BITUMINOUS ROAD MAINTENANCE.

By Wm. G. Tonkel,
Allen County Highway Superintendent.

Bituminous maintenance and construction meant nothing to me a few years back, for I was not sold on the idea of a bituminous macadam road and could not speak favorably of it. However, after inspecting roads in the northern part of Ohio, noting the condition and abundance of this type of construction and after giving it a great deal of thought and study I came to the following conclusions:

1st. That a bituminous type of road was a success.

2nd. That in order to be a success the initial construction should be done by capable, experienced contractors.

3rd. That in order to insure the proper smoothness and binding qualities a carpet coating should be put on the next year after construction.

4th. That the cost including maintenance of this type of highway was considerably less than I had thought.

To fully explain these conclusions I will say that bituminous roads are a success, for in this tour we traveled miles and miles without getting off this type of road construction, each road being level and smooth. Evidence of its success was that more construction of this type was being petitioned in that locality, for surely nothing is a success until it has public opinion behind it. When petitions are circulated for a road it means that public opinion is in favor of its construction and its worth.

It is necessary the next year after the job is completed to go along with a pressure tank and put on a coat of tar or asphalt and allow this to settle, say two or three hours, and then finally cover up lightly with stone chips or pea gravel.

One of the most important features of maintenance on any type of road is that of side-ditching and drainage. The side ditches on every road should be deep enough that at no time will the level of the water reach the bottom of the metal on the road.

Whenever holes appear on the road they should be carefully swept out, all the loose particles removed and the holes patched prior to the carpet coating. The traffic will then immediately iron out these patches and when the carpet coating is put on each particle of stone will be held firmly in place and become part of the compacted metal. None of this repair should be done when the road is wet for water does not mix well and serves as a resistance to the binding qualities of either tar or asphalt.
The shoulders and berms should always be compact and conform to the crown and grade of the road so as to take the surface water off the highway as quickly as possible. They should be compact enough to serve as a curb to the edge of the pavement. A great deal of trouble has been experienced in what is known as ravelling on the sides of the highway. This can be eliminated by putting down a heavy base on both sides of the road and rolling into the berm coarse aggregate of stone.

Not every superintendent can qualify himself as a road superintendent by being just a democrat or republican. In order to improve himself for this position he should school himself to the requirements of his work, because I honestly believe that sooner or later road superintendents will be licensed and called upon to pass a regular examination. In maintaining county roads, a superintendent has in his power perhaps the greatest investment in his county. I don’t believe you can show me where any one single institution in your county has the capitalization that the combined capitalization of the county roads would be. Therefore, why shouldn’t the county demand even greater qualifications from its manager, i. e. the superintendent, than the private institution would demand of its general manager or general superintendent?

CONSTRUCTION OF BITUMINOUS MACADAM ROADS AND STREETS.

By Orin M. Darling,
Engineer, Allen County.

There are five distinct steps in the construction of the bituminous macadam surface, which substantially are as follows:

1st. A layer of coarse aggregate is spread upon the foundation. This coarse aggregate may consist of broken stone, mine tailings or slag, but preferably broken stone should be used. The stone must be clean and free from dust or an excess of flat or elongated pieces. It should have a percent of wear of not less than six (6). When tested by means of laboratory screens, it should be uniformly graded between the following limits: passing two and one-half (2½) inch screen 95 to 100%, passing one and one-quarter (1¼) inch screen 0 to 15%. This layer of crushed stone should have a thickness of 2½ inches after rolling.

2nd. After the coarse aggregate has been spread to the required thickness, it should be dry rolled with a three wheeled roller weighing not less than 10 tons. The rolling should start longitudinally at the sides and proceed towards the center of the pavement, overlapping on successive trips by at least one-half