

## THE ARMY ENGINEERS AS ROAD BUILDERS IN TERRITORIAL IOWA

By *W. Turrentine Jackson*

Settlers crossing the Mississippi River to secure the rich farm lands of the Iowa prairie discovered that their greatest need was for passable roads leading westward from the river towns. In 1838, shortly after the organization of a territorial government separate from that of Wisconsin, the Legislature turned its attention to road building. Knowing that many Iowa citizens were willing and anxious to work on the public roads, the Legislature required three days' service from every male between the ages of twenty-one and fifty. These citizen labor gangs, so often present in frontier communities, were to be directed in Iowa by road supervisors within the county, township, or other unit of local administration.<sup>1</sup> Because of their limited numbers, the Iowa pioneers realized, however, that individual efforts and those of the Territorial Government would prove insufficient in building roads of any great length or durability. Like many of the territories and states east of the Mississippi, Iowa looked to the Federal Government for assistance.

Both the advisability and constitutionality of the Federal Government's road building program had been debated for many years in the United States Congress.<sup>2</sup> Some members of Congress, unwilling to approve federal aid for roads within states, raised no objection to financial assistance for the territories. The proponents of federal participation in the construction of internal improvements soon learned that the objections of their Congressional colleagues were at a minimum if a military justification could be presented. With national defense an avowed purpose of road building, the assignment of the responsibility for construction was given to the Secretary of War. Congress was generous in appropriating sums of money for roads that were designated as "military roads" ostensibly for the transportation of men and supplies to the forts and reservations on the frontier,

<sup>1</sup> *Laws of the Territory of Iowa, 1839-1840*, 115.

<sup>2</sup> Jeremiah Simeon Young, *A Political and Constitutional Study of the Cumberland Road* (Chicago, 1904), *passim*.



particularly in case of an outbreak of Indian hostilities. Emigrants moving westward toward and across the Mississippi River often found these the most desirable, if not the only, improved land routes for transporting their belongings to a new home.

Within the War Department organization of 1838, road building assignments were allotted to the Corps of Topographical Engineers. This small Army unit, totally comprised of officers, was primarily responsible for the federal road building program in territorial Iowa. The agency had known an interesting history. As early as March, 1802, Congress had created the Corps of Engineers within the United States Army. The functions of the Corps were somewhat confused in 1813 when a law was passed attaching several officers to the Army General Staff as "topographical engineers." Eight years later President James Monroe separated these engineers from the General Staff and recognized them as a bureau within the Corps. In 1831 Congress made the topographical engineers a separate bureau of the War Department directly responsible to the Secretary. No attempt was made at that time to specify the duties of the Corps of Topographical Engineers, as distinct from those of the Corps of Engineers, although the chief, Colonel John J. Abert, had assurances from John H. Eaton, Secretary of War, that the topographical engineers were to take charge of all civil works, including harbor and river improvements and road construction. Lewis Cass, the new Secretary of War appointed in 1831, favored a specification of the duties of each engineering group but doubted that the topographical engineers had sufficient personnel to assume responsibility for all non-military engineering activities of the Army.

Nevertheless, Abert, always aggressive, reported to Congressional committees that his Corps, which was called upon to make the surveys and submit plans and estimates for civil works, should also be assigned the duty of construction. The already overworked Corps of Engineers registered no protest. Shortly after assuming office in 1837 as Secretary of War, Joel R. Poinsett clarified the hitherto confused organization by issuing a regulation that the Corps of Engineers would confine its activities to fortifications for defense, and all new works not of a military character would be assigned to the Topographical Bureau. Works of civil improvement already under construction were also to be transferred, and the Bureau thereby acquired control over some seventy projects including breakwaters, harbors, rivers, and roads. In August, 1838, the Topographical



Engineers had reached maturity as an organization and were intensely busy.<sup>3</sup>

Although the river and harbor improvements of the Engineers were more extensive than their road building during the next decade, numerous roads connecting the settlements or forts on the frontier were surveyed, and a sizeable number were constructed.<sup>4</sup> In 1839, the Federal Government's road construction program was concentrated in Michigan and the territories of Florida, Wisconsin, and Iowa.<sup>5</sup>

On the last day of 1838, W. W. Chapman, delegate to Congress from the Iowa Territory, presented a resolution in the House of Representatives instructing the Committee on Roads and Canals to consider the expediency of constructing a road from Dubuque to the Missouri state line passing through as many county seats as practicable and terminating in Van Buren county.<sup>6</sup> Legislation was accordingly drafted appropriating \$20,000 for this project and on March 3, 1839, President Van Buren signed the bill authorizing Iowa's first "military road." This law did not locate the terminus of the road but specified that it should meet the Missouri line at the point best suited for extensions to Jefferson City and St. Louis. Congress required that the route first be opened throughout; then, within the limits of the appropriation, improvements toward its completion were authorized. An effort was to be made to connect the seats of justice of the

<sup>3</sup> W. Stull Holt, *The Office of the Chief of Engineers of the Army, its Non-Military History, Activities, and Organization* (Baltimore, 1923), 1-11. "Annual Report, Bureau of Topographical Engineers, December 30, 1839," *Senate Document 58, 26 Cong., 1 Sess. (1839-1840)*, 10-12. In this report Abert traces the history of the Corps.

<sup>4</sup> The work on the National Road had been their noteworthy achievement. Differences of opinion, in and out of Congress, on the constitutionality of federal road-building within state boundaries and a squabble over the actual route to be followed led to curtailment of appropriations for this project. In 1843, the Topographical Engineers' Chief complained that no allotment for the construction had been made since 1838. See Young, *Political and Constitutional Study of the Cumberland Road*, 20-30, 37-47.

<sup>5</sup> At this time seven roads were under construction in Michigan that had been started prior to 1837 when Michigan was in territorial status. Most of these converged upon Detroit, and the great thoroughfare between Chicago and Detroit was the major road undertaking of the Engineers. In Wisconsin, several roads led away from Fort Howard, on Green Bay: one to Milwaukee and another to Fort Crawford at Prairie du Chien. The appropriations for five Florida roads connecting the larger settlements in that Territory had not been expended due to Indian hostilities. For details, see "Annual Report, Bureau of Topographical Engineers, December 30, 1839," *Senate Document 58, 26 Cong., 1 Sess.*, 21-31.

<sup>6</sup> *The Congressional Globe*, 25 Cong., 3 Sess. (1838-1839), 7:85.



several Iowa counties along the route and at the same time to select the best sites for bridges or ferries over the Iowa streams, provided always that the length of the road was not greatly increased. The Secretary of War was to supervise the construction by granting contracts for specified work or by any other method which he might determine. Congress also appropriated \$5,000 at this time for the "opening and construction of a road from Burlington through the counties of Des Moines, Henry and Van Buren, towards the seat of Indian agency on the river Des Moines. . . ." <sup>7</sup>

The task of constructing these roads was assigned to the Topographical Engineers by the Secretary of War as a routine matter. Abert selected R. C. Tilghman to serve as a civilian "agent and engineer" of the Bureau <sup>8</sup> to superintend the Iowa internal improvements. He was authorized to name assistants for the survey, to choose the place for his headquarters where mail could reach him, and to make requests for the requisite instruments and supplies. The Bureau recommended that once the roads were surveyed the construction should be placed under contract with stipulations to pay for the work after inspection. Tilghman was warned not to make larger expenditures than the appropriations and to produce the most serviceable roads possible with the funds available. His compensation was to be \$4.00 a day with an allowance of 12½ cents a mile for transportation. <sup>9</sup>

While Tilghman was en route to St. Louis, Abert wrote the Quartermaster Department requesting tents and supplies for the surveying party and deposited \$3,000 to the credit of Tilghman in the Bank of the State of Missouri in St. Louis. Of this first deposit, \$2,000 was allocated to the Military Road, \$1,000 for the Agency Road. <sup>10</sup> Tilghman wrote from St.

<sup>7</sup> 5 *United States Statutes at Large*, 352.

<sup>8</sup> Tilghman had written the department on May 6, 1838, from Baltimore, requesting an engineering assignment. Register of Incoming Correspondence, Topographical Engineers, War Department Records. With the exception of a few scattered items, the incoming correspondence to the Bureau prior to 1850 can not be located. There are preserved, however, the valuable bound Registers of Letters Received which give the date and a brief summary of the nature of each communication received. An alphabetical list of addressers accompanies each volume. All incoming letters cited are summarized in the Register located in The National Archives.

<sup>9</sup> Abert to Tilghman, March 16, 1839. Outgoing Correspondence, Topographical Engineers, War Department Records. Copies of letters written by the Bureau are available in The National Archives in bound letter books arranged chronologically. As all correspondence and manuscript reports used in this study are in The National Archives, further reference to the location of materials will be omitted.

<sup>10</sup> Abert to Tilghman, April 1, 1839.



Louis on April 28, 1839, that his address was to be Burlington, Iowa, and a month later he was in that Iowa river town making estimates for the work to be accomplished during June and July.

The essential supplies, including surveying instruments, arrived from Washington the second week in June. From the middle of June until August, Tilghman was in the field with the surveying parties.<sup>11</sup> Periodically the Bureau of Topographical Engineers forwarded funds,<sup>12</sup> and Tilghman kept Abert informed through the monthly progress reports which he was instructed to prepare.<sup>13</sup> Finally on August 9 he forwarded to the Bureau for approval the contracts which he had made for the construction of a portion of each road.<sup>14</sup> Early in September Abert deposited the last \$7,000 of the appropriation for the road from Dubuque to the northern Missouri boundary to Tilghman's credit in St. Louis.<sup>15</sup>

In October Tilghman requested permission to return to Baltimore for the winter<sup>16</sup> and the Bureau granted his request with the understanding that he would prepare his drawings and reports before the close of the year. If he considered it desirable to have one of his assistants remain to supervise the roads during his absence the Bureau desired the selection of R. W. Burgess.<sup>17</sup> Abert, in writing Burgess of his new position, stated, "As the roads under your charge are constructed for the convenience of the public, such portions of them as may be completed can be opened for travel."<sup>18</sup>

Tilghman prepared large maps showing the line of the roads which he had surveyed and the topographical features along the route. The map of

<sup>11</sup> Tilghman to Abert, May 24, June 12, 1839.

<sup>12</sup> Abert to Tilghman, July 3, 1839; Major William Turnbull to Tilghman, August 2, 1839. Major Turnbull was acting for the chief during the month of August. \$5,000 was deposited for the Dubuque-Missouri boundary road on July 3, \$6,000 more on August 2. The remaining funds for the Agency Road were deposited in sums of \$2,000 on each date.

<sup>13</sup> According to the Register of Incoming Correspondence, Tilghman reported on June 30, July 8, August 9, September 26, October 20, 1839. None of these reports has been found. Apparently Abert did not recognize any of these communications as a definitive report because on December 30, 1839, in preparing his own annual report he stated, "The report of the officer has not yet been received."

<sup>14</sup> Tilghman to Abert, August 9, 1839.

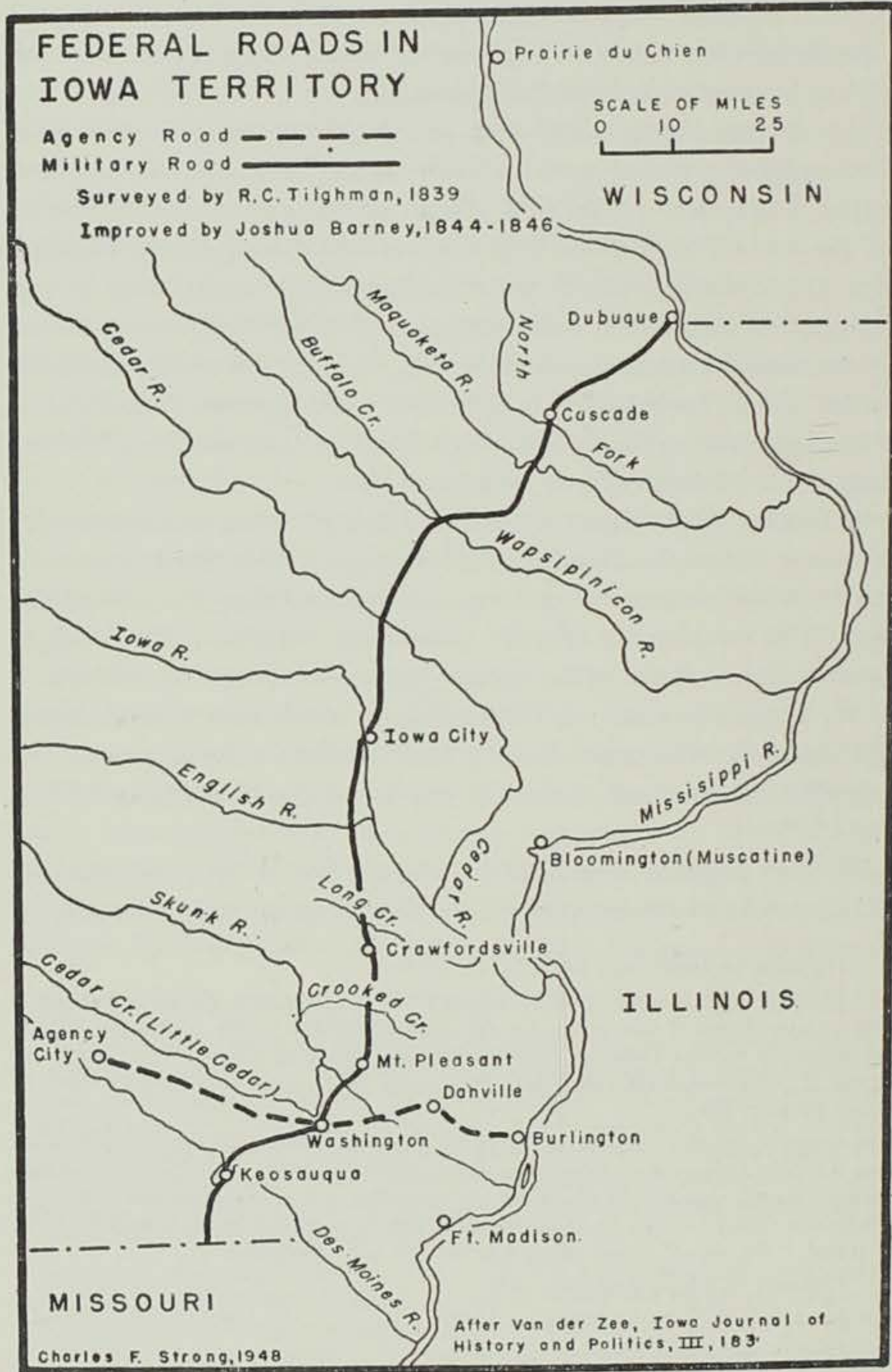
<sup>15</sup> Abert to Tilghman, September 3, 1839.

<sup>16</sup> Tilghman to Abert, October 3, 1839.

<sup>17</sup> Abert to Tilghman, October 23, 1839.

<sup>18</sup> Abert to Burgess, February 25, 1840.







the Dubuque-Missouri boundary road is in seven sections, approximately four by two and one-half feet each, and that of the Burlington-Agency City road in four sections of equal size.<sup>19</sup> Although his final report was published, the field notes which he forwarded to the Bureau were never printed and have disappeared from the records of the Corps.<sup>20</sup>

According to Tilghman's report, the Military Road to the northern boundary of Missouri "commences at Dubuque, and passes through a ravine at its southern extremity, called 'Dirty hollow,' to the prairie. . . ." From there the surveyor located the route in this manner:

after crossing two branches of Catfish creek, [it] follows a dividing-ridge to the Cascade falls of the north fork of Maquoketah, (distance twenty-five miles from Dubuque,) having crossed Prairie creek and Whitewater; from the Cascade falls it follows a high dividing-ridge to

<sup>19</sup> These maps are available in the Division of Cartographic Records, The National Archives.

<sup>20</sup> The Register of Incoming Correspondence, Topographical Engineers, does not record the receipt of any report or notes, other than financial accounts, from Tilghman after his arrival in Baltimore. Several references are made to the report by Abert, who probably received it personally in Washington. On March 20, 1840, Abert forwarded a copy of "Mr. Tilghman's report in reference to roads in Iowa" to Burgess and told him that Delegate Chapman of Iowa wanted no change made in the locations of the previous season. Burgess acknowledged its receipt on April 10. On July 6, 1840, he likewise forwarded a second copy of Tilghman's report to Captain W. A. Guion who was the officer responsible for the roads and to whom Burgess reported in St. Louis. This report, prepared in Baltimore and dated February, 1840, was forwarded by Abert to the Secretary of War, Joel R. Poinsett, and was finally published, at the request of Chapman, as *Senate Document 598*, 26 Cong., 1 Sess. (1839-1840).

As early as 1850, the Bureau began to receive letters requesting copies of Tilghman's field notebooks to assist in settling land ownership problems in Iowa. Tilghman wrote T. J. Lee of the Bureau on January 14, 1850, "Yours on the 7 inst. inquiring for the notebooks of the Surveys of Roads in Iowa, has just been received. I cannot at this distance of time, recollect with certainty, what was done with them; but have no doubt, that the proper disposition was made of them, to wit: that they were turned over to the Bureau at the time the sketches of the routes were sent in — It is possible, however, that they may have been turned over to Capt. Guion who succeeded me in charge of these works, and to whom the balance on hand of the appropriation was paid over." On February 1, 1854, Tilghman wrote Abert, who had inquired about the survey notes, "I received a letter on the same subject a few years ago to which I replied, and I desire now to repeat that the notes and maps made for them were taken by me to Washington and delivered to the Bureau of Topo. Engrs., on being relieved of said duty. The balance of the funds were turned over by me to Capt. Guion of Balto. and it may be, that the missing notes were afterwards placed in his possession. . . . If so, Mr. Burgess may possibly give some information in regard to them." These letters, with others, relative to the missing records, will be found in the Incoming Correspondence, Topographical Engineers, War Department Records, The National Archives.



the south fork of Maquoketah, and thence the main dividing-ridge to the Wapsipinicon, having crossed Warmley creek, Kitty's creek, and Fawn creek; the line crosses the Wapsipinicon (forty-eight miles from Dubuque) at the mouth of the Buffalo fork, and follows a ridge to the summit at Russel's; thence over a rolling prairie to Cedar river, which it crosses about seventy miles from Dubuque; and thence to Iowa City (the seat of government) on the Iowa river, having crossed Indian creek, Rapid creek, and several inferior streams: crossing the Iowa river at the seat of government, the line passes over a prairie to Harris's creek, Old Man's creek, and thence to Davis's creek, along a ridge, having crossed English river; thence over a level prairie to Mount Pleasant, (the county seat of Washington county,) having crossed Goose creek, several branches of Long creek, Crooked creek, and some smaller streams; from Mount Pleasant the line follows a ridge to Skunk river, which it crosses at Hughes's ferry, thence to Little Cedar, and over a level prairie (passing through the town of Washington and the head of Bratting Grove) to a ridge leading to Keosauqua, a flourishing town on the Des Moines river, and seat of justice of Van Buren county.<sup>21</sup>

After completing the survey, Tilghman had employed Lyman Dillon of Cascade to plow a furrow along the surveyed route from Iowa City to Dubuque as a guide to the contractors. Starting at Iowa City, Dillon used a large breaking plow drawn by five yoke of oxen, and under the guidance of the Army engineer made a furrow some eighty-six miles long connecting the territorial capital with the Mississippi River town. It was the longest furrow on record. Cooking utensils and other provisions were carried in a covered wagon drawn by two horses, and at the close of each day's plowing Dillon and his driver slept in the wagon after turning the animals out to graze on the open prairie. The details of this feat have provided one of the most interesting stories told by pioneer Iowans.<sup>22</sup>

<sup>21</sup> Senate Document 598, 26 Cong., 1 Sess., 2-3. For a diagram of the route of this road see map accompanying this article; also see, Jacob Van der Zee, "The Roads and Highways of Territorial Iowa," *THE IOWA JOURNAL OF HISTORY AND POLITICS*, 3:183 (April, 1905). The name of the town of "Washington" was later changed to "Hillsborough" to avoid confusion with present-day Washington to the north in Washington County. See *History of Henry County, Iowa . . .* (Chicago, 1879), 555.

<sup>22</sup> Numerous accounts of this incident have been printed. For example see F. M. Irish, "History of Johnson County, Iowa," *Annals of Iowa* (First Series), 6:107 (April, 1868). Charles Negus, "The Early History of Iowa," *ibid.*, 8:106 (April, 1870); Benjamin F. Gue, *History of Iowa* (4 vols., New York, 1903), 1:197; Jacob Van der Zee, "The Roads and Highways of Territorial Iowa," 220-21; Irving Berdine Richman, *Joway to Iowa, the Genesis of a Corn and Bible Commonwealth* (Iowa



Upon the completion of the furrow, construction was concentrated on this sector of the road, and various contracts were given local residents to improve segments. The Langworthy brothers of Dubuque, Edward, James, and Lucius, were granted the contract to make the road from Dubuque to the Cedar River.<sup>23</sup> At the end of the season Tilghman reported that the timber along the route was cut out for forty feet and that twenty feet had been grubbed. At the numerous wet places the road had been ditched, and most streams were bridged. At Prairie and Whitewater creeks and at the Wapsipinicon River, stone abutments were built to make the bridges more permanent. This road was regarded by the Army engineer as the most important in the Territory.<sup>24</sup>

The Army engineer described his 1839 survey of the Agency Road as follows:

Leaving Burlington at a stake in the road opposite a blacksmith's shop, the line follows a ravine inclining to the north to the prairie; on reaching which, it approaches the township line, along which it runs until within a few miles of "Skunk river," when, the ground being very much broken, the line inclines to the north, and follows a ridge to the crossing of Cedar creek; thence, along a ridge, to the mouth of Alud creek, and thence along the valley of the Skunk river to Smith's mill; crossing Skunk river at Smith's mill, the line follows a ridge to a ford of Prairie creek; thence, over a prairie, to Little Cedar, crossing Williamson's creek and a branch of Cedar. After crossing Little Cedar, the line follows the Fort Madison road to the town of Washington; thence, across a flat, wet prairie, to the head of Lick creek; and thence, along a river, to the Indian agency on the Des Moines. . . .<sup>25</sup>

This road, running from Burlington to the vicinity of present-day Ottumwa, was seventy-six miles in length. After completing the survey, Tilghman concentrated his construction work on the twenty-mile section between Burlington and Skunk River. Bridges were built over streams when necessary, wet sections of the prairie were drained by ditches, hills graded, and, when the road passed through wooded areas, trees were felled and stumps

City, 1931), 217; Benj. F. Shambaugh, *The Old Stone Capitol Remembers* (Iowa City, 1939), 210-11; John E. Brindley, *History of Road Legislation in Iowa* (Iowa City, 1912), 52.

<sup>23</sup> Shambaugh, *Old Stone Capitol Remembers*, 211.

<sup>24</sup> Tilghman to Abert, "Report on the survey, location, and construction of roads and canals in the Territory of Iowa," *Senate Document 598*, 26 Cong., 1 Sess., 3.

<sup>25</sup> *Ibid.*, 2. For a diagram of the route of this road see map accompanying this article.



grubbed. This section of Iowa was without roads, and Tilghman thought the federal road construction project was of great importance to the emigrants moving westward from the Mississippi to settle in the Des Moines River valley.<sup>26</sup>

In 1839, the majority of the immigrants coming into Iowa from Illinois were obliged to use a road from De Hagues, Illinois, to Burlington. The three-mile stretch immediately east of the river opposite Burlington was a low, swampy marsh which provided harassing difficulties and delays to the traveler and the mails. Burlington citizens raised \$2,500 to improve this sector and the Congress appropriated an equal sum.<sup>27</sup> Tilghman spent both appropriations on an embankment leading from the bluffs opposite Burlington to De Hagues.

During this season Tilghman had also considered ways and means for improving the mail route from the Missouri boundary to a point between Dubuque and Prairie du Chien. A preliminary survey convinced him that the road was so circuitous that no funds should be expended until it was relocated. Between Dubuque and Davenport the road attempted to connect all the small settlements along the river. Tilghman recommended the saving of ten miles by constructing a direct general mail route with the smaller river towns being connected by feeder lines.<sup>28</sup> The Congressional allotments were exhausted, however, and no additional funds were in prospect. Tilghman realized that the federal road construction project in Iowa under his supervision was therefore terminated and his contract with the War Department fulfilled. He left the Territory to prepare his official reports to the Chief of Topographical Engineers and to seek additional professional employment.

Thus, in a single year, the Federal Government had launched four road projects serving the new Iowa Territory. In each case the funds allotted were inadequate to complete the construction. On December 23, 1839, the Legislative Assembly of the Territory of Iowa adopted a memorial to Congress requesting an additional \$20,000 for the Military Road. The Legislature pointed out that although the course was surveyed the entire distance, lack of funds had stopped construction at Iowa City, only half

<sup>26</sup> *Ibid.*, 2.

<sup>27</sup> 5 *United States Statutes at Large*, 352-3.

<sup>28</sup> Tilghman to Abert, "Report on the survey, location, and construction of roads and canals in the Territory of Iowa," *Senate Document 598*, 26 Cong., 1 Sess., 3.



way to the Missouri line. The additional sum requested, which Tilghman had assured the Iowa lawmakers was sufficient to complete the road, was justified because this "laudable work" was "not only beneficial to the Territory, but also to our nation, for the transportation of mails and the conveyance of munitions of war, which is of great importance, situated as this Territory is upon the borders of an Indian country."<sup>29</sup>

Prior to the receipt of Tilghman's report, the Bureau Chief likewise realized that the Congressional appropriations were insufficient to construct satisfactory roads, and presented estimates for additional funds in his *Annual Report*. The Military Road from Dubuque, he thought, would be 170 miles long and to build what was known as a country road would cost \$68,000, or \$48,000, in addition to the original appropriation. The Agency Road, roughly estimated at 70 miles, would cost \$23,000 additional.<sup>30</sup>

Tilghman's estimates were not as high: \$6,407 would complete the Burlington-Agency City road; \$21,246 the Dubuque-Missouri boundary road. Ten thousand dollars was the amount recommended for the De Hagues Road and for the mail route along the Mississippi.<sup>31</sup> The last two estimates were no higher because the state of Illinois had made an appropriation for the former construction and there was an unexpended balance of the federal funds for the Missouri boundary-Prairie du Chien improvement. No appropriations for Iowa roads were made by Congress during

<sup>29</sup> *Senate Document 95*, 26 Cong., 1 Sess. (1839-1840). The memorial was signed by Edward Johnson, speaker of the Iowa House of Representatives, and S. Hempstead, President of the Council. Governor Robert Lucas forwarded copies to the Iowa Delegate in Congress, the Secretary of War, the President of the Senate, and Speaker of the House.

<sup>30</sup> "Annual Report, Chief of Topographical Engineers . . ." *Senate Document 58*, 26 Cong., 1 Sess., 30.

<sup>31</sup> Tilghman to Abert, "Report on the survey, location, and construction of roads and canals in the Territory of Iowa," *Senate Document 598*, 26 Cong., 1 Sess., 4-8. Tilghman's estimates were specific. The line of the Agency Road was divided into five sections. From Burlington to Skunk River only \$900 was needed; from Skunk River to Williamson's Creek, \$1,425; from Williamson's Creek to Little Cedar, \$1,500; from Little Cedar to Lick Creek, \$1,300; from Lick Creek to the Indian Agency, \$700. Within each section exact estimates were made for bridging, grading, ditching, leveling, and filling. The Military Road was divided into six sections for the purpose of making estimates. From Dubuque to Iowa City, \$3,700 was needed for bridge construction; from Iowa City to English River, \$3,910; from English River to the west branch of Long Creek, \$2,200; from west branch of Long Creek to Crooked Creek, \$2,285; from Crooked Creek to Mount Pleasant, \$1,450; from Mount Pleasant to Washington, \$4,175; and from Washington to Keosauqua, \$1,575. The greatest expense along this road was to be the bridging of streams.



1840, but at the end of the year when Abert submitted his estimates of funds needed in 1841 he revised his previous request to conform with Tilghman's estimates.<sup>32</sup> He notified Congress:

In consequence of the want of appropriations, there has been but little done, during the last season . . . under the direction of this bureau. Our efforts have been limited to the preservation of the works and property, and to such repairs as the small balances on hand would enable us to make. Such of the public property as was perishable and liable to be lost, and for which fair prices could be obtained, has been directed to be sold; while property of a different character has been stored for preservation.<sup>33</sup>

At the close of this year, the Iowa Territorial Legislature adopted another memorial to Congress requesting a \$10,000 appropriation for the construction of a road from Bloomington (Muscatine after 1849) to Iowa City. No military road was available for the transportation of arms and munitions of war from the depot at Rock Island westward to the Dubuque-Missouri boundary road, a distance of seventy miles. The legislators thought the most practicable method of supplying the inhabitants along the frontier near Iowa City with essential arms to defend themselves against Indian hostilities was to ship by water from Rock Island to Bloomington, a distance of thirty miles, and then overland for another thirty miles from Bloomington to Iowa City. Augustus C. Dodge, Iowa's new delegate to Congress, was urged to request this combined land and water route.<sup>34</sup>

The Twenty-seventh Congress in its three sessions, 1841-1843, turned a deaf ear to appropriation requests for Iowa road construction. The next Congress passed a bill on June 15, 1844, approving \$5,000 for the construction and repair of bridges on the Agency Road and \$10,000 for the same purpose on the Military Road.<sup>35</sup> During July, Joshua Barney of Baltimore was selected as agent of the Topographical Engineers for the

<sup>32</sup> "Report of the Chief Topographical Engineers" in Report of the Secretary of War, 1840, *House Document 2*, 26 Cong., 2 Sess. (1840-1841), 174.

<sup>33</sup> *Ibid.*, 172.

<sup>34</sup> *House Document 53*, 26 Cong., 2 Sess. (1840-1841). This memorial, approved on December 18, 1840, is signed by Thomas Cox, Speaker of the House of Representatives and Mort. Bainbridge, President of the Council, Iowa Legislature.

<sup>35</sup> 5 *United States Statutes at Large*, 670. This law also included a \$7,500 appropriation for the improvement of Dubuque harbor provided, upon survey, a permanent improvement could be completed for that sum making it possible for the largest river steamers to land at Dubuque at all seasons of the year when the river was open.



Iowa improvements and was ordered to go immediately to Dubuque for a preliminary survey before the close of the summer. His salary was set at \$100 a month plus two cents for each mile of travel while inspecting the road situation.<sup>36</sup>

Barney found the road surveyed by Tilghman five years before no longer used in many sections and most of the bridges washed away. He reported to Abert that it was useless to spend money on the Agency Road beyond the Little Cedar Creek because it had been abandoned and other roads to the Sac and Fox Agency substituted. A suggestion that funds would be spent on improving bridges on one of the new routes brought a speedy reply from the Topographical Bureau, stating that the Secretary of War had decided the funds must be strictly applied to the Agency Road. Operations were to be suspended on that part of the road which was abandoned.<sup>37</sup>

After several reports from Barney, the War Department realized that the situation was somewhat different in the field from what had been anticipated and ordered the agent to make a detailed estimate of the needed repairs on the bridges along each route. In making the estimates he was to use his judgment in locating the bridges for the greatest advantage, considering both security and cost. However, reasons were to be given for all departures from the 1839 survey.<sup>38</sup> Barney notified Abert that by his instructions he assumed the Bureau presupposed bridges had been built which were in need of repair but in reality, on the Agency Road, the only vestiges remaining were the abutments of a bridge once built over Mud Creek. The remaining stone could be used only in reconstruction work since the original span had not been long enough and, in his opinion, the abutments should occupy different positions. He did not consider it necessary to alter the site of any previous bridge except on the Little Cedar. Beyond the Little Cedar, he reported, all of the streams could be crossed without bridges. However, should future use of the road be extensive enough to justify bridges, they could be constructed with a few logs. Barney concluded his report on this western segment of the road by saying, "Since the survey was made by Mr. Tilghman, the country has been in parts improved, land has been taken up, farms located and fenced in, and

<sup>36</sup> Abert to Barney, July 11, 1844.

<sup>37</sup> Abert to Barney, September 6, 1844.

<sup>38</sup> Abert to Barney, November 2, 1844.



the inhabitants have substituted roads which appear better to answer their purposes than that located in the first instance."<sup>39</sup>

The agent recommended that eight major bridges be built on this road between Burlington and the Sac and Fox Agency, ranging from a 20 foot span over Williamson's Creek at a cost of \$150 to a 375 foot structure over Skunk River costing \$6,700. The aggregate cost of bridging would be \$11,915. Because his examination of the road came hurriedly so late in the season all estimates were listed as *approximate* for constructions in *probable* locations. In each case, Barney had considered the quality and proximity of timber and stone to the places where the bridges were required. The most suitable timber was white oak; no pine could be obtained unless brought down the Mississippi in rafts at a prohibitive cost. The masonry was to be dry rubble work built of the stone nearest each location.<sup>40</sup>

The general condition of the Military Road was only slightly better. The only bridges constructed by Tilghman still standing were over the south fork of Catfish Creek and those over Prairie and Whitewater creeks. The bridge over the Wapsipinicon, considered the major construction of 1839, had disappeared; even the abutments and the pier had been swept away. Barney recommended a slight alteration of the route to provide better sites for crossing the south fork of the Maquoketa, the Wapsipinicon, the Iowa, and the English rivers. The expense for bridging streams on this road was to be far greater than that for the Agency Road. Suitable bridges over the three major rivers, the Cedar, Iowa, and Skunk, would each cost from \$6,800 to \$9,400. The engineer thought that drawbridges would be most useful on the Cedar and the Iowa, and the expense for these would be even greater. The aggregate cost for construction of seventeen bridges was estimated at \$37,525. Barney reported that it was his intention to invite proposals for the construction of each of these bridges and to make a selection based upon the reasonableness of the bids and the necessity for construction, keeping all expenditures within the limits of the appropriation. He also suggested that there were many impassable sloughs between the Maquoketa and Iowa City which needed to be drained and, if authorized,

<sup>39</sup> Barney to Abert, November 21, 1844, "Roads in Iowa," *House Document 28*, 28 Cong., 2 Sess. (1844-1845), 2. This report was transmitted to the House of Representatives by the Secretary of War in answer to a House Resolution of December 26, 1844, requesting information.

<sup>40</sup> *Ibid.*, 2-3, 7-8.



a small part of the appropriations could be advantageously spent for this work.<sup>41</sup>

This report was read by appropriate committees of the United States Congress and at the close of its session a bill was passed appropriating an additional \$5,000 for improvements on the Agency Road and \$8,000 for the Military Road. Five thousand dollars was also allocated for the construction of a road from the Mississippi bluffs opposite Bloomington to Iowa City, somewhat in accordance with the request which the Territorial Legislature had first made in 1841.<sup>42</sup> This law was approved on March 3, 1845.<sup>43</sup> Very little of the appropriation for 1844 had been spent by Barney, and the combined amounts made possible some of the bridge construction which he had recommended at the close of the 1844 season.<sup>44</sup>

During March, 1845, Barney renewed operations on the Military Road, receiving contracts for building bridges and petitions from Iowa residents relative to changing sections of the route.<sup>45</sup> The Bureau invariably approved the contracts for bridges and masonry which he recommended as well as the changes in the route, but warned him to secure the right of way at all stream crossings, where the adjacent lands belonged to individuals, before any bridges were commenced.<sup>46</sup> Each individual change had to be approved in Washington and rough sketches of the old and new locations were to accompany each request.<sup>47</sup>

In April, Barney turned his attention to the Bloomington-Iowa City road and was soon convinced that the small appropriation could be spent most advantageously opposite Bloomington at the bluffs on the east bank of the Mississippi. The Bureau reported that the wording of the law was such that the money could be expended on the road between the bluffs and the river, even on the east side, both at Bloomington and at Burlington on the Agency Road.<sup>48</sup> Barney knew that the construction would be in Illinois

<sup>41</sup> *Ibid.*, 3-7.

<sup>42</sup> 5 *United States Statutes at Large*, 778.

<sup>43</sup> *Ibid.*, 742.

<sup>44</sup> The failure to make expenditures in 1844 is largely explained by the fact that Barney, with the aid of Captain T. J. Cram, was busy examining the Dubuque harbor to determine whether permanent improvements could be made with \$7,500. The law of March 3, 1845, appropriated an additional \$7,000 for this work.

<sup>45</sup> Barney to Abert, March 1, March 20, 1845.

<sup>46</sup> Abert to Barney, March 19, 1845.

<sup>47</sup> Abert to Barney, April 26, 1845.

<sup>48</sup> *Ibid.*



and not Iowa and wrote the Bureau for further information. Abert replied, "It is as necessary to provide for the passage of sloughs, either by embankments or bridges, as it is to secure safe means of crossing rivers and other streams upon the line of the road; use your own judgment in each case."<sup>49</sup> Bridges and causeways were to receive first attention and, if any funds remained, road repairs might be considered.

Although Barney's annual report had not been received when Abert prepared his report in November, the Bureau had sufficient information to summarize developments. The masonry for the abutments of bridges on the Military Road was for the most part complete, but the construction of some bridges was delayed due to the mill owners' failure to deliver the lumber. At Burlington the two and one-half miles between the bluffs and the east bank of the Mississippi were reported to be submerged from two to eight feet at times of high water. The situation at Bloomington was similar where five bridges and twelve hundred yards of embankment were to be built. Out of Iowa City, according to reports, this road traversed a low, wet prairie for ten miles, and from about ten miles out two territorial roads had been constructed to the east, one to the north of a direct line to Bloomington being the first located, and the second to the south chosen as an improvement. Eighty-six hundred dollars would be needed to complete construction of both routes between the capital and the river.<sup>50</sup>

During December, 1845, Barney was in Washington to discuss the status of the Iowa internal improvements and receive oral instructions. At the Bureau he prepared a synopsis of his previous year's work. Since it had been found necessary to omit the bridging of the Cedar, Iowa, and Skunk rivers because of excessive cost, rude ferries had been established at the crossings. The ice, during much of the year, rendered these ferries useless, and permanent bridges were urgently recommended.<sup>51</sup> The agent thought the northern section of the road between Dubuque and Iowa City of much greater importance than the southern and was more generous in expenditures for its improvement. In all, eighty-seven culverts and bridges

<sup>49</sup> Abert to Barney, May 3, 1845.

<sup>50</sup> "Report of the Chief, Topographical Engineers," in Annual Report of the Secretary of War, 1845, *House Document 2*, 29 Cong., 1 Sess. (1845-1846), 383-4.

<sup>51</sup> Barney to Abert, "Public Works in Iowa," *House Document 98*, 29 Cong., 1 Sess. (1845-1846), 2. Barney had surveyed the Red Cedar again and decided that his 1844 estimate of \$9,400 was inadequate. At least \$14,000 would be necessary. The estimates of \$8,400 for the Iowa River and \$6,820 for the Skunk stood.



were built, totaling 1,860 feet in length. At these improvements 2,423 perches of masonry and 8,501 cubic yards of embankment were also constructed.<sup>52</sup> Only the structure over Big Creek, south of Mount Pleasant, was not completed. The agent emphasized the fact that the section of the Agency Road surveyed by Tilghman west of Washington in Henry County was not used, but since several territorial roads from the western part of Iowa converged on Washington, the section east of the town to Burlington was of greater importance. The Skunk River, which had not been bridged, was the only serious obstacle on the road, but a larger appropriation would be essential before construction on it could be undertaken. The remainder of the funds, approximately \$4,000, would be used at the bluffs, where the contractor was preparing to commence operations the following spring.<sup>53</sup> No work had been done on the Bloomington-Iowa City road when Barney left the Territory, although the contract had been let.<sup>54</sup>

When the Army engineer returned to the West in 1840, he carried orders to report on the condition of the public property left at Quincy, Illinois, at the close of the Tilghman surveys and to sell all usable materials at auction in St. Louis. The funds were to be allocated to Iowa engineering projects.<sup>55</sup>

After his return to Dubuque, Barney prepared a detailed statement for the Topographical Bureau revealing some difficulty with a contractor on the Military Road. Darius Hunkins had been granted the contract for the larger bridges, with the exception of those proposed for the Cedar, Iowa, and Skunk rivers, on the basis of the 1844 appropriation of \$10,000. When the additional \$8,000 became available, William St. John and Alfred Hebard were given separate contracts to bridge smaller streams and sloughs. None of these contracts was fulfilled in the time specified because of extensive illness on the frontier and the lack of lumber. Extensions of time

<sup>52</sup> *Ibid.*, 2-4. Barney prepared a detailed table listing each bridge, with a description including its length and amount of masonry and embanking built.

<sup>53</sup> *Ibid.*, 4-5.

<sup>54</sup> *Ibid.*, 6-7. Barney's estimates for further construction were as follows: Military Road, \$33,175; Agency Road, \$15,180; Bloomington-Iowa City road, \$4,689. These amounts did not include unexpended balances in earlier appropriations.

<sup>55</sup> Barney to Abert, September 7, 1846. This annual report is available in manuscript at The National Archives. The author has been unable to locate the document in published form. Some of the contents were restated in the "Report of the Chief, Topographical Engineers, 1847," *House Executive Document 8*, 30 Cong., 1 Sess. (1848), 667-70.



were granted, but in November, 1845, Barney learned that Hunkins had no intention of finishing the Big Creek bridge south of Mount Pleasant. His contract was cancelled and Hebard was employed to build the bridge. When the agent examined the bridges during August, 1846, all were found to be firmly in position, with no sagging. He reported that all were elevated about the reach of freshets and were likely to remain as long as the material of which they were constructed lasted.<sup>56</sup>

On the Agency Road, Alfred Hebard, the contractor, had built sixteen bridges and seventeen culverts between Burlington and the Little Cedar, totaling 451 feet of bridging, 1,045 perches of masonry, and 2,008 cubic feet of embankment. Some assistance had come, from inhabitants along the route, to increase the number of culverts which could be built for drainage. Upon completion of this assignment, Hebard was transferred to Burlington to build bridges and embankments on the east bank of the river. The agent warned the Bureau:

If this portion of the Agency road is to remain in the condition in which it will be left after the expenditure of the present appropriation it can be of very little use. The Mississippi River in ordinary stages overflows a great portion of the bottom land over which this road is located, and the embankments in their present stage will not make the bridges accessible. During the high stages of water, almost the whole flat for three miles in extent is inundated. . . . The citizens of Burlington and adjacent country have in memorials to Congress and the War Department shown the great necessity for the improvement of this Road.<sup>57</sup>

He estimated that 62,000 yards of embankment should be built to raise the road above high water mark, but the present appropriation would complete only 13,000. An additional \$8,000 was needed.

At Bloomington, William Brownell had the contract for cleaning, grubbing, bridging, and building embankments on the bluffs opposite the town. This work, unlike that at Burlington, was to be completed within the appropriation.<sup>58</sup> In summarizing his operations for 1846, Barney noted the rapid settlement of the country and the increased demand for land in the vicinity of the federal roads.

Before the bridges on these roads had been constructed, persons

<sup>56</sup> Barney to Abert, September 7, 1846.

<sup>57</sup> *Ibid.*

<sup>58</sup> *Ibid.*



desirous of purchasing and settling on land remote from the River were deferred from doing so on account of the constant uncertainty of their being able at suitable times to transport their produce to market. There are very few bridges in the Territory, other than those which have been constructed within the last fifteen months by the recent appropriations of the General Government. . . . In a new country the inhabitants are usually poor, and being but few in number, it is not possible for them to make the improvements necessary to the rapid development of its resources. A few roads judiciously located, as avenues between the principal towns, from the interior of the Territory, with good and substantial bridges over the small streams and impassable sloughs that intersect them, would greatly enhance the value of the public lands, and the increase of sales would more than compensate the Government for the money expended in such improvements.<sup>59</sup>

The United States government accepted its obligation in Iowa, as elsewhere on the frontier, to build roads for defense, for the mails, and incidentally for the settlers. All the requests from individuals, pressure groups, town councils, and the Territorial Legislature could not be met, but the Federal Government was reasonably generous in allocating approximately \$60,000 for Iowa roads between 1839 and 1845. These federal roads were undoubtedly the best constructed and among the most widely used in Iowa during the territorial days. The Topographical Engineers took their assignments seriously, evolving a pattern of procedure in construction. In each case, a civilian engineering agent had been appointed to supervise the work because of limited Army personnel. His first responsibility was a preliminary survey to determine how the appropriation could be spent most advantageously and the preparation of cost estimates for the most urgent and feasible construction. Upon review and approval at the Bureau, building contracts which invariably went to local residents might be let.

The agent continued in his role of supervisor, inspector, and disbursing agent. From his monthly reports and annual summaries of progress in the field, so wisely required by the Secretary of War from all officers and civilian agents in charge of public works, the historian can discover interesting, if minute, details about the building or exact route of a road, perhaps no longer used, or learn of its greater significance in aiding the pioneer settler to build a commonwealth. Certainly these Iowa roads were a vital segment of the transportation network in the Territory.

<sup>59</sup> *Ibid.*