

BECO'S
QUARTERLY
MAGAZINE

Local Public Agencies & Subrecipients

2023
*New Year
Teaser Issue*

January 2023

ADOT





EDITOR'S NOTE

Welcome to the January 2023 BECO's Quarterly Newsletter (Teaser).

And a Happy and Healthy New Year!

Because BECO's Quarterly has been on a bit of a hiatus, this issue is meant to be a teaser for the upcoming year.

Please email me if you have suggestions on what you would like to see and read about.

As always, you will find stunning images from around Arizona, taken from the pages of ADOT's "Arizona Highways Magazine".

Look for an article on ADOT's "I17 Improvement Project" with information on road closures and some helpful links for the most up-to-date information at your fingertips.

You'll also find an article from "American DBE Magazine" on pages 8-10 about Lane Construction Group and how they were recognized for Diversity Excellence.

And just for fun, some pages from a throwback issue of Arizona Highways Magazine from December 30, 1922.

Hope you enjoy this issue!

Melanie Peterson
ADOT LPA/SR Program Manager

Photo on Left: Pronghorns make tracks across snow-covered grasslands north of Sonoita in Southern Arizona (AHM). *By Norma Jean Gargasz*
Cover Photo: Snow covers a saguaro skeleton amid healthy cactuses in Sabino Canyon, northeast of Tucson in the foothills of the Santa Catalina Mountains (AHM). *By Norma Jean Gargasz*



Cathedral Rock towers over a snowy landscape at Crescent Moon Ranch, a historic homestead in Sedona that now serves as a day-use area picnic site. *By Derek von Briesen*



I-17 Improvement Project

Drivers who travel I-17 at night will need to plan ahead to avoid major delays as the highway is closed regularly during the weeknight overnight hours for controlled rock blasting over the next several months. The blasting is necessary work as part of the I-17 Improvement Project from Anthem Way to Sunset Point (link is external). I-17 improvement project

As part of a safety-based operation, the first full closures are scheduled for Wednesday, Nov. 30 from 10 to 11 p.m. and Thursday, Dec. 1 from 10 to 11 p.m. During the next approximately eight months, the full closures will take place two to three times a week Mondays through Thursdays.

Generally, blasting will occur between 10 and 11 p.m. However, the window of time for this work to occur is between 10 p.m. and 4 a.m. The start and end

times of each closure could vary based on blast-site, weather and traffic conditions, or other unforeseen circumstances.

On weeknights when controlled rock blasting is scheduled, crews will begin narrowing I-17 to a single lane in both directions at 7 p.m. and then fully close the highway after 10 p.m. Drivers should expect delays while crews set up traffic control, and use caution around construction personnel and equipment.

Motorists planning to travel on I-17 during the overnight hours should leave early or delay travel to avoid the closures entirely. Motorists who travel between 10 p.m. and 4 a.m. should expect to be impacted by the closures on nights when blasting occurs. Safety is the number one priority when conducting controlled rock blasting operations. The roadway cannot be reopened until the operation is completed successfully and all debris is cleared from the roadway.

Overhead message signs alerting drivers to the upcoming closures will be displayed ahead of the closure areas. These signs will also advise drivers to reduce speeds and prepare for stopped traffic.

The Arizona Department of Transportation is strongly encouraging everyone to stay informed about the weekly overnight full closures.

Here's how drivers can plan ahead:

- Get real-time traffic conditions at [AZ511.gov](https://www.az511.gov) or by calling 511 (except while driving). You can also download the [AZ511 app](#). Updates about the start of the closures and the reopening of the highway once the blasting and clearing operations are complete will be communicated in real time via AZ511 so drivers know what to expect. Field crews will be coordinating closely with ADOT's Traffic Operations Center.
- Drivers can also consult [AZ511](#) if they wish to take an alternate route.
- To see the dates when controlled rock blasting is scheduled, visit the [Traffic Alerts page](#) on the project website, [improvingi17.com](https://www.improvingi17.com).
- Sign up for emailed traffic alerts via the pop-up box on the home page of [improvingi17.com](https://www.improvingi17.com) so you can plan your trips accordingly.
- Work crews will provide project information on work zone signage and overhead message boards along the I-17 project corridor.

More about the I-17 Improvement Project:

Once complete, the I-17 Improvement Project will help alleviate congestion and improve safety and traffic flow north of the metro Phoenix region. The 23 miles of improvements include 15 miles of roadway widening from Anthem Way to Black Canyon City. One travel lane will be added in each direction along this stretch. In addition, an eight-mile flex lane system will be constructed from Black Canyon City to Sunset Point. Flex lanes are a new feature for Arizona's highway system and are proven technology to help reduce congestion on I-17 during peak travel times and allow for traffic movement during emergency situations.

The I-17 flex lanes will operate as a separate, two-lane roadway carrying one direction of traffic at a time depending on the greatest need along the steep, winding eight miles between Black Canyon City and Sunset Point. For example, the flex lanes will be able to carry heavy northbound traffic on a Friday or heavy southbound traffic on a Sunday. Similarly, ADOT will be able to open the flex lanes to accommodate traffic any time if a crash or other incident causes long delays.

The two flex lanes will be next to, but physically separated from southbound I-17 using concrete barriers. Access to the flex-lane entrances will be controlled by gates. Overhead message signs will alert drivers to the open direction of the flex lanes. The flex lanes will be operational seven days a week.

For more information about the I-17 Improvement Project, visit [improvingi17.com](https://www.improvingi17.com), call 877.476.1717 or email info@improvingi17.com

Lane Construction Recognized for Diversity Excellence

from American DBE Magazine, 2022 Issue III

Lane Construction Corporation (Lane), the U.S. subsidiary of Webuild Group, has an extensive history of building major highway projects across the Carolinas and in the states of Florida, Virginia, Washington, California and Texas. Engineering News Record (ENR) ranked the company as the 16th largest transportation contractor in 2021.

Lane's extensive operations on U.S. Department of Transportation (USDOT) funded transportation projects require ongoing outreach and contract compliance initiatives related to administering the federal Disadvantaged Business Enterprise (DBE) Program. Charlea Washington serves as Lane's Compliance Manager and is the company's DBE Liaison Officer. Her role requires leading the organization's DBE Program administration and working closely with project managers to support and guide outreach and compliance activities on all projects. "The importance of my role is creating opportunities for small, diverse contractors, that they did not know existed; establishing, building, and maintaining relationships with the community and local agencies; and leading the training and development initiatives for our diverse contractors."

In August 2022, the National Institute of Minority Economic Development (NIMED) recognized the work of Lane across the Southeast region at its Executive Networking Conference, held in Pinehurst, North Carolina. The company received the "Diversity Excellence" Award for strong outreach efforts and partnering with DBE firms to complete major infrastructure projects over the past several years. Lane has worked closely with one of NIMED's core programs – The USDOT Office of Small Disadvantaged Business Utilization's Small Business Transportation Resource Center - Mid-Atlantic Region (SBTRC).

Additionally, Lane has co-sponsored the USDOT Bonding Education Program along with the SBTRC for seven consecutive years since 2015. During this time, the program helped more than 120 firms learn about the surety bonding process and improve their bonding capacity. Firms completing the program have grown their bonding capacity by



\$30.7 million and secured \$13.9 million in construction-related contracts. "Lane has been a great partner since our first Bonding Education Program. They have been supportive and assertive in helping DBEs increase their bonding capacity and getting work on projects," Mid-Atlantic Region SBTRC Program Manager Alyssa Mako said.

Lane partners with SBTRCs across the country and leverages the relationships to provide resources from its internal staff of Subject Matter Experts for subcontractors. Lane's project staff also teach a variety of courses including Bidding, Estimating, Proposal Writing, Safety, Project Management and Compliance. These courses provide valuable information to potential subcontractors and offers businesses a direct contact within the Lane organization.

In addition to partnering with SBTRCs to conduct outreach and training, Washington relies on internal colleagues leading each project to administer the day-to-day activities to ensure DBEs have meaningful opportunities on Lane projects. Washington ensures successful administration of the DBE Program by its project executives through maintaining ongoing communication with them and providing training to project staff to keep everyone abreast of DBE Program regulations and potential challenges on any given project.

Washington's role also includes building relationships with local resources, community groups and public agencies to understand the expectations of the communities where Lane plans to do business; and the expectations of clients regarding DBE Program administration and contract compliance. "Relationships are extremely important to any business, internal and external! I like to be intentional by being compliant with the agencies, attending and participating in community activities, and researching initiatives that are in line with our business operations," Washington said. Lane's extensive number of major projects offer significant subcontracting opportunities to DBE firms. Some of these firms go on to build ongoing relationships with Lane project staff and first tier subcontractors. Lane will continue its efforts in the South Atlantic Region to keep pace with ongoing projects (including tunnel work) with a total contract value of more than \$2 billion in North Carolina, South Carolina, Washington D.C. and Virginia. Some of the projects include a \$441 million 495 Express Lanes Northern Extension (NEXT) project in Northern Virginia, and a \$181 million I-85 Widening Phase III project in South Carolina. Additional projects in North Carolina include a \$346 million I-440 Widening project, a \$260 million I-77/I-40 Interchange Improvements & Reconstruction project, a \$403 million Lane Blythe

JV project to Complete I-540, and a \$236 million project to widen I-40 26 miles from I-85 in Orange County to the Durham County Line.

PullenBoy Hauling (PullenBoy) is a Raleigh, N.C. based DBE firm that has found success in building a relationship with Lane as a subcontractor. PullenBoy won its first major hauling contract with Lane Construction in 2021 working on the NCDOT Complete 540 project. The husband-and-wife team of Jarvis and Dannesia Pullen began building a relationship with Lane project staff while working as a second-tier hauler on the NCDOT I-440 Beltline Widening project. PullenBoy is performing well on the contract and made a positive impression with Lane project managers.

Based on this experience, Lane estimators reached out to PullenBoy to request a quote for the Complete 540 project, a large project to complete the final portion of the Raleigh outer belt. PullenBoy submitted a quote and received a \$3.5 million contract to provide hauling services. “Although we were not as large as some of the other companies bidding on the project, Lane gave us a chance and were willing to work with a smaller company. The project is going extremely well, and it has been a great experience so far,” Dannesia Pullen said.

Photo previous page: Supplier Diversity Contract Compliance Manager Charlea Washington (left) accepts the Diversity Excellence Award on behalf of Lane Construction Group from National Institute for Minority Economic Development CEO Kevin Price at the 2022 Executive Networking Conference. (American DBE Magazine)

Washington believes these types of opportunities is what the DBE Program is all about. “A successful DBE working with Lane is a DBE who understands that the program is a steppingstone to greater things,” she said. Washington also encourages all contractors to operate with a holistic, intentional approach and gain understanding of business operations from the field to the back office. She believes this approach will yield greater opportunities in growth and development. She said: “At Lane we take the DBE regulation seriously; however, we also know that not all contractors have the resources to sustain their business operations. This is why we partner with the SBTRCs, the governing agencies, and local organizations to provide additional resources to help them succeed.”



PullenBoy Hauling owners Dannesia and Jarvis Pullen.



American DBE Magazine is your premiere networking resource for businesses, administrators, and stakeholders in the USDOT Disadvantaged Business Enterprise Program.

The mission of American DBE Magazine is to create and publish content to promote, inspire, inform, educate, and encourage diverse business owners and other stakeholders in diverse business development in the infrastructure design, construction and transportation industries.

FEATURES:

- DBE Business Opportunities
- Industry Best Practices
- Business Profiles
- Business Development Articles



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ARIZONA HIGHWAYS

ISSUED BY THE
ARIZONA STATE HIGHWAY DEPARTMENT
 PHOENIX, ARIZONA

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

EDITORS ARE PRIVILEGED TO USE ANY OF THE MATTER HEREIN CONTAINED

Volume 2.

Phoenix, Arizona, December 30, 1922.

Number 3.

RECEIVED
 MAR 14 1923
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 PHOENIX, ARIZONA

1923 Funds for Arizona Highways

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Status of State Road Construction

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1922 Breaks All Road Building Records

1923 FUNDS FOR ARIZONA HIGHWAYS

RECEIVED
 MAR 14 1923

December 30, 1922.

Mr. Frank R. Goodman,
 PHOENIX, ARIZONA.

Dear Sir:

Attached please note a list of funds available for 1923 state road construction.

Items 1 to 9 inclusive, should provide some \$340,000 cash during the next 60 or 70 days. Items 10 to 16 inclusive, should provide an additional \$600,000 of ready funds.

During the last 30 days we have cleared up all the old accounts that could possibly be handled so that \$250,000 will probably more than cover all of the outstanding accounts at the present time, including payments for labor and supplies, and estimates due contractor, etc., including road work done during December.

Our monthly expenditures are approximately \$250,000. The State Imprest Fund is \$50,000 but \$150,000 is really needed for this purpose.

We average between \$300,000 and \$400,000 in Federal vouchers in transit. The temporary carrying of both the state and federal road expenditures is a very difficult financial problem.

All of the Federal Aid allotted to Arizona has been applied for. In addition modified project agreements can be submitted July first, 1923, on Projects 64 to 74, inclusive, raising the federal participation from 25 to 61 per cent, which will take up two-thirds of the Federal Aid already authorized by Congress, which will be available on that date.

Complete inventories are being submitted of office, laboratory, shops, warehouse, yards, also construction camps, etc. The material, equipment, supplies, etc., assets of the department, are worth approximately \$3,000,000.

Yours very truly,
 Theo. Maddeek, State Engineer.

Funds Available for State Road Construction 1923

Balance in 75 per cent State Road Tax Fund	\$ 61,756.23
Balance in 25 per cent State Road Tax Fund	108,888.91
Appropriations in Senate Bill 51	58,044.75
Automobile Fees for 1923, approximately	250,000
Due from Counties, Cities, Salt River Valley Water Users' Association, etc. for equipment	24,100.00
Gasoline Tax, 1923	195,000.00
Federal Aid Vouchers submitted	357,200.00
Federal Aid work completed vouchers not submitted, approximately	388,000.00
Engineering and Contingency items not yet submitted, approximately	34,000.00
Pledged from Apache County Highway Commission on St. Johns-Springerville, etc.	100,000.00
Pledged from Coconino County Highway Commission on Flagstaff-Winslow	15,000.00
Pledged from Graham County Highway Commission on paving program	135,000.00
Pledged from Maricopa County Highway Commission on Marinette-Wickenburg	165,000.00
Balance available in Maricopa County according to Highway Commission and Board of Supervisors for paving East of Mesa 4 miles, North of Marinette 4 miles, Buckeye to Hassayampa 9 miles, and construction Hassayampa to Yuma Line	375,000.00
Yavapai County on Wickenburg-White Spar, Prescott-Ashfork Agreement	210,000.00
Yuma County Balance for extension of Aztec to County Line 7 miles	8,815.60
July 1st 25 per cent \$ 87,500 Half this calendar year.....	43,750.00
July 1st 75 per cent 262,500 Half this calendar year.....	131,250.00
TOTAL	\$2,660,805.49

Federal Funds to match above at maximum ratio of 61 to 39 per cent already authorized and applied for 2,016,000.00
 Federal Funds authorized by Congress available July 1st, 1923

B. P. R. Estimate Forest Aid Flagstaff-Angel	273,701.69
B. P. R. Estimate Forest Aid Prescott-White Spar, approximately	450,000.00

GRAND TOTAL \$6,313,107.18

EQUIPMENT SUPERINTENDENT LISTS SUPPLIES

Some idea of the wide range and huge value of surplus war materials and other equipment purchased by the Arizona Highway department may be had by glancing through the inventory of property held by J. H. Allen, superintendent of equipment and supplies. A large portion of this was obtained from the federal government at a nominal charge to cover transportation and handling. The following tabulation shows the more important items of material and equipment in use and reserve:

164 Anvils	1 Three-Quarter Yd. Excavator
83 Bbls. Asphalt	1 Portable Steam Engine
107 Wagon Axles	119 Fresno Scrapers
1164 Single Bit Axes	2238 Files, Assorted Sizes
135 Hand Axes	20 Forges
8 Adding Machines	70 Blacksmith Flatters
36 Blasting Machines	92 Graders
19 Concrete Carts	9 Wagon Running Gears
18 Blacksmith Blowers	29 Complete Running Gears KD
5 Vertical Boilers	1 Metropolis Generator
4 Clam-shell Buckets	2 Gen. Electric Co. Generators
1 Back-dump Drag Line Bucket	96 Emory Grinders
2 Orange Peel Buckets	4 Barrels Lantern Globes
250 Wrecking Bars	72 Five-lb. Cans Axle Grease
100 Pinch Bars	90 Tent and Bunk Houses
540 Water Buckets	3840 Horse Shoes
120 Carpenter Braces	152 Kegs Railroad Spikes
600 Lbs. Carbide	134 Nash-Quad Springs
21 Triple Iron Blocks	77 Liberty Truck Springs
11 Single Snatch Boxes	32 Heavy Aviation Springs
1 Universal Crusher	14 Throw-Lever Switches
1 Ten-ton Overhead Traveling Crane	1 Revolving Gravel Screen
1 15-ton Locomotive Crane	12 Kegs Wire Staples
3 Railroad Push Cars	125 Two-man Cross-Cut Saws
30 Railroad Flat Cars	107 One-man Cross-Cut Saws
8 Koppel Cars	504 One lb. Cans Harness Soap
3 Rock Crushers	320 Hand Saws
4500 Ft. B. B. Coil Chain	95 Carpenter Squares
248 Cutters for Milling Machine	60 Shears
20 Tons of Coal	128 Sets Saw Tools
9200 Yds. 24-in. Canvas	22 Carborundum Stones
23150 Yds. 30-in. Canvas	999 Tarpaulins
4200 Yds. 42-in. Canvas	295 Tents
8840 Yds. 72-in. Canvas	61 Tanks
50 Quarter-in. Bolt Cutters	10 Dump Trailers
650 Quires Emory Cloth	293 Solid Tires
28 Cold Chisels	73 Pneumatic Tires
77 Rope Drags	112 Tubes
1 Ledger Wood Pile Driver	1 Welding Torch
18 Road Discs	6 Narrow Gage Railroad Turn Tables
4 Five-ton Derricks	11 Hand Trucks
28 Posthole Diggers	210 Blacksmith Tonges
10 Gasoline Engines with Pumps	12 Typewriters

119 Vices	1 Marion Gasoline Shovel
1 Vulcanizing Machine	1 Portable Paint Sprayer
90 Wagons	1 12-in. Shaper
128 Wheelbarrows	2 Power Hack Saws
22 Emory Wheels	2 Band Saws
2 Complete Welding Outfits	108 Head Live Stock
3 Hand Winches	21 Maney 4-Wheel Scrapers
1438 Monkey Wrenches	11 Slip Scrapers
60000 Lbs. Assorted Sizes Steel	11680 Shovels
127 Trailers	50 24-in. Emory Stones
45 Tractors	46 Jack Hammers
498 Trucks and Automobiles	1 Aeroplane Hangar
\$6817 Worth of Mess Equipment	1 Steam Hammer
506 Kegs of Nails	1 Hoist and Boiler
36 Hoof Nippers	3 Two-Drum Steam Hoists
3 Asphalt Pots	3 Single-Drum Steam Hoists
55 Plows	40 Columbia Hoists
2 Locomotive Plows	52 Sets Cart Harness
32 Pumps	97 Sets Artillery Harness
6300 Ft. 3/4-in. Pipe	40 Sets Wheel Harness
18292 Ft. 2-in. Pipe	92 Claw Hammers
565 Ft. 1 1/2-in. Pipe	300 Ball Pein Hammers
4752 Ft. 3-in. Pipe	416 Hatchets
3360 Ft. 1-in. Pipe	108 Blacksmith Hammers
14700 Ft. 4-in. Pipe	100 Blacksmith Hardies
2000 Ft. 8-in. Matthewson Joint	550 Long Shovel Handles
22 Drill Presses	6076 Axe Handles
3020 Ft. Sheet Piling	650 Mattock Handles
90 Rolls Tar Paper	5075 Pick Handles
1 20-Ton Weaver Press	1340 Ft. 3/4-in. Hose
55 Low-Down Red Jacket Pumps	1700 Ft. 3-in. Hose
5 Hand Drill Presses	1184 15-in. Channel Iron
5160 Picks	75000 Lbs. Reinforcing Steel
2 American Pumps	15 Three-Ton Hydraulic Jacks
2 Electric Light Plants	70 Drawer Knives
91 Carpenter Planes	1 Mogul Loader
48 14-in. Pinchers	2 La Blonde Lathes
332 Pliers	1 Liberty Lathe
36 Harness Punches	2 Steam Locomotives, Narrow Gauge
200 Quires Sand Paper	2 Gasoline Locomotives, Narrow Gauge
1 Austin Gasoline Road Roller	46 Spirit Levels
1 Portable Refrigerator Plant	1 Wagon Loader
200 Ton 25-lb. Rail	1 Havelock Maintainer
35 Army Field Ranges	18 Concrete Mixers
1186 Rakes	1 Brown & Sharp Miller
18800 Lbs. Manila Rope	1 Milling Machine
3 Scarifiers	1 Motor-Driven Sewing Machine
2 P. and H. Shovels	1 Cutting and Threading Machine
1 Steel Sharpener	1 Washing Machine
3 Circular Saws Mounted	5 15-h. p. Motors
1 Bucyrus Steam Shovel	2 5-h. p. Motors
65 Sets Stocks and Dies	1 93-h. p. Motor Mounted
6 Grindstones	23 Motor Cycles
1 Austin Gasoline Shovel	2 Continental Motors
	1 Hudson Motor
	5 White Motors
	2 G. M. C. Motors
	4 7 1/2-h. p. Motors
	1 1 1/4-h. p. Motor
	4 1-h. p. Motors
	7 10-h. p. Motors
	2 40-h. p. Motors
	17 Micrometers
	980 Pick-Mattocks

STATUS OF STATE ROAD CONSTRUCTION

APACHE COUNTY

Contractor J. H. Udall has completed the construction for the state of a bridge near Concho.

Contractors Winsor & Frost have started 13½ miles of highway construction from St. Johns south toward Springerville and County Engineer J. M. Shepard is rapidly completing the 44.2 miles of the St. Johns-Zuni road. The state furnished \$15,000 and the county \$20,000 of the \$35,000 being expended.

Federal Aid has been applied for on 29 miles of additional road through Springerville toward the New Mexico line.

On the Holbrook-Gallup highway, state forces have completed the grading of 40 miles between the New Mexico line and the Apache-Navajo line. The contract for the Allentown bridge on this road was let to the Midland Bridge & Construction Co. for \$5,718 and the contract for the bridge at Saunders to the Monarch Engineering Co. for \$15,440. The grading for the entire 52 miles of this road lying in Apache county should be completed early in 1923.

COCHISE COUNTY

Contractors White & Miller have completed 10 miles of asphaltic paving between Tombstone and Bisbee.

State forces have completed the improvement of streets through Tombstone and Benson.

The Cochise county portion of the Fairbanks-Nogales road has been completed and state forces are now engaged in laying concrete paving on the dips between Douglas and Rodeo.

The State Highway department has taken over the maintenance of all of the Borderland highway in Cochise county and is improving the county-built road between Benson and Tombstone.

The Cochise County Board of Supervisors requested the State Engineer to call for bids for two miles more of paving near Tombstone but after bids were received for 89 cents per square yard north and 95 cents per square yard south of Tombstone the board decided to hold the Seventy-five per cent fund for maintenance. There is some suggestion that the board will request the State Engineer to call for bids on six and a half miles of this two and a half inch paving between Tombstone and Bisbee early in January. Local paving companies are interested as White & Miller, the contractors on the other work have moved their plant to Yuma.

COCONINO COUNTY

Forest Aid has been applied for between Flagstaff and the Canyon Padre bridge and Federal

Aid has been requested between Winslow and Canyon Diablo. On both of these roads better locations have eliminated nearly 10 miles of distance. The location west from Winslow is nearly on the old original road closely parallel to the railroad in order to shorten distance, take advantage of the railroad's concentration of drainage and for convenience in importing surfacing as the local material is very poor.

State forces have completed the Williams-Ashfork highway and were fortunate in finishing the cinder surfacing of three miles of the Williams-Flagstaff section before the first heavy snow storm. From Flagstaff west the National Old Trails highway in Coconino county is a boulevard; from Flagstaff east everything with the exception of 12 miles lying between Canyon Padre and Canyon Diablo should be under construction in the next 90 days.

GILA COUNTY

No state road construction is in progress in Gila county at present but it is anticipated that state forces will early start the construction of a road from Livingstone via Wheatfields to Globe, thereby providing a new route between Globe and Roosevelt.

County forces under County Engineer Julius Milton are continuing the steam shovel work on the reconstruction of the road between Roosevelt and Payson. An excellent highway is being built with little expenditure for labor. The State Highway department recently secured a carload of government powder for this work.

GRAHAM COUNTY

The contract for six miles of paving between Safford and Central has been let to the Lee Moor Contracting Co. Fifteen per cent of the grading and structures and two per cent of the paving are complete. Federal Aid for an additional seven and a half miles of paving between Central and Matthews' Wash has been approved by the Secretary of Agriculture and bids have been called for this work. Federal Aid has also been requested for seven more miles of paving between Safford and Solomonville. Funds for these three projects will be provided out of the Graham county bond issue and Federal Aid.

The prices secured for the paving of the first 6-mile section are the lowest for this class of construction in Arizona since the war. This is due to the fact that asphaltic and cement types of paving have been held in open competition. The square yard price is \$1.10 plus the cost of cement.

The state has paid Graham county \$3,000 for its share of the cost of 10 miles of road from the Greenlee county line toward Solomonville. This work was done by county road forces.

GREENLEE COUNTY

The Mule Creek highway is complete and the forces engaged on this job have been transferred to other work. Highway forces of Grant county, N. M., are progressing with the work on the New Mexico portion of this highway which will provide a short route between Clifton, Ariz., and Silver City, N. M., and form an important link in the new Elephant Butte-Roosevelt dam route. This road, while built for utilitarian purposes, is one of the most scenic in Arizona, resembling somewhat the Prescott-Jerome highway.

MARICOPA COUNTY

Three rock crews, a team outfit and bridge crew have been organized and are now working on the Wickenburg-Hot Springs road. The construction of this 10½ miles of highway is a substitute for the old 19-mile road between these points. Approximately three and a half miles have been completed. Three cars of government powder have been received and arrangements made to secure the additional amount necessary to complete this work.

On the Phoenix-Yuma route a surfacing crew working with the aid of gasoline shovel and trucks has nearly completed the graveling of the road between Gila Bend and Gillespie Dam and this section should be completed in January.

An additional state crew has been placed on the work just north of the dam, building a pilot road across the lowlands submerged by the backwaters of the dam, with the idea of making this road a core for permanent construction. It is expected that the shovel now used in surfacing work south of the dam will be moved to the new pilot road as soon as the present work is completed. Shovel and trucks will then be utilized for raising and widening the core. Traffic will be able to use the pilot road, cutting off a lengthy detour, during the main construction.

Bob McKay, sub-contractor on the 15-mile section between Gila Bend and Piedra, has completed 60 per cent of the grading and 50 per cent of the surfacing on this construction.

State forces under Foreman Al Lillard have been grading the road between Hassayampa river and Buckeye in order to prepare the sub-grade for nine miles of paving. In a number of instances irrigation ditches have been moved and trees grubbed out wherever they interfered with the new location.

A caterpillar tractor and blade are being used on a new line from the Hassayampa westward, which will eliminate one mile of distance between the river and Arlington. The new route is also on good surfacing material most of the way.

State forces have recovered most of the steel from the washed-out span of the bridge across the Hassayampa and the reconstruction is completed with the exception of one piece of steel which was lost in the flood. Replacement parts have been ordered from Los Angeles. At present the bridge contains one wooden member which will be replaced as soon as the new material arrives. The contractors' bondsmen are financing the work.

Of the total of 200 miles between Phoenix and Yuma, 110 miles of highway have been completed, 60 miles are under construction and the remaining portions are embraced in projects that will be started as soon as Federal Aid already requested is secured.

The reconstruction of the Apache trail has been completed with the exception of the river road near the Roosevelt dam and the change of line at Mormon Flats. State forces under Engineer Harry Hagen are now working on this latter construction. The contract for supplying structural steel for two bridges has been let to the Missouri Valley Bridge & Iron Co. These new bridges will replace the old wooden structures whose many years' service has threatened their safety.

The Pacific Construction Co. has completed the half-mile stretch of 18-foot concrete paving on Grand avenue, the work being put through in record time, enabling the route to be open to traffic during State Fair week.

Work on the New River bridge being erected by the Northern Construction Co. between Peoria and Marinette is 60 per cent completed. The Glendale-Marinette paving is 99 per cent complete.

Federal Aid has been requested for an additional four miles of paving northward from Marinette. Arrangements have been made with the Maricopa County Highway Commission to furnish \$165,000, which being supplemented with \$205,000 Federal Aid, will insure the improvement of the remaining distance between Phoenix and Wickenburg.

Federal Aid has been requested for an additional four miles of paving from the Eastern canal, east of Mesa, toward the Apache Trail junction. A new grade on the section line has already been completed.

A survey crew has completed the location of a new road between Chandler and Casa Grande. A caterpillar blade outfit has been started on this construction although not all of the right of way has been secured. The new route will use the Sacaton dam and bridge as a crossing over the Gila river. The new location shortens the distance and keeps on good material most of the way, eliminating long hauls for surfacing.

MOHAVE COUNTY

Work on two miles of the new state highway eastward out of Kingman is 75 per cent completed. This road shortens the distance one-fourth mile as well as cutting out one grade crossing.

State forces under Foreman William Smith have

moved from Del Rio, Yavapai county, to Seventeen Mile hill between Oatman and Kingman, preliminary to building four miles of new highway. When this work is completed this crew is expected to reconstruct the road in the vicinity of Crozier, a part of which work has already been done by the Santa Fe railway in conjunction with its double tracking work. This latter includes two under-grade railroad crossings.

NAVAJO COUNTY

Contractors Warren Bros. will complete the state highway paving through Winslow by January 15.

Four contracts for the improvement of the road between Holbrook and Winslow let some time ago are 95 per cent complete. Cashion & Caldwell on Schedule 3 have completed their contract. Schedule 4 will be completed by January 15. On schedules 1 and 2 the grading and concrete work is all done and 80 per cent of the surfacing placed.

Contractors Udall & Co. have completed 30 per cent of 11 miles of construction between Holbrook and the Petrified Forest. County Engineer West and Supervisor Owen were in Phoenix recently and secured a carload of state equipment for maintenance use on Navajo county highways.

PIMA COUNTY

Federal Aid has been requested for several bridges to be constructed between Tucson and Nogales.

Engineer A. W. Jenkins and Foreman M. E. Taylor have nearly completed the reconstruction of all of the Tucson-Florence highway in Pima county. The alignment of this road has been greatly improved, eliminating short curves and greatly widening the road bed. Recent rains have consolidated most of the new work and the road is in excellent condition.

PINAL COUNTY

Goodman & Merrill have completed 90 per cent of the grading on the five miles of highway west from Superior and report the finishing 75 per cent complete and the bridge work all in. About 7,000 feet of new road are open to traffic.

Engineer W. W. Van Frank and Foreman Lee Burdwell have completed 34 miles of the Pinal portion of the Florence-Tucson highway and their advance work has met that of state forces working north from Tucson. The reconstruction of the entire distance between Florence and Tucson will be completed at an early date.

Engineer Julius Irion has resurfaced 12 miles of the Mesa-Florence highway and will complete the remaining 3 miles in the next two weeks, at which time it is expected his shovel and crew will be moved onto the Goodman & Merrill contract for the purpose of surfacing this road.

The State Highway department has awarded the contract for five miles of paving to the Pacific Construction Co. This construction will start at the Superior junction and continue toward Mesa. The paving will average two and a half inches thickness, being laid on a gravel surface already in place, the construction being similar to the 10 miles of paving south from Tombstone.

Engineer Ross Allison has completed the location of the new highway from Casa Grande to the Sacaton dam being erected by the Indian department across the Gila river. The government will build a bridge on top of the dam structure.

SANTA CRUZ COUNTY

Contractor B. I. Pearce has completed the construction of two and a half miles of 18-foot, 6-inch Portland cement paving from the city limits of Nogales northward. Several improvements in alignment were made in the sub-grade before laying the pavement.

Contractors Lown & Wood of Nogales have completed 33 per cent of the construction of the Patagonia bridge.

Federal Aid has been requested on several additional bridges on the Nogales-Tucson highway.

YAVAPAI COUNTY

Traffic is now using the new Granite Creek bridge and all of the new road four miles north from Prescott with the exception of the underground crossing which is yet to be installed. The project is 97 per cent complete. Arrangements have been made with the Santa Fe whereby the railroad will drive the piling for the under pass false work, make all track alterations and furnish the steel for the superstructure, the state to furnish the road grading and concrete substructure. The State Highway department is endeavoring to make some similar arrangement with regard to the elimination of the grade crossing on the Prescott-Jerome highway.

State forces have completed the grading on Federal Aid Project 61 from the lower Granite Creek bridge 22 miles northward to the Tusayan National forest with the exception of backfilling the bridges. The surfacing will follow. Seventy per cent of the project is open to traffic.

The main arch of the Willow Creek bridge has been poured and this structure should be completed in the next 30 days. The bridge across the Little Chino being constructed by Contractor H. J. Mann is 40 per cent complete and the Verde River bridge being built by Contractor L. C. Lashmet is 25 per cent complete. Contractor S. B. Shumway has completed 40 per cent of the remaining structures on this 22 miles of highway.

State forces under Foreman Bill Oliver have begun the grading on Federal Aid Project 62 which runs from the end of Project 61 to Ashfork. The contract for the construction of Lower Hell's Can-

yon bridge was recently awarded to L. C. Lashmet and Upper Hell's Canyon bridge to The Monarch Engineering Co. The rock grading in the vicinity of Lower Hell's Canyon has been let to Contractor Lashmet.

Foreman J. B. Bristol has completed the surfacing of four miles of the Prescott-Jerome highway, a gasoline shovel and 14 dump trucks being used on the job. This crew will be ready to begin surfacing on Federal Aid Project 61 by February 1.

Engineers of the Federal Bureau of Public Roads have completed the survey, plans, etc., for a road from Prescott to White Spar and this project is slated for first consideration by the Forestry department. Engineer Grant of the Arizona Highway department has a location crew working on the route between White Spar and Congress Junction. This road in conjunction with the Forest Aid road will complete the Yavapai portion of the new Prescott-Wickenburg-Phoenix highway. The new road from Phoenix to Ashfork via Wickenburg and

Department Installs Two Branch Yards

The Arizona Highway department has purchased a lot in Tucson for the purpose of storing maintenance and emergency construction equipment. The department has also secured a lease at Ashfork for the same purpose. Sufficient 9-foot corrugated iron sheeting has been requested from the stock of the Federal Bureau of Public Roads at Albuquerque to enclose these yards. Maintenance houses and small warehouses are being erected, a considerable quantity of old bridge lumber and federal material being utilized for the purpose.

A new locomotive crane from the federal government has been received at the main highway yards at Phoenix.

In an endeavor to provide work for as many mechanics as possible shop forces of late have been engaged in placing a large amount of equipment recently received from the federal government in first class condition, though not desired for immediate use. All of the old state boilers and those received from the federal government have been recently re-flued and re-fitted with flue material which was also army equipment.

Tent frames have been constructed for practically all of the state road camps. These have been built to utilize a large number of truck covers received from the federal government. This new tentage was necessary as some \$15,000 worth of pyramidal tents received three years ago had been worn out in service.

To facilitate the handling of machinery and supplies inside the highway yard a 9-foot paving has been laid.

A total of 17 Dodge three-quarter-ton trucks were recently received from the federal authorities. Several of these have already been distributed to

White Spar will be 50 miles shorter than the present route and eliminate 11 railroad grade crossings.

YUMA COUNTY

A contract for the construction of 42 miles of highway from Wellton eastward to Aztec was recently let to Kisselberg & Smith. Six and a half miles of grading and bridging and three miles of surfacing have been completed. An amended project statement has been requested of the federal government calling for an extension of the original project some seven miles to the Maricopa county line. Federal approval is expected in the near future.

The Yuma County Highway Commission has agreed to furnish the additional funds to match Federal Aid on this road, so the entire Yuma county portion of the Yuma-Phoenix highway should be completed by next summer.

the various counties.

Shop forces have been kept busy converting F. W. D. ordnance bodies into state standard dump trucks. Sixty-four of these have already been changed.

About 90 portable maintenance huts have been built and placed in use.

In planning additional warehousing at the yards it has been learned that there is a sufficient quantity of 9 and 12-foot corrugated iron sheeting on hand at the Albuquerque headquarters of the Bureau of Public Roads to erect an additional warehouse.

Two carloads of reinforcement steel for the Prescott-Ashfork and Tucson-Nogales bridges have been received and will be cut up into correct lengths and distributed as needed.

The Arizona Highway department at the request of the Federal Bureau of Public Roads, which with the forestry and reclamation bureaus constitutes the largest part of the Department of Agriculture, has assisted the Salt River Valley Water Users' association to secure some equipment needed in the construction and maintenance of roads within its project.

The traveling crane located in the machine shop has been extended so as to operate 30 feet into the yard and a jib crane recently received from the federal government has been erected in the blacksmith shop.

GROWTH OF STATE HIGHWAY SYSTEM

During the last two years the state highway maintenance mileage has increased from 335 to 1013. By July 15, 1923 it will reach about 1500 miles.

1922 Breaks All Road Building Records

(From Highway News Digest)

All records for road construction in the U. S. were broken during the fiscal year 1922, according to the annual report of the Bureau of Public Roads. During that period 10,000 miles of federal aid roads and more than an equal mileage of highways without Federal assistance were constructed. From the viewpoint of federal aid progress the year divides itself into two periods, one before and the other after the passage of the federal highway act. The first period was a season of great construction activity during the which the greater part of the work of completing the 10,000 miles was done. It was also one of almost complete stagnation with respect to the initiation of projects.

When the year opened there was an unobligated balance of \$18,793,544 of the federal aid appropriations and the projects initiated since the beginning of the work aggregated 35,402 miles. By the end of October 1921 the unobligated balance had been reduced to \$11,714,328, the lowest it had been since 1918. Only two states at that time had a balance of more than \$1,000,000 to draw upon for new projects, and a number were so reduced that their balance was not sufficient to pay for another mile of road. Just before the passage of the federal highway act the mileage submitted by the states had not grown during the fiscal year but had actually diminished as a result of the withdrawal and substitution of projects. The total mileage proposed was only 35,379 miles as compared with the 35,402 miles of four months before. Immediately upon the approval of the act the initiation of projects took on new life and in the months of March and June reached the unprecedented total of 1,250 miles a month. At the close of the year the submitted mileage is 39,940 miles, 4,538 miles greater than at the close of the preceding fiscal year.

At the close of the preceding year projects completed aggregated 7,469 miles and there were 17,978 miles under construction, which were estimated as 50 per cent complete. In one year the completed mileage has grown to 17,716 miles, an increase of more than 10,000 miles, and there still remain under construction 14,513 miles which are estimated at 56 per cent complete. The federal aid earned by the states on completed and uncompleted projects amounts to \$194,560,135, of which \$166,911,552 have actually been paid. The total length of projects in all stages, including those which have been completed and those which are in the stages preliminary to construction, is 39,940 miles.

The roads brought to completion during the year average over 200 miles for each state. The greatest increase in completed mileage is in Texas, which has added during the year 933 miles to its completed highway. Arkansas, Georgia, Iowa, Minnesota, and North Carolina, each with an increase of more than 500 miles, and Montana and Wisconsin, with more than 400 miles, made notable advances

toward the goal of a completed highway system. A number of smaller states, such as Louisiana, Maryland, Massachusetts, and Rhode Island, made very substantial increases in proposition to their size. The largest payment of federal aid during the year also went to Texas, which received from the government \$5,915,046 and earned nearly \$2,500,000 more. Other large payments were made to Illinois, Iowa, Ohio, and Pennsylvania, each of which received from \$4,000,000 to \$5,000,000 or more during the year.

Tests and Research

The activity in research and the promising results that have been obtained have been outstanding developments of the past fiscal year, says the report. To some extent the bureau has been associated with practically all the major investigations that have been in progress. The research carried on by the division of tests at the department experimental farm at Arlington, Va., is regarded not only as the most important function of the division, but as one of the most valuable services the bureau is performing.

To the State Highway Department of Illinois and the Highway Commission of California, cooperating with the Columbia Steel Co. of Pittsburg, California, the country is indebted for two researches, conducted at Bates, Ill., and Pittsburg, Calif., on a scale never before attempted. Both of these investigations had for their purpose the testing of actual road surfaces of various designs under actual traffic. By the boldness with which these tests were conceived and the thoroughness with which they were conducted the two state departments and steel company have made the outstanding contributions of the year to the advancement of the science of highway engineering.

The researches completed last year at Arlington, and those at the Bates road in Illinois and at Pittsburg, Calif., in which the bureau cooperated, have thrown considerable light on the traffic-resisting qualities of road surfaces of different designs laid on various subgrade materials, and have led to certain tentative conclusions as to the proper thickness of slab for different weights of vehicle. Immediate results are apparent in the altered standards of design in some states, and as the information is gradually disseminated other states will no doubt follow. Results of the motor-truck impact tests are being used as the basis for the amendment of laws governing the weight of motor vehicles.

There is still need, however, for much more investigation. Information is badly needed as to the physical characteristics of subgrade materials which are causing certain roads to give short service, the proper manner of draining soils of different types or their possible treatment with admixtures of stabilizing materials, and the relative strength of bituminous surfaces on concrete bases as compared with concrete slab surfaces.

HIGHWAY ORGANIZATION OF ARIZONA

STATE HIGHWAY DEPARTMENT, PHOENIX

Gov. THOS. E. CAMPBELL, Chief Executive
THOS. MADDOCK, State Engineer

Engineering Department

F. N. HOLMQUIST	Asst. State Engineer
C. C. SMALL	Chief Locating Engineer
E. A. WOLFE	Chief Construction Engineer
FLOYD ALLEN	Assistant Construction Engineer
MERRILL BUTLER	Bridge Engineer
L. P. FRAIZER	Maintenance Engineer, Southern Division
W. C. GOETZ	Maintenance Engineer, Central Division
SHEPARD HISCOX	Maintenance Engineer, Northern Division
W. J. JAMIESON	Office Engineer
R. M. HANSON	Testing Engineer

Accounting Department

W. R. INGRAM	Chief Clerk
C. F. PRICE	Purchasing Agent
S. R. STANFORTH	Traveling Auditor
J. H. ALLEN	Supt. Equipment and Supplies

COUNTIES

APACHE —	
GUSTAV BECKER, County Engineer	Springerville
J. M. SHEPHERD, County Highway Engineer	Springerville
COCHISE —	
SID SMYTH, County Engineer	Tombstone
COCONINO —	
FRANK R. GOODMAN, County Engineer	Flagstaff
GILA —	
JULIUS MILTON, County Engineer	Globe
GRAHAM —	
W. R. HUTCHINS, County Highway Engineer	Safford
GREENLEE —	
MARICOPA —	
A. F. HARTER, County Engineer	Phoenix
R. C. PERKINS, County Highway Engineer	Phoenix
MOHAVE —	
R. H. HAYWARD, County Engineer and County Highway Engineer	Kingman
NAVAJO —	
J. T. WEST, County Highway Engineer	Holbrook
PIMA —	
W. C. LEFEBVRE, County Engineer	Tucson
PINAL —	
W. W. LANE, County Engineer	Florence
SANTA CRUZ —	
J. W. LARIMORE, County Engineer	Nogales
YAVAPAI —	
JOSEPH McCARTHY, County Highway Engineer	Prescott
YUMA —	
W. L. ELLISON, County Engineer	Yuma
NORMAN B. CONWAY, County Highway Engineer	Yuma

FEDERAL BUREAU OF PUBLIC ROADS

THOMAS H. MacDONALD, Chief of Bureau	Washington, D. C.
P. ST. J. WILSON, Chief Engineer	Washington, D. C.
DR. L. I. HEWES, Regional Director	San Francisco
J. S. BRIGHT, Assistant Regional Director	San Francisco
E. S. WHEELER, District Engineer	Phoenix, Ariz.
P. H. EVERETT, Senior Highway Engineer	Phoenix, Ariz.

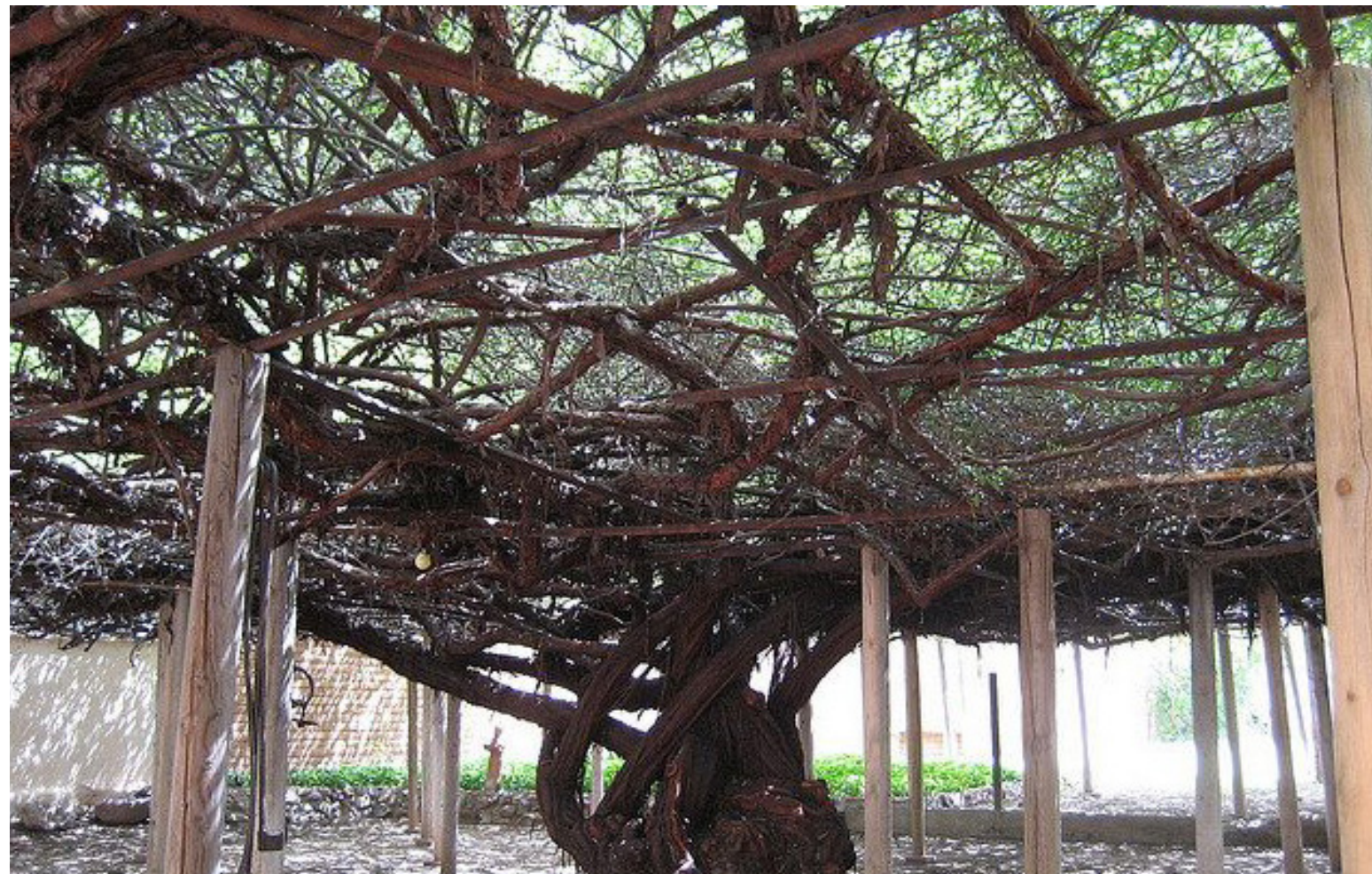
INTERESTING FINDS IN ARIZONA

Rose Tree Museum - Tombstone, Arizona

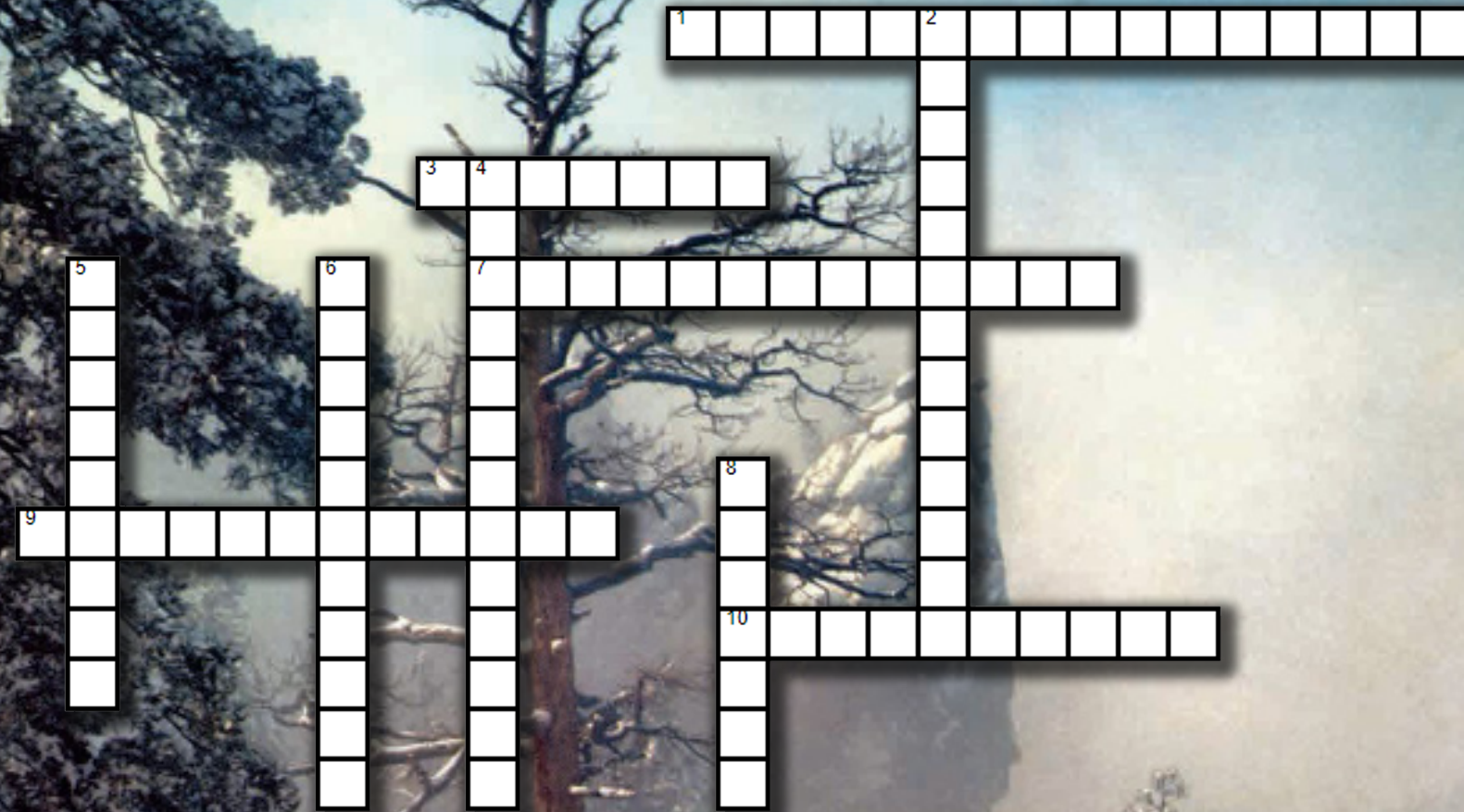
The Rose Tree Museum in the famous wild west town of Tombstone, Arizona displays a fine collection of historic artifacts and materials, but the real attraction is the backyard rose bush which is the largest in the world.

Planted in 1885 with cuttings from a "Lady Banksia Rose" that had been sent from Scotland, as the tree was first declared the "world's largest" in the late 1930's and has only continued to grow since then. The

canopy of the bush-cum-tree now covers nearly 5,000 feet of space and is elevated from the ground by a series of wooden and steel supports. Each year, after the shed husks are cleaned out from around the base of the tree, the plant blossoms with clusters of small white roses. As weather permits, visitors are welcome to visit the museum and spend a lunch beneath the scenic green roof. More information can be found on the Rose Tree Museum's website tombstonerose.com



CROSSWORD PUZZLE "AZ FINDS"



ACROSS

- 1: Limestone caves with spectacular showcase chambers
- 3: Rippling sand dunes frozen in the Arizona rock
- 7: A self-built castle made by a mysterious man
- 9: Ancient pueblos built into a natural canyon wall
- 10: Desert-Colored Waterfalls

DOWN

- 2: Dramatic river bend surrounds a natural red-rocked pedestal
- 4: The highest point in Arizona
- 5: An urban laboratory
- 6: Extinct Volcano Observatory
- 8: A Shakespearian tragedy on Route 66

NOTE: Answers are (mostly) two words, just omit the space. :)

USEFUL CONTACT information



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Bid Verifications, Certifications of Final Payment (COP), Federal Reporting (Monthly, Semi-Annual and Annual)



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CROSSWORD PUZZLE ANSWER KEY

ACROSS:

- 1 : Katchner Caverns
- 3 : The Wave
- 7 : Mystery Castle
- 9 : Walnut Canyon
- 10 : Grand Falls

DOWN:

- 2 : Horseshoe Bend
- 4 : Humphreys Peak
- 5 : Arcosanti
- 6 : Roden Crater
- 8 : Two Guns



DECEMBER 1965: Heavy snow bends the boughs of evergreens near Arizona Snowbowl in the San Francisco Peaks. This Darwin Van Campen shot was titled "World in White".