

RESOLUTION No. 3.

JOHN BROPHY.

JOINT RESOLUTION to allow John Brophy an additional compensation for the selection of Salt Springs.

Resolved by the General Assembly of the State of Iowa:

Treasurer of state authorized to pay. That the treasurer of state be authorized to pay John Brophy, out of any money in the treasury not otherwise appropriated, the sum of two hundred dollars for services as commissioner to locate Salt Springs.

Approved December 23, 1848.

RESOLUTION. No. 4.

MAIL ROUTE.

JOINT RESOLUTION for a mail route from Fort Des Moines, to the east or Boone fork of Des Moines river.

Resolved by the General Assembly of the State of Iowa:

Instructions. That our senators and representatives in congress are hereby requested to use their influence for the establishment of a mail route from Fort Des Moines, Polk county, via the rapids on the Des Moines river, in Boone county, to the east or Boone fork of the Des Moines river, in the state of Iowa.

Resolved,

Copies to be forwarded. That the secretary of state is hereby instructed to forward a copy of these resolutions to our senators and representatives in congress.

Approved. Dec. 23, 1848.

[171] RESOLUTION No. 5.

DUBUQUE AND KEOKUK RAIL ROAD.

JOINT RESOLUTION to accept a reconaissance and preliminary survey.

Resolved by the General Assembly of the State of Iowa:

Preliminary survey accepted. That the subjoined reconaissance and preliminary survey of a route for a rail road from Dubuque, in Dubuque county, to Keokuk, in Lee county, in the state of Iowa, be and the same are hereby accepted and adopted. And that our senators be instructed and our representatives in congress be requested to procure from the government of the United States a grant of land to aid in the construction of said rail road in accord-

ance with the memorial of the general assembly of the state of Iowa, approved Jan. 25th, 1848: *provided, however*, that in the permanent location of said road, Jefferson county, may if found practicable, be substituted for Henry county.

Resolved,

Copies to be forwarded. That the governor be requested to forward one copy of this resolution to the senate of the United States, one copy to the speaker of the house of representatives, and one copy to each of our representatives and senators in congress.

Approved January 15, 1849.

REPORT OF THE ENGINEER.

Iowa City, Dec. 4. 1848.

The board of directors for the Dubuque and Keokuk rail road, met at Iowa City, and a quorum being present proceeded to organize, by electing Maj. L. H. Langworthy, of Dubuque, president, P. R. Skinner, esq., of Anamosa, Jones county, secretary, and J. H. Fisher, esq., of Iowa City, treasurer.

The following report of the surveyor and engineer appointed for that purpose. was submitted and accepted:

December 4, 1848.

To Lucius H. Langworthy, President of the board of directors "for the Dubuque and Keokuk Railroad."

Sir:—Having in compliance with my instructions made a reconnaissance of the route from Dubuque to Keokuk, through certain inter- [172] mediate points, with a view to ascertain the practicability of constructing a rail road thereon, I have the honor to offer the following report as the result of my examination:

General Description of the Route.

This railroad is designed to connect Dubuque on the north, with Keokuk, on the south. The former the centre of a great mineral and agricultural district. The latter situated at the foot of the "Des Moines rapids." on the Mississippi, the head of certain navigation on that river.

In this route, the road will pass through the heart of several of the most populous and fertile interior counties of the state of Iowa, now laboring under serious inconvenience, in common with the entire district, west of the proposed improvement, for want of some outlet for their abundant agricultural products.

The work is therefore very naturally regarded as an object of interest to nearly all the eastern slope of the state, and besides accommodating the business in this district, as well as the increased amount and extended area of traffic, which such improvements never fail to produce—it will constitute an important link in the great chain of communication between the eastern and southwestern markets—taken in connection with either of the railroads, in contemplation, from Lake Michigan to points on the Mississippi, near to and opposite Dubuque. One from Milwaukee, the other from Chicago, (the latter now in course of construction) it will complete the chain of rapid communication from the eastern cities to a point on the Mississippi, within

about 180 miles of St. Louis, where the navigation is seldom interrupted by the severity of winter weather.

The length of the route, is a fraction less than one hundred and ninety-six miles.

Particular Description of the Route.

For the sake of convenient reference, the route will be considered in several divisions:

1st division, extending from Dubuque to the White Water creek, a distance of sixteen miles and 4320 feet; commencing at the foot of Clay street, in Dubuque, the route extends westwardly along said street about 3300 feet; then running to the left, enters brick-yard hollow, and following the course of this ravine, attains the summit of the ridge between the city and Cat-fish creek, at a depression indicated [173] by the heads of this and another ravine leading to the creek, at a distance of about $2\frac{3}{4}$ miles. To surmount this ridge, a grade of sixty feet per mile, on a portion of the route, and also, a short but deep cut at the summit will be necessary. Descending from the summit, a short distance by an easier grade, the route strikes an elevated table land, through which are channelled out the deep but narrow valleys of three branches of the Cat-fish creek, all encountered within a space of about two miles—these, together with the numerous lateral ravines, present a broken surface, but with care in adjusting the line of location, and by crossing these at considerable elevation, the cuttings and fillings, though numerous, will be short; for crossing these branches, one bridge of 25 feet and two of 40 feet each, will be necessary; stone for the abutments will be found near the crossings. Crossing the last branch at a distance of about 4 miles from the commencement, the route is then along the general course of this valley, gradually gaining by its slope sufficient elevation to command the dividing ridge between the Cat-fish and White Water creeks; passing over more favorable ground, with moderate grades and no abrupt curvature.

After crossing the ridge, at a distance of about twelve miles, the general course, without serious obstacle, is along the White Water slopes until striking the stream, at a distance of sixteen miles and 4290 feet, where a bridge of thirty feet, at only a slight elevation, will be required.

The most difficult part of the line embraced in this division, and the most expensive of any equal portion of the entire route, will be in the first seven or eight miles.

The topography of the country indicates another route for this division of the road, which on account of the very limited time allowed for my operations, I was unable to examine particularly, but which should not be overlooked in making the surveys preliminary to a definite location of the line. This route leads from Dubuque along the river bluffs by side cuttings to the mouth of Catfish, and then following the general course of this valley to its source, crosses the dividing ridge, and striking the White Water at the termination of the other route.

Second division, extending from the White-Water to the south fork of the Maquoketa, a distance of 17 miles and 2,955 feet.

From the White-Water, the route continues on favorable ground, requiring but moderate grades and gentle curves, without any heavy work, crossing Curran's branch and John's fork, where bridges of twenty-five feet each will be required, then ascending, crosses the dividing ridge, between White Water

and Maquoketa, at the heads of two opposite ravines, where a slight cut will be necessary, it contin- [174] ues on with an easy grade to the north fork of the Maquoketa, and crosses at Cascade, requiring a bridge of one hundred feet at a small elevation. The distance from the White Water to the Maquoketa, is about seven and one-half miles.

After crossing the river the line curves to the left in order to pass by a low summit into the valley of Farm creek, then passing up this valley it gains the elevation of the dividing ridge between the two forks of the Maquoketa, traversing in its course, Bowen's prairie, on very favorable ground, and crossing this ridge, with a slight cutting, it descends the course of a long ravine, without heavy grade or sharp curve, to the south fork of the Maquoketa, where a bridge of one hundred feet will be required. This division extends almost entirely over prairie. The grades can be kept within thirty feet per mile, without unnecessary expense.

Third division, extending from south fork of the Maquoketa, to a point near a summit between the Wapsipinicon river and the Cedar river, a distance of seventeen miles and two thousand five hundred and eighty-one feet. From the Maquoketa the line continues on very favorable ground, crossing successively Story and Kidney's creeks with bridges of twenty-five feet each, then running along the general course of the last named creek, it crosses the dividing ridge between the Maquoketa and Wasipinicon rivers, by the heads of two opposite ravines with a moderate grade, but a sharp cut at a distance of about eight miles, descending with about the same grade, over fair ground, the route strikes Walworth's creek, and continues down its valley to the valley of the Buffalo fork, passing about a mile of rough ground, and crossing the creek twice with quite small bridges, continuing on the left bank of the Buffalo and passing through Anamosa, (county seat of Jones county,) it crosses the Wapsipinicon immediately below the mouth of the Buffalo fork, at a distance of thirteen miles from the commencement. A bridge of two hundred and ninety feet will be required here at a considerable elevation. A short but high embankment will be necessary, extending from the river to the bluffs, on the south side. Materials for the bridge can be found almost at hand. The line after striking the bluff, follows for a short distance the course of the river, then ascending the course of a long ravine, it passes, after encountering some rough ground, by the head of Roton creek, to the summit between Wapsipinicon and Cedar rivers, and terminates this division on very favorable ground. In ascending from the Wapsipinicon a grade of fifty feet per mile will probably be necessary on a short portion of the route. An easier grade could possibly be admitted by substituting a different route from the summit north of the Wapsipini- [175] con by passing into the head of Fawn creek and descending by its valley, crossing the Wapsipinicon so as to strike the valley of Reed's creek, and following its course on the south until attaining the necessary elevation to surmount the ridge. The distance would be, however, greatly increased, and the ground still be broken. This route would leave Anamosa half a mile to the west of the line, and under my instructions I did not consider myself at liberty to consider any route which should not make that place a point.

Fourth division, extending from the termination of third division to Cedar river, a distance of eighteen miles, and one thousand five hundred and twenty feet.

This division embraces a very favorable portion of the route, extend- [ing] over level or gently rolling prairie, through nearly the whole distance. Three small branches of Big creek, and Squaw creek are crossed, requiring small

bridges, within twelve miles of the commencement, after which Indian creek, the largest on this division, is encountered, passing this with a bridge of thirty feet, requiring no heavy work, high grades, or sharp curves. The route continues in a southwesterly direction until the ravines and bluffs of the creek are passed, the route then turns to the south and passing over quite favorable ground, strikes the Cedar river at the rapids, where a bridge of five hundred and thirty feet will [be] required. The facilities for crossing here are not surpassed at any other point on the whole route or on this river.

Fifth division, extending from the Cedar to the Iowa river, a distance of eighteen miles and four hundred and sixty-two feet.

From the Cedar the route takes a southwestern direction across a wide bottom, and ascending the bluff by a ravine, across a low summit without difficulty, and strikes Prairie creek at a distance of about two and one-half miles, where a bridge of thirty feet will be necessary, continuing on about the same course, it gradually ascends the dividing ridge between the two rivers, and passes the summit at the distance of about six miles from the commencement. The ground up to this point being highly favorable, continuing on, in nearly the same direction, over equally fair ground, a further distance of about twelve miles, crossing in this distance four small creeks, requiring an aggregate amount of bridging of fifty feet, when the route curves to the right, (having gained sufficient space to avoid a great number of deep ravines leading to the Iowa river,) and passing over ground somewhat broken, crosses Rapid creek with a bridge of twenty feet, then ascending passes the summit and strikes the head of Ralston's creek, at a distance of about four miles from the Iowa river, following the valley of this creek, the line continues on through Iowa City, and strikes the river about one [176] mile below the town. A bridge of three hundred feet will be necessary to cross this stream. The ground is very favorable on this division until arising within a few miles of Rapid creek, when it assumes comparatively a more unfavorable aspect, and continues so to the termination of the division. The grades can probably be kept below thirty-five feet per mile, without incurring heavy work.

Sixth division, extending from the Iowa river to Mount Pleasant, a distance of forty-eight and one-half miles. After crossing the Iowa river, the route continues on the river bottom two miles, then ascends by moderate grade the side of the bluff, crosses the summit and descends to the valley of Old Man's creek, crossing which with a bridge of forty feet, and another low summit, it strikes the south branch of Old Man's creek, all within a distance of about six and one-half miles.

There will be no difficulty in keeping the grades on this part of the route below the maximum assumed on the first division. Up to this point there will be no heavy work or sharp curvature on this division, and from this point the route assumes a very favorable character, crossing English river at a distance of about ten miles, with a bridge of about one hundred and fifty feet, and ascending without difficulty from its valley, the route is nearly direct to Washington, and for a considerable part of the distance over nearly level prairie, crossing Davis creek with a trifling bridge in this distance, and leaving the town of Washington, the route continues on equally favorable ground until reaching the west fork of Crooked creek, a distance of about three and one-half miles, which is crossed with a bridge of sixty feet, and without any difficulty as to grade or curvature. At a further distance of about two and one-half miles the main branch of Crooked creek is encountered, requiring a bridge of one hundred feet and some extra work near the crossing, thence after ascending from this creek, the route continues

over very fair ground to Mount Pleasant. The only interruption to grades or alignment, worthy of notice, occurs at Big creek, about three and three-fourths miles from the town, and here nothing of a serious nature; a bridge of sixty feet will be required here. This entire division may be considered favorable.

Seventh division, extending from Mt. Pleasant to Keokuk, a distance of forty-eight and one-half miles. On leaving Mt. Pleasant the route inclines to the left, striking the Skunk river below the mouth of Big creek, the descent to the river being facilitated by the valley of this creek; a bridge of three hundred feet will be necessary here. After ascending from the river, the route continues over favorable ground, passing through or near West Point, and strikes the valley of Devil creek near the Mississippi bluffs, and descending by this valley to the [177] bottom, takes nearly a direct course to Montrose, thence down the Mississippi, eleven and one-fourth miles, to Keokuk, without difficulty.

The grades on this division can be kept below the maximum admitted on the northern end of the route, without requiring expensive work.

Another route not differing materially in distance from the one here adopted, presents itself for consideration on this division, viz: from Mt. Pleasant, inclining to the right to meet a feasible descent to the valley of Big creek; crossing this stream and surmounting, by extended curvature, the dividing ridge between the creek and Skunk river; crossing the river and ascending from its valley, by a long ravine, to the general level of the highlands between this and the Des Moines river; thence on very fair ground through or near Salem, and crossing the heads of Sugar or Devil creek; then following the main trace of the dividing ridge between this creek and the Half-breed creek, and finally passing down by the western slope of this ridge.

This route would undoubtedly accommodate a greater range of business in the interior, whilst on the other hand, the greater facility of approaching Keokuk on the first route, together with the consideration that the part of the line between Keokuk and Montrose (around the rapids) could soon be made available, even during the progress of the work on the remainder of the line, would perhaps entitle it to the preference. These are considerations, however, to apply in the definite location of the line, and it will be for the board of directors, after complete surveys, to decide between different routes offering conflicting pretensions for the location.

In concluding this description of the route, it might perhaps suffice for all the purposes for which this report is required, to state the entire practicability of constructing a rail-road of sufficient capacity for all the objects for which it is designed; but as a matter of interest, the cost of construction will be considered.

“Grading.”

The estimates are based upon a gradual road bed of sixteen feet in width, for a single track of rail-way.

“Mechanical Structures.”

These are supposed to be constructed of the best materials, and on the most approved plan. The bridges of wooden frames, on stone abutments and piers; for large spans, the frames to be of “Longs improved [178] patent.”

and for moderate spans, "Town's Lattice." The culverts are calculated for stone, except in a few instances, where the hauling would be great and the embankment but light; in these cases wooden drains are contemplated, with a view of transporting stone upon road to replace them when necessary.

The Track.

The superstructure contemplated in the estimates is of the kind most generally used on rail roads in this country, consisting of "Longitudinal Sills, Cross Sills," and rails, all of timber, the rails surmounted with an iron plate.

The "Estimated Cost" of the road, completed ready for cars, is \$2,071,788.00.

"General Remarks."

The total distance of the route, as examined, is one hundred and ninety-five miles and five thousand two hundred and forty-eight feet.

There is no doubt that the route can be essentially shortened by future examinations, and perhaps be improved in many places; all of which will tend to reduce the estimated cost.

Like all estimates made in this stage of the work, the one here presented must be regarded as only an approximation towards accuracy, though I have endeavored not to fall into the too common error of making it too low.

It should not be forgotten that although the face of the country along the route is generally favorable for a railroad, the *direction* of this route is unfavorable, in as much as it crosses the principal drainings of the country.

Notwithstanding all this, it will be seen from the estimates, that the work is not only practicable but quite feasible.

All of which is respectfully submitted,

THOS. J. McKEAN,
Engineer, Dubuque and Keokuk Rail Road.

[179] RESOLUTION No. 6.

MAIL ROUTE.

JOINT RESOLUTION for the conveying of the mail.

Resolved by the General Assembly of the State of Iowa:

Instructions. That our senators in congress be instructed, and our representatives be requested, to procure the carriage of the mail on route No. 4554, from Dubuque to Iowa City in this state, three times a week, in two horse carriages.

Resolved,

Copies forwarded. That the secretary of state be required to forward one copy of the above resolution to each of our senators and representatives in congress, and one copy to Hon. Cave Johnson, post master general.

Approved Dec. 23, 1848.