.20	1,336.86	2,640.06
Hemet	2,157.52	2,235.30	4,392.82
Palm Springs	2,464.51	2,958.01	5,422.52
Perris	736.56	870.86	1,607.42
Riverside	28,666.58	29,886.66	58,553.24
San Jacinto	1,299.34	1,168.04	2,467.38
<b>Totals</b>	<b>\$47,359.33</b>	<b>\$51,243.87</b>	<b>\$98,603.20</b>
<b>San Bernardino County:</b>			
Chino	\$3,009.92	\$3,621.26	\$6,631.18
Colton	7,744.88	8,835.73	16,580.61
Needles	3,035.00	3,121.67	6,156.67
Ontario	13,112.15	12,260.64	25,372.79
Redlands	13,685.56	12,338.50	26,024.06
Rialto	1,585.09	1,524.65	3,109.74
San Bernardino	37,713.70	37,606.40	75,320.10
Upland	4,549.62	5,440.51	9,990.13
<b>Totals</b>	<b>\$84,435.92</b>	<b>\$84,749.36</b>	<b>\$169,185.28</b>
<b>Totals District VIII</b>	<b>\$131,795.25</b>	<b>\$135,993.23</b>	<b>\$267,788.48</b>

## District IX

CITY	STREETS OF MAJOR IMPORTANCE Section 194		STATE HIGHWAYS Section 203
	Fiscal Year Ending	Fiscal Year Ending	Section 203
	June 30, 1940	June 30, 1941	Ending
<b>Inyo County:</b>			
Bishop	\$1,118.82	\$1,283.47	\$2,402.29

# es for Biennium Ending June 30, 1941

CITY	STREETS OF MAJOR IMPORTANCE Section 194		STATE HIGHWAYS Section 203
	Fiscal Year Ending June 30, 1940	Fiscal Year Ending June 30, 1941	Biennium Ending June 30, 1941
<b>Mono County:</b>			
None			
Totals District IX	\$1,118.82	\$1,283.47	\$2,402.29

## District X

<b>Amador County:</b>			
Amador	\$165.08	\$214.48	\$379.56
Jackson	1,935.50	1,743.44	3,678.94
Plymouth	331.10	396.24	727.34
Sutter Creek	977.89	976.82	1,954.70
Totals	\$3,409.56	\$3,330.98	\$6,740.54
<b>Calaveras County:</b>			
Angels	\$883.28	\$1,001.80	\$1,885.08
<b>Mariposa County:</b>			
Hornitos	\$59.85	\$136.96	\$196.81
<b>Merced County:</b>			
Atwater	\$885.21	\$1,063.81	\$1,949.02
Dos Palos	897.77	842.43	1,740.20
Gustine	980.77	1,167.18	2,147.95
Livingston	775.16	770.95	1,546.11
Los Banos	1,810.01	1,907.10	3,717.11
Merced	6,821.06	8,730.15	15,551.21
Totals	\$12,169.98	\$14,481.62	\$26,651.60
<b>Sacramento County:</b>			
Isleton	\$2,805.27	\$1,582.36	\$4,387.63
<b>San Joaquin County:</b>			
Lodi	\$7,170.39	\$9,543.30	\$16,713.69
Manteca	1,558.06	1,706.40	3,264.46
Stockton	46,300.35	47,129.89	93,430.24
Tracy	3,696.27	3,493.79	7,190.06
Totals	\$58,725.07	\$61,873.38	\$120,598.45
<b>Solano County:</b>			
Benicia	\$2,812.01	\$2,083.69	\$4,895.70
Dixon	965.33	954.42	1,919.75
Fairfield	1,091.79	1,130.14	2,221.93
Rio Vista	1,263.61	1,435.06	2,698.67
Suisun City	873.64	608.14	1,481.78

CITY	STREETS OF MAJOR IMPORTANCE Section 194		STATE HIGHWAYS Section 203
	Fiscal Year Ending June 30, 1940	Fiscal Year Ending June 30, 1941	Biennium Ending June 30, 1941
<b>Solano County—Continued:</b>			
Vacaville	1,803.25	1,390.28	3,193.53
Vallejo	14,747.43	17,289.75	32,037.18
Totals	\$23,557.06	\$24,891.48	\$48,448.54

<b>Stanislaus County:</b>			
Ceres	\$946.99	\$1,147.37	\$2,094.36
Modesto	13,606.89	14,437.32	28,044.21
Newman	1,225.02	1,045.72	2,270.74
Oakdale	2,038.77	2,232.72	4,271.49
Patterson	873.64	955.28	1,828.92
Riverbank	775.17	973.36	1,748.53
Turlock	4,127.77	4,168.24	8,296.01
Totals	\$23,594.25	\$24,960.01	\$48,554.26

<b>Tuolumne County:</b>			
Sonora	\$2,199.04	\$1,944.15	\$4,143.19
Totals District X	\$127,403.36	\$134,202.74	\$261,606.10

## District XI

<b>Imperial County:</b>			
Brawley	\$10,077.14	\$10,093.73	\$20,170.87
Calexico	6,080.65	4,664.40	10,745.05
Calipatria	1,500.13	1,549.63	3,049.76
El Centro	8,141.64	8,628.51	16,770.15
Holtville	1,697.06	1,526.38	3,223.44
Imperial	1,875.64	1,286.05	3,161.69
Westmorland	1,424.83	870.00	2,294.83
Totals	\$30,797.09	\$28,618.70	\$59,415.79
<b>Riverside County:</b>			
Blythe	\$984.65	\$2,028.56	\$3,013.21
Indio	2,510.83	1,977.74	4,488.57
Totals	\$3,495.48	\$4,006.30	\$7,501.78
<b>San Diego County:</b>			
Chula Vista	\$3,734.88	\$4,425.81	\$8,160.69
Coronado	5,236.94	5,971.12	11,208.06
El Cajon	1,013.61	1,267.10	2,280.71
Escondido	3,302.41	3,927.92	7,230.33
La Mesa	2,425.89	3,380.95	5,806.84
National City	7,047.91	8,910.18	15,958.09
Oceanside	3,392.18	4,006.31	7,398.49
San Diego	146,435.52	175,155.14	321,590.66
Totals	\$172,589.34	\$207,044.53	\$379,633.87
Totals District XI	\$206,881.91	\$239,669.53	\$446,551.44

## Motor Transportation Is Big Business

U. S. motor transportation is the Nation's biggest business, with an annual investment equal to one-tenth of the National income, with more than 6,000,000 employees and with thirty million American stockholders, according to Charles M. Upham, engineer-director, American Road Builders Association.

"Useful and productive employment for both labor and capital in this

industry is founded on the public highway facilities of the Nation," Mr. Upham writes. Add to this the social and cultural benefits of good roads and it becomes apparent that every citizen has an important stake in the National highway system.

"If you buy stock in an ordinary corporation, to which you pay \$50 every year, you want to know a great deal about that corporation. You are entitled to an annual report setting forth facts about assets, management, dividends and so forth. Yet the aver-

age motor-vehicle owner, who invests \$50 a year in highway taxes is supplied with few facts about the highway system. The highway system is the most important factor in the Nation's economic system, but the extent of its influence on agriculture, industry, commerce and general welfare has never been completely evaluated. Since roads affect the lives and welfare of every individual, the development of the highway-transportation system should be based on a thorough knowledge of its effect on the Nation.



Views of two sections of Cahuenga Pass Freeway in Los Angeles County that was reconstructed into a 12-lane divided highway largely with gas tax funds totaling \$886,000. Additional funds were contributed by PWA, Los Angeles City and County

## President Pays Honor to State Highway Chief

**A**PPPOINTMENT of State Highway Engineer Charles H. Purcell as a member of a special seven-man committee to make a study during the coming summer of post-war developments of an improved system of National highways, has been announced by President Roosevelt.

The committee will serve in an advisory capacity to John M. Carmody, Federal Works Administrator.

Others appointed to the committee are Thomas H. MacDonald, U. S. Public Roads Commissioner; G. Donald Kennedy, Michigan Highway Commissioner; Bibb Graves, former Governor of Alabama; Frederick A. Delano, Chairman of the National Resources Planning Board; Harland Bartholomew, City Planner of St. Louis; and Rexford G. Tugwell, Chairman of the New York City Planning Commission.

In a letter to Mr. Purcell asking him to serve, President Roosevelt said:

"I am asking you to serve as a member of an Interregional Highway Committee, which is to act in an advisory capacity to the Federal Works Administrator. The committee is to review existing data and surveys for the purpose of recommending and outlining a limited system of National highways designed to provide a basis for improved interregional transportation.

"I should like to have the committee make an early study so that as a result of their recommendations we can shortly undertake the preparation of detailed plans and specifications. This will permit us, upon the completion of our defense program, to utilize productively some of the man power and industrial capacity then available to construct a National system of interregional highways."

In announcing the appointment of the committee, the President said:

"Most of the members of this committee have both an extensive knowledge of the problem and sympathetic interest in its solution. It is my hope that our National needs will be paramount in their deliberations."

## April Traffic Totals 1,836,012 Vehicles on State Toll Bridges

**T**HE month of April witnessed a continuation of the large volume of traffic which has for some time been a notable characteristic of the State-owned toll bridges. The daily average for the San Francisco-Oakland Bay Bridge for the month was 49,716. The highest single day's total occurred on Easter Sunday, when 71,745 vehicles crossed the bridge. This record has been exceeded on only two other days

since the opening of the bridge.

On the Carquinez Bridge, a new high record was established with an average of 10,821 vehicles per day.

The traffic over the Antioch Bridge, although much less in volume than over the other two bridges, showed a substantial increase over the record of April, 1940.

The total traffic for April on the San Francisco-Oakland Bay Bridge and the Carquinez and Antioch bridges is tabulated below:

	San Francisco-Oakland Bay Bridge	Carquinez Bridge	Antioch Bridge
Passenger autos and auto trailers	1,356,242	295,536	16,390
Motorcycles and tricars	3,610	914	30
Buses	29,292	4,904	195
Trucks and truck trailers	75,903	23,020	3,147
Others	26,430	262	137
<b>Total vehicles</b>	<b>1,491,477</b>	<b>324,636</b>	<b>19,899</b>

## Transfers Move Traffic and Safety Engineers

The National Defense Program has made necessary a number of transfers among the personnel of the Department of Traffic and Safety of the Division of Highways.

District Traffic Engineer Harry L. Webb, District X, Stockton, was called to active duty in the Army and is now a major on the staff of the 184th Infantry at Camp San Luis Obispo. When Mr. Webb left District X, George Greenwood was made Acting District Traffic Engineer. However, he was in the Naval Reserve and this month was ordered to active duty as First Lieutenant Engineer Corps at Cavite, Philippine Islands. He sailed for Manila on May 5th.

Richard Wilson, Associate Traffic Engineer, long employed by District IV, San Francisco, has been transferred to Stockton to succeed Greenwood.

W. R. Cobb, Associate Traffic Engineer in Central Headquarters, Sacramento, who has been with the Division of Highways since December 1, 1933, has been transferred from

Central Office to District IV to replace Wilson.

W. L. Welch, who entered State service with the Division of Highways September 16, 1929, has been transferred from the Central Office to the Traffic Department of District VII in Los Angeles.

## Carmody Recommends \$287,000,000 for Highways

(Continued from page 5)

roads conforming to the main lines of the strategic network, as designated by the War and Navy Departments; (2) make roads and bridges on auxiliary lines of the network eligible for improvement with Federal Aid secondary road funds; and (3) permit the use of Federal Aid funds in payment of part of the cost of acquiring necessary rights of way and attendant property damage.

The problem of reservation roads, including company streets in Army cantonments and naval establishments, totaling about 1,500 miles, is not included in the recommendations for expenditures because provision is currently being made for them by the Army and Navy.

# Traffic Hazards Eliminated in Red Rock Canyon

(Continued from page 5)

Between Mojave and Ricardo the highway traverses a section of desert typical of southeastern California. The land, in general, rises and falls over the debris cones that have been brought down from the bordering mountains by the numerous cloud-bursts which are typical of the region. These washes, intersecting the highway, are usually dry but at times, for short periods, may carry a flash flood that is beyond the capacity of any reasonably-sized bridge or culvert structure to carry.

## DIPS SOLVED PROBLEM

The original construction of the highway through this vicinity solved a problem by the construction of numerous dips in the grade line at points where flooding could be expected. This treatment proved adequate for the volume and speed of traffic using the highway for a number of years subsequent to its construction. However, the accident hazard gradually increased with greater speeds and volume and during the past two years it became apparent that further betterment of conditions must be undertaken if the accident ratio on this section of highway was to be held within reasonable bounds.

Studies of the behavior of water and debris carried in the washes, conducted over a period of years, indicated the ineconomy and impracticability of building bridges of large enough capacity to handle all floods. While the average run-off could be easily handled in this manner, there are occasional floods of great volume—floods that would require very costly bridges over the water to be conducted. Such bridges, if realized, would present an absurd appearance, and would serve a need only during periods seldom exceeding an hour, and at intervals of probably several years.

## COMPROMISE PLAN RESULTED

In order to secure the utmost of service and safety to the traveling public, a compromise plan was adopted which involved the handling of the usual water run-off by means of

large diameter pipes or culverts, with a highway grade line so laid as to provide dips for periods of peak floods.

The existence of short, depressed sections on a primary highway, traversing open desert country, constitutes a potential hazard and obstructs the uniform, free flow of traffic. This hazard is greatly increased when depressions become partially filled with silt, rocks, and sand by excessive floods, particularly when these obstructions are so located that approaching high-speed traffic encounters them without adequate warning.

Under normal conditions the riding qualities of the highway are materially impaired by the existence of these short, vertical curves. Likewise, the restricted sight distance at an average dip may be a direct or indirect cause of traffic friction.

## SPEED DESIGNS ADOPTED

In order to overcome these undesirable conditions, the improvement was planned by taking into consideration all factual data accumulated through a carefully planned traffic and safety study. Preliminary traffic speed checks were taken for the purpose of determining tentative design classification, as well as studies to indicate the critical speeds encountered by present-day traffic.

The designed speed finally adopted as a result of these studies varied from 50 miles per hour in the winding Red Rock Canyon section to 70 miles per hour in the desert section.

Modifications in standard practices were also required in order to ensure that objects such as boulders or loose sand which possibly might be carried upon the roadway by floods would be sufficiently illuminated by car headlights as to give ample opportunity for the operator of a vehicle to come to a safe stop before striking an obstacle.

These studies have resulted in a design that permits high-speed traffic to traverse the dip with confidence and with a reasonable exercise of care on the part of the operator, with absolute safety.

# Maintenance Men Invent "Mercy Sled"

**N**CESSITY was the mother of an invention conceived by the Maintenance Department of District V of the State Division of Highways to expeditiously care for injured motorists in the mountainous areas of the district, which embraces Monterey, San Benito, San Luis Obispo and Santa Barbara counties.

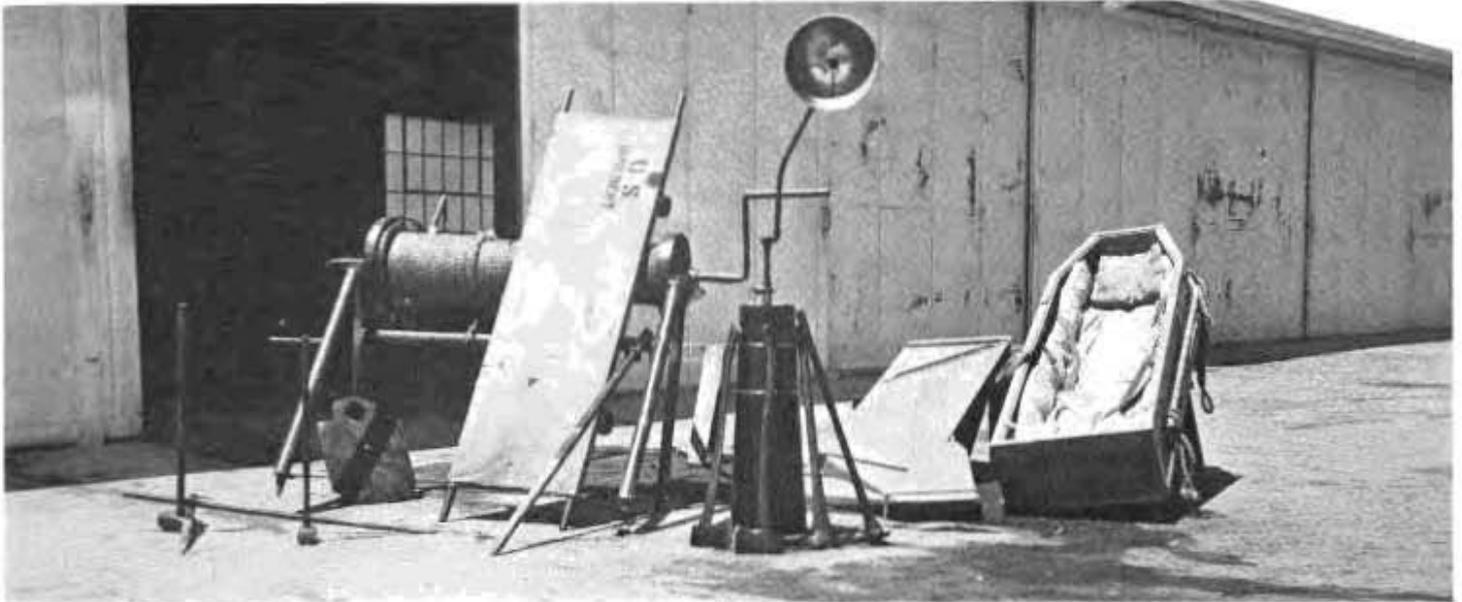
Recently an automobile plunged off the highway in Monterey County near Willow Camp and rolled down a 500-foot embankment. Of the five persons in the car, four were so seriously injured that they had to be carried to the highway on stretchers. Members of the maintenance crew at Willow Camp labored for four hours carrying the victims up the steep slope of the canyon into which the automobile had dropped.

## FILED AN EMERGENCY

As a result of this experience, they constructed a device which they call a "mercy sled." The sled is a wooden box with a camp bed mattress placed in it. A rope tied to the box runs through a tackle block, which is set up on the roadway at the point where the sled is to be lowered over an embankment or cliff.

The maintenance crew had occasion to use this sled shortly after it was built. An automobile driven by a woman skidded off the highway and fell a distance of some 400 feet. The maintenance crew rushed the sled to the scene of the accident and lowered it to the victim, who had been given first aid by a physician hastily summoned.

The injured woman was placed in the sled and carefully strapped in place to prevent any jarring of her broken body. The end of the rope attached to the sled was tied to the rear axle of a truck which slowly pulled the box up to the highway, where an ambulance awaited. Without the mercy sled it would have required an hour to remove the victim from the canyon instead of the few minutes that were necessary. The sled was built by Frank Odom at the request of District Engineer Gibson.



"Mercy Sled" equipment built by maintenance crew of District 5 shown at top includes hoisting apparatus, stretcher, portable searchlight and sled. Below, two views showing sturdy construction of sled. Man is Frank Odom of crew, the designer and builder.

# Six-Lane Divided Freeway Planned Through Balboa Park, San Diego

By E. E. WALLACE, District Engineer

**A**N estimated increase of over 30 per cent in population within the past few months in San Diego, due to defense activities, has resulted in heavy increase in traffic on all main highways within or entering the city.

The conditions which are developing were foreseen and early last Fall a system of "Access Highways" was designated at a conference which was held at the Headquarters of the Commandant of the Eleventh Naval District in San Diego, at which representatives of the Navy, Army, Marines, Public Roads Administration, and the State Division of Highways agreed on the more important highways which should be improved or rebuilt in order to provide necessary access to the various Federal activities.

One such access highway is U. S. No. 395 which is the inland highway connecting San Diego with the Marines' Camp Elliott and the large

housing project on Kearny Mesa, thence through Escondido to March Field, Riverside, and the Metropolitan area of Los Angeles.

The present highway enters San Diego through a circuitous route passing to the east of the business center. A more direct connection with the various activities is desirable and a new routing was therefore adopted by the State Highway Commission, proposing a freeway or parkway development into the center of San Diego. This required a highway development through Balboa Park which is the pride of San Diego and in which both the 1915 and 1935 fairs were held.

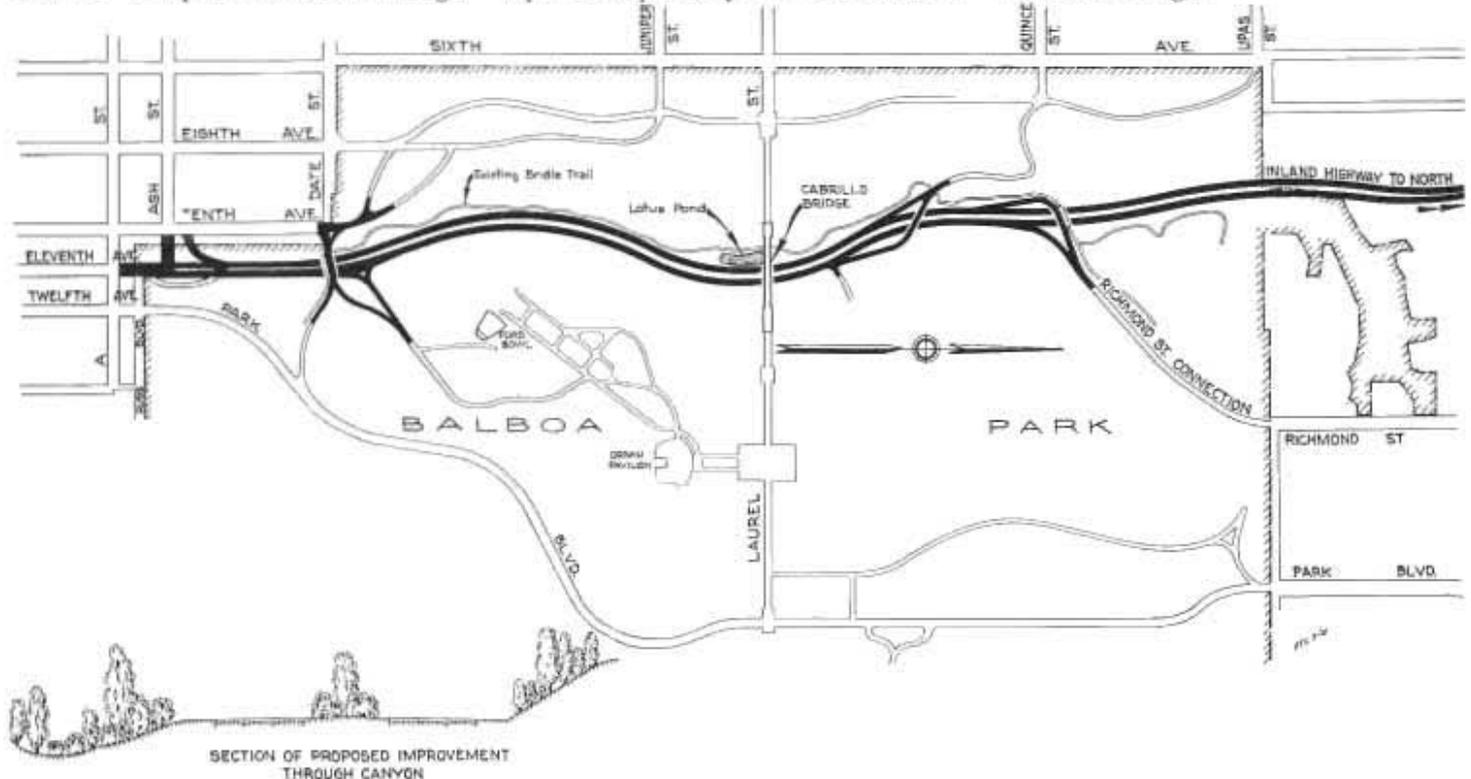
The charter provision required a two-thirds majority vote of the people to set aside any portion of the park for other than park purposes, and on March 25, 1941, the people of San Diego, by a vote of eight to one, set aside a 200-foot width of right of way through Cabrillo Canyon to be developed as a parkway and to serve as a

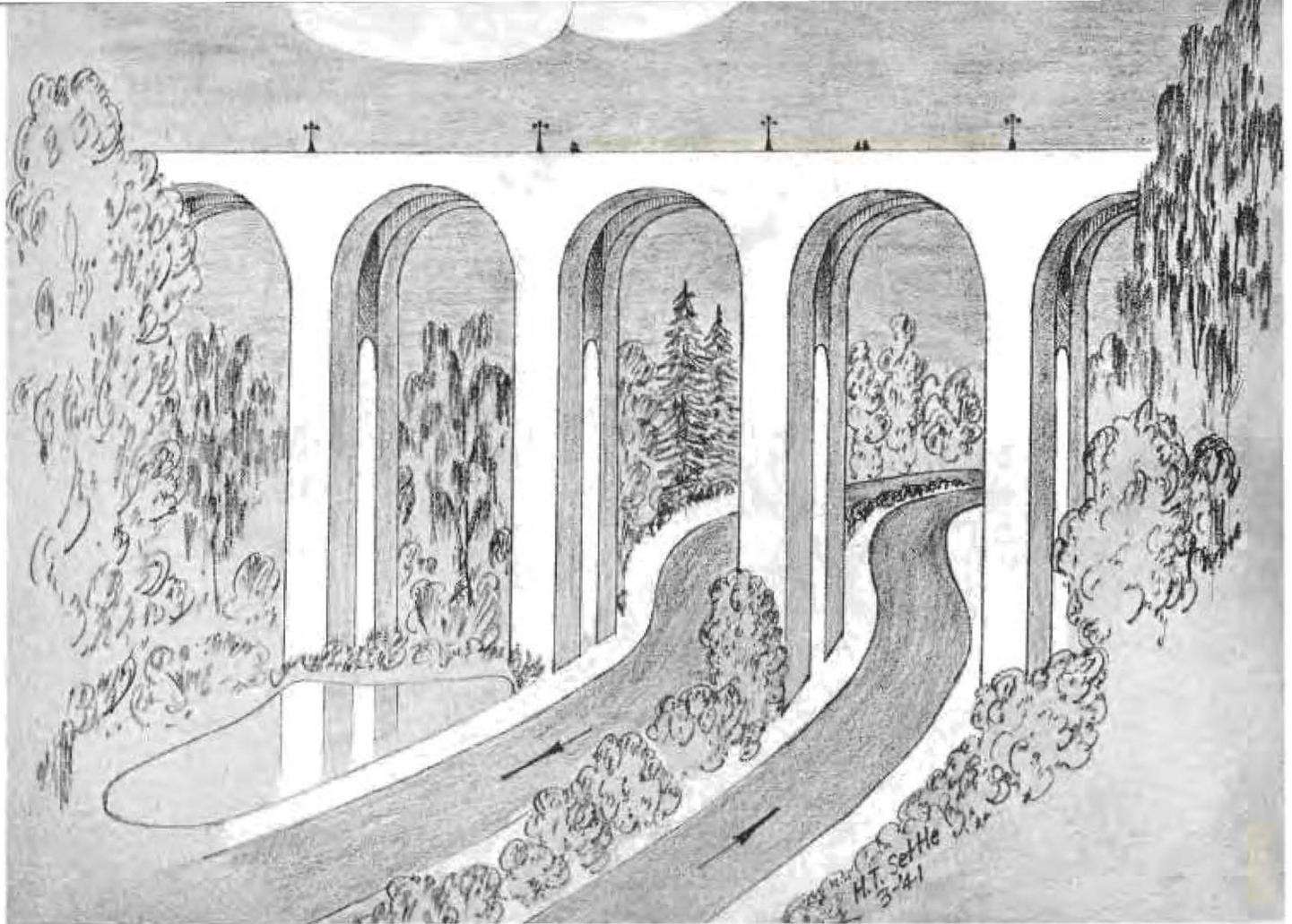
portion of the State highway entering San Diego from the north.

Surveys have already been completed by District XI Office and the first unit will be ready to advertise for contract as soon as access highway funds are made available by Congressional action.

The extent of the first improvement depends on the Federal appropriations which may become available but a substantial start is assured by allotments included in the next biennial State Highway Budget, together with  $\frac{1}{4}$ ¢ gas tax funds for expenditure on State Highway Routes within the city.

The plans now being prepared provide for a six-lane divided highway through Balboa Park and underneath University Avenue, thence under the Washington Street extension which will connect with El Cajon Avenue, then on a new location along the east side of the Sixth Street Canyon and across San Diego River on a modern concrete bridge.





Sketch showing a proposed division of lanes of the new highway passing under Cabrillo Bridge in Balboa Park

The divided highway will extend across Kearny Mesa and will be free from highway intersections at grade from the business district to the Mesa. Several structures will be utilized through the park to provide separations of approaching highways so the traffic will enter the freeway on the proper side and without intersecting opposing lines of traffic.

When completed, the highway will be a freeway comparable with the Arroyo Seco Freeway between Los Angeles and Pasadena.

The portion through the park will be landscaped to conform with the adjacent park development and, when completed, the highway will provide an unexcelled parkway entrance into

the heart of the city as well as a more direct and expeditious traffic route.

A few of the problems that develop in connection with the project involve:

Proper provision for drainage of storm waters that accumulate in the canyon.

Saving, where possible, attractive groups of trees and existing landscaping.

Providing for present and proposed water and sewer mains, bridle paths, walks and crossings.

Acquisition of rights of way and moving of buildings on the portion outside of the park.

Proper handling of traffic consisting of over 30,000 vehicles per day;

street car traffic, existing public utilities, etc. on University Avenue during construction of the six-lane subway underneath University Avenue.

Construction of half a dozen overhead structures to provide for entering highways.

Providing proper detours for necessary traffic during construction.

Temporary bridge and detour for use of traffic while San Diego River bridge is being constructed.

Salvaging top soil for future landscaping and obtaining imported borrow to provide satisfactory subgrade for the pavement and numerous other details as are usually encountered on the average project.

## Multi-Lane Highways Increasing In U. S.

United States improved highway exceeding two-lane widths amounts to 11,070 miles, according to the American Association of State Highway Officials. New York leads with 926

miles of three-lane arteries. Pennsylvania is next with 905 miles. Illinois has 548 miles of four-lane motorways and Michigan follows with 394.

California has 90 miles of five-lane highway and 39 miles of six-lane. Michigan leads the six and eight-lane classifications with 101 and 22 miles, respectively. Montana and Wyoming

are the only States that do not have any roadway exceeding two lanes in width.

Despite a considerable mileage of existing four-lane highways, the percentage of this mileage that is of modern design, divided-lane construction is negligible. This figure is probably less than 1,000 miles.

# Redwood Timber Deflectors Built on Eel River

(Continued from page 4)

lapped six inches and tied with four strands of 14-gauge galvanized wire laced over and under the mesh at one-foot intervals. The placing of wire mesh, gravel backfill and the roadway embankment around the deflectors was carried on concurrently with the erection of the logs.

New sacked concrete riprap was constructed on the new embankment at Greenlaw Bluffs between the north end of the existing riprap and the first deflector. A timber crib was constructed on top of the deflector and carried up to the elevation of the top of the new riprap to provide a means of tying in the riprap to prevent scour during high water. Wire and rock mattresses were constructed along the toe of the existing riprap where it needed such protection.

Between the first and second deflectors at Greenlaw Bluffs there is a group of large redwood trees which were seriously undermined during the previous winter. A timber crib was therefore constructed, tying in with the first deflector and supporting the ground under the trees.

The timber deflectors average 38 feet in overall height, 60 feet in width, 90 feet in horizontal depth and extend into the river a distance from the center line of the highway of 100 feet. A total of 15,120 lineal feet of logs entered into the construction of the log deflectors. In other terms this would be 500,000 board feet or enough to construct thirty average size dwelling houses.

The total cost of the deflectors, including excavation, redwood timber, wire mesh and gravel backfill was \$32,000, or an average of \$8,000 for each of the four deflectors. The total construction cost of the project was approximately \$70,000.

With emphasis on rural highway safety and National defense, eight thousand local units of the National Grange will compete during the next six months for awards offered by the farm group to Granges which make the greatest contribution to community highway safety each year.

## In Memoriam

Hartley R. Church

Hartley R. Church, Associate Highway Engineer in the Department of Public Works, Division of Highways, District V, San Luis Obispo, succumbed to a heart attack while vacationing in San Francisco, April 21, 1941.

Mr. Church was born November 13, 1876, in Remington, Indiana. He was a graduate in engineering from Earlham College, Richmond, Indiana, and a member of the American Society of Civil Engineers.

His earlier activities included railroad and municipal service in the Middle West and in Central California.

He entered State service in February, 1922, with the Division of Highways, District III in Sacramento, being employed in both office and construction activities. In February, 1926, he transferred to District V at San Luis Obispo where he remained until his untimely death. His activities in District V consisted of the handling of permits and his contacts won him a host of friends throughout the State.

Mr. Church was a member of King David Lodge No. 236, F. and A. M. of San Luis Obispo. He was active in the church and an ardent worker in the Boy Scouts and worthy local activities. He was a veteran supporter of the C.S.E.A., having served in nearly every office of San Luis Obispo Chapter 10.

He is survived by his wife and two sons, Osmon and Robert.

His passing has taken an honored and esteemed friend from his fellow workers who extend their deepest sympathy and consolation to the members of his family.

On September 22d the Seventh Annual Western Safety Conference opens at the Olympic Hotel in Seattle. This conclave will be attended by safety experts and others vitally interested from the eleven western States and Alaska, British Columbia, Hawaii, Texas and Mexico.

## Highway Bids and Awards for the Month of April, 1941

INYO AND MONO COUNTIES—Between Laws and Benton Station, about 2.1 miles to be graded, bituminous surface treatment applied for a length of about one mile and penetration treatment applied for a length of about 1.1 miles. District IX, Route 76, Sections A, B. Contract awarded to Shea & Beebe, Hawthorne, Nevada, \$14,188.

LOS ANGELES COUNTY—Over North Figueroa Street at Park Row, a bridge consisting of reinforced concrete slab spans and an open spandrel arch to be constructed. District VII, Route 165, Section L.A. The Contracting Engineers Co., Los Angeles, \$29,960; Carlo Bongiovanni, Hollywood, \$33,999; J. E. Haddock, Ltd., Pasadena, \$39,469; Werner & Webb, Los Angeles, \$51,132. Contract awarded to J. S. Metzger & Son, Los Angeles, \$29,705.

LOS ANGELES COUNTY—Traffic signal system on Firestone Blvd., between Central Avenue and Alameda Street to be furnished and installed. District VII, Route 174, Section B. Martin J. McCarthy, Los Angeles, \$5,450. Contract awarded to Econolite Corp., Los Angeles, \$5,282.

LOS ANGELES COUNTY—Between Fairfax Ave. and La Brea ave. about 1.0 mile to be surfaced with asphalt concrete and portions of base to be constructed of Portland cement concrete. District VII, Route 162, Section A. Nick Perscallo, Los Angeles, \$60,788; J. E. Haddock, Ltd., Pasadena, \$64,324; P. J. Akmadzich, Sunland, \$66,332; Chas. H. Johnston, Los Angeles, \$71,360. Contract awarded to Oswald Brothers, Los Angeles, \$59,427.

LOS ANGELES COUNTY—A bridge consisting of two 52-foot 6-inch and one 75-foot steel beam spans over North Figueroa Street at Castelar Street to be constructed. District VII, Route 165, Section L.A. Carlo Bongiovanni, Hollywood, \$58,765; J. S. Metzger & Son, Los Angeles, \$59,819; W. J. Distell, Los Angeles, \$64,092; J. E. Haddock, Ltd., Pasadena, \$64,588. Contract awarded to Contracting Engineers Co., Los Angeles, \$56,694.

LOS ANGELES COUNTY—At Mill School, about 0.3 mile to be graded and surfaced with plant-mix surfacing. District VII, Route 170, Section B. Griffith Co., Los Angeles, \$10,274; Chas. H. Johnston, Los Angeles, \$14,412. Contract awarded to J. E. Haddock, Ltd., Pasadena, \$8,802.

NAPA COUNTY—Between Calistoga and 0.2 mile north, about 0.7 mile in length to be graded and surfaced with road-mixed surfacing. District IV, Route 49, Sections A, Cstg. E. A. Forde, San Anselmo, \$21,806; Claude C. Wood, Lodi, \$22,937; Louis Bissotti & Son, Stockton, \$23,205; Lee J. Immel, Berkeley, \$25,714; J. L. Conner & Sons, Calistoga, \$29,605. Contract awarded to Harold Smith, St. Helena, \$20,263.

SAN BERNARDINO COUNTY—Between Power House and one-half mile east, about 0.6 mile to be graded and bituminous surface treatment applied and a reinforced concrete bridge to be constructed. District VIII, Route 190, Sections D, E. Matich Bros., Elsinore, \$83,976; J. E. Haddock, Ltd., Pasadena, \$91,644; Ralph A. Bell, San Marino, \$95,490. Contract awarded to Geo. Herz & Co., San Bernardino, \$78,123.

When you arrive at the point where you know how little you know, you have arrived at the beginning of knowledge.

# State of California

CULBERT L. OLSON, Governor

## Department of Public Works

Headquarters: Public Works Building, Twelfth and N Streets, Sacramento

**FRANK W. CLARK, Director of Public Works**

**FRANZ R. SACHSE, Assistant Director**

**MORGAN KEATON, Deputy Director**

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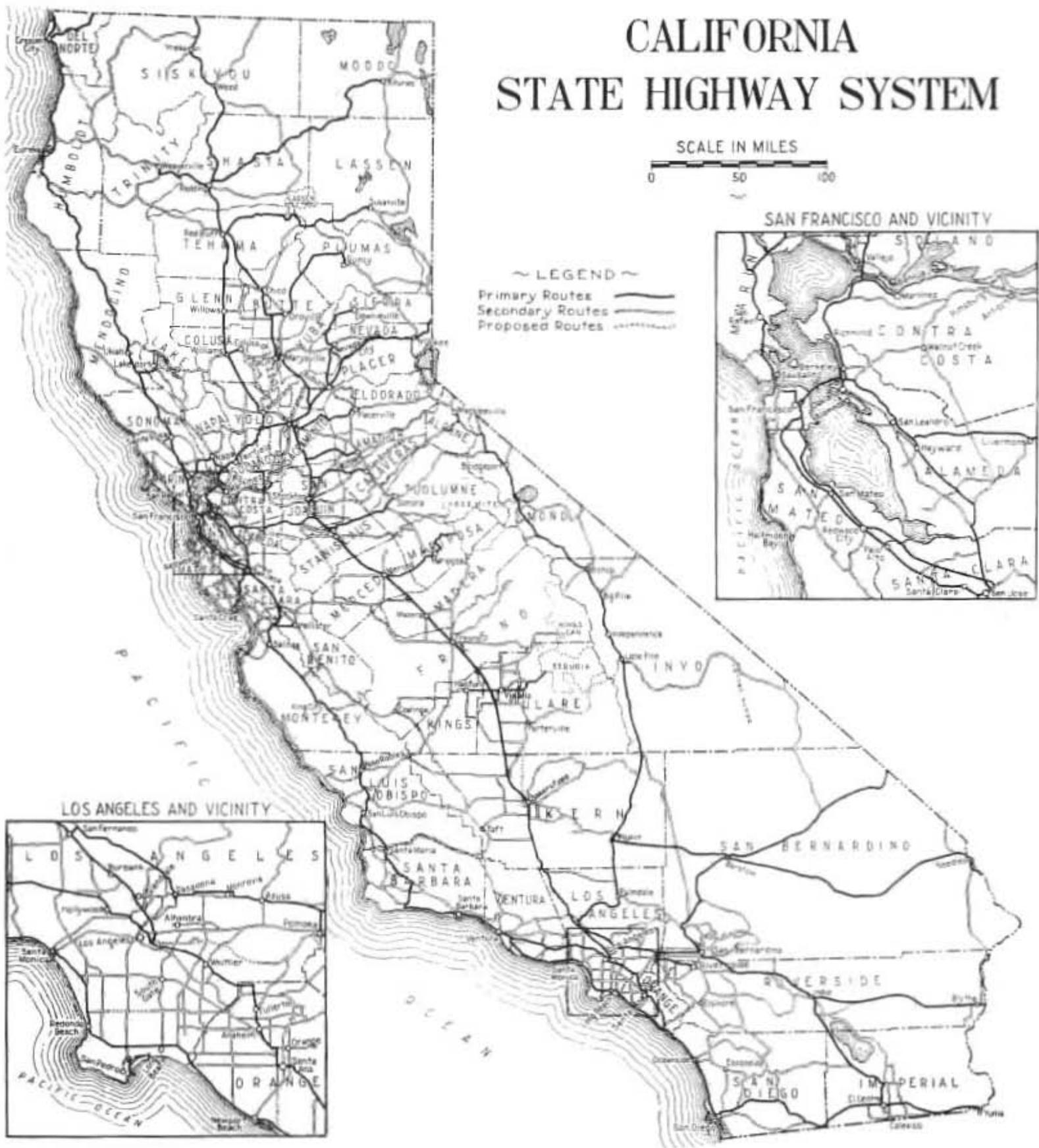
# CALIFORNIA STATE HIGHWAY SYSTEM

SCALE IN MILES

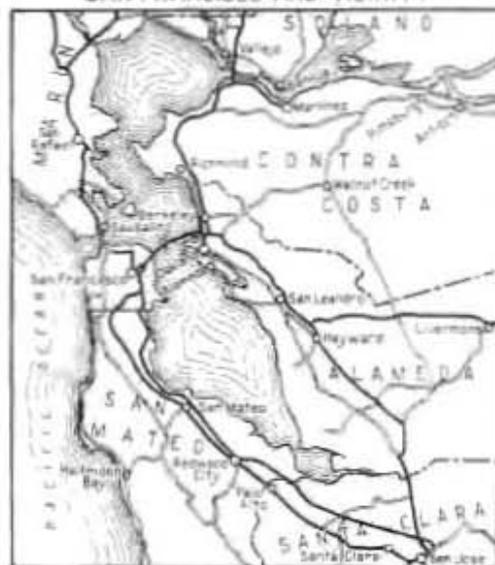


~ LEGEND ~

- Primary Routes
- Secondary Routes
- Proposed Routes



### SAN FRANCISCO AND VICINITY



### LOS ANGELES AND VICINITY

