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SERIES I

MINERAL RESOURCES OF INDIANA

ROAD MATERIALS

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ROAD MATERIALS

Rock used for road construction in Indiana is obtained from glacial deposits of sand and gravel, from deposits of residual gravels, and from quarries in the bedrock formations. The glacial deposits include several different rock types, chiefly quartzites and granites, with gneiss, limestone, schist, and basic igneous rocks present in smaller quantities. They occur in irregular and discontinuous deposits along streams, and in moraines, eskers, and outwash plains, in the glaciated portions of the state. Over most of northern Indiana, with the exception of the Upper Wabash Valley, the mantle of glacial drift is so thick that no bedrock is exposed and the only road materials available are sands and gravels.

Residual gravels are chiefly cherts, concretions, and sandstone and limestone pebbles derived from weathering of the bedrock. Geodes from the Borden and Harrodsburg are sometimes used. Residual gravels occur chiefly along stream courses in the unglaciated portions of the state. They are generally not very satisfactory for use as road metal. Some sand and gravel, of glacial origin, is found in the unglaciated portions of the state along streams where it has been transported from areas covered by the glaciers. In 1935 Indiana produced 4,450,885 tons of sand and gravel, valued at $2,293,749.00.

In the southern part of Indiana, limestones are used principally for road construction. Some sandstones are used locally, but they are generally inferior to limestones. Rocks belonging to formations of Ordovician, Silurian, Devonian, Mississippian, and Pennsylvanian age are quarried and crushed to furnish stone for all types of road construction. The Ordovician limestones, found in the southeastern counties, are usually interbedded with shales. They occur as thin beds from two to ten inches thick, along stream valleys in Decatur, Dearborn, Ohio, Switzerland, and in the eastern part of Jefferson, Fayette, Franklin, Ripley, Union, and Wayne counties. They vary considerably in physical characteristics, but are generally suitable for road metal.

Silurian limestones occur in southeast and central-north parts of Indiana, and are extensively quarried in the latter area. They vary much in chemical and physical composition, being rather massive limestones and dolomites in some places, and soft, shaly layers in others. The Silurian of southern Indiana includes the Brassfield, Osgood, Laurel, and Louisville limestones; the northern Indiana Silurian comprises the Liston Creek, Huntington, Kokomo, and Kenneth limestones. The Huntington is very often dolomitic and very porous. In northern Indiana, outcrops are found at Bluffton, Delphi, Huntington, Kentland, Logansport, Monon,

Portland, Wabash, Warren, and other places along major streams. Decatur, Ripley, Jennings, Jefferson, and Clark counties, in southern Indiana, contain the major outcrops of Silurian limestones.

Devonian limestones are found in southeastern Indiana and include the Jeffersonville, Beechwood and Silver Creek formations. The Beechwood and Silver Creek are not very well suited to use as road metal, but the Jeffersonville is quarried in several localities. It is a bluish to gray limestone, fairly hard, and is from fifteen to fifty feet in thickness.

The Mississippian strata, occurring in the central part of southern Indiana, contain some of the best stone for road materials. Several limestones are suitable, including the Harrodsburg, Salem, St. Louis, St. Genevieve, Beaver Bend, Reelsville, Beech Creek, Golconda, and Glen Dean. The last five are all Chester limestones.

The Harrodsburg lies between the Lower Mississippian Borden formation and the Salem limestone. It is thin and irregularly bedded, attaining a thickness of 90 feet in places. Quarries are located principally in Putnam, Owen, Monroe, Lawrence, and Washington counties.

The Salem (Indiana-Oolitic) limestone is one of the best known building stones in the United States, but it is too soft to be very suitable for use as road metal. Planer dust from the mills is used to some extent as a top dressing and cementing material for harder stone. The proximity of the Harrodsburg and St. Louis limestones to the Salem obviates the use of the latter stone.

The St. Louis and St. Genevieve limestones are probably the best suited for use as road materials of any stone in Indiana. They are hard, tough, and have good cementing qualities. The layers are of compact, massive, dark blue to gray stone, with considerable chert in places. Quarries and crushers are located in Putnam, Owen, Monroe, Lawrence, Orange, Crawford, and other counties. The two formations include 250 to 300 feet of limestone.

Chester limestones in Indiana include: Beaver Bend, 12 feet thick; Reelsville, 5 feet thick; Beech Creek, 14 feet thick; Golconda, 20 feet thick; and Glen Dean, 10 feet thick. All these limestones are separated by beds of shale and sandstone. They are quarried and crused in several counties in southwestern Indiana.

Pennsylvanian limestones are generally local in occurrence, thin, and contain considerable percentages of clay and sand. They are usually not more than five feet thick. Quarries have been opened in several counties in southwestern Indiana and the stone is used locally.

Sandstones are generally not used for road metal, since they are very low in wearing qualities. One sandstone, however, the Basal Pennsylvanian Mansfield formation, contains a gravelly or conglomerate phase at its base which is very good for use in construction of gravel roads. Gravel roads constructed from the Mansfield are among the most durable roads of this type in the state.

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