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MADRAS RECORD OFFICE.

Government of Madras.

Police (Secret) DEPARTMENT.

G.O. No. 691 Press Mis.
135-36

Dated 8 · 3 1867.

Not to be folded or roughly handled

SD

No. 135. Read the following Memorandum from the Officiating Commissioner of Mysore, to the Secretary to Government, Public Works Department, dated Bangalore, 23rd February 1867, No. 6,554-47 :—

Your No. 375-2,951, dated 14th September 1866.

With reference to the above forwards, for the information of His Excellency the Governor in Council, the accompanying copy of a Memorandum No. 690-627 of the 5th instant, addressed to the Executive Engineer, Shimoga Division, by the Chief Engineer in Mysore, relative to the improvement of the Agumby ghaut.

Memorandum from the Chief Engineer of Mysore, to the Executive Engineer, Shimoga Division, dated Bangalore, 5th February 1867, No. 690-629.

1. I inspected the Augumby ghaut to-day* in company with the Executive Engineer, Captain Palmer, whose charge, as will be observed from the annexed eye-sketch, extends from the top to the eighth turn, or about two and a half miles from the top.

* 26th January 1867.

2. The remaining four miles to the foot at Soméshweram, where the ghaut-proper ceases, is under the Madras Department Public Works.

3. From the extremely precipitous nature of the upper or Mysore portion of the mountain face, it has only been with the utmost difficulty, and by blasting through a considerable portion of the line, that the ghaut road has been carried down.

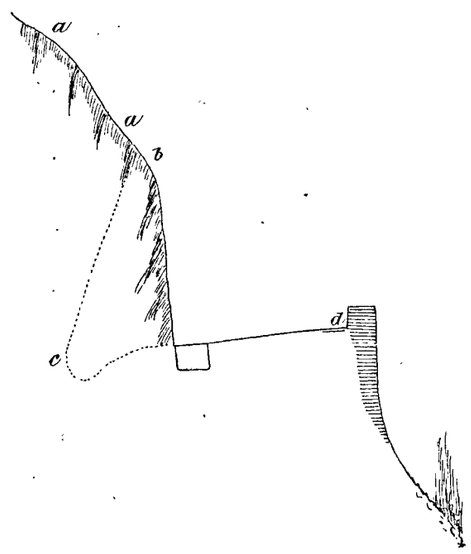
4. The turns at the end of the short zigzags are everywhere brought up against sheer cliffs, and although, as I shall show further on, some slight extension of length, and consequent flattening of gradient, may yet be gained, the work must be extremely limited. The maximum gradient now being about 1 in 11, I think it might yet be possible to reduce this to 1 in 15 or 16, but more it does not seem to me could well be promised without a vastly disproportionable expenditure of means. The gradient over all, judged by difference of level between the top of the ghaut and Soméshweram, would be 1 in 21, but much length is unavoidably lost by flat portions above and below.

5. The case is entirely the reverse with the lower or the Madras end of the ghaut, excepting in their uppermost zigzag (the fifth), where the work is much the same as ours; and I may here be permitted to observe that this character prevails as a rule, with all the ghauts, the steep upper portion in Mysore presenting difficulties wholly unknown to the lower or Madras portions, which ascend mostly in earth-hill-side-cutting, and along the wide bases of the spurs at foot, necessarily involving little labor and less skill, and hence, probably, the readiness with which, ignorant no doubt of this important physical difference, the authorities on that side have preferred their complaints. It will be seen, as I proceed, that wherever the same difficulties occur on the Madras side, they have made less effort than Mysore to overcome them.

6. My object, however, being to show what is actually now being done on the Mysore side, under the small estimate sanctioned for special work to the ghaut, amounting to Rupees 7,865, I beg now to note briefly, in detail, the most prominent features as well as the points calling for immediate attention.

7. Before coming to the first milestone (considered the head of the ghaut, and 56 miles from Shimoga), a nicely executed laterite drain bridge has been nearly finished, and another further on. A third of two vents is about to be commenced a little in advance. The road along this portion, past the Police Tannah, and as far as the head of the first zigzag, calls for little remark. It is from 20 to 27 feet wide, well formed, and only requires to be metalled.

8. Immediately on turning the corner of the first zigzag, the breadth of the road is found for 30 or 40 feet to be only 10 and 11 feet wide, and for the 100 yards in advance of this, varies from 15 to 18 feet. Blasting is here vigorously going on, as this is probably the worst portion of the line. The cliff is composed of a ferruginous clay-slate which, though soft on being first cut into, rapidly weathers out hard, and as the strike is downwards, and inwards as *b c* in the annexed sketch, there would be no objection to simply blasting out the footing on the line, instead of taking down the whole cliff some 30 feet and more in height. The labor, blasting away *a a* as at present, is practically useless, and may thus be avoided. There is no possible danger of the rock falling, although overhanging, and at comparatively little outlay the breadth *c d* = 20 feet could be easily obtained.



9. Another matter is that steel stone-picks, now used in cutting out the footings for the Sreeramadavy anicut, would readily clear away the rock along its line of strike; twenty or thirty of these will now be supplied to the Executive Engineer for use, instead of resorting everywhere to blasting.

10. The turn at the end of the first zigzag can be improved, as pointed out personally to Captain Palmer, simply by carrying on the nose 12 feet, and clearing a little way back into the side. The second portion of the first zigzag is of good width, full 18 feet everywhere, the gradient fair, and all it requires is a similar improvement to the turn at its end.

11. The first portion of the second zigzag is also good and of full width, excepting at the turn where some debris, brought down by upper drainage, requires to be cleared away, and the nose lengthened. A small portion of the outer revetment also needs to be carried out perpendicularly, to gain width. The second portion of this zigzag is all in good order and of full width, the turn at the end, however, requires improvement by blasting some of the rock at end, and otherwise lengthening it, 20 feet in length could thus be easily gained.

12. The first part of the third zigzag is more than the proper width, but the gradient, 1 in 15, is objectionable, and from the existence of sheer cliff at its upper and lower extremities, it is to be feared that very little, if any, improvement is practicable. The second portion is at commencement good in gradient, but lower down it is so steep as 1 in 12, and, moreover, for 30 yards is only 15 feet wide. The widening of the ghaut to 18 feet here is of course practicable, and further, I consider that nearly 100 feet in length could be gained by blasting out the cliff at the end, thus flattening the objectionable gradient above. This, with other similar work, must however form portion of a separate estimate.

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8th March 1867.

13. The drinking fountain at the end of this zigzag should be at once put in working order, and others of a similar description placed at one or two more points on the ghaut, water being much needed here for consolidating metaling as well as for man and beast.

14. The fourth and last Mysore zigzag is very narrow, only 15 feet wide at the turn, and the gradient 1 in 11 in one portion. Length and corresponding flattening of the gradient can undoubtedly be gained by blasting at the end, and carrying up the outer revetment perpendicularly, as explained personally to Captain Palmer. The width can also be brought up to 18 feet, but much of this must necessarily form part of the separate estimate before adverted to. The second part of the zigzag, at the end of which is the boundary, is 1 in 14, and as it runs right into the cliff at the end, little improvement can be effected.

15. The stone quarried along the ghaut rapidly disintegrates under traffic, and the road surface is now both dusty and heavy for carts. I consider that the ghaut should be metalled with the above stone, properly broken in its full width, as a substratum, and over this good laterite gravel, procurable from above, laid at least three inches in consolidated thickness. The maintenance allowance should also be raised from Rupees 180, as at present, to Rupees 350 per mile, the amount given to the Munzerabad and Boond ghauts.

16. In the lower portion of the fifth zigzag (Madras) the gradient is about 1 in 10, and in many other places objectionable. Wherever rock occurs in side-cutting the road is also narrow, and no attempt is apparently now being made to widen it. The road surface is, moreover, heavy and dusty, and the only party I saw engaged in its repair were throwing on ochreous clay over it, with what object I cannot say.

17. Captain Palmer will ere long submit an estimate for the alterations I here pointed out as desirable, and will, meanwhile, effect considerable improvement with that now being worked out. I do not consider it requisite for me here to enter into any general discussion regarding the utility of the present ghaut, or the advantage which might be gained by adopting an entirely new line.

18. I am given to understand that the principal portion of the traffic which passes through Shimoga in this direction is from Dharwar, and notwithstanding the defects of the ghaut already pointed out, a fully laden cart is easily taken from bottom to top by a single pair of bullocks in a day. The great use now made of the ghaut sufficiently proves that its condition forms no bar to traffic.

19. Moreover, objectionable as are some of its engineering features, it may be noted that the rock of which it is composed is of such firm character, that although the side scarps are in many places of great height, no slips have apparently occurred in the thirty years which have elapsed since Captain Bower traced the line.

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8th March 1867.

This immunity from slips is doubtless, in some degree, also attributable to the extremely dense character of the vegetation which covers the whole of the mountain side, and which should undoubtedly be preserved with the greatest solicitude, as tending to hold up the soil and prevent its being washed away during the monsoon. The opposite characteristics of rock and vegetation on the Boond ghaut have produced, and will continue to produce slips of the side scarps every monsoon, thereby causing endless vexation and trouble.

No. 136. ORDER THEREON, 8th March 1867, No. 691.

CIVIL WORKS, No. 18.

1. Communicated to the Board of Revenue and the Superintending Engineer of the 7th Division, with reference to the Orders of Government No. 2,950 of the 14th September 1866.

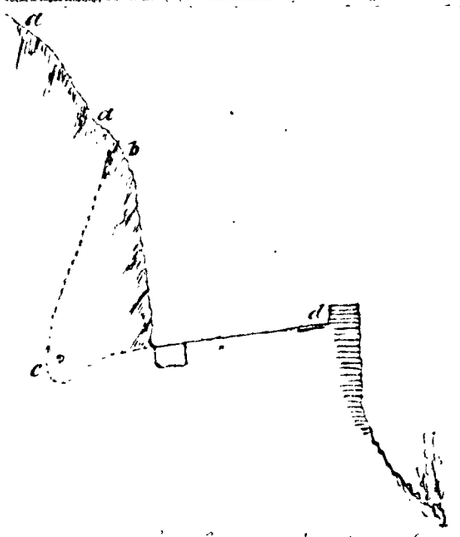
2. Colonel Walker's attention is requested to the remarks of the Chief Engineer of Mysore in paragraphs 5 and 16 regarding the condition of the Agumby ghaut within the Madras limits.

(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R. E.,
Secretary to Government.

To the Board of Revenue.
" Superintending Engineer, 7th Division, with Sketch.
" Revenue Department.

Exd. S. T. Augustin.



Compared the general section
of the said Zigzag
right as regard general outline,
depths, widths and slopes,
with the sections of same
as shewn on the plan
and sections approved
by the Secretary of State
for India in Council
on the 12th day of
December 1866.

10. The line of the said Zigzag
was then inspected personally by Captain
Stevens, beginning on the crest 12 feet and
returning to it on the other side. The second
portion of the Zigzag is 8 feet wide, 6 feet
deep, and the gradient 1 in 18 required in
a similar manner to the first portion.

11. The third portion of the 2nd Zigzag is also
8 feet wide, 6 deep, excepting at the turn where
some slight removal was by my instructions
made to the crest, and the new alignment
of small portion of the outer parapet
to be carried out by Executive Engineer
Gya with all convenient speed.

Approved.

Sd/ H. Durand
Lt Colonel
Secy to the Govt of India
Public Works Department

Simla
the 12th July 1867.

The second portion of the 2nd Zigzag to be well engineered and of good width, the turn at the end to be of requisite improvement by clearing some of the earth end, and otherwise constructing it so as to be easily available as may be required.

12. The first portion of the 2nd Zigzag is to be of the proper width, and the gradient 1 in 15 where practicable, and from the road there to the 2nd Battery it is to be of the best very little labour is required in practicing. The second portion is to be engineered and constructed, but more than 30 yards in length of the whole of the 12 gabions in the former portion and further [illegible] are to be made of the best materials and [illegible] to be [illegible] the gabions in the [illegible] and [illegible] of the 2nd Battery [illegible] to be [illegible] of the 2nd Battery [illegible] to be [illegible] of the 2nd Battery [illegible] to be

unit, a fully loaded Coal Cart is easily taken from one end to top of it in a single train of which she is capable in a day. The great use now made of the Coal and increasing yearly that the execution forms no case to be feared.

19. Observations. Questions which were sent to the Engineering Features of Canada in regard to the Navigation of the Rivers &c. &c. in connexion with the Railway, and which from their importance and great weight, no effort has been spared since the opening of the Railway to answer satisfactorily.

Power traced the line - This is unquestionably a difficult one, extremely. One Engineer of the Railway, who knows the country about Dumbarton, is perfectly satisfied with the practicability of the line, and that there is no difficulty in the way of the Railway crossing the River Clyde at the point where it is intended to cross it.

Characteristics of Coal and Navigation of the Clyde. That there is plenty of Coal in the Clyde basin, and will continue to be for a considerable length of time.

Dunmore
5th February 1849

[illegible]
Engr. to Glasgow Railway Co.
[illegible]

The Executive Council
Province of Canada

[illegible]

Chas Saunders
Esq Commissioner
&c &c.

Ext
Publ.

Rec'd 1867 Secret
No. 1867 Sp 710

From The Officiating Commissioner of Mysore

To The Secretary to Government Public Works Department Fort St. George.

Dated Bangalore 23rd February.

Despatched

Received 27

Enclosures No. 2

General No. 6534 / Communications No. 47 } 1866-67.

Upon Rs. 375/2967 dated 14th September 1866

With reference to the above forwarded for the information of His Excellency the Governor in Council, the accompanying Copy of a Memorandum of the 5th Instant, addressed to the Executive Engineer Cuddapah Division by the Chief Engineer in Mysore, relative to the improvement of the Gingoomby Khat.

Chas Saunders

Offg Commissioner

No. 135

a. 1st March/67 Or. Lim?

Offg Commissioner

Rec'd 691. 5th March/67

13

Public Works Department.

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PROCEEDINGS of the MADRAS GOVERNMENT.

Under date the 8th March/67.

Read the following

From the Officiating Commissioner of Mysore (Here enter No. 1557/47 dated 23rd Feby 1867)

Communicated to the Board of Revenue and the Superintending Engineer 1st Division, with reference to the orders of Government No. 2950 of the 14th September 1866

Colonel Walkers attention is requested to the remarks of the Chief Engineer of Mysore in paras 5 and 16 regarding the condition of the Agundy Khat within the Madras limits —

To The Board of Revenue
— Supdg Engr 1st Div with Sketch
— Revenue Dept

Rec'd 13/3/67

Pub: Works 1867 Department

Pro: of Govt for March

No 691

Pro: of the Madras Govt

Of 8th March 1867

Letter from the Commissioner of Hydrabad forwarding a Copy of a Memorandum by the Chief Engr relative to the improvement of Aguada Point communicated to the Board of Revenue and to the Supt Engr of the 4th Division, with certain remarks.

No 135- 136

C. 1st Branch 167 P. W.