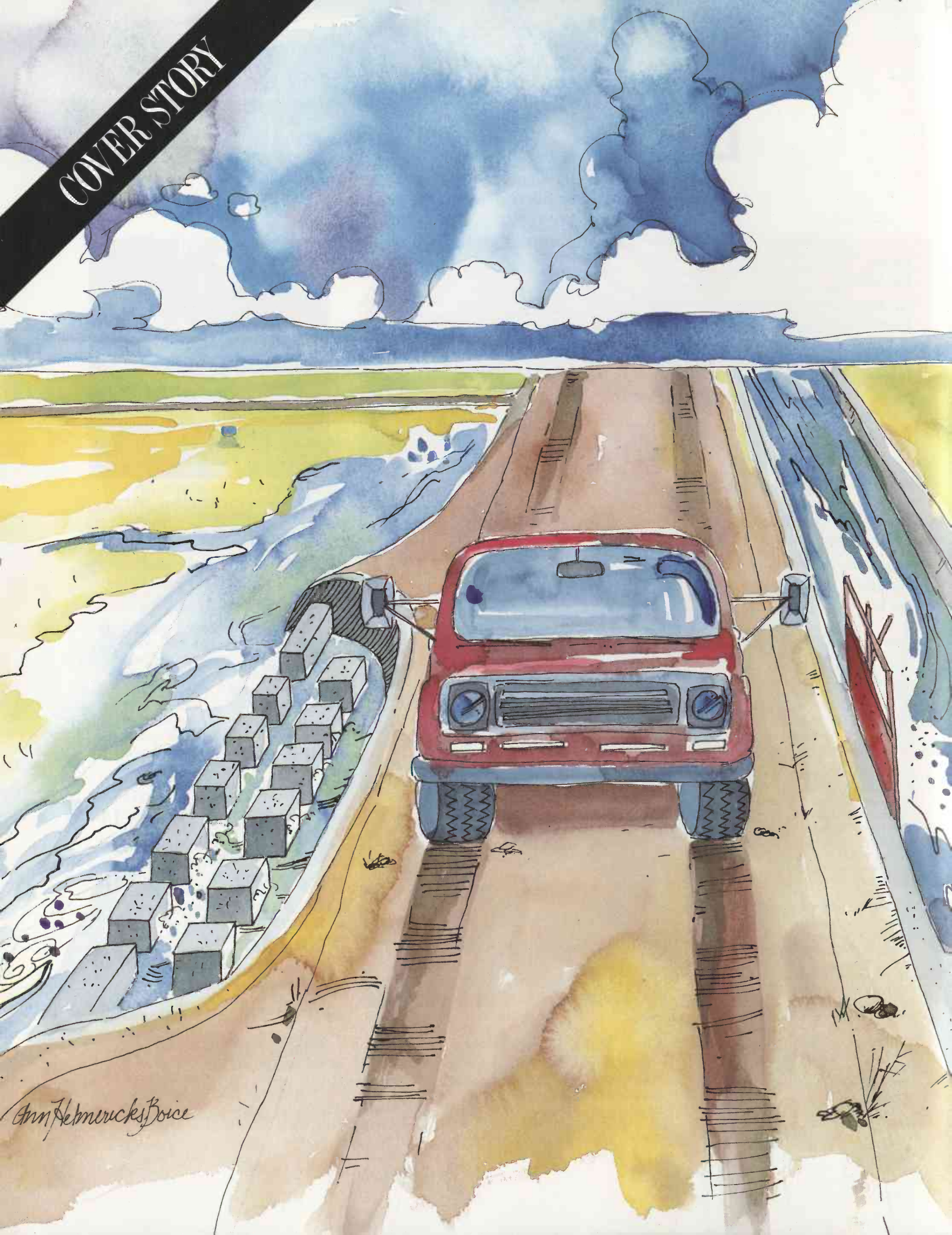


COVER STORY



Ann Helmerucks Boice



NEW LIFE FOR TOHONO O'ODHAM LAND

BY JAN McCOY

With a new source of water close at hand, the Tohono O'odham Indian Nation is returning to its agricultural traditions that dried up as surrounding non-Indian users gulped its ground water.

When the Spaniards first came to the Santa Cruz Valley, they found the Tohono O'odham farming along the Santa Cruz River as they had done for thousands of years.

But in modern times, non-Indian agricultural and municipal development in the Santa Cruz Valley pumped the ground water to ever-deepening levels, drying up the water that was the lifeblood of Tohono O'odham agriculture.

In 1975, the Nation filed a water rights suit against the non-Indian water users in the Santa Cruz Basin. The suit claimed non-Indian water users had pumped water from under its land without compensation.

Congress settled the suit with the landmark Southern Arizona Water Rights Settlement Act of 1982. In exchange for dropping the suit, the U. S. Department of Interior will deliver 66,000 acre-feet of imported water per year from the Central Arizona Project and other sources beginning no later than October 1992.

Two of the Nation's 11 political districts will receive the water. The

San Xavier District will receive 50,000 acre-feet of water and the Schuk Toak District will receive 16,000 acre-feet. The U.S. Department of the Interior, through the U.S. Bureau of Reclamation, is charged with improving and expanding the Nation's existing irrigation systems and developing new ones in the districts.

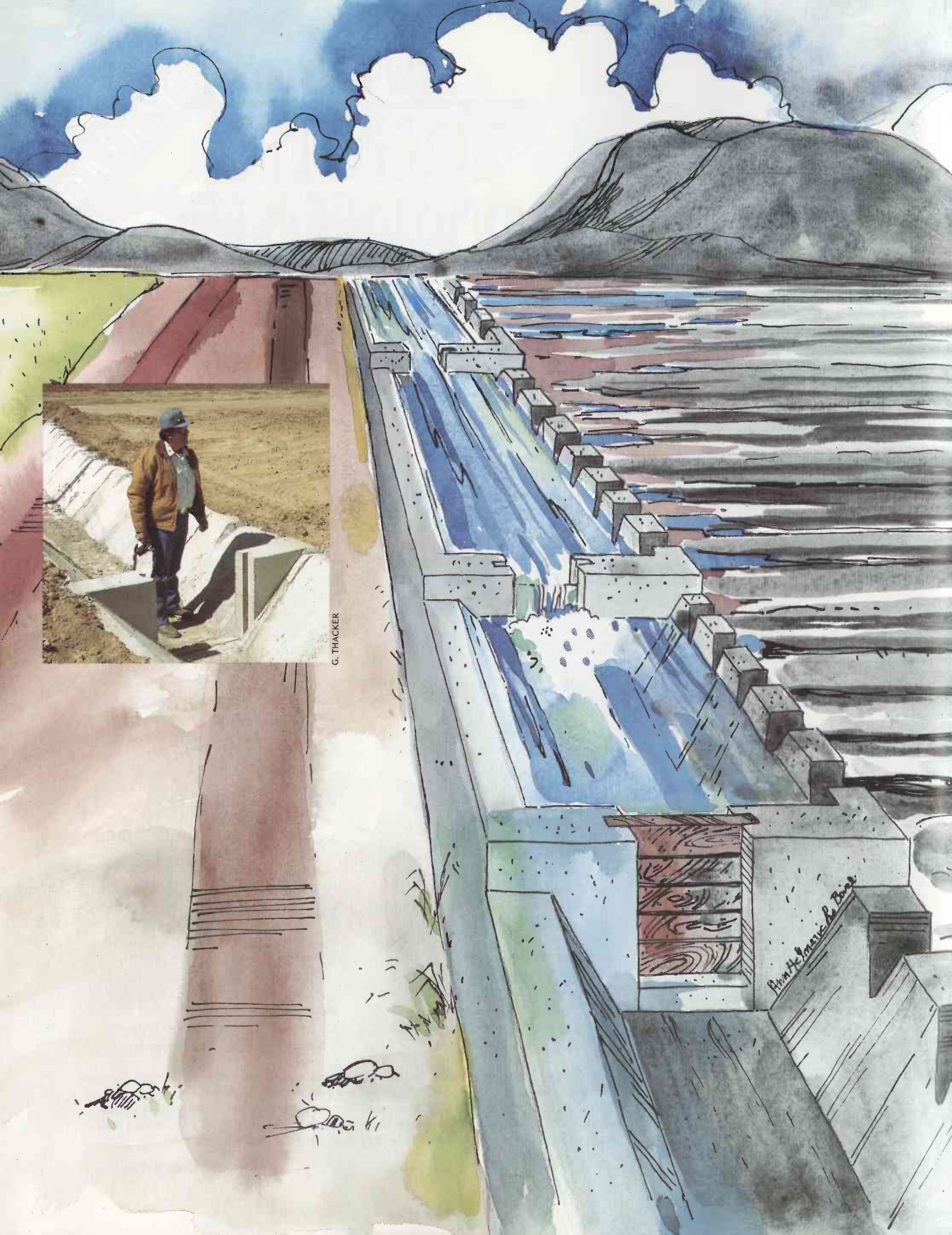
One project springing from the new water source is rehabilitation of the now unproductive San Xavier Cooperative Farm. Located near the San Xavier Mission south of Tucson, the farm consists of allotted lands belonging to about 1,300 individual landowners.

For many years, the Tohono O'odham irrigated their vegetable crops with water from the nearby Santa Cruz River.

"I remember when I was small, the Santa Cruz River always had about 6 to 8 inches of very clean, cool water running year-round," says Michael Enis, chairman of the San Xavier District Cooperative Association. "My grandfather would harvest his sweet corn and other vegetables by horse and plow. In the mid-to-late 1930s, everybody was farming and going great-guns because they had water."

In the early 1940s, wells and canals designed to make farming more efficient were installed by the U. S. Bureau of Indian Affairs. Through the 1950s, the Tohono

Opposite page: The level-basin irrigation system is one of the methods that will be used to irrigate the Tohono O'odham Indian Nation's San Xavier Cooperative Farm. Water from the canal along the right side of the road flows through a pipeline built underneath and runs headlong into concrete barriers set at the entrance of the field. The rushing water slows to non-erosive speeds and spreads evenly over the entire area.



G. THACKER

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O'dham continued growing vegetables for their own use, and began to lease parcels of land to a non-Indian cotton farmer. They later began to grow cotton themselves.

But as neighboring Tucson grew, the water table fell. Many Tohono O'dham wells went dry. The non-Indian farmer stopped leasing the land in the mid-1960s, Enis says, because there was no longer enough water to sustain his crops. Soon after, a second non-Indian farmer attempted to grow lettuce on the land, but after one planting, he also moved away.

The Nation fought back finally in the mid-1970s and filed suit against surrounding farms, mines and the City of Tucson.

"Something had to be done," Enis says, "the city was using all our water and we were going nowhere."

Today, the water is returning, but the new source means rethinking the irrigation and design of the San Xavier Cooperative Farm.

"This type of water we're going to be getting is new to everybody," Enis says. "We all know how ground water reacts to irrigation, with this type of water, it will be different." CAP water is expected to flow three times the rate of current pumping systems.

Enis says an engineering firm hired by the Nation recommended using conventional irrigation ditches with siphon tubes that must be primed and moved manually between crop rows. But after years of backbreaking experience with siphon-tube irrigation, Enis proposed alternate irrigation methods be studied before making a commitment.

"I talked with a farmer in Marana and asked if he knew someone I could talk to," Enis says. "He gave me Gary Thacker's name at the University. Gary's been very helpful since then."

Thacker, a University of Arizona Pima County Cooperative Extension agricultural agent, has worked

with the farm association on the rehabilitation project since 1987. He arranged field trips for Enis and other Nation officials to view the notched-ditch irrigation system used in the Safford area. Thacker also showed the group the level-basin irrigation system used in the Wellton-Mohawk Irrigation District near Yuma.

From the information supplied by Thacker, Enis says the association opted for notched-ditch irrigation on the south 800 acres of the farm, and level-basin irrigation on 200 acres in the north fields.

"It was hard to sell that concept to the Bureau of Reclamation," Enis says, "but they later went to the Safford area and saw the notched-ditch system, and it's now been approved by the Bureau and is under design."

Notched-ditch irrigation, which is designed for farming on a slope, is ideal for use on the natural south to north slope of the farm's south 800 acres, Thacker says.

Because of the O'dham's long history of farming, this is one of the richest archaeological areas in the Southwest. The archaeological treasures are the key design constraint in rehabilitating the farm. Only the soil that has been plowed in modern times can be disturbed, so large land-leveling cuts are out of the question.

As a result, 800 acres of this 1000-acre farm must be left with its natural south-to-north slope. Only the north 200 acres are flat enough for level-basin irrigation.

The farm will receive 4,000 acre-feet of CAP water per year from a pipeline that will cross Interstate 19. The line will deliver 20 cubic feet of water per second. Plans for use of the remaining 62,000 acre feet of water now are being formulated by the Bureau of Reclamation and the Nation.

Enis says the association is now in the final stages of farm design.

"Still, we're looking at a year away from this point before any

ground gets touched," he says. "We still have to do some clearing, take old canals and fencing out, and remove a few trees that are in the boundaries of the farm rehabilitation. After that, we have to prepare the land and make sure everything is designed right."

The association members plan to do their own farming, rather than lease the land to non-Indian farmers.

"We want to be the people who do the farming and have full control over what is being planted and how the profits are going to be distributed," Enis says. The association is researching the types of crops that will be most profitable and forming a construction group to do the rehabilitation work on the farm. The group is considering planting cotton (if prices go up), vegetables, fruit or possibly pistachios.

"I think with the proper help—and we're looking at the UA College of Agriculture—we can come up with something feasible for our project," Enis says. "We'd like to do some test plots to see what will work."

Although it will take more than a year to prepare the full 1,000 acres of the farm, Enis says he hopes planting can begin on some of the rehabilitated acres once the water is available.

He says the association hopes to secure a start-up loan from the Nation, since federal land cannot be used as collateral for conventional financing.

Although much paperwork still must flow between the federal government and the Tohono O'dham, the association is ready.

"Our group is anxious to see this go," Enis says. "We want to make this farm a showcase."

Contact Enis at P.O. Box 50849, Tucson, Ariz., 85703, (602) 294-5727. Contact Thacker at the Pima County Extension office, 4220 N. Campbell Ave., Tucson, Ariz., 85719, (602) 628-5161.

Opposite page: The notched-ditch irrigation system moves water, without pumping, from the higher end of a sloped field to the lower end. The ditch is built along the slope of the land, perpendicular to the furrows. "Stop logs" control the flow of water from one section of ditch to the next. Irrigation starts when water flows over the notches built into the top of each wall. Although the irrigation system is built on a slope, each section of ditch is level. Inset: Michael Enis inspects the notched-ditch irrigation system used in Graham County.