

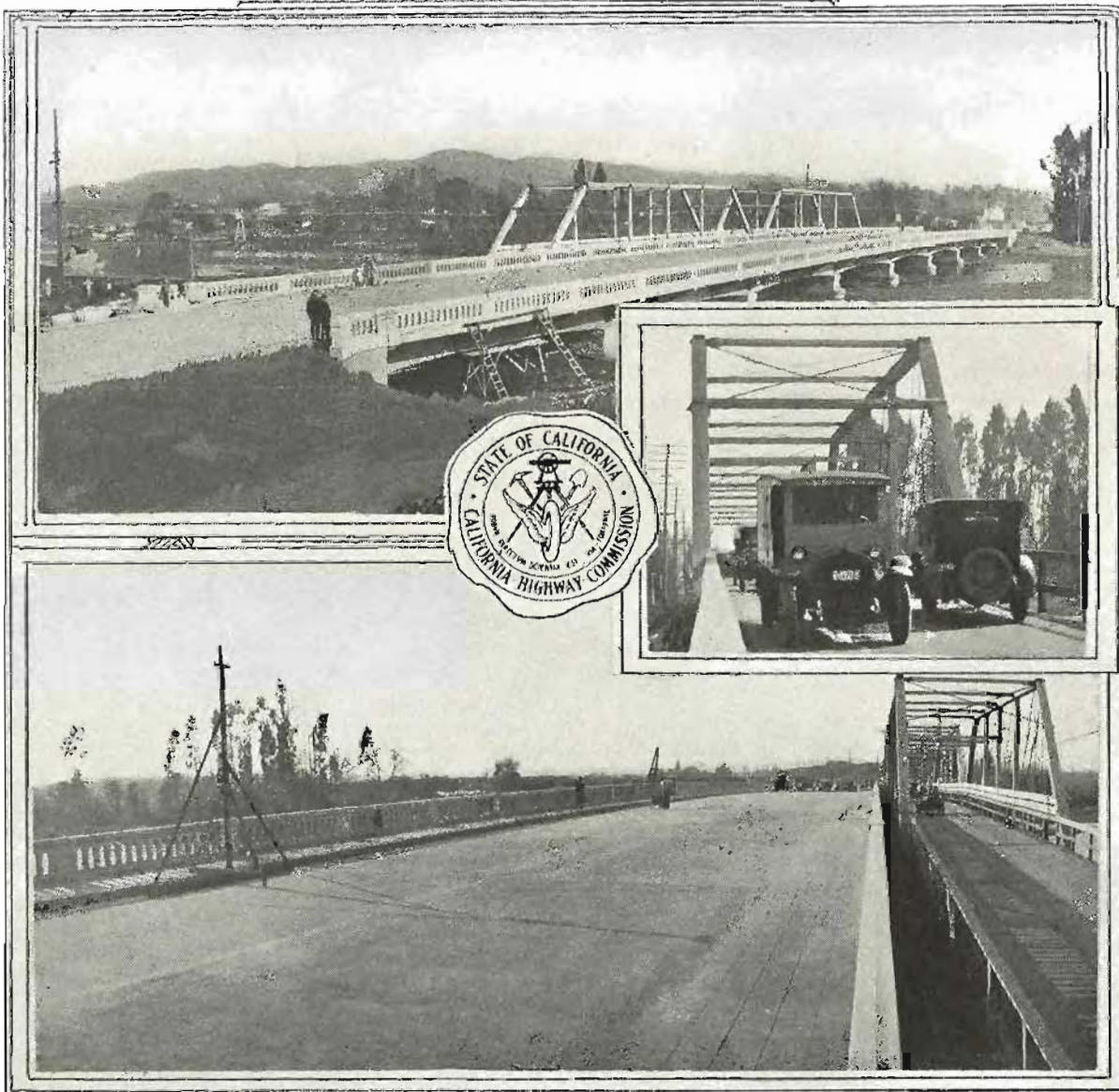
# CALIFORNIA HIGHWAYS

A BULLETIN ISSUED BY THE CALIFORNIA HIGHWAY COMMISSION FOR THE  
INFORMATION OF ITS EMPLOYEES AND THE PUBLIC

Vol. 3

MARCH, 1926

No. 3



OLD AND NEW AT SAN GABRIEL RIVER—New state bridge on the highway between Los Angeles and Whittier is now open to the public. It has a clear roadway width of forty feet and, in addition, a five-foot sidewalk on either side. The new bridge, the widest on the state system, takes the place of the congested wooden structure built by the county and shown in the inset. The gasoline tax provided funds for this project. (Photos by Bridge Department.) (See description on page five.)

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# CALIFORNIA HIGHWAYS

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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 or to loan cuts, and this privilege is extended newspapers and periodicals without restrictions.

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

Vol. 3 MARCH, 1926. No. 3

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## FEDERAL AID FOR ROADS NOT CHARITY

(From the San Bernardino Sun.)

CALIFORNIA has been apportioned \$2,484,706 in federal aid money for highways and perhaps there will be a new outcry from the eastern states that such a large sum of money is to be expended by the government in the far west.

This money is not charity from the government, as the situation is viewed through California eyes, for the United States government owns a vast domain of not less than 20,000,000 acres of land, exclusive of worthless desert, in California. On this vast holding of property there can be no tax levy by the state or any county, school district, or road district. The other property of the state must pay the taxes for the upkeep of this federal land.

In San Bernardino County there is mile after mile of open government land on each side of the transcontinental highways. There is no way to raise adequate funds for highway work in these sections of San Bernardino County, and to relieve the situation California has taken over the building and maintenance of all the transcontinental highways in San Bernardino County, but the only way that the state can properly, or rather even meagerly finance operations on these roads, is from the federal aid funds.

The manner in which the California Highway Commission protested the original suggestion that federal aid be abandoned is known to have aided in the change of sentiment in Washington.

#### Three Billions For Fun.

Begin now to save money for next summer's vacation. A line-up of government figures leads to a reasonable conclusion that the American people spend about \$3,000,000,000 a year for vacations. That's perhaps five per cent of our national income--a nickel wind-up for a 95-cent run.

The country has liberated itself from the conviction that the secret of success is ten hours a day, six days a week, fifty-two weeks a year. The nation was chopped out of the woods and shoved over the mountains under that formula, but that was another day and another way.

The average vacation is two weeks, time enough to find out how a man three states away plants his corn, regulates motor traffic and catches fish; time enough to find out that there's a national mind, a national ambition and a national struggle. It is the best safeguard the country has against sectionalism and provincial content. It's cheap at \$3,000,000,000.—*Collier's Weekly*.

## RECORD FOR 1925 SHOWS REMARKABLE INCREASE IN STRENGTH OF CALIFORNIA PAVEMENTS

By EARL WITHYCOMBE, Assistant Engineer, Construction Department.

**C**ONSTRUCTION Department records conclusively show that the strength of Portland cement concrete pavements laid by the California Highway Commission has been constantly improving, and, furthermore, that all types are becoming smoother and easier riding.

The average strength of the Portland cement concrete pavements has in 1925 increased 40 per cent over that obtained in 1924, and as much as 55 per cent over the average of former years. Expressing it in another way and considering the value of the pavement on a compressive strength basis, the six-inch slab cast during 1925 is the equivalent of eight and one-half inches of the 1924 concrete. The result is all the more remarkable when we consider that it was obtained without any increased cost to the state.

More attention than ever before is being paid to the scientific proportioning of mixtures going into all types of pavements, and this feature, combined with painstaking attention to details of mixing and placing, is reflected in a better quality product and a smoother riding surface.

### Portland Cement Concrete.

The earnest and conscientious efforts of the field men are largely responsible for the splendid record of the past year. They have industriously adhere to the methods of design, control, and manipulation of mixtures to give a maximum strength concrete with reasonable workability, as worked out by C. S. Pope, construction engineer, and C. L. McKesson, materials and research engineer. To the field men, primarily, and to cooperating contractors, credit is given for the results obtained. The efforts of the department are now being directed to securing better uniformity and more careful workmanship as regards finish of surface, placing of joints and other details.

### How Strength is Determined.

Strength of concrete is determined by crushing specimens 6 inches in diameter by 12 inches in height, cast in the field from the mix as it is deposited upon the subgrade. These casts are cured on the job and shipped to the laboratory in time to be broken in the testing machine at the proper interval. Casts for

both ten- and twenty-eight-day breaks are taken during the early part of the job. The former are discontinued after ten specimens have been submitted and the twenty-eight-day specimens are regularly cast until the job is finished. Each specimen as a rule represents approximately 250 cubic yards of concrete on a twenty-foot width paving job but smaller yardages are represented on narrower pavements and shoulder work.

The ten-day breaks are an early indicator of the strengths to be expected and the twenty-eight-day breaks are accepted as the true indicator of the ultimate strength.

In addition to the specimens submitted during construction, test cores about 4½ inches in diameter are drilled from the completed pavement as the department may direct.

### Strength of Portland Cement Concrete.

Compressive strength of Portland cement concrete is recorded as the load required in pounds per square inch to rupture the test cylinders or cores.

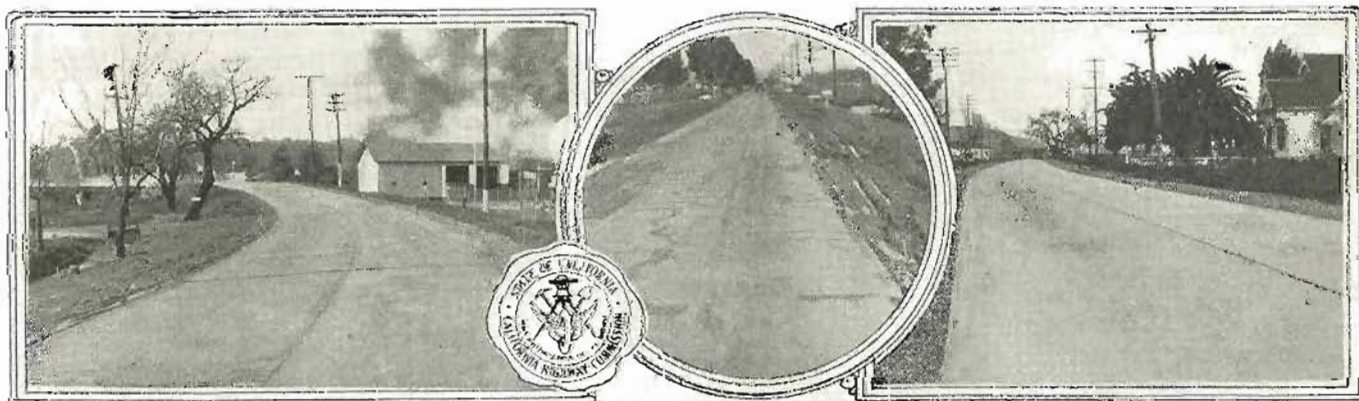
The average strength of the individual cement concrete pavements constructed in 1925 ranged from 3427 to 5109 pounds per square inch. The general average for the year was 4311 pounds. The average for the year 1924 was 3151 pounds. Individual jobs varied from 2662 to 3950 pounds per square inch. Portland cement concrete shoulder widening ranged from 3370 to 4220 pounds per square inch during 1925, and from 3310 to 4220 pounds in 1924.

The difference in strength between full width pavement and shoulder concrete is due largely to the fact that in the latter a more plastic mix is required because the narrow width necessitates hand tamping and, furthermore, on shoulder work central mixing plants are generally used.

### Daily Reports Required.

Daily reports of the mixtures used, grading of the aggregate, proportion of water and yield of concrete in place are submitted by the resident engineers. The department in this way is kept in close touch with the work during construction.

(Continued on next page.)



CALIFORNIA'S STRONG PAVEMENT—Left and right, sections of new pavement on the Redwood highway near Healdsburg, Sonoma County, Division IV, the compressive strength of which averaged 5109 lbs. per square inch at twenty-eight days. Center, typical section of the old fifteen-foot pavement widened and thickened by the new slab which has a width of twenty feet. (See table on page five.)

## STRENGTH OF CALIFORNIA PAVEMENTS SHOWS INCREASE

(Continued from page 3.)

Field inspections are made at frequent intervals during construction by representatives of the Construction Department, who make personal checks of the gradings and proportioning of aggregates. Subsequent inspections are made of the project at yearly intervals to better judge the suitability of the type and design of the individual pavement under known traffic conditions. These inspections consist of a vialog record of the project, a crack survey and the noting of individual items of interest. Rate of smoothness from the vialog record indicates the resistance of the pavement and its foundation to displacement. The crack survey establishes the normal interval between cracks and indicates the value of designed joints in preventing injury to the pavement from expansion or contraction.

### Asphaltic Pavements.

As yet no satisfactory test has been applied to asphaltic mixtures to show their comparative ability to resist displacement. In warm weather pavements of this type tend to fail under traffic by pushing or rolling, and, when the temperature is low, by cracking or disintegrating. During the past several years, the department has, by careful study and observation of its own work, come to several definite conclusions regarding the satisfactory performance of asphaltic mixture, which, in full or in part, check the claims of individual investigators.

The most important points are the proper proportions of asphaltic cement, amount and character of very fine material, and the proper grading of the aggregate to produce a mixture of maximum density.

### Testing of Asphaltic Pavements.

A sample of the uncompressed mixture as it leaves the plant, two sample tins of the asphaltic cement used, and a sample of the rolled and completed pavement are secured daily, and submitted to the laboratory. The uncompressed sample is used to determine the amount of asphaltic cement present and the grading of the aggregate. The daily samples of the asphaltic cement are used as a check on the quality of cement previously sampled in bulk. The compressed sample is used to determine the specific gravity of the finished pavement and when compared with the relative gravity of the individual aggregates denotes the density of the finished product. These laboratory results are reported back as quickly as possible to the resident engineers for their guidance.

Reports of the mixtures used and grading of the individual aggregates are submitted on a daily report to the department by the resident engineer.

Field inspections are made by representatives of the Construction Department at regular intervals and a personal check made of the materials, proportioning and handling of the mixtures.

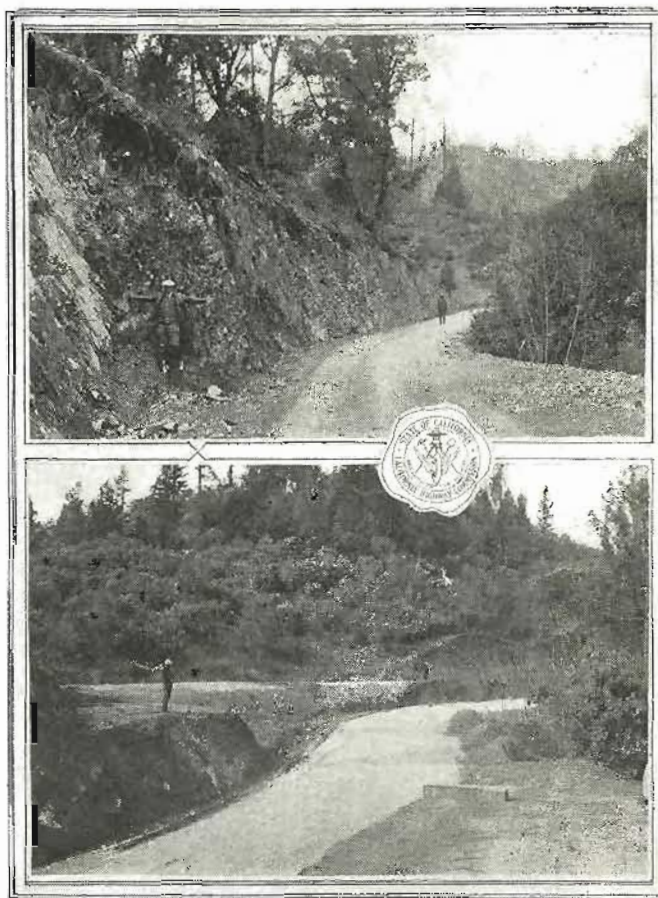
### Vialog Records.

As a method of comparing the riding qualities of pavements, the vialog has proven an invaluable aid to the department. It is stimulating interest among contractors as well as engineers in the effort to secure smooth pavements. Smoothness is not only a welcome convenience to the traveling public, but is also of vital importance to the life of a pavement. *Smoothness eliminates impact, which is the greatest enemy of any type of pavement.*

Portland cement concrete pavements constructed in 1925 ranged from 6.4 to 43.0 inches of roughness per mile. The general average was 14.3 inches.

Asphaltic concrete pavements constructed in 1925 ranged from 18.9 to 90.6 inches of roughness per mile with a general average of 33.2 inches.

The general average of all pavements constructed in 1925 was



STRAIGHTENING THE PACIFIC HIGHWAY—Graphic views of reconstruction work recently completed in the Sacramento canyon, north of Redding. *Above*, position of the engineer indicates width of cut back into the bank. This material is used to widen the outer shoulder. *Below*, a line and grade change, old road at the left.

## AN ENGINEER'S JOB

HIGHWAY location is not a function of the state legislature in the opinion of Governor Smith of New York state. In giving his approval to a legislative bill increasing the state road system by some 2400 miles he stated that the system was apparently as perfect as could be secured by the existing method. He added: "Laying out highway routes I do not believe to be a legislative function. It is an engineering problem and while it remains a legislative one we will never be able to resist the tendency to lay-out new routes as a result of log-rolling projects in the legislature not strictly destined to improve the state highway system but rather to promote the interest of some localities."

18.8 inches as compared with a record of 22.2 inches per mile for 1924.

Where constructed shoulders were of sufficient width to carry a vehicle a vialog record was taken and included in the general average.

(See table on page five.)

The road is the physical sign or symbol by which you will best understand any age or people. If they have no roads, they are savages; for the road is a creation of man and type of civilized society. If you wish to know whether society is stagnant, learning-scholastic, religion a dead formality, you may learn something by going into universities and libraries, something also that is being done on cathedrals or churches or in them, but quite as much by looking at the roads, for if there is any motion in society, the road, which is the symbol of motion, will indicate the fact.—Bushnell.

# New Bridge Completed on Historic Whittier Boulevard

ON THE road that has continued through the years, from the period of Spanish exploration to the days of state highways, the great traveled route from Los Angeles southward, the California Highway Commission has completed one of the most magnificent structures on the state highway system—the new reinforced concrete bridge across San Gabriel River on the Whittier Boulevard, Los Angeles County. Views of the bridge are shown on the front cover.

Average traffic on this route at the Los Angeles city limits, not far away, often is in excess of 20,000 vehicles per day, making it one of the heaviest traveled of all state highway routes. It seems incredible that this great volume of traffic was able to squeeze through the narrow county-built bridge erected several decades ago. It was not possible without aggravating delays and serious accidents, as great volumes of food stuffs are trucked into Los Angeles over this route.

### Part of Widening Project.

Widening of the pavement on the Whittier road to fifty-six feet,

a program inaugurated by the Commission in 1924, made construction of a new bridge imperative. The new structure, which was built alongside of the existing bridge so as to interfere as little as possible with traffic, is now completed and open to travel.

In many respects its standards are the highest of any bridge on the state highway system. Its clear roadway of forty feet is in excess of the width of any existing bridge on the state highway. In addition, it has two six-foot sidewalks for pedestrians. The bridge consists of eight fifty-four-foot spans, making its total length 432 feet. Three thousand cubic yards of concrete went into its building together with 400,000 pounds of reinforcing steel.

Charles and F. W. Steffgen of San Diego were the contractors and the cost was approximately \$95,000, a charge against the gasoline tax reconstruction fund. C. W. Jones and A. S. Kennedy were resident engineers for the bridge department, which had charge of the project.

The bridge was formally dedicated and opened to traffic by co-eds from Whittier College before a large gathering of officials and citizens of the East Side district together with representatives of the Highway Commission.

### Good Roads Versus Sin.

The author of a recent treatise on the economic cost of sin to the United States estimates it at \$13,000,000,000 a year, certainly a startling sum.

The Bureau of Public Roads at Washington says that the current year will witness the construction of 24,000 miles of improved highways in the United States at a cost of more than a

billion dollars. A billion dollars for roads, large as it is, is small compared with the annual waste of \$13,000,000,000 for forms of self-gratification, described as sin.

"The wages of sin is death," according to high authority, but good roads lead to economic efficiency and joy and prosperity that will endure. How would it do to cut a billion dollars off the sin appropriation during the new year and build 48,000 miles of improved highways in 1926?—*The Earth Mover*.

## California Highway Commission—1925 Paving Projects

Division	County	Route	Section	Contract No.	Contractor	Resident Engineer	Ave. strength of concrete at 28 days, lbs. per sq. in.	Vialok index of roughness, inches per mile	Ave. interval of designed joints, feet	Ave. interval of joints and cracks, feet	Ave. variation in cement used per day, per cent	Ave. yardage or tonnage and per day
<b>PORTLAND CEMENT CONCRETE PAVEMENTS.</b>												
I	Humboldt	1	H	444	J. F. Knapp	H. C. Ingle	4,980	11.7	33.3	31.3	2.2	183
II	Tehama	7	A	472	E. A. Burns	R. A. Tremper	4,053	20.7	47.4	45.6	2.1	48
III	Sacramento	3	B	M-98	Kaiser Paving Co.	F. R. Baker	3,427	43.0	88.0	70.5	2.4	80
IV	Sonoma	1	B	M-90	J. V. Galbraith	G. Wade-M. C. Fosgate	5,109	29.5	87.0	55.0	2.1	201
VI	Merced	4	C-D	M-84	H. H. Peterson	P. L. Wilcox	4,070	11.7	91.5	40.0	1.5	171
VII	Orange	2	A	M-74	Jahn and Bressi	C. N. Ainley	3,710	12.0	87.6	69.2	1.9	224
VIII	San Diego	2	D	M-83	R. A. Watson	W. D. Eaton	3,653	6.4	92.6	82.2	2.4	167
VIII	San Bernardino-Riverside	26	B-A	458	Basch Bros.	R. L. Young	4,200	10.0	100.0	40.8	0.6	250
VIII	San Bernardino	28	A	M-81	Basch Bros.	R. L. Young	3,514	9.9	97.3	63.5	1.3	229
X	San Joaquin	4	A-B	M-65	J. F. Knapp	C. M. Butts-C. W. Springer	4,490	10.5	80.6	61.2	1.1	224
<b>PORTLAND CEMENT CONCRETE SHOULDERS.</b>												
*IV	San Mateo	2	A	M-78	Federal Paving Co.	R. E. Messner	4,220	27.9			1.5	187
V	Santa Barbara	2	J	M-72	Cornwall Construction Co.	E. B. Brown	3,580	17.9			1.7	105
*VI	Presno	4	C	M-69	Stewart and Bland	W. K. Reed-H. O. Ragan	3,370				1.5	76
*X	Yolo	6-7	A	M-62	Kaiser Paving Co.	F. C. Hewitt	3,550	33.9			1.9	105
<b>ASPHALTIC CONCRETE PAVEMENTS.</b>												
III	Butte	47	A	451	Chico Contracting Co.	F. R. Baker		90.6				129
IV	San Mateo	2	A	M-78	Federal Paving Co.	R. E. Messner		24.7				196
V	Santa Barbara	2	J	M-72	Cornwall Construction Co.	E. B. Brown		27.2				173
VI	Kern	4	D	M-82	Federal Paving Co.	H. O. Ragan		18.9				319
X	Sacramento	4	B	M-100	A. Teichert and Son	A. Wallace		24.4				286
X	Yolo	7	A	DM-60	Force and Currihan	C. M. Butts		50.7				220
X	Sacramento	53	A	DM-81	Valley Paving Co.	C. M. Butts		56.3				178

\*Central Mix.

## Chart Presentation of Elements Affecting Concrete Construction

By C. S. POPE, Construction Engineer.

THE following charts have been prepared for use of resident engineers and others with a view to predicting results which may be expected on different phases of concrete construction.

The data have been assembled from various sources which seem dependable but principal reliance has been placed on material available at this time from our own laboratory.

In common with all such generalizations, individual cases, due to the very numerous causes which may affect the results of tests of concrete materials may be expected from time to time to show results at considerable variance with the findings of these charts.

Application of common sense and discrimination in their interpretation, however, will enable engineers to recognize the influence of these various factors and will make the charts of great value to those who have occasion to use them, and who properly interpret the data furnished by them.

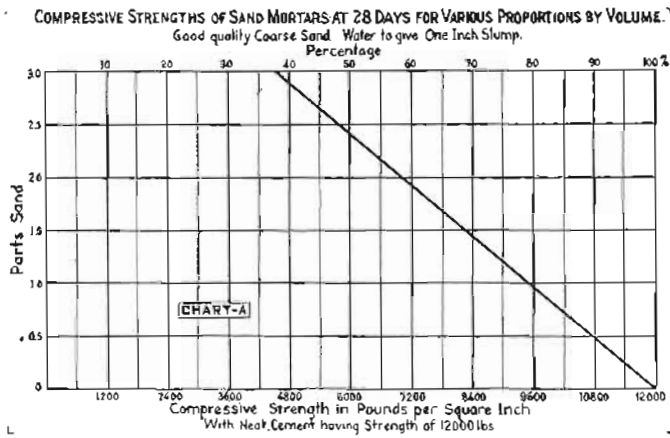
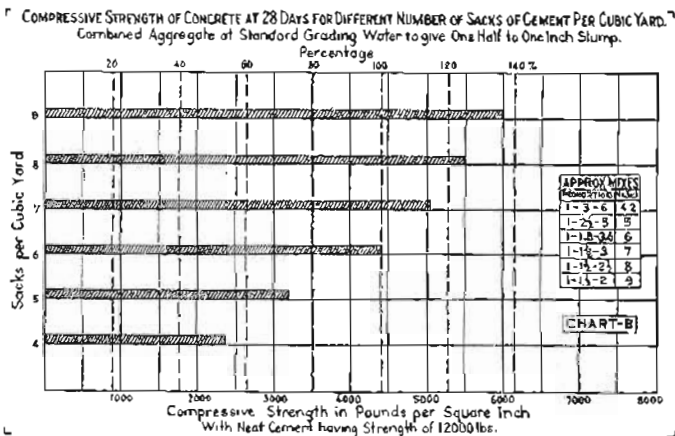


CHART A. This chart gives compressive strengths of sand mortars of various proportions. The strengths are given in percentages of compressive strength of neat cement. A cement having a compressive strength, neat, of 12,000 lbs. per square inch at 28 days is assumed as 100% and all values given are prorated on the basis of the use of this cement in the varying proportions required.



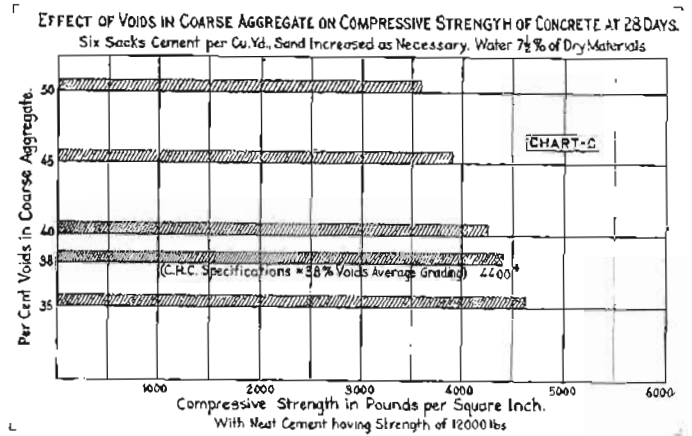
### Sand Assumed Structurally Sound.

The strength ratio shown assumes a sand which is structurally sound. A sand which is structurally weak will show higher strength ratios with a cement having a low neat strength than

with a cement having a high neat strength. The stronger cement brings out the weakness of the sand and the strength ratio for such a material would not be a straight line in the graph shown.

Sixty per cent is probably a conservative figure to use in estimating the probable strength of field concrete based on mortar strengths, the ratio of sand to cement in both concrete and mortar being the same.

CHART B. This chart shows compressive strength of concrete with varying cement content. The compressive strength is shown in pounds per square inch based on first-class aggregate,



and cement testing neat at 12,000 pounds per square inch at 28 days. The concrete is assumed to have a ½- to 1-inch slump, the water varying slightly as required by its aggregate.

CHART C. This chart shows the effect of voids in coarse aggregate on compressive strength. The graph is particularly valuable and is shown both in percentages and in pounds per square inch. The effect of excess voids in the coarse aggregate is, of course, to require the addition of more sand to maintain workability with a corresponding decrease in compressive strength of the concrete.

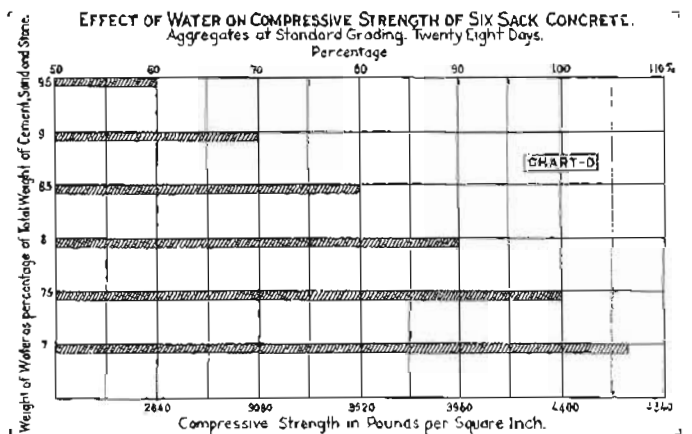
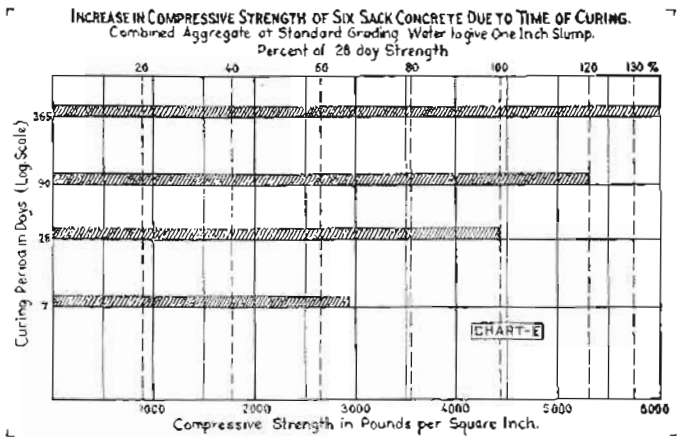


CHART D. This table shows effect of water on compressive strength and is founded on tests in our own laboratory, on tests in Bulletin No. 58 of the Bureau of Standards, and on tests by Prof. Abrams.

CHART E. This chart shows increase in compressive strength with increased time of curing. The values shown will

vary more with conditions than those given in other tables. In this instance the values are based on mean temperatures of 70° or higher. Lower temperatures will retard curing time.



### MAINTENANCE CREW COMMENDED BY USER OF HIGHWAY

**B**Y THE establishment of a system of maintenance stations throughout the state, quick action is possible whenever an emergency arises at any point on the state highway system. This fact was demonstrated recently when crews of Division VI made repairs on the Cholame lateral following severe storms in that section. The work was so well done that it elicited the following comment in a letter from a user of the highway:

SAN JOAQUIN LIGHT & POWER CORPORATION.

Fresno, California.

March 15, 1926.

Mr. J. B. Woodson,  
Highway Commission Engineer,  
Rowell Building,  
Fresno, California.  
Dear Mr. Woodson:

On last Friday, I was traveling between Paso Robles and Bakersfield, and when I arrived at the foot of the Cholame grade, some trouble developed in the motor of my automobile, and it was necessary for me to progress very slowly until I arrived at Lost Hills.

While moving along at this very slow rate of speed, I was well able to observe the excellent condition of the road, and was much impressed with the work accomplished by your local crew, in so short a time after the severe storm in that area.

I thought it proper that the evident efficiency of that particular crew be called to your attention.

Very truly yours,

A. M. FROST,  
Manager of Sales.  
By (Signed) M. P. LOHSE.

Father (to daughter after examining her expense account):  
"Do you think silk stockings are absolutely necessary?"  
Daughter. "Certainly, up to a certain point"

Lecturer—"Now for a few minutes, ladies and gentlemen, we shall consider the fundamental principle of architecture. The Tuscans—"

Voice from the rear—"How d'y'e build a doghouse?"

Lecturer (promptly)—"Do you contemplate moving, sir?"—

Boston Transcript.

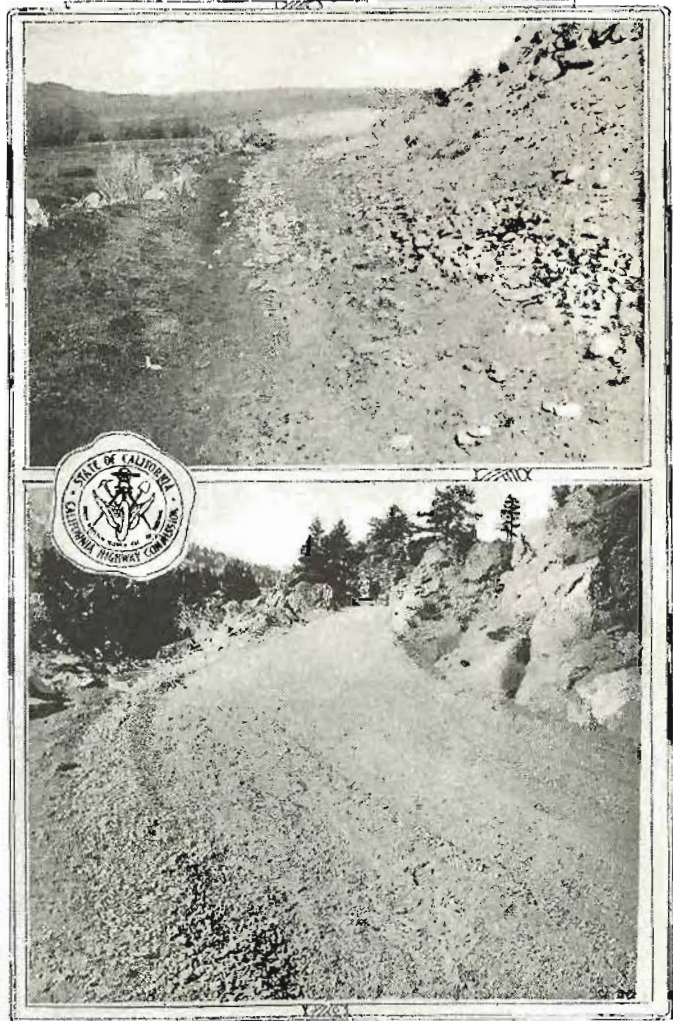
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### HOUSE COMMITTEE FAVORABLE TO NEW FEDERAL AID BILL

**T**HE Dowell bill authorizing federal aid appropriations of \$80,000,000 for each of the fiscal years 1928 and 1929 was favorably reported to the House of Representatives by the Committee on Ways and Means supported by the Committee on Roads. The prompt action of the committee is gratifying to friends of federal aid throughout the country. It must be supported in its action. With this in mind, there is published below for the benefit of the civic organizations of the state the entire membership of Committee on Roads which has the legislation in charge

C. C. Dowell, Iowa, chairman; J. M. Robison, Kentucky; Clarence MacGregory, New York; Charles Brand, Ohio; J. J. Manlove, Missouri; Don B. Colton, Utah; W. H. Sproul, Kansas; W. P. Holaday, Illinois; H. L. Bowles, Massachusetts; J. L. Hooper, Michigan; C. J. Esterly, E. N. Carpenter, Pennsylvania; J. M. Nelson, Wisconsin; E. B. Almon, Alabama; W. J. Sears, Florida; C. B. Hudspath, Texas; Frank Gardner, Indiana; Clarence Cannon, Missouri; G. C. Peery, Virginia; Elmer Thomas, Oklahoma; R. E. Kemp, Louisiana.

There is little opposition to the federal aid appropriation in the house; it is in the senate that the friends of federal aid must muster their forces. Every friendly senator must be urged to stand firm when the matter comes to an issue in the near future.



EAST OF THE SIERRA—Above, the old county road on the route of the state highway in Inyo County; below, the grade of the new state highway in the same vicinity, traffic conditions greatly improved. (Photos by Div. IX.)

## DOWELL SAYS FEDERAL AID SUPPORT NEVER MORE GENERAL

**S**UPPORT for appropriations for the continuation of construction of the federal aid system of highways was never more general than it is today. So declared Representative C. C. Dowell of Iowa, chairman of the Committee on Roads, in reporting favorably to the House of Representatives the pending bill authorizing appropriations for the fiscal years ending June 30, 1928, and June 30, 1929.

The report of Chairman Dowell is as follows:

"The Committee on Roads, to which was referred the bill H.R. 9504, begs leave to report it has had this legislation under consideration, has held extensive hearings thereon, and has directed me to report the same to the house with the recommendation that the same do pass.

This bill provides for an authorization of \$75,000,000 for the fiscal year ending June 30, 1928, and the sum of \$75,000,000 for the fiscal year ending June 30, 1929.

The bill also provides authorization in the sum of \$7,500,000 for forest roads and trails for the fiscal year ending June 30, 1928, and the sum of \$7,500,000 for the fiscal year ending June 30, 1929.

These authorizations are identical with the authorizations provided in the legislation enacted in the Sixty-eighth Congress except that the authorizations in the Sixty-eighth Congress provided for the fiscal years 1926 and 1927. The present bill extends this same authorization to the fiscal years 1928 and 1929.

The committee, in this report, is pleased to advise the house that never since the organization of this committee has there been such general support for this legislation. In fact, during the hearings there have been before the committee, favoring this legislation, representatives of the following organizations with duly authorized statements from their several organizations:

1. American Association of State Highway Officials.
2. American Automobile Association.
3. American Bakers Association.
4. American Farm Bureau Federation.
5. American Federation of Labor (by resolution filed).
6. National Grange.
7. American Road Builders Association (by resolution filed).
8. National Automobile Chamber of Commerce.
9. The Chamber of Commerce of the United States.

The Bureau of Roads and the Forest Service of the Department of Agriculture also appeared before the committee and gave very exhaustive statements concerning the handling of the federal funds, the condition of construction on the federal highway system, and the cooperation between the federal government and the several state highway departments, concerning the entire administration of the Federal Highway Act, including extensive investigations and research relative to the benefits derived from the federal highway system."

## FORETHOUGHT IN BRIDGE DESIGN PROVES A MONEY SAVER

(From the February Issue of Successful Methods.)

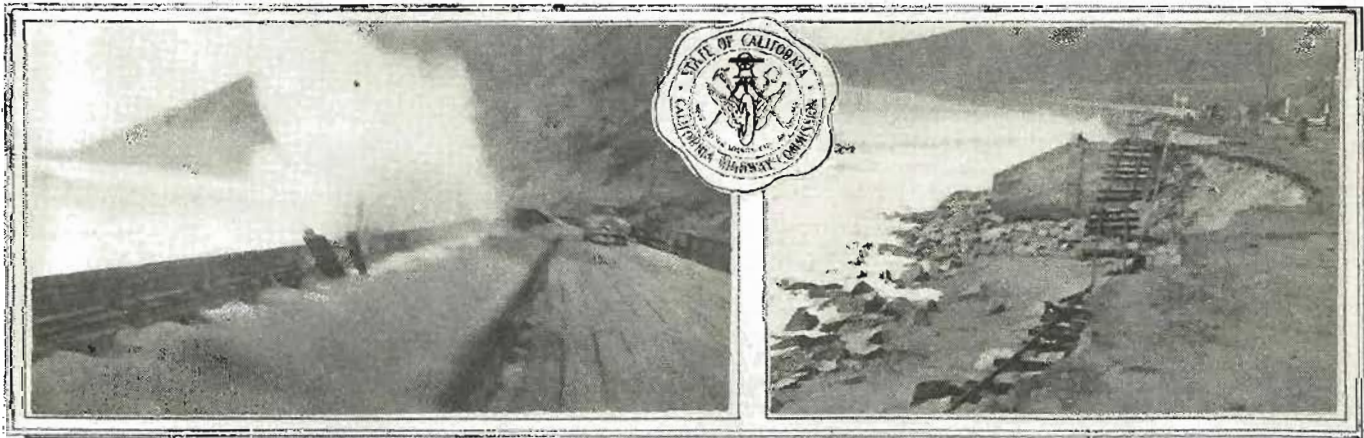
**T**HIS is the season of the year when the men in charge of bridge design in the various state highway departments have plenty of time to think up new types of bridges. Actual construction work is at a standstill in most states and they are free to devote their minds to devising ways of meeting the needs of their states so far as the construction of highway bridges is concerned.

A short while ago the California Highway Commission was planning a concrete bridge across Alamitos Bay and foreseeing the necessity of permitting a dredge to pass through the bridge at

some future time constructed the center span in such a way that it could be removed.

This forethought proved its value later on when the city of Long Beach decided to send a dredge up the bay in order to construct its recreation park. By harnessing the power of the tides through the use of a floating barge, the center span of the bridge, 46 feet long and 26 feet 10 inches wide, was removed in order to let the dredge pass through and then replaced.

As a result of this planning in constructing the removable span, the Highway Commission succeeded in moving and replacing the span at the small cost of \$500 and the entire job was done with such dispatch that the bridge was closed to traffic only five hours.



**SEAWALL EFFECTIVE AGAINST BATTERING OF WAVES**—Left, waves hurled fifty feet into the air after striking the new seawall on the Ventura coast during recent storm. It will be noted concave surface of wall has turned back bulk of the water. Right, damage done by storm on section unprotected by seawall. Track is contractor's industrial railroad. Seawall designed and under construction by Bridge Department.



## J. B. WOODSON RESIGNS POST AT FRESNO; HAS RECORD OF FOURTEEN YEARS SERVICE

WITH a record of more than fourteen years of faithful service to his credit, Division Engineer J. B. Woodson, of Division VI, headquarters Fresno, resigned his position with the highway department on March 19th, effective April 1st.

The resigning engineer is one of the "old timers" with the Commission, having entered the state service on January 1, 1912, the day the original engineering staff took office.



J. B. Woodson.

Mr. Woodson has held the position of division engineer at Fresno for the entire period of his service, during which he supervised the building of the original pavement through the San Joaquin Valley and the lateral roads extending east and west. His most important recent activity has been the planning of the new highway entrance to Yosemite Valley through the Merced canyon.

Maintenance has been one of Woodson's hobbies. He was one of the first to advocate a system of permanent maintenance stations with state-owned homes for maintenance foremen. This system has been extensively

developed in Division VI.

Mr. Woodson, it is understood, will enter private practice with headquarters in Los Angeles.

### Mr. Morton's Letter.

The resignation was officially accepted by Mr. Morton in the following letter:

March 22, 1926.

Mr. J. B. Woodson,  
Division Engineer,  
Fresno, California.

Dear Sir:

I have your letter of resignation dated March 19th, and wish you to know that it is with sincere regret that we receive confirmation of your previously expressed intention to leave the State Highway Commission's service.

Viewed from the angle of the headquarters office and from that of the Highway Commissioners themselves, your administration of the affairs of your division has always been most gratifying. Differences of opinion have seldom existed between you and this office, and when they have you have often convinced us that your position was right rather than ours.

You have the best wishes of the highway department in your new work. The Commissioners individually have all expressed regret that you have decided to leave.

With best wishes for your success in your new work, I remain

Very truly yours,  
(Signed) R. M. MORTON,  
State Highway Engineer.

## CALIFORNIA HIGHWAYS GOES TO ELEVEN FOREIGN COUNTRIES.

Copies of California Highways, the official bulletin of the California Highway Commission, are now being mailed to eleven foreign countries. In almost every instance the recipient is an engineer who has visited California to inspect highway construction and who has requested that he be sent the bulletin.

The list includes Australia, Italy, Canada, Chile, Egypt, England, Japan, Mexico, New Zealand, France, and Sweden.

Fond Mother: "Yes, Genevieve is studying French and algebra. Say 'Good Morning' to the lady in algebra, Genevieve."



NEW SECTION OF TAHOE-UKIAH ROUTE—Graded and surfaced highway west of Williams, Colusa County, Division III.

## TAXPAYER COMMENDS WORK

EMPLOYEES of the California Highway Commission are always glad to know that their efforts meet with the approval of the public, particularly taxpayers who furnish funds for building and maintenance of the highways.

Division III recently completed the construction of a section of the Tahoe-Ukiah state highway west of Williams, Colusa County. A large property owner of that section has forwarded the following comment to the division headquarters:

J. W. FORGEUS.  
Spring Valley Ranch.  
Williams, California.

February 20, 1926.

Mr. F. W. Haselwood,  
Sacramento, California.

Dear Sir:

I want to compliment you on the gravel highway leading west of Williams. I think I like it as well as any road in the state. Your man Forrest has been a good man on the roads.

I am a large taxpayer and have taken an interest in state highways from the start. I like to see men like Forrest on the job.

Yours very truly,

J. W. FORGEUS.

## WIDE RIGHTS OF WAY APPROVED

(From the Inglewood News.)

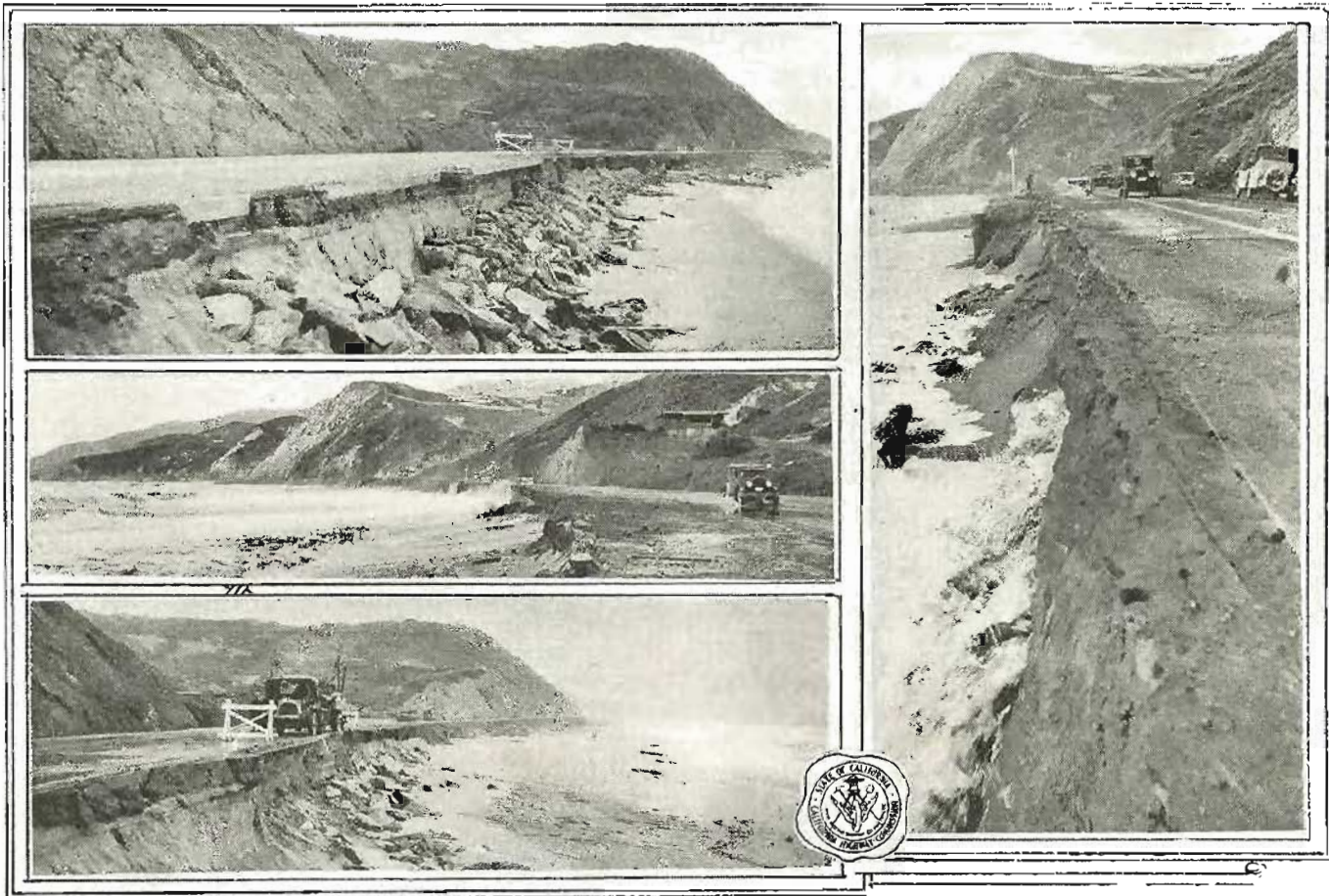
THE State Highway Commission should be commended for its decision to use every effort to induce communities and counties to make their highways at least eighty feet, preferably a hundred, wide.

By planning such highways through the hot and dusty valleys, for example, it will be possible to provide shade and a boulevard. The safety of a shaded boulevard, especially where a railroad track is adjacent, is worth a vast sum to human life and property. Farms along such a highway should have much greater value.

It is reported that some men give the right of way generously but others haggle. The Commission has adopted a plan of offering from two to three times the assessed value of the property. If the offer is refused, condemnation suits follow.

California will certainly be wonderful when the plans in mind are realized. We hope there may be much cooperation on the part of landlords and landowners.

MAINTENANCE FUNDS WILL REPAIR SOUTH COAST HIGHWAY



NORTH OF SANTA MONICA—The entire beach line was changed in places along the south coast by recent storms, the worst in fifteen years. Permanent repairs to the state highway probably will cost several hundred thousand dollars. The views show conditions north of Santa Monica, Los Angeles County. *At the right*, receding storm still battering the shoulder which has been washed away to the edge of the concrete pavement; *Lower left*, maintenance crew unloading material for emergency repairs; *Upper left*, rock and bags of sand placed to protect highway embankment; *Center*, waves dashing against highway grade.

ONE OF the most severe storms since the beginning of state highway construction struck the southern California coast on February 12th and 13th, when a combination of extreme high tides and storms on the ocean caused the worst damage recorded in fifteen years. The estimated cost of replacements and repairs is nearly a quarter of a million dollars, which will come from the motor vehicle and gasoline tax funds.

Damage Summarized.

The following is a summary prepared by Division VII of the damage done at various points:

SAN DIEGO 2-A—South of Cardiff, San Diego County, where the highway is adjacent to the beach, high tides threw considerable seaweed over the pavement and washed out the shoulders. The cost of repairing the damage and making this section safe will be \$17,000.

ORANGE 2-A—A cloudburst occurred in the hills in the vicinity of Capistrano, in Orange County, and in some places near Galivan flood water crossed the highway to a depth of three feet. The damage, however, was light considering the amount of water crossing the highway and amounted to about \$1,000.

ORANGE 60-A—Along the coast in Orange County, between Sunset Beach and Huntington Beach the waves

washed over the Pacific Electric railroad tracks and flooded down across the state highway, cutting out 6000 cubic yards of embankment and 600 tons of oil-cake shoulder that had been placed along the concrete pavement. Damage here amounted to approximately \$5,000.

LOS ANGELES 60-B—Along the paved highway northwesterly from Santa Monica the damage was most spectacular due to the fact that about seventy-five cottages built between the highway and the ocean were destroyed by the huge waves and the shore line strewn with wreckage. About 50,000 cubic yards of embankment were carried away, 30,000 of which will have to be replaced to give the required 10-foot shoulder, and about 6500 tons of riprap rock will be required to protect the new embankment. \$38,000 has been allotted to repair this section.

LOS ANGELES 60-A—As a result of the storm along the coast highway through the Malibu ranch an estimated expenditure of \$70,000 will be required to replace the damage done and to protect against further damage by ocean.

VENTURA 60-A—Along the Hauser contract close to 50,000 cubic yards of slides have occurred and considerable embankment washed out. It is estimated \$100,000 will be required to remove slides, replace embankments, and protect the new fills with riprap rock.

The storm did other damage in Division VII but it was of minor importance compared with that listed above.

**PIERCE SUCCEEDS McLEOD AS  
ACTING HEAD OF DIVISION X**

**T**HE PROMOTION of R. E. Pierce from assistant division engineer to acting division engineer in charge of Division X is announced by State Highway Engineer R. M. Morton, effective as of March 1st. The new acting division engineer succeeds J. C. McLeod, who resigned to accept a partnership in the contracting firm of Force and Currgan of Oakland.

The resignation of Mr. McLeod was followed by other promotions in Division X as follows:

L. E. McDougal, office engineer, to be assistant division engineer;

Clarence Bovey, maintenance superintendent at Stockton, to be assistant division engineer in charge of maintenance;

F. C. Hewitt, resident engineer, to be maintenance superintendent at Stockton succeeding Mr. Bovey.

**Has Long Record.**

Except for the period when he served as First Lieutenant of Engineers during the war, the new head of Division X has been on the staff of the Commission since 1915. He served as resident engineer and assistant engineer in Division III prior to the organization of Division X, when he became assistant division engineer in charge of maintenance. He is president of the Sacramento Chapter of the American Association of Engineers.

Mr. McDougal has been an employee of the Commission since 1919. He will be in charge of the office during the absence of Mr. Pierce and will devote his time to the supervision of construction work.

Mr. Bovey is another of the "old timers" with the California Highway Commission, having been a member of the engineering staff since 1912. For a number of years he was resident engineer under G. R. Winslow.

Mr. Hewitt was with the Commission prior to his service with the army in France, and later was engineer for the National Park Service in connection with the location of roads in Lassen Volcanic National Park. He has been resident engineer with Division X for the last two years.

The resignation of Mr. McLeod, who came to California two years ago from the Oregon highway department, is regretted by the entire department and by members of the Commission and Mr. Morton. Mr. McLeod has been active in planning numerous important reconstruction projects throughout Division X several of which he carried to completion. His work gained for him not only the confidence of his superiors, but that of the people of his district as well. All join in wishing him success as a member of the new firm of Force, Currgan and McLeod, engineers and contractors.

Two chance acquaintances from Ireland were talking together. "An' so yer name is Riley?" said one. "Are yez any relation to Tim Riley?"

"Very distantly," said the other, "Oi was me mother's fust child, an' Tim was the tinth."

An American friend just over from the States dropped in to the *Passing Show* office with the latest joke on the American passion for standardization. A man was being questioned by an employer on his suitability for a fairly important job as a mechanic.

"But," said the employer, "are you an all-round man—a thoroughly trained mechanic?"

"Oh, yes," the man assured him: "for six years I had experience at the Ford works."

"And what did you do there all that time?"

"Well," said the man, "I screwed on nut 467."

—*The Passing Show* (London)

**MOTORIST WHO HIT MAINTENANCE MAN PAYS \$240 FINE**

**M**AINTENANCE men employed by the California Highway Commission often risk their lives in the service of the public and are entitled to protection of the law. This fact was brought forcibly to the attention of a Los Angeles broker recently, when he was brought before the justice court at Newhall and fined \$240 on a charge sworn to by Division Engineer S. V. Cortelyou.

The charge was the result of an incident which took place on the state highway two miles south of Newhall. Four members of a maintenance crew were patching the pavement, when a car came up on the wrong side of the highway. The driver drove through the new patch and knocked down one of the men before bringing his car to a stop.

**County Authorities Cooperate.**

When remonstrated with, he drew a revolver, threatened to kill any who got in his way and drove off. The number of the car was secured and a warrant sworn to immediately. The following letter tells of the splendid cooperation accorded the division by the authorities of Los Angeles County:

COUNTY OF LOS ANGELES.

SHERIFF.

Criminal Department.

Los Angeles, California.

March 10, 1926.

Mr. S. V. Cortelyou,  
Division Engineer,  
California Highway Commission,  
Los Angeles, California.

Dear Sir:

Subject -- -----

I have your communication of March 1st, directed to Constable Bitterson at Newhall, relative to the actions of the above subject and the controversy he got into with your men employed on the road near Newhall.

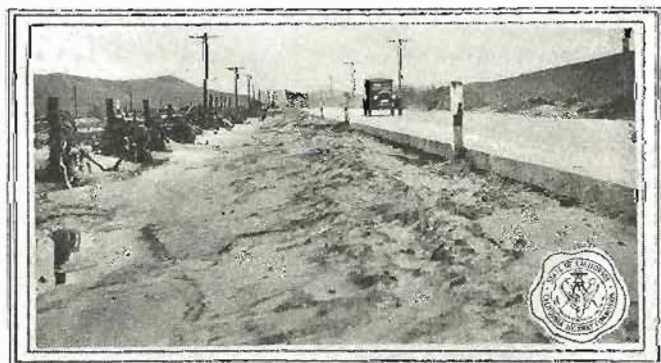
Please be advised that his warrant was sent to me for service, and I immediately detailed deputies on same, with the result that this defendant was arrested and taken before Judge Arthur Perkins at Newhall, WHERE HE WAS SEVERELY LECTURED AND FINED \$240.

I believe that this has taught him a lesson, and I do not think that in the future you will have any trouble whatsoever from this particular defendant.

I trust that this meets with your approval, and at this time I wish to say that any time your men have any trouble of this nature, if they will get a warrant and report same to this office, we will exert every effort to take these men into custody and have them fined. We desire to cooperate with you in the fullest extent in the maintenance of our good roads.

Very respectfully,

WILLIAM I. TRAEGER, Sheriff.



NEAR SAN JUAN—Recent storm damage to the state highway grade requiring expenditure of maintenance funds for replacing shoulders.

WHAT THE DIVISIONS ARE DOING

**DIVISION I.**

HEADQUARTERS, WILLITS.

T. A. BEDFORD, DIVISION ENGINEER.

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

**S**LIDE removal continued an important activity of Division I during the month. For a period of ten days the road was blocked to traffic south of Eureka by slides and washouts, the worst in several years. At the big slide, south of Scotia, maintenance crews worked night and day in an effort to open the highway to traffic. Two 1/3-yard power shovels, a large drag line outfit, and a high-pressure pump were used two shifts daily to remove debris that came down the mountain with this slide. It is estimated that 15,000 cubic yards of earth and rock already had been removed from the roadway at this point.

A recent rainfall record at Willits showed a precipitation of fifteen inches in eighteen days. Twelve inches fell during one

period of eight days. The large number of slides and the blocked condition of culverts testifies to the severe winter.

Authorization has been received for the placing of considerable guard rail at various points on the Redwood highway to promote the safety of the road.

**Maintenance Station Site Purchased.**

A desirable site for a maintenance station has been acquired at Boonville, Mendocino County, on the Navarro River highway. It is two acres in extent and was purchased for \$300, of which \$100 was donated by business men of Boonville. The price is considered very reasonable.

Operations are progressing at the convict camp on Smith River. Some damage to the new grade was done during the period of high water which may require some revision of plans for the protection of grade slopes during winter months.

**DIVISION III.**

HEADQUARTERS, SACRAMENTO.

F. W. HASELWOOD, DIVISION ENGINEER.

Counties of Butte, Colusa, El Dorado, Glenn, Nevada, Placer, southern Plumas, Sierra, Sutter, Yuba, and northern Sacramento and Yolo.

**M**AINTENANCE of a large mileage of county roads taken over by the Commission on January 1st is now well under way in Division III. The results to date are encouraging, for it is evident the division will be able to accomplish more with the funds allotted than was anticipated. The new situation has resulted in several changes in personnel and location of maintenance crews. Division III now has seventeen maintenance superintendents and foremen employed, stationed at as many different points throughout the division.

**Truckee Canyon Contract Accepted.**

Grading in the Truckee River canyon is progressing steadily. The Irey and Holden contract for work between Boca and Floriston, Nevada County, including the Hinton extension, has been completed and accepted. The cost of grading this 5.3 miles was approximately \$328,000.

On the remaining section, Floriston to the Nevada line, 6 miles, 3.5 miles have been completed to date by the Nevada Contracting Company. The coming of spring is expected to enable the contractor to speed up the work. The division is anxiously awaiting news that the big power shovel doing the advance grading has "broken through" at the point where the Nevada road now ends.

Painting of timber trestles recently completed in Butte and Glenn counties is now under way and placing of asphalt concrete floors will be started in the near future.

Joseph Birkett has completed the placing of 610 lineal feet of 8-foot by 6-foot cement concrete pavement widening at one of the entrances to Grass Valley. This improves a street where car tracks recently were removed.

The old wooden causeway between the American River and the Globe Iron Works, North Sacramento, has at last been removed with the final completion of the new ground level pavement. Riprap has been placed along the outer sides of the levees protecting the two subways which were a part of the improvement.

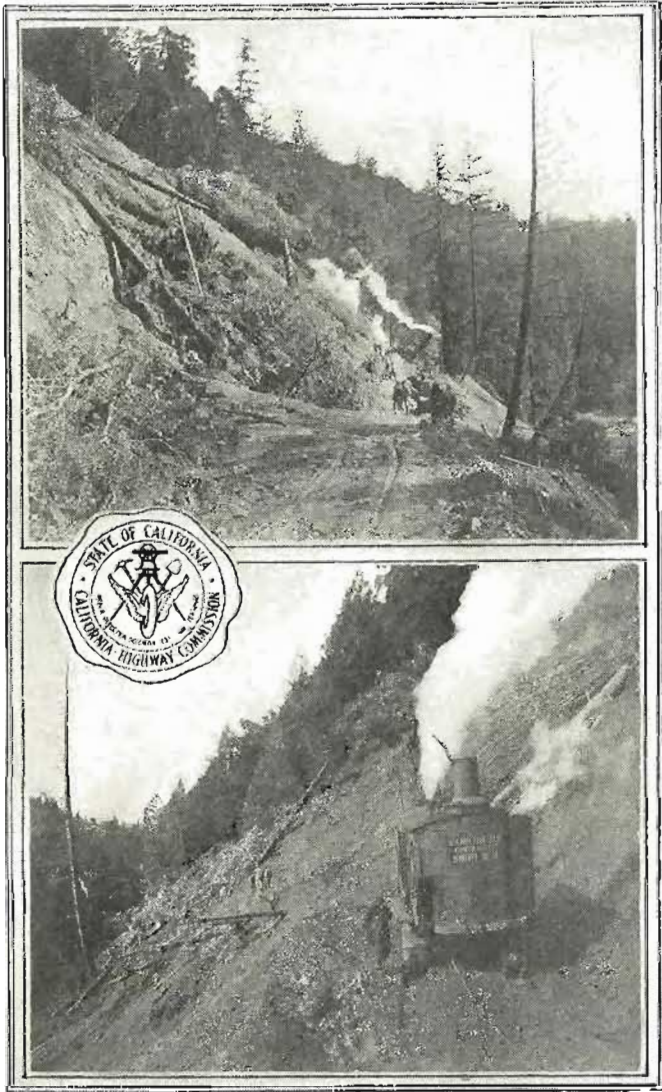
Storage buildings for maintenance equipment have been completed at Marysville and Colfax. A foreman's cottage is under construction at Marysville.

Surfacing is under way at various points between Placerville and Camino and at points on the Mother Lode highway north and south of Placerville.

**Slides Removed.**

Slides have been removed from the new section of the Victory highway between Colfax and Gold Run.

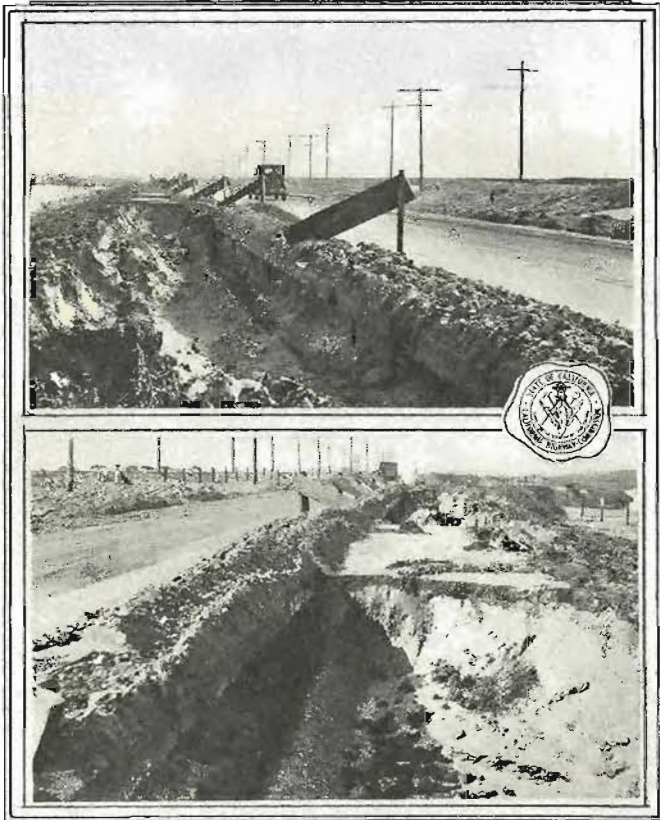
The division is cooperating with the Glenn-Colusa Irrigation District in the construction of a drainage ditch which borders the west side of the highway for 2.65 miles between Logandale and Willows, Glenn County. The fence line will be moved back and



**BIG SLIDE NEAR GARBERVILLE**—Equipment rushed into service by Division I to open Redwood highway following recent storms. Thousands of dollars of maintenance funds will be required for slide removal in this division.

the spoil from the ditch utilized to build up the earth shoulders along the highway. About 20,600 cubic yards of material will be moved.

tenance crew at work bettering drainage conditions, strengthening structures, and improving dangerous points. By next summer, the road will be somewhat safer to drive over than heretofore.



NEAR NEWPORT BEACH—High seas washed over the Pacific Electric tracks shown at right above and scoured away shoulders of the south coast highway. The concrete pavement was not damaged by the unprecedented storm. Motor vehicle funds will repair damage.

### DIVISION VI.

HEADQUARTERS, FRESNO.

J. B. WOODSON, DIVISION ENGINEER.

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

**T**WO WIDENING projects on the San Joaquin Valley trunk highway in Kern County recently were completed under the direction of Division VI. They are the Federal Paving Company's job of 8.2 miles between Bakersfield and Lerdo, and a project of one mile, south of Delano, completed by the Warren Construction Company. The old 15-foot concrete base in both instances was widened to 20 feet and thickened with asphalt concrete.

Fresno and Madera counties are taking steps to secure rights of way for the proposed reconstruction of the state highway across the San Joaquin River at Herndon, at the boundary of the two counties. Building of a badly needed new bridge on the west side of the Southern Pacific railroad and the placing of a short section of new pavement will eliminate two grade crossings and a number of dangerous curves.

#### City and State Cooperate.

The city of Fresno and the Commission are cooperating in the widening of the pavement at the southern entrance to Fresno. The completion of the project will provide a section of pavement 40 feet in width.

The widening of 2.8 miles north and south of Delano is a Division VI project which, it is expected, will be under way in the near future.

### DIVISION VII

HEADQUARTERS, LOS ANGELES.

S. V. CORTELYOU, DIVISION ENGINEER.

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

**W**ITH pretty co-eds from Whittier College letting down the barriers, the final unit of the Los Angeles-Whittier boulevard was opened to traffic recently with a large crowd of local residents and officials present and participating. Leaders in the dedication of the new section of state highway were Commissioner Nelson T. Edwards, Mayor W. B. Green of Whittier, Mayor M. R. Parmelee of Montebello, and Fred Beaty, president of the East Side Association.

In addition to the new section of 3.5 miles of pavement, 56 feet wide, the opening of the new subway under the tracks of the Union

(Continued on next page.)

### DIVISION V.

HEADQUARTERS, SAN LUIS OBISPO.

L. H. GIBSON, DIVISION ENGINEER.

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

**R**APID progress is being made on the Pismo Beach contract on the Coast highway, San Luis Obispo County. The bridge across Villa Creek is practically completed and the overhead crossing of the Southern Pacific railroad is well advanced. Grading is about 40 per cent completed with further progress awaiting completion of the overhead crossing. The main cut, which contains about 75,000 cubic yards, and which is to cut away several hundred feet of existing highway, is completed to the point where it was necessary to remove the existing roadbed. A first-class detour has been graded and graveled to carry traffic for several months, pending completion of the new highway.

A number of houses and other buildings in and near the town of Summerland have been moved to make room for the new Summerland-Ortega Hill highway, and the rough grading through the town is practically completed. The heavy cut over Ortega Hill is more than 50 per cent completed.

#### Widening Work Progresses.

The Cornwall Construction Company is making rapid progress on the widening of the highway south of Carpinteria, having completed rough grading south of the town and poured the concrete shoulders along one side of the existing pavement.

One of the traversable county roads taken over by the division on January 1st was the road from Carmel to Big Sur River, Monterey County. This picturesque stretch has been somewhat of a bugbear to timid motorists on account of its narrowness, crooked alignment, and steep grades. Division V has a main-



NEW MAINTENANCE STATION—Foreman's cottage and warehouse for equipment near El Rio, Ventura County, Division VII.

**DIVISION REPORTS**

(Continued from page 13.)

Pacific railroad and the completion of the new reinforced concrete bridge over San Gabriel River also were celebrated.

The new highway from the Los Angeles city limits to Whittier is now a 56-foot pavement for practically the entire distance between the two municipalities. Los Angeles County and a local improvement district cooperated with the state in financing the project, an important section of the Los Angeles-San Diego highway and one of the heaviest traveled state highways. It is on the route of the El Camino Real connecting the early missions.

**San Onofre Line Change in Use.**

Traffic is now using the San Onofre-San Mateo Creek line change on the Coast highway in San Diego County. The new location shortens the distance two-thirds of a mile and eliminates sixteen curves, at two of which numerous fatal accidents have occurred. The heavy fill necessary to make the change has not been paved, but will be surfaced with crushed rock until after settlement has taken place. Two handsome bridges across the two creeks have been completed by the bridge department.

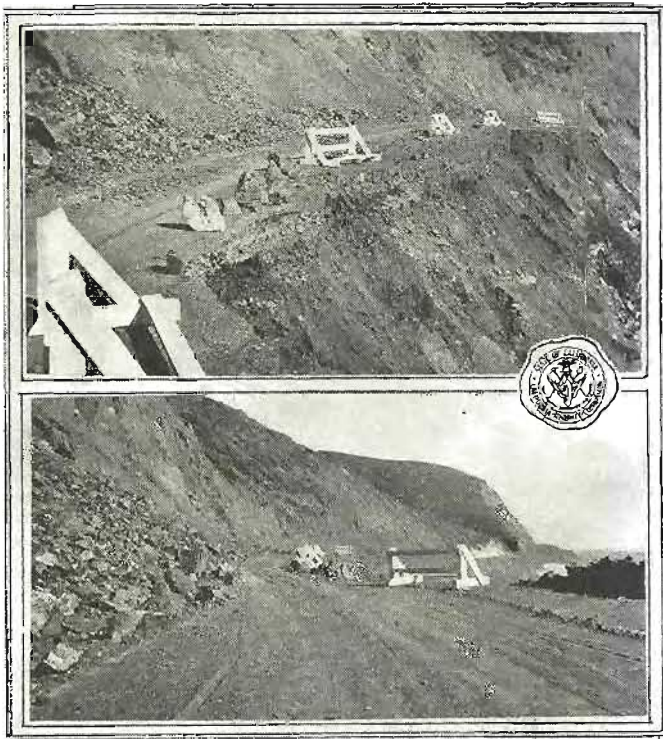
**Orange County Paving Progresses.**

Between Newport Beach and Corona Del Mar, on the South Coast highway, the subgrade is ready for concrete pavement. From Corona Del Mar to Laguna rock for asphalt macadam is now in place.

Widening of the fifteen-foot pavement on the Foothill boulevard to twenty feet by the addition of cement concrete shoulders has been completed from San Fernando to Tujunga, except at the line change in the vicinity of Big Tujunga Wash where grading is in progress.

Over two miles of "second-story" concrete pavement has been placed on the contract for reconstructing the state highway between Camarillo and Ventura.

Paving with cement concrete is now under way on the Coast highway through the Malibu ranch. This work was commenced at Las Flores Canyon and will be continued to Latigo Creek, a distance of nearly seven miles.



**ON THE HAUSER CONTRACT**—Wave action during recent storms seriously damaged sections of the new grade on the Ventura coast which will require large quantities of heavy riprap for protection. Emergency appropriations already have been made.

**DIVISION VIII.**

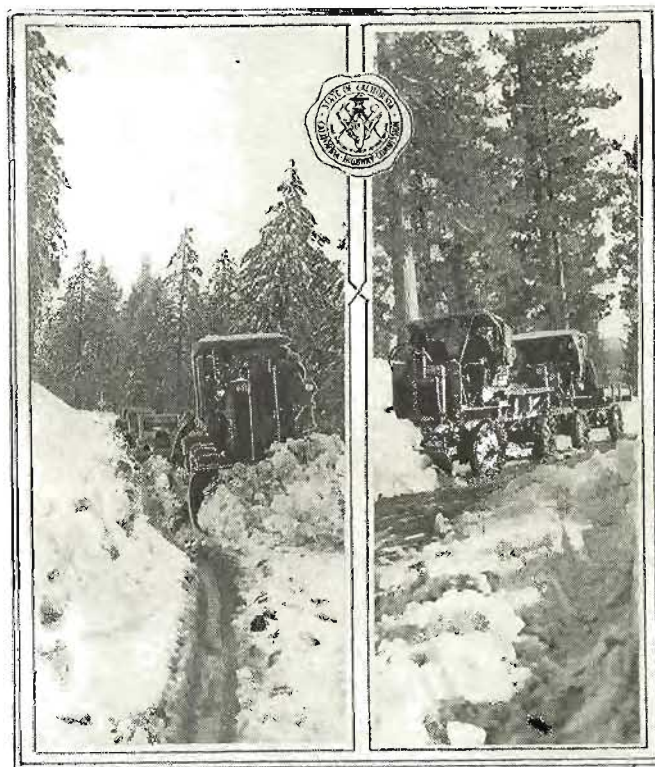
HEADQUARTERS, SAN BERNARDINO.

E. Q. SULLIVAN, DIVISION ENGINEER.

Counties of San Bernardino, Riverside, and Imperial.

**D**IVISION VIII was honored recently by a visit from Governor Friend Wm. Richardson, who made a trip of inspection over the National Old Trails from San Bernardino to Topock and also over the Mecca-Blythe highway in Riverside County. In an address at the National Orange Show, he emphasized the great improvement that had been made on these two roads since his first trip three years ago, prior to the commencement of state maintenance.

The snowfall along the state highway in the San Bernardino mountains this winter was the heaviest in four years. At Big



**SNOW IN SOUTHERN CALIFORNIA**—Equipment of Division VIII bucking snow on the Rim of the World highway near Big Bear Lake in the San Bernardino mountains. *Left*, tractor pushing snow plow; *Right*, trucks working in tandem pushing scraper.

Bear Lake, the depth was thirty inches on the level and in recent weeks there was still snow on the ground. Division VIII's snow removing equipment was given considerable service.

**Brawley-Imperial Grading Finished.**

Grading of the highway between Brawley and Imperial has been completed and the water-bound macadam surfacing has made this section a speedway for motorists. Oiling of the macadam has been authorized and will be under way in the immediate future.

The placing of cement concrete shoulders between Edom and Indio, Riverside County, has been completed, widening the existing pavement from 16 to 20 feet. Sand shoulders through this section made the concrete shoulders necessary.

**Sand Hill Paving Under Way.**

The building of the grade for the placing of an asphalt concrete pavement across the Sand Hills on the El Centro-Yuma connection, in Imperial County, is now well under way. A drag line outfit is being used for the construction of the high fill upon which the pavement will be placed.

Grading between Hicks and Daggett, in San Bernardino County, is practically completed and production of material for placing of a crushed rock surfacing has been begun.

**DIVISION X.**

HEADQUARTERS, SACRAMENTO.

R. E. PIERCE, ACTING DIVISION ENGINEER.

Counties of Amador, Calaveras, Alpine, Tuolumne, Stanislaus, San Joaquin, Solano, and southern Sacramento and Yolo counties.

**A**N IMPROVED entrance to Sacramento from the west is nearer realization as the result of the award of a contract to the H. V. Tucker Company of San Francisco for the building of a roadbed from the west end of the M street bridge to the new West Sacramento subway, in West Sacramento. The new subway has been finished and grading of the roadway will be followed by a paving project. The work is well under way.

Bids have been asked for the widening and resurfacing of 7.8 miles from Modesto to the Stanislaus River in Stanislaus County. This will be the most important reconstruction project of the year for Division X.

**Location Survey Under Way.**

A location survey between Sonora and Pulleys, to a connection with the recently completed Forest highway project in Tuolumne County, is nearing completion under the direction of F. C. Hewitt.

Division X is now actively engaged in improving sections of the Mother Lode highway within the division under the new maintenance program recently inaugurated by the Commission. Later in the spring, several specific betterments will be undertaken on the trans-Sierra roads of the division.

Authorization has been received for the repair of twelve bridges located in San Joaquin and adjoining counties.

**SOUTHERN PROJECTS PRAISED**

**D**IVISION VIII at San Bernardino has received the following letter commenting on two paving projects recently completed in San Bernardino and Riverside counties:

**PORTLAND CEMENT ASSOCIATION,**

548 South Spring street,  
Los Angeles, California.

Mr. E. Q. Sullivan,  
Division Engineer,  
San Bernardino, California.

Dear Mr. Sullivan:

Recently I had the pleasure of riding over your two concrete highway jobs completed in 1925. I have reference to the Beaumont-Redlands road as well as the second-story work from San Bernardino to Redlands, both contracts completed by Basich Brothers.

I want you to know that in my opinion these two projects are as smooth-riding roads and apparently as good construction as any that I have noticed in Southern California. Both yourself and Mr. Young, your resident engineer, are to be congratulated on the first-class construction that you obtained on these two roads.

This letter is not intended to disparage the work of any of the other division engineers or make any comparison as I am sure they are all doing good work, but I was so pleased with these two jobs that I wanted you to know how I felt about them.

With kindest regards, I am

Yours very truly,  
(Signed) J. E. JELICK,  
District Engineer.

**Camera Lost.**

L. D. Packard is seeking the party who borrowed a Bridge Department camera and who so far has neglected to return it.

Scotchman to Caddy: "Are you good at finding balls?"  
Caddy: "Yes, sir!"  
Scotchman: "Well, go find one and we'll begin."

**DEL NORTE SUPERVISOR LIKES  
WORK OF MAINTENANCE CREWS**

**T**HE RECENT winter has been a trying time for maintenance crews on the Redwood highway. The heavy downpour of rain that continued for weeks resulted in numerous slides at many points along the route and at times it was impossible to keep the road open for traffic south of Eureka. In Del Norte County by strenuous efforts serious delays to traffic were obviated.

Supervisor W. A. Fleming of the Fifth Del Norte District has forwarded headquarters a clipping from one of the Crescent City papers, expressing the desire that the item be published in *The Bulletin* in appreciation of the work of the Division I forces.

The article reads as follows:

**Highway Foreman Given Credit For Efficient Work.**

Residents of this county have been heaping much praise upon the shoulders of J. W. Ross, the efficient foreman of highway maintenance under Superintendent J. J. Stockard of Div. No. 1 of the California Highway Commission.

Ross has charge of the maintenance of the highway from the Klamath River north to the Winchuck River at the state line, a distance of 47 miles. Ross deserves great credit for the able manner in which he has handled the road situation in the face of the recent heavy storms.

Although there were numerous slides on the highways and many trees down across the road, none of them caused serious traffic delays due to the untiring efforts of Ross and his crew to clear away the debris. The only real delay of the season was the high water at the Klamath River, which prevented the operation of the ferry.

**That's More Than Some Get.**

I sent my boy to Yale  
With a pat upon the back;  
I spent ten thousand dollars,  
And got a quarterback.

There was a young lady named Eleanor,  
Whose auto turned over and felonier;  
'Twas ten minutes or so  
Ere she seemed to know  
The things that the people were 'teleanor.

Little Johnny, a city boy, in the country for the first time, saw the milking of a cow.

"Now you know where the milk comes from, don't you?" he was asked.

"Sure!" replied Johnny. "You give her some breakfast food and water and then drain her crankcase."

**HIGHWAY NEWS NOTES**

"**S**AFETY on the Highways" was the subject of a paper presented by State Highway Engineer R. M. Morton before the annual convention of the County Supervisors' Association in San Diego on March 12th. Mr. Morton also appeared before the convention of county engineers. Other engineers of the department who presented technical papers before the latter body were C. S. Pope, C. L. McKesson, and Fred J. Grumm.

Assistant State Highway Engineer T. E. Stanton has completed an inspection of state highway projects throughout the southern counties.

W. F. Faustman has been transferred from Division III to the headquarters drafting office.

H. R. Church, resident engineer, has been transferred from Division III to Division V.

Benjamin Thomas, assistant resident engineer, formerly with Division X, is now on the staff of Division VII.

Arthur Wallace of Division X is now with Division VI.

H. T. Avery, office engineer, is the proud daddy of a son whose arrival broke the continued birth of girls in Division V.

Ralph C. Wright and J. F. O'Hara, draftsmen, Division VIII, are among the new fathers of the past month.

STATE HIGHWAY FUND CONTRACTS (Bond Funds, Including Federal Aid)

Cont. No.	Di- vision	County	Route	Sec.	Location	Miles	Type	Contractor	Estimated cost	Date contract awarded	Contract time, days
445	III	Nevada	38	B	COMPLETED AND ACCEPTED SINCE FEB. 8, 1926. Pico to Floriston..... Across San Marco Creek..... Coachella Stormwater Drain.....	5.72	Grading..... Reinf. Concrete Bridge..... Reinf. Conc. Girder Bridge.....	Irey and Hilden..... R. A. Watson..... Rath, Falk and Bergendahl.....	\$918,688 60 84,135 28 42,181 66	July 16, 1924 June 3, 1925 July 29, 1925	150
467	VII	San Diego	2	D							
477	VIII	Imperial	26	E							
494	VI	Mariposa	18	J	AWARDED SINCE FEB. 8, 1926. Across Bear Creek at Briceburg..... Across State Gulch and Sweetwater Creek.....		Reinf. Conc. Girder Bridge..... Two Arch Span Bridges.....	South Bros. Co..... Noble Bros.....	\$29,045 03 23,048 75	Mar. 17, 1926 Mar. 17, 1926	100
495	VI	Mariposa	18	E, F							
					Sub-total.....				\$52,091 78		
					PENDING AWARD—None. Total State Highway Fund Contracts Awarded and Pending Award.....				\$52,091 78		

Note:—Primary construction covered by the above contracts does not include funds obligated for cooperative first highway projects, prison camp-road activities, or day labor jobs not being done under contract.

STATE HIGHWAY MAINTENANCE FUND CONTRACTS (Including Gasoline Tax Fund)

Cont. No.	Di- vision	County	Route	Sec.	Location	Miles	Type	Contractor	Estimated cost	Date contract awarded	Contract time, days						
M-67	III	Sacramento	3	B	COMPLETED AND ACCEPTED SINCE FEB. 8, 1926. Sacramento Northern Railroad Crossing..... Across San Gabriel River..... Cypress Lawn Cemetery to San Bruno..... Beardley Canal to Lerdo..... Two miles S. San Onofre to northerly boundary..... American River to Globe Iron Works..... At Middle Causeway.....	4 39 8 21 3 65 0 42 0 10	Underpass..... Reinf. Conc. Girder Bridge..... F. C. C. Widening and A. C. Surface..... A. C. Pavement and Rock Borders..... P. C. C. Pavement and Std. Surface..... P. C. C. Pavement..... Grade and Std. Surface.....	Lord and Bishop..... Charles and F. W. Steffen..... Federal Paving Co..... Federal Paving Co..... R. A. Watson..... Kaiser Paving Co..... Edward W. Dahl.....	\$23,319 09 104,147 10 243,096 20 175,717 48 142,098 89 31,615 31 14,688 00	April 15, 1925 May 4, 1925 May 4, 1925 May 20, 1925 June 2, 1925 Sept. 3, 1925 Oct. 22, 1925	175						
M-73	VII	Los Angeles	2	D													
M-78	IV	San Mateo	2	A													
M-82	VI	Kern	4	D													
M-83	VII	San Diego	2	D													
M-88	III	Shasta	3	R													
M-104	VII	Yuba	2	F													
M-113	II	Shasta	3	C								AWARDED SINCE FEB. 8, 1926. Across Doney Creek..... At Lankershim.....	Arch Span Bridge..... Maintenance Shop Bldg.....	Bordwell and Zimmerman..... Hodge and McMackin.....	\$89,915 63 20,070 00	Mar. 17, 1925 Mar. 17, 1925	50
M-114	VII	Los Angeles															
												Sub-total.....				\$109,885 63	
					PENDING AWARD—None. Total State Highway Maintenance Fund Contracts Awarded and Pending Award.....				\$109,885 63								

Note:—The above obligations charged against the State Highway Maintenance Fund do not include funds from these sources obligated for general maintenance and for specific betterments being done under day labor authorization.

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