



THE LINCOLN HIGHWAY AND RAINBOW ARCH BRIDGE



The Lincoln Highway

Sifting through archival, personal photo images, newspapers and memories of the past, I became a factual archeologist unearthing information about the Lincoln Highway, Shady Oaks and Marshall County. The following record helps define our heritage, to see our predecessors and ourselves in context.

Americans have always wanted to do what the masses are doing. We are puppets for inventions. First, the rails expedited travel. Then, people complained about adhering to time schedules, moving too fast to view the scenery and running through the back door of a community. At night, the twinkling lights of small towns left much to one's imagination as trains sped quickly through them.

In 1912, representatives of the auto makers and cement companies met in Detroit to address a problem that behooved the industry. The shortage of good roads was detrimental to sales. Carl Graham Fisher's plan for a graveled highway across the United States at an estimated cost of \$10 million was enthusiastically received by these leaders. Initially, Fisher wanted to call it the "Coast-to-Coast" rock road. However, patriotism triumphed; and it was named in memory of Abraham Lincoln.

This dream was not for an all new road. It would be a ribbon of many existing roads linked together which would eventually fuse agriculture and industry. As it unfurled across the United States, folks everywhere adopted the slogan, "See America first!"

At approximately the same time, D. W. Norris, Marshalltown's newspaper editor, bought his first automobile. He became an influential advocate of the good roads movement after repeatedly miring down in Iowa's bottomless gumbo. In April of 1994, John W. Norris, Sr. (deceased December 1994) wrote, "Even though I was a small boy, I remember well the dedication my Dad had to promoting Iowa to 'get out of the mud.' He crusaded on this issue for many years, and people back then gave him credit for getting hard-surfaced roads started in Iowa."

The official starting point for the Lincoln Highway was Times Square (Lincoln Tunnel) in New York City. It passed through Philadelphia and Pittsburgh, skirted northern Ohio and Indiana and continued south and west of Chicago.

The Lincoln Highway corridor entered Iowa via the DeWitt-Clinton Bridge over the Mississippi River. Immediately, the greenery of tall corn was evident. The vista opened to the undulating country around Mt. Vernon, through the wooded hillsides near Cedar Rapids and continued past large oat fields to Belle Plain and Tama.

In 1914, the Lincoln Highway was routed through Marshall County on existing roads. The 30-year old Rock Valley Bridge served as the eastern entrance to Marshalltown, which was nestled in a charming setting. Gladys Beetner (deceased 1996) was born in 1908 in the Stavanger community. She remembered riding over this wagon bridge in a horse-drawn buggy. On a frightening ride home from the county fair, she and her family crossed the bridge amidst a cloudburst. Water swirled everywhere!

The Highway traversed past the State Agricultural College (Iowa State University) in Ames, crossed a sea of corn from Boone to Omaha and headed west to Cheyenne and Salt Lake City. The old Salt Lake Trail, rich in legends and history, became the main stem of the new Lincoln Highway. Across the deserts and over the mountains of Utah and Nevada, it wound its dusty, hazardous way. It entered California through Donner Pass and ended at the Pacific Ocean in San Francisco's Lincoln Park. Over 400 towns were along its route.

It was advertised that the usual pleasure party, with easy driving and a nominal amount of sight-seeing, could make the cross-country trip in 20 to 30 days by driving approximately 10 hours a day. This estimate meant that the average driving time was 18 miles per hour.

In 1916, a Maxwell motor car could be purchased for \$655, a Saxon Six was valued at \$785 and a Chalmers five-passenger touring car cost \$1,050. To make an

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adventure in your new car even more enjoyable, suggested equipment included: a pair of Lincoln Highway penants, tire chains, good cutting pliers, chain tightener springs, tire casings, inner tubes, spark plugs, shovel and lamp bulbs.

Some suggested "don'ts" for the daring tourists in 1916 were: don't wear new shoes, don't forget your yellow goggles (amber-colored lens) and don't ford water without first wading it.

According to the "Official Road Guide to the Lincoln Highway" published in 1916, Marshalltown was 1,207 miles from New York and 2,124 miles from San Francisco. The Highway benefitted Marshalltown with additional trade and publicity, but the County generated little effort to improve the road that divided it.

People were reminded that after a rainstorm they could save their tempers and time by stopping for five to 10 hours until the road dried. During wet weather, roads out of Marshalltown were mud-choked in every direction, leaving farms isolated and cutting school attendance.

Marshalltown's population was 16,029; and it boasted of six hotels, six garages, five banks, three railroads, two newspapers, 400 business places, three express companies, two telephone companies, nine public schools, electric lights, trolley, water works, commercial club and automobile club. The Lincoln Highway was paved through the City.

The Lincoln Highway was 3,384 miles long; it was about 203 miles longer than the shortest transcontinental route of connecting railroads and 14 miles shorter than the transcontinental telephone line. It linked the Heartland to San Francisco, New York and everywhere in between.

In the early 1920s, Josephine (Chinn) Sipling, then a seventh grader, lived on a farm in the Rock Valley neighborhood. She specifically remembers a mother and her children from Ohio, who were driving their Model T across the State. It was late in the afternoon, and a storm was brewing. The lady drove into the Chinn farmyard and asked if they could spend the night. She offered to pay well. They were welcomed for supper, and the three were bedded down for the night. Other farmers experienced similar and oftentimes too frequent dilemmas like this one. A few years after this incident, the new Shady Oaks Cabin Camp fulfilled the need.

The Shady Oaks commercial cluster, or complex, typified the earliest physical evidence of roadside culture in Iowa. It consisted of the cabin camp, gas station and cafe on the rural Main Street of the Nation. The tourist of the day was looking for comfort and cleanliness (hot water), not luxury.

Wayne Norton, a nonagenarian, now of McGregor, Texas, vividly remembers the long drive (73.2 miles) to Cedar Rapids before the Lincoln Highway was paved. Wayne, a former Marshalltown resident, scoutmaster and Rhodes Scholar said, "It was an eight-hour drive in my Model T, and the mud still sticks in my mind, just as it did to the wheels."

"The Big Road Fight" began during the Summer of 1923. The County voted on bonds to pave the Lincoln Highway east and west across Marshall County and gravel what is now Highway 14. The opponents or "mud roaders" tried to restrain the selling of the bonds. However, they were unsuccessful; and on September 29, 1924, a contract for paving was let at \$2.18 per yard.

The J. C. ("Chris") Anderson and E. E. Empie Construction Company's successful bid was the lowest received for County paving in Iowa. This firm was organized in Marshalltown in December of 1914 but didn't secure a contract until August of 1915. They also did ditching and sewer work.

Chris Anderson came to America at 19 years of age. Prior to that, he was involved in road building in Holland and Denmark. Chris fell in love with a Danish girl who was visiting in Marshalltown. She was engaged to someone else, but true love triumphed. The couple was married in Minneapolis in 1918. Chris had to pay her former fiancée for her passage to America. Elsa Mae (Anderson) Diggins of Marshalltown is their daughter.

Marshall County led the paving construction in Iowa in 1925. That will be remembered as the year "Marshall County crawled out of the mud." Twenty-one and a half miles of County road cost \$602,424 to grade and pave. On January 1, 1926, Marshalltown's Times-Republican ("TR") carried a picture of Chris Anderson and E. E. Empie, the contractors who laid the Lincoln Highway paving. The headlines for another article read, "Lincoln Highway Hardsurfaced During Last Year."

Winter approached early in 1925 leaving a little more than one and one-half miles of the Lincoln Highway to be constructed in the Spring of 1926. The crew had left off at the bottom of the hill just south of Rock Valley School (Don Searle's). They used wheelbarrows, shovels and muscles to pour the cement. The cost to property owners was \$75,303, and no assessment exceeded 40 cents per acre. The average cost for paving east of the City was \$27,411 per mile. When the work resumed in the spring, the new concrete took on an entirely different texture from the old. Paving of the Lincoln Highway to the Tama County line (Indian Village Township) was completed in the Summer of 1926.

The firm of Anderson and Empie used 400,000 sacks of cement, or 115,235 tons of material, for the Marshall County paving project. Approximately 1,800,000 gallons of water were required to mix the concrete, and an estimated one billion gallons of water were used for curing, mixing, etc. Other materials used were stone, calcium chloride, sand, steel and expansion joints.

In Paul G. Norris' book of "Memorable People," he eulogized Chris Anderson as a pioneer paver. Paul wrote, "He and others like him proved we could afford paved county highways when many thought we couldn't." Anderson's company laid many of the first, rural concrete slabs; they were 18-foot wide and eight inches deep. Shady Oaks Road remains unchanged; however, many other sections of the Highway have long since been widened, or replaced.

In 1926, Marshall County was still somewhat isolated from the east when weather conditions were unfavorable, as Tama and Benton Counties had not yet taken steps to pave their highways. In Marshall County, the town had been brought to the farm. Now, the farmer on the Lincoln Highway had all the advantages that a man in the city had, even to fire protection.

In the days of Model Ts, Iowa farmsteads boasted large, white homes, red barns and numerous white leghorn chickens. These notorious fowls either scratched in the road or waited to cross the road in front of approaching vehicles. Many hit automobile radiators midst a flurry of white feathers. The stunned birds flipped, flopped and squawked

until they came to their senses or were made into stew. Redheaded woodpeckers blindly met their demise in much the same way.

Most new innovations began back east and moved westward. The new, sparkling white Shady Oaks Complex (cabin camp, gas station and eatery) was located at the southeast gateway to Marshalltown. "The Queen City of the West."

Imagine the enlightening conversations at the cabin camp in the evening. Motorists, who had been to California, told of the wide-open stretches of the west, where they encountered little traffic, enabling them to drive any speed their car could manage. Others gave praise for the accommodations offered at Shady Oaks, and they passed the word along.

The automobile, Lincoln Highway, gas station/eatery and cabin camp were interlocking links in a chain of events. According to historic surveys, highways are organic, around which the past, present and future revolves.

The Lincoln Highway, which traversed a dozen states, was marked its entire length. The states on this route were New York, New Jersey, Pennsylvania, Ohio, Indiana, Illinois, Iowa, Nebraska, Wyoming, Utah, Nevada and California. There were from five to eight markers to the mile and two at all turns. Many Lincoln Highway logo markers were painted on existing telephone poles. White arrows designated the direction to proceed.

In Marshalltown, 15 turning markers were required. These markers predated road maps, and motorists followed the directions written in a driving guide. Ultimately, three types of markers designated the route of the Lincoln Highway: Flat porcelain signs, curved ones and painted utility poles.

The title "paint slinger" was given to the fellow who painted the poles. A public relations representative preceded the painter. He reached the town first and acted as a promoter. Sometimes the townfolk were unhappy with the way the poles were painted. Representatives of the community usually repaired the sloppy paint jobs.

This same event occurred across the State of Iowa in the Summer of 1994, as Bob and Joyce Ausberger of Jefferson (representatives of the new Lincoln Highway Association) and their crew painted the Lincoln Highway logo (red, white and blue emblems with the big L)

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on over 200 utility poles. Bob said, "The Lincoln Highway is part of Americana."

One must remember that Federal and State funds were not available, so the transcontinental Highway was mainly supported by pledges from major car companies; and the Association's directors served without salary.

Congress passed some highway legislation in 1921; but by 1925, the government planned to number all highways. On December 31, 1927, the original Association ceased, as the Highway was assimilated into the numbering system for U.S. highways. It became U.S. 30 in the East and Midwest, and U.S. 40 and 50 in the West. Many highways are no longer given names that arouse your imagination.

At the same time, another mode of travel was gaining worldwide attention. On May 22, 1927, the Des Moines Sunday Register carried the bold headlines "Lindberg In Paris — Makes Epoch Flight of 3,600 Miles in 33-1/2 Hours." Another caption read, "Trip Wasn't Picnic, Says 'Flyin' Fool."

In August of 1987, the 75th Anniversary of the Lincoln Highway was remembered in Marshalltown. Two former Eagle Scouts were depicted in the August 22, 1987 edition of the TR; Homer Rhinehart and Virgil Schewe (both deceased) recalled their place in the Highway's history. As boys, they lent their expertise in verifying the roads and streets through Marshall County and Marshalltown for the Lincoln Highway. They were driven by executives from the national scouting office in New York City.

On September 1, 1928, Boy Scouts placed approximately 3,000 markers, along this great Highway. It was one of the last major accomplishments of the Association. The Highway markers were eight-foot long cement posts, buried in the ground to a certain notch, to assure the same height. A bronze medallion with the head of Lincoln engraved on it was imbedded above the red, white and blue bars with a blue L in the center. The words "This Highway dedicated to Abraham Lincoln" were engraved on the medallion.

Today, the concrete posts are great treasures. They once served as memorials to a heroic individual. Less than 10 percent of the posts still contain the original

medallions. Seven such markers are accounted for in Marshall County.

This brings to mind the once famous signs and rhymes of Burma Shave along the highways and byways. They provided history and Biblical and political information. Six red and white signs made up a set. The first signs went up in 1926; and four years later there were 6,000 signs in 33 states. It was an extremely cost-effective means of advertising.

Most of the Company's 35 employees manufactured the product. The road men who drove the eight trucks were called PHDs (post hole diggers). They could dig the six holes required for five to seven sets of signs a day. The famous Burma Shave slogans were submitted by anyone who entered their jingle contests.

Some of the slogans were: "The bearded lady - tried a jar - she's now a - famous - movie star - Burma Shave," "Salesmen - tourists - camper outers - whisker sprouters - don't forget your - Burma Shave," "Heavens latest - neophyte - signaled left - then turned - right - Burma Shave," "Violets are blue - roses are pink - on graves - of those - who drive and drink - Burma Shave," "Speed was high - weather was not - tires were thin - X marks the spot - Burma Shave" and "Proper distance - to him was bunk - they pulled - him out - of some guys trunk - Burma Shave." Have we lost our splendid sense of humor?

Some vintage cars of the Lincoln Highway era were the Model A, Studebaker, Dusenbergs, Cord and Packard. The slogan for Packard was, "Ask a man who owns one." Instead of a Packard, I asked a man who owned a Cord.

In 1929, John W. Norris, Sr., was working in Syracuse, New York. In December of that year, he bought a Cord, front-drive convertible coupe. John described it as dark blue with baby blue wire wheels and a rumble seat. He said it taught him the advantages of a front-drive car. The Cord was the first of its kind made in America and perhaps the world. The Dusenbergs, Auburn and Cord were all distributed by the Auburn Automobile Company of Auburn, Indiana.

In January of 1930, John moved back home. He said, "This gorgeous car of mine traveled the Lincoln Highway past Shady Oaks many, many times."

This magnificent car was said to have the following advantages: absence of fatigue for driver and passenger, effortless handling, a different roadability and a sense of security. Cars may have changed but advertising hasn't. The price was \$2,495 for this Convertible Cabriolet, and equipment other than standard was extra.

In the 1930s, a vast array of billboards bordered the Lincoln Highway. The roadscape and advertising blended together like peanut butter and jelly. In photos from this time frame, a Gildner's sign stood directly across from the Log Cabin building at Shady Oaks.

John Gildner said, "Our first store opened in Marshalltown in 1913. Later, we had two billboards, one west of town and one east, on the Lincoln Highway." The large, white sign said, "Gildner's, Outfitting Men Since 1896 — Exclusive Agents for Arrow Shirts."

By 1931, a survey by the American Automobile Association revealed that travel westward had gained by leaps and bounds. Thousands of motor cars, business or pleasure bound, were making the transcontinental trip compared to a mere 150 that dared to make the formidable trip in 1913.

The increase in traffic didn't give a green light or a clear road ahead for Highway 30, Marshalltown and other towns along its route. Problems were in store according to D. J. Trail, Field Manager of the Nebraska-Iowa Lincoln Highway Association!

An article entitled "Trail Gets Funds Here to Wage Fight For Lincoln Highway" appeared in the TR on July 20, 1939: "Mr. Trail said the money collected from memberships in the association would be used to advertise U.S. No. 30, as the shortest of the transcontinental routes. Formation of the association and the raising of a 'defense fund,' he declared, became necessary when the larger Iowa cities on U.S. No. 6 began a militant campaign to have thru traffic routed over that highway. Automobile clubs, east and west, billboards and newspapers, Mr. Trail said, would be used to 'tell the story of the Lincoln Highway.'"

The following article appeared in the TR in 1946, "Rerouting of 30 Is Approved By Government. Change in Highway Will Eliminate Marshalltown From Route.

"Government approval has been secured by the Iowa Highway Commission for the rerouting of Highway 30 from McLean's corner west of Marshalltown, east and one-half mile south to connect with the present road at the Shady Oaks tourist camp, east of the city.

"Total length of the new route will be approximately nine miles, only a couple of miles will be relocated, because the balance will follow existing roads. The routing will cut off approximately four miles from the length of the highway and will eliminate 25 corners and curves.

"The new highway probably will be surfaced with a redesigned paving slab, which uses no reinforcing steel, since steel is not available. The culverts will be mostly of the arch type, also constructed without reinforcing steel. Although the work of securing right-of-ways may begin this fall, in all probability construction will not start until next spring."

On February 6, 1948, the old section of Highway 30 (from Marshalltown to the Shady Oaks Corner) was turned over to the County road system and called East Lincolnway. It is now called Shady Oaks Road.

The Marshalltown TR, October 21, 1970, showed a picture of Rainbow Bridge and a blacktopping machine. The caption under the picture said, "Work is going ahead on the blacktopping of old Highway 30 east of Marshalltown. Workman are shown rolling the first covering on the bridge near the Shady Oaks Cafe. This is part of the road improvement program of Marshall County under supervision of the county engineer."

In June of 1988, participants in a national event called the "Old Car Lincoln Highway Tour" drove into Marshalltown in their vintage automobiles. The tour was planned by Lyn Proteau, historian and author, who has been referred to as the "Lincoln Highway Lady." On arrival, the group was disappointed to find the renoun Rainbow Bridge permanently barricaded. As it turned out, the Lincoln Highway outlasted the porous, concrete rainbow arches which had succumbed to rusting, cracking and chipping.

There was an evening parade in downtown Marshalltown. The caravan stayed overnight so they could chat with members of the local antique car club, display memorabilia, encourage history buffs to join the Lincoln Highway Association and visit the Shady Oaks

area. My imagination soared on that warm June night as the antique cars traversed the Shady Oaks area. It was a de-ja vu experience for this Lincoln Highway landmark. Now, along this trace of yesterday run elevated fiber optic and cable television lines and buried telephone cables.

William L. Withuhn, curator of transportation at the Smithsonian Institution, wrote, "The Lincoln Highway accelerated the processes of social mobility, changed our geography and led to a new America."

Here the roadside landscape has changed very little in the past 70 years. Looking at the Lincoln Highway postcards from the 1920s, the setting is easy to identify. Even today, the north vista from the new Shady Oaks Bridge is the same. The row of large bur oaks outline the same, identical curve in the road. The Log Cabin is in the same focal point, and the entrance to Shady Oaks hasn't changed for over a hundred years. It has the aura of a place designated for preservation, as it is a historic link in the saga of the Lincoln Highway.

The original office/residence represents the definition of Shady Oaks vernacular. It was built by its owner and his friends, without formal dimensions, to meet a specific need; and it emulates the characteristics of the entire Shady Oaks vicinity. Legacies of the Lincoln Highway have influenced my existence for nearly three decades. They are excellent examples of the effect of the transportation system on its environment.

The new Lincoln Highway Association was formed in 1992 to recreate a living history of the development of highway transportation. On August 27, 1994, the Second Annual Conference took "a step back in time" on their Eastern Tour. Two busloads of Highway enthusiasts made their first pilgrimage to Shady Oaks. Cameras flashed here and there, and many questions were asked regarding the three original buildings. Gregory Franzwa, President of the Association, visited later in November.

A cameo incident came to light in October of 1994. Franzwa sent two 1926 photos that he discovered among Special Collections in the University of Michigan Library. One print was of Shady Oaks gas station (comfort station), and the other of Hendorf's (Handorf's) corner marked with an X. The X indicated where Henry Bourne Joy, the first President of the

Lincoln Highway Association and President of the Packard Motor Car Company, had years earlier spent the night in a mudhole on the corner just north of Shady Oaks. In 1994, the new Lincoln Highway Association reported that only 20 percent of the historic routes and roadside features like Shady Oaks are still in existence.

Walking along Timber Creek (west of Shady Oaks Bridge) in March of 1994, I was saddened by the devastation necessary for the construction of the new Highway 30 Expressway ("Expressway") around Marshalltown. The sight of the disappearing, tree-lined bank was heartbreaking. The larger trees were already gone, and many more had red bands indicating that they would be removed. New sandbars jutted from the opposite side of the stream bed, and it was evident that beavers had been at work. Many small tree stumps looked like sharpened lead pencils.

Perhaps the noisy birds were happy and unaware of their vanishing habitat or scolding about the loss of their former homes. Due to the great flood of 1993, the banks of Timber Creek had eroded where they weren't rick-racked with rock. The Creek was carved out deeper and wider; and according to a representative of the Department of Natural Resources, this phenomenon will continue.

I recalled finding the remains of a small structure and some kitchen utensils, broken glass, etc., in this sequestered spot not far from the Highway a few years ago. This was the same location where two fellows, a bachelor and a Civil War Veteran, had lived together in the 1930s. Their sanctuary was almost completely concealed by the growth of trees. These men bought bayrum at the dimestore in Marshalltown. It consumed all of the time, energy and money of these otherwise likable fellows. The use of this product caused great concern to their loved ones and eventually caused their demise.

As a result of the new Expressway, Shady Oaks Road (Lincoln Highway) will be the only hard-surfaced, at-grade access to Marshalltown. All other access roads will be via cloverleaves.

The gloomy combination of farmers wanting to grow more corn and the ever-increasing flow of traffic is resulting in the destruction of Iowa's beautiful, irreplaceable

trees. This continual loss is our great sacrifice. Only stumps, brush underfoot and open sky above mark where graceful trees once stood. I mourn the empty spaces.

In June of 1995, sections of the narrow, sunken road bed (Shady Oaks Road) outlined by tall, waving grass were like tunnels. It was a sight to behold. I almost expected to see a Model T loom into sight as I rounded the next curve. Rain and warm soil temperature had encouraged the roadside growth.

The contrast of a well-groomed, grassy area drew my attention to a pair of unique culverts near the Don Searle home. These visible tubes are held fast by concrete walls which extend several feet on either side of the road. They represent the design signature of the 1920s.

Driving our three-mile stretch of the old Lincoln Highway has never been an unpleasant experience, except for the potholes. It is, however, scheduled to be resurfaced in 1997. Leaving town via East Olive, or turning off busy Highway 30, the welcome change of pace on Shady Oaks Road allows peace of mind.

**The Rainbow Arch Bridge
Crossing a Bridge is Always an Event
1918 - 1990**

*Every day we literally cross bridges,
Burr bridges and drive over bridges;
A transitional passage in music is a bridge,
Connecting major sections of a composition.*

Through the years, man has developed many ingenious ways of carrying loads over rivers and other roads. A structure that crosses rivers, ravines, railroads or other roads and carries vehicles or people is defined as a bridge. Types of bridges are beam, arch and suspension. In all three types, the foundations must carry the full weight of the bridge and the traffic on it. Because of their shape, arched bridges are in compression and thrust outward on their end supports. Every bridge is a challenge, as heat expands them, and cold contracts them. One weak part can wreck a whole bridge. Just as workmen arch their back to carry heavy loads, so do bridges.

The first bridges were developed for wagons to use. At that time, the state road system was

the railroad. The next phase was for vehicular traffic. The 1900s brought the use of reinforced concrete for building bridges, and the arch style was the first. Bridges built between 1910 and 1920 were designed with technology based on load carrying, economy of construction, durability and appearance, much the same as they are today.

On August 6, 1912, James Barney Marsh patented an innovative new concrete bridge. He incorporated certain new and useful improvements in reinforced arch bridges, as concrete alone was not able to resist tensile stresses without steel reinforcement. With the main structural members of the rainbow arch held above the roadway, Marsh pointed to greater waterway clearance than that provided by concrete deck arches. The bridges were so named because the trusses formed a half-circle, or rainbow. Dozens of the economical, medium-span rainbow arch bridges were built in Iowa between 1910 and 1930, and hundreds were designed and marketed across the Midwest.

Marsh was born in North Lake, Wisconsin, in 1854 and moved to Fredericksburg, Iowa, at the age of 18. It is believed that he attended Bradford Academy for one year. The Academy, which began in the 1860s, was similar to an early-day junior college. Although it was a popular educational institution, it only existed for 12 years; and the structure still stands across from the Little Brown Church (Nashua).

Young Marsh received his Bachelor of Mechanical Engineering (BME) degree in 1882 from what is now Iowa State University. His first job with the Des Moines office of the King Iron Bridge Company (based in Cleveland, Ohio) was to design and supervise the erection of iron structures throughout Iowa.

Marshall County began using concrete for bridge construction on a regular basis in 1910. An extensive bridge building program culminated in March of 1918 when the supervisors awarded contracts for over 75 concrete structures. County Engineer, H. O. Hickock, was still planning two of the largest spans to be undertaken by the County since the turn of the century.

One of the two largest spans planned by Hickock would carry a township road across Minerva Creek, and the other was to be east of Marshalltown in LeGrand Township and carry the Lincoln Highway over North Timber

Creek. The bridge over Timber Creek would replace the existing 1884 Rock Valley Bridge which had heard the clippety clop of horse-drawn vehicles. Since 1914, the designation of the Lincoln Highway brought an increase in vehicular traffic; and a few years later the County deemed it necessary to replace the bridge.

Marsh, now President of Marsh Engineering in Des Moines, was contracted to design rainbow arch spans for the two bridges. A competing contractor submitted a bid for a different type of bridge. The County elected to erect a truss for the Minerva Creek site and the patented, concrete arch for the Rock Valley site. The contract was awarded to Alexander and Higbee of Des Moines for \$16,200, and the County paid Marsh Engineering Company \$810 for the drawings. As strange as it may seem, young Marsh had supervised the construction of the first bridge over North Timber Creek in 1884 (it was an 80-foot Pratt through truss). Marsh Engineering continued to design and build rainbow arch bridges well into the 1930s.

After the County purchased land for the new site from Matilda and Corydon Bramer Moore, excavation for the bridge abutments began immediately. It was located 100 feet south of an existing truss, over a newly dredged channel of North Timber Creek.

On March 5, 1918, an article in the TR stated, "Labor is important and the most uncertain item. Contractors included in their cost figures for labor prices ranging from \$3.50 to \$4.50 a day for common labor, with probably an average of \$4. None of them are at all certain where all the labor is to be recruited. Cement was figured on a basis of about \$2.10 a barrel delivered."

Most bridge workers were able to find accommodations, such as light house-keeping rooms. One housing problem arose which was typical of the day. The head engineer for this notable bridge was a black man. He sought assistance in locating housing among leaders in Marshalltown, but they were unable to find a solution to his dilemma. Being a resourceful and responsible person, the head engineer simply pitched a tent on the banks of Timber Creek.

The May 9, 1918, TR stated, "The absence of cost of maintenance on the arch, as compared with painting the steel truss and

depreciation of the latter bridge together with the prettier design influenced the board to select the arch."

The construction went well throughout the summer. By November, the arch ribs and floor beams had been poured. Construction sites had to have warning lights in 1918 just as they do today. For a time, Rainbow Bridge had no side rails, and many lanterns were lit and hung for the safety of folks who used this road. I was told that, just for the sport of it, one teenage girl was daring enough to take a lantern from the site.

The handsome structure was completed by the end of the year. It is interesting to note that the bridge consisted of a single, 110-foot span carried some 26 feet above the streambed. The roadway width was just 20 feet between curbs, and the arches rose 22 feet at the crown. For those of you who were daring enough to walk over the rainbow arches as children, you may now realize the danger involved. When you combine the distance from the top of the arches to the streambed, one slip would have caused quite a fall.

The massive structure consumed 522 cubic yards of concrete and 32,040 pounds of reinforcing steel, totaling over 720,000 pounds.

Located on the Lincoln Highway, this would mark the first and only major bridge that Marshall County would build specifically for America's first transcontinental route. This information is documented by the Department of the Interior.

According to the July 25, 1919, LeGrand Reporter, "The widely heralded U. S. Army Motor Transport Convoy passed through Marshall county Thursday (July 24th). . . . the procession started in the morning and motors of one kind or another kept coming until well along in the afternoon.

"Trucks of all descriptions were in the convoy - big, little, light, medium and heavy, kitchen, oil, and water tanks, Red Cross ambulances, machine shops, searchlight, etc.; passenger cars, motorcycles, Goodyear and Firestone advertising trucks, ad infinitum.

"It was an imposing spectacle and marks the beginning of a new era in road building - the federalizing of a system of national highways." The Convoy passed over the

Lincoln Highway, traveling through LeGrand and crossing the new Rainbow Arch Bridge.

Gilbert Chinn (deceased 1995) saw three bridges over Timber Creek: The 1884 Rock Valley (\$2,150), the concrete, single-span Rainbow Arch (\$16,200) and the new five-span Shady Oaks Bridge (\$361,500). When he was a lad, the present Highway 30 west of Shady Oaks Junction was a horse path.

The Rainbow Arch Bridge achieved the status of a local landmark. It was a historical reference to a time period, the years of World War I and the original Lincoln Highway. Many a fisherman cast their lines through the rainbow or sat under its shade, but the Bridge was destined to succumb to the ravages of time.

The Rainbow Bridge served the Lincoln Highway and Highway 30 for nearly three decades. New Highway 30 was constructed a quarter-mile south and bypassed Marshalltown. After 69 years, the deteriorating bridge became partially dysfunctional in March of 1987. It was closed permanently on December 7, 1987 (D Day).

In 1994, Iowa had a total of 11 Marsh arch bridges remaining — all on county roads: Seven in Boone County, one in Dallas County (just off Highway 169 near Perry), one in Kossuth County and two in Calhoun County.

The nicest one is a three-span arch which was kept near its replacement. It is now located in a Calhoun County park near Lake City. Most of Marsh's structures have succumbed to excessive rusting and cracking due to large quantities of steel encased in porous concrete. His invention marks a memorable early experiment in concrete engineering.

In 1921, Marsh designed the longest rainbow arch bridge ever, spanning the south Platte River at Fort Morgan, Colorado. This structure consisted of 11 fixed-arch spans, with a total length of 1,110 feet. In 1930, Marsh surpassed this by 100 feet on the seven-span Cotter Bridge, over the White River in Arkansas.

J. B. Marsh, 82, died June 26, 1936, in Des Moines. His success and claim to fame was Iowa based.

End of the Rainbow

Newspaper articles and letters could have been copied to tell the factual story of the demise of Rainbow Bridge; but I want you, the

reader, to know the actual story and how I lived it. Living a drama can engulf your life.

Some statements that stayed with me were from the Des Moines Sunday Register on November 15, 1987, "... the bridge (Rainbow) will be replaced by a concrete culvert and a road will be built to reroute traffic while the work progresses."

A response from Tom Reasoner of Ames was published in the TR, "It would be sad enough to lose such a visible engineering feat, sadder still to lose a historical reference to a time and place — the years of the First World War and the original Lincoln Highway; but saddest of all, perhaps, to lose a county landmark. Too much of a region's past is present in this bridge. I doubt a 'culvert' could ever achieve such a status. . . . I knew it well as a bright spot along Highway 30."

Reading the word culvert brought a visual picture to my mind. Would it be like fording the streams at the Ledges State Park? Can you imagine the depth of such a culvert in July of 1993? Perhaps it would have been at least 15 feet under the raging Timber Creek. I was relieved to learn that a culvert, or a so-called "Indiana Jones" bridge, was not a consideration.

A month later in the "From Other Times" column of the TR, a notice from the Year 1948 was printed, "County Engineer J. F. Arthurs, Jr., announced an Army surplus bridge over Minerva Creek in the northwest part of the County had been installed and was open to traffic." Was this another possibility? Are any such bridges still available?

Warren B. Dunham, Director of the Iowa Department of Transportation ("DOT"), said, "... bracing would clog the crick." If the bridge eventually fell in, would it be the final resting place of the fallen arch? Statements like this made my adrenalin flow a little faster and caused me to crusade for a new bridge.

Over the three years of wondering, waiting and watching, many scenarios flashed through my mind. I felt a tremendous responsibility to our residents and their well-being. Shady Oaks is my home and my livelihood. I needed to protect it. I became like a mother hen protecting her brood of chicks.

It was close to my heart and up to me to restore Shady Oaks to its former dignity. It was a place always known for its pleasant

The Lincoln Highway and Rainbow Arch Bridge

surroundings and accessibility to both Highway 30 and Marshalltown. Words seemed to diminish this importance. Some revelations cost you dearly; and until now, I have never revealed any of the repercussions we encountered.

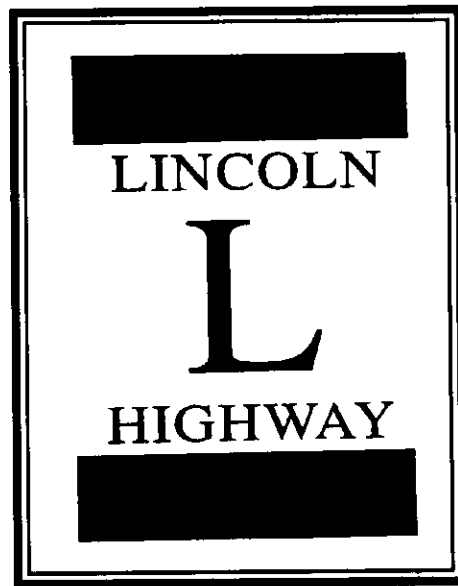
Some of our renters wanted to move out immediately when the road closed; others tried to sell their homes. Once, I felt cheated when an older home couldn't be moved out; and two desirous, prospective renters had to be told that even though a lot was vacant, they couldn't move in. They were unable to make the sharp curve from the north. It seemed this exact time frame was the last "Hurrah" for homes that would fit our vacant lots. That's the way the ball bounced, but I couldn't give up.

Fraser Design of Loveland, Colorado, assembled the data to develop the HAER (Historic American Engineering Record) on Rainbow Bridge at a cost of \$4,554. It was a requirement of the State Historical Preservation Officer. The Record then had to be approved by the National Park Service Division of the Department of the Interior. Copies were then filed with the Library of Congress, the State Historical Society of Iowa and the Marshall County Engineer's office. The Iowa DOT also retained a copy. Much red tape was involved in disposing of the bridge. It is important to note that locally no group came forward in an effort to preserve Marshall County's last Rainbow Bridge.

Although the Rainbow Arch Bridge is extinct, its predecessor, the Rock Valley Bridge, was dismantled and reassembled twice and still carries local traffic on a secondary Marshall County road. It is the oldest wagon bridge in Marshall County. Of the thousands of Pratt trusses erected in Iowa in the late 19th century, few predate its 1884 construction date.



This design was used at the entrance of Shady Oaks during the early stages of development as a campground and cabin camp.



This design is one of the many used to mark the route of the Lincoln Highway. Its colors were red, white and blue.