

[From the Long Island Star.]

BROOKLYN AND JAMAICA RAILROAD.—We present with much pleasure the following report concerning the contemplated Railroad between Brooklyn and Jamaica. It has already been published in the Long Island Farmer, the editors of which paper have politely furnished us with a copy. We hope the citizens of Jamaica and Brooklyn will be induced upon considering it, to take active measures for carrying the work into effect.

To the Commissioners of the Brooklyn and Jamaica Railroad:

Gentlemen—The results of the survey made at your request, and with a view to determine the route and plan of the Brooklyn and Jamaica Railroad, is respectfully submitted in the following Report and accompanying Draft.

Your familiar acquaintance with the topographical character of the ground along the line will render it unnecessary for me to make any remarks on that subject, further than just to notice such characteristic features as come in connexion with the different locations.

The principal dividing ridge of the island, as it intervenes between Jamaica and Brooklyn, constitutes of course the dividing or summit ridge of the route; and the first question to be solved with reference to a definitive location, is the point at which this ridge shall be passed. The elevation is not so great as to present any serious difficulty on this account, but as the general direction of the ridge is nearly parallel with that of the contemplated road, a latitude of choice is allowed, which comprises six or seven miles from Jamaica westward; and it became necessary therefore to examine every part of this range with care, to determine the line of least elevation and least expense. Two summits of very favorable character in these respects were discovered within the limits mentioned, one at the distance of about a mile and a half from Jamaica, and the other in the neighborhood of the Half-way House, (Howard's tavern,) and two corresponding routes, designated as the northern and southern routes on the draft, were respectively examined and surveyed.

The point of commencement at Jamaica was selected for both routes the same, viz. a point in Flushing Lane, about eighteen chains north of the main street: that point being nearly in a direct line with the eastern part of the village, and on ground extremely favorable for any extension or connection that might hereafter be thought desirable. The ground on the south side was examined, and a trial made, with a view to the same object, but the line proved decidedly inferior in the respects mentioned, besides being much intersected by broken and low ground, which could not but add materially to the expense of construction.

From the point designated the two lines are traced on the same ground nearly out to the Williamsburg turnpike, passing in rear of the different tenements, and over a surface of the most favorable character. After crossing the turnpike, the northern route diverges to the right, and commences a gradual ascent along the face of the hills—the southern route at the same time following the surface in a very slight descent, makes a gentle curvature to the left, crossing the turnpike near Lot's farm, and the grounds of the Union Race Course about midway between the course and the turnpike. It then proceeds in nearly a straight line to the Half-way House, where it just touches the turnpike on the south side, and then turns to the right in a curve of about a mile radius, which brings it to the proper position and direction for crossing the summit. All the ground thus far is singularly favorable for the object in view, and the summit itself presents no material difficulty. A short extra cutting reduces the apex of the graduation to a height of about twenty feet above the town plat of Jamaica, and this is surmounted in both directions by grades not exceeding sixteen feet per mile. The line thus reaches the interval of Bedford, which it passes on good ground, and without any impediment worthy of particular notice.

Between Bedford and Brooklyn a secondary ridge intervenes, commencing at Mount Prospect, south of Parmentier's Garden, and running out in the direction of the village of Williamsburg. Its height is less considerable than the principal ridge already mentioned, but its relative position in the immediate vicinity of Brooklyn precludes in some degree the necessary space for graduating, and we are obliged therefore to cut down sufficiently to bring the relations of height, between the ridge and termination of the line, within the limits of a reasonable maximum grade. Several trials were made at different points along the ridge, for the purpose of determining the lowest and most favorable crossing place; and the line as delineated on the map, crossing the

ridge a little north of the turnpike near Parmentier's Garden, exhibits the decisive result of these trials. If we assume an average grade, from the Brooklyn end of the line to this point, at twenty feet per mile, which, on a line calculated as largely as this might be for the conveyance of passengers, is deemed sufficient, it will make the extreme cutting on the top of the ridge a little more than thirty feet; but it runs out rapidly to O, on Brooklyn side, and to about half the depth mentioned on the Bedford side, which gradually declines to O, before reaching Bedford. With this cutting, the line is brought into the town plat of Brooklyn.

The northern route, which was spoken of as ascending the face of the hills near the Williamsburg turnpike, enters the woods in rear of J. C. Stoothoff's farm, and attains its summit height in about the distance of a half mile beyond. In its approach to this point, as well as in its continuance through the hills, the ground is much broken, presenting a succession of gravelly ridges, resembling pine ridges, with deep isolated hollows between. The extreme height of the summit, however, is not great, and may be surmounted without much extra cutting, with a grade of about sixteen feet per mile from the Williamsburg turnpike; and the descent westwardly is accomplished by a declivity equally gentle.

The general character of the surface on the north slope of the hills is undulating; and the line, after emerging from the ravines of the ridge proper, continues on ground somewhat of this description; and which in construction would require rather a large proportion of cutting and filling. It is believed, however, that the ground on which the route is traced is less objectionable in this respect than that on the right or left—the former being broken into prominent head lands towards the sound, and the latter partaking in some degree of the bolder and more deeply undulating character of the neighboring ridge. In approaching Brooklyn the line in question admits of two different locations—one descending directly towards the Wallabout bridge, and the other tending more to the left, and intersecting the southern route in the neighborhood of Bedford. The latter, although it encounters the deep cut heretofore mentioned, in the ridge near Parmentier's, has upon the whole a decided advantage in point of ground. The Wallabout route having also a considerable deep cut near the head of the Brick Rope Walk—several lesser cuts and embankments in other places, and an expensive embankment and bridge for crossing the Wallabout itself—all which, however, will be exhibited in its proper relation by the estimate.

Assuming for the present the superiority of the branch which unites with the southern route, we are enabled to institute a comparison between the northern and southern routes in point of length, curvature, &c. that is to say, from the point of commencement at Jamaica to the point of confluence near Bedford—indicated on the map by the letter C. The distance between these two points by the northern route proves to be 8 miles and 258 1-2 perches, while by the other it is only 8 miles and 255 1-2 perches—a difference of 3 perches in favor of the southern route. As this is of little consequence in a preliminary location, we assume for the sake of simplicity in what follows, the mean of 8 miles and 257 perches as the length of either route, indiscriminately.

With regard to alignment and curvature, the north route has a total inflexion of 301 degrees in 4 miles and 136 perches, which gives an average radius of about 5000 feet, while the south route has only 110 degrees of inflexion in 3 1-2 miles, which gives a radius of about 10,000 feet. The residue of either line, viz. 4 miles and 121 perches of the north, and 5 miles 97 perches of the south, are straight. The relative expense of the two lines will be shown by the estimate at the end of this report.

I proceed now in presenting the rationale of the location, to state the circumstances which influence its trace through the village of Brooklyn.

Presuming that the Fulton street Ferry is contemplated as the point of ultimate termination, it is shown by the draft that it may be approached in a variety of ways, viz.:

1st. The Wallabout route approaches it, of course, by a line through the eastern and northern quarters of the village;

2d. The Parmentier routes, either of them, may reach it through the same quarters; or,

3d. They may be carried through the southern quarter of the village, and conducted to the proposed termination by a line through Furman street, under the cliff of the Heights; and this last location may either follow the arrangement of the streets, in the

quarter through which it passes, or it may take greater advantage of the ground by a detour to the left, independently of the streets—all which modes of approach are traced on the map.

In speaking of these different routes, the engineer, I presume, will not be expected to present any views other than those of a professional character. So far as choice of location depends upon views of local or relative interest, the stockholders will be the only proper judges—the business of the Engineer being merely to present facts, and such calculations of facility or advantage as are strictly technical.

Conformably to this suggestion, I proceed to speak more particularly of the routes just enumerated.

That called the Wallabout Route crosses the Wallabout itself, most conveniently, about on the line of the present bridge; and at a height of about 20 feet above the water—this height being necessary for elevating the grade as nearly as possible to the summit of the village graduation, which occurs between the bridge and the Fulton street ferry. At the west end of the viaduct the route takes the direction of Jackson street, by a curve of minimum radius, and thence, at the proper position, a similar curve brings it into the line of Water street, which it follows out to its termination at the ferry. Any feasible arrangement of this line will require some alteration of the regulated grades of the village—on the plan proposed, the alteration commences a little above the intersection of Prospect street, amounting to a depression of about seven feet at York street, and of fifteen feet at the intersection of Front; and it appears that these alterations may be managed in the transverse streets without any material public inconvenience. The ground between Front and Water streets on the line of the curve, and to some distance on the latter, including the tenement of J. H. Clarke, Esq., is *unexcavated*, and presumed to be *unregulated*; no account therefore is made of it, except in the estimate of excavation. The interference with this ground however, is the chief objection to this location, as well as to the next following one, though with this exception, neither of them can be considered as interfering injuriously with the rights of private property. The total length of the road by the line thus described, would 11 miles and 32 perches from the starting place in Jamaica to Fulton Ferry.

The route (either of them) which enters the village by the pass near Parmentier's Garden, and approaches the point of termination by the eastern and northern quarters, is the next to be considered. The location of this route, like that of the preceding, is attended with some difficulty, in consequence of the height of regulation to be surmounted, and the diagonal relation of its general course to the system of streets—many of which, in the quarters referred to, are densely built upon. It was suggested by some of the friends of the road that it might in this case take a zigzag direction, with five or seven turns, through the streets of least acclivity; but the objections to such an arrangement are almost too obvious to require remark. A train of carriages may indeed surmount a short inclined plane, graded much above the ordinary maximum, if it have free scope sufficient for acquiring the necessary head way; but in this case the angles would interfere materially with such an operation—rounded as much as they could be, within the limits of the street, they would still have to be passed with a very restrained velocity even by single cars, and a train would scarcely be able to pass at all without manual assistance. The first of them, therefore, that should be encountered on the rise of the plane, would effectually quench all the momentum previously acquired, and probably render the motive power impotent as to any further ascent. Such a location would evidently be illusory as regards a practical connexion with Fulton ferry. Under all the circumstances, I feel assured that the location delineated on the map is the most feasible, if it be not the only feasible one (in this direction) that the case admits of, that is to say—passing down Gold street, and thence by a curve of minimum radius into Water street. It interferes indeed with the tenement of Mr. Clarke, as already mentioned, but in every other part the quantity of excavation and embankment is far less than by any other street line whatever. Its length is no greater than that of a zigzag trace—it has but one rectangular turn, which may be circled by a radius of two or three hundred feet, and it interferes less with the regulated grades than any line with which it could be compared. Assuming it therefore for the case stated, it makes the entire distance from Jamaica to Fulton ferry eleven miles and 230 perches.

The location next to be spoken of is that which passes from Parmentier's to Fulton ferry by the south and west quarters of the village. This may