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CALIFORNIA HIGHWAYS

OFFICIAL PUBLICATION OF THE CALIFORNIA HIGHWAY COMMISSION

Vol. 1

JANUARY, 1924

No. 1



Thompson's Studio, Susanville. Photo

A handsome span and a safe undercrossing—The new Devil's Corral Bridge on the Susanville Lateral in Lassen County
Dedicated December 8, 1923.

CALIFORNIA STATE PRINTING OFFICE
FRANK J. SMITH, Superintendent
SACRAMENTO, 1924

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California Highway Department

California Highway Commission

HARVEY M. TOY, Chairman, San Francisco
N. T. EDWARDS, Commissioner, Orange LOUIS EVERDING, Commissioner, Arcata
R. M. MORTON, State Highway Engineer, Sacramento

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H. E. WARRINGTON, Bridge Engineer LOWELL R. SMITH, Purchasing Agent
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Policies of the Highway Commission

By HARVEY M. TOY,

Chairman, California Highway Commission.

DURING the year in which the present California Highway Commission has been in office its policies have been the subject of more or less widespread discussion in the newspapers of the State and are pretty generally understood to be:

First—Completion of the main trunk lines and interstate connections;

Second—Thorough maintenance of completed highways and their betterment by widening of cuts, elimination of sharp curves, grade crossings, and other dangers as fast as possible;

Third—A study of local conditions and the designing of pavements and road types to meet conditions rather than the standardization of a single design for general use throughout the State;

Fourth—Wider and thicker pavements that will stand up under modern traffic (a minimum of twenty feet in width on main lines and eighteen feet elsewhere); and,

Fifth—Widening and thickening of the fifteen-foot pavements heretofore constructed as fast as necessary funds become available.

"AN OUTSIDE COMMISSION."

In order to better prepare ourselves for the great task of looking after California's state highways, the Commission has traveled from 10,000 to 15,000 miles up and down the State studying the highways and the problems of each section at first hand and in consultation with our engineers and representatives of local communities. Often, we have been accompanied by Governor Richardson.

In carrying forward the work and determining upon a policy for the future, we have endeavored to be an outside commission. Our decisions have been reached after a personal inspection of the highways in question and after giving those interested opportunity to present their views and suggestions.

The same desire to get close to the people, whose servants we are, has actuated our engineers who have traveled with us from Imperial County on the south to Modoc on the north for the purpose of gaining a thorough knowledge of the condition of the existing state highways.

In this way, we expect to take advantage of the experience of the past to the advantage of the users of California highways in the future.

We are committed to a policy of completing the main interstate connections and this work is going forward in all parts of the State as vigorously as present funds will permit.

WORKING ON TRUNK LINES.

Paving and grading contracts are under way or soon will be under way on the highway between San Diego and Yuma, Arizona. The Victorville to Needles road, another of the interstate connections in the south, has been taken over for maintenance. In northern California, we are pushing forward the Truckee River connection with Nevada, the Pacific highway, north of Redding, and the Redwood highway up the coast.

Completion of these roads, we are certain, will be of great benefit to the State as a whole because it will encourage increased travel into and through California from the north, south and east. In nearly every instance, these main trunk lines were contemplated in the first bond issue of 1909 and we propose to keep faith with these communities and neighboring states who are now chiding us for failure to make good previous promises.

REFINANCING NECESSARY SOON.

Even this restricted program can not be finished before a complete refinancing of state highway building is necessary and the time when this problem must be met and solved by the people of California is not far distant.

(Continued on page 6.)

THE RECORD FOR 1923

The following, in brief, is the total of expenditures and mileage of roads completed by the California Highway Department during the year 1923:

EXPENDITURES.

Second State Highway Fund.....	\$304,596 55
Third State Highway Fund.....	11,769,319 47
Motor Vehicle Fund.....	3,827,723 05
Miscellaneous funds.....	240,452 60

Grand total \$16,142,091 67

FEDERAL AID.

Federal aid collected, 1923..... \$3,071,875 66

HIGHWAYS COMPLETED DURING YEAR.

	Miles
Original construction.....	339.59
Graded and gravel surface.....	142.24
Portland concrete base.....	116.33
Asphalt concrete pavement.....	31.73
Bituminous macadam.....	49.29

Reconstructed pavements of various types..... 89.19

Grand total of new work completed..... 428.78

Work under way and bids pending January 1, 1924 (all types) 346.22

Meet the Commissioners and New Engineer

NELSON T. EDWARDS

HARVEY M. TOY

LOUIS EVERDING



HARVEY M. TOY, San Francisco hotelman appointed chairman of the California Highway Commission by Governor Richardson, has back of him years of active interest in highway work. He was president and an active organizer of the California-Nevada-Utah Highway Association and for a long time has been active in the movement for an improved highway from Auburn to the Nevada border through the Truckee River canyon. Mr. Toy's great ambition is to see the interstate trunk lines completed at the earliest possible date. Chairman Toy has large property interests in the San Francisco Bay district and is owner and proprietor of the Hotel Manx.

NELSON T. EDWARDS, of Orange, came to the Highway Commission with a record of many years in public office in Orange County where he has served as City Trustee, Postmaster, County Clerk, County Supervisor, and a member of the Orange County Highway Commission. As Supervisor and County Commissioner he gained much practical experience in connection with highway building which makes him a valuable member of the State Commission. Mr. Edwards is owner of several orange groves, is president of the Orange Savings Bank, Orange Chamber of Commerce, and is a director and officer in several other financial and business institutions in his home community and in Santa Ana.



ROBERT M. MORTON

LOUIS EVERDING, of Arcata, for many years has been identified with the lumber industry of Humboldt County. As State Highway Commissioner, he is holding his first public office. His experience as a builder began when he became assistant superintendent of the Excelsior Redwood Company, subcontractors for furnishing rock for the construction of the first jetties on the Humboldt Bay bar. Following the war, he again became interested in similar contracts with the federal government. Mr. Everding has been assistant general manager and

secretary of Northern Redwood Lumber Company, in which, until recently, he held substantial interests. At the present time he is owner of a large ranch in Eel River Valley, in Humboldt County. Shortly before his appointment, Mr. Everding made an automobile tour of the country which gave him an opportunity to observe and study highways in many states.

ROBERT M. MORTON, appointed State Highway Engineer by Governor Richardson, assumed the office with a record of seventeen years' activity as an engineer engaged in highway construction in varying phases. For two years immediately previous to his appointment, he served as San Diego County Highway Engineer in charge of construction work under a county bond issue. Previous to that he was engineer for Sacramento County. His first work in the West was in 1908 when he made a study of highway needs in San Joaquin County as a representative of the Bureau of Public Roads. A year later, he became Chief Engineer for the San Joaquin County Highway Commission. He is a graduate of Washington and Jefferson University and for a number of years was connected with the Bureau of Public Roads of the Department of Agriculture. He has had experience in the Middle West, South, as well as the Pacific Coast.

Modification of Contracts During 1923

By R. M. Morton, State Highway Engineer

ONE of the first actions of the State Highway Engineer in January, 1923, was to survey the work in progress and decide as to its conformity with what would be, in the future, the road building policy of the State. Work found out of line with new standards was modified where possible.

Grading contracts were under way in various parts of the State calling for width in excavation of 21 feet and width in embankment of 24 feet. This section was considered too narrow for traffic and drainage, and on all contracts which were not too far along, the width was increased to minimum of 24 feet.

Some of these included the contract of the Pacific Construction Company on the Redwood highway in Humboldt County; the section from Donner Summit to Donner Lake on the contract of Wilmshurst and Manetas, and others. On one section in Siskiyou County, between Gazelle and Yreka, the width was increased to 30 feet, this section being located through level country.

HEAVIER PAVEMENTS PROVIDED.

On many contracts the type of pavement was modified. In Merced County, between Los Banos and San Luis Creek, Blanco and Taylor held a contract over adobe soil for 12.25 miles of plain concrete pavement, 18 feet wide and 5 inches thick with edges deepened to 7 inches. The pavement thickness was increased to 6 inches with 9-inch edges and reinforcement was installed throughout.

In Placer County, Gorrill Bros. held a contract from Auburn to Colfax for bituminous macadam pavement on new grade. This was modified to a 4½-inch waterbound macadam. After the base thus installed has passed through a season's traffic, a pavement placed thereon should be successful.

Between Hercules and Rodeo, in Contra Costa County, Louis Tagnon held a contract for macadam and concrete surfacing. This was modified to eliminate the concrete paving, and to increase the thickness of the rock. The road was finished as a waterbound macadam, to which calcium chloride has since been applied and the result is one of the best highways in the division. Paving will follow at a later date when the fills become settled.

COMPACT SUB-BASE DEMANDED.

In San Benito County, between Hollister and the Pacheco Pass road, the contract held by the Granite Construction Company was modified by substituting a gravel surfacing for the bituminous macadam surface originally planned, for about 5.0 miles of the section, which was upon new grade over adobe soil.

Upon the remaining 3 miles the bituminous macadam was constructed as originally planned, for this section was located upon a well-graveled county road.

In Siskiyou County, between Grenada and Yreka, the V. R. Dennis Construction Company was beginning the construction of a bituminous macadam pavement. Due to heavy soil conditions and the location of this road on the

heavily traveled Pacific highway, this work was modified to include only gravel surfacing. The contract was later extended to include the next section between Gazelle and Grenada, and will furnish an excellent base for future paving.

In Imperial County, George H. Oswald held a contract for an asphaltic concrete pavement 9 feet in width. This is one of the sections between El Centro and Yuma on the original "all year road" into California. This contract was modified to increase the width of paving to 15 feet, the width of the adjacent sections.

Other modifications and additional work allowances have been made, where possible, to conform the work in progress to the new policies of the Highway Department. Inasmuch as in January, 1923, there were about 150 progressing contracts and day labor jobs upon some of which the contractors would not consent to modifications, many of the existing contracts were completed as originally planned.

HIGH STANDARDS ON NEW WORK.

New work placed under contract shows the highest standards. No grading on important roads will be built to a width less than 24 feet, with drainage space outside the road-bed; in many cases the width will be 30 feet with drainage outside, depending upon the character of the country traversed.

No paving will be laid less than 18 feet in width, and on main line highways the width will be a minimum of 20 feet.

Careful traffic census figures upon the state highways taken in 1920, and again in 1922, at 103 stations, showed the average increase in two years to be 47 per cent in the total number of vehicles. Further increases in traffic are inevitable and the California state highway system must prepare for it.

We know now that no type of pavement will do the impossible under heavy traffic; that is, bridge over weak spots in the supporting grade beneath. Paving is regarded by the State Highway Engineer as being the final step in the construction of the road. The earlier and most important steps are the preparation of foundation, and this can be done on treacherous soil by the progressive type of road building which provides for graveling or macadamizing of the earth grade and allowing it to become compacted by travel.

"All Want Good Roads."

—President Coolidge.

In his recent message to Congress, President Coolidge said in part:

"Highways * * * should continue to have the interest and support of the government. Everyone is anxious for good highways. I have made a liberal proposal in the budget for the continuing payment to the states by the federal government of its share for this necessary public improvement. No expenditure of public money contributes so much to the national wealth as for building good roads."

Governor Has Keen Interest in Highways

By W. F. MIXON, Secretary, California Highway Commission.

A CONTRIBUTING factor of the utmost importance in making effective the road-building program of the Highway Commission is the intense interest taken in all details by Governor Friend W. Richardson.

The Governor probably has traveled over more miles of projected roads during his year in office than any executive preceding him has in a full term. Early in the year, with the Commissioners and Engineer, he spent four days of continuous travel over the roads, traversing the Mojave and Colorado deserts, crossing those wide expanses of sand and cactus three times.

His interest in the Redwood highway took him as far north as Crescent City, and the need of a bridge crossing the Klamath River so impressed him that he signed the bill for the "Dr. Douglas Memorial Bridge" to be constructed near Requa.

INSPECTS ROADS.

He also is deeply interested in a suitable highway into the Yosemite and made an inspection trip from Briceburg to El Portal, the uncompleted section of the road. When this road is completed, in two years, it will be one of the wonderways of the nation.

The Governor is also interested in a completed highway to Lake Tahoe, and during the summer undertook a trip from the capitol to the lake by way of Placerville and extended his journey over the Tioga Pass through Tuolumne Meadows and the Big Oak Flat road into the San Joaquin Valley, for the purpose of studying the needs of mountain construction.

The Governor and the State Highway Commission are fully agreed that the most important work to be undertaken is the completion of the interstate connections. To link up highway systems with Nevada, by way of the Truckee River route, the connection with Arizona, via Yuma, and the two Oregon connections, by way of the Redwood highway through Crescent City, and the Pacific highway through the Siskiyou Mountains, are the projects in which the Governor is most vitally interested.

REFINANCING NECESSARY SOON.

(Continued from page 3.)

Our engineers tell us that it will take \$200,000,000 to complete the state highway system as at present constituted and this estimate does not include paving for all of the roads by any means. With each succeeding bond issue, roads have been added to the state system, often because of the power of the influences back of them, rather than because of their logical place in a system of state highways.

This is the condition confronting the Highway Commission and the State Highway Engineer whose duty it is to build the roads.

We are also faced with hundreds of miles of thin concrete pavements which must be rebuilt to save the initial investment. In this regard we have adopted a courageous policy and are building no roads on main trunk lines less than twenty feet in width. The gasoline tax will materially aid



Governor FRIEND W. RICHARDSON, who appointed present Commission and highway engineer.

APPROVES BULLETIN.

The Governor keeps more closely in touch with the various divisions, through reports from headquarters, than those divisions know.

He is a believer in thorough cooperation and is of the opinion that this monthly bulletin may be made of inestimable value to the department of road building if every official and employee will do as he should, look upon his employment as a public service and correlate his energies with his fellows.

in carrying this work forward during the year 1924.

A study of traffic conditions and their relation to the width and thickness of highways also is being made and the width of the pavement in the future will bear relation to the traffic which it must carry.

Everywhere, we are striving for the proper location of the road. Primary construction must be right as the location of the road, in the final analysis, is the only thing permanent about it. Mountain laterals will be properly located and surfaced with local materials until a better surfacing is needed and the necessary finances are available.

The California Highway Commission has not refused to hear anyone who wished to be heard; it has not declined the counsel of any competent to give it enlightenment. It only desires to serve for the benefit of the people of California; to be fair to every section of the State without fear or favor.

Sir

A Message From the State Highway Engineer to Employees of the California Highway Commission

THE official organ of the California Highway Commission will be the means of transmitting to employees of the department a knowledge of the policies and standards of administrative officials. The road building program is proceeding on a definite policy, which, if carried out conscientiously by the men "on the firing line," will make California one of the foremost states in the construction of real highways.

From time to time questions of policy and matters of detail will be discussed in CALIFORNIA HIGHWAYS for the benefit of those whose work in remote places makes impossible frequent contact with the State Highway Engineer and his assistants. The highway officials must have the cooperation of every employee wherever located.

SHOULD KNOW BEST METHODS.

It is the duty of state highway employees to know the best methods of performing their work and apply them. This is true in every detail of our work, starting with the surveying parties. The exercise of unassailable judgment is required by the locating engineer and chief of party in choosing the proper line, and in so disposing their men as to get the field work done at the least cost.

In the preparation of office plans there is much opportunity for study and the exercise of judgment in the selection of alignment and grade adjustments.

In the inspection work it is the duty of the engineer to cooperate to the fullest extent with the contractor and at the same time maintain himself on a basis of such friendliness and influence through exercise of good judgment that the contractor will respect his every request.

SOUND JUDGMENT NECESSARY.

In the administration work of the divisions and of headquarters there is much opportunity for exercise of judgment. Poor judgment in the management of a division multiplies overhead expense and breeds inefficiency among the subordinates, who quickly recognize weaknesses of this nature.

All of these matters, from time to time, will be discussed in CALIFORNIA HIGHWAYS, and the ideas of the men "on

the firing line" will be welcomed. As opportunity offers, contributions of real merit will be given space in the bulletin.

No one individual can carry the great burden of the California highway project. He must have the loyalty, cooperation and support of all assistants and employees, bonded together by the sympathy born of striving for a common object.

100 PER CENT FEDERAL AID

THE annual convention of the American Association of State Highway Officials, held in New Orleans in December, provided an opportunity for Chairman Harvey M. Toy of the California Commission to launch a movement for 100 per cent federal aid for the public land states of the West in their efforts to complete transcontinental highways.

Mr. Toy and State Highway Engineer Robert M. Morton represented California at the important session and Mr. Toy, who was elected a member of the executive committee, journeyed on to Washington to discuss the matter with Western congressmen and the President. Favorable action at this session of congress is hoped for.

In a report to the Commission, Mr. Morton pointed out numerous benefits to California as a result of attendance at the convention. We hope to have space to discuss this matter at greater length in the next issue of the Bulletin.

IMPORTANT PROJECTS APPROVED

Just as the Bulletin was going to press word was received from Washington to the effect that the Truckee River route for the state highway, between Donner Lake and the Nevada State line, had been approved for federal aid. The Boca to Loyaltan contract for grading, which will be let during January, also has been approved for federal aid.

From the War Department at Washington comes approval of the application of the California Highway Commission for a permit to bridge the Klamath River at Requa on the Redwood highway. The bridge department is now preparing plans and specifications for this bridge.

BLASTING on the Coast road in Southern California showing character of country along Ocean Front where Scenic Highway is being Constructed.



Highway Work Now Separate Department

AS a result of a measure passed by the last legislature, and approved by the Governor, the building of highways in California, for the first time, has been delegated to a separate and distinct department of the State government—the California Highway Commission.

The State Highway Engineer, whose sole duty is the building of highways, is the executive officer of the Commission. He has ceased to be the Director of the Department of Public Works and to divide his time with other departments in no way connected with the State's highway program.

WITH OTHER DEPARTMENTS.

Under the Department of Engineering Law, formerly in force, what is now the California Highway Commission consisted of the "appointed members" of the advisory board of the department, which was composed of the Governor, State Engineer, General Superintendent of State Hospitals, and Chairman of the State Board of Harbor Commissioners.

This arrangement continued until 1921, when the State Department of Public Works was created, of which the California Highway Commission became the division of highways. The State Highway Engineer became director of the department and in addition to his duties as executive officer of the highway commission he assumed jurisdiction over the Divisions of Engineering and Irrigation, Water Rights, Land Settlement, and Architecture. The Director

of the Department of Public Works and the highway commissioners constituted a "Board of Public Works."

This arrangement proved unfair, not only to the State Highway Engineer and the highway work generally, but to the State, because it compelled an officer, chosen primarily because of his ability as a builder of highways, to direct the work of four other departments entirely unrelated to highway construction yet of importance in their particular fields.

NO OPPOSITION TO REPEAL.

After two years under this law there was no opposition in the legislature to its repeal by the addition of a new article to the Political Code creating the California Highway Commission, as a distinct entity, unencumbered by combinations with other state departments.

On August 17, 1923, the State Highway Engineer once more became the executive officer of the highway commission without other duties, leaving him free to give his entire time, thought and energy to the building of the best possible highways for the people of California.

The members of the Commission and its engineer fully realize the magnitude and importance of the task before them and they approve as constructive legislation the action of the legislature and the Governor in setting apart the state highway work as a separate department of the State government.

The department is now going forward with a new spirit and a new determination to achieve results for California.

HEADQUARTERS' CHRISTMAS PARTY

THE ambition of our genial secretary, Mr. W. F. Mixon, to get all the officials and employees at headquarters together, along with their women folks and the children, was realized on December 28th at the headquarters' Christmas party. Mr. Mixon previously had celebrated his return from several weeks in the hospital by having a Christmas tree placed on the fifth floor of the Forum Building.

A voluntary collection provided toys and candy for the children and Ben Milliken, who runs the prison camps, was an ideal Santa Claus. Governor Friend W. Richardson and Mrs. Richardson were among the guests and the Governor and Mr. Mixon both made short talks.

Clay Chipman appeared in several clever songs. Little Miss Elinor Cushman pleased with her dainty dancing. Lewis Schenk was the clown, while Mrs. Charles Thorp and Thomas Wright were others on the program. Mrs. Edward Araujo accompanied the singers on the piano.

Fred Grumm was chairman of the committee in charge. He had the assistance of numerous members of the staff.

Pacheco Pass Work Is Appreciated

At a recent meeting of the Highway Commission, the following letter, addressed to State Highway Engineer

R. M. Morton, and signed by Lettie M. Garner, secretary of the San Benito County Chamber of Commerce, was read:

"The Board of Directors of the San Benito County Chamber of Commerce desire to express to you their appreciation and gratitude for the personal interest manifested by you, and the invaluable assistance rendered us, in securing for this county the all-important highway, the Pacheco Pass-Hollister Cut-Off, which is now nearing completion.

"We feel that we can but inadequately express our full appreciation to you for your efforts in our behalf, without which our own efforts would have been futile."

The New Specifications

DISCUSSING new specifications for California highways of the future, State Highway Engineer R. M. Morton, recently, had the following to say:

"New specifications under which we expect to advertise several sections of highway will provide for a minimum thickness of six inches of concrete, with edges increased to nine inches in three feet. Only in exceptional cases will reinforcing be used.

"The minimum width will be 20 feet; center paper joints will be provided and we are considering expansion joints 1½ inches in width, spaced 100 feet apart, filled with a mixture of asphalt and sawdust.

"Each job will constitute a separate study as to the width and type of surfacing. The minimum width will be 20 feet and we shall build up to 40 feet on highways carrying above 5000 vehicles a day."

PURPOSES OF THE BULLETIN

CALIFORNIA HIGHWAYS, the name chosen for the official publication of the California Highway Commission, with this issue makes its initial bow to the state highway organization and the public.

The present members of the California Highway Commission and the State Highway Engineer, long before becoming identified with the state government, saw the need of an official state highway publicity organ.

The California Highway Department has nothing to conceal, but on the contrary welcomes publicity regarding the highway work. The inauguration of a regular publication is under good auspices for it has the hearty approval of cooperating state agencies, including the State Printing Office, the State Board of Control, and Governor Richardson.

TO BE FORUM FOR IDEAS.

The purposes of the official organ can be clearly stated—its sphere of usefulness will be as an agency for the interchange of experience among employees of the department, and for the maintaining of morale in the organization. Contributions containing the ideas of all of the engineers will be constantly solicited.

Better methods of construction and maintenance in use in one location will be exploited in CALIFORNIA HIGHWAYS so that other engineers having the same problems may profit thereby. We want this to be a forum for the exchange of ideas, for suggestions from the officials to the employees, for criticism of constructive nature, to the end that the work and methods of the California Highway Department may be improved.

WELCOME PUBLIC INTEREST.

The right of the public to full and complete information in regard to all matters affecting the public highways is, in itself, sufficient reason for a publication. The roads belong to the people of the State. Highway officials are the servants of the people and are duty bound to render a full accounting, both through financial statements and in outlining the purposes and aims of the Highway Commission and the broad policies which guide their operations.

If the California Highway Commission fails in its duty, it will be because it has failed to interpret the desires of the people. The Highway Commission hopes by timely and constructive publicity to keep alive an intelligent public interest in the work of this department.

Gasoline Tax States

According to the latest compiled reports, a gasoline tax is now effective in thirty-five states. The funds raised in almost all cases are going into roads in one way and another. The following is a list of the states levying such a tax and the amount:

Alabama, 2 cents; Arizona, 1 cent; Arkansas, 3 cents; California, 2 cents; Colorado, 2 cents; Connecticut, 1 cent; Delaware, 1 cent; Florida, 3 cents; Georgia, 1 cent; Idaho, 2 cents; Indiana, 2 cents; Kentucky, 1 cent; Louisiana, 1 cent; Maine, 1 cent; Maryland, 1 cent; Mississippi, 1 cent; Montana, 2 cents; Nevada, 2 cents; New Hampshire, 1 cent; New Mexico, 1 cent; North Carolina, 3 cents; North Dakota, 1 cent; Oklahoma, 1 cent; Oregon, 3 cents; Pennsylvania, 2 cents; South Carolina, 3 cents; South Dakota, 2 cents; Tennessee, 2 cents; Texas, 1 cent; Utah, 2½ cents; Vermont, 1 cent; Virginia, 3 cents; Washington, 2 cents; West Virginia, 2 cents; Wyoming, 1 cent.

Good roads are to be urged principally for the same reason that good schools are maintained—because they increase the intelligence and value of the citizen to society.—*The Dixie Highway.*

To abandon the building of good roads would be comparable to a person starting to crawl after he had once learned to walk.



CALIFORNIA HIGHWAYS

OFFICIAL PUBLICATION OF THE
CALIFORNIA HIGHWAY COMMISSION
SACRAMENTO, CALIFORNIA

HARVEY M. TOY, Chairman;
N. T. EDWARDS and LOUIS EVERDING, Commissioners.
ROBERT M. MORTON, State Highway Engineer.
W. F. MIXON, Secretary.

We are pleased to permit publication of any of the matter contained herein and this privilege is extended newspapers and periodicals without restrictions.

FRANK B. DURKEE Editor
P. O. Box 1103, Sacramento, California.

Vol. 1 JANUARY, 1924 No. 1

JUST AMONG OURSELVES



HIGHWAY NEWS NOTES

Headquarters.

EVERYONE around headquarters is glad to have Secretary W. F. Mixon back on the job once more. He was compelled to spend a number of weeks in a Woodland hospital following a recent serious operation.

Reports from New Orleans declare the oyster supply is still low following the recent visit there of Chairman Harvey M. Toy and State Highway Engineer R. M. Morton during the recent convention of the American Association of State Highway Officials.

File Clerk J. F. Fite found something with a kick in it the other day when he tried to crank a stubborn automobile and now he's nursing a broken wrist.

Mrs. Billie Frazier, secretary to Assistant State Highway Engineer T. E. Stanton, has resigned to accept a position with the Rice Growers' Association of California.

The stork beat Santa Claus to it at the home of Claude Simpson and left an eight and a half pound daughter just a few days too early to make her a Christmas baby.

One of the convict camps recently tried to stump Purchasing Agent L. R. Smith with an order for some size twelve EE shoes for a negro sojourner, but Smith made good and the fellow's corns are reported better.

Division I.

Division Engineer T. A. Bedford recently accompanied the Commission and Mr. Morton on a visit to Quincy, where the Plumas County lateral was discussed. Mr. Bedford was in charge of surveys in the Feather River Canyon.

Division II.

B. H. Henry has been designated resident engineer for the Redding to Bayha paving, a contract for which has just been let.

E. L. Sietz is in charge of the surveys now under way for the realignment and widening of the Pacific highway between Halfway Creek and Dunsmuir. Construction Engineer E. J. Basset is making a study of the changes to be made.

Resident Engineer W. H. Johnson is proud of the new Devil's Corral bridge across Susan River, in Lassen County, which was dedicated last month.

Division III.

W. B. Albertson, for a number of years with Division III as construction superintendent and recently with Division II, has been placed in charge of the convict day labor camp at Briceburg on the Yosemite lateral.

Carl B. Wirsching, until recently assistant engineer in Division III, has been appointed assistant division engineer in the new Division VIII with headquarters at San Bernardino.

George W. Wade, assistant engineer, has been transferred from Division IV to Division III.

R. A. Bergman has been moved from Sacramento to San Bernardino as chief draftsman in Division VIII.

Division IV.

Division Engineer Jno. H. Skeggs has been on a vacation recently visiting relatives in the East.

Edward Lippert is back at the division office after an operation that kept him in bed for awhile.

Arthur Hanes, formerly with the testing laboratory at Sacramento, is now asphalt inspector on the Peninsula highway.

Charles L. Wilber, formerly with the State Reclamation Board, is now assistant resident engineer on the Peninsula highway.

Division V.

Division Engineer L. H. Gibson recently accompanied State Highway Engineer R. M. Morton on an inspection tour of the highways in this district. They were accompanied by Chairman Harvey M. Toy of the Highway Commission on a visit to the Hearst ranch on the Coast road.

Division VI.

Wedding bells were ringing recently for Chief Clerk A. L. Anderson of Division VI, who led to the altar Miss Frances Axelson of Fresno. The staff presented the couple with a set of silver.

H. E. Barker is the proud father of Donald Edwin, a young draftsman, who arrived in Fresno, October 18, 1923.

H. J. Blair, resident engineer at Los Banos, has resigned to accept a position with the Alloy Steel Company of Canton, Ohio.

Division Engineer J. B. Woodson addressed the Fresno Chapter of the American Association of Engineers recently on the subject of state highways.

Division VII.

Miss Eleanor Lyons has been transferred to San Bernardino as senior clerk in the new Division VIII.

A. B. Cleveland, former assistant division engineer in this division and for ten years in the employ of the Highway Commission, is now making a study of grade crossings for the Automobile Club of Southern California.

W. L. Walker and F. C. Stilson, draftsmen, have resigned to accept positions with the Taft Realty Company of Hollywood.

(Editor's note—The fine southern California spirit in which the view of "Scenery on L. A. 60 B" was sent in is duly appreciated but it failed to pass the censor. Headquarters claims that one of the fair ones is from Sacramento. How about it?)

Division VIII.

H. T. Smith is superintendent of the movable construction outfit on the Victorville to Needles road recently taken over by the State for maintenance. At present he is located at Newberry Springs.

A. W. Schmuck was superintendent in charge of the work under way on the Crest route which has received favorable commendation.

Divisions Tell of 1923 Accomplishments

DIVISION I.

HEADQUARTERS, WILLITS.

T. A. BEDFORD, DIVISION ENGINEER.

Counties of Del Norte, Humboldt, Mendocino, and Lake.

THE energies of Division I, at present, are devoted largely to pushing forward the completion of the Redwood highway to provide a connection with the Oregon state highway to Grants Pass. The United States Forest Service has 13½ miles under contract for grading north of Crescent City, which is about half completed.

State highway engineers and the Bureau of Public Roads are making surveys and plans for the construction of the remaining 90-mile gap upon which no work has been undertaken by the State to date.

The only active State contracts on the Redwood highway at present are the following:

Between Trinidad and Freshwater Lagoon, in Humboldt County, 16.5 miles of grading and graveling; Pacific Construction Company, contractors.

Between Forsythe Creek and Outlet Creek, in Mendocino County, 17.3 miles of grading and bituminized macadam; Conners and Hansen, contractors. (Work closed down for winter.)

Reinforced concrete bridge over Wilson Creek, in Del Norte County, completed in December. C. H. Gildersleeve, contractor.

STEAM SHOVELS AT WORK.

Two day labor crews are at work widening, straightening, and surfacing the highway; one north of Cummings, in Mendocino County, and the other in the Redwoods on the south fork of Eel River, in Humboldt County. These crews are equipped with steam shovels and other necessary machinery for heavy work.

A day labor convict camp is located on the Klamath River above Requa and is engaged in building a new highway, of high standards of alignment and width, to connect the present county road with the proposed "Dr. Douglas Memorial Bridge" which will be erected across the Klamath River near Requa. One hundred and fifty convicts are at work at this point.

On November 23d a hearing was held in Crescent City before Colonel Herbert Deakyn, United States Army Engineer, upon the application of the California Highway Commission for a permit to erect this bridge. The permit has been

W. W. PATCH



PATCH RESIGNS

THE resignation of W. W. Patch, Division Engineer of Division VII for the past nine years, became effective January 1st. Spencer V. Cortelyou, his assistant for many years, has been named acting division engineer pending the appointment of a successor to Mr. Patch.

The retiring division engineer, during the period in which he has been in charge of the Los Angeles office, has had supervision of the expenditure of more than \$12,000,000 in primary construction work on state highways in the south.

Notable work done under his supervision includes the grading and paving of the Ridge route, design and construction of pavement in San Bernardino and Riverside counties, building of a number of large bridges and heavy construction between Point Mugu and Sycamore Canyon, in Ventura County.

Mr. Patch plans to enter the real estate business in Santa Monica and will continue engineering work in a consulting capacity.

granted by the Chief of Engineers in Washington and plans for building of the bridge are expected to move forward rapidly.

Federal aid has been asked to match the appropriation of \$225,000 voted by the last legislature.

DIVISION II.

HEADQUARTERS, DUNSMUIR.

H. S. COMLY, ACTING DIVISION ENGINEER.

Counties of Siskiyou, Modoc, Trinity, Shasta, Lassen, Tehama, and northern Plumas.

DIRT is flying in Division II on the big job of completing the Pacific highway from Redding to the Oregon line, toward which much of the time and thought of the division forces are directed.

Dunn and Baker of Klamath Falls, contractors, are at work widening and straightening the highway from the Oregon line south for a distance of ten miles. The contract calls for a grade thirty feet wide most of the way. A crushed rock surface will be provided until the new work has had time to thoroughly settle.

CONTRACT LET.

On December 10th the Kaiser Paving Company was awarded a contract for paving from Redding to Bayha, 10 miles, with a twenty-foot concrete pavement six inches thick with heavy edges.

A few days later bids were opened for the realignment, widening and surfacing of the unit from Bayha to Halfway Creek, also in Shasta County. Surveys are under way for Halfway Creek to Dunsmuir, forty miles; curves will be flattened out to a 300-foot radius and the distance shortened by about five miles. Grades will be not over 6 per cent.

Four rock crushing plants are being installed in the Sacramento Canyon to furnish surfacing for the road during and after reconstruction.

TO KEEP HIGHWAY OPEN.

Snow plows and other equipment are being assembled to keep open the twenty-two miles of completed concrete pavement between Dunsmuir and a point north of Weed during the winter.

The Dennis Construction Company is completing the grading and surfacing of the seventeen miles between Gazelle and Yreka, which is the last unimproved unit between Mexico and the Oregon line.

Two undercrossings on the main line of the Southern Pacific Railroad recently were completed south of Redding and six short gaps in the pavement between Red Bluff and Redding are now being finished. On December 24th bids were opened for six bridges on the Eastside highway, south of Red Bluff.

On the Trinity lateral in Trinity County 200 convicts and approximately 100 free men, since May, 1923, have completed 2½ miles of highway along Trinity River and about five miles along Grass Valley Creek. Two power shovels are on this job. In December the entire force was concentrated between Buckhorn Summit and Town House, 20 miles west of Redding.

The convict camp on the Klamath lateral in Siskiyou County finished seventeen miles of highway this year between Shasta River and Walker, along the Klamath. The work is continuing with 100 free men and a power shovel, the convicts having been moved to Mariposa County.

COMPLETE LATERAL UNIT.

Within the past month that portion of the Redding-Alturas lateral between Burney and Montgomery Creek has been completed and opened to travel, a distance of seventeen miles. The Bureau of Public Roads has completed the grading between Adin and Adin Summit on this lateral and surfacing has been completed between Adin Summit and Canby on a twenty mile section, graded three years ago.

Grading of six miles of highway is under way north of Alturas on the Alturas-Cedarville special act highway. Repairs to the causeway, across Alkali Lake, east of Cedarville, have been completed, as promised by the Highway Commission during its visit there last summer.

On the Red Bluff-Susanville lateral eight miles of highway was completed this year east of Paynes Creek, eliminating bad grades. The Bureau of Public Roads contract, west of Mineral, is about 60 per cent complete. From Mineral to Morgan Springs day labor forces have about completed the highway, which is open to travel.

Grading has been completed from two miles east of Chester to two miles east of Westwood by the Isbell Construction Company and a part of the rock surfacing placed by Polk and Polk, contractors.

BRIDGE DEDICATED.

The "Devil's Corral" bridge across Susan River, between Westwood and Susanville, on the Susanville lateral, was dedicated December 8th by the people of Lassen County. Rocca and Calletti, contractors.

During December grading on the Johnsonville-Milford unit, east of Susanville, was completed. Eight miles of the new grade have been surfaced with rock. Warren Construction Company, contractors.

DIVISION III.

HEADQUARTERS, SACRAMENTO.

GEORGE R. WINSLOW,

DIVISION ENGINEER.

Counties of Sacramento, Solano, Yolo, Colusa, Glenn, Butte, Plumas, Sierra, Nevada, Yuba, Sutter, Placer, El Dorado, Amador, Alpine, Calaveras, Tuolumne, Stanislaus, and San Joaquin.

THE year 1923 marked important strides forward in Division III toward the building of an improved highway eastward to the Nevada state line at Verdi, the interstate connection on the Victory highway. With the exception of one short unit, grading and rock surfacing of 16.85 miles between Auburn and Colfax has been completed by C. H. and A. W. Gorrill, contractors, and opened to travel.

Grading is under way on another unit between Donner Lake and Donner Summit; bids have been opened for the grading of a section between Truckee and Boca while surveys and plans are under way for the building of the entire remaining unconstructed portion of the route between Colfax and the Nevada border.

Other projects of importance include the widening and thickening of old pavements on both the east and west side highways in the Sacramento Valley and in western San Joaquin County, as well as an extensive program of improvement from maintenance funds of the many miles of mountain highways within the district.

REVIEW OF YEAR'S WORK.

In addition to the Auburn-Colfax unit the following is a brief review of the more important projects completed in the division during 1923:

Southerly boundary of Nevada County to Grass Valley, 14.81 miles of oil macadam pavement. Healy-Tibbitts Construction Company, contractors.

Denverton to Rio Vista, in Solano County, 11.94 miles of concrete base. Wilson D. Ellis Company, contractors. A part of this pavement was placed over a subgrade of adobe which was experimentally treated with portions of lime, cement, hydrated lime, limestone dust, and asphaltic oil, to determine methods of handling adobe subgrades.

Fairfield to Vacaville, Solano County, 8.8 miles widened to twenty feet with concrete shoulders and asphalt surfacing.

Bridge over Bear River on the Auburn-Grass Valley lateral. Security Bridge Company, contractors. Approaches graded by state forces.

Colusa to Long Bridge, Colusa and Sutter counties, 10.86 miles, concrete base, a unit of the Tahoe-Ukiah highway. Bonnell, Savage and Fenn, contractors.

Sacramento County line to Central House, in Amador County, 9.33 miles of grading and gravel surface. Blumenkranz and Vernon, contractors.

HIGHWAY WIDENED.

Roseville to Lincoln, Eastside highway in Placer County, 4.95 miles of widening and thickening. J. A. Costello, Jr., contractor for asphalt work. Concrete shoulders placed by state forces.

Marysville south to Morrison's Crossing, in Yuba County, 8.2 miles of widening and thickening with asphalt macadam. New drainage ditches were constructed in connection with this job. Blumenkranz and Vernon, contractors.

Reinforced concrete bridge over the San Francisco-Sacramento Railroad near Denverton, in Solano County. O. B. Chaney and Sons, contractors.

Bridge across Stony Creek, east of Orland, in Glenn County, on the Chico-Orland state highway; total length 1010 feet. A. W. Kitchin, contractor.

Donner Summit to Donner Lake, on the Victory highway, in eastern Nevada County, 3.3 miles of heavy grading. Wilmshurst and Manetas, contractors. (Forty per cent complete.)

WORK BY STATE FORCES.

Aside from the construction of concrete shoulders on the Eastside highway between Roseville and Lincoln state forces have completed a number of projects throughout the division. Among the more important ones may be mentioned the following:

From the westerly boundary of Calaveras County to Valley Springs, on the San Andreas lateral, gravel surfacing completed.

East of Suisun, Solano County, 1.72 miles of experimental road. This unit was constructed partly of pre-cast slabs of varying sizes.

Ione to Jackson, Amador County, 10.74 miles surfaced with gravel on the Jackson lateral.

About one-quarter mile of concrete base at Town Talk, in Nevada County.

Reinforced concrete base approaches to Cache Creek bridge, in Yolo County, and guard rails for same.

Smith's Flat to Sportsman's Hall, in El Dorado County, 2.37 miles surfaced with asphalt macadam.

In addition to some of the larger widening jobs already mentioned, the following work in Division III has been financed from motor vehicle funds:

A portion of the Oroville-Willows highway west of Butte City, in Glenn County, 11.89 miles, grading and graveling. V. R. Dennis Construction Company, contractors.

Between Roseville and Lincoln, Placer County, 1.12 miles of second

story concrete, 20 feet wide. Kaiser Paving Company, contractors.

Westerly boundary to Banta, San Joaquin County, 8.1 miles of water-bound macadam shoulders. F. F. Irely and C. O. Holden, contractors. (Work under way.)

SMALL JOBS COMPLETED.

The following work has been completed by state forces and financed from motor vehicle funds:

Guard rails between Stockton and French Camp, San Joaquin County; drainage structures at the Oroville Y, in Butte County; repairs to the Georgiana Slough bridge in Sacramento County; rock surfacing on new levee between Rio Vista and Isleton, in Sacramento County, where reclamation work is under way; concrete pavement at the entrances to the city of Tracy, San Joaquin County; 3.59 miles of asphalt macadam surfacing over old base from the southern boundary of Glenn County to Logandale; placing of 336 feet of concrete base at the approach to the new Isleton bridge, in Sacramento County; grading and graveling of new right of way on the main line at Galt, Sacramento County; rebuilding of seven bridges on mountain laterals, four in Alpine County, one in El Dorado, and two in Placer County.

The sum of \$5,000 has been allotted for widening and grading a section of the state highway on the west shore of Lake Tahoe, near Meeks Bay. This work was begun in November with a gasoline power shovel.

For widening work on the Big Oak Flat road, \$7,000 has been allotted for expenditure between Shawmut Grade and Priest's Hotel.

DIVISION IV.

HEADQUARTERS, SAN FRANCISCO

JOHN H. SKUGGS, DIVISION ENGINEER.

Counties of San Francisco, Marin, Sonoma, Napa, Contra Costa, Alameda, Santa Clara, Santa Cruz, and San Mateo.

COMPLETION of 79.92 miles of highway of various types and several bridges is the record of Division IV for 1923, in addition to the work under way at the close of the year. Included in the completed projects are the first unit of the Skyline Boulevard; work on the Pacheco Pass; work in northern Napa county which will aid in reaching Lake County by an improved highway; and widening of the Peninsula highway, south of San Bruno.

The year has marked the beginning of another project, vital to the interests of San Francisco, the Bay Shore highway, surveys for which are now under way.

A resume of completed projects is as follows:

Widening and paving of the Black Point cutoff from Ignacio to Fairville, 9.52 miles in Marin and Sonoma counties. Grant Smith Construction Company, contractors.

Grading and graveling of the Black Point cutoff from Fairville to the Napa County line, in Sonoma County, 9.24 miles. Healy-Tibbits Company, contractors.

First section of the Skyline Boulevard, Sloat boulevard to Sneath road, San Francisco and San Mateo counties, 7.42 miles. P. L. Burr, contractor.

PACHECO PASS WORK.

Pacheco Pass highway, San Felipe to easterly boundary of Santa Clara County, 16.76 miles, graded and surfaced with gravel. Rhodes and Price, contractors.

First section of the Santa Rosa-Schellville highway, Sonoma County, 11.73 miles, graded and surfaced with asphalt macadam. Grant Smith Company, contractors.

Greenville to easterly boundary of Alameda County, 9.94 miles, widening of old fifteen-foot pavement to twenty feet. Oakland Paving Company, contractors.

Alto to Belvedere Crossing, Marin County, 3.49 miles, graded and surfaced with gravel. J. A. Modin and M. C. Preston, contractors.

Calistoga to Napa County line, Napa County, 9.19 miles, graded and surfaced with crushed stone. Ross Construction Company, contractors.

Overhead crossing bridge at Lytton, Sonoma County, over Northwestern Pacific Railroad and approaches. C. H. Gildersleeve, contractor.

Hercules to Rodeo, Contra Costa County, 1.30 miles, widening and relocation of the highway. Louis Tagnon, contractor.

Bridge across Arroyo Seco Creek, east of Schellville, Sonoma County. Davison and Nichol森, contractors.

CONTRACTS UNDER WAY.

The following jobs are under way at the beginning of the year:

Second unit of the Skyline Boulevard, Sneath road to Half Moon Bay, San Mateo County, 13.47 miles, grading and surfacing with crushed stone. P. L. Burr, contractor.

Crystal Springs Dam bridge on the Skyline Boulevard, San Mateo County, twenty girder spans; width 30 feet and length 608.02 feet. J. H. Shepherd, contractor.

Five miles east of Gilroy to San Felipe, Santa Clara County, 4.52 miles on the Pacheco Pass highway, graded and surfaced with gravel. J. P. Holland, contractor.

PENINSULA HIGHWAY WIDENED.

Widening of the Peninsula highway between San Bruno and Beresford, 5.13 miles, 36 to 40 feet by laying of 8-foot concrete shoulders eight inches thick with a ten-inch edge and surfacing of old pavement with 2½ to 3-inch asphalt concrete wearing surface. Pacific States Construction Company, contractors.

This widening of the Peninsula highway, which is one of the heaviest traveled highways in the state, will assist in relieving traffic congestion south of San Francisco. The work is being financed from motor vehicle funds.

Maintenance studies in Division IV during the year have included the development of pavement heaters and recocking kettles for use on asphalt roads, making possible a minimum interference with traffic.

Experiments also have been made with calcium chloride as a means of eliminating dust and the excessive use of sprinkling trucks on dirt roads.

DIVISION V.

HEADQUARTERS, SAN LUIS OBISPO.

L. H. GIBSON, DIVISION ENGINEER.

Counties of San Benito, Monterey, San Luis Obispo, and Santa Barbara.

AN extensive program of widening and draining grades on the main coast route, north of Santa Barbara, and the construction of crushed rock shoulders in San Luis Obispo and Monterey counties are features of the past year's work in Division V. Aside from the grading under way on the San Simeon-Carmel highway along the ocean, no great amount of heavy construction has been done in the division during 1923.

Blake and Heaney have nearly completed the highway grade from the Monterey County line north to Salmon Creek, along the ocean front north of San Simeon. And in northern Monterey County, George Pollock, contractor, is working southward from the Big Sur River toward Anderson Canyon, 13.1 miles. Power shovels are busy night and day in dangerous and heavy construction hundreds of feet above the foaming breakers.

On the Santa Maria-Kern County lateral, 11.13 miles have been graded and graveled, and, in addition, 6.1 miles to Buckhorn Creek have been graded by the Warren Construction Company and are now being surfaced with gravel. East of Buckhorn Creek, 16.3 miles are under construction by the Bureau of Public Roads as a Forest Highway Project.

SAN BENITO WORK COMPLETED.

In San Benito County, a unit of 7.64 miles, from Hollister northward toward the Pacheco Pass road, has just been

completed and presents a fine appearance. The first 3½ miles out of Hollister are asphalt macadam and the remainder gravel surfaced. Granite Construction Company, contractors.

A three-mile unit from San Juan to Chittenden, on the road to Watsonville, is under construction, making a connection with the Santa Cruz County highway system. The surface will be water-bound macadam. Granite Construction Company, contractors.

Widening in the cuts north of Santa Barbara is providing better drainage and improves the appearance of the highway. A power shovel is being used effectively.

Maintenance work is just beginning on the mountain laterals and eight separate crews have been organized in the division, each under the direction of a foreman, to care for ordinary maintenance.

DIVISION VI.

HEADQUARTERS, FRESNO.

J. B. WOODSON, DIVISION ENGINEER

Counties of Fresno, Madera, Merced, Mariposa, Kings, Tulare, and Kern, north of the Tehachapi.

WORK on the last unit of the magnificent water grade highway through the beautiful Merced River Canyon into Yosemite Valley, which will make the national park accessible to motor travel at all seasons of the year, is now under way under the direction of the engineers of Division VI. For the first time in the history of the division, convict labor is being used on the Yosemite lateral.



J. B. WOODSON

A camp has been established at Briceburg and two steam shovels are in operation.

WORK COMPLETED DURING 1923.

The following projects were completed in Division VI during 1923:

Sierra National Forest boundary to Briceburg, Mariposa County, 5.69 miles, grading and culverts. F. Rolandi, contractor.

Junction Pumping Station to Hart, Cholame Pass road, Kern County, 20.18 miles asphalt macadam and partial surfacing of the old county pavement. Kaiser Paving Company, contractors.

From San Luis Creek to Los Banos, Merced County, 12.25 miles of concrete pavement on the Pacheco Pass, completed by Blanco and Taylor, contractors.

Surfacing with gravel of 3½ miles of

mountain portion of the Pacheco Pass lateral, Merced County, by state forces.

From the westerly boundary of Merced County to San Luis Creek, Pacheco road, Merced County, 3.39 miles of grading and 5.10 miles of concrete paving. Pacific Construction Company, contractors.

From west of Maricopa to Maricopa, in Kern County, 2.71 miles of asphalt macadam. C. B. Christensen, contractor.

Asphalt macadam surfacing through towns of Tipton, Arwater, and Livingston on the main line through the San Joaquin Valley. Valley Paving Company, contractors.

WORK UNDER WAY.

In addition to the work starting on the Yosemite lateral, already mentioned, the following work is under way in Division VI:

Junction Pumping Station to San Luis Obispo County line, in western Kern County, 15½ miles of grading through the Cholame Pass by state and county forces. When completed this will provide a cross lateral road to Paso Robles, on the Coast highway.

Three Rivers to Sequoia National Park boundary, eastern Tulare County, 6 miles of grading and rock surfacing to connect with the government road, providing an improved means of travel into the Giant Forest and other park attractions. Nevada Contracting Company, contractors.

From Cottonwood Creek to the first crossing of the Kern River, 8.6 miles of grading in eastern Kern County, comprising the first unit of the Bakersfield-Walker Pass route. When this, and the adjoining section to Democrat Springs, are completed a new and improved highway will be provided into Kern River Valley and the towns of Isabella, Kernville, Weldon, and Onyx, and trans-Sierra points. W. S. Mead, contractor.

Parkfield Junction to Coalinga, 8.9 miles of grading in western Fresno County. This is the first unit west of Coalinga on the "Sierra to the Sea" highway. The location eliminates twelve crossings of Waltham Creek and two railroad grade crossings. C. Miles, contractor.

From the Merced-Madera County line to Califa, in western Madera County, approximately 15 miles of asphalt macadam paving. This is the extreme easterly section of the Pacheco Pass highway, and is the last unit of the road to be improved. R. T. Shea, contractor.

The work on both the Coalinga and the Pacheco Pass laterals was scheduled for completion about January 1, 1924.

DIVISION VII.

HEADQUARTERS, LOS ANGELES.

S. V. CORTELYOU,

ACTING DIVISION ENGINEER.

Counties of Los Angeles, Ventura, Orange, San Diego, and eastern Kern, south of Mojave.

WIDENING of sections of the congested state highways in this district, completion of plans for additional work along this line, and the finishing of the paving of important sections of San Bernardino-El Centro highway are among the important accomplishments of Division VII during 1923.

The ever increasing traffic over the state highways radiating from Los Angeles makes wider and thicker pavements imperative.

REVIEW OF 1923.

The following is a brief review of the work completed in the division during the year:

Through the city of Occanside, 1.41 miles of concrete pavement, surfaced with asphalt.

In Orange County, from the easterly boundary to San Juan Creek, 9.45 miles. Old pavement widened and thickened, partly with second story concrete and partly asphalt surfacing and concrete shoulders. George H. Oswald, contractor.

Concrete shoulders and asphalt resurfacing for a distance of 13.12 miles in the vicinity of Saugus, Los Angeles County. Sam Hunter, contractor.

Quail Lake to northerly boundary, Los Angeles County, 3.4 miles of second story concrete and 6.9 miles widened with asphalt concrete surfacing over old pavement. Southwest Paving Company, contractors. A contract was awarded December 17th to Williams and Singletary of Colton for widening, draining and otherwise improving this same unit.

A new concrete bridge across Newhall Creek, in Los Angeles County, was constructed by W. M. Ledbetter, contractor, and the approaches paved by a maintenance crew.

NEW SAN GABRIEL BRIDGE.

Electrical power for mixing and distributing concrete contributed to the rapidity with which the San Gabriel River bridge, in Los Angeles County, was constructed by D. A. Foley and Company. The length of the bridge is 1005 feet. The approaches were paved by W. D. McCray, contractor.

In Riverside County, paving of three units of the main trunk line was completed during the year as follows:

Banning to Whitewater, 12.54 miles of concrete base. Lee Moor Contracting Company, contractors.

Whitewater to Edom, 18.06 miles of reinforced concrete base. Henry J. Kaiser, contractor.

Edom to Indio, 12.26 miles, graded and paved with asphaltic concrete by the Warren Construction Company.

In Imperial County, two miles graded and paved with concrete between Imperial and El Centro.

Another unit in Imperial County, between East Highline Canal and the new County Well, was paved with Willite by George H. Oswald, contractor.

PROGRESS ON COAST ROAD.

The Hauser Construction Company is making progress with a seventy-ton steam shovel which has now reached Black Point on the Oxnard-San Juan Capistrano road. A second shovel is cleaning up on the westerly end of the contract while four more shovels are on the way from Hawaii to be used on this job. Ventura County has let a contract for the building of a concrete bridge across Calleguas Creek.

The concrete pavement between Las Flores Canyon and Santa Monica, 7.39 miles, which was built by the Lee Moor Contracting Company, was opened to traffic in June, except for two detours around bridge sites.

Los Angeles County has completed construction of two bridges over the west arm of Alamitos Bay and the San Gabriel River on the Coast highway.

Jahn and Bressi of Los Angeles were the low bidders on December 10th for the widening and repaving of the existing state highway between San Diego and Oceanside, in San Diego County.

Location surveys for 8.44 miles of highway from Laguna Beach to San Juan Capistrano have been completed and plans are being prepared.

PLAN SCENIC FOREST HIGHWAY.

The State Highway Commission and Los Angeles County each has agreed to contribute \$150,000 a year for two years for work on the Arroyo Seco-Mount Islip highway and application has been made for aid on this project from forest highway funds.

Paving of the approach to the bridge over Santa Clara River on the Mint Canyon highway, in Los Angeles County, is progressing rapidly. H. E. Cox of Pasadena is the contractor. The Topango Canyon bridge, which is being built by Los Angeles County, is nearing completion.

COAST UNIT NEAR COMPLETION.

Paving is practically completed between Long Beach and Huntington Beach on the Coast highway. H. H. Peterson, contractor.

William Ledbetter is constructing a

bridge for Orange County over Anaheim Bay on this same route.

Considerable work has been done during the year and is under way in Division VII under maintenance work orders.

Drainage structures are being built between Workmen Mills and the San Gabriel River. Shoulders have been widened to 8 feet from Tustin to Culver Corner, in Los Angeles County.

SAN DIEGO SURFACING.

Considerable success is reported from the use of disintegrated granite as surfacing from Descanso Mountain to La Posta Creek, in San Diego County. Deposits of material have been located at several places along the road and material stockpiled and used when needed after rains.

A crew of forty men is completing the widening of the Mountain Springs grade, in San Diego County. A steam shovel, P and H crane and trucks are being used and the road has been kept open for traffic at all times.

Maintenance crews in Division VII during 1923 used 130,000 gallons of asphalt and over 14,000 tons of crushed rock. Twenty foremen with crews varying from three to eight men are employed, each crew having thirty to forty miles of highway to patrol.

DIVISION VIII.

HEADQUARTERS, SAN BERNARDINO.

E. Q. SULLIVAN,

ACTING DIVISION ENGINEER.

Counties of San Bernardino, Riverside, and Imperial.

THE newly-formed Division VIII is unique among the divisions of the State in that practically the entire mileage of the division forms a part of trans-continental highways. Approximately 80 per cent of the traffic over these roads is westward into the State and only about 20 per cent easterly.



E. Q. SULLIVAN

These routes are from Yuma through the Imperial Valley, branching at El Centro for San Diego and for Los Angeles via San Bernardino; from Needles westward through Barstow and Victorville; and from Blythe, on the Colorado River, to Mecca, on the Imperial-Los Angeles route.

Until recent weeks, work in the territory now covered by Division VIII was carried on under the direction of Division VII, headquarters, Los Angeles. Maintenance work on the Crest route, in San Bernardino County, was taken over by Division VIII, December 15th.

PAVING NEARING COMPLETION.

Paving between the High Line Canal and the beginning of the old Plank Road, in Imperial County, is nearing completion. An asphaltic concrete pavement five inches thick and fifteen feet wide is being placed. It will be a great relief to traffic through this district. George H. Oswald, contractor.

A contract has just been let to the Pioneer Transfer Company of Calexico for grading and surfacing with gravel the four miles from Westmoreland to the end of the present concrete highway in Imperial County. The road level will be raised to avoid flooding during the irrigating season.

Foundations and piers for the new bridge across Whitewater Wash, ten miles east of Banning, are nearing completion. Forms for the superstructure for two of the spans are in place. Peculiar conditions regarding the water level at different points where excavations were necessary have been encountered. Gibbons and Reed, contractors.

The paved city streets of Banning will be connected with the state highway system when the placing of .6 of a mile of asphalt concrete, six inches thick and twenty feet wide, is completed by the Southwest Paving Company which was recently awarded the contract. Culverts have been placed by state forces.

WORK COMMENDED.

The department has received commendation for the work being done on the Crest route where state forces are at work above the 5000-foot elevation with a P and H gasoline shovel. The work consists of widening and improving the grade on the route to many popular mountain resorts.

It is proposed to establish five permanent maintenance camps on the Victorville to Needles highway, recently taken over by the State for maintenance. A superintendent for this work is now located at Newberry Springs. A part of his equipment will consist of a 60-horsepower tractor and a grader with scarifier attachments.

It is probable that an entirely new grade will be established on a new location throughout much of the line.

26,500 Miles of Federal Aid Road Completed.—A total of 26,536 miles of federal aid roads was completed by June 30, 1923, according to the United States Department of Agriculture. Some 8820 miles of federal aid highways of different types were constructed during the fiscal year ending on that date. The projects under construction at the close of the year totaled 14,772 miles and were estimated as 55 per cent complete.

STATE OF CALIFORNIA
 CALIFORNIA HIGHWAY COMMISSION
 MAP SHOWING
 STATE HIGHWAY SYSTEM

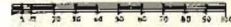
R. M. MORTON - STATE HIGHWAY ENGINEER
 COMMISSIONERS

HARVEY M. TOY (Chairman)

LOUIS EVERDING

N. T. EDWARDS

Statute Miles



1924

LEGEND

- Pavement completed or under contract
- Grading completed or under contract
- Authorized but not taken over by State
- Division Boundaries



DIVISION HEADQUARTERS

Division No.	Situation
I	Willits
II	Dunsmuir
III	Sacramento
IV	San Francisco
V	San Luis Obispo
VI	Fresno
VII	Los Angeles
VIII	San Bernardino
IX	Bishop
X	Sacramento

Map showing progress of paving and other improvements on the California state highway system, and also boundary lines of newly-created divisions.