

Some Experiences as a County Surveyor

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Before relating some incidents in connection with my early experiences in the county Surveyor's office, it may be desirable to relate how I came to be a county surveyor in the first place. Surely it was farthest from my thoughts until a few short months before it happened. Prior to World War I, the electrical industry seemed to be about the most attractive vocation and, like so many others, I chose this field. For some time previous to and during the war I was in charge of the electrical equipment, including the operation of the overhead trolley propelled interurban cars and the telephone lines of the company. Like so many others of that period, I was optimistic enough to envision a great network of interurban lines connecting all parts of the country with a means of rapid transportation. We were even then experimenting with high voltage, high speed, electric trains.

But with the war going on and the great impetus being given to the automobile and truck industry, it seemed that within a matter of months a new method of mass transportation was being born. Near the close of World War I a great system or method of transportation found itself engulfed in the dying convulsions of a great industry. We, who had thought we were all set for our life work, with retirement benefits thrown in, suddenly found ourselves about to be the victims of progress. So it was either make new alignments in step with the times or go on the scrap heap. I chose to enter a new field of engineering.

About this time I was asked if I would be interested in being appointed deputy surveyor for our county. I accepted the appointment because it seemed to me that with the close of the war and the tremendous increase in automobile and truck production, there would be a great popular demand for improved highways which would make the office of county surveyor one of the more important county offices. Our county surveyor of that time also saw the possibilities and resigned to go into highway contracting, and I am happy to relate that he made good and retired pretty well-to-do. Before this time most of the down-state

counties had been constructing improved highways under the so-called three-mile road law, which had been enacted some years previous. But as our county was strictly rural and blessed with unlimited supplies of gravel, our people had never up to this time let any contracts for improving any highway under plans and specifications prepared in advance by the county engineer (as he was beginning to be referred to by this time). One petition had been filed under the three-mile road law, but this had been promptly eliminated by remonstrating taxpayers who resented the idea of a bond issue to finance road construction.

Such was the picture at the close of World War I. But by now public sentiment was demanding that a start be made in constructing a highway system which would be more suitable for the rapidly changing means of transportation. The State Legislature in the 1919 session enacted the county unit road law whereby the improvement petitioned for would be financed by the issuance of county bonds. So it happened that the first improved road by contract in our county was a county unit road. As I had succeeded to the office of County Surveyor and Engineer, the petition was referred to me for plans and specifications. What I knew about road construction at that time wouldn't have made a very big book, but I worked closely with the county commissioners, as has always been my custom. Under the county unit road law the commissioners designated the type of road surface which would be built. Several county-wide meetings were held and a tentative system was planned which would eventually connect all our towns and villages with improved roads. We were fortunate enough to have one commissioner with vision and foresight enough to see the importance of some hard surface construction, and it was decided that each town in the county should have a section of concrete pavement. I am proud to report, some 37 years later, that this policy was adhered to and that these pavements are still doing 100 percent service, with a minimum of repair and practically no replacement.

Our First Concrete Pavement

The state highway system was also being formulated at the same time, so that the newly created state highway commission was not in a position to be of much help. It was under such circumstances that the first concrete pavement ever to be laid in our county was constructed. The Portland Cement Association was greatly interested and cooperated fully in the preparation of plans and specifications. It was about this time that I first became acquainted with Prof. Ben Petty. Ben was a young professor at that time and had chosen to start on a campaign for better roads for Indiana. As you are all aware, he's still at it.

Professor Petty came into our county on my invitation, and we went out to a far corner of the county to a farmers' institute. Professor Petty made one of his first major addresses for improved roads. He still often mentions that trip. I recall that one citizen became so enthusiastic that he wanted to know why the delay—why the speeches—he wanted action. The slogan at that time was "Get us out of the mud." Today it is "Get us out of the dust." Both are excellent slogans.

We had adopted what was then considered standard specifications for concrete, including washed gravel and sand for the coarse and fine aggregates, the concrete to be a one part cement, two parts sand and three parts crushed limestone or gravel graded to proper sizes, with sufficient water to make a workable mix, and no reinforcement except dowels at the construction joints. The pavement was to be eight inches thick in the center and six inches thick at the outer edges, on a flat subgrade.

Our first contract, besides having ten and one-half miles of screened gravel surface, also had about two-fifths of a mile of this 16-foot concrete and about one-fifth of a mile of 26-foot concrete, with curbs and wire mesh reinforcement. At that time the Portland Cement Association was advocating the construction of integral curbs and slab all cast in one operation. Accordingly, our specifications were set up that way. Of course the contractor, like ourselves, had never before built any concrete pavement.

It was late in the fall (October) when we came to this part of the contract. We had two Portland Cement Association engineers on the job for advice and to assist in the supervision. The reinforcement to be used was standard wire mesh. Considerable time and effort were spent in making the forms to be used. Everything was all set, so we thought, when the operation began. But our troubles also started at the same time. It was impossible to keep the forms from rising as the concrete was placed inside them. Also, the mix had to be made very wet and fluid so the mesh could be placed at proper depth in the concrete. This condition went on for a day or two and then, showing no improvement, I took the bull by the horns, so to speak, and instructed the contractor to build 6-inch by 18-inch straight curbs. These curbs, so constructed, are still in place. I learned a few things about curb and gutter work on this first job and had no further trouble because, on future jobs, I constructed the curb and gutter first and then the pavement. The pavement was finished in due time. The concrete was struck off evenly and checked with a straightedge, then covered with straw for the customary 21-day curing period.

But our troubles were not over—yet. When the 21 days had elapsed, we proceeded with much pride to unveil our new pavement. But, when it was uncovered, we discovered to our amazement that we had the most natural looking waves cast in concrete which one could imagine. It was cast, and we couldn't change it. It was solid, although riding over it was like riding a roller coaster. Of course, everyone connected with the project got the blame, and I don't believe the public was ever convinced that we hadn't actually finished the pavement with the waves built in. The contractor had to be the goat, as the Board took one thousand dollars off the contract price as a penalty for his so-called faulty construction. The public used the road just the same and it eventually became and still is a segment of U. S. 20, carrying some of our country's heaviest cross-country freight. A few years ago the state highway commission was persuaded to give it a bituminous coat to smooth out the waves. I might add there has been no failure of any part of this pavement constructed 35 years ago this coming fall. We must live and learn bit by bit. We went on with our county unit plan and placed concrete pavement in all our towns, and with no further curb trouble or slump trouble either.

State Inspection

Most of you will recall that the county unit road law contains a provision that the county may have state highway inspection if a proper petition requesting such inspection is filed with the state highway commission. A new commissioner took office while one of these roads was being built. This road also had a section of concrete pavement as well as about 11 miles of gravel. To satisfy this commissioner, a petition was filed with the commission requesting state inspection. Accordingly, in due time, an inspector arrived and reported to my office that he had been assigned to the job of inspector on the concrete section of this particular road. I provided him with the specifications and went with him to get located on the work. This was during the so-called "Roaring Twenties" when the noble experiment of national prohibition was in full bloom. Of course, our county as well as every other community had its quota of bootleggers and illicit booze joints. Home brew was in high order. One day when the contractor was pouring the concrete pavement the commissioners and I rode out to this project to see how the work was progressing. To our amazement, as we neared the mixer we saw a man on his hands and knees crawling along after the finishers. On closer observation we discovered that it was our inspector. When we asked why he was following the mixer on his hands and knees,

he managed to answer that he had to get down close so he could inspect the concrete. It was evident that he had also been inspecting one of our home breweries and taken on too many samples. Personally I didn't feel any particular anger with him, but agreed that it wasn't a very good example for an inspector to set. Needless to say, it was "curtains" for any further state inspection on our county roads.

Now just a word concerning the early difficulties in procuring sufficient right-of-way widths. Fortunately in the early days of our road improvement projects we had a county attorney who had the foresight to see the necessity of sufficient right-of-way. With this support, I succeeded in making the surveys for 50-foot rights-of-way and got them legally established as such. It might be interesting to relate that as late as about the year 1926 a member of the state highway commission and a resident of an adjoining county came out with a public statement that a 40-foot right-of-way was sufficient for any state highway or county road. So, as you can see, the world does progress.