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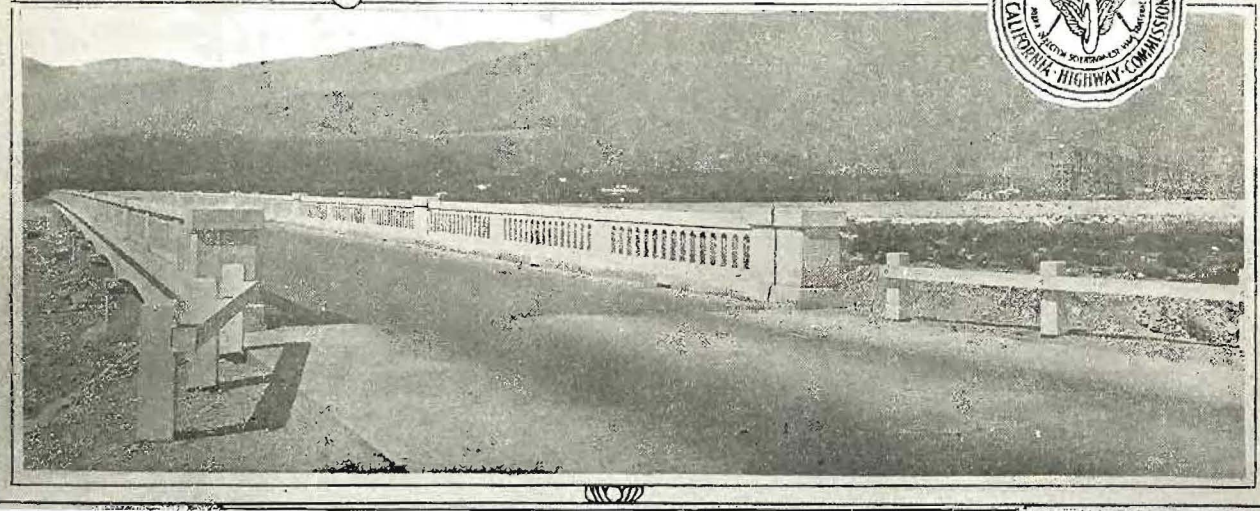
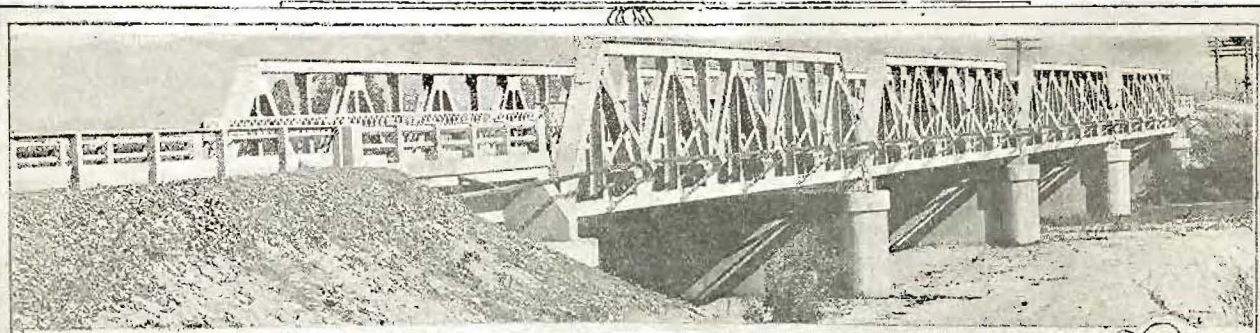
CALIFORNIA HIGHWAYS

OFFICIAL PUBLICATION OF THE CALIFORNIA HIGHWAY COMMISSION

Vol. 1

APRIL, 1924

No. 4



THREE CALIFORNIA STATE HIGHWAY BRIDGES—Above, the Rio Honda bridge, Los Angeles County; center, South Yuba River arch, Downieville lateral; and below, reinforced concrete structure across San Gabriel River, recently completed.

BRIDGE DEPARTMENT NUMBER.

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

California Highway Department

California Highway Commission

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BRIDGE PROBLEM SERIOUS

Enlarged Department Handles Design and Construction

By HARLAN D. MILLER, Acting Bridge Engineer.

THE financing and construction of the great number of urgently needed bridges on the state highway system is one of the most important immediate requirements confronting the people of the state and the California Highway Commission.

Everywhere, on the state road system, old bridges, inadequate for present and future traffic, are in use, and to the limit of available funds, bridge building is one of the highway commission's major activities.

Funds, in addition to those already on hand, will be required in large amount to adequately handle the situation.

To supplement the funds of the various state road bond issues, the highway commission, in 1912, adopted a policy of requiring counties to build bridges over twenty feet in length on the state highway. Under this requirement, counties already have contributed for bridge construction in the neighborhood of \$9,000,000. Examples of this cooperation are the contributions made by Humboldt, Santa Barbara and Tehama counties, which approach \$1,000,000 for each county. Other counties also have expended large sums for state bridges.

BRIDGE BUILDING LAGS.

The natural result of this policy, however, has been that hundreds of badly needed bridges have not been built. Wherever passable, bridges, already existing on the highway system, for which a few years additional life could be predicted, were made exceptions in state highway layouts; and, at present, we find many inadequate bridges still in use, the safe age limit of which was passed years ago.

Due to these conditions, bridge construction has lagged behind the highway construction and the need for many new bridges has been increasing until it can no longer be ignored.

The estimate cost of the most necessary bridges, which should be in use or under construction at the present time, on

the state highway system, is \$12,000,000. The inclusion of the elimination of hundreds of dangerous grade crossings, which work, in the interest of safety to the traveling public, should go forward rapidly, would more than double the estimate.

BRIDGE DEPARTMENT ENLARGED.

As a preliminary step to meet this situation, State Highway Engineer R. M. Morton, in the latter part of 1923, directed that the construction of all bridges, as well as their design, should, in the future, be under the direct supervision of the Headquarters Bridge Department. This is a change in policy from the previous practice, under which all bridge construction was supervised by the various divisions of the state highway organization, but is in line with the practice of the highway departments in almost all other states.

Under the new policy, the entire responsibility for design and construction rests in the Bridge Department, of which the writer is acting head at the present time.

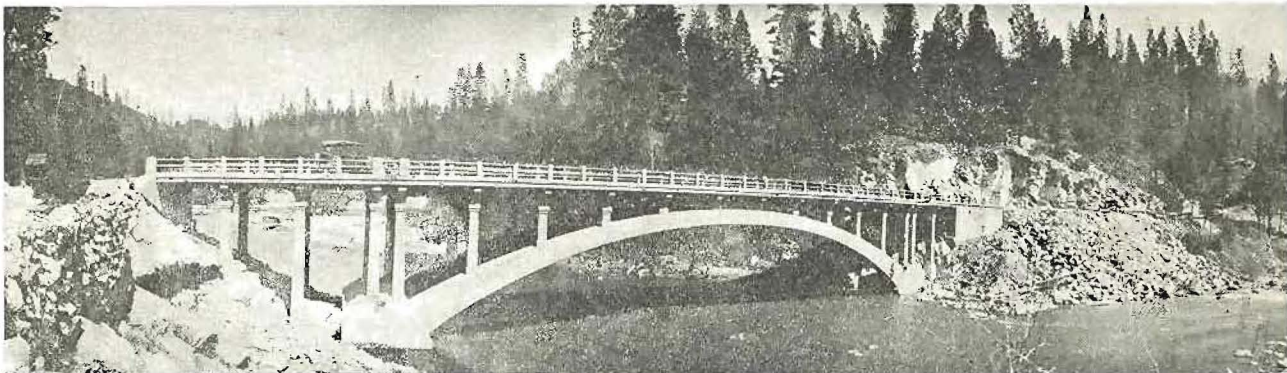
Within the bridge organization, two divisions are functioning: One for the preparation of plans and specifications, and the other for preliminary field investigation of bridge sites and for the supervision of construction work.

DUTIES OF THE DEPARTMENT.

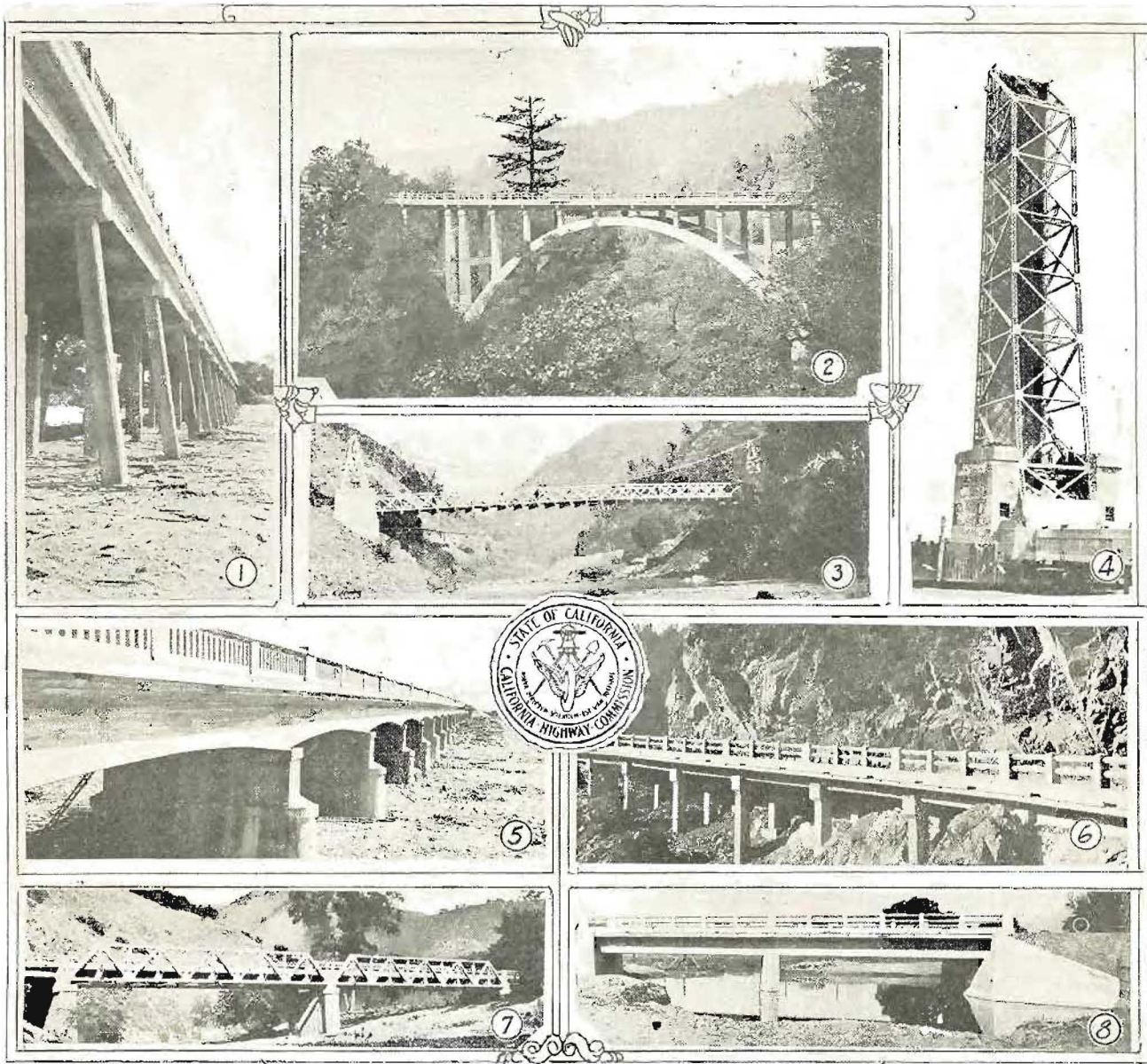
The duties of the bridge department may be summed up as follows:

1. Study of foundation and stream conditions and supplies of local material;
2. Determination of the size and the most suitable type of design;
3. Preparation of detail plans, specifications and contracts;
4. Training of resident engineers and inspectors for the supervision of bridge construction, and the detailed supervision of construction, payments, etc.

(Continued on page 6.)



Reinforced concrete arch over Middle Fork of Yuba River on the Downieville lateral.



TYPICAL CALIFORNIA STATE HIGHWAY BRIDGES.

1. The California Highway Commission's standard reinforced concrete pile trestle. 2. Reinforced concrete arch bridge over Bear Gulch in Humboldt County. 3. Suspension bridge over the Merced River in Mariposa County. 4. Bascule bridge over Petaluma Creek between Sonoma and Marin counties. 5. Reinforced concrete girder bridge over the San Gabriel River in Los Angeles County. 6. Sidehill viaduct or half bridge on the Redwood highway in Humboldt County. 7. Pony truss bridge over Huasna Creek in San Luis Obispo County. 8. Standard reinforced concrete girder bridge for small crossings.

TRAFFIC CENSUS STARTS

A STATEWIDE traffic census on state highways, under the direction of the maintenance organization, was inaugurated Sunday, April 13th, and continued on the following day. The census will be taken for two days each month indefinitely, it is announced by A. J. Wagner, maintenance engineer.

In May, the count will be made on Tuesday and Wednesday, and so on, continuing through the week, in order to make possible a comparative statement for the entire seven days.

COOPERATION EXTENDED.

Cooperation of ferry companies and the quarantine stations of the state department of agriculture, at state lines,

has been accorded the maintenance forces of the several divisions in taking the census.

Heretofore, it has been necessary to employ outside help when making traffic counts. This year, by using the organized maintenance forces, it is believed, the work may be done efficiently without the additional expense necessary in the past. The count was taken at approximately 300 stations throughout the state highway system.

The Skyline boulevard is only partly finished but an application has been filed with the Railroad Commission for a franchise to operate a motor stage over it.

A report on the 1922 traffic census in printed form has been furnished all division engineers.

THREE LARGE STRUCTURES READY FOR CONTRACT

BRIDGES across the Klamath and Van Duzen rivers, on the Redwood highway, and the Rincon causeway and seawall, on the Coast highway, in Ventura County—three of the largest structures yet to be built on the state highway system—soon will be under construction by the California Highway Commission.

Bids already have been asked on the Van Duzen bridge and the Rincon causeway and will be called for on the Klamath bridge in the near future.

The Van Duzen bridge will replace an old steel span with a handsome reinforced concrete structure, 734 feet long, Van Duzen and consisting of three arch spans, each 165 feet long, and eight approach spans, each 30 feet long. The arches are of the single rib type with open spandrels. The long and careful study given this bridge resulted in a simple and economical design.

The Klamath River bridge, near Requa, is destined to be one of the famous structures of the state highway system. It will be a memorial for the late Assemblyman Dr. G. H. Douglas, of Crescent City. Located near the mouth of the Klamath River, in southern Del Norte County, this bridge will eliminate the weakest link in the Redwood highway, an antiquated ferry, which has hampered development of the northwestern section of the state for many years.

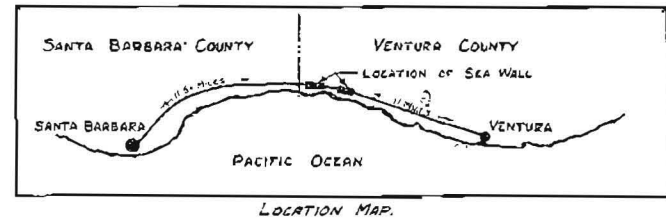
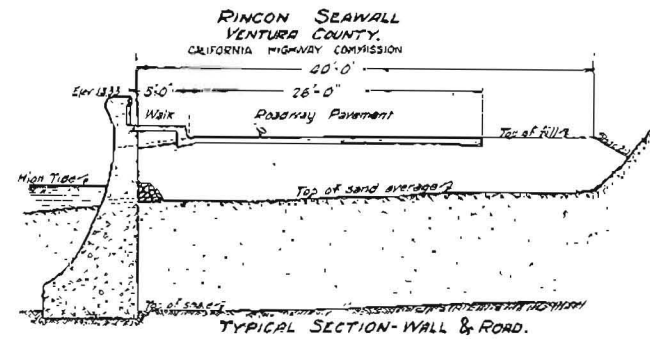
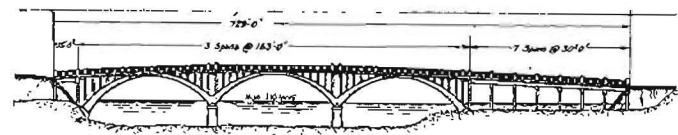
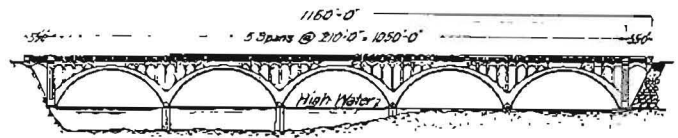
Because of its memorial aspects, a great deal of attention has been given to the design. The structure will be one of the largest concrete arch bridges in the country, and will consist of five open spandrel arches, each 210 feet long, in addition to the approaches. The total length of the bridge will be 1160 feet, and the roadway will be 30 feet above high water. A very dense concrete will be used because of the salt air of the nearby ocean.

The dilapidated wooden trestles at El Rincon on the Coast highway, in Ventura County, shortly will be replaced by a handsome concrete seawall and causeway, back of which a broad concrete highway will be constructed after a fill has been made. Immediately back of the wall, a five-foot sidewalk will be located; while, on the bank side of the highway, there

will be ample room for parking machines for those who desire to stroll along the ocean front.

In all, 6400 feet of wall and highway will be constructed, the work to be financed from gasoline tax funds. The highest type of construction is planned throughout, and the new structure, when completed, undoubtedly will be a feature of the coast trip from San Francisco to Los Angeles.

EDITOR'S NOTE: Contract for Van Duzen bridge awarded April 16th.



Engineer's sketches of three important structures soon to be placed under contract: Above, Klamath River Bridge, Del Norte County; center, Van Duzen bridge, Humboldt County; and, below, typical cross section of the Rincon seawall and causeway, Ventura County. The map shows the location of the seawall on the Coast route.

QUARANTINE FAILS TO STOP HIGHWAY WORK ON MALIBU

AFTER fighting gun men, lawyers, injunctions and barbed wire fences for several years, in an effort to keep construction work going on the Coast Boulevard through the Malibu Ranch, Los Angeles County, Division VII now has a quarantine on its hands.

Despite the fact that all roads leading to the day labor camp, north of Santa Monica, have been posted and are under observation by the Los Angeles health department, the work is progressing rapidly with thirty-five men and twenty head of stock on the job.

The fact that nine men are ill with smallpox has had no demoralizing effect and the crew is moving dirt as usual.

CAMP SITES LISTED

AT the request of the Redwood Highway Association, Division I, is compiling information for a comprehensive report of camp and park sites available along the route of the Redwood highway, northward from Willits.

The work has been completed as far north as Eureka, a distance of 152 miles, and discloses the existence of seven private parks and seventeen public parks, well wooded and watered and including many beautiful groves of Redwood.

There is every indication that the Redwood country is going to be thronged with thousands of motorists long before it will be possible to complete the highway.

W. L. Holt, state road commissioner from Kansas, visited Chairman Harvey M. Toy, recently, while inspecting California state highways.

ENGINEERS VISIT DIVISION IV

DIVISION engineers, accompanied by several of the engineers from headquarters, made an inspection of highways in Division IV, on April 1st, 2d, and 3d, including in their trip some of the Contra Costa County highways.

On the evening of the 2d, the party gathered in San Francisco for a dinner, presided over by Division Engineer J. H. Skeggs, of San Francisco. H. W. Schreiber, head of the maintenance work in Division IV, read a paper, explaining the details of his organization, which was commented upon by engineers present.

MANY POINTS DISCUSSED.

During the discussion, the following matters were placed before the meeting for consideration:

Regulations of public utility pole lines on state highways; charging of fees for issuance of permits for trespasses on highways; authority of the state regarding location of rural delivery mail boxes; more authority for division engineers in granting of permits; less "paper work" for maintenance foremen; proper location of shade and ornamental trees; individual liability of engineers in case of accidents with state cars, and a number of other subjects.

The traffic census to be taken by the maintenance forces was explained by A. J. Wagner, maintenance engineer.

URGES ORGANIZATION STUDY.

In a short talk, State Highway Engineer R. M. Morton declared the public is not interested in the details of the highway organization, but only in getting roads built and efficiently maintained. He urged the engineers to study their organizations with a view of making them more efficient and less costly to the state. Idle equipment, he said, should be shifted from one division to another so that it would be in service at all times.

Others who spoke included Commissioners Harvey M. Toy and Louis Everding; A. E. Loder, engineer for the California State Automobile Association, and former division engineer for the commission; Secretary W. F. Mixon, and Paul F. Fratessa, attorney for the commission.

It is estimated that 70,000 out-of-state motorists will visit California during 1924 and that, through the gasoline tax, they will contribute \$200,000 toward road building and maintenance in this state.

The California Highway Commission has voted to permit the people of Alturas, Modoc County, to erect a clubhouse at Kelly Hot Springs, property of the commission.

BRIDGE PROBLEM SERIOUS

(Continued from page 3.)

ADVANTAGES OF PLAN.

Advantages of this plan, as demonstrated in other states, are:

1. More economical designs because of intensive study of site data, preliminary to design;
2. Accumulation of information resulting in improved designs and more uniform construction;
3. Acquisition of a corps of highly trained and experienced engineers and inspectors;
4. Quicker construction of bridges on account of centralized authority.

Aside from the duties enumerated above, the bridge department also must check and approve plans for bridges to be built upon the state highways by the various counties and by the federal government. Joint inspection of such bridge construction usually is arranged; also, frequently, the department is requested to prepare plans for bridges to be built entirely by the counties on the state highway. Special designs are prepared for culverts when unusual conditions exist which do not permit the use of standard culvert designs.

ASSUMING NEW DUTIES.

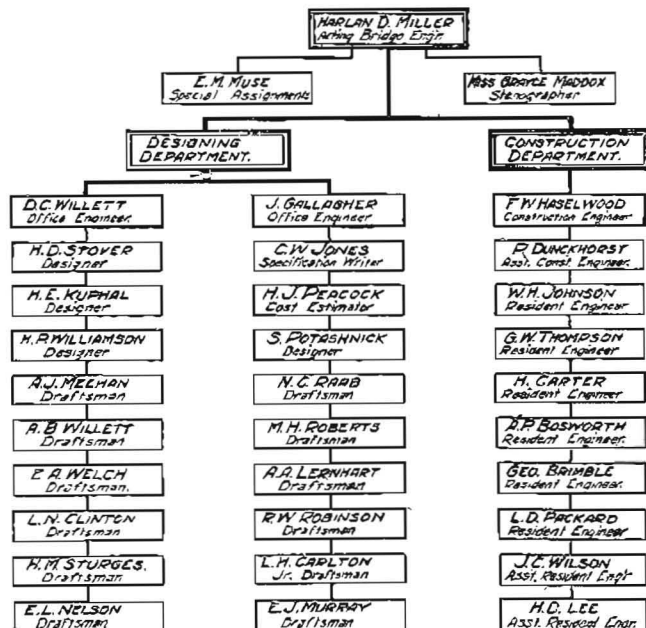
The enlarged bridge department is assuming its new duties gradually and up to the present time has charge of the field construction of four major bridges. As more bridges are placed under contract, the field supervision will expand

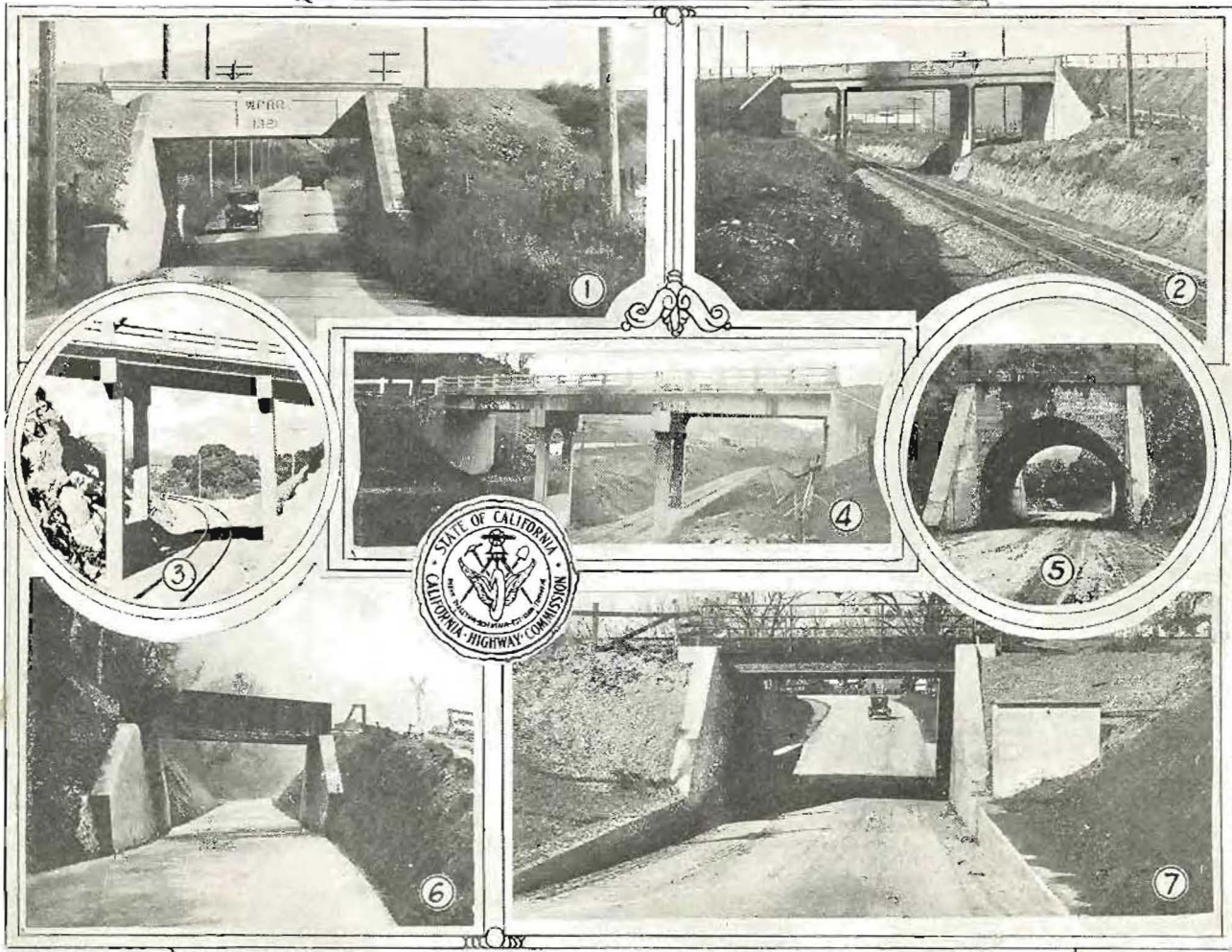
until all major work is under our supervision. Plans now being prepared, for which financing is provided, indicate that at least twenty separate jobs will be handled this year.

The department employs thirty-three men at present, twenty-five of whom are draftsmen and designers and eight are field men. Expansion of the field organization will be necessary to handle additional field inspection.

CHART GIVES PERSONNEL.

The present organization and personnel is illustrated by the following chart:





TYPICAL STRUCTURES ELIMINATING RAILROAD CROSSINGS.

1. Subway under the Western Pacific Railroad in Alameda County. 2. Overhead girder bridge over the Southern Pacific Railroad in Alameda County. 3. Crossing over the tracks of the S. D. and A. Railroad at Jacumba, San Diego County. 4. Overhead crossing over the Northwestern Pacific Railroad at Lytton in Sonoma County. 5. Concrete arch subway under the Southern Pacific tracks at Hornbrook, Siskiyou County. 6. Subway under the Northwestern Pacific Railroad in Mendocino County. 7. Subway under the Southern Pacific Railroad at Davis, Yolo County.

MAKING THE HIGHWAYS SAFE

THE bridge department of the California Highway Commission is now engaged in making studies and plans for the elimination of a score or more of dangerous grade crossings on the state highway system. This is but a fraction of the work that should be done were funds available.

An idea of the magnitude of the grade crossing problem may be gleaned from the joint report on railroad crossings on the state highway system, compiled by the engineers of the highway commission, the federal bureau of public roads, and the state railroad commission. This report shows 572 crossings investigated outside of incorporated cities. The estimated cost of their elimination, in one way and another, is more than \$14,000,000.

STUDIES UNDER WAY.

Elimination of the most dangerous crossings, where numerous deplorable accidents are constantly occurring, will cost probably \$5,000,000.

At the present time, studies are being made for the elim-

ination of the following grade crossings, among others, on the state system:

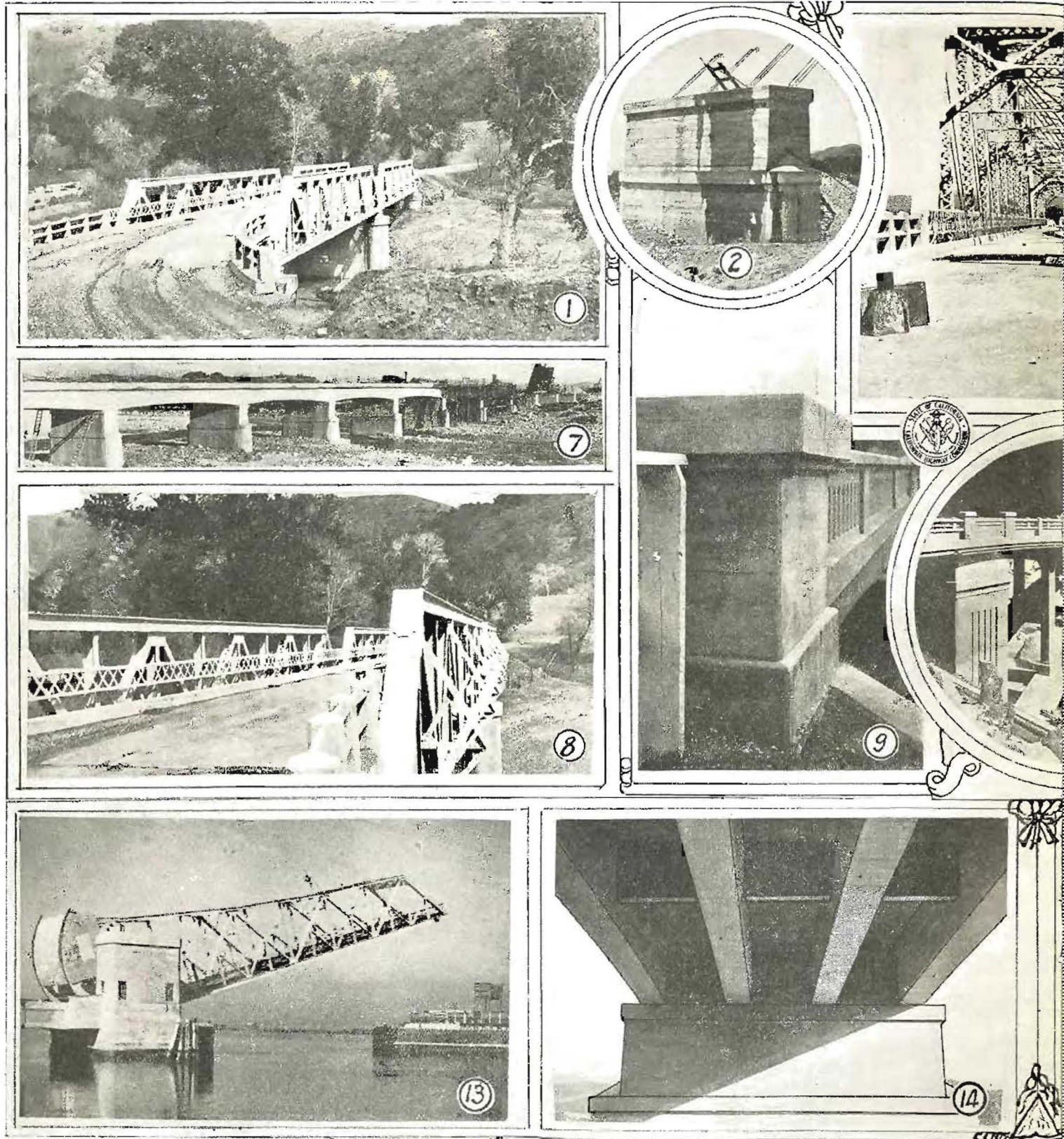
Nineteen crossings between Auburn and the Nevada line, partly by realignment of the highway and partly by overhead and subway structures; at Loleta, in Humboldt County; at Polaris and Iceland, in Nevada County; at Lomo, in Sutter County; Calaveras, Calaveras County; Mullen, Yolo County; Pismo, San Luis Obispo County; Ventura, Ventura County; Mossdale, in San Joaquin County; Fairfield, Solano County; and at Brighton and North Sacramento, in Sacramento County.

ANOTHER RAINMAKER

DIVISION Engineer E. Q. Sullivan of San Bernardino may become a rival of "Rainmaker" Hatfield as the result of a happening on Sunday, March 2d. On that date, the staff and employees of the division, including those foremen who could leave their work, enjoyed a picnic at Palm Springs.

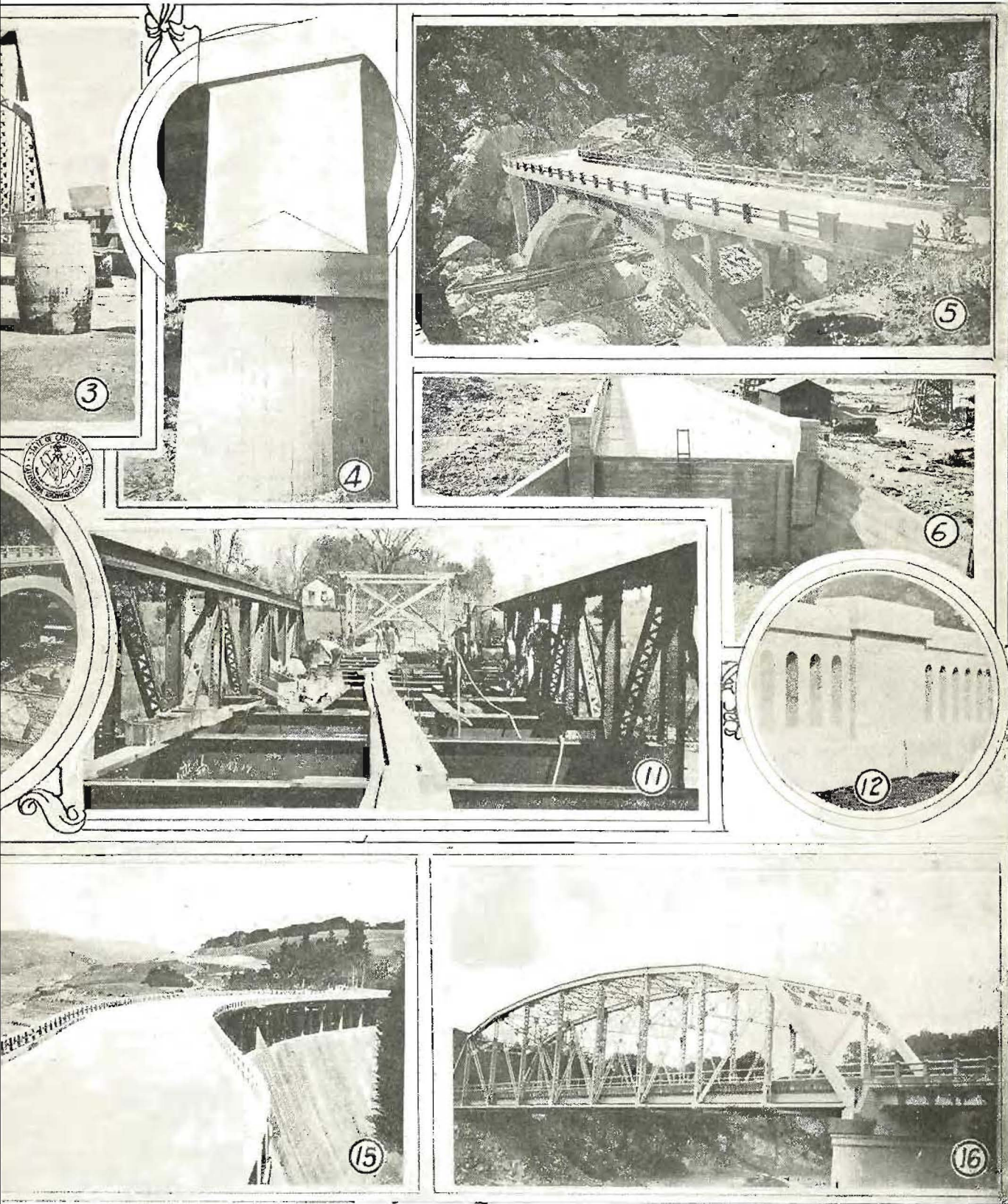
During the course of the festivities, it rained, the first rain to fall at Palm Springs for five years.

No time was lost in giving full credit to Sullivan and his picnic.



UNUSUAL DETAIL FEATURES OF CA

1. Wide approaches, super-elevated, are provided where necessary. 2. Concrete girders are securely anchored to piers. Note long protruding rods ready to be embedded. Note double coping. 3. Curved approaches are added where necessary to avoid sharp turns in the highway. 4. Substantial and permanent character of abutments provided on pony truss bridges to strengthen top chords. 5. Large, substantial end posts well proportioned in size are added at ends of bridges. 6. Attention is given to steel bridges. 7. Substantial, as well as ornamental railings are provided. 8. Machinery house built of concrete for permanency. 9. Diaphragm between concrete piers. 10. Ornamental copings at top of piers add to appearance of bridges.



STATE HIGHWAY BRIDGES

3. Substantial character of bracings over the roadway, between trusses, is demonstrated on this bridge. 4. Piers are substantial and well proportioned. 5. Outside knee braces are shown on this bridge. 7. Curved underside of girders on concrete bridges gives added beauty of appearance. 8. Outside knee braces are shown. Note soft, smooth finish and attention to detail on this bridge. 11. Web of floor beam is extended up into concrete to anchor concrete floor of roadway. Note soft, smooth finish and attention to detail on this bridge. 15. Wide bridges are provided where traffic conditions warrant. Note 30-foot roadway provided on

Better Concrete

By D. C. WILLETT, Bridge Department.

FROM a financial standpoint, speed is of prime importance to construction, but this demand for speed and time saving has resulted in careless working methods.

These "speed" methods, alone, often result in the reduction of the strength of concrete over fifty per cent, and it is a known fact, that in very few cases in concrete construction today has the strength in the concrete, on which the engineer based his calculations of design, been produced.

This fact has alarmed makers of cement, for they know, that if the use of their products is to increase, it must be used properly. With this knowledge, the Portland Cement Association is spending thousands of dollars trying to overcome the carelessness of present day construction.

STRICT REQUIREMENTS NECESSARY.

With these conditions existing, the bridge department is compelled to lay down strict requirements as to methods of construction, and to see that they are followed.

With the aid of the state highway laboratory, which is inseparable to good construction and good concrete, the individual materials are carefully tested as to their quality.

The cement, an important material used in the making of concrete, is required to pass a rigid test; aggregates used, usually sand and gravel or crushed rock, are carefully inspected; and the water also is required to stand a test for purity.

Physical characteristics of concrete are determined, not only by the quality of the several materials which enter into it, but perhaps to a greater degree by the proportions in which the materials are mixed, for the proper proportioning of fine and coarse aggregates may double the strength.

It is a matter of common experience that the method of arbitrary selection, in which fixed quantities of fine and coarse aggregates are mixed without regard to the size and grading of the individual materials, is far from satisfactory.

The aggregates, which form about eighty-five per cent of the material for a concrete bridge, are in most cases obtained at the site or close by. This accounts for the economy of concrete over other materials. By proper handling, this local material can be made into excellent concrete.

LOCAL MATERIALS INSPECTED.

The bridge department inspects local deposits of materials and samples are sent to the laboratory where they are carefully tested for quality and grading. These materials are then combined, using the proper proportions to give the best and most economical results. The resulting concrete is then tested for strength and on these strengths the calculations of design are based.

To make certain that the proper proportioning of the materials is accurately carried out in the field, each inspector, who handles bridge construction, is brought into the office and laboratory where he is instructed in the methods of proper proportioning. He is shown, by a physical demonstration, the effects of poorly graded materials and the use of excessive amounts of water.

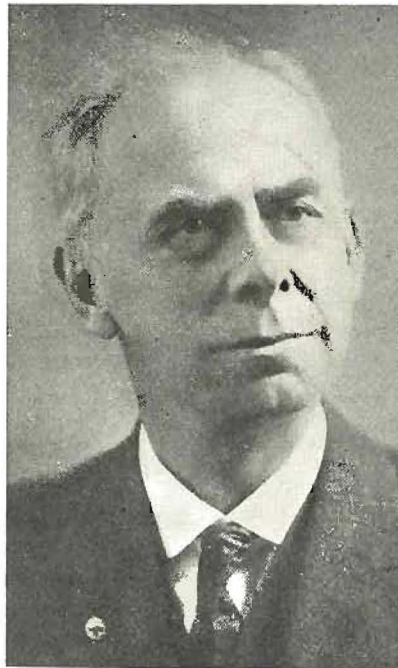
It has been stated, and correctly so, "An increase of thirteen per cent in the mixing water causes the same reduction in strength as if thirty-three per cent of the cement is omitted." This example shows the reason for emphasizing the importance of proper control of mixing water in concrete.

The requirements of good concrete are:

1. Elimination of present careless methods of construction.
2. Proper inspection and tests to insure quality of individual materials.
3. Mixing of aggregates in proper proportions.
4. Use of the proper amount of water.

COMMITTEE AT WORK

THE Committee of Nine, appointed by Governor Richardson under an act of the last legislature to make a study of the state highway system, began its work during the week of March 24th, when a number of southern California state highways were inspected. A second trip over additional roads in the southern counties was made during the week of April 21st.



W. F. MISON

Previous to its initial trip, the committee met in Los Angeles and decided to make trips over the entire system before holding formal hearings, which are scheduled for later on, prior to the next session of the legislature. Where overnight stops have been made, the committee, however, has conferred

informally with delegations of citizens who have wished to present various matters in connection with the state highways.

COMMITTEE'S PLAN.

It is the purpose of the committee to see as many miles of the state highway system as possible and to secure the views of all who wish to be heard. It is empowered to recommend the best method for designating "a proper system of state highways" and "methods of obtaining revenues necessary."

W. F. Mison, secretary of the state highway commission, is acting as secretary for the committee which is serving the state without compensation.

A MOVE TO BE COMMENDED

THE recent announcement of the Standard Oil Company that it proposes to remove its highway advertising signs in California has the hearty approval of the California Highway Commission and the state highway engineer. The new policy of the company is in line with that of the commission which prohibits advertising matter on the highway right of way.

The Standard Oil statement, issued through its sales organization, is as follows:

"Convinced that highway advertising signs detract from the natural beauty of the great routes of travel of the Pacific coast, this company has decided that it will erect no more such signs and that it will immediately remove all of its signs of this nature now standing. Hereafter the company will confine its use of signs to commercial locations.

"The company feels that the splendid scenery so characteristic of nearly all of the highways of California, Oregon, Washington, Nevada and Arizona should be unmarred, and on that account is willing to sacrifice the advertising value of the signs

STANDARD OIL COMPANY OF CALIFORNIA."

FOUR MORE CONTRACTS

SINCE the March issue of the bulletin, four additional contracts, three for repaving sections of the state highway, and a fourth for the Van Duzen River bridge, have been awarded by the commission as follows:

Southerly boundary to Camarillo, Ventura County, 13.5 miles, regrading and widening the pavement, awarded to Sam Hunter of Santa Barbara, \$329,722.64.

Milpitas to Coyote Creek, Santa Clara County, 3.72 miles, widening grade and thickening pavement, awarded to Federal Paving Company, \$87,371.04.

Pasadena Avenue to Montebello, Los Angeles County, 2.8 miles, widening and thickening pavement, awarded to George Oswald, of Los Angeles, \$183,863.50.

Across Van Duzen River, near Alton, Humboldt County, reinforced concrete bridge, awarded to Bordwell and Zimmerman of Napa, \$90,691.50.

These contracts make a total of 161.04 miles of highway placed under contract since November 1, 1923. The estimated cost of completing this new work is \$4,253,393.65.

Convicts working on California state highways made net earnings of \$5,500 during the month of February under the new pay law passed by the last legislature. Convicts in the Briceburg camp made allotments to dependents to a total of \$1,440 for the period ending March 15th.

THE SHOVEL THAT COMMITTED SUICIDE: On the brink and the place where it plunged into the ocean.



IN MEMORIAM

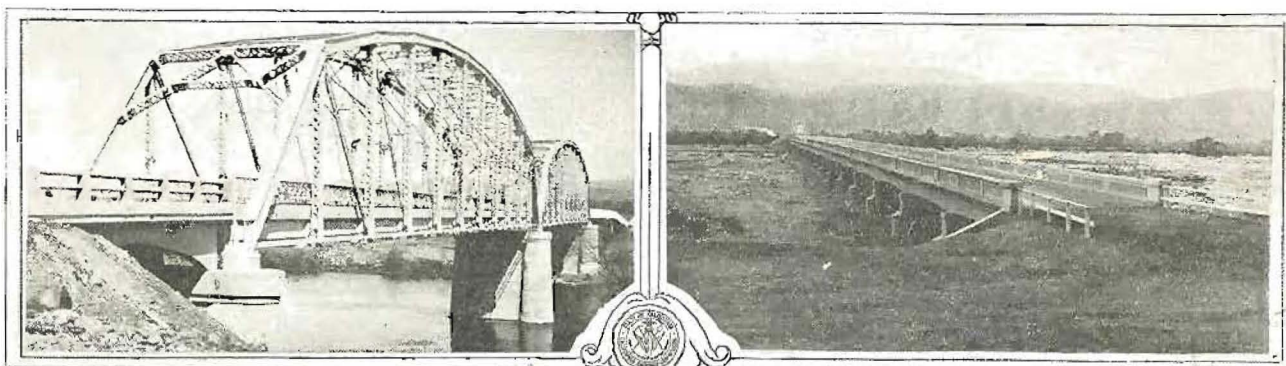
AT 1.20 a. m., March 5, 1924, in the dead of night, the Bucyrus 30-B, full diesel shovel, belonging to George Pollock Company, contractors, tired of its endless labors, plunged headlong 500 feet over a precipice to a watery grave in the turbulent waters of the Pacific Ocean at station 186 Contract No. 395, V-Monterey-56-E.

No services were held as her plans were well executed and she now rests in the bosom of the Pacific, free from all earthly troubles.

No effort is to be made to recover the body.

A post-mortem investigation showed that about four feet of bank gave way allowing the shovel to slide off backwards, slowly. The operator escaped. The shovel hit only three times in the descent and the last plunge was over a cliff about 150 feet high, landing the shovel seventy-five feet into the ocean.

The remains may be seen at low tide.



At left, steel truss bridge over Feather River, Oroville lateral, Butte County; and right, reinforced concrete girder bridge over the Big Tujunga River, Los Angeles County.

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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. APRIL, 1924 No. 4

JUST AMONG OURSELVES

☆☆☆

HIGHWAY NEWS NOTES

Spring Brings Baseball Fever.

RECENT warm spring weather has inoculated the office force of Division II with baseball fever. E. Wilson has been named manager, and C. F. Oliphant captain of the division's team. In their first game with the Dunsmuir town team, the Highways were defeated 10 to 7, but expect to be in better form in the future.

Teams also have been organized in one of the construction camps in the Sacramento canyon and in the day labor camp on the Trinity lateral.

M. L. Johnson has been transferred from the division office to E. J. Bassett's construction job at Baird.

E. G. Hawkins, of the accounting department, spent two weeks at R. W. Brown's camp last month, checking account.

Superintendent R. W. Brown has acquired a motion picture machine for his convict camp, in western Shasta County.

J. P. Smith has resigned as rental equipment clerk and has been succeeded by L. S. Stivers, formerly of the Beaver Creek camp on the Klamath.

George H. Wilson, Jr., and Daniel Allen have resigned. H. K. Ward has succeeded Allen as chief of the latter's party.

Division II regrets to announce the death of William Niven Aird, a new employee of the department. Deceased was a native of Scotland and a Canadian World War Veteran.

Headquarters.

It is with extreme regret that the bulletin announces the death of Mrs. Graham, wife of Clyde A. Graham, of the headquarters accounting department, formerly with Division I, and of John Temby, father of C. J. Temby well known headquarters draftsman.

The new law, under which men from the state prisons employed on the state highways are paid a small wage, has greatly increased the work of department which supervises the prison road camps. This department now has an office of its own, room 527, Forum building. The bulletin editor and the convict superintendent began work in the same office last November, but both soon found themselves needing more room.

Mrs. Julia Harlow, formerly stenographer for both departments, now devotes her entire time to assisting with the publicity work. Miss Kathryn B. Melarkey is the new stenographer in the office of prison road camps.

Draftsmen Change Divisions.

Almon Coonrod and Herman Fisoher, formerly with Division II at Dunsmuir, have been added to the drafting force in Division VIII, San Bernardino.

Dennis O'Hara, formerly with Division III, has been appointed junior equipment engineer, and has taken over the supervision of equipment in Division VIII.

Division VIII was pleased to have as its recent visitors, State Highway Engineer R. M. Morton, Commissioner N. T. Edwards, Construction Engineer C. S. Pope and C. L. McKesson, his assistant. Another visitor from headquarters was C. M. Smith, traveling auditor for the accounting department.

Office Engineer Resigns.

D. E. Henry, office engineer, Division IV, San Francisco, has resigned and has been succeeded by R. E. Messner, recently resident engineer on the Peninsula highway.

M. C. Fosgate and O. B. Brinkerhoff, assistant resident engineers, and J. L. Richmond and A. N. Bennett, rodmen, have been transferred from the Peninsula highway to the new Beltane-Schellville contract, in Sonoma County.

George J. Wagner is in charge of construction on the third unit of the Skyline boulevard. Included in his party are E. Carlstadt, assistant resident engineer, and rodmen Brandon, Hurley, and Freye.

E. J. Brown is resident engineer on the widening of the Oakland-San Jose road from Milpitas to Coyote Creek. A. F. Janes and J. A. Harley have been assigned to this party.

T. A. Perrott resigned February 29th.

Division III News.

J. W. Vickrey has been named resident engineer on the Truckee-Boca grading contract, Nevada County. A. R. McEwen will act as his assistant.

C. O. Dingle is resident engineer on the Stony Creek bridge construction, in Glenn County.

W. C. Jones has been assigned to the grading contract at Donner Summit as assistant resident engineer.

H. L. Montfort has been appointed superintendent in charge of maintenance on the highway from Placerville to Lake Tahoe and about the lake.

Myron E. Greer and F. A. Parker, draftsmen, have resigned. Greer has accepted a position with the Standard Oil Company in Sacramento.

Division VII.

C. G. Kilster has been named resident engineer on the widening and paving job between Shoup avenue and the westerly boundary of Los Angeles County on the coast route.

J. P. McAndrew has been transferred from the Whitewater bridge job, in Riverside County, to the Shoupe avenue job as assistant to Mr. Kolster.

L. G. Corey, formerly assistant resident engineer at Oxnard, has been made chief of a new survey party just organized.

Harry Lansdowne is chief of the party doing survey on the Whittier boulevard, east of Montevello, Los Angeles County.

Equipment Man Injured.

While returning to Sacramento at night from Stockton, R. A. Watkins, superintendent of equipment for Division X, was run into by a speeding machine which was attempting to pass a truck. Watkins sustained severe lacerations on his hands and face, and was removed to the Stockton Emergency Hospital for treatment. He is now at his home in Sacramento and is reported recuperating.

W. K. Wright, construction engineer, Division X, has established his home in Sacramento, his family having arrived recently from Oregon.

Division VI Personals.

B. H. Burrell has been appointed resident engineer at Chowchilla, succeeding Earl Withycombe, now with the construction department at headquarters.

Leslie F. Talley, instrumentman, and John A. Talley, H. B. Williams, Shirley Ewers, Eugene C. Garrigan, and Morris Reeser, rodmen, have been added to relocation survey parties working in the Kern River canyon, Kern County.

Carl Nelson has been appointed maintenance foreman on the Mariposa-Yosemite road.

Three convicts from the Briceburg camp, working on the Yosemite road, were injured recently when they drilled into an unexploded charge of explosives. One of the three died at the San Quentin hospital. Another convict was killed on this job by falling rock during the month.

Enlarged Bridge Department Now on the Job



(1) Harlan D. Miller, Acting Bridge Engineer; (2) F. W. Haselwood, Construction Engineer; (3) D. C. Willett, Office Engineer; (4) J. Gallagher, Office Engineer; (5) C. W. Jones, Specification Writer; (6) H. J. Peacock, Cost Estimator; (7) Paul Dunckhorst, Assistant Construction Engineer; (8) G. W. Thompson, Resident Engineer; (9) W. H. Johnson, Resident Engineer; (10) H. Carter, Resident Engineer; (11) H. D. Stover, Designer; (12) H. E. Kuphal, Designer; (13) H. P. Williamson, Designer; (14) A. J. Meehan, Draftsman; (15) A. B. Willett, Draftsman; (16) E. A. Welch, Draftsman; (17) L. N. Clinton, Draftsman; (18) H. M. Sturges, Draftsman; (19) Grayce Maddox, Stenographer; (20) N. C. Raab, Draftsman; (21) M. H. Roberts, Draftsman; (22) A. A. Lernhart, Draftsman; (23) S. Potashnick, Designer; (24) R. W. Robinson, Draftsman.



SMILEWAYS



"VAN DUZEN"

There's many a hair turned a lustrous grey,
As bridges were pondered all during the day,
But if ever a bridge would drive one to "boozin',"
It's that three-arched wild dream known to all as "Van Duzen."

There's Gallagher, Raab, Potashnick and Stover,
Four good engineers—just look them all over,
But all four have at times been caught doing some "snoozin'"
While attempting a perfect design of "Van Duzen."

Now comes Leonard from "Frisco" who writes a long letter,
Because his designs do not prove any better;
We'll leave it to Whittle to do all the "choosin',"
And tell us who made the best bridge for "Van Duzen."

—Paul Dunckhorst, Bridge Department.

By collecting a 10 cent fine every time engineers in the construction and maintenance departments at headquarters were provoked to "cuss words," Miss Fern Dunkeson, stenographer, raised a fund with which she purchased two gold fish. They have been named "Pope" and "Wagner," respectively, and "Wagner" already has been taught to eat out of her hand.

The reason for the peculiar walk of H. W. Schreiber, maintenance engineer in Division IV, at last has been fathomed. It is caused by his annual trip on horseback through the State Redwood Park during the period when spring maintenance is under way.

Thirteen

"Al" Wagner would like to know who put the tacks on the highway while he was visiting the Colonel's division.

Ed Araujo, of the construction department, insists that Earl Withycombe, recently of Division VI, shall be entered in the contest for the best looking engineer. How about Ed, himself?

Health Hint to Motorists: A lightning bug is about the only one that can get along with just a tail light.

The engineers do a lot of kidding about Skeggs' Canal, but over in Lake County the newspapers say it's the best mountain road in the state.

JUST AMONG OURSELVES

(Continued from page 12.)

Division I Man Weds.

R. W. Wright, of the Willits office, Division I, was married March 20th to Miss Agatha R. De Carie, of Sacramento. The ceremony was performed at the Westminster Presbyterian Church in Sacramento.

E. M. Cameron has been making investigations and a report on the location of possible routes easterly from Korbel in Humboldt County for a distance of fifteen miles on the Arcata-Weaverville highway.

Explores Country.

Studying possible routes for the Mecca-Blythe highway, Division Engineer E. Q. Sullivan, of San Bernardino, has made numerous hikes into the desert, some of them as long as twenty miles into country which, apparently, had not been visited by white men for many years.



With the Maintenance Crews



WIRING and installation of lights in the Newhall tunnel has been completed by Division VII.

Grading for the laying of concrete approaches to the Pacoima Wash bridge, recently completed near San Fernando, has been begun by a thirty-man crew in charge of assistant superintendent A. W. Schmuck.

A maintenance crew equipped with a clamshell dredger and five dump trucks is at work constructing drainage ditches along the highway between Irvine and Tustin, Orange County. Excavated material is being used to widen shoulders.

The maintenance department of Division IV reports major slides on the new highway in the Mount St. Helena section of Napa County have been removed and the road opened to traffic.

Spring Work to Start.

Division III reports opening of mountain roads has been somewhat delayed, due to storms during March. Maintenance crews, however, are moving to higher levels as fast as possible, preparatory to the usual spring opening work.

Grading, dragging, and graveling the 7.2 miles between Coloma and Placerville, a portion of the Mother Lode highway, is now under way, under a recent vote of the commission directing that maintenance be done on this section.

Rock shoulders are being placed on the Eastside highway, near Chico, and calcium chloride has been spread on 1400 feet of highway, north of Auburn, as an experiment.

Division III has the spring cultivation of trees along the highway under way.

Dangerous curves opposite the Wise power house, below Auburn, are being eliminated by state forces.

Merrill Begins Work.

Grant P. Merrill, Division X maintenance superintendent, and his family have moved to their summer home, a pretty log cabin at Woodruffs, Alpine County, where Merrill once more has begun his summer work—keeping state roads in that district in good condition.

Funds have been allotted for line and grade improvement on Pacific grade on the Big Trees road and for similar work between Silver Mountain and Junction.

Division X crews are extending all pipe culverts between Fairfield and Vacaville and Batavia and the county line, in Solano County.

HOW DOES HE DO IT?

HERE is something for division engineers to think about. H. S. Comly, at the helm of Division II at Dunsmuir, recently appeared before the Northern California Supervisors Association convention at Weaverville. It was reported that the supervisors were in a rather belligerent mood.

When Comly came away, a copy of the following resolution, duly passed by the association, had been spread upon the minutes:

Be it resolved, by the Northern California Supervisors Association that we publicly express to Division Engineer H. S. Comly, of the California Highway Commission, our sincere appreciation for the detailed information furnished us and assure him he has labored not in vain to establish a closer and firmer cooperative spirit between us and the organization he so masterfully represents as division engineer.

A NARROW ESCAPE

AN example of the difficulties under which construction is progressing on the San Simeon-Carmel highway, south of the Big Sur River, in Monterey County, Division V, was the accident in which G. Corvin, a workman, nearly lost his life. A slide carried him to the brink of a canyon where he

Placing of a wheel guard on the Mokelumne River bridge, north of Lodi, has been completed, and a carload of riprap placed to protect footings from scour.

Fordsons Prove Popular.

Good results have been obtained on the Michigan Bar-Drytown road, in Amador County, by using a Fordson tractor equipped with blade and drag. Two additional Fordsons have been ordered for use in other places in Division X, as a result of the experiment.

Division X is planning to try out liquid calcium chloride on a section of graveled road in Calaveras County.

New Equipment in Division VIII.

New equipment recently approved for Division VIII includes a Barber-Greene loader, to be used on the desert near Needles, and seven Fordson tractors. The latter are being used to drag desert roads under maintenance.

The only road in the division closed to travel during the winter, with the exception of roads under construction, was the Crest route, leading to Big Bear Lake in the San Bernardino Mountains. Traffic was stopped for a short time by recent snow storms.

Roads Good in Division II.

Maintenance foremen from all parts of Division II report roads in excellent condition for the summer travel. Signs of dust, unusual for this time of year, are showing in some districts.

Six new road graders and a Wehr one-man power grader have been purchased for use of maintenance forces. Two more of the latter graders have been requisitioned as those now in service are doing excellent work.

More than sixteen miles of the highway in the Sacramento canyon have been surfaced with rock since this work started some time ago. The work is scheduled for completion June 1st. The small, crushed rock is packing well under traffic and constant dragging, and, with the application of calcium chloride, it is believed this road can be maintained in excellent condition during the summer.

Surfacing work will be done shortly on the Trinity lateral between Weaverville and Tom Long gulch. A small state force also is completing culverts between Brunt Ranch and White's Bar Creek, in Trinity County.

caught against some trees. Falling rocks crushed his foot and ankle and broke four ribs. J. M. Knapp, a field draftsman, rendered first aid.

It was necessary to remove the injured man forty miles to Monterey for treatment. The sea was rough and the contractor's boat, the usual means of communication, could not leave Monterey Bay. Ten men carried Corvin, on a stormy night, over slides and mountain trails to the nearest automobile road.

The suffering man reached Monterey within twenty-four hours, but it was found necessary to amputate his foot.

MAINTENANCE WORK PRAISED

RECENTLY, the commission, in cooperation with Tehama County, expended a small amount of money for maintenance on the Red Bluff-Susanville lateral between Red Bluff and Paynes Creek, the unconstructed section of this route.

The work was done under the direction of Resident Engineer S. W. Lowden of Division II. Commenting upon the results accomplished, the *Red Bluff Daily News*, in a recent issue, said:

"Engineer Lowden has shown splendid efficiency in making his allowance of funds reach from one end of the section to the other. He has corrected all the troublesome places, widened the road, and removed the curse-provoking water brakes and in their place has constructed drains. The entire stretch of road from Red Bluff to Paynes Creek was never in better condition."