

# Arizona Highways



Repairing Cloudburst Damage

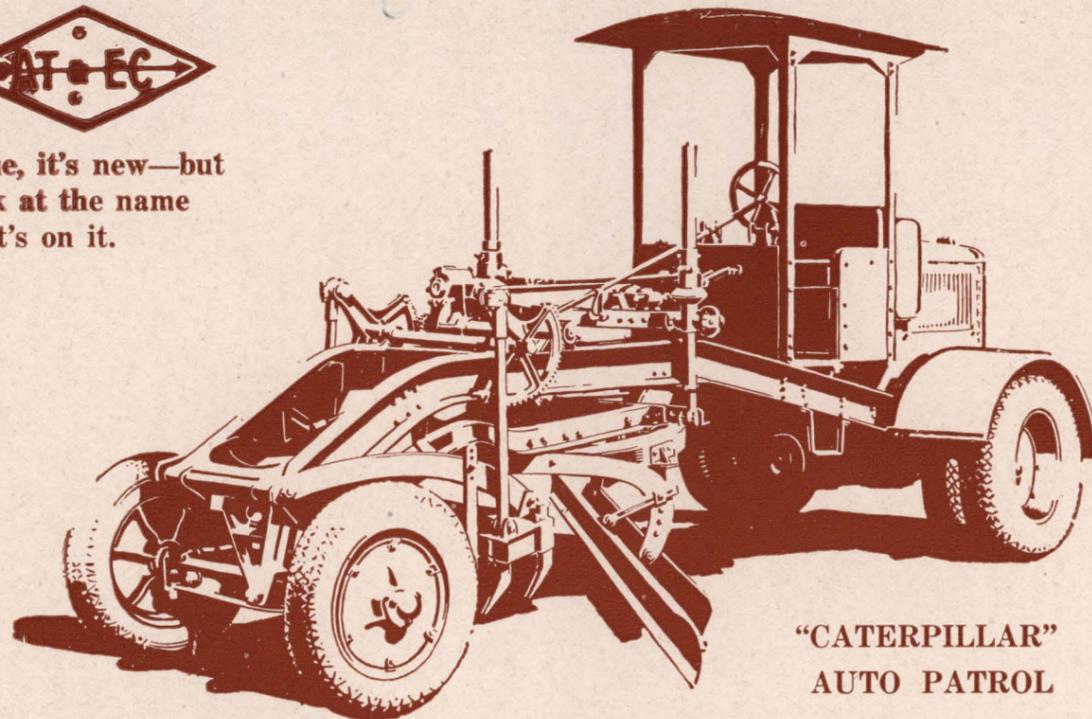
Volume 7  
Number 11

November  
1931

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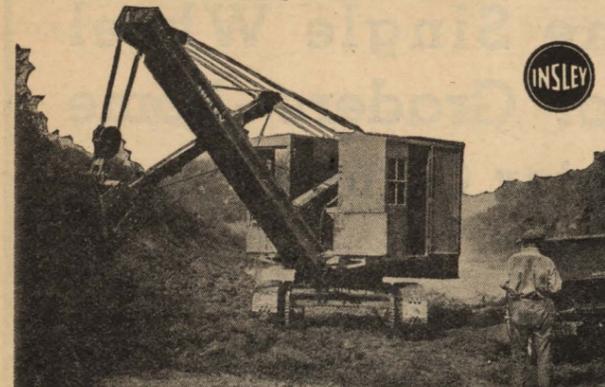


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# Arizona Highways

November, 1931

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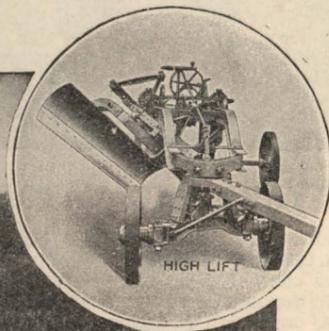
EL PASO, TEXAS

General Contractors

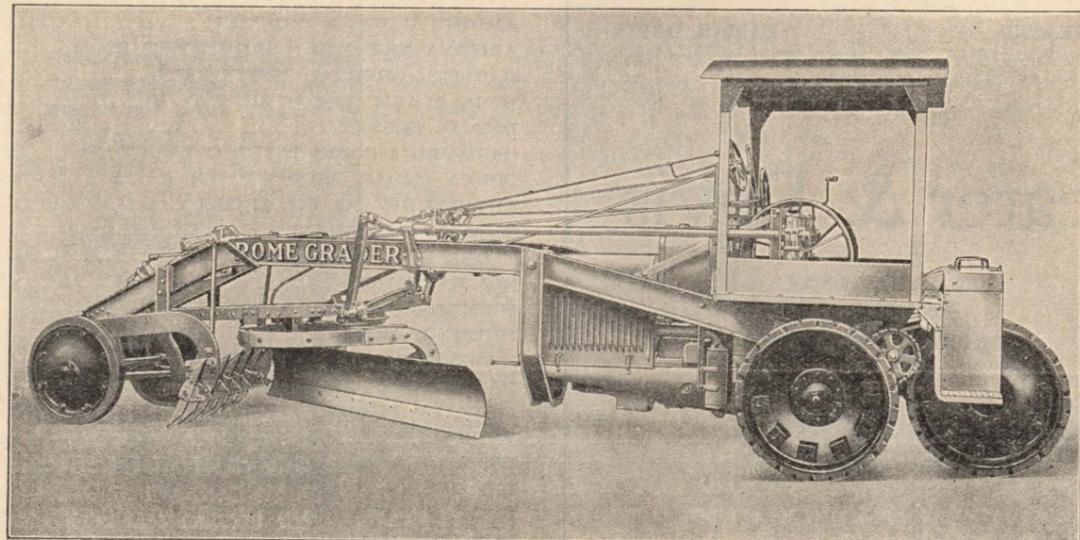


At present constructing Arizona F. A. P. 604-95B, which consists of grading and drainage of forty miles of U. S. Highway 89. Beginning at the suspension bridge across the Little Colorado River at Cameron and extending northward toward the Lee's Ferry Bridge on the Flagstaff-Fredonia Highway.

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# ARIZONA HIGHWAYS

CIVILIZATION FOLLOWS THE IMPROVED HIGHWAY

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Volume VII.

NOVEMBER, 1931

No. 11

## Betterments Keep Old Roads Up To Date

One of the important duties of the maintenance division of the Arizona Highway Department is carrying on the betterment projects of the highway budget each year. This important work is carried on by the maintenance division under the direction of the district engineer in the district in which the work is located.

Much of the traveling public, when they see a highway crew at work knocking off the corner of a curve, widening the highway in a dangerous spot, seal coating a stretch of oil surfaced highway, have the opinion the forces are doing something that should have been done when the road was built. Such is not the case. As we know, at the time highways are constructed, they are built with a view of giving the service which the importance of the road at that time demands and according to the traffic which the highway bears. Many of Arizona's roads were originally built to open up some particular scenic section or to serve local communities. At that time they were good highways for what they were intended. Since then traffic has increased over those sections. Commerce has succeeded sightseers or the connecting road has become a link in an important highway. Traffic has increased. Speed has been added to one of the requirements. Heavy laden trucks have replaced the jitney of former days.

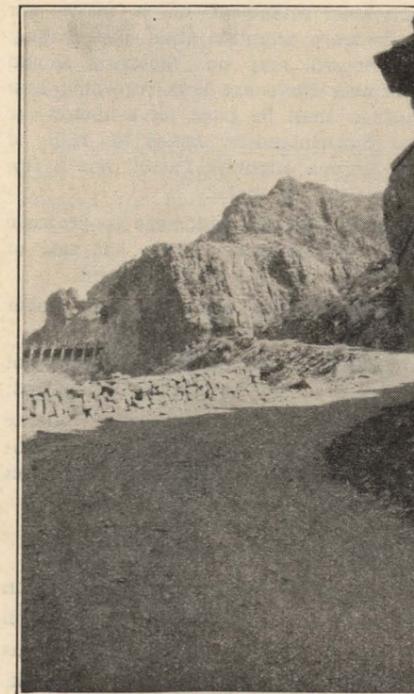
### Traffic Conditions Change

Where once a road was noted for its scenic thrills, today the bulk of the traffic cares nothing for the view and for the sake of safety and comfort it is up to the highway department to remove the sharp curves, the dips and the narrow roadbed spots and replace them with wider turns of increased vision, dips with box culverts and widen the roadway and strengthen the bridges.

Time too, takes its toll of every road. Bridges wear out, floods scour the footings, retaining walls crack and general wear and tear of fast moving, heavily laden traffic demands a constant removal of old structures and the build-



This was considered a fine boulevard ten years ago, but traffic increases now demand it be widened and straightened. The arrows indicate the structures that have been installed to permit these changes that will soon take place on East Van Buren Street.



ing of new ones. Thousands of feet of old fence has to be replaced with the modern guard rail. Bank protection, rip rap, jetties and stream deflectors, drainage ditches and dykes are a constant duty of the betterment work to keep a modern highway in repair.

These works are too great for the maintenance crews to undertake, along with their regular work and a force of foremen, trained in these particular jobs, are moved about by the engineers to do the work as has been foreseen and provided for in the year's budget.

Betterment jobs range from 500 to \$50,000, according to the character of the improvement needed in the highway. The work is done by force account by the state, and forces employed range from five to 50 men on each job. Labor for such betterment jobs are recruited

Apache Trail—Where the corners have been knocked off, improving the visibility.

in the district in which the work is being done. During the present fiscal year 35 betterment projects were scheduled in the highway budget and a total amount of \$239,350 was set up to do the work.

Some of the outstanding work that has been done in the way of betterments this year have been

1. The widening of cuts, turns and narrow roadway on the Apache Trail as far as Canyon Lake. This work was done with a three-eighths cubic yard shovel and dump trucks. The work was almost entirely in solid rock formation and cost about 60 cents per cubic yard in place on the road, for a total expenditure of \$15,000.

2. Coronado Trail between Clifton and Metcalf and Metcalf north. This project has been mostly a hand labor job consisting of widening the highway in narrow rock points and building and repairing rock and masonry walls and bridges. The cost of this work will amount to \$30,000.

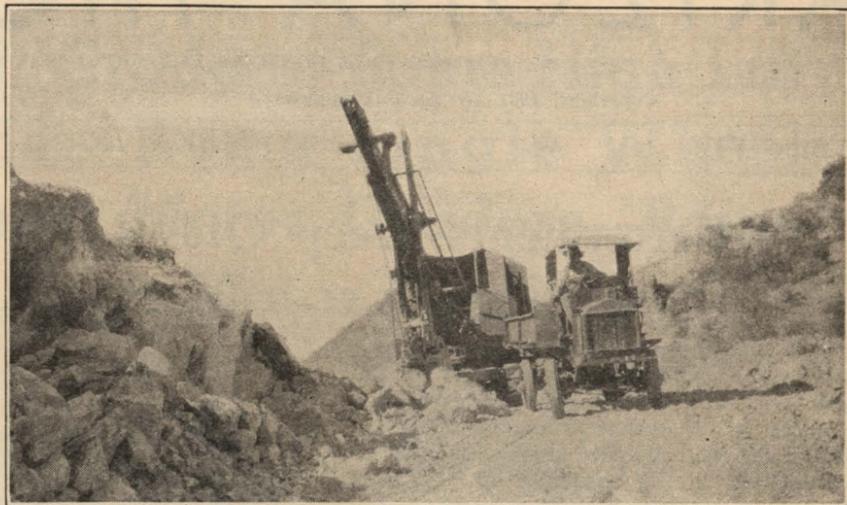
3. The widening of turns and the increasing of visibility on the White Spar highway south of Prescott. This is one of the greatest used mountainous highways in the state and is a high speed road. The betterment work being carried on will greatly increase the safety factor of the highway.

4. The cinder surfacing of 15 miles of the Rice-McNary highway from McNary to White River. This work was done with a three-eighths cubic yard shovel and dump trucks. The cinder pit was located at one end of the project, necessitating a long haul, yet the work was done for 80 cents per cubic yard in place and this dangerous piece of highway that was almost impassable in wet weather has been turned into a high speed road.

#### Half of Work Completed

To date about one-half of the betterment work for the fiscal year has been completed and the other projects will be undertaken as rapidly as the equipment and machinery is available. One of the important projects on which some work has been done, but which will be completed this winter is the widening of East Van Buren street from the Phoenix city limits to the Tempe bridge. This early concrete road of 18 foot width is one of the heaviest traveled arterials in the state and structures and road bed will be widened nine feet on each side of the present highway. The securing of additional right of way needed in some places has delayed the undertaking of this project.

The maintenance department and the



Highway Department shovel at work widening Apache Trail. This betterment work has made the Trail a much safer highway.

district engineers are ever on the alert for these necessary betterments. They must be anticipated and each year the division prepares their recommendations which are submitted to the highway commission in the month of May for their consideration and decision as to what will be undertaken during the coming fiscal year.

### Care Should Be Exercised In How You Load Your Car

Packing equipment on a motor car needs more attention than just making sure it will stay on. Motorists should remember there are laws regarding how baggage shall be piled on a motor car and Superintendent James M. Hall, of the Arizona Highway Patrol, has a few suggestions to make:

"Do not permit equipment to protrude past the hub caps on the left side of the car," says the superintendent.

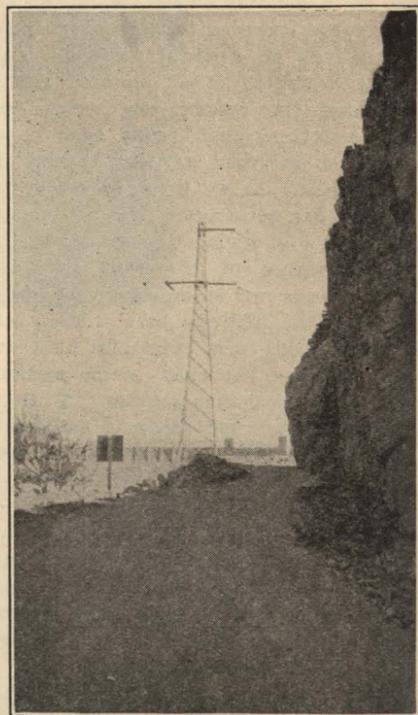
"Be sure that no ropes trail under the car;

"License plates and lights must not be obscured by luggage or equipment;

"When animals are transported on the running board, suitable cages or containers should be provided to protect the animal."

#### CALLING TO THE "ROAD HOG"

A suggestion looking to the solution of the "road hog" problem comes from Arthur E. Overbury of Monrovia to the Automobile Club of Southern California. Briefly, the plan is to have motorists



A bad corner that should be taken off near Roosevelt Dam. This has not been attempted because of the great quantity of rock that will have to be moved.

adopt a signal of three short, sharp toots of the horn to become known as notice for the slow driver to move over out of the center of the road, "please."

The author of the idea believes that with the new road hog law in effect that the three toots becoming known as a warning signal would eliminate a great deal of inconvenience and danger caused by slow driving near the center of the highway.

# Traffic Changes Quality of Highways

When is a highway really good or really bad?

Only a few years ago our dirt and surfaced roads in Arizona were considered the best of that type, that could be found in the United States. The information which backs up this statement was brought to us by tourists from all parts of the country. Their conclusion was arrived at through comparison. It was thought that a tourist knew a good road when he had driven over it.

Dirt roads, although very pleasing to travel part of the year, become nightmares during very wet or very dry seasons. The dirt road has rapidly given way to the natural surfaced road. Natural surfacing placed upon our highways has made them nothing short of famous as a traveler's facility, and has been no small factor in selling our state to our neighbors, near and far.

#### Natural Surfacing Only Temporary

Only a few years ago, traffic was light. Heavy bus and truck lines were uncommon. High speed was not even thought of except by race drivers and although records were made they were much lower than the average speed which touring cars of today easily can make. The traffic of yesterday did not ravage the highways like that of today. The lighter and slower traffic of yesterday did not create continuous fogs of dust and grind the surface of the roadway to the shape of a wash board like the heavy high speed traffic of the present day. Traffic has become so fast and so great that the proper maintenance of a natural surfaced road is impossible.

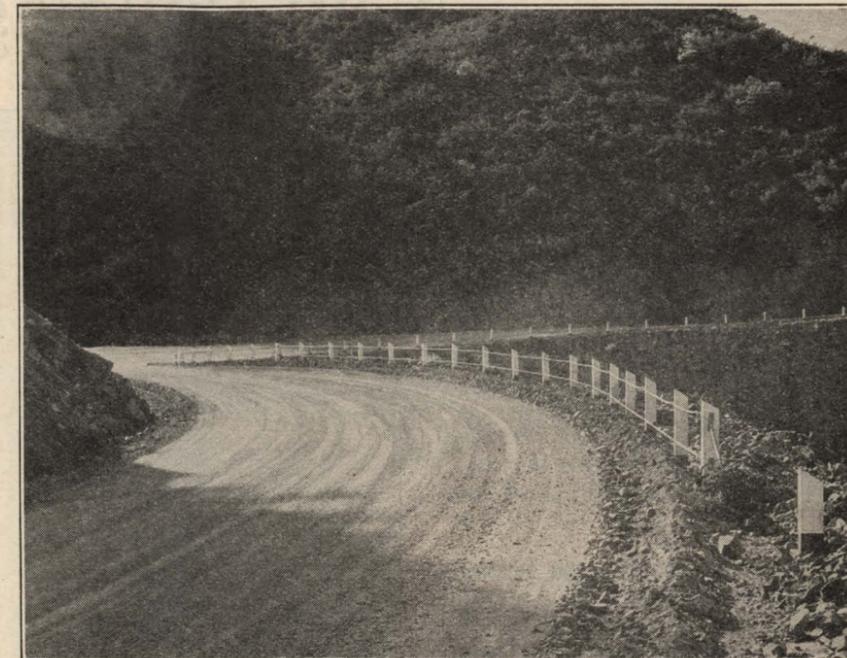
#### The Next Stage

Areas adjacent to some of our larger cities are improved with high class pavement such as cement and asphaltic concrete types. They are a great success but the problem of improving the main cross-state highways involves immense sums of money and would prove burdensome to a sparsely inhabited state like Arizona if the so-called permanent types of pavement were used.

Increased traffic of the present day kind has proven conclusively that the use of natural surfacing is only a means of habituating traffic and can be considered as only a temporary stage of construction and is preparatory to a higher type of surfacing.

#### Oil Surfacing Successful

Arizona now has several hundred miles of oil surfaced highways. The Highway Department did not start a large pro-



Sloping of bank on this corner increased visibility, giving full view of curve, thus increasing safety and speed.

gram of oil roads to begin with but felt its way cautiously by constructing short stretches under different conditions in order to determine the best ways and means of building a good road under all conditions. We have had some failures but it must be said that to date none of these roads have been deserted nor have they given way to other types of construction.

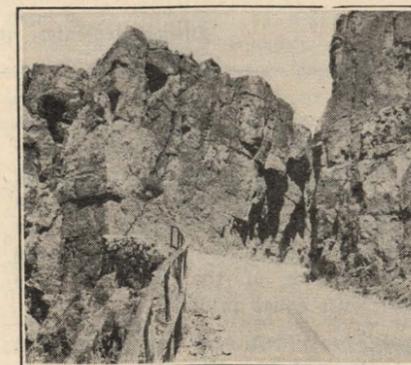
The Phoenix-Prescott Highway, a distance of 112 miles, is paved and oil surfaced for half the distance and is of natural surfacing for the remainder

of the distance. The comparison of these two types is very marked. The distance now paved and oil surfaced is an average good highway and is pleasing to ride over. The remaining distance which is of natural surfacing was pointed out as being typically a wonderful natural roadway until the oil surfacing program came along and now this wonderful natural road is a despised section and the question is often asked, "Why don't you oil surface that bad road?" It is true that the old road is not what it used to be, but after all it is largely a matter of comparison. I mention the Phoenix-Prescott highway because of its popularity with a large section of the state and we are all familiar with it, "The Hassayampa Trail."

#### Improper Comparison

Those of us who have to travel The Hassayampa Trail, and do travel it often as a necessity or convenience, think that the later improved section is just about what it ought to be and the natural section is more or less terrible, but the people who travel from state to state observing the roads under both good and bad conditions do not stand back to comment favorably on the condition of

(Continued on Page 21)



Here are blind corners that are being widened on Coronado Trail.

# Cochise County Opens Its New Building

Cochise county officials are now housed in the new, modernistic Court House that has risen during the past year on the hillside bordering the main thoroughfare through the city of Bisbee. Twenty-six miles to the north, in the town of Tombstone, once the rip-roaring mining center of the Southwest, stands the old Court House, deserted after 50 years' of service to the people of the county and state.

About two years ago, after a spirited county contest, it was decided at the polls to move the county seat to Bisbee, at the same time \$300,000 in bonds were voted for the building of a new county building to house the officers, courts and the county jail.

Built along modern lines, the building is an imposing structure in this picturesque mining city of southeastern Arizona. In the hills back of the new structure lie mountains of copper ore, waiting the call of the world's commerce to send it to the copper marts of the world.

## Unique Mining Town

Bisbee is an unique mining town, located in a winding canyon. While the town itself is but a few blocks wide, its main street, off of which the Court House stands, is miles long, extending, as it does, through several communities which go to make up the Warren district. Along this way one passes Johnston's addition, Lowell, Warren, Tintown, Don Luis, Jiggerville and Bisbee itself.

Bisbee is situated on the "Broadway of America" highway about half way between Douglas, the smelter city, and Tombstone, the romantic, picturesque town of the eighties, when its silver mines were among the greatest producers in the world, and all the famous mine town characters of that period added excitement and color to its civic existence.

Gone are the days that featured the early life of the old Court House of Cochise county. It will be interesting for the historians of 50 years from now to compare the stirring and tragic events that have taken place in the old with those that will transpire in the new. It is doubtful if the present or future generations will be able to produce as interesting a record as the hardy pioneers of Arizona enacted within the red



Bisbee dedicates new County Building

brick walls of the former court house. Today we hand it to the gleaming newness of the Bisbee Court House as being one of the finest public buildings in the state, but in 1881, when the now abandoned building first opened its doors to the service of the public it was viewed with equal pride.

Many prominent and near prominent people have held office therein—many criminals of note were confined in its jail, many noted people secured their

marriage licenses there, many people secured both their marriage and divorce papers therein and some of the latter nearly collided running from the divorce court to the marriage bureau.

## Scene of Notable Trials

John L. Sullivan visited the famous building and was there just before the legal hanging of four men occurred in its jail yard, many trials of note were held in its court room. Held there was the trial of W. C. Greene, charged with

murder, in which he was cleared by a jury. There was held the famous Bisbee deportation trial which lasted for weeks, there was the famous trial of several noted Mexicans charged with being in this country for the purpose of hatching revolutions in Mexico and for which they served a term in the federal prison—at the present it is the home of many Chinese who are here as guests of Uncle Sam and at this writing it appears Uncle Sam is tiring of playing the role of "mine host."

This charming old style of architecture, with all its beauty, will probably become a county museum in connection with the annual Helldorado celebration. That seems the destiny of this famous old building at this time.

## Road Oils Used In State Highways Are Passed By Tests In Laboratory

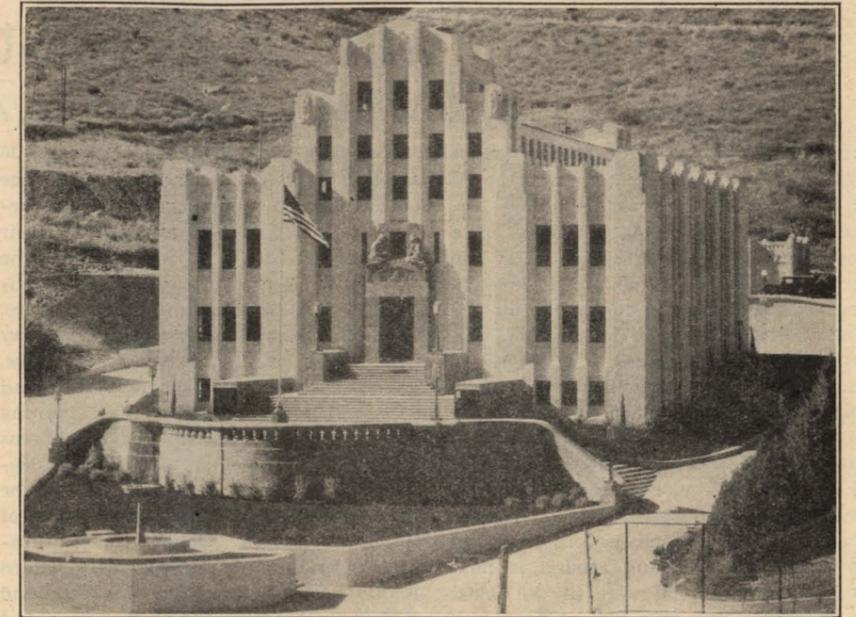
By J. W. POWERS  
Engineer of Materials

Diverging from concrete making materials and the apparatus and equipment necessary to test them, let us go back to the road surface again.

The present era in highway building in Arizona might be called the "dustless" era. The public demand is the criterion by which the policy of the department is formed. First it was improved location and alignment, then a high cementation, natural surfacing to give a faster, smoother road, and now the oil surface.

As building of a permanent type is too costly, to serve the purpose it was necessary to go to a more inexpensive type, thus the surface treatment with road oil was resorted to. The necessary characteristics of a good material have been gone into several times in previous articles, so this article will deal only with the oil.

The two determinations which have the most significance are asphalt content and viscosity. Upon the asphalt content of an oil depends its ability to bind satisfactorily the surfacing into a semi-rigid surface. All oils used by this department at the present time are liquid at ordinary temperatures, and have an asphalt content of not less than 65 per cent, determined by an open evaporation at 535 degrees Fahrenheit. The oil is placed in an evaporating pan and heated for the necessary time to drive off the



Another view of new Cochise County Court House in Bisbee. It is one of the outstanding public buildings of the state.

lighter fractions and convert it into a semi-solid state. The consistency of the semi-solid is measured with a penetrometer at 77 degrees F. The penetrometer is a uniformly loaded needle which is used to penetrate, for a specific time interval, the asphalt obtained from the evaporation. Depth of penetration is read directly and is the depth in tenths of millimeters of the penetration of the needle.

## Based on Penetration

For uniformity and as a standard, the asphalt content is based on an asphalt of 80 penetration. In our work on these oils we run two portions of a sample and evaporate so that we have asphalt contents which will give a penetration on each side of the standard set, and then by interpolation, we determine the exact percentage. Roughly—for each change on one per cent in asphalt content there will be a change of 20 in penetration.

As all oil treatment is done by the road mix method, it is necessary to have a measure of workability. The measure of workability is viscosity. Viscosity is measured with the Saybolt Furol Viscosimeter at 122 degrees F. The length of time in seconds it takes 60 cc to flow through a small orifice is its viscosity. The usual range of viscosity for the type of oil used is between 200 and 300 seconds.



The old Court House in Tombstone that has served the county for the last 50 years. Here much of the early history of Arizona was put on record.

## THE OLD, OLD STORY

A backwood mountaineer one day found a mirror which a tourist had lost. "Well, if it ain't my old dad," he said, looking at it. "I never knowed he had his pitcher took."

He was so pleased he took the mirror home, stole into the attic and hid it. But his actions did not escape his suspicious wife. That night, after he was asleep, she slipped to the attic and found it. "H-m-m," she said, looking into the mirror, "so that's the old hag he's been chasin'."

# Our Famous Ghost Cities

By EDWARD J. KELLEY, Pierce, Arizona

Can you name off hand, a once famous Arizona city, that, in less than 70 years, or the allotted space of one man's life, came into existence in the center of a hot desert, was the direct cause of the formation of the Territory of Arizona, produced enough gold to bolster up the United States treasury in time of war, became the theater of the most deadly Indian fighting Arizona has ever known, just missed being Arizona's capital city by a vote of eight to seven in a contest with Prescott, was the home city of many of our most able pioneers and Territorial leaders, and then passed into oblivion so complete its very name is forgotten, and you can ride over and around it now, and never know you were in the midst of residences that once housed 6,000 people, unless some one told you? Such are but a few high points of our ghost city of La Paz.

Perhaps no other one city in Arizona had such an influence in our early history. It was at one time the home city of such men as Pauline Weaver, Charles B. Genung, Herman Ehrenburg, Henry Wickenburg, Peter Brady, Jackson McCracken, John Mullen and the Goldwater brothers. It was from here Dick Gard, M. M. O'Gorman and the Schefflin brothers laid plans that resulted in the finding of Tombstone. It was the Mecca of all the early miners from Wickenburg on the east to Prescott on the north and Castle Dome to the south. All of these, miners, cowboys, merchants, Indian fighters and ranchers, men of brains and action, left an indelible stamp on Arizona that can never be removed.

## Fort Tyson

Have you ever been in or seen a real honest to goodness Indian fighting fort in Arizona? Not an open army camp, but a real fort. If not, stop off in Quartzite, formerly known as Tyson's Well, and visit old Fort Tyson. It was built by Mike Tyson when water was more precious than gold and the Indian troubles were at their worst. It does not need a guide to its interesting features. It speaks for itself. Its thick adobe walls, nicked by bullet and arrowhead, could tell many a story. Its dirt roof, again and again, has prevented the flaming arrow from destroying it. The main entrance permitted big forty-eight mule teams with their wagon train, driving in with safety. Interior port holes are so arranged to permit the defenders to shoot through several rooms to protect

the main gateways. Should these outside gates be carried by Indians, the same portholes were so arranged that the defenders were able to concentrate their fire on the doors of the second line of defense. A precious well of water enabled Tyson to stand off many a siege. Nothing about it is superfluous; every little thing in it has a definite place. It shows the handiwork of men who had seen and been in lots of tough fighting and knew what they were about. It was a haven of refuge for all. Many a fleeing express stage came into it on the run and many a fighting caravan of freighters sought shelter there. Prospectors and cavalry troops alike valued it. Material for the plots of a thousand movies is centered around the place and it is probably the last fort of its kind left in Arizona.

Today, the Arizona highway department is busily engaged in rebuilding, oiling, and straightening curves in many parts of Highway 60, between Wickenburg and Ehrenberg, which closely follows the old freight trail between La Paz, Ehrenberg, and Wickenburg. It will be a wonderful road in a few months, our citizens and tourists can travel in a few hours, distances it formerly took the old-timers weeks to cover. Its scenery, history and many other features are so interesting, they will undoubtedly attract visitors from all over the state and nation. Therefore, a brief description should not be out of place.

## Indians On Rampage

In 1861, owing to the Civil War, the federal government was compelled to abandon what is now Arizona, temporarily. At this time, Arizona was practically a wilderness containing but a handful of white men. Tucson was the only city worthy of the name and it was about 99 per cent Spanish. The Indians, believing this abandonment was permanent, took advantage of it and immediately started in to exterminate all the whites in it. Even the walled city of Tucson was threatened with extermination. A reign of terror followed. Americans were picked off until, it is estimated there were less than 100 left. All small parties of prospectors were killed and only 24 hours a day vigilance saved the few remaining.

In 1861, Pauline Weaver and some Mexicans found placer gold in the hills near the Colorado river about 100 miles north of Yuma. Every canyon and gulch

for miles around, produced the precious metal and the usual stampede ensued.

A little later the wonderful Vulture mine was discovered, together with Signal, Congress and a host of other rich places. In 1862, La Paz came into being as a supply point for these miners. These early prospectors, with no other machinery than a gold pan, produced gold by the millions from the hills near La Paz. Owing to the Civil War and Indians, none of this gold found its way east. It was more easily shipped down the Colorado river and Gulf of California to Culiacan, Sinaloa, Mexico; where most of it was refined and minted. A little of it went by ship to San Francisco. So great was the amount produced, the federal government woke up. We were buying war munitions abroad on a huge scale to equip the northern armies. Our paper money was worth less than 35 cents on the dollar in foreign countries, as we were buying mostly on credit. This La Paz gold was badly needed to stabilize the dollar. Congress soon took action and in 1863 created the Territory of Arizona, clearly defined our boundaries and separated us from Mexico. President Lincoln named a Maine man named Goodwin, as governor and we took our place on the political map of the United states. The national government sent cavalry and infantry to La Paz and other strategical points to guarantee the flow of gold to Washington and a new era began. Wells Fargo sent their ablest men to handle the business; the name Arizona became known to the outside world and we became nationally important.

## Indians Preyed on Freighters

Meanwhile, the Mohave, Yavapais and Apache Indians, crafty and able fighters all, had things pretty much their own way. The new towns of Prescott, Wickenburg, Signal, Congress Junction and other places drew most of their supplies from La Paz. Most of the early miners went to La Paz to spend their wealth and seek pleasure. Consequently, traffic developed, upon which the Indians levied tribute. That is, when a freight outfit was too large to be captured or massacred, except at great loss of life, the Indians would parley and let it pass in peace on payment of a certain amount of bacon, flour, and beans. A small outfit, or one that was crippled from previous battles, was simply wiped out. Every trick that was known to the army was used to sub-

due these outlaws. At one time, our government tried the Mexican trick of subsidizing the worst ones. Some chiefs were put on the payroll under one guise or another; others were enlisted as scouts.

Many times it was doubtful whether these scouts or the uncaptured ones were the worst offenders. They rarely stayed put, for most of them, as soon as they were fed up and could get weapons, broke loose again. In spite of money, food and peace, it seemed as if they loved the war path. Under their war chiefs, Manetevi, Pan Qui and Colohagua, they continued their war of extermination and made life miserable for the soldiers.

Chief Manetevi, of the Mohaves, was rounded up by the commanding officer at La Paz and questioned. "Why cannot you Indians settle down and live peacefully. It is an easier life, more profitable and you can keep your lands to hunt or loaf all you wish?" The Indian looked disgusted. "White man like to hunt quail?" he asked. "Yes," was the answer. "White man like to hunt bear?" "Yes," was the reply. "White man like to hunt deer?" he continued. Again the answer was, "Yes." "Huh," said Manetevi, "Indian like to hunt white man. Same thing."

## First Reservation Formed

Finally the government tried to put the Indians on that strip of land along the Colorado river between La Paz and Parker and called it the Colorado River Indian reservation. This was and still is the first Indian reservation in Arizona. It was thought that by having them so close to the soldiers in La Paz, they could be watched and thus controlled. All good Indians were supposed to stay on the reservation. All others were liable to be shot at sight. This did not help very much, for the whites had practically declared a war of extermination and all Indians were fair game any time. Even many of the army officers and other officials were advocating this war of extermination as the only solution to the Indian question. Depredations continued and it remained for a freighter to settle them. The soldiers could not guard all the freighters and the Indians were demanding an increase in tribute with every trip. One day, a well-known freighter was jumped by an unusually large bunch of renegades. As usual, he dropped off a small wagon containing food, whipped up the rest of his outfit and left the Indians to their feast. It was the last feast for that particular band. Somehow, some arsenic and other assayers' supplies had become spilled over that food in the hurry and excite-



How a slow driver in the center of a boulevard bunches traffic into a procession.

ment. Other freighters got ideas and, for the first time, the Indians commenced to hesitate about leaving the reservation for the war path.

## Wild Life in La Paz

Meanwhile, in La Paz, life went on in a manner perhaps never before known in an American city. Saloons were numerous and fully equipped with all kinds of gambling devices. Miners made rich strikes daily in the hills, but thought nothing of losing or doubling their money at the tables when they came in town. Situated in a hot spot, only the hardiest survived. Whiskey was the main beverage as to drink wine or beer was considered effeminate. Besides, freight rates were so high that only high powered drinks were worth while. Owing to the heat, Indians and lack of comforts, very few of the married men brought their families. Everybody went armed and life was short, so everyone enjoyed himself as best they could, while they were able.

Mohave squaws did most of the housework and met the domestic needs of the camp. These Mohave women were considered the most progressive and best looking of the Arizona Indians and besides, had a decided liking for white men. The few white men who seeped in from the east were usually men who had left home "for their country's good." At this time, and for many years afterward, there was not a Protestant church in Arizona. The Catholic Padres from the south, occasionally reached La Paz and tried to make some sorts of a showing for Christianity, with but varying success.

Away from La Paz, water was scarce and valuable. Men gladly paid two dol-

lars a gallon for it to drink and also to wash gold in the placers. Most of the necessities and all of the luxuries arrived by river steamers. George C. Perkins, famous afterwards as Senator from California, shipped most of the supplies from San Francisco to Guaymas, from whence it was trans-shipped to La Paz. M. M. O'Gorman acted as his Arizona agent and arranged for it to be shipped east, north and west until the discovery of Tombstone. By that time, the railroads were entering the Territory and new sources of supplies were opened up.

## Ehrenberg Ferry Opened

Another ghost city that will interest you is Ehrenberg. Situated on the bank of the Colorado, it is easily seen from the road. It was the ferry crossing for years for the overland stage lines and when the Colorado in 1870 cut itself a new channel and left La Paz three miles inland, it became the shipping port for the steamers. Here, you will see a once big city built of adobes, slowly melting before the onslaught of the Colorado. Only the lonely graveyard, situated close to the road, is seemingly safe from the river. Here was instituted the first regular post office in Arizona. Joe Goldwater, of the famous Goldwater brothers was its first postmaster.

Even now the flow of gold continues and will continue indefinitely. Every big rain makes available new gold bearing sand in the washes and gulches. If you come for a vacation, bring a gold pan, an old frying pan will do and try your luck. All Quartzite stores are equipped with gold scales and you will often see some grizzled old times, just in from the hills, purchase his supplies with pinches (Continued on Page 22)

# Arizona Highways

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**ARIZONA HIGHWAY DEPARTMENT**

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ARIZONA STATE HIGHWAY COMMISSION  
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## JOBS IN HIGHWAY CONSTRUCTION

Arizona is differently situated in this time of depression than are the majority of the states of the Union. It is largely a producer of raw materials in the form of copper, cotton, cattle and wool. These industries are amongst the hardest hit in the nation and there is no way to revive them until the business conditions of the nation first improve. We are helpless to help ourselves in the emergency, there is nothing else to which we can turn our unemployed to doing while the prices on these products of our hills and soil are below production costs.

The paramount need of locating jobs for our unemployed is greater now than at any time of the depression. We have no great enterprises that can take advantage of the cheap material and labor market to construct works that will serve them with the revival of business. Our people can do their utmost along the lines of charity to keep our unemployed from going hungry, but that will not serve the purpose. The people of Arizona have been and still wish to continue workers. They do not want the demoralizing influence of having to accept charity, they ask for a chance to work.

The biggest opportunity to put the greatest number of the unemployed to work in this state is in building highways, and building of highways is one of the most constructive works that could be undertaken at this time for the future prosperity of the state.

Again this state is different from the majority of states in the Union. It is impossible for this sparsely settled state to finance the huge highway program

that would be needed to place these men to work and to give this state the class of highways it should have. Over sixty per cent of Arizona is federally controlled lands. There are vast stretches of Indian reservations, forest lands, national parks and public lands that belong to the national government, but which this state must build highways around or through to give adequate transportation both to state and inter-state traffic. There is no state in the Union where the federal government could spend a few millions of dollars in highway construction to better advantage than in the State of Arizona.

The Arizona Highway Department is prepared to do this work. Surveys, plans and specifications have been prepared ready to submit to bid on millions of dollars' worth of highway improvements in the state. Our national representatives have been urged to ask congress for \$10,000,000 to be spent on Arizona highways and this department is ready to carry on the work. Governors of other states in urging the construction of highways to relieve unemployment have stated their surveys show that 75 per cent of the money spent in highway construction goes to labor in the building, the furnishing of materials, etc.

The highway department is ready to meet the emergency that confronts Arizona, provided funds can be made available to do the work. Our unemployed can be put to work building for the future development and prosperity of the state if the federal government will advance the funds to undertake it.

## WHAT ARE THE CAUSES OF ACCIDENTS

Since man started to travel, there have been traffic accidents. It is to be presumed that in the stone age they fell over cliffs or were drowned, fording streams, but what concerns us today is the fact that as we have expended billions of dollars for the improvement of highways, the manufacturers of motor vehicles have added all the devices that science has been able to invent to make our machines safer and lessen the dangers of accident, still the accident toll in life, limb and property mounts higher and higher each year.

It is evident the problem needs to be attacked from a different angle. The National Safety Council has been making a nation-wide study of accidents for a number of years. The mass of statistics it has gathered is making it more apparent each year that the outstanding factor in auto accidents is the indiscriminate issuing of operators' licenses. This is shown in the figures that are piling up on "repeaters," persons who have more than one accident. It is a known fact that a large percentage of persons who have motor crashes seem to be veritable glutons for punishment in this matter of accidents.

A comparatively recent study of a group of commercial fleet operators reveals the fact that about one-third of some 1,200 operators had no accidents whatever. Another third had two accidents each and the remaining third of the group each had from three to ten accidents. If these findings on repeaters represent a fair cross-section of the national automobile accident experience it certainly is high time that the matter be given the attention it deserves and some method devised to take them off the highways.

## Highway Commission Meets Once In October

The Arizona State Highway Commission met in regular session in their offices in the Highway Building October 5, 1931, at 10:00 A. M. Those present were: Chairman Addams, Vice-Chairman Hart, Commissioners Barth and Mansfield, also State Engineer, Secretary and Mr. Riney B. Salmon, Assistant Attorney General. Commissioner Trengove was excused.

It was regularly moved by Commissioner Barth, seconded by Commissioner Hart and unanimously carried that the official minutes of August 17, 1931, be approved.

Mr. H. S. Dick, who had asked to appear before the Commission, was present with a delegation of farmers from the Salt River Valley. Mr. Dick stated he had asked Mr. D. B. Wiley of the Maricopa County Farm Bureau to be spokesman for him. Mr. Wiley stated he first wanted to comment on the efficiency of the Highway Patrol. That he believed they were doing an excellent work and were enforcing the motor vehicle laws of the state in an excellent manner. The fact that the State did have a means of enforcing the motor vehicle laws had brought up one question which was vitally effecting the farmers of the Salt River Valley. That the Ninth Legislature had passed a law regarding a tax on trailers used on the highway. This law was a direct hardship on the farmers inasmuch as it compelled the farmer who occasionally used a trailer to haul a farm animal to market, or a load of cotton, to pay the same tax on his trailer as was intended by the Legislature to be charged for the commercial use of the trailer on the highway. Mr. Wiley stated they had attempted to amend this law in the Tenth Legislature to where the farmers would be taxed according to the use the farmer made of his trailer, that the farmer is using a trailer to transport his live stock or farm equipment was in reality saving wear on the highway and helping general traffic conditions as driving live stock on the highway was a slow and dangerous method in these days. However, all the farmers felt that to pay a full year's license fee and taxes imposed on their trailers made the cost prohibitive to them in the use of the trailer in this limited way.

### Going Back to Wagons

Mr. Robert Lowe, a Salt River Valley Farmer, stated he had a trailer which he had used about 50 miles this year. That he believed a wagon and team does much more damage to the highway

than a trailer and that the farmers would have to start using wagons in place of trailers if they have to pay a tax on their trailers.

Mr. W. W. Bradshaw, who stated he was a small farmer, stated he had a trailer which he used one day a month and a truck which he uses all year. That he pays taxes on this truck and does not object to it, but that it seemed to him farmers who had bonded themselves to build the roads in this valley ought to protest at being taxed for the time which their trailers stood in their yards which in his case was all the time excepting two days a month.

Chairman Addams asked if it wasn't a farmer who introduced this bill. Attorney Salmon stated, "I think it was. However, the bill, as I see it, wasn't meant to be on farm vehicles. The amendment did that to it." Mr. Wiley stated a bill was introduced in the last Legislature to correct this temporary use of farm trailers but when it came up, the bill as finally introduced made a clean sweep and was killed because, as it stood then, they wanted to exclude all trailers from tax. The intention of the farmers' amendment to the bill was to allow the farmers to take out a license and pay tax for the length of time the trailer was to be used. Mr. Mansfield stated the farmers' intention was to pay a tax for 60 days out of the year, or one-sixth of the tax. Mr. Wiley stated the delegation only wanted to know if there was anything the Commission could do in this matter. Attorney Salmon stated he recognized the problem of the farmers but the law required the payment of all taxes prior to licenses. That the Commission could do nothing. Superintendent Hall of the Highway Patrol stated that, inasmuch as the duties of the patrol are set up for them by the Legislature, they were endeavoring to enforce this law as much as possible and that in upholding the law, the patrolmen must cite all cases found in violation of the law.

### Wagons Not Trailers

Mr. Elmer Parker, another farmer, asked if they were allowed to take a wagon on the highway hitched behind their car. Attorney Salmon stated "Yes, at a reduced speed of six miles an hour." Mr. Parker stated that the law would force the farmers to use wagons instead of trailers. Mr. Lowe stated he could not understand why a wagon could be used when a trailer saves the highways and expense for himself.

Mr. Dick asked if the patrolmen could

not overlook the farmers in this emergency. Attorney Salmon stated the law was plain and that no change had been made since 1927 and in that respect the motor vehicle division was powerless to make any exceptions. Chairman Addams said, "That considering the opinion of the Attorney General, if the Commission met with the farmers to work something out they would be violating the law." Mr. Wiley asked if Mr. Whitworth would meet with the farmers. Chairman Addams stated, "Mr. Wiley has suggested that Mr. Whitworth meet with them, I will entertain a motion." Commissioner Barth made the motion that Mr. Whitworth meet with these farmers and attempt to work out a plan. The motion was seconded by Commissioner Hart and unanimously carried.

The next order of business was the awarding of contracts. The State Engineer recommended that the contract on the Globe-Safford Highway, F. A. P. No. 87-E be awarded to the low bidder, Dudley Stone Products Company in the amount of \$15,158.22.

Commissioner Mansfield inquired if the Dudley Stone Products Company had ever done a job for the State Highway Department. The State Engineer stated "No, this is a new outfit." Commissioner Mansfield suggested the Commission look up the financial standing as they bid twenty-five per cent under the estimate. Mr. O'Connell stated he did not know them. While the financial statement was being checked, the Commission proceeded with the next contract.

The State Engineer recommended that contract on the Prescott-Phoenix Highway, F. A. P. No. 72-A, be awarded to the low bidder, Packard and Tanner, Phoenix, Arizona, stating they had qualified and were responsible bidders. It was regularly moved by Commissioner Mansfield, seconded by Commissioner Barth and unanimously carried, that the contract on the Prescott-Phoenix Highway, F. A. P. No. 72-A, be awarded to the low bidder, Packard and Tanner, Phoenix, in the amount of \$27,771.72, which does not include 10% for engineering and contingencies, provided, said contractor meets all requirements including the employment of local Arizona Citizens, pays a minimum wage of \$4.00 per day for laborers, furnishes good and sufficient bond, and, provided further, that requirements of bond include the payment of total amount of damages the State may sustain by reason of the contractor failing to complete the contract within the time limits as

provided for. The State Engineer was authorized to sign said contract.

#### Sell Obsolete Graders

The Secretary brought to the attention of the Commission that two Wehr Graders, equipment number 183 and 184, obsolete equipment, stored in the Phoenix yards, had been advertised for bids. That the Commission had been polled as to their opinion for the sale of them and, although the approval of the high bids had been received from a majority of the Commission, Attorney Salmon had ruled it was irregular to sell them except in open meeting. Since that time, the bid of Mr. Hartman, who was high on Grader No. 184, had been withdrawn because of the delay in making the award. Commissioner Mansfield suggested that the graders be awarded to the highest combination of bids. State Engineer O'Connell stated "Anything over \$100 is a good deal." It was regularly moved by Commissioner Mansfield, seconded by Commissioner Hart and unanimously carried that the Wehr Graders be sold separately to the highest bidders; namely, Item No. 1, Grader No. 183, Jules Vermeersch, Phoenix, in the amount of \$101.99; Item No. 2, Grader No. 184, Heinie's Auto Wrecking Company, Phoenix, in the amount of \$105.50.

The Secretary presented a resolution requested by Marks and Marks, Attorneys, granting permission to the Phoenix Firestone Service Incorporated to sue in the name of the State Heitsch and Bitten, contractors on Federal Aid Project No. 86-C and Non-Federal Aid 25-A and Federal Aid Project 86-E. The Secretary stated he had taken this request up with the Attorney General's office and had asked the attorneys for the Firestone Service Incorporated to furnish further facts of the case to determine whether the Commission should grant their request or not.

Chairman Addams asked the advice of Attorney Salmon. Attorney Salmon stated, "Mr. Comparet raised this question when the Commission grants this suit in the name of the State to the Bonding Company. This suit is over tires sold to a contractor. The bonding company would not be responsible if these tires were used on some other project. We must determine if the bonding company is responsible for accounts preceding judgment against contractor and to determine whether proper claim can be started against the bonding company. If the Commission wants to grant the right for suit in the name of the State, they can do so but we can not judge this claim from the information furnished us."

It was regularly moved by Commissioner Mansfield, seconded by Commissioner Hart and unanimously carried, that the Commission do not pass this resolution giving Phoenix Firestone Service, Inc., permission to sue Heitsch and Bitten and their bondsmen in the name of the State.

#### Contract Awarded

State Engineer stated he had examined the financial statement of the Dudley Stone Products Company and was satisfied. Chairman Addams made the suggestion that time would probably be saved in awarding the contracts if the financial statement of the lowest bidder was laid before the Commission at the time of awarding contracts.

On the recommendation of the State Engineer that the contract on the Globe-Safford Highway, F. A. P. No. 87-E, be awarded to the low bidder, Dudley Stone Products Company, El Paso, Texas, it was regularly moved by Commissioner Mansfield, seconded by Commissioner Hart and unanimously carried, that the recommendation of the State Engineer be approved and the contract on the Globe-Safford Highway, F. A. P. 87-E, be awarded to the low bidder, Dudley Stone Products Company, El Paso, Texas, in the amount of \$15,158.22, which does not include 10% for engineering and contingencies, provided, said contractor meets all requirements including the employment of local Arizona Citizens, pays a minimum wage of \$4.00 per day for laborers, furnishes good and sufficient bond, and, provided further, that requirements of bond include the payment of total amount of damages the State may sustain by reason of the contractor failing to complete the contract within the time limits as provided for. The State Engineer was authorized to sign said contract.

The State Engineer brought to the attention of the Commission that the Canion and Francis bid had been in error in the bidding on concrete, the bid being 22c, whereas the estimate on this work was \$22.00. Inasmuch as the bid would have been low at 22c and was completely out of line, it was thrown out. Mr. Hatcher requested permission to return the check of Canion and Francis which he was still holding. Mr. Addams turned the chair over to Vice-Chairman Hart and moved that the Canion and Francis check be refunded. Commissioner Mansfield seconded the motion and it was unanimously carried.

#### Investigate Suit Request

The Secretary presented a resolution requested by Attorney Mat Walton granting permission to the Arizona

Tractor and Equipment Company to sue Heitsch and Bitten and their bondsmen in the name of the State for rental of equipment used on the Tucson-Nogales Highway, A. F. E. No. 642 and 8904. Commissioner Mansfield asked if this project was a 17 mile stretch of oil. Mr. Hatcher stated he did not know much about the claim except that there was a controversy between Bales and Frederickson and the Arizona Tractor Company, stating the bonding company would hardly be responsible if this were not used as stated, on a rental basis. Chairman Addams inquired if this case did not parallel the other case just passed upon. Attorney Salmon stated he believed the purchase price or the rental basis covered the actual value for the use of the equipment for this construction. Attorney Salmon recommended the request be delayed until the Attorney could appear before the Commission.

Mr. Hatcher stated he often wondered why vendors did not prosecute the contractors who had signed affidavits that all just claims had been paid before final settlement was made by the State. Commissioner Mansfield stated he could not understand why these claims were so late in coming in as this job had been finished for so many months. Commissioner Mansfield stated that all bills should be looked into before final settlement is made with the contractors, that it appeared to him the vendors sell the contractor equipment and then failed to put their claim in before the State paid the final settlement and then wanted to use the State to bring suit against the contractor and his bondsmen. It was decided to delay action on the request until afternoon.

It was brought up by the Secretary that the Commission at their former meeting had instructed the State Engineer to let the contract for the 1932 motor vehicle license plates upon telegraphic confirmation from the Commissioners so as not to delay the making of the plates and cause the extra expense of a commission meeting for that purpose. That telegraphic confirmation had been received from all of the Commissioners for the letting of the contract to the Kittle Manufacturing Company but that, inasmuch as Attorney Salmon had ruled this was illegal, he believed the matter should be brought up for confirmation.

It was regularly moved by Commissioner Hart, seconded by Commissioner Mansfield and unanimously carried that the Commission ratifies the contract for making the 1932 motor vehicle plates to

the Kittle Manufacturing Company in the sum of \$19,987.58.

On the recommendation of the State Engineer, the telegraphic approval of Commissioners Barth, Hart and Mansfield, and the personal approval of Chairman Addams, the contract for building Lowell School bridge and overpass was awarded to C. T. Clam in the amount of \$1,754.60.

#### All Employees Insurable

The Secretary brought to the attention of the Commission the Attorney General was to get an opinion as to whether those members of the State Highway Department drawing over \$2,400.00 a year were entitled to Industrial Insurance. Attorney Salmon stated it was his opinion that, "Anyone drawing over \$2,400.00 is not entitled to insurance, the law (1419 RCA 28 1425) any person drawing over \$2,400 per year is not entitled to be carried in this insurance. Chairman Addams inquired as to what was the legal status on other officials. Attorney Salmon stated, "This applies to any person who has sovereignty of State." Chairman Addams inquired, "What is a District Engineer?" Mr. Salmon stated he had taken this matter up with the Industrial Commission and they were anxious to take it up; thus, his conclusion it does not cover those persons. Inquiry was made concerning the various Foremen, Chief Clerks and so forth of the Department. Chairman Addams turned the chair over to Vice-Chairman Hart. It was regularly moved by Commissioner Addams, seconded by Commissioner Barth and unanimously carried, that the Attorney General be instructed to take every employe on the State Highway payroll and scrutinize the payroll and designate those who come under the Industrial Insurance law. Commissioner Addams resumed the chair.

The Secretary brought up the matter of insurance on the Ehrenberg-Blythe bridge, stating that in purchasing the bridge we had taken out an additional \$40,000 policy to September 1st, at which time this additional insurance expired. The State Engineer stated the written policy which Arizona and California had insisted be placed on the bridge by the bridge company was in the amount of \$120,000 the first year extending from April, 1931 to April, 1932; \$80,000. from April, 1932 to April, 1933 and \$40,000. from April, 1933 to April, 1934. Chairman Addams asked Vice-Chairman Hart to take the chair, stating "The situation is we have paid \$115,000 for our portion of the bridge. We are covered by insurance for how much?" Attorney

Salmon stated, "\$120,000." State Engineer O'Connell stated, "The value of the bridge site is \$131,000 and the value of the right of way \$66,000, leaving \$165,000 as the value of the bridge. We have an investment between two states of \$165,000 worth of bridge not including the right of way and site, and it is covered only by \$120,000 insurance. Until next April the danger is over from floods." Chairman Addams stated, "We are shy \$40,000." Commissioner Mansfield asked the State Engineer if he didn't believe in the protection of the bridge or other state property at all times. It was regularly moved by Commissioner Addams, seconded by Commissioner Barth and unanimously carried, that additional insurance be placed on the bridge so as to have full coverage of Arizona's equity in the bridge. Chairman Addams resumed the chair.

The Secretary brought up the unfinished business of bonding motor vehicle fuel distributors. Chairman Addams asked Motor Vehicle Superintendent Whitworth to explain the situation as to the collection of motor vehicle fuel taxes. Commissioner Mansfield stated he believed there should be a departmental ruling that all distributors be required to furnish bond in the State, and that he was ready to make a motion at this time to get a bond from all gas vendors. Chairman Addams asked, "Is there anything that can cover the law to that effect?" Attorney Salmon asked, "To the effect that a bond might be required by the distributor." Commissioner Mansfield stated, "There is nothing that says we cannot and I make a motion that the Motor Vehicle Department be notified that all distributors of motor vehicle fuel be required to furnish a bond protecting state money collected." Commissioner Hart seconded the motion which was unanimously carried.

It was regularly moved by Commissioner Mansfield, seconded by Commissioner Hart and unanimously carried that the Commission recess from 12:05 P. M., October 5, 1931 to reconvene at 2:00 P. M.

The Commission reconvened at 2:05 P. M., October 5, 1931, all members present except Commissioner Trengove excused.

#### U. S. 66 Delegation Appears

A delegation representing U. S. Highway 66 Association in Arizona waited on the Commission relative to construction work on U. S. 66 as contained in the budget for the Twelfth Fiscal Year. Mr. Carmel Giragi of Winslow was the first

(Continued on Page 14)

## Keeping Check On State Equipment Saves Tax Dollars

By A. H. LIND,  
Superintendent of Equipment

Keeping tabs on all the equipment a state highway department uses in the construction and maintenance of over 2600 miles of highway involves much more than a cardex filing system, although I will admit that such a system is indispensable in the keeping of the records. The Arizona Highway department has some four hundred trucks and cars of all types and description. Besides these there are 56 tractors in operation, 30 rotary fresnos, 120 trailers of many different types, 170 motor graders, 80 pull graders and all the miscellaneous equipment that goes with construction work from cook wagons to jackhammers.

It is the duty of the superintendent of equipment to see that the equipment is available to do the work needed. When a crew calls for the machines necessary to do a work, whether it has been a planned job or whether it is to meet an emergency, it is up to the equipment department to produce it.

We must know at all times where every piece of equipment is located, in what state of repair it is and whether it is busy or idle. Our records must be kept so that every job a piece of equipment does its rental time is correctly charged to that project.

Mechanical and physical inspections must constantly be made by the superintendent to determine the condition of all this equipment and its adaptability to the work it is being used on. Often a form is using a piece of equipment because he has it that is causing his job money, when by transferring the piece in question to another project in exchange for some piece of equipment better suited to his job will make money for both projects. By keeping close tabs the equipment superintendent thus often saves the construction or maintenance department money.

By a careful check of the equipment during the last three months we have been able to transfer seven rotary fresnos and five motor graders from projects on which they were idle most of the time to other projects on which they were needed for full time work, thus effecting a saving to the department of many thousand dollars as new equipment would have had to be purchased had we not known of equipment that was not operating to its full capacity.

## Highway Commission

(Continued From Page 13)

spokesman for the delegation stating they appeared before the Commission relative to construction on U. S. 66 and that the delegation had three speakers to present; Mr. J. B. Wright, Karl Hudson and Senator J. Hubert Smith of Mohave County.

Mr. Wright, the first spokesman, reviewed the construction that had taken place thus far on U. S. 66 from its conception, pointing out that most of the improvement done on this highway had been done with money furnished by the four northern counties and calling attention to the Commission that this was one of the widely used transcontinental highways and there were several critical points that badly needed improvement; namely, the section from Gold Roads to Oatman and Kingman between Ash Fork and Flagstaff and Winslow and Holbrook. State Engineer O'Connell stated the Department was now working on plans to improve portions of U. S. 66; that since they had federal aid to match, this work would be started immediately. He also stated there is \$100,000 of forestry money to be matched with state funds for Ash Fork Hill to start in 1933 and the Department intends to start work from Kingman in the near future. Chairman Addams stated, "That work will start within the next six weeks." Mr. Karl Hudson, the next speaker, stated he was gratified to know the Department had plans for the Carrizo project as he knew of nine serious accidents on those bridges where people had been killed and injured. Mr. Hudson confined himself to analyzing the expenditures set up in the present budget and stated his delegation was interested in knowing whether the work would be started on the projects set up in this year's budget, or whether they would be carried forward into the next year's budget as had been done several times previously.

Senator Smith stated that all the delegates present representing U. S. 66 Association were interested in U. S. 66 as a whole and believed this highway was a big asset to the State as a whole and, as an Association, they were interested in bringing U. S. 66 to the highest possible standard in the earliest possible time. Senator Smith also asked, "Is it possible for you to say that the budget, as now outlined will be carried out that way? We would like to be able to go before our people with a favorable reply." Commissioner Barth stated he would like to assure Senator Smith and

## Every Good Surveyor Knows---

THAT canned tomatoes are both food and drink.

THAT the vernier and lower clamp springs become weak with use, causing an instrument to creep, and that they should be removed and stretched occasionally.

THAT a plumb bob can be quieted by tapping the plumb line with his finger.

THAT the boss does not approve of using the toe of the rodman's boot for a T. P.

the delegation that, as one member of the Commission, he was one hundred per cent for them and thought the Commission should go on record as saying these projects would be completed as outlined in the budget. Chairman Addams asked Vice-Chairman Hart to take the chair.

### Work To Be Carried On

Commissioner Addams asked the State Engineer, "Is there any reason why, at the present time, the budget as outlined by the Commission should not be carried out as outlined?" The State Engineer stated, "Nothing at present." Commissioner Addams asked, "There are no projects that we cannot carry out?" State Engineer O'Connell replied, "They can be started but not carried out in this budget." Mr. E. E. McNamara, one of the delegates, stated, "One of the primary things important to the residents of Northern Arizona is to assure them that those projects will be started." Mr. Jesse Boyce stated that he would like to call the attention that certain promises had been made for U. S. 66 and if any way possible, he would like to have the department complete the projects 82-A and 82B so that instead of crossing nine tracks at Williams, an overpass could be built to prevent it. State Engineer O'Connell stated the Department was working with the railroad on plans for this overpass; that the plans had been approved by the Bureau of Public Roads and as soon as the railroad approved them the Department would start work on this project. Commissioner Mansfield stated, "Mr. Hudson's remarks about people on 66 having

projects carried over reminds me that I get those same remarks from the South. One of our projects is still a carry over. Personally, as far as my attitude is concerned, I would like to see your projects carried on as well as our own." Commissioner Hart stated, "Since this money was budgeted for 66, I feel as Mr. Barth, that it should be put on as soon as the Engineers can get to it and the same about the Southern routes." Commissioner Addams resumed the chair.

Mr. Mat Walton, Attorney, appeared asking consideration of the resolution granting the Arizona Tractor and Equipment Company permission to sue the firm of Heitsch and Bitten and their bondsmen in the name of the State. Attorney Salmon asked Mr. Walton if the \$4,000 represented in the contract of the Arizona Tractor and Equipment Company was rental of equipment. Mr. Walton stated Heitsch and Bitten promised to pay that amount for rental. Chairman Addams asked, "For rental or direct purchase?" Mr. Walton replied, "For rental." Chairman Addams asked Vice-Chairman Hart to take the chair and inquired if this \$4,000 for rental of equipment on the road was promised direct to the Arizona Tractor and Equipment Company and not to Bales and Frederickson. Mr. Walton produced the original letter and promised to furnish the Commission with a copy for their records. Commissioner Mansfield wished to know if a claim had been presented for this rental before final settlement had been made by the contractor. Mr. Hatcher stated he thought the claim had been brought up after the final estimate was taken, but would look and see if he had any record showing the date. Chairman Addams suggested while waiting for information the resolution for transferring of funds be taken up.

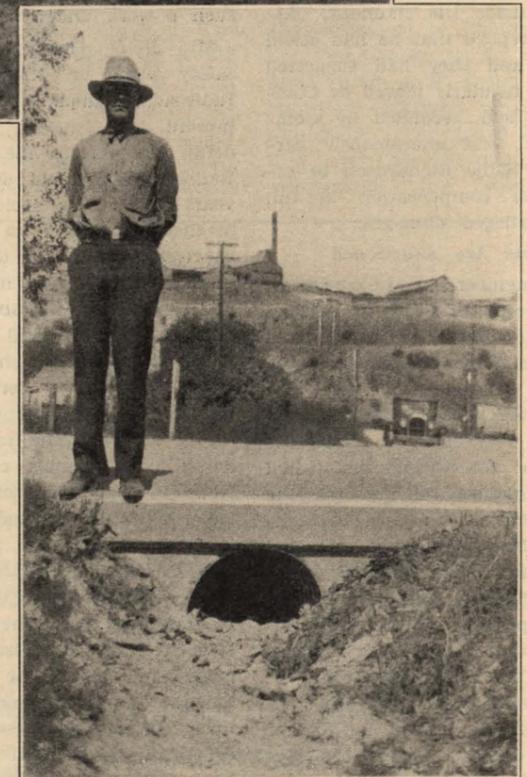
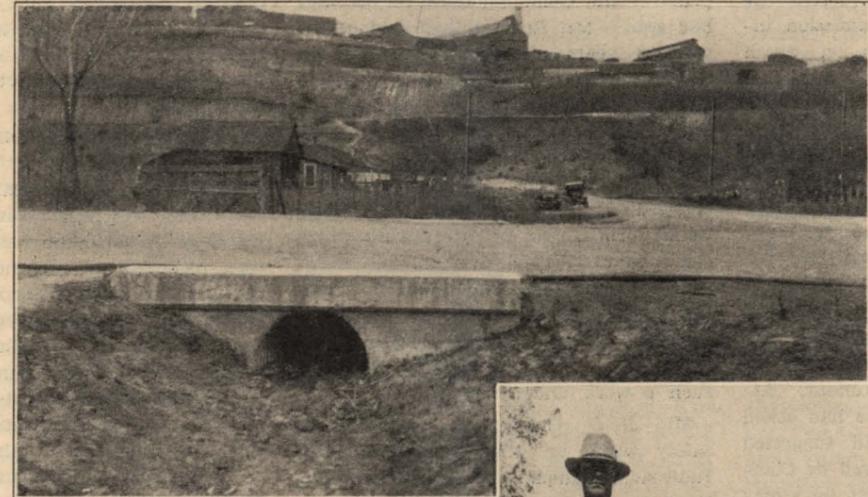
The Commission then took under consideration the question of adequate bond for Mr. Hatcher. State Engineer stated Mr. Hatcher had the signing of payrolls and checks when Mr. Small and himself were out of town. Commissioner Mansfield moved the bond of Mr. Hatcher be fixed at \$50,000, equivalent to the others handling money in like capacity. The motion was seconded by Commissioner Hart and unanimously carried.

It was regularly moved by Commissioner Hart, seconded by Commissioner Mansfield and unanimously carried that authority be given to Mr. Hatcher to sign with the Bureau of Public Roads.

Mr. Hatcher appeared before the Commission again and stated he found in his file a bill from the Arizona Tractor

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This 24-inch Pure Iron Culvert was installed by Harold Gribble, engineer of Gila County, Arizona, in 1915. The above photo was taken in 1923, a year after the road was surfaced. At the right is Mr. Gribble standing by the same culvert when he inspected it in 1930. It is in excellent condition.

Under city, county and state roads, throughout the country, Armco culverts are giving splendid service. Many of these culverts installed back in 1906 are in good condition today after a quarter century of service.

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and Equipment Company against Heitsch and Bitten dated July 22 and the affidavit of Heitsch and Bitten was drawn on July 17. It was regularly moved by Commissioner Mansfield, seconded by Commissioner Barth and unanimously carried that the resolution granting permission to the Arizona Tractor and Equipment Company to sue Heitsch and Bitten and their bondsmen in the name of the State be adopted.

Commissioner Mansfield requested the Department to keep the Commission informed as to the contracts on which affidavits are filed so the Commission

Attorney Salmon filed a report with the Commission concerning his investigation of the claim of Mrs. Sadie Richardson, as presented by Mrs. Mary Conover, for compensation on account of the alleged taking of certain lands for highway purposes and alleged damages occasioned to lands of hers by the improvement of the State highway through Duncan. Chairman Addams asked Attorney Salmon, in his opinion, what offer should be made the claimant. Attorney Salmon replied that he had asked several people and they had suggested \$100.00. It was regularly moved by Commissioner Mansfield, seconded by Commissioner Barth and unanimously carried, that Mrs. Sadie Richardson be offered \$100.00 as compensation in full for land and alleged damages.

#### Agreements Are Sanctioned

The State Engineer presented an agreement between the State of Arizona and the City of Nogales for paving from the end of the present paving on the State Highway to connect with the pavement in the City of Nogales. The Secretary was requested to read the resolution. The State Engineer stated he desired to change the part of the agreement concerning the engineer. Commissioner Mansfield inquired if they had placed the money. The State Engineer stated, "The City of Nogales will pay after the completion of the work by improvement bonds and with surplus City money." The State Engineer said, "The Department does not pay the State's share of the paving until after completion of contract, when the Department would deduct the engineering fee and pay the City of Nogales the remainder." It was regularly moved by Commissioner Mansfield, seconded by Commissioner Hart and unanimously carried, that the State Engineer be empowered to enter into an agreement with the City of Nogales for sharing in the pavement from the end of the State Highway to connect with the paving of the City of Nogales.

The Commission next took up plans for a safety campaign. Mr. T. L. Roberts, an employee on the staff of the Santa Fe Railroad engaged in safety work, was present and was asked to address the Commission. Mr. Roberts first requested the Secretary to outline what the Commission had done in this respect. Mr. E. V. Miller, Engineer of Plans, who had also been co-operating on the safety campaign, outlined the plans of the Commission as far as they had gone. Mr. Roberts then told of the past 20 years efforts on the part of the Santa Fe railroad to promote safety and reduce accidents on the railroad and in all departments of the railroad, and of the wonderful results these efforts had obtained. He, also, stated he believed if the Highway Commission would form a plan of safety work which could be carried on over all the State, that it would materially help in lessening the accidents, and that he would give the Commission any co-operation which they desired in helping them get such a work under way.

Mr. J. C. Goodfellow, interested in safety work on the Southern Pacific Railroad, headquarters in Tucson, was present and outlined with considerable detail the efforts the Southern Pacific Railroad had made over a number of years in reducing accidents of all kinds in their shops and on the railroad. He expressed his desire to give the Commission co-operation in the formulating and conducting of a State wide campaign and stated he believed such work should be a part of the Highway Department's duties and he felt certain if the Commission continuously worked along a safety line like the railroads had been doing for a number of years, it would result in a great reduction of traffic accidents throughout the State.

Mr. E. E. McCarty, Superintendent of the Arizona Division of the Santa Fe Railroad, also spoke before the Commission and stated he felt sure a very efficient safety organization could be organized in this State without a great amount of expense and that by drawing upon the National Safety Council, excellent material could be gotten by the Highway Department for carrying on such a campaign. That he believed the people would give freely of their time to carry on in behalf of such a worthy cause. Like Mr. Roberts, Mr. McCarty stated he would be glad to give time and help as much as the Santa Fe Railroad was able.

Chairman Addams thanked the three gentlemen for appearing before the Commission and assured them that the

Commission would go on record for a safety campaign to see if some specific plan can be worked out.

"To All

Mr. Hatcher presented the following resolution which he requested the Commission to adopt so that it might be sent to all the Chambers of Commerce, Credit Men and Trade Associations in the State in an effort to stop the practice of giving unlimited credit to persons engaged in highway work or employed in highway work by the contractors and then attempting to make the State Highway Department a collection agency for their bills.

#### "CREDIT ASSOCIATIONS

And

#### "CHAMBERS OF COMMERCE:

"During the last year the Arizona Highway Department has been deluged with requests and demands for payment of accounts owed by contractors, sub-contractors and their employees. The Arizona Highway Department is not responsible for these accounts, but is willing to do everything in its power to protect all creditors, but this power is limited. A bond filed by the general contractor with the Department covers all labor, material, provisions and supplies that actually go into the construction of any highway and the Department demands affidavits to the effect that all these accounts are paid before making final settlement with the contractors.

"The Department would like to suggest that you inform the citizens and merchants of your community that they use the same discretion when selling contractors, sub-contractors and their employees that they use in selling any other person."

It was regularly moved by Commissioner Barth, seconded by Commissioner Hart and unanimously carried, that the resolution be adopted.

The State Engineer presented an agreement between the State of Arizona and the City of Globe for the widening of two bridges located on Broad Street in the City of Globe.

Commissioner Mansfield inquired of Attorney Salmon, "Can the Commission compel the City of Globe to live up to this agreement? What about the expiration of their offices?" Attorney Salmon stated their terms of office would not expire before then and he believed the agreement could be enforced. It was regularly moved by Commissioner Hart, seconded by Commissioner Mansfield and unanimously carried, that the agreement executed by the City of Globe be approved.

The Secretary read a report from Percy

Jones, Jr., regarding an alternate route for a portion of the proposed Globe-Showlow Highway through Lakeside instead of Showlow and a letter from Mr. C. C. Small, Deputy State Engineer, to the State Engineer in which he concluded, "I think there is nothing in this route to recommend itself and it should not be further considered." It was regularly moved by Commissioner Barth, seconded by Commissioner Hart and unanimously carried, that the survey as originally laid out be allowed to stand.

A report was read from Ira W. Wagon, Right of Way Agent, to the State Engineer concerning the claim from P. J. Moran of Flagstaff in respect to ten acres of land in Coconino county and a letter of transmittal from the State Engineer to the Commission, in which he recommended, "He believed Mr. Moran's suggestion of \$10,000 for the ten acres, or \$1,000 an acre, is very much too high."

It was regularly moved by Commissioner Hart, seconded by Commissioner Mansfield and unanimously carried, the meeting adjourn October 5, 1931, to meet again at 10:00 A. M., October 6, 1931.

#### Meeting On October 6

The meeting was called to order by

Chairman Addams at 10:00 A. M., October 6, 1931. Those present were: Chairman Addams, Commissioners Barth and Mansfield, State Engineer, Attorney Salmon and Secretary; Commissioner Hart arrived at 10:10 A. M. Commissioner Trengove excused.

The State Engineer stated the changes in the agreement with the City of Nogales were ready and they were read by Attorney Salmon and approved by the Commission.

The Secretary read a request from B. W. Norton representing the City of Bisbee, asking the Department to furnish a dump body for an old army F. W. D. truck, which the City of Bisbee owned and which they wished to put into operation to aid the unemployed. It was regularly moved by Commissioner Mansfield, seconded by Commissioner Barth and unanimously carried, that the Department sell an old truck body with attachments for an F. W. D. truck to the City of Bisbee for the sum of \$1.00.

It was brought to the attention of the Commission by the State Engineer that there was a considerable quantity of old kindling wood in the Tucson yards which should be disposed of in cleaning up the premises and should be advertised for sale or given to some charitable institution. Chairman Addams stated the work-

men in the Tucson Shops would like to buy it. The State Engineer stated he believed we would have to have a bid on it and he did not like to sell it to our own employees. Chairman Addams stated the Department should get rid of it and asked how it could be disposed of. Attorney Salmon stated to give it away. Chairman Addams asked if the Department could sell it. Commissioner Mansfield suggested that it be sold to the employees for the sum of \$1.00. Attorney Salmon stated that could be done. It was regularly moved by Commissioner Mansfield, seconded by Commissioner Hart and unanimously carried, that the scrap wood in the Tucson yards, on the advice of the Attorney General, be sold to the employees in the Tucson Shops for the sum of \$1.00.

A report was read by the Secretary from the Superintendent of the Highway Patrol outlining the activities of that department to, and including, September 30, 1931.

A letter was read from A. H. Lind, Superintendent of Equipment, requesting the Commission to fix a price on ten 12x14 used wall tents. Commissioner Mansfield inquired if they were old equipment. The State Engineer stated they were obsolete equipment and he recommended the Department let the

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Fair Commission have them. It was regularly moved by Commissioner Hart, seconded by Commissioner Barth and unanimously carried that the tents be sold to the Arizona State Fair Commission for the sum of \$1.00 per tent. Commissioner Addams resumed the chair.

#### Act On Unfinished Business

The Secretary called the attention of the Commission to a list which he had prepared of unfinished business in previous meetings and asked the Commission if they wished to go over the list. The Commission expressed the opinion the items should be cleared up.

Page 130 in the Minute Book—The State Engineer was instructed to prepare an inventory of stock in the Warehouse and Stock Room. This matter was referred to the State Engineer and Chairman Addams to report back at the next meeting.

Page 137—The Commission was asked to investigate if there were any surplus tents that could be given by the Department for charitable uses. State Engineer reported there were no surplus tents.

Page 294—The State Engineer and Attorney General were to draw up an agreement to pay Mr. Suggs \$3,000 in full for damages and easement granted for right of way on Highway 80. The Secretary read a letter from Mr. C. L. Suggs, President of the Southwestern Manufacturing and Construction Company stating the company was making arrangements to pay off and satisfy a judgment lien on the property, that they would let the matter stand in abeyance until this judgment was satisfied. Chairman Addams stated the letter of Mr. Suggs was indefinite, he thought some definite time should be set for completion of this transaction. It was regularly moved by Commissioner Hart, seconded by Commissioner Mansfield and carried, Chairman Addams not voting, that Mr. Suggs be given until December 1, 1931, to show satisfactory title to the Attorney General, otherwise, the offer of the Commission is withdrawn.

Page 248—The State Engineer was to make a report in detail on the status of the old Casa Grande-Gila Bend Highway. State Engineer O'Connell stated the funds for this road have been spent and the Commission has nothing to do. It was regularly moved by Commissioner Mansfield, seconded by Commissioner Hart, and carried, Chairman Addams voting "No," that the report of the Attorney General and Engineer on the old Casa Grande-Gila Bend highway be accepted and filed.

Page 285—The Commission took under

advisement taking over of the road from Winslow down Long Valley as a State Route. It was regularly moved by Commissioner Mansfield, seconded by Commissioner Hart and carried, Commissioner Barth voting "No," that the route down Long Valley be rejected.

Page 318—The State Engineer was to communicate with the Salt River Valley Water Users' Association concerning the status of the Highway Department in flood control work on the Agua Fria River. State Engineer reported he had communicated with the Salt River Valley Water Users' Association. It was regularly moved by Commissioner Mansfield, seconded by Commissioner Hart and carried, Chairman Addams voting "No," that the application for funds for Agua Fria flood control be rejected.

Page 321—The request of one-half day Saturday and one day a month sick allowance for Mechanics taken under advisement. It was regularly moved by Commissioner Hart, seconded by Commissioner Mansfield and unanimously carried, that the outside shops be placed on the same basis as the Phoenix Shops.

Page 326—Attorney Salmon stated he hesitated to advise the Commission on the Shumway Construction Company's claim until he reviewed the files. Attorney Salmon stated the Attorneys in the case had appeared and asked the case be dismissed, which had been done by the court, thus closing the suit.

The State Engineer was to get from the East Van Buren Improvement Association and the Utility Companies their written agreements to remove their poles from the highway right of way on East Van Buren Street. The State Engineer reported the District Engineer was working with the Telephone and Power Companies for the removal of their line.

State Engineer O'Connell reported he had communicated with the parties interested in constructing the bridge at Parker and had received a reply from the Clerk of the Board of Supervisors of San Bernardino County, which the Secretary read, showing the Board of Supervisors at their meeting on September 28 advised the Highway Department they were in favor of a bridge at this location but could not make any appropriation at this time as all available funds for the present fiscal year had been appropriated.

The State Engineer reported he investigated the condition of the detour on Bisbee grade and it was now reported in good condition.

The State Engineer reported Mr. Small was investigating the claim of Attorney Gold that a gravel pit in the Northern

part of the State was incorrectly located.

A letter was read from E. E. McCarty of the Atchison, Topeka and Santa Fe Railway Company, stating the Railway Company had withdrawn from sale the land lying within the wye formed by the junction of Highway 66 and 89 East of Ash Fork.

A petition forwarded by the Governor's office transmitted by J. F. Connor, State Senator from Yavapai County, asking the Department to fence that portion of the Hassayampa Trail beginning at or about the National Forest boundary on the North and continuing parallel to the highway to the Southern terminus of a major cattle range ending at the top of Yarnell Hill. The State Engineer stated that this fencing is not in the original agreement in the building of the highway and there were no funds available. It was regularly moved by Commissioner Hart, seconded by Commissioner Mansfield, and carried, Commissioner Barth voting "No," the petition for fencing the Hassayampa Trail as requested be rejected.

Mr. E. M. Whitworth received the following report from the Standard Oil Company:

"Mr. Whitworth: The Standard Oil Company developed title on two trucks, which they plan to operate in vicinity of Quartzite, for which they request registration at the office of the County Assessor in Phoenix and tender fee of \$3.50 for registration. This is based on advice of the opinion of their attorneys to the effect that unladen weight fees are not required under amended legislation, and the fee of \$3.50 only is required. The County Assessor has requested advice from the Division as to whether or not he should grant registration on this basis. The situation remains this, that the registration will not be effected until further advice has been given the Assessor's office."

A petition was read from Colonel T. L. Sherburne commanding the Tenth Cavalry at Fort Huachuca, Arizona, and other residents of that district requesting the State to take over and maintain as a State road the highway from the Northeast corner of the Fort Huachuca Military Reservation north five and one-half miles to the junction with State Highway No. 82. The State Engineer recommended that, as this was only a County Highway, the petition be rejected. Chairman Addams asked Vice-Chairman Hart to take the chair. It was regularly moved by Commissioner Barth, seconded by Commissioner Adams and carried, Vice-Chairman Hart not voting, that the



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petition be rejected. Commissioner Addams resumed the chair.

The Secretary called to the attention of the Commission the supplementary reports that had been given each Commissioner of the labor employed on all projects by the contractors. Commissioner Mansfield requested a resume of labor employees by compiling, stating the number of persons employed and the number of projects under way in the State.

A communication was read by the Secretary from the Van Buren Street and Highway 80 Improvement Association concerning the improvement of East Van Buren Street.

A communication was read from E. L. Farrin of Aztec, Arizona, requesting the sale of 10 or 15 barrels of road oil to improve the highway to his home. It was regularly moved by Commissioner Mansfield, seconded by Commissioner Hart and unanimously carried, that the request of E. L. Farrin and all further requests from individuals for the sale of supplies or materials be refused.

It was regularly moved by Commissioner Hart, seconded by Commissioner Mansfield and carried, that the Commission recess at 12 o'clock noon, October 6, 1931, to reconvene at 1:30 P. M.

The Commission reconvened at 1:30 P. M., October 6, 1931. Chairman Addams, Vice-Chairman Hart, Commissioner Barth, State Engineer O'Connell, Attorney Salmon and Secretary present; Commissioner Mansfield absent; Commissioner Trengove excused.

A communication was read from Mrs. B. A. Walker, Hackberry, Arizona, concerning drainage in front of her property and was referred to the State Engineer.

#### Deny Flood Damages

A communication was read from J. H. Schmidt, 1104 23rd Street, Douglas, Arizona, presenting a claim for \$280.00 al-

leged damages to his property at 23rd and A Avenue in Douglas on August 9th by flood, alleged to have been caused by the highway. State Engineer O'Connell stated his office was still making investigation of this claim. The Attorney General read an opinion that, generally speaking, the State would not be liable for damage of abnormal floods. The State Engineer recommended the claim be disallowed as the flood this year was not a normal flood. It was regularly moved by Commissioner Barth that the claim be refused. Commissioner Barth then withdrew his motion until the arrival of Commissioner Mansfield.

A communication was read from W. T. Brinley, Willcox, Arizona, asking if the Highway Department would permit the State Engineer to aid property owners in the vicinity of Double R Canyon in the making of a survey for a road in that section. The Commission instructed the Secretary to notify Mr. Brinley there were no funds available for such a work that was not on a State Highway system, but that the Department's Locating Engineer would be glad to confer with him.

A letter was read from a committee of Chloride citizens requesting that the survey for the Boulder Dam Highway be made so as to include Chloride. The Secretary was instructed to acknowledge receipt of the request and advise it would be necessary to wait for the final report of the survey party now in the field.

A letter was received from C. E. James, Alpine, Arizona, requesting that section of the road from Alpine to the New Mexico State Line be made a part of the State Highway System. Chairman Addams turned the chair over to Commissioner Barth. On the recommendation of the State Engineer, it was regularly moved by Commissioner Hart, seconded by Commissioner Addams and carried, the request be rejected. Commis-

sioner Addams resumed the chair.

A letter from Geo. Downey, Chairman of the Board of Supervisors, Yuma County, was read requesting the maintenance of either of the sections of the road from Vicksburg to Bouse, or Bouse to Quartzite, being temporarily used as Highway 60 during the construction of the highway from Vicksburg to Quartzite, be maintained by the State. On the recommendation of the State Engineer, it was regularly moved by Commissioner Hart, seconded by Commissioner Barth and carried, the request be refused.

Commissioner Mansfield arrived at 2:00 P. M.

The claim of J. H. Schmidt, previously read by the Secretary, was again brought up. On the recommendation of the State Engineer, it was regularly moved by Commissioner Barth, seconded by Commissioner Mansfield and carried, Commissioner Hart voting "No," that the claim be denied.

A letter from Mrs. J. H. Fisher, Box 201, Douglas, Arizona, presenting a claim of \$100.60 for alleged flood water damage to her property near Douglas was read by the Secretary. On the recommendation of the State Engineer that the flood in question was an abnormal flood, it was regularly moved by Commissioner Barth, seconded by Commissioner Mansfield and carried, Commissioner Hart voting "No," that the claim be denied.

The Secretary presented numerous letters and communications from citizens requesting the proposed route of U. S. 60 from Showlow be established so as to include the towns of Concho and St. Johns.

There being no further business to come before the Commission, it was regularly moved by Commissioner Mansfield, seconded by Commissioner Hart and unanimously carried, that the Commission adjourn at 2:45 P. M., October 6, 1931, pending call of the Chairman.

## State Projects Under Construction

### DISTRICT NO. 1

#### Geod. B. Shaffer, District Engineer

Martter and Bock have the grading, draining and sub-grade stabilizer on nine miles beginning at Crookton and extending west to Seligman, F. A. P. 80-B, 75 per cent complete. Floyd J. Beeghly, resident engineer.

V. R. Dennis Construction company have construction on grading, draining and placing of sub-grade stabilizer, mineral aggregate and oil surfacing 14½ miles, which begins 1½ miles east of Quartzite and extends east towards Salome, F. L. H. P. 1-A, 27 per cent complete. Percy Jones, resident engineer.

Lee Moor Construction company has the construction of 7.2 miles, grading, draining, surfacing and oil processing, F. L. H. P. 1-C, beginning near Gonzales Well and extending towards Quartzite 39 per cent complete. Percy Jones, resident engineer.

Ralph Pleasant has construction of sections E and F of F. A. 98, 24 miles grading and draining, beginning 16 miles east of Quartzite and extending east, 55 per cent complete, Barney Hodgkin, resident engineer.

Packard and Tanner have been awarded a contract for the construction of 1.1 miles located approximately 11 miles N. E. of Congress Junction, Geo. Lang, resident engineer.

Pearson, Dickerson and J. C. Morse have been awarded a contract for the oil processing, by the Road Mix Method, of approximately 17½ miles, beginning at Kingman and extending west. M. Kisselberg, resident engineer.

### DISTRICT NO. 2

#### F. N. Frant, District Engineer

O. F. Fisher has the grading, draining and surfacing of 7.8 miles, beginning one mile east of Williams and extending east to Pitman Valley, F. A. 89-D, 84 per cent complete. W. T. Halloran, resident engineer.

Packard, Tanner and Morse have the grading, draining and surfacing of nine miles, beginning at Pitman and extending toward Flagstaff, F. A. 89-E, 92 per cent complete. R. C. Pond, resident engineer.

Veater and Davis have completed the construction of F. A. 95-B, (Cameron to Ridge, 40 miles on U. S. Route 89). H. D. Alexander, resident engineer.

### DISTRICT NO. 3

#### R. C. Perkins, District Engineer

Robert McKee has completed the grading and draining of 13.7 miles, F. A. 87-E, Geronimo east. L. C. Bolles, resident engineer.

Chas. Willis and Sons have the construction of 10.8 miles of the Globe-Showlow highway, beginning ½ mile east of Globe and extending northeast, F. A. P. 99-8, 45 per cent complete. Carl Brannen, resident engineer.

Lee Moor Construction company, has the grading, draining and sub-surfacing of 11½ miles of the Globe-Showlow highway, beginning at Salt River and extending south, F. A. P. 99-A, 19 per cent complete. Gus Rath, resident engineer.

Dudley Stone Products company has been awarded a contract for the sub-surfacing of approximately eight miles, which begins approximately six miles east of Geronimo and extends east. L. C. Bolles, resident engineer.

### DISTRICT NO. 4

#### W. R. Hutchins, District Engineer

Stanley Jaicks has completed the construction of F. A. Projects 25-B and 86-D 9.2 miles extending south from the Pima-Santa Cruz county line, 92 per cent complete. Sid Smith, resident engineer.

Ralph Pleasant has completed the construction on the oil processing of F. A. P. 94-E, which begins at the Pima-Pinal county line and extends south 8.3 miles. J. R. Van Horn, resident engineer.

Skeels and Graham have the grading, draining and placing of sub-surfacing of 13 miles, F. A. P. 97-B, beginning at the south end of the Sacaton Bridge and extending south, 83 per cent complete. Joe De Arozana, resident engineer.

Skeels and Graham have the surfacing and oiling of five miles, beginning at the north end of the Sacaton Bridge and extending northwest, 98 per cent complete. Joe De Arozana, resident engineer.

Skeels and Graham have the surfacing and oiling of two miles beginning at

Coolidge and extending north, F. A. 94-B, 99 per cent complete. Joe De Arozana, resident engineer.

William Peper has the construction of 2½ miles, beginning approximately five miles north of Bisbee and extending north, F. A. P. 79-G, 80 per cent complete. C. S. Benson, resident engineer.

N. G. Hill company has the surfacing and oiling of approximately 17 miles from Casa Grande to Picacho, 53 per cent complete. J. R. Van Horn, resident engineer.

Skeels and Graham have been awarded a contract for seal coating approximately 22½ miles of the Tucson-Florence highway, F. A. Projects 90-A and 18-A.

### Traffic Changes

(Continued from Page Five)

the natural roads connecting our widely separated communities and they marvel at the extent and condition of our higher type roads.

The comparison between a good oil surfaced road and a good natural surfaced road is accentuated by going directly from one to the other. We are not inclined to change our speed while traveling from one type to the other and this, on the part of the traveler, is wrong. The natural road will not stand up under as high speed as the oil surfaced road and therefore our maintenance forces are losing ground. So it can be truthfully said that a road is not always bad, when the general conclusion is arrived at by drivers who attempt to hold to constant high speed. It often is mental rather than physical.

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## Bureau Of Public Roads Projects In Arizona

### UNDER CONSTRUCTION

C. G. Willis and Sons completed October 24, the grading of Forest Highway-Oak Creek Hill Section 7-C. The project begins at the top of the Oak Creek Canyon, 13 miles south of Flagstaff, and extends to the bottom of the hill, a length of 2.8 miles. Cost of construction was approximately \$187,000. E. J. McCracken, resident engineer.

Lord and Bishop completed in October the contract for oil surfacing 26 miles of the Grand Canyon Route 3 from Bright Angel point to Cape Royal, at an estimated cost of \$285,000. This project was located on the north rim of the Grand Canyon National Park and in Coconino county. W. J. Nelson, resident engineer.

Portions of Sections "A" and "C" of the Payson-Holbrook Forest Highway Route 11 are under betterment and improvement work by day labor. Portions to be so improved total ten miles in length and will cost approximately \$12,000. D. L. Williams, resident engineer.

Harry Hagen completed on October 28 the contract for the grading of 5.6 miles of Section 2-D, Swift Trail Major Forest Development Road, in Crook National Forest, Graham county. The total cost was approximately \$7,200. L. G. Watters, resident engineer.

Jack Casson completed the first week in November his contract for the surfacing by the plant method of 35 miles, Sections "A," and "B" and "C" of the Grand Canyon-South Approach Road in Coconino county. Total approximate cost

of construction was \$227,000. V. G. Watson, resident engineer.

Everly & Allison of Des Moines, New Mexico, have the grading and draining of 16 miles through the Petrified Forest National Monument in Apache and Navajo counties. Estimated cost of construction is \$115,000 and work is now 70% complete. E. F. Strickler, resident engineer.

Hodgman & MacVicar have the contract for the grading and drainage of 20 miles of the Pine-Winslow Forest Highway Route 10, beginning approximately seven miles north of Clint's Well and extending to the North Forest Boundary 30 miles southwest of Winslow. Contract time began June 27th and work is now 70% complete. Estimated cost of project is \$112,000. C. R. Dalton, resident engineer.

R. S. Black has the contract for the construction of 6.3 miles of the Pine-Winslow Forest Highway in Coconino county. The project begins at Clint's Well and extends northeast to a connection with the south end of the 20 mile project under construction by Hodgman & MacVicar. Estimated cost of construction is \$48,000 and contract is now 60% complete. C. R. Dalton, resident engineer.

Heitsch & Bitten have the contract for placing a seal coat on 19 miles of the Grand Canyon-Desert View Route within the Grand Canyon National Park. Estimated cost is \$14,000 and work is now 20 per cent complete. V. G. Watson, resident engineer.

Bids were opened August 20 for grading and draining two sections, Units 4 and 5, of the Payson-Holbrook Forest Highway. Lengths of the units are 0.5 mile and 1 mile respectively. Rogers Bros. were low bidders of Unit 4 and H. I. Turley was low bidder on Unit 5. Award has been made. Estimated cost of construction for the two Units is \$5400, and work is now 95 per cent complete.

Glenn Shumway has the contract for four Station Contract Units south of Heber on Section B of the Payson-Holbrook Forest Highway. The estimated cost is \$8,000 and work is now 75 per cent complete. D. L. Williams, resident engineer.

Bids were opened at the Grand Canyon on September 24 for sub-grade reinforcing and oil surfacing by the plant mix method 17.199 miles of the Grand Canyon-South Approach Road. Geo. H. Oswald was the successful bidder and

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award has been made to him on the basis of his proposal. The total estimated cost is \$135,000. Work began on October 22 and is now 20 per cent complete. V. G. Watson, resident engineer.

Howard Smith et al of Thatcher, Arizona, has the contract for grading two station contract units of the Swift Trail, 26 miles southwest of Safford. The combined lengths of the projects are 0.8 mile, estimated cost \$2700 and work is now 25 per cent complete. L. G. Watters, resident engineer.

Charles Ballard of Snowflake has the contract for moving and re-erecting an 80-foot steel span bridge from Leroux Wash near Holbrook to Buckskin Wash near Heber. Work began November 2. D. L. Williams, resident engineer.

R. L. Sharp of Nutrioso submitted the low bid on October 27 for placing 2300 cubic yards of subgrade reinforcing material on 2.2 miles of the Clifton-Springerville Highway near Springerville. Award has been recommended to Sharp.

### Surveys

Payson-Indian Garden-Colcord Survey, Forest Highway Route 11, beginning at Payson and extending eastward for an approximate distance of 40 miles, to a connection with the Young-Holbrook Highway near the Gila-Coconino county line. Survey began March 15th and was completed the first week in November. J. H. Brannan, locating engineer.

Hermit Rest Survey and Hermit Rest to a connection with Bass Camp Survey. Located on the South Rim of the Grand Canyon in the Grand Canyon National Park. Approximately 12 miles in length. F. H. Horton, locating engineer.

A resurvey has begun of the line between Grand Canyon Village and Bass Camp and Mannikaja Spur to the west. J. H. Brannan, locating engineer.

### Bids to Be Opened

Bids will be opened at the Grand Canyon November 17 for grading and

draining 7.1 miles of the Cameron-Desert View Approach Road to the Grand Canyon National Park.

Bids will be opened at the Petrified Forest National Monument November 19 for placing subgrade reinforcement, by three station contracts, on a portion of the Petrified Forest National Monument Highway, now under construction.

Plans and Specifications have been prepared for the grading and draining of 6.3 miles of the Lower Canyon Section of the Oak Creek Highway. Bids will probably be opened the latter part of November, although at this time a definite date has not been established.

### Our Famous Ghost Cities

(Continued from Page Nine)

of gold just as in the days of '49. It is estimated that over \$400,000,000 in gold alone, have been produced in this area. Nuggets are still found. Within a few hundred feet of the road, near the Gonzales Well, was found the record nugget of the camp, worth nearly \$1,200.

Aside from gold, there are many other interesting attractions for the vacationist. In the S-H mountain range, undoubtedly named by some godless mule skinner, close to Tyson's Well, the remains of many ancient Indian villages are found. The matates with which they ground their corn are still in place and the near-by smooth rocks are covered with hieroglyphics telling the story of a departed race. These picture rocks, as the hieroglyphics are called by the natives, are found by the dozen.

A few miles to the north of Quartzite is found a petrified forest about ten miles square in size. It differs greatly from the petrified forests of northeastern Arizona. It is believed that some convulsion of nature made this old forest the bed of the Colorado river and later movements raised it again.

We should, as a state, take measures to

preserve and maintain such places as the Ehrenberg cemetery, Fort Tyson, this petrified forest and the picture rocks. Once destroyed, they can never be replaced and surely they deserve a better fate than that. We must take care of them for future generations before it is too late. At all events, a trip over this part of Highway 60 should prove both interesting and instructive to all students of Arizona history. The road is good, gas stations abound, water is available everywhere and good hotels or camping places are plentiful. It is a trip worth while.

What is said to be the only bridge of its kind in the world—a huge petrified tree—was recently reinforced with a concrete girder because it had been weakened by people crawling over it.

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## Road Conditions, Arizona State Highway System

These conditions were reported as of November 4. Changes will occur on roads under construction according to progress of the work. (Editor's Note.)

U. S. Route 80, Yuma to Rodeo, 518 miles. All paved, oil surfaced or gravelled-condition good. Two and a half miles under construction, Bisbee Hill, two short detours, good condition.

U. S. Route 66, Topock to Lupton, 396 miles—gravel surface, oiled or paved. Condition good excepting nine miles under construction east from Seligman, one short detour and three mile detour, good condition. Sixteen miles under construction east of Williams. Traffic using old road.

U. S. Route 180, Florence Junction to state line, 183 miles—gravel or oil surfaced—condition good. Construction east of Geronimo nearing completion.

State Route 88, Apache Trail, Apache Junction to Globe, 83 miles—gravel surface. Condition good.

State Route 73, Cutter to McNary, 104 miles, gravel surface Cutter to Rice and White River to McNary, other unimproved. Fair condition.

State Route 71, Coronado Trail, Clifton Junction to Springerville, 157 miles—gravel and partly surfaced. Condition good, Clifton Junction to 40 miles north of Clifton. Cherry Lodge to Hannigan good except when raining. Alpine to Nutrioso good. Nutrioso to Springerville good excepting caution by 7.3 miles under construction near Springerville. This road will close with winter snows.

U. S. Route 89, Nogales to Fredonia, 660 miles—gravel, oil or paved surface to Flagstaff, graded and drained to Cameron. Forty miles under construction Rock to Fredonia. Nine miles under con-

struction between Nogales and Tucson. Condition good. Three short detours.

U. S. Route 70, Holbrook to State Line, 109 miles—Gravel surfaced, condition good to excellent.

State Route 79, Prescott to Flagstaff, 91 miles—Gravel or oil surfaced to Sedonia, Sedonia to Flagstaff graded and drained. Condition good excepting for construction in Oak Creek Canyon which at times is impassable. Sedonia to Flagstaff slow in wet weather.

State Route 74, Wickenburg to Ehrenberg, 134 miles. Surface mostly low type improved. Fifty-one miles under construction from Gonzales Wells east. Detour county road Quartzite to Bouse to Vicksburg. Other detours slow when wet.

State Route 81, Douglas to Safford, 128 miles—Gravel surfaced. Condition good.

State Route 87, Chandler to Picacho, 51 miles—Gravel or oiled surfaced excepting 13 miles under construction Sacaton Dam to Coolidge. Detour rough.

State Route 187, Sacaton Dam to Casa Grande, 13 miles—Gravel surfaced. Condition good.

State Route 83, Vail Junction to Sonoita, 28 miles—Gravel surfaced. Good.

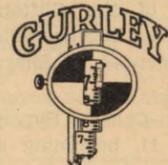
State Route 82, Nogales to Tombstone Junction, 70 miles—Gravel surfaced. Good.

State Route 84, Tucson to Gila Bend, 124 miles—Oil surfaced Tucson to county line, gravel surface to Casa Grande. Part surface to Gila Bend. Road under construction Picacho to Casa Grande.

### STATES INCREASE GAS TAX

Ten states have increased their gasoline tax this year. The increases are as follows: Arizona, 4 to 5; Arkansas, 5 to 6; Maine, 4 to 5; Massachusetts, 2 to 3; North Carolina, 5 to 6; North Dakota, 3 to 4, (suspended pending referendum election); Oklahoma, 4 to 5; Utah, 3 1-2 to 4; Washington, 3 to 5; Wisconsin, 2 to 4.

With the recent increases there now are five states that have a 6 cent gasoline tax, twelve with a 5 cent tax, eighteen with a 4 cent tax; nine with a 3 cent tax, and four states and the District of Columbia with a 2 cent tax. The 5 cent tax is universal in the Canadian provinces.



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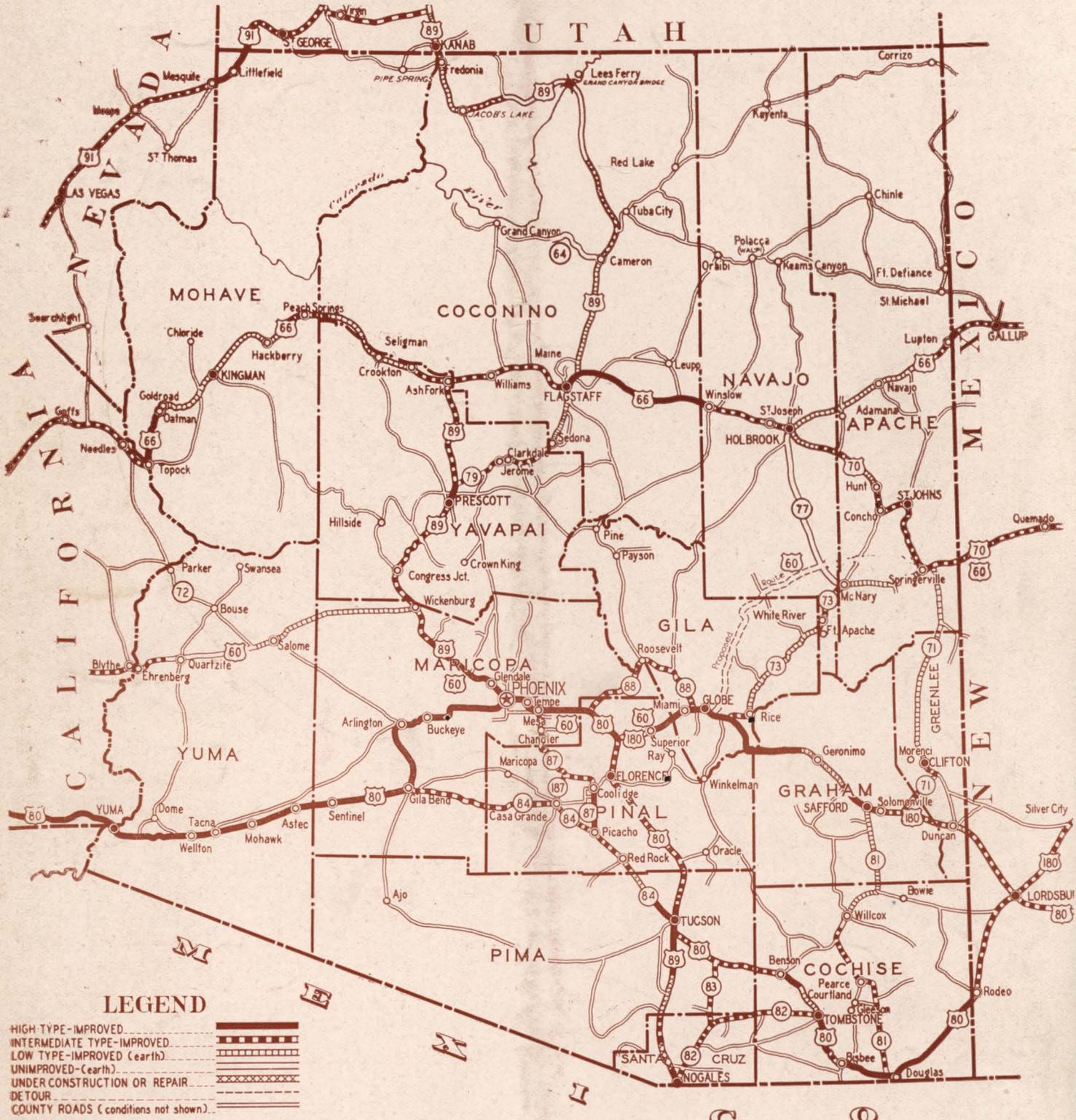
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- HIGH TYPE-IMPROVED
- INTERMEDIATE TYPE-IMPROVED
- LOW TYPE-IMPROVED (earth)
- UNIMPROVED (earth)
- UNDER CONSTRUCTION OR REPAIR
- DETOUR
- COUNTY ROADS (conditions not shown)

- U. S. ROUTE No.
- STATE ROUTE No.



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## ARIZONA HIGHWAY DEPARTMENT CONDITION MAP OF STATE HIGHWAY SYSTEM

Scale  
 0 10 20 30 40 50 Miles



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