



*Credit: Jim Larson, CALTRANS*

CALTRANS Maintenance Worker Jim Carter was twice honored for rescuing the couple whose van was teetering on the raging channel's edge in Myers Canyon. CALTRANS Director Adriana Gianturco presented him with a California Highway Commission resolution and a department commendation.

At a later date, Captain Ed Chapman, California Highway Patrol, presented Carter with his department's highest civilian award for his deed.

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The Army Corps of Engineers made a reconnaissance of the flood plain near Ocotillo, outlining preventative measures for future floods.

Their report is due in July or August. It's likely the federal government will not be able to justify spending much, leaving the burden of channel improvements, if any, on Imperial County.

On the positive side of the catastrophic storm was the announcement of an early man site found in the face of a bank eroded by floodwaters.

The potential of the find was termed extremely important, mostly because of the great age of the deposits and how it may lead to knowledge of early man in Imperial Valley.

Indications are the 75-foot-deep site could be 100,000 years old or more. Carbon 14 dating of soils far above the site have recorded ages in excess of 30,000 years.

Over 80 rock tools were found before the official announcement was made in May 1977. In addition, pieces of human bones were found in close association with the tools. All artifacts are located at the Imperial Valley College Museum. 7.



# TROPICAL STORM



by  
James L. Larson  
CALTRANS Information  
Officer, San Diego, Cal.

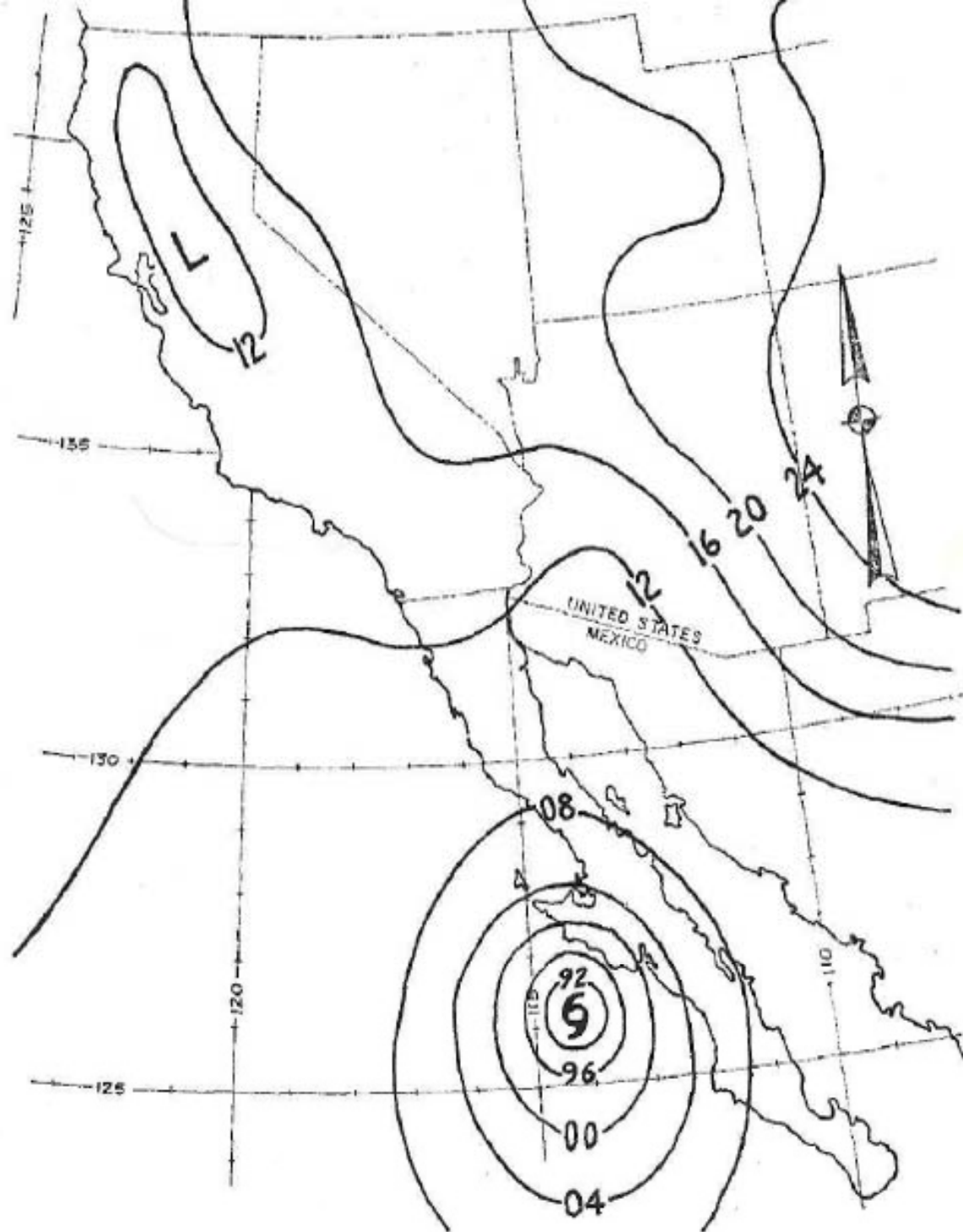


Kathleen was the first tropical storm to hit California in 37 years. When it came ashore near Punta San Pablo, Baja California shortly after midnight September 10, 1976, it was a hurricane. As it moved north through mountainous terrain the winds decreased. By early morning of that same day the National Weather Service downgraded Kathleen to a tropical storm.

As the storm passed through California, it caused widespread flooding in parts of San Diego, Imperial, Riverside and San Bernardino Counties, leaving in its wake 10 people dead, hundreds of homes damaged, and heavy crop losses.

Usually, Southern California's heaviest rainfalls occur during the winter months, when storms generally unleash water in widespread areas; but freak summer storms, such as Kathleen, can do more damage by concentrating the rainfall on a small area in a short time.

Kathleen concentrated along the Laguna Mountain range, about 80 miles east of the City of San Diego. Eight to 10 inches of rain fell in as many hours. The rocky surfaces, barren slopes, and sandy washes of the mountains caused almost all of the fallen water to run off rapidly to the desert below.



Rain from the storm fell very heavily on the eastern slopes of the Laguna Mountains where Interstate 8, a four-lane freeway which is the major artery between San Diego and points east, is located. Route 8 was upgraded to freeway standards two years ago when the Pine Valley bypass, located to the west, was opened to traffic. The completion of the highway was hailed by many as a means of increasing the significance of San Diego's port activities. The highway passes near Jacumba, separates and descends 4,000 feet in elevation, as it winds 10 miles in distance down Mountain Springs grade to the desert floor. Below, the freeway interchanges at the small desert community of Ocotillo as it proceeds east towards Arizona.

Severe damage to Highway 8 imposed a great inconvenience upon the many truckers and motorists alike who had to travel long distances to get to their destinations before a detour could be built. Instead of a two-hour trip from the City of San Diego to the City of El Centro, motorists were traveling at least three hours, truckers even more.

Myers Creek is one of the main washes draining the barren peaks. About halfway down Mountain Springs grade, the creek bed parallels and crosses the eastbound lanes of Interstate 8 four times. Where the east and west roadbeds merge at the bottom of the grade, the freeway bends southeast, while Myers Creek continues easterly towards the town of Ocotillo.



*Aerial view of barren terrain where Kathleen struck*  
*Credit: Jack Meyerpeter, CALTRANS*





passes near Jacumba and Ocotillo. The rails descend through Carrizo Gorge on a gentle grade to the desert floor.

The railway also sustained many washouts and rock slides, and in some places the rails were completely buried for long distances. While the rails are out of service, trains must now haul goods north to Riverside before heading east, adding at least 300 miles to the trip.

Kathleen's storm waters gathered and raced down mountain washes, over highways and railways, through fields and groves, across the open desert into irrigation channels, and eventually into the Salton Sea. This 360-square-mile sea rose an unprecedented eight inches.

The damage by tropical storm Kathleen was scattered in several large counties. This publication, however, mainly concerns the Jacumba-Ocotillo area, where the most water fell, and the severest damage was done.

*Major washout of San Diego-Arizona Eastern Railroad in Carrizo Gorge*

*Credit: Jim Larson, CALTRANS*





*Floodwaters near Jacumba, racing toward Carrizo Gorge*

*Credit: Bob Turner, Campo*



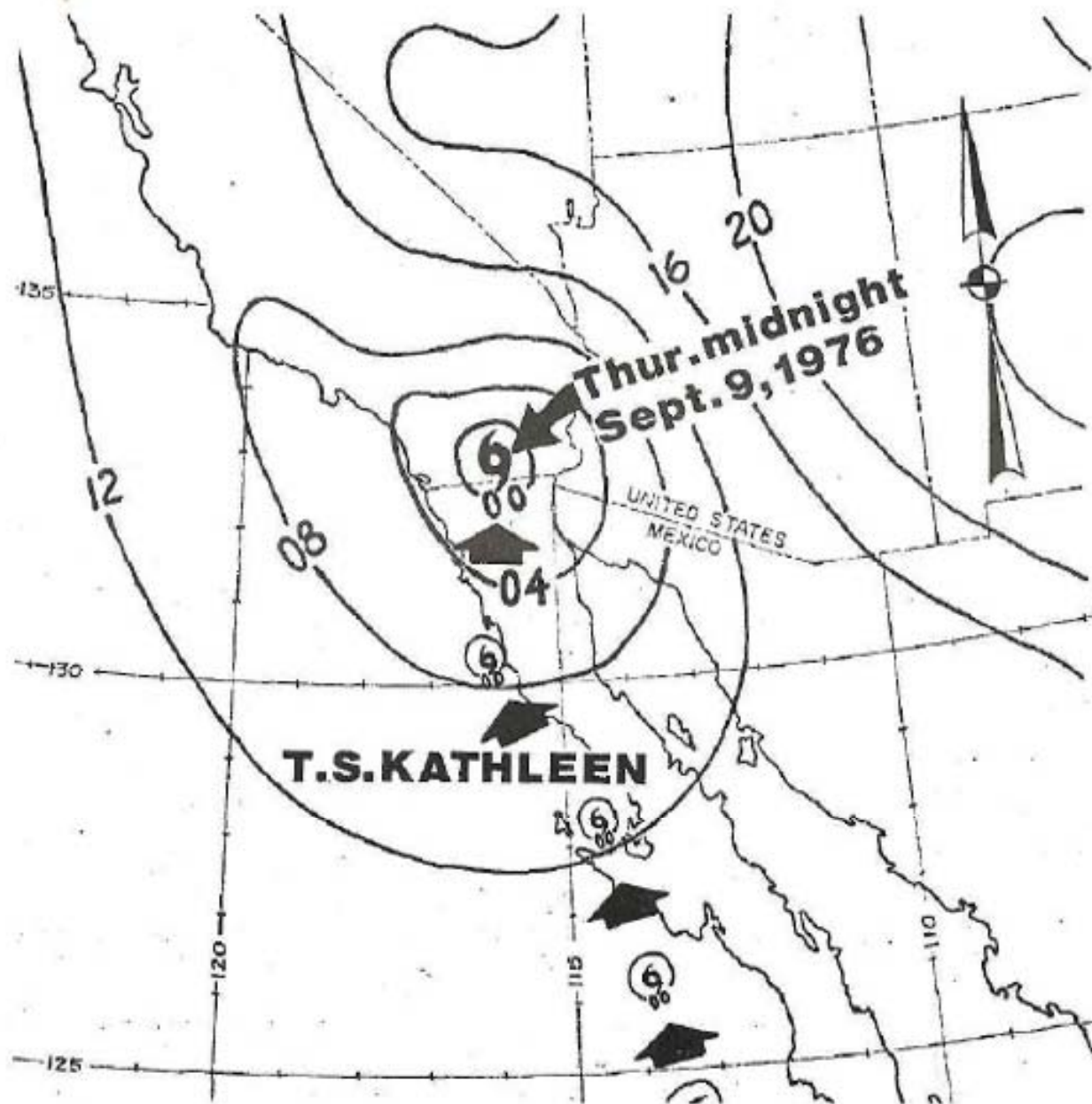


*Freeway lanes now a river*

*Credit: Bob Grossett, California Highway Patrol*



# Tropical Storm Kathleen



The week of September 5th, 1976, was muggy in San Diego County with temperatures in the 80's and 90's. The U.S. Weather Service explained that a tropical storm named Kathleen, off the coast of Baja California, Mexico, was the primary cause. She, the eleventh storm of the season, was beginning to move northward. These storms, however, rarely come as far north as California.

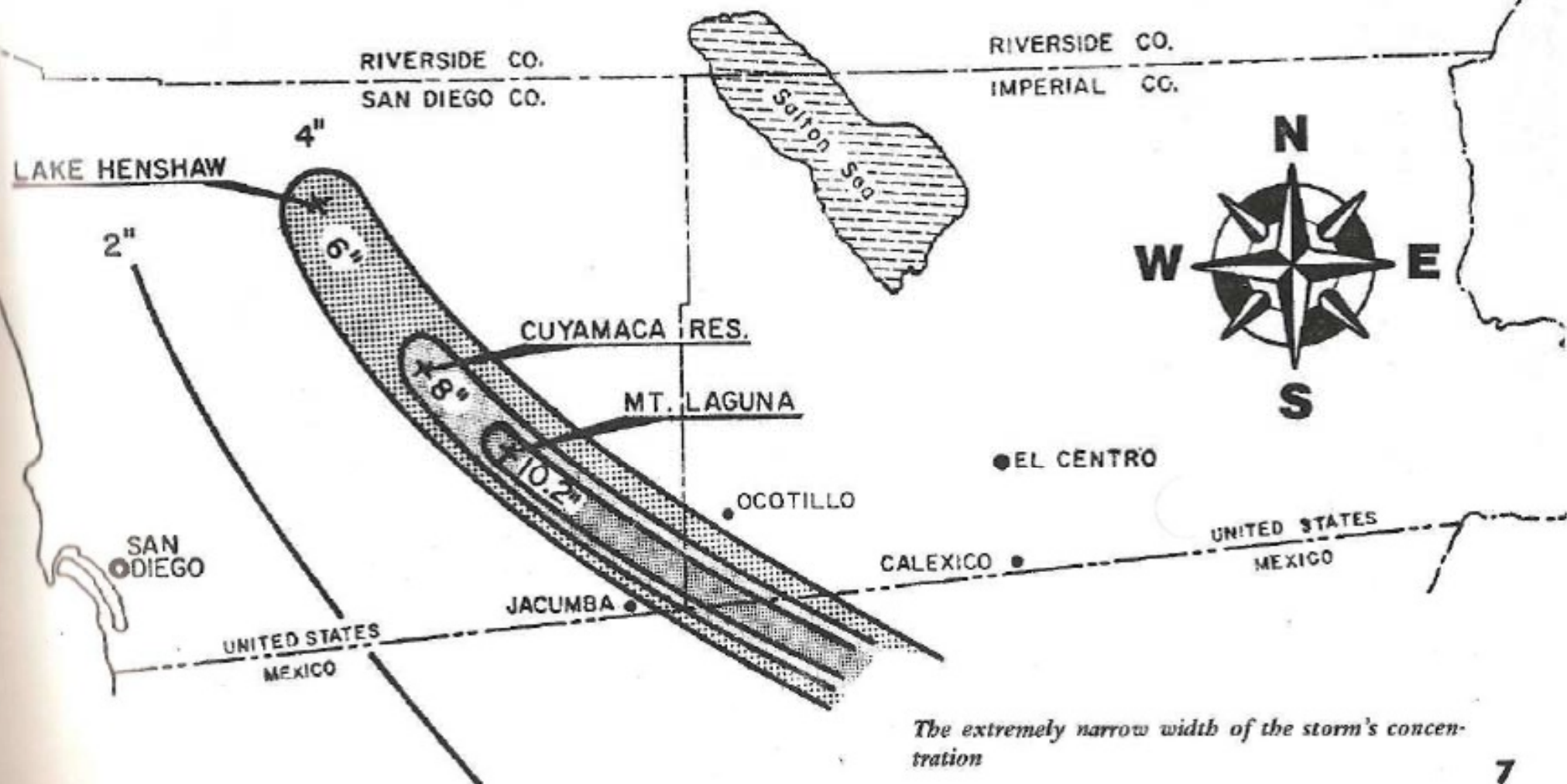
By Thursday, September 9th, it looked as if a rarity was going to occur. The force of the storm moved north into Baja California, and was rapidly heading, with all its fury, toward California. Flash flood warnings were announced in parts of San Diego, Imperial, Riverside, and San Bernardino Counties. Rain, heavy at times, fell throughout the day and night, accompanied by strong winds. But no one really ever suspected the nightmare that was about to follow.

In Jacumba, about 70 miles east of San Diego, rain began falling heavily about midnight of the 9th and continued all morning. As dawn broke, the rain intensified.

*Path of the storm*  
*Credit: U.S. Weather Bureau*



# RAINFALL FROM SEPT. 9th Midnight to 9:00 A.M. SEPT. 10th, 1976





In the California Department of Transportation (CALTRANS) radio room of the San Diego District Office, reports from maintenance men started coming in telling of very heavy rains, swollen creeks, and water surging over the roadway in several locations. Radio reception was broken, and only partial conversations were being understood: "Water crossing eastbound lanes . . . stopping traffic." "Can you stop traffic at . . . ?" "531 - am closing the westbound at Ocotillo." "10-4 . . . I'll get some barricades."

By 9:00 a.m., tropical storm Kathleen was still pouring her wrath along the mountain peaks just above the desert floor, and there was nothing to hold the water back. "Water was pouring off cut slopes like waterfalls," said California Highway Patrolman Bob Grossett, "but what was most alarming were the rocks and boulders falling on the road."

Myers Creek, normally a dry wash, had soon swollen into a raging river. The first of the four 14 x 21-foot arch culverts, which pass the creek beneath the freeway through this three-mile section, had surging water backed up 20 feet above the arch. Then the water raced across the road, halting a dozen motorists going down the grade.

One couple, the Beckers of Louisville, Kentucky, waiting in their van on the shoulder of the roadway, were hoping the rain would let up. Suddenly, water raced over the second arch culvert and smashed into their van, spinning and pushing it toward the raging creek. The couple was trapped inside their van

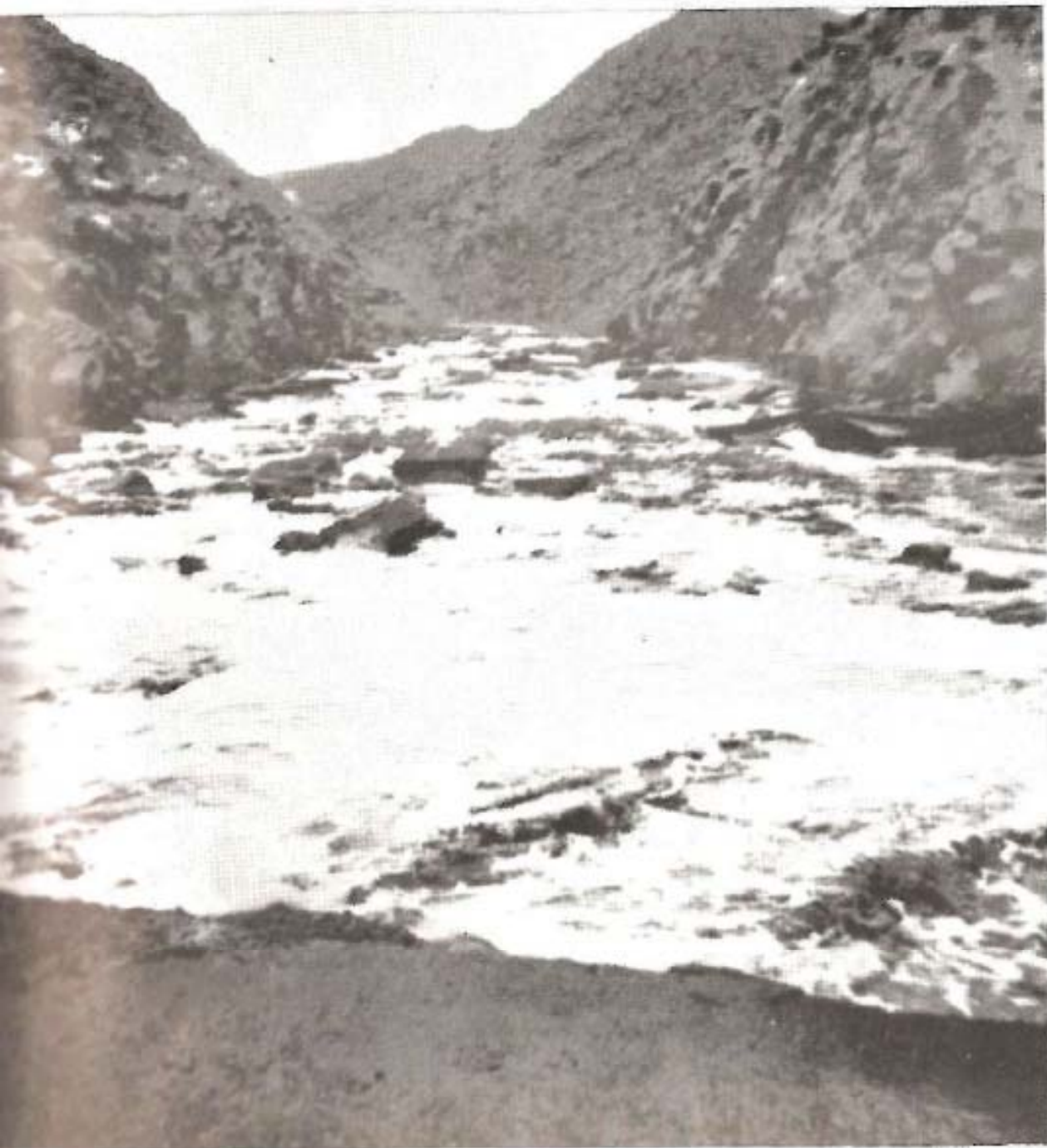


*Above: Myers Creek during the peak of the flood*

*Below: Huge culvert is no match for the surging waters*

*Credit: Bob Grossett, California Highway Patrol*





for 20 minutes, as water continually battered against them. The raging creek was tearing away the embankment close to their front wheels.

Luckily, CALTRANS Maintenance Worker, Jim Carter, was clearing the road nearby and saw their dangerous predicament. He pulled the Becker's van from the swiftly moving water with his 10-wheel, 6-ton dump truck. "At first I tried to wade over to the van," Carter said, "but the force of the water nearly knocked me down." He then pulled his rig up behind the van, got out on the step, crawled across the hood, down to the plow. He reached under the swirling waters, attached a chain to the van, crawled back to the cab of his truck, and towed them backwards to safety.

The third and fourth arch culverts suffered the same fate as the first two. After surging over culvert three, water raced two to four feet deep down the freeway's entire 42-foot width. At culvert number four, more water again crossed over the road, gnawing away at the shoulders and slopes. Before long, large sections of asphalt pavement crumbled and joined the boiling waters in the race toward the desert floor.



*Freeway pavement reduced to rubble*

*Credit: Jim Larson, CALTRANS*





*Old highway, foreground, Myers Creek and destroyed portion of 1-8 against cutbank. Note the two arch culverts.*

*Credit: Jack Meyerpeter, CALTRANS*



*Asphalt concrete rippled, gouged and carried off by angry waters*

*Credit: Jim Larson, CALTRA*





*Half of the roadbed washed away*

*Credit: Jim Larson, CALTRANS*

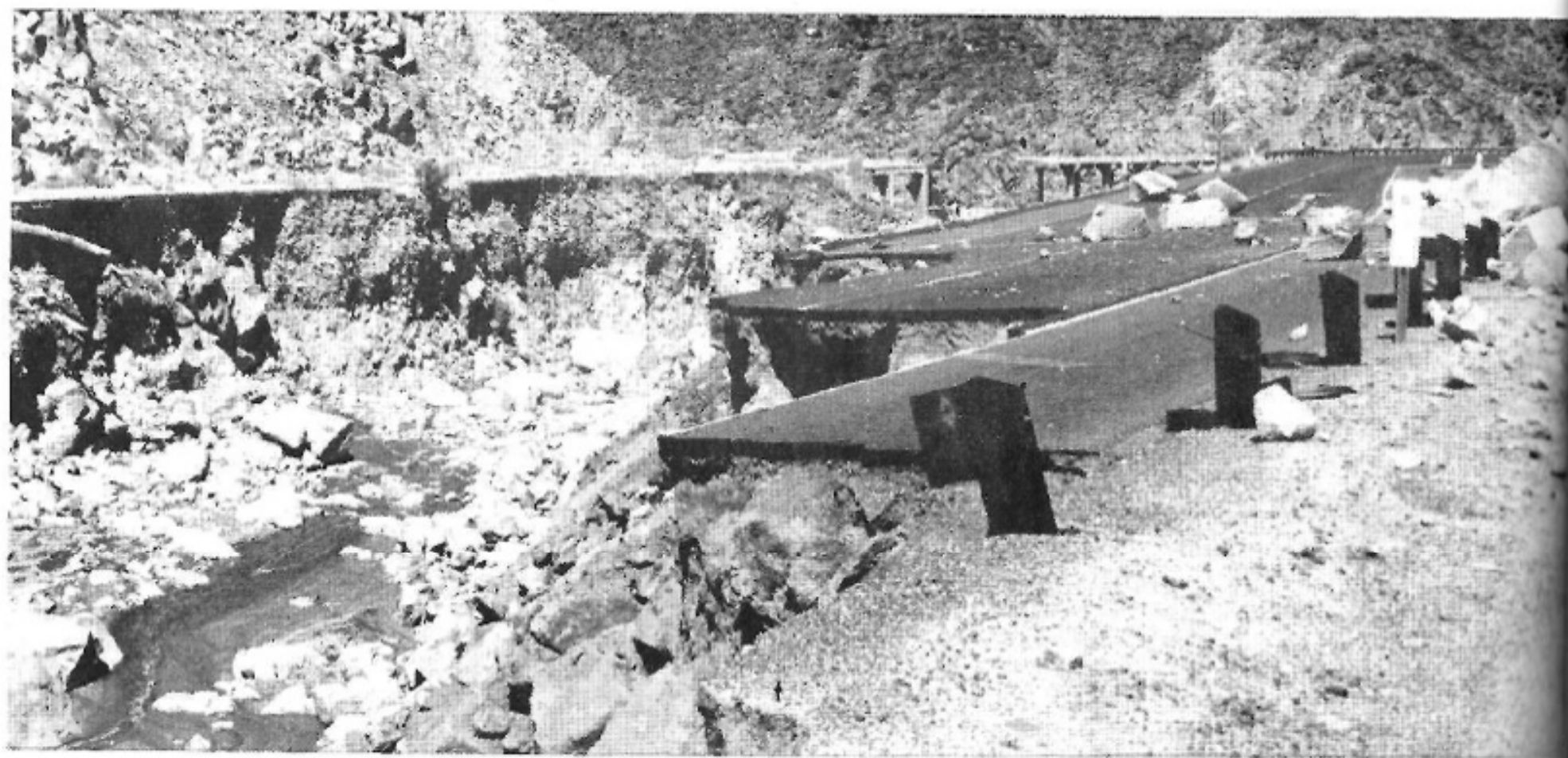


Never before in recorded history had this much water raced down Myers Canyon: 10 to 15 feet deep, 20 to 40 feet wide. The water's velocity was estimated to reach up to 25 and 30 miles per hour, forcing huge boulders to tumble along.

The noise was deafening, according to witnesses. The whole situation was described by one observer as

being downright spooky! Water was everywhere, flowing down the road, streaming like waterfalls off the slopes and surging down the creek bed. Rocks were falling on the road, being swept from the freeway embankment and smashing together down Myers Creek. What a contrast to the normally dry, rocky, and altogether quiet creek bed motorists have passed through on their

way east! Who would have imagined that this could ever happen! A mile further down the road Maintenance Worker Bill Ferguson paused a moment to observe the rampaging creek. Amidst the loud rumbling and cracking of rocks bumping in the creek, a huge section of roadway behind him gave way. "I couldn't believe it! That 50-foot-high fill just slipped into the creek," Ferguson said.



*50-foot-high freeway section, 500 feet long, washed away*

*Credit: Jim Larson, CALTRANS*





*Credit: Jack Meyerpeter, CALTRANS*

*Thoroughly washed out!*



*Dangling guardrail is grim reminder of destructive force*

*Credit: Jim Larson, CALTRANS*





*Looking across the 500-foot washout*

*Credit: Jim Larson, CALTRANS*

Nearby stood the old arch bridge, which had spanned Myers Creek for 50 years or more. The high water and rocks gave the bridge its greatest test. One after another, rocks smashed into the bridge's vertical supports, until they finally weakened and broke, causing a 30-foot-long slab to drop below. For over 50 years it had withstood what every storm had thrown at it, but Kathleen's rage was simply too much.



*Credit: Jim Larson, CALT*





*A boulder-strewn scene of destruction along Myers Creek*

*Credit: Rick McCarthy, Union-Tribune*

The last highway obstacle before the open desert was the 150-foot-long Myers Creek bridge, about a mile further downstream. CHP Officer Robert Enders was nearby when suddenly, the north end of the bridge fell. "Before it fell high waves were pounding into the bridge every two or three minutes, splashing water high over the top," Enders said.



*Myers Creek bridge becomes an island*

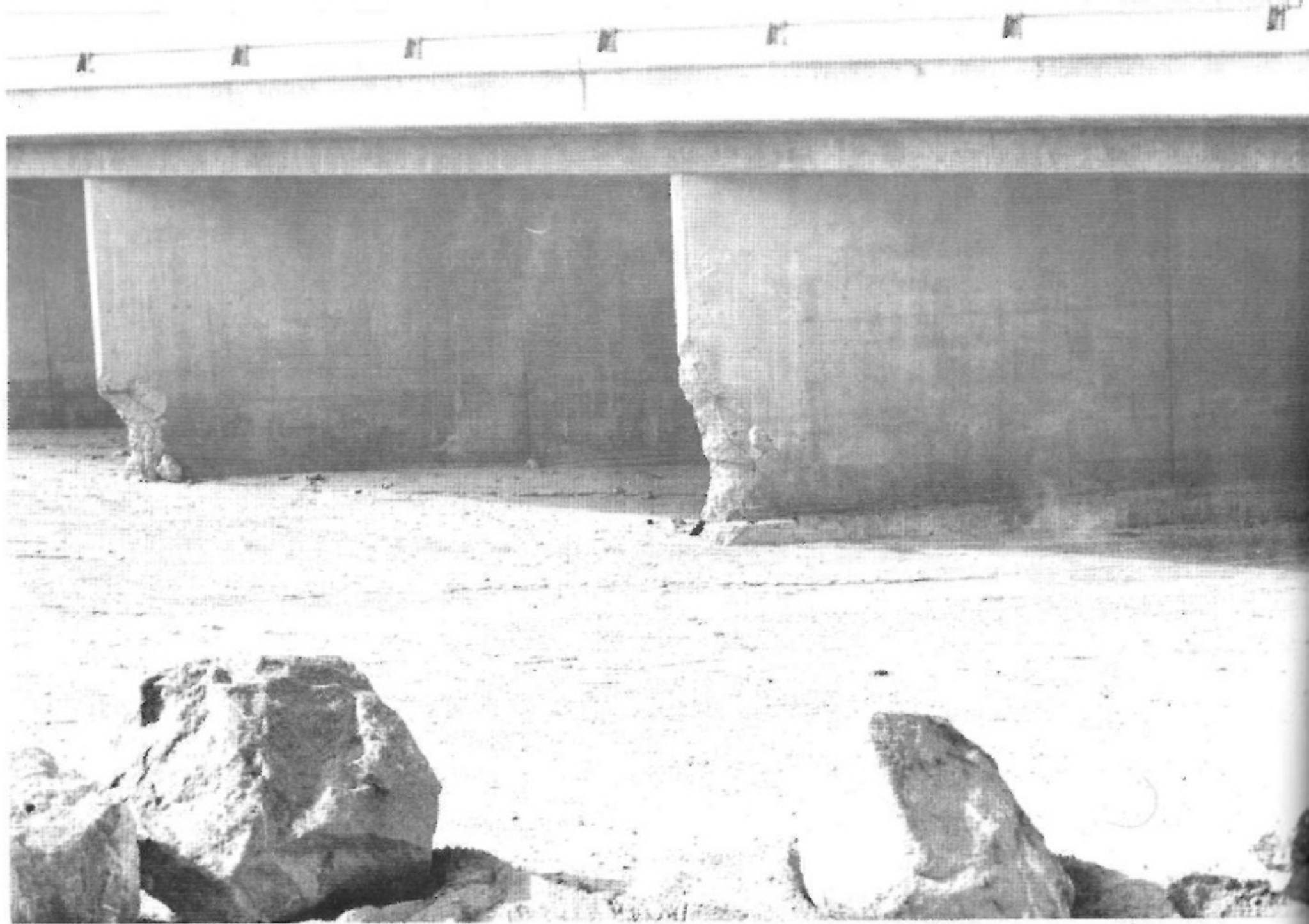
*Credit: Bob Grossett, California Highway Patrol*





*When the highway fill washed out there was nothing to hold up the bridge*

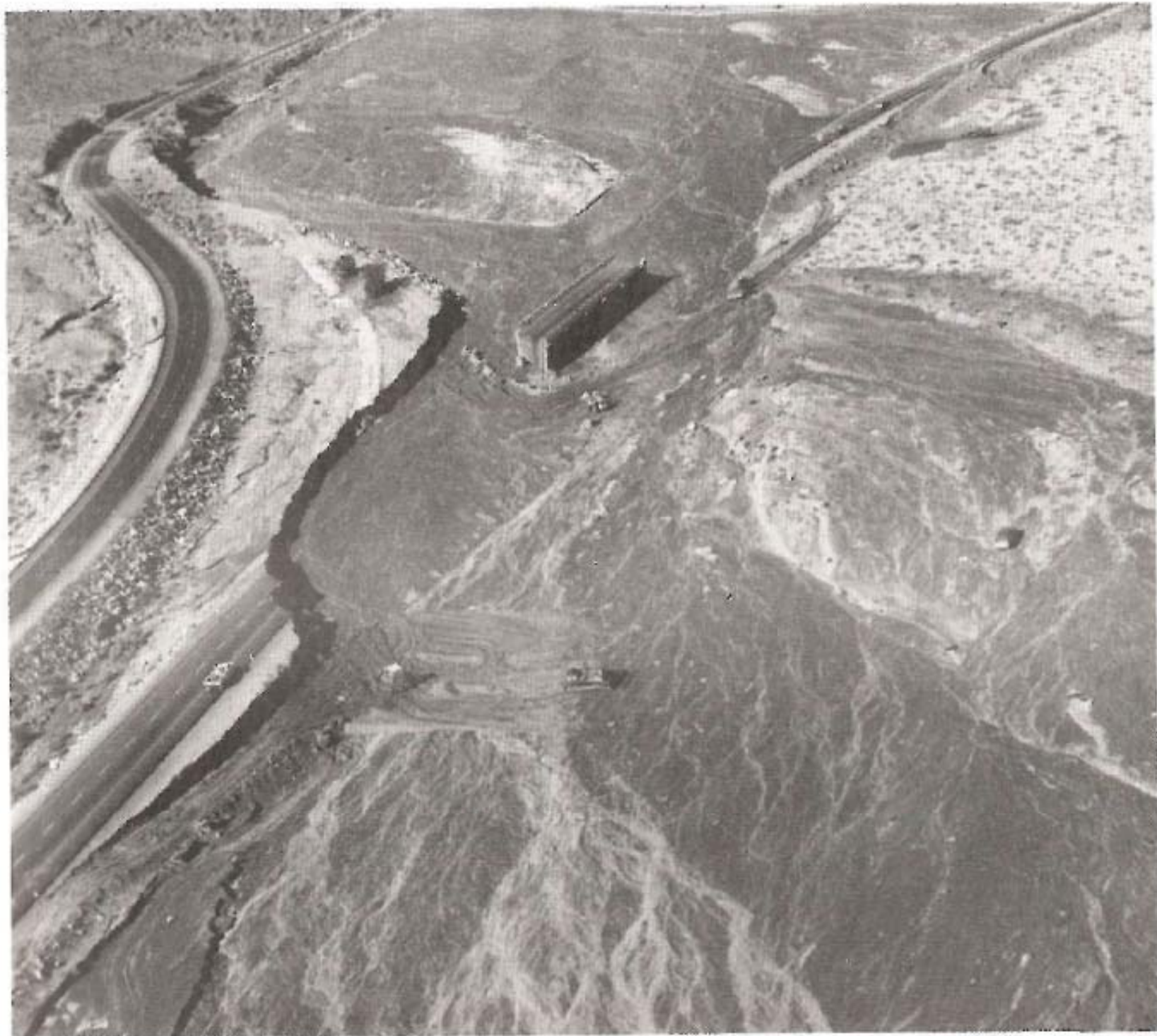
*Credit: Jim Larson, CALTRANS*



*Large boulders forced downstream battered supporting columns*

*Credit: Jim Larson, CALTR*





*Aerial view of Myers Creek bridge washout*

*Credit: Paul J. Noden, Imperial Valley Press*

A pickup truck and station wagon were swept off the road near the bridge and tumbled downstream. Two girls miraculously managed to free themselves from the truck and wade out of the water to high ground. Both truck and wagon finally stopped moving one-half mile downstream, completely demolished. Here Kathleen's destruction

turned from man-made structures to man himself. The driver of the wagon was unable to escape; his body was found hours later in a mud bank, two miles away in Ocotillo.

Three brave men tried to make a rescue attempt after watching the

vehicles get swept away. Two of the men were carried away in the raging current and felt very lucky to survive. One managed to get free from the flow at Miller's Garage, about one mile away. The other was carried two miles to Ocotillo. The third man lay hurt between two roaring flows of water on the "Eastern's" railroad track.





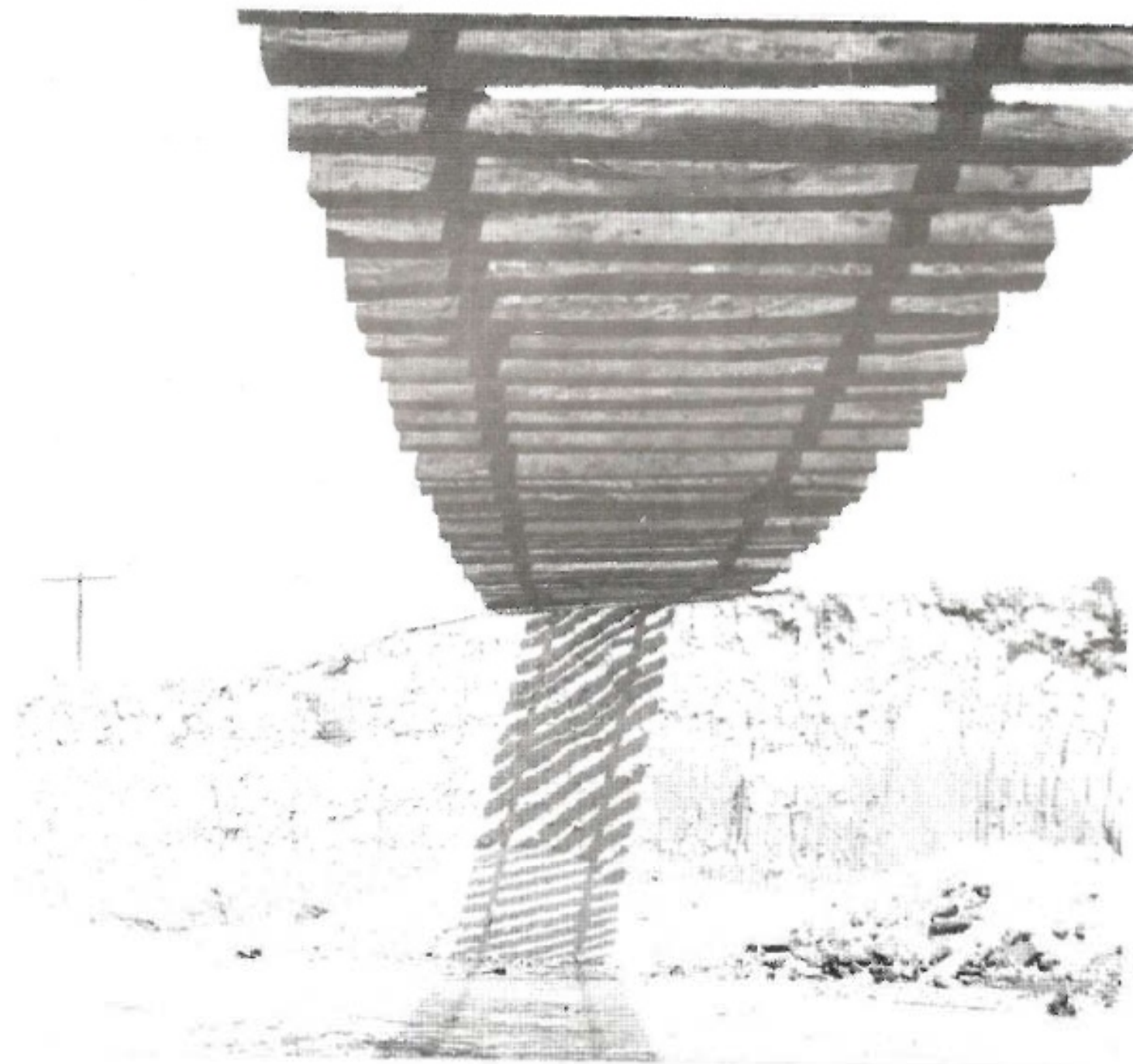


*San Diego-Arizona Eastern Railroad tracks partially  
buried by tons of sand*

*Credit: Rick McCarthy, Union-Tribune*







When Kathleen's assault hit Ocotillo, the waters had, by this time, joined to form a front of five-feet deep and a half-mile wide. Houses and trailers were torn off their foundations; vehicles relentlessly overturned. "After the wave went by," said grocery store owner Richard Bell, "you could see household paraphernalia, refrigerators, trash

barrels, furniture and propane tanks . . . all kinds of things floating by."

In the desert town of Ocotillo, two miles downstream, no one was really aware of what was about to happen. The small retirement community, centered near the bottom of the old highway grade, had gradually built up over the years and consisted of small retirement

houses and mobile homes built up around a mile-long strip. The high ground in Ocotillo was near the freeway at the south end of town. There was a depression in the middle of town, but folks there never thought of it as a major wash. In actuality, it was the downstream portion of Myers Creek and was sitting right smack in the path of the racing flash floodwaters. †



*Water normally is channeled between the freeway and railroad, but Kathleen's floodwaters would not be contained*

1. San Diego Union, Sept. 11, 1976

*Credit: C. H. Burnett*





**32** *Floodwaters passing through Ocotillo*

*Credit: Rose [unclear]*









*A sea of muddy water*

*Credit: R. E. Nugate*





*Knee-deep and treacherous*

*Credit: Bob Bell*



*Many household articles were swept away*

*Credit: Bob Bell*





*The waters subside, but the sand and silt remain in lubricated vehicle parts to cause costly repairs*

*Credit: Bob Bel*



*ullo's main street becomes a river*

*Credit: Bob Bell*







*A gateway to destruction*

*Credit: Bob Bell*





Sergeant Billy Hall, Imperial County Deputy Sheriff, helped rescue 25 people from their homes in Ocotillo during the heavy flooding. "We drove into the water, jumped out and waded into the homes, while the 4-wheel drive Blazer circled nearby," said Hall. "We couldn't pop the vehicle in the water or it would get stuck," Hall continued, "so when we brought someone out

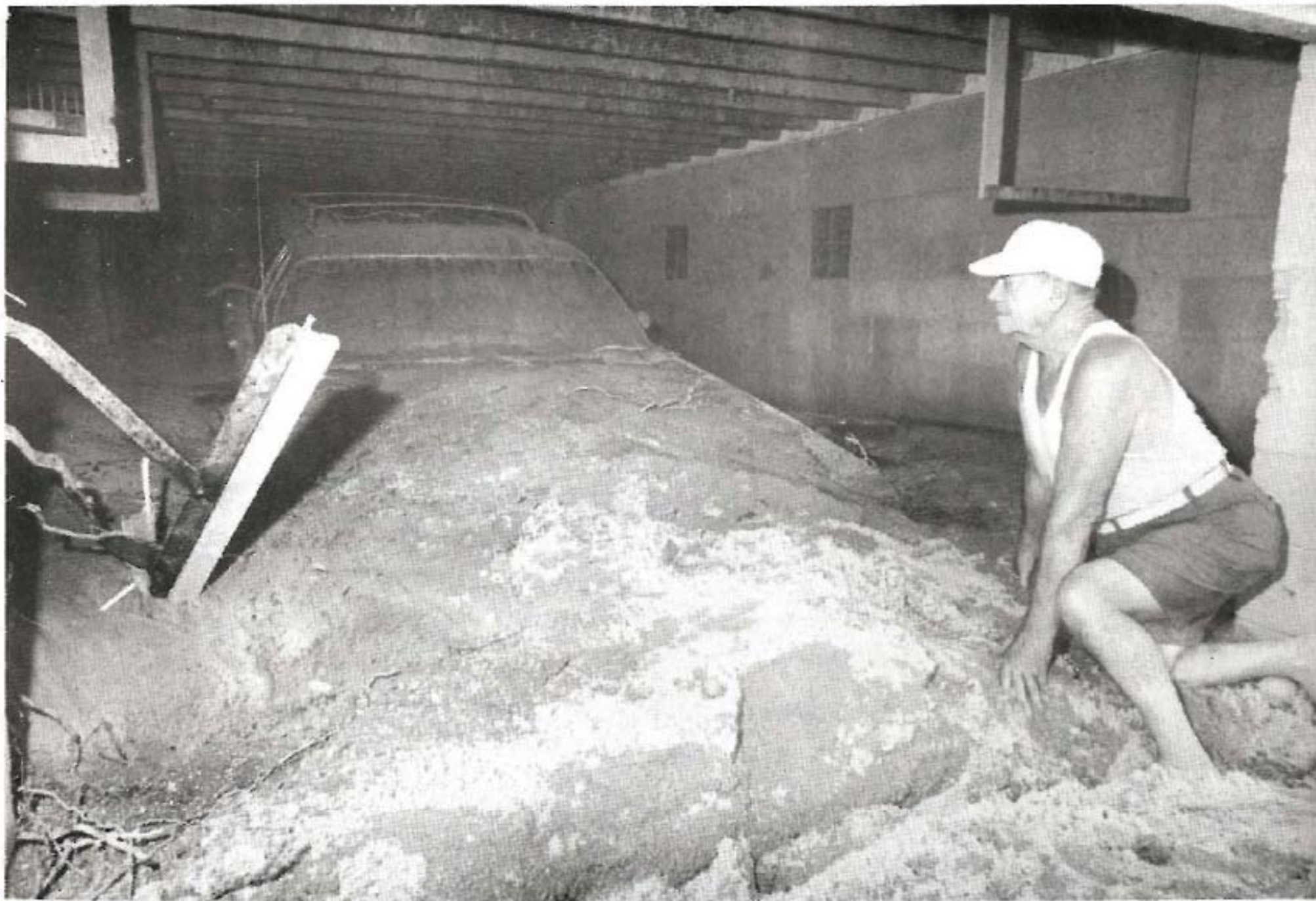
we were constantly moving, trying to get them into the Blazer."

Sergeant Hall said many of the people didn't want to leave their homes and valuables. "I carried a dog in one arm, a parakeet and cage in the other, with the woman holding on to my back," he said. Several people were hauled out with their 120-pound oxygen bottles, making

rescue attempts even more difficult. The water passing through town during its peak was only about four-feet deep in the center, according to Hall, but occasionally a three-foot wave would pass through. "I was trying to wade across to the other side of town and was up-ended by a three-footer," exclaimed Hall, "and I weigh 240 pounds!"







*A discouraging sight*

*Credit: Paul J. Noden, Imperial Valley Press*



*this huge semi-truck was no match for the flood*

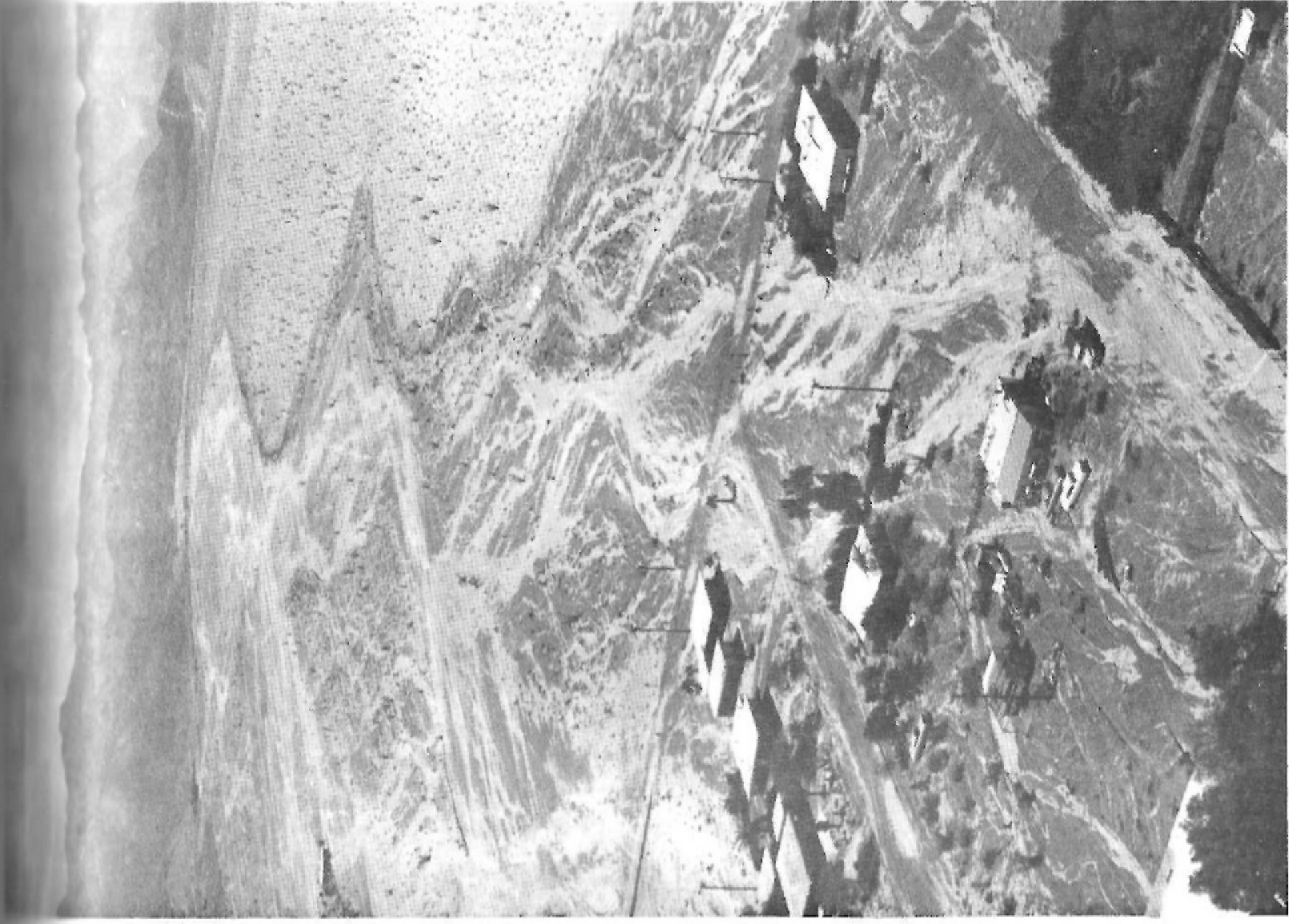
*Credit: Paul J. Noden, Imperial Valley Press*





After the storm tons of debris, sand and rocks were left behind

Credit: Paul J. Noden, Imperial Valley



*The path taken by the runaway waters*

*Credit: Rick McCarthy, Union-Tribune*



Meanwhile, on the west side of the mountain ridge, floodwaters were building up in the Carrizo Gorge wash. This drainage basin is over 100 square miles, extending deep into Mexico. It wasn't until after 10:00 a.m. when the high water reached the freeway near Jacumba.

It came a half-mile wide and four to six-feet deep, tearing and chewing away at the San Diego-Arizona Eastern Railroad near the freeway.

The water flooded homes in nearby Jacumba and tore up several county roads. Trees and brush were up-

rooted and carried along. Eventually, the debris partially blocked a timber railroad bridge, and the angry waters, searching for another route, soon washed over and undermined many sections of track.



*Credit: Bob Turner*



*Two-foot diameter culverts point skyward after supporting fill washes away*

*Credit: Jim Larson, CALTRANS*





*Blocked by debris, water topped the railroad tracks*

*Credit: Jim Larson, CALTRA*



...took a beating

Credit: Jim Larson, CALTRANS





*Water forced these heavy tracks off the roadbed*

*Credit: Jim Larson, CALTRANS*

Friday afternoon, September 10, a survey of the storm damage painted a grim picture. The death toll hit 10 as the valley dug out of the mud: three died in Imperial County, six in Mexico, and one in Yuma, Arizona. According to the Imperial County coroner's office, the following deaths were attributed to "Kathleen":

1. When the Myers Creek bridge approaches washed out, one man died when he and his vehicle

were swept away at the bridge.

- Five miles further downstream at Painted Gorge Road, a man rushing out to help flood victims, which he heard about on his "CB" radio, was caught in the middle of the wash by advancing floodwaters and drowned as his truck tumbled away. His body was recovered five miles away from his home.
- The third victim died of an ap-

parent heart attack when he refused to leave his Ocotillo home during the flood.

- In Mexico four died when an adobe fence collapsed on the roof of the owner's home, and two drowned off the coast of San Felipe when their boat was swamped and sunk. 2.
- The circumstances of the death in Yuma, Arizona are not known by the writer.

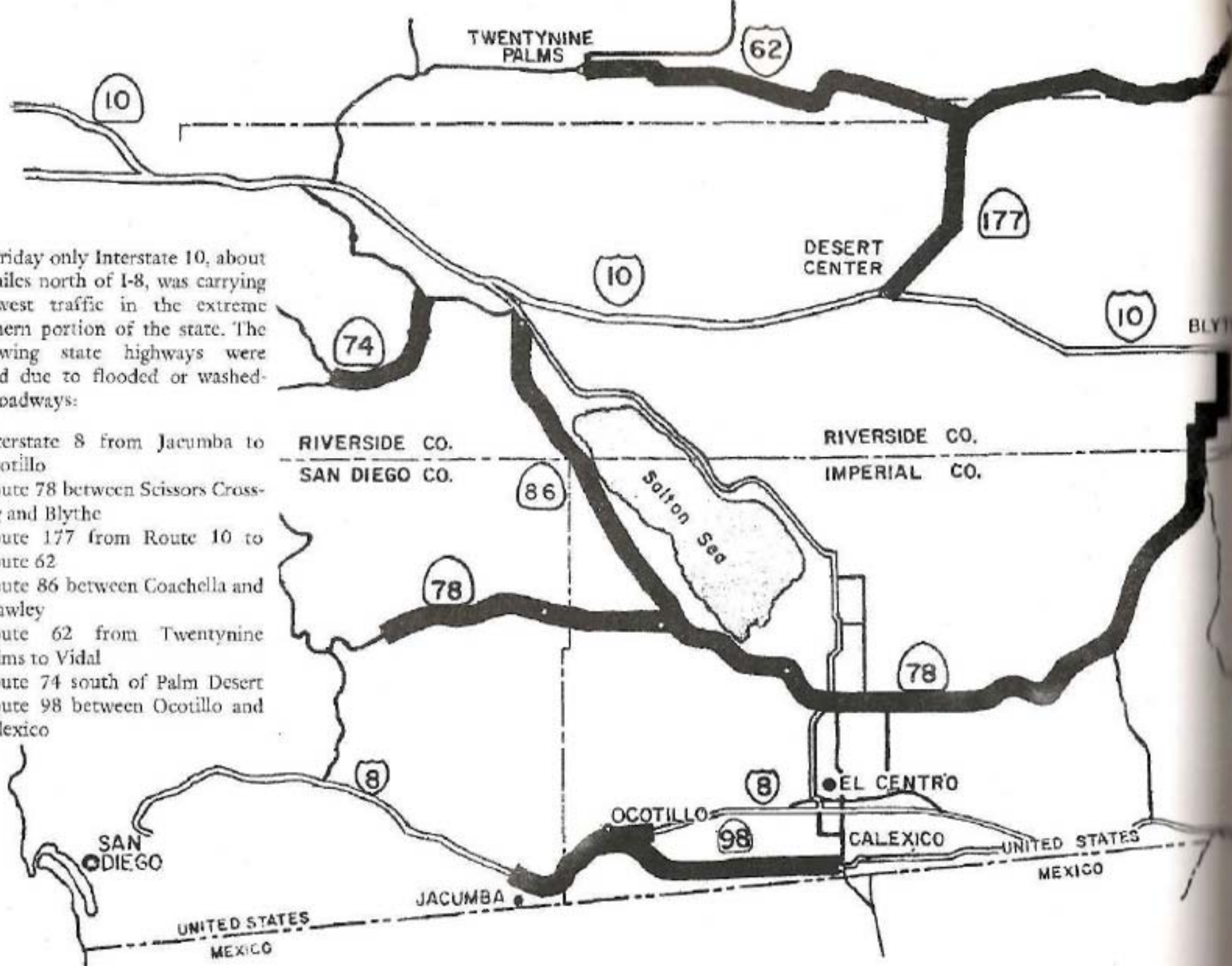
2. San Diego Union, Sept. 12, 1976



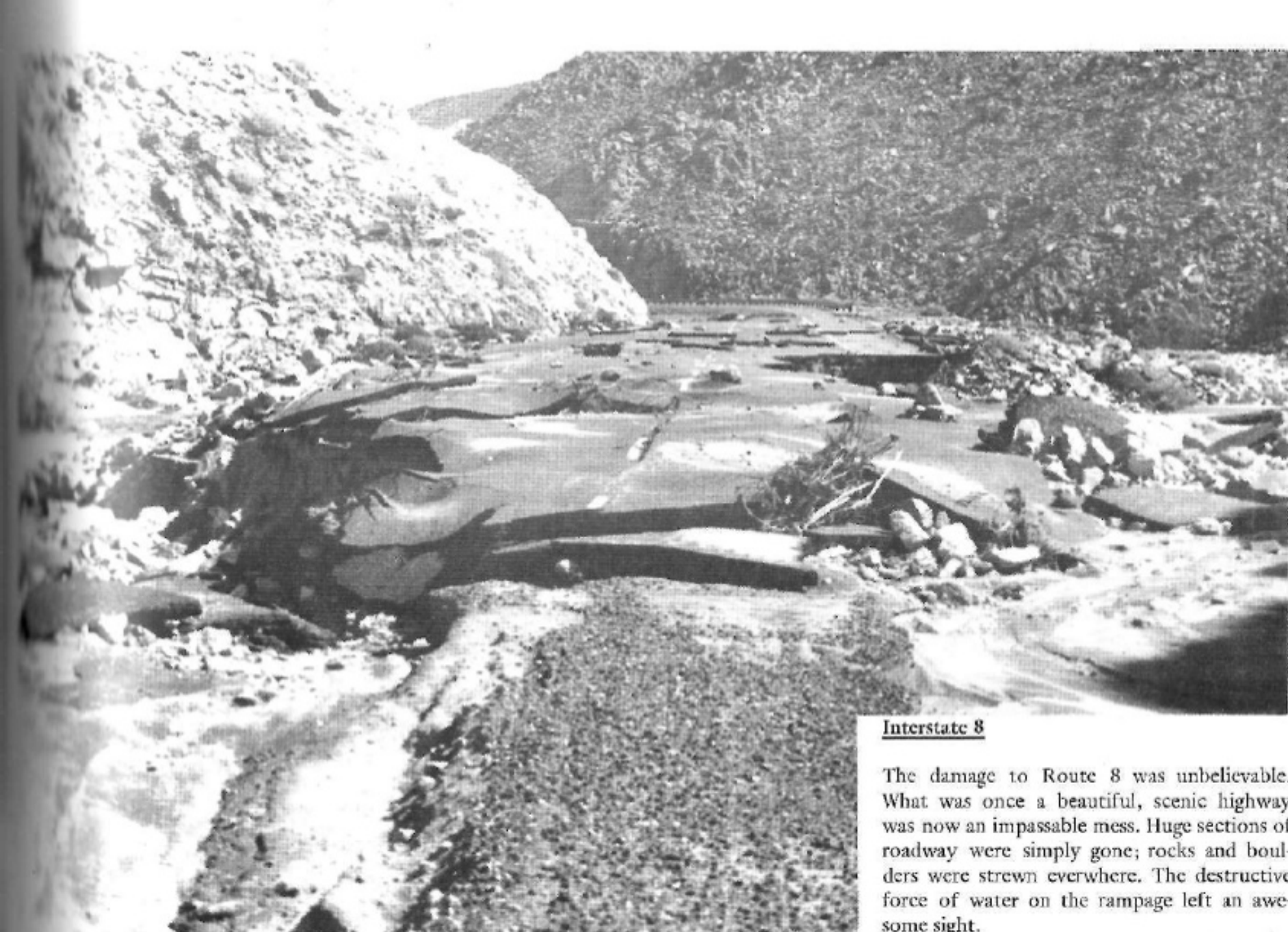


On Friday only Interstate 10, about 75 miles north of I-8, was carrying east-west traffic in the extreme southern portion of the state. The following state highways were closed due to flooded or washed-out roadways:

- Interstate 8 from Jacumba to Ocotillo
- Route 78 between Scissors Crossing and Blythe
- Route 177 from Route 10 to Route 62
- Route 86 between Coachella and Brawley
- Route 62 from Twentynine Palms to Vidal
- Route 74 south of Palm Desert
- Route 98 between Ocotillo and Calexico



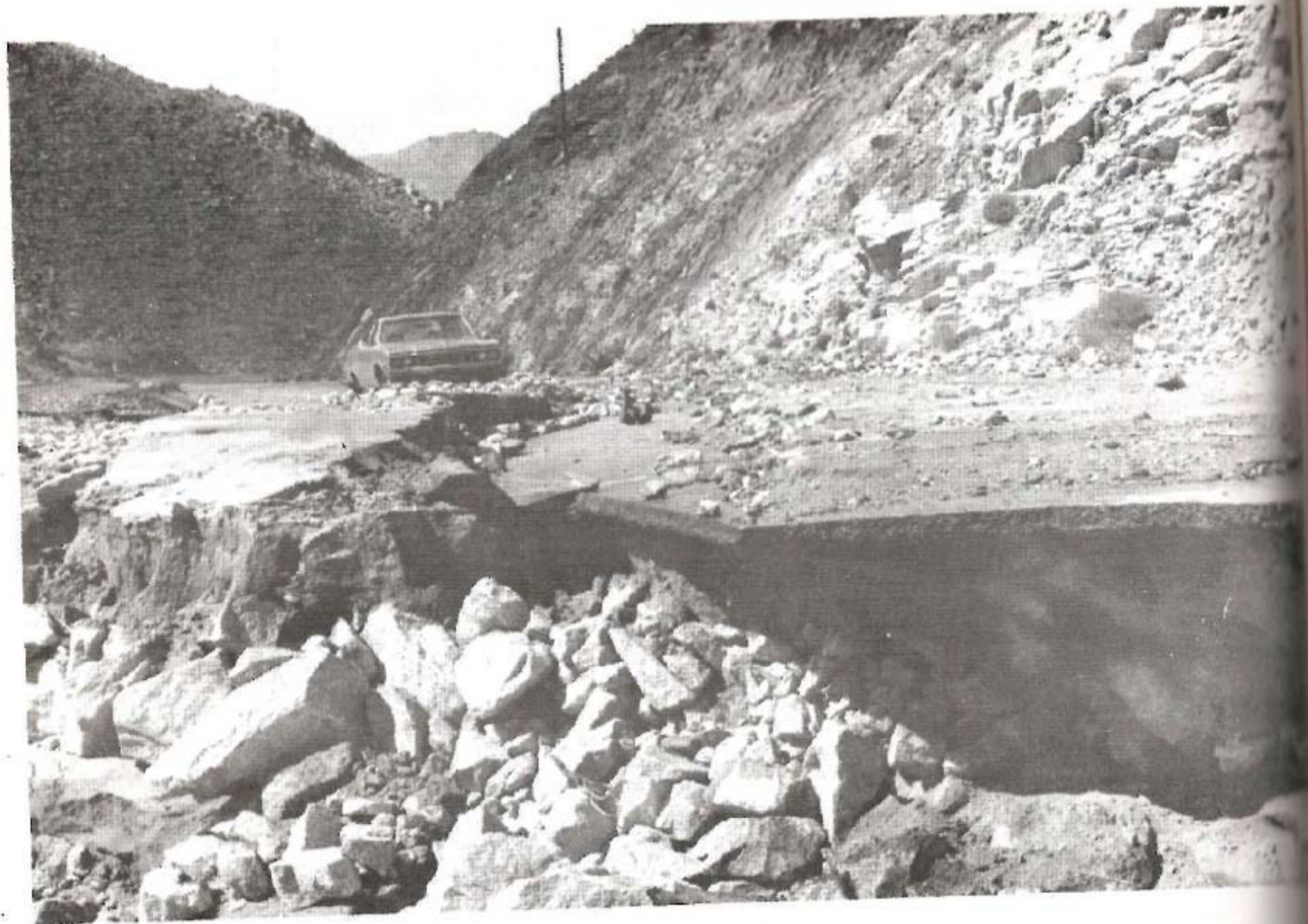
## HIGHWAYS CLOSED BY THE STORM



### Interstate 8

The damage to Route 8 was unbelievable. What was once a beautiful, scenic highway was now an impassable mess. Huge sections of roadway were simply gone; rocks and boulders were strewn everywhere. The destructive force of water on the rampage left an awesome sight.





*Credit: Jim Larson, CALTRANS*

lo

day afternoon, the day after Kathleen's  
only a trickle of water was flowing  
h Ocotillo. Shocked residents began  
out and assessing the damage.

and mud were everywhere — inside  
and trailers and over the roads. One  
t said the ground level raised four feet  
e at his house.

in one subdivision, the force of the  
ushed a gravel truck right through one  
said long-time resident, Bill Weaver.  
er house is completely gone over  
Weaver said. "Only the chimney is

al talley showed: Eight homes were  
destroyed; another five received major  
, and about 14 required major clean-  
ing with some renovations. And 28  
eded major cleaning. 3.

3. San Diego Union, Sept. 11, 1976



*Credit: U.S. Navy photo*





In neighboring Anza-Borrego Desert State Park the ancient dry lake bed was no longer dry. It was now an honest-to-goodness lake, four to five-feet deep. In this same area roads were silted, washed out, and covered with debris. Signs were down, and litter barrels were scattered. A park ranger reported a staggering loss of wildlife. Many snakes, rats, burrowing owls and rabbits drowned.

The gypsum plant at nearby Plaster City reported many gaps in their 25-mile railroad, making passage impossible. 4.



*Dry Lake Airport — not so dry!*

*Credit: Jim Larson, CALTRANS*



## San Diego-Arizona & Eastern Railroad

Before the storm, Southern Pacific ran two freight trains a day, six days a week, between San Diego and El Centro. The section of track from the top of the grade near Jacumba to the desert floor at Ocotillo passes through Carrizo Gorge, one of the most spectacular railroad alignments in the west. Located here is the famous 185-foot-high, 633-foot-long timber bridge, which is a masterpiece of engineering. The rails hug the canyon walls high above the gorge, bridge over drop-offs, and tunnel through mountains. The route was completed in 1919 and like most mountain railroads, requires a good deal of maintenance. In 1951 passenger service was suspended.

After Kathleen hit, a railroad spokesman said the track had five breaks a mile over a 30-mile length. The big timber bridge was structurally sound, but some timbers near the bottom were ripped loose. Rock slides blocked many of the tunnels. Estimates to repair the facility are \$1.3 million.

After weighing the decision to repair or abandon the damaged section of rail, Southern Pacific decided to abandon, and petitioned to the government to do so.



*Credit: Bob Jones*

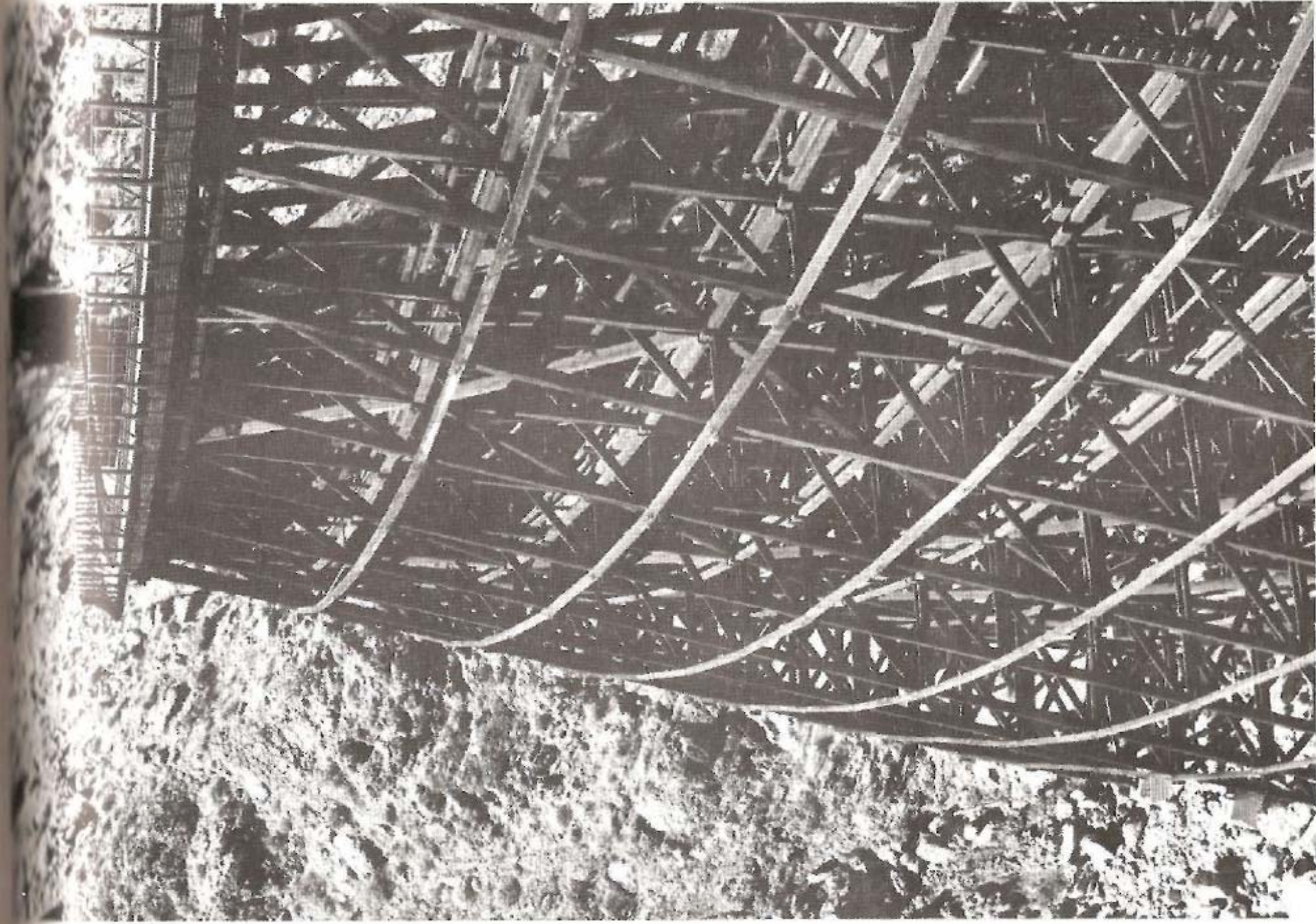


*Rock slides were common*

*Credit: Jim Larson, CALTRANS*







*Fortunately, this famous trestle in Carrizo Gorge was spared*

*Credit: Jim Larson, CALTRANS*

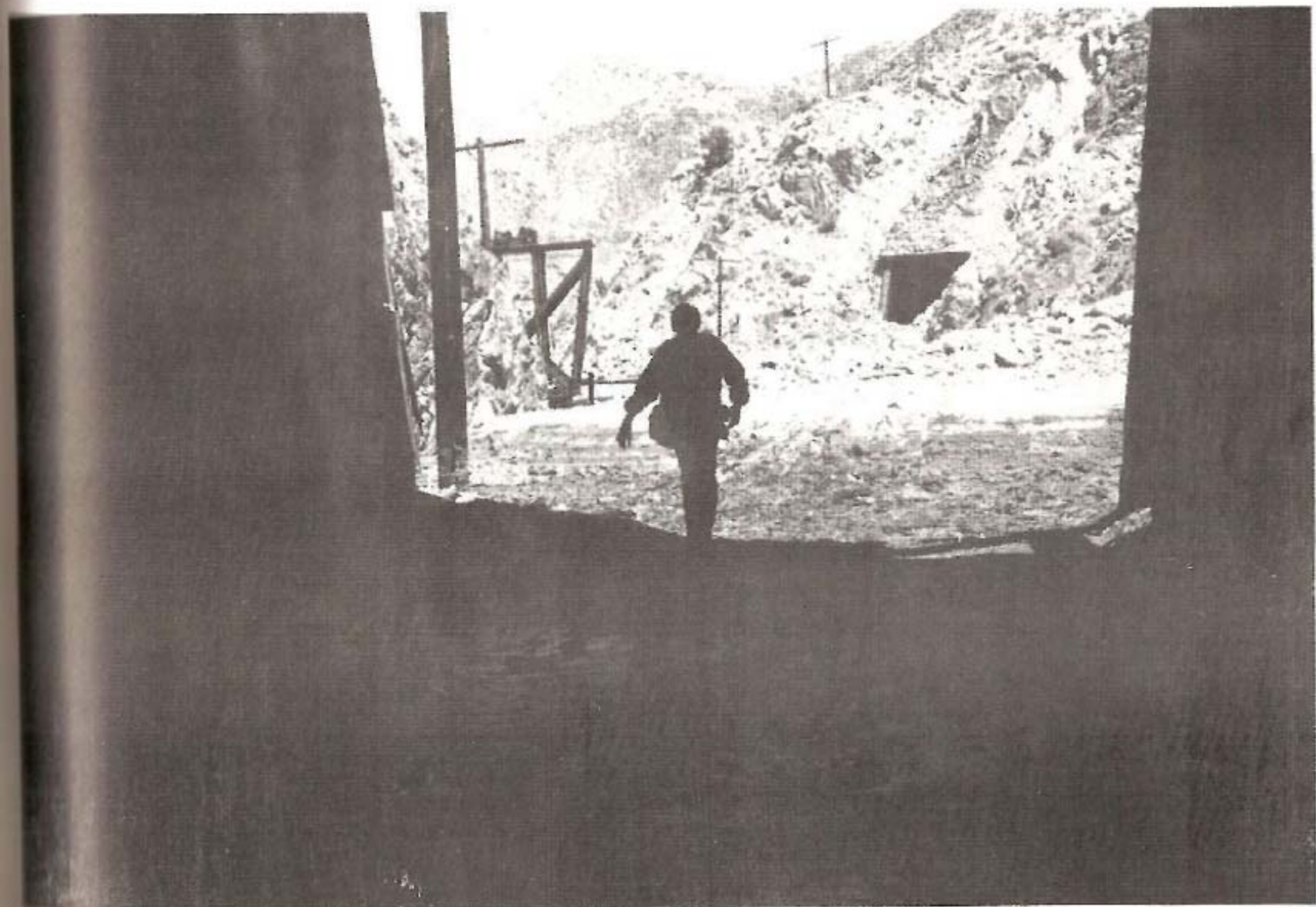




*The debris on the tracks indicates water built up behind the roadbed, ran over the rails before washing out*

*Credit: Jim Larson, CALTRANS*







## Imperial County

The Imperial Valley is one of the state's most productive agricultural areas, and tropical storm Kathleen's wrath will be felt here for some time. Agricultural officials estimate crop losses in excess of \$11 million in Imperial County. Sugar beet crops took the heaviest toll, reporting a \$6 million loss. Cotton losses were \$2.5 million, alfalfa \$2 million. It will cost an estimated \$200,000 to replant 2,000 acres of vegetables that were destroyed.

There were no reported losses to livestock; however, the feed lot in El Centro was underwater. Officials said they were having difficulty getting the cattle fed due to the muddy roads.

Many fields were flooded from the very system which brings life to the crops — the irrigation canals. The estimated two inches of rain which fell in Imperial Valley, along with floodwaters from the mountains, was carried in sections of the concrete channels and flooded many fields. Also, raging Myers Creek broke into the West Main Canal with a 60-foot-wide gap. Crews had to work all along the canal, fishing out hay bales and other debris.

All water from the Colorado River supplied to the valley was cut off Friday to relieve the rain-filled waterways. "We're spilling water out of our canals wherever we can," said Assistant General Manager, Donald Twogood, of Imperial Irrigation District. On the West Main, water was dumping out at 4,000 cubic feet per second. S. San Diego Union, Sept. 11, 1976

*Credit: Jim Larson, CALTRANS*



*The New River in Brawley overflowed on its way to the Salton Sea*



*the farmlands were buried under a layer of mud*

*Credit: Jim Larson, CALTRANS*









## Riverside County

Property damage and agriculture losses in Riverside County totalled \$38.5 million. According to a county official, 857 homes and 16 businesses were damaged by the flooding. Agriculture losses were put at \$11.5 million. *6.*

Palm Desert, situated at the base of high mountains, was hit the hardest, with 625 damaged homes. This was apparently caused when a dike broke upstream of the desert community. The 15-foot-high dike was designed to divert water to the east of Route 74 into Deep Canyon Flood Control Channel.

State Highways 78 and 86 were both closed when water swept over the road in many locations. Shredders were eroded as the water crossed over the road, leaving 10 to six-foot drop-offs.

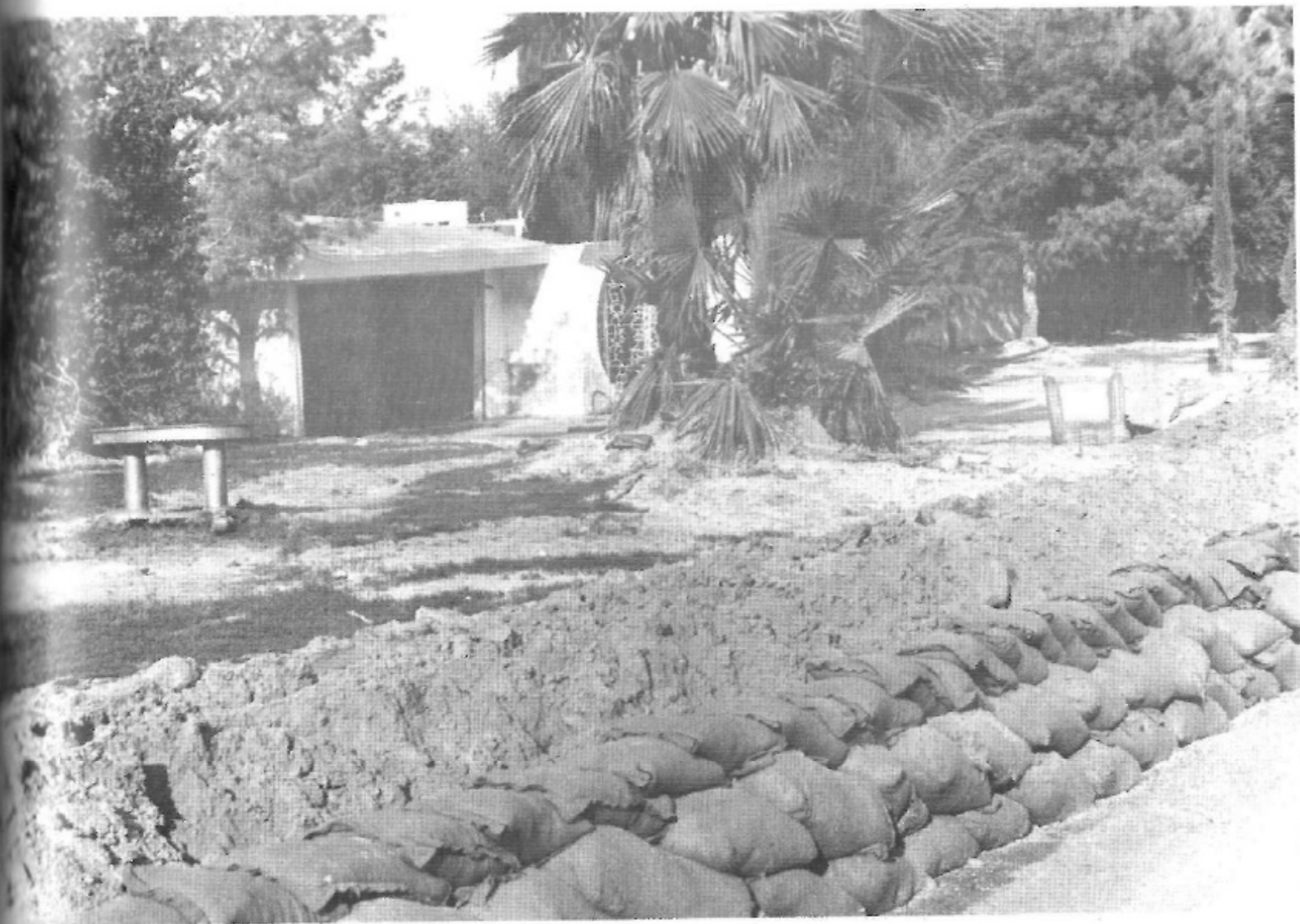
Water receded within a day, and maintenance crews, working day and night, had all routes reopened the following day.

*6. Indio Daily News*

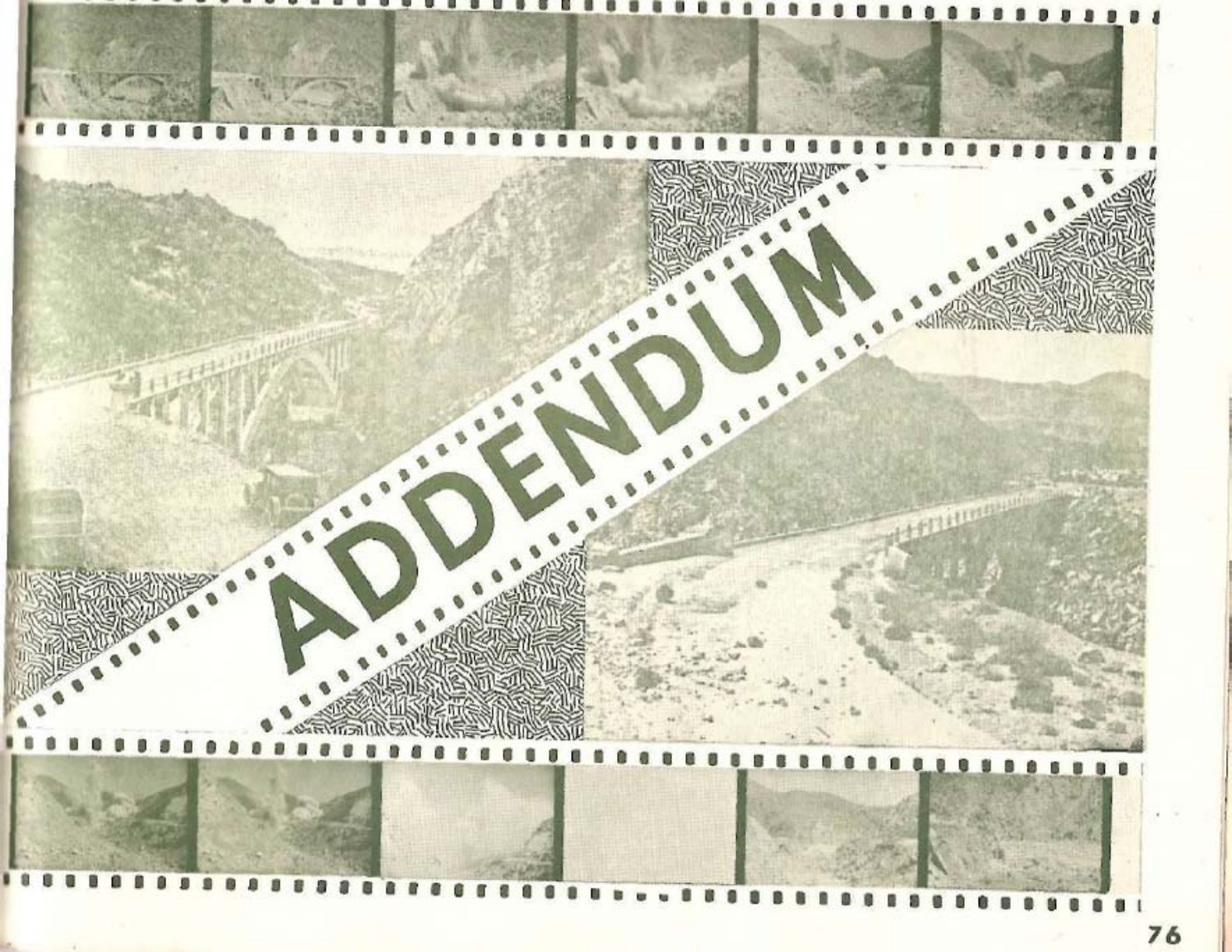


*Homestead Road in Palm Desert*

*Credit: Jim Larson, CALTRANS*







ADDENDUM



## ADDENDUM

Several items of interest have occurred since the original text was written. First of all, the project to repair I-8 at Mountain Springs grade was put out to bids April 18th, 1977; bids were opened June 2nd. The low bidder was Ladd, Inc. of Redding, California, who bid \$3,129,285.

The contract calls for rebuilding the eastbound traffic lanes where damaged and improving drainage flow in many locations along Myers Creek. Also in the contract is the removal of the damaged arch bridge and the replacement of the battered Myers Creek bridge at the bottom of the grade. The new bridge will be longer and wider.

### San Diego, Arizona & Eastern Railroad

In February, 1977, the Southern Pacific Transportation Company, owner of the SD&AE, said it was financially impractical to rebuild the rail line between San Diego and El Centro, and started abandonment proceedings with the Interstate Commerce Commission.

Railroad officials estimated it would take \$1.3 million to get trains moving again. The storm tore out three trestles, damaged five others, and destroyed sections of track in 50 locations.

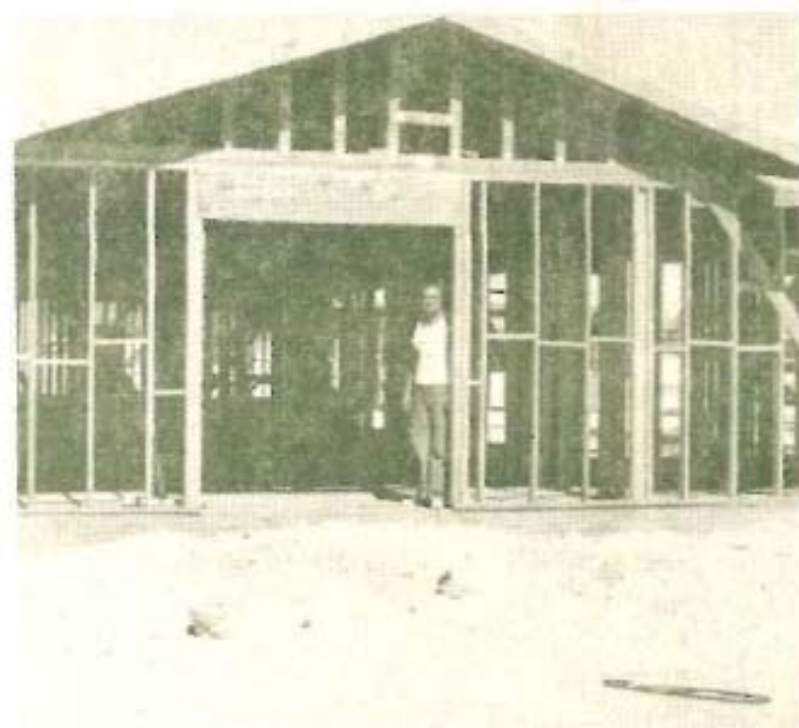
Officials plan to operate only an 18-mile section between Plaster City and El Centro in Imperial County. All other sections would be abandoned in the plan, including the 45 miles of track located in Mexico and the branch lines into El Cajon.

The news of abandonment brought immediate reaction from many individuals and groups who oppose the move. Opponents say 93 businesses, big and small, would be financially damaged by the rail closure. The case is still pending.

### Ocotillo

In Ocotillo, where major structural damage was high, most residents stayed and began improving their properties. Some merely walked off.

The full force of the errant waters hit the Setzer's home on Cactus Street, leaving nothing to live in - they turned out to be the only people in town with flood insurance. They've designed a new house which is now under construction.



*Credit: Jim Larson, CALTRANS*



One problem now facing Ocotillans is drifting sand. The half-mile-wide flood plain is completely denuded of vegetation to stop blowing sand. Sand is constantly building up along homes and fences, costing residents hundreds of dollars for clean up. One resident, L. Lucy, said the winds have been blowing steadily from March to June, making matters worse.



Ocotillo realtor Bob Bell said that today the real estate market is strong. "The town has changed," he said, "I sold more property since the flood than the previous five years I opened this office." Only several residents panicked and immediately sold out for a loss but, according to Bell, they were making plans to leave before the flood.



*Credit: Jim Larson, CALTRANS*