

E. H. Owen
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ARIZONA HIGHWAYS

ISSUED BY THE
ARIZONA STATE HIGHWAY DEPARTMENT
PHOENIX, ARIZONA

With the Idea of Furthering the Development of
Good Roads Throughout the State

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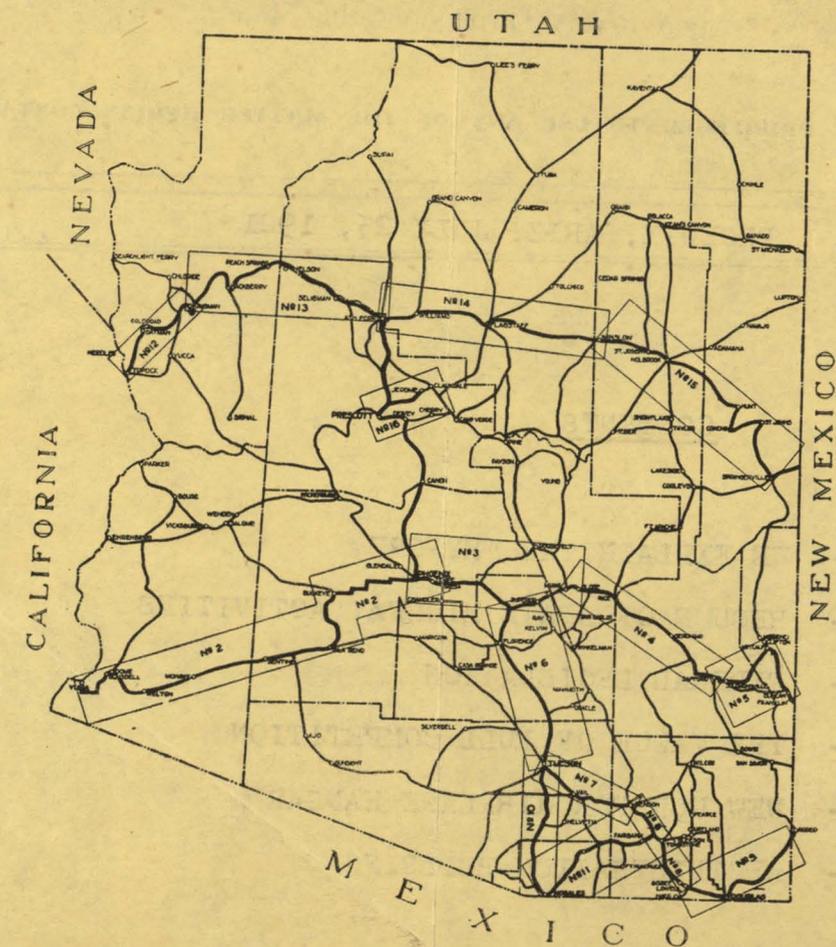
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PHOENIX, ARIZ. JULY 25, 1921

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THE WHYFORE

Millions of dollars thru legislative appropriations, county and city bond issues are being expended yearly in Arizona in the construction of highways either directly or indirectly under the supervision of the State Highway Department.

The taxpayers of Arizona have a right to know how this money is being spent. They have a right to know all there is to know about this department for our highway program is coming to be regarded secondary in importance only to our public school system.

For the purpose of keeping all interested persons informed concerning highway development in this state it has been decided by this department to issue a news letter from time to time under the title of Arizona Highways. We claim no credit for originating the idea. Thru the American Highway Education Bureau this form of fact-dissemination has been adopted by the Federal Bureau of Public Roads, and in the issuance of regular publications by the highway departments of Wyoming, Nevada and other western states.

It will be the aim of Arizona Highways to give out accurate and complete information. Heretofore the publicity from the department has been unsystemized and haphazard, giving rise to misinformation at times which is not conducive to the efficient carrying out of any public enterprise.

In the publication of an inexpensive pamphlet of this kind the Department believes that it is meeting its obligation to the public, and that the slight expense entailed is a legitimate one. Arizona Highways will be mailed free to any taxpayer sufficiently interested to make the request. The total number of copies will necessarily be limited, however, and it is for this reason that we look to the press to make free use of the matter contained herein and count on their cooperation in placing these facts in the hands of the people.

THOS. MADDOCK,
State Engineer.

WHAT'S DOING ON ARIZONA HIGHWAYS

The following is given as a resume of State highway activities in Arizona by counties:

APACHE

No state highway work now in progress. Contractors Tanner Bros. have just completed 3 miles of road between Holbrook and St. Johns in the vicinity of Hunt. The county board of supervisors will open bids on July 30, for the construction of 9.6 miles of highway between Hunt and Concho.

COCHISE

Contractor Dan LaRoe is putting the finishing touches on a 26-mile contract from Bernardino to the New Mexico line. This means the completion of the Borderland route through Cochise county. Federal Aid Project #49 embracing the improvement of the road between Fairbank and the Santa Cruz county line has been submitted to the Bureau of Public Roads and work will be started as soon as federal approval has been granted. Maintenance crews are being organized by I. P. Fraizer, Maintenance Engineer with the State Highway Department, to take over the maintenance of all state highways in Cochise county. Completion of the Benson-Vail road has been delayed just out of Benson by failure to secure a right of way from the Southern Pacific railway.

COCONINO

Warren Bros. have completed the paving of 1.1 miles thru the town of Flagstaff, as a part of the National Old Trails Highway. This paving is 18 feet wide with a four inch bituminous base and two inch surface of bitulithic. The construction was financed from city funds supplemented with federal aid at a total cost of \$48,000.00. The state grading camp located three miles west of Flagstaff has been moved to AshFork Hill. The surfacing crew is making good progress on the new grade between Flagstaff and Williams. Volcanic cinders are being used as surfacing material and the work should be completed by September. The new grade is considerably shorter than the old, is graded higher, and with heavy timber, which shadowed the road removed, the possibility of blockade from winter snows; which has always been a serious menace in this section, has been materially lessened.

In compliance with the request of the Williams Chamber of Commerce, the \$25,000 appropriated for the construction of a road between Williams and Clarkdale has been applied to the improvement of the road between Williams and Clarkdale via AshFork as forming a more practical connection.

Cocconino Con'd.
The grade outfit west of Williams has nearly completed its work east of Supai and is now working its way toward AshFork assisting in the task of reducing the heavy grade of AshFork Hill to a maximum of six per cent.

GILA
Construction Engineer, Jas. A. Parker is reorganizing the maintenance crews on the Globe to San Carlos and Globe-Roosevelt highways which disbanded last year on account of lack of funds. On the Gila County portion of the Superior-Miami Highway, Contractor S. Y. Faucett is making satisfactory progress on a one mile contract around the head of Pinto creek, and the same applies to the Gila county forces which contracted another section of this route.

GRAHAM
State forces are now at work in the vicinity of Geronimo. Five miles of the new road west of Geronimo have been thrown open for traffic, and construction work is now in progress east of Geronimo, paralleling the Arizona Eastern railway. The state recently completed the extension of the Gila river bridge above San Carlos and the improvement of 12 miles of road between the San Carlos and Gila river bridges. The Indian agent at San Carlos is looking after the reconstruction of several wooden culverts on that portion of the road lying in the Indian reservation.

GREENLEE
The state recently completed the survey of the Mule Creek road from Clifton toward Silver City, N. M. Owing to a shortage of funds a narrow gauge road is planned. Seven miles of road will be required to connect up with the New Mexico end of the road and funds will be provided from the State's 75 per cent road fund supplemented by a portion of the Greenlee county bond issue. The board of supervisors, the county highway commission and the chamber of commerce in Greenlee county have requested the State Highway Department to start this construction in preference to the improvement of the route between Clifton and Springerville.

MOHAVE
State forces have completed the road between Topock and Oatman and between Oatman and Gold Roads on the National Old Trails Highway. A few men are repairing the equipment used on this construction. State forces are at work on the Indian reservation between Nelson and Peach Springs. The next work to be undertaken will be the improvement of the 17 mile hill between Kingman and Oatman with the probable elimination of the underground railroad crossing on the Truxton wash near Crozier. This work together with gravel surfacing out of Topock will place the entire route of the Old Trails highway thru Mohave county in first class condition.

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The state recently completed the survey of the Mule Creek road from Clifton toward Silver City, N. M. Owing to a shortage of funds a narrow gauge road is planned. Seventeen miles of road will be required to connect up with the New Mexico end of the road and funds will be provided from the State's 75 per cent road fund supplemented by a portion of the Greenlee county bond issue. The board of supervisors, the county highway commission and the chamber of commerce in Greenlee county have requested the State Highway Department to start this construction in preference to the improvement of the route between Clifton and Springerville.

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MARICOPA

The Allied Contractors who have the contract for the construction of the Wickenburg bridge across the Hassayampa River, have completed all of the foundations and two of the three spans. B.H. Lee was awarded the contract for the grading of the approaches estimated at 5,000 cubic yards, on July 15. There were three other bidders. The new state highway department office building is also nearing completion. This building will also likely house the State Land Department. The basement will be used for laboratory and storage purposes, and the second story as a drafting room. The offices of the Highway Department will be moved to its new quarters about August 1, from the main floor of the Warehouse adjoining, thus affording more room for the storage of machine parts. As a result of a change of policy on the part of the war department a large amount of additional surplus war materials will now be available, and many small tools and parts are now being received. Some of the larger shipments of the last few days include eight cars of TNT and three miles of industrial railway. The bridge department recently erected an airplane hangar received from the government and this will be used for the storage of trucks and other equipment. The mechanical forces of the department are now engaged in the construction of 30 cook and bunk wagons for the use of maintenance crews. Federal Aid Project #46, Phoenix to Cashion, which is being built in conjunction with the Maricopa Highway Commission is practically completed. Plans and specifications for an additional seven miles of cement concrete paving west and south from the Agua Fria river have been sent to the district engineer of the Bureau of Public Roads at Albuquerque for approval. Contractor LaRoe has started installing the drainage structure for the paving between Phoenix and Glendale. This is a federal aid project seven miles in length. On August 8, the Department will open bids for the construction of three miles of paving between the eastern city limits of Phoenix and the end of the concrete highway to Tempe.

NAVAJO

The Bureau of Public Roads has refused Federal Aid for the Winslow paving on account of lack of competition in bidding. Bids for both asphalt and cement concrete paving will be opened by the State Engineer on July 25. The work between Winslow and Holbrook is being held in abeyance until it can be learned what action will be taken by Congress relative to the Phipps-Dowell bill.

PIMA

Contractor John Hoops has completed the construction of the drainage structures on the nine miles covered by his contract on the Tucson-Nogales Highway and has started paving operations. DeWaard & Cobham have nearly finished their contract calling for the construction of five bridges on the Tucson-Nogales Highway. The Vail-Benson Highway, including the Cienega Creek Bridge is

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GRANDE

The state recently completed the survey of the Mile Creek road from Clifton toward Silver City, N. M. Owing to a shortage of funds a narrow gauge road is planned. Seven-teen miles of road will be required to connect up with the New Mexico end of the road and funds will be provided from the state's 75 per cent road fund supplemented by a portion of the Greenlee county bond issue. The head of supervisors, the county highway commission and the chairman of commerce in Greenlee county have requested the State Highway Department to start this construction in Greenlee to the improvement of the route between Clifton and Springerville.

MOHAVE

State forces have completed the road between Topock and Oatman and between Oatman and Gold Road on the Cotton-Old Trails Highway. A few men are repairing the equipment used on this construction. State forces are at work on the Indian reservation between Nelson and Peach Springs. The next work to be undertaken will be the improvement of the 17 mile hill between Kintman and Oatman with the probable elimination of the underground railroad crossing on the Kintman wash near Oatman. This work together with gravel surfacing out of Topock will place the entire route of the Old Trails Highway thru Mohave county in first class condition.

Pima con'd.

completed and in first class condition. Additional maintenance forces have been organized for this road as well as the one leading south from Tucson to Oracle and Florence.

PINAL

On the Superior-Miami Highway, Superintendent of Construction, Ran Bone is moving his camp from the head of Queen Creek to Iron's Canyon, for the purpose of continuing the heavy construction work in Iron and Devil's canyon. The Prison Camp located one mile above Superior has been reopened and these forces will be utilized in putting the finishing touches on the lower portion of the road. Contractor Maurice Ryan has completed Section D of the Florence-Superior Highway. A state maintenance camp will be installed at the important junction of the Florence-Superior and the Mesa-Superior roads. Prisoners from the state prison are continuing the surfacing of the road north out of Florence toward Mesa, and are also engaged in the manufacture of concrete culvert pipes to be used between Florence and Tucson.

SANTA CRUZ

State forces have recently completed sections A and B., embracing 14 miles of highway between Nogales and Fairbanks and will begin the construction at the request of the Santa Cruz Highway Commission, of the road between Sonoita and Patagonia, a distance of 13-1/2 miles.

YAVAPAI

The state has reopened its construction camp on the Prescott-Jerome Highway and work is being prosecuted thru the Granite Dells country. E.J. Harrington is completing his contract calling for the construction of a concrete bridge across Granite Creek. Plans and specifications for four miles north from Prescott have been submitted to the Bureau of Public Roads. The construction will be handled by the State Highway Department in conjunction with the Yavapai County Highway Commission. State forces have completed a new road from Pica to Peach Springs, eliminating an especially bad piece of highway thru Nelson's Canyon and are now engaged in improving the route between Peach Springs and the Mohave County line.

YUMA

The state has completed the 900 foot extension of the Antelope Hill Bridge damaged in the Thanksgiving day flood of 1919, together with approaches to the same. The gravel crushing outfit has been moved from the quarry near Yuma to gravel pits near Blaisdell and the surfacing of the road has been started westward to connect with the road on the mesa running east from Yuma. About two miles of road is already surfaced and good progress is being made on the remainder.

The eyes of the highway world are now focused on Congress which has under consideration two measures calling for a continuance of the federal aid program. One of these is known as the Townsend bill after Senator Townsend and the other is entitled the Phipps-Dowell-Robinson bill.

The Townsend bill calls for the appointment of a national highway commission originally of five members, but by virtue of a recent amendment to be composed of three only. This bill was favorably reported out of the senate committee on post offices and post roads on June 13, and ever since Senator Townsend has been awaiting an opportune moment to call up his measure for passage, at which time the minority report on the same measure will be heard and debated. This bill has the endorsement of the American Automobile Association.

The Phipps-Dowell-Robinson bill would continue federal aid under the Bureau of Public Roads of the Agricultural department, under a single executive. Its chief feature is one which commends it especially to the west, and is known as the graduated scale formula. Under this formula, the government pays a greater share of the expense of road building in public land states than under the present fifty-fifty arrangement, the payment being in proportion to the total acreage of public lands. The allotment of federal aid to such states, however, is not increased. The effect would be to lessen the burden of expense to the state on all roads which are built cooperatively by the state and the federal government.

The following table indicates the approximate scale ratio of state expenditures on each \$100.00 required of the eleven Western States:

STATES	PER CENT OF PUBLIC LANDS TO TOTAL AREA	PER CENT OF COOPERATION REQUIRED
Arizona	71.2	23.0
California	46.2	37.1
Colorado	50.3	35.0
Idaho	68.2	32.5
Montana	43.9	36.8
Nevada	90.6	8.5
New Mexico	49.9	30.6
Oregon	50.0	35.8
Utah	79.8	17.2
Washington	31.7	45.7
Wyoming	71.9	20.
Average		29.4

One of the most important pieces of construction of the State Highway department is the new administration building, now nearing completion, located at the state highway yards, Phoenix. This building embraces 18,000 square feet of floor space, the same as that contained in the five floors of the state capitol wing. The latter construction cost \$155,000, while the estimated cost of the highway administration building is \$42,535.91, or less than one third.

No legislative appropriation was made for this building, funds for the construction being taken from the 25 per cent road tax fund on the principle that suitable quarters for administration and storage purposes are as important as the construction of highways. As a matter of fact the road funds have not suffered materially, by virtue of the fact that the original source of the funds was income from the rental of federal equipment. Such revenue was placed in the 25 per cent fund for lack of any special fund to take care of such proceeds.

The building is a reinforced concrete floor and frame structure, 60 by 100 feet, and is being erected to comply with the building restrictions of the City of Phoenix. The exterior walls are of 8-inch concrete blocks and the interior walls of 4-inch blocks.

The basement floor will be used for laboratory, lavatory and storage purposes, the second floor for the administration offices, of the State Highway department, with a portion reserved for the State Land department, and the upper floor will be utilized as a drafting room.

A report on the present status of the building shows 835 cubic yards of Class A construction in place and 74 yards of Class B. A total of 104,670 pounds of reinforcing steel has been placed and the roof framing is 40 per cent complete. Sub-contracts for wiring, plumbing, exterior walls and partitions are under way and the sub-contracts for plastering and chimney have been awarded. The window frames are set and the windows delivered.

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ADMINISTRATION BUILDING

The labor costs to date total \$14,901.46, and the material costs, \$14,256.50, bringing the total expenditures to date to \$29,157.96. The sub-contract estimates yet to be paid amount to \$4,122.95, and the work yet to be done is estimated to cost \$9,255, bringing the total estimated cost to \$42,535.91.

The construction of this building is designed to meet the growing needs of the department, and is in line with the policy to provide proper housing facilities for surplus war materials distributed by the Federal Bureau of Public Roads. To date upwards of \$3,000,000 of such equipment has been received, and owing to the reduction of the army, shipments are now increasing in number and size, making imperative the full use of the warehouse building, the lower floor of which has been used by the administration, clerical and engineering forces.

When the initial offer came from the federal government to send free road equipment for the payment of freight charges it became apparent that the state would have to install a central yards suitable for its storage and repair. The land was purchased in May, 1919, at a cost of \$12,324.10. Since then shops sheds and other buildings have been added as required.

Work on the administration building was started in 1920. The basement and first floor were completed and then construction was stopped on account of shortage of funds. In April construction was resumed by an association of workmen, mostly men with families, who agreed to wait for their pay until July 1. Funds came in from the rental of equipment, however, and they were paid off in June.

This work as well as highway construction throughout the state was started at as early a date as possible this year, with the idea of providing employment for a large number of men forced out of employment by the closing of the mines and the general financial depression.

Economy in construction has been aided by the fact that the reinforced steel was taken from stocks on hand received from the federal government, while the lumber used for the concrete forms and elsewhere in the construction was used material taken from the Marinette bridge job.

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Administration Bldg. Con.

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