1. Number of pages 44
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MADRAS RECORD OFFICE.

Government of Madras.

Public Works **DEPARTMENT.**

Cons. 7.7.57

G.O. No. 1276 Press Mis.

3-5

Dated 1—7— 1857

Not to be folded or roughly handled

Read the following papers.

No. 3. From Colonel C. E. FABER, Chief Engineer; to H. FORBES, Esq., Acting Secretary to Government, dated 27th May 1857, No. 729.

SIR,

I have the honor to forward, for the information of Government, the accompanying report, by the Superintending Engineer, Southern Circle, No. 104, dated 2nd April 1857.

2. This report contains in the first seven paragraphs, information respecting the present state of the works at Jackattalah the manner in which they have been executed, the cost of the works, the progress made since the 5th October 1855, and the time required for their final completion.

3. As to the present state of the works; they are either completed or under progress; two Barracks, the Staff Quarters, the Hospital and the Engineer Store room. Of the Barracks one is ready for being roofed in, another is complete with the exception of one room on the ground floor which has yet to be floored and ceiled, the other two ranges have each been carried up to the level of the floor of the final story.

4. In the Staff Quarters the lower story walls are built, and all the first flooring joists laid.

5. The Hospital is ready to be roofed, and the Engineer Store room is complete.

6. Of the execution of these buildings, the Superintending Engineer cannot speak too highly both materials and workmanship he reports to be excellent.

7. In detailing the cost of the work, the Superintending Engineer gives the cost of brick in chunam for both lower and upper stories of tiled and terraced roofing of boarded flooring and of teak wood, and states, that he considers the rates to be in no wise excessive when the losses arising from the destruction of bricks by rain, in so raining a climate, and from the death of public cattle are taken into consideration, and the arrangements for procuring bricks and chunam are stated by Major Lawford to be the best possible.

8. This evidence given, after personal inspection of the buildings themselves, and communication with the Executive Officers, is very satisfactory as from this being the first public work of much importance which has been constructed on the Hills, it is only by personal examination on the spot that the want of information at Madras can be supplied, there being, in fact, no data deduced from works already constructed with which the cost of materials and workmanship at the Jackattalah Barracks can conveniently or usefully be compared.

9. With respect to the progress made since the 5th October 1855, a statement is submitted to which I must refer Government. The total expenditure in 455 days has been 3,63,201-3-2, or at the rate of Rupees 23,948 per month of 30 days or about 2½ lacs of Rupees a year. This amount is considered by the Superintending Engineer to be as much as could be expected under the circumstances of the scarcity of labour, from the reluctance of the work people of the plains, to remain on the hills, and from the demand for labour for the Railway.

10. In this opinion I fully concur, and I would add, as another reason, why work cannot be carried on so rapidly at Jackattalah as in the plains, that the weather is so much more uncertain. From the subjoined table it will be evident that, much more can be done in the plains, and has been done in the Deccan under the Superintendence of two Officers and one European Supervisor (Eaton) and one European Overseer (Palmer) but this is during much drier weather than that of the Neilgherries.

11. Expenditure at Secunderabad on new works.

		Rs.	A.	P.
June	1856	24,243	9	7
July	,,	19,662	6	11
August	,,	25,391	14	11
September	,,	9,993	1	0
October	,,	34,976	1	9
November	,,	27,873	13	6
December	,,	68,644	10	4

12. The amount spent at Jackattalah has averaged 23,948 Rupees a month, this includes, of course, a comparatively small expenditure during the first few months : it must also be noticed that the progress of work is likely to be more rapid in future than it now is.

13. Captain Campbell states that four more years are required to complete the entire set of buildings. This seems to me over-estimated, and I think that two and a half, or at most three years should suffice, if work be carried on even at only the same rate as at present, whereas augmenting expedition might fairly be expected. It appears from the Budget for 1857-58, that about 7⅔ lacs remain to be expended, and from Major Lawford's report, I learn, that the expenditure of the first 18 months has been at the rate of 2½ lacs a year, so that at the average rate hitherto attained only three years would be required.

14. With the object of expediting the future progress of the work, suggestions are made by the Superintending Engineer in the eighth and five following paragraphs.

15. In the eighth para, stress is laid upon injurious effect which will result from the removal of Europeans from the works, and a list, which accompanies the report, shews the names and regiments of men whose services are indispensably necessary.

16. Another list slightly differing from this, has since been received from Captain Campbell, on my own requisition, and is forwarded with this letter. All the men entered in this latter, are to be paid out of the estimate ; but they are not all to receive monthly pay, as some work by the piece or by contract ; their monthly salaries and earnings will amount to about Rupees 576-1-8, and can be divided as follows.

	Rs.	A.	P.
A Book keeper...	75	1	8
Estimate maker and Draughtsman...	60	0	0
Superintendent of Carpenters	65	0	0
Writer...	8	0	0
Superintendent of Bricklayers	50	0	0
Assistant do do	30	0	0
In charge of brick fields, 1 man...	20	0	0
Do lime burning, 1 man...	20	0	0
Do cutting firewood do	20	0	0
Assistant Superintendent of Carpenters...	20	0	0
In charge of water course, 1 man...	15	0	0
Do Peat cutting do.....	15	0	0
Do Public cattle do...	14	0	0
Assistant in store and work yard...	14	0	0
	426	1	8
10 Sawyers at say 15 Rupees a month each...	150	0	0
Total...	576	1	8

17. Of these persons it may be briefly said, that so copious an admixture of the European element for the Superintendence of public buildings destitute of all architectural character or constructive difficulty, is without any parallel in India ; yet, I would strongly recommend that they all be retained. Most of them are required to perform duties which would be done by natives in the plains, but which can be performed much more efficiently by Europeans at Jackattalah, and when the costliness of the work is considered, I think there can be no doubt of the desirableness, if not absolute necessity, of employing energetic Europeans. The Executive Officer is or ought to be the best judge as to their value to him, and he is decidedly of opinion that they are indispensable.

18. The recommendation contained in the 10th para. will be referred to the District Engineer of Trichinopoly for report, and will be duly considered.

19. The proposition brought forward in the 11th para. is one in which I am unable to concur as Overseers are, I think, very far more urgently required elsewhere than at Jackattalah.

20. The suggestion contained in the twelfth para. seems to be a good one, and if it meet with the approval of Government after Major Maitland's opinion has been expressed, its fulfilment would probably be attended to with benefit to the work.

21. It is satisfactory to find from the 15th para. that the accounts still continue to be kept clearly and regularly, and from the 17th that great care is taken not to injure the forests from which firewood for brick and lime burning is obtained.

22. The subject alluded to in the 18th para. calls for no remark at present, as Captain Campbell's report must first be obtained before any recommendation can be made to Government.

23. The very satisfactory results of taking the remainder of the lease for the Moodoomallay Teak forest near Seegoor is alluded to in the 19th para, a report and Tabular statement on the same subject, drawn up by Captain Morgan, accompanies, and will be found to be well worth the perusal of Government.

24. It hence appears that all the timber required for the barracks would cost, if obtained from the Annamullays, 3 lacs of Rupees, if obtained from Palghaut 1,66,500 Rupees, and if obtained from the Moodoomallay Forest 1,12,250 Rupees and that by obtaining it from the latter the saving over the Annamullay wood is 1,87,750 Rupees and over the Paulghaut wood 54,250 Rupees.

25. In connection with this subject, Major Lawford recommends in his 13th para. that four additional Elephants be sent to drag timber in the Moodoomallay Forest, and to this I earnestly request the favorable consideration of Government, as these Elephants cannot be more usefully or profitably employed than in the Department at present, and their services are much required for the particular description of forest work described.

26. On the whole, I cannot but hope that the manner in which the Jackattalah work has been carried on will be thought such as to reflect credit on Captains Campbell and Morgan and to shew the value and advantage of adequate and ample Superintendence in undertakings of an extensive and costly description. I had hoped that the visit of the Superintending Engineer Southern Circle would have led to the introduction of improvements, whether in general system or in particular details which would have ensured an accelerated rate of progress hereafter. That such has not been the case to any notable extent, I hold to be creditable to Captain Francis, who organized the first arrangements, and to Captain Campbell, the present zealous Executive Engineer. But it is not to be overlooked that the operations have been marked by an obviously increased expedition since they were renewed in October 1855, and it seems only fair to attribute this increase to the labours of Captain Morgan who has been indefatigable in the forests, the Peat press and the Brick fields, which latter, (the actual regulators of progress), do not seem to admit of further extension.

From Major E. LAWFORD, Superintending Engineer, Southern Circle, on Circuit ; to Colonel C. E. FABER, Chief Engineer, dated Camp Ootacamund, 2nd April 1857, No. 104.

SIR,

I have the honor to report my arrival at Jackattalah on the 16th Ultimo, on which date accompanied by Captains Francis and Campbell I inspected the European Barracks under construction, and was employed during the three following days in making further enquiries connected with those buildings, which I limited to the period subsequent to the inspection by Lieutenant Colonel Cotton in August 1855.

2. The following is the present state of the works.

No. 1. Barrack. Upper story walls nearly completed for roofing. This building is under execution by contract and its progress though slow, does not interfere with that of the others on which the working parties of the Executive Engineer are employed.

12. The amount spent at Jackattalah has averaged 23,948 Rupees a month, this includes, of course, a comparatively small expenditure during the first few months : it must also be noticed that the progress of work is likely to be more rapid in future than it now is.

13. Captain Campbell states that four more years are required to complete the entire set of buildings. This seems to me over-estimated, and I think that two and a half, or at most three years should suffice, if work be carried on even at only the same rate as at present, whereas augmenting expedition might fairly be expected. It appears from the Budget for 1857-58, that about 7⅔ lacs remain to be expended, and from Major Lawford's report, I learn, that the expenditure of the first 18 months has been at the rate of 2½ lacs a year, so that at the average rate hitherto attained only three years would be required.

14. With the object of expediting the future progress of the work, suggestions are made by the Superintending Engineer in the eighth and five following paragraphs.

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25. In connection with this subject, Major Lawford recommends in his 13th para. that four additional Elephants be sent to drag timber in the Moodoomallay Forest, and to this I earnestly request the favorable consideration of Government, as these Elephants cannot be more usefully or profitably employed than in the Department at present, and their services are much required for the particular description of forest work described.

26. On the whole, I cannot but hope that the manner in which the Jackattalah work has been carried on will be thought such as to reflect credit on Captains Campbell and Morgan and to shew the value and advantage of adequate and ample Superintendence in undertakings of an extensive and costly description. I had hoped that the visit of the Superintending Engineer Southern Circle would have led to the introduction of improvements, whether in general system or in particular details which would have ensured an accelerated rate of progress hereafter. That such has not been the case to any notable extent, I hold to be creditable to Captain Francis, who organized the first arrangements, and to Captain Campbell, the present zealous Executive Engineer. But it is not to be overlooked that the operations have been marked by an obviously increased expedition since they were renewed in October 1855, and it seems only fair to attribute this increase to the labours of Captain Morgan who has been indefatigable in the forests, the Peat press and the Brick fields, which latter, (the actual regulators of progress), do not seem to admit of further extension.

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2. The following is the present state of the works.

No. 1. Barrack. Upper story walls nearly completed for roofing. This building is under execution by contract and its progress though slow, does not interfere with that of the others on which the working parties of the Executive Engineer are employed.

„ 2. Three rooms including the whole upper story fully completed and occupied by H. M's. 74th Highlanders. The fourth room on the ground floor has not the floor or ceiling finished, and has been used as a workshop by the Executive Engineer, but it will now be floored as quickly as possible, and made over temporarily to the Regiment for occupation before the monsoon, leaving the ceiling to be completed afterwards.

„ 3. Walls 15 feet high, or up to floor level, and ready for joists.

„ 4. Nearly the same as No. 3.

Staff Quarters.—Lower story walls built, and nearly all upper flooring joists laid.

Hospital.—Pillars of outer verandah built and roof about to be commenced, but the necessity of completing room No. 4 of Barrack No 2 will delay this work.

Engineer Store room.—Completed.

In the finished Barrack No. 2, a granite floor has been substituted for wood in the outer verandah of lower story, and the change is an extremely advantageous one, the difference of cost not exceeding five Rupees per square.

3. Of the construction of these buildings it is impossible for me to speak too highly in regard to either materials or workmanship, both being of the best description and displaying the utmost care and attention on the part of the Executive Engineer. Since Colonel Cotton's visit the brick work has greatly improved, and has been executed by Native bricklayers under European Superintendence. The bricks are of full size, (12 per cubic foot) the bond good, and the mortar (composed of 3 sand to one lime) is firm and well set. The roof, ceilings and floors are all good, and well put up, and the same must be said of the doors, windows and fixtures. In short I have never seen any public buildings more admirably constructed.

4. The next point for consideration is the cost of what has been executed, and the probable sufficiency of the estimates already sanctioned for completing the works. The working rates are as followes, viz.

Lower story brick in chunam for 100 cubic feet	Rupees	20
Upper story brick in chunam for 100 cubic feet	„	22
Tiled roofing including timber for square.....	„	70
Terraced do. do.	„	68
Boarded floor do. do.	„	145
Teak wood wrought and put up per cubic foot.		
Moodoomallay forest near Seegoor.....	„	2¼
Annamallay forest large scantling.....	„	4

While I consider the above rates by no means excessive, I believe they will prove sufficient, but there will be an increase in the quantity of excavation in this difficult site, and the expenditure must be swelled by losses of various kinds, such as that of bricks by rain, and the deaths of public cattle 50 of which have been lost within one month recently. The arrangements for procuring bricks and chunam are the best possible, though at first I considered it an error to burn the lime on the spot, but this was found necessary to ensure its good quality.

5. With respect to the progress made during the period under review, I beg to submit a statement shewing the amount of work performed from the 5th October 1855, the date on which the buildings were resumed after their suspension by order of Government, to the 18th March 1857, comprising 455 working days and including three monsoons. The number of bricks made and delivered during this period was nearly six millions, and the supply of chunam amounted to 32,594 parahs. There were 40,625 cubic yards of excavation, and about 30,000 cubic feet of timber wrought to scantling &c., each block requiring 336 tons of wood. The expenditure amounts for the same period to Rupees 3,63,201-3-2, or including all holidays to 2½ lacs per annum.

6. Now considering the reluctance of the workmen of the plains to reside on the Hills, their liability to sickness and frequent returns to their villages for festivals, domestic affairs and

the cultivation of their lands, together with the demand for labour on the Railway, I am of opinion that the amount of work accomplished at the Barracks is as much as could be reasonably expected, and that no want of energy or attention on the part of the Executive Officer can be imputed. The confined extent and unfavorable situation of the brick fields in deep sheltered valleys, affording little room for drying; the great distance (27 miles) of the line quarries and the steep ascent of the ghaut up which the material is carried are obstacles which could not be surmounted. In buildings of this description all hurry must be avoided, and I am quite satisfied that their durability will amply vindicate Captain Campbell's character as a careful and judicious Officer.

7. The time necessary for completing the works is stated by Captain Campbell to be four years from the present date, and with the means already at his disposal I believe the period to be necessary, but perhaps some acceleration may result from the measures I am about to propose, and those I have authorized.

8. First, I would recommend that the European Soldiers now employed on the works should be considered as permanently placed under the Executive Officer's orders until the Barracks are completed, and not liable to be removed for Military duty or other cause except misconduct, and at Captain Campbell's instance. So much depends on the active and intelligent Superintendence of these men that their loss must immediately and seriously cripple the operations, and as the Barracks are intended for the exclusive advantage of the European Troops, it seems just and reasonable to rely on their aid in the construction under circumstances which greatly limit the employment of skilled Native labour. The subjoined list shews the names and Regiments of men whose services are indispensably necessary for the completion of the Barracks

9. Secondly, I consider that while Captain Campbell and his subordinates retain their proper position and claims in the General Department, their situation is distinct and peculiar, as regards the District Establishments and Officers and Subordinates so employed should be held as extra to the fixed allotment; otherwise the hands of Captain Francis will be weakened by their withdrawal from the current duties of the district.

10. Thirdly, I think that the Engineer Department at Trichinopoly should be required to afford assistance, by making up at that station, doors, windows, scantling for joists, brick and earth barrows, and pick and mamoty handles, which may afterwards be sent up to Jackattalah by the aid of public cattle, or otherwise; and to this end the District Engineer of Trichinopoly should be placed in communication with Captain Campbell, and the teak wood now at that station may be used for the purpose.

11. Fourthly, I recommend that two efficient Overseers be immediately placed under Captain Campbell's orders, one of whom may advantageously be a trained Sapper, and I would suggest Assistant Overseer Loftus as fitted for the duty, and the other an uncovenanted servant (Mr. J. Wright) who will be employed in the room of Assistant Overseer Grayson about to be invalided, who has done scarcely any duty for the past twelve months owing to his habits of intemperance.

12. Fifthly, I propose that a party of 30 or 40, good Carpenters of the Ordnance Artificer Corps be sent to work under Captain Campbell, and these men will thus not only render valuable service to Government but will have a good opportunity of qualifying themselves in Engineering carpentry which will prove most useful to themselves. Captain Campbell states that such a party would be of essential service by rendering him to a certain extent independent of the native carpenters. Quarters are available for the Artificers, who should be under the Executive Engineer's exclusive control.

13. Sixthly, It is necessary that four additional Elephants be sent to drag timber in the Moodoomalay Forest, the lease of which expires on the 30th April 1858, and the more timber that is procured in the interim the sooner will the works be finished. There are now several Elephants at Seeromogay some of which might be sent to Captain Morgan till required for Military purposes. This suggestion has been offered separately and its adoption is strongly recommended.

14. The above are the principal points which I beg to bring to the notice of Government as requiring their early attention and orders, and I would only further advise that in the supply of such materials as cannot be procured on the spot Captain Campbell be allowed to make his own arrangements, which are certain to be the most efficient, and for which he may justly be held responsible. Whatever correspondence may be imposed on this Officer for the purpose of conducting his current duties and whatever difficulties arising from routine he may experience, must to a greater or less degree impede his actual work.

15. I must not omit to mention that I have examined all Captain Campbell's books, and agree with Lieutenant Colonel Cotton in the opinion that nothing can be clearer or more regular than his system of accounts, as a proof of which I may state that the statement of work performed which accompanies this report was supplied to me at a day's notice. Lieutenant Darling whose duties are chiefly confined to the superintendence of payments and posting the cash book, in which respect he does good service, is unable to afford much active assistance.

16. The supply of fuel for brick and lime burning being a very important subject in connection with the Barracks, I have made it my duty to visit both the Peat Moss and Forest. The former is worked partly by Europeans and partly by Burghers who are beginning to appreciate the advantages of regular labour and pay. The man in charge is from Argyleshire with good practical knowledge of his business, which he conducts with evident skill. The moss is supposed to be capable of yielding 23,500 tons of dry peat, but the monthly supply Captain Campbell thinks cannot amount to 100 tons, owing to the uncertainties of weather.

17. My visit to the Coonoor Forest from which the wood and charcoal as well as a certain quantity of timber are derived was very interesting, and may be most useful by disabusing the Government of the idea that in felling trees Captain Campbell is utterly destroying the forest. No saplings under 8 inches in diamter are allowed to be cut, and great care is taken to plant all the clearings as fast as made. These young trees are thriving remarkably well, and their growth is fostered and improved by the removal of the underwood, even the stumps of the felled trees covered over with a plaster of clay and cowdung to keep out wet, are throwing out new shoots that will eventually become fine trees, Captain Campbell, has had a grant of 7,500 Rupees for forming young plantations which I also found in a thriving state, and if this sum were increased to 10,000 during the year 1857-58, it would I am convinced be productive of great public benefit; but however that may be decided, Government may rest assured that the Coonoor forest of about 400 acres while yielding a valuable supply of timber and fuel, without which the Barracks must come to a stand, is being carefully renovated by an Officer whose early recollections have given him both the desire and the skill essential to success.

18. The construction of a Mill and Bakery for the Barracks is included in the estimates to the amount of 15,000 Rupees, but the original detailed estimates for these works amount to about 35,000 Rupees. There is however for sale at Ootacamund a water mill owned by a Mr. Schnarre, who asks I believe 6,000 Rupees for the works and buildings, and will guarantee an out-turn of bread for the supply of a Regiment. If this purchase be made the establishment of the Mill need not exceed the estimated sum and the works could be brought into immediate use, but before taking any further steps I have requested Captain Campbell to ascertain the working of the Mill (which I have inspected) by actual experiment.

19. The results of taking on lease the Moodoomallay teak Forest near Seegoor have been successful, the average produce being 2,000 cubic feet monthly at an estimated cost of Rupee 1 annas 2 per foot delivered, but it is most important to increase the monthly supply in order to diminish the expense, and obtain a large stock of timber before the lease expires; and for this purpose, I have applied for more Elephants; and shall direct Captain Morgan to consider it his duty to supply at least 7,000 cubic feet monthly in future, on being provided with these animals.

20. I cannot conclude this report without expressing my obligation to Captain Francis for the information and assistance he has afforded me.

No. 4. Extract from the Proceedings of the Chief Engineer, dated 5th June 1857, No. 941.

Read again Official Memo., from the Acting Secretary to Government, dated 3rd April and recorded in Diary to Proceedings 8th April 1857.

Resolved, with reference to the Official Memo., recorded above, that the tracings of the Jackatallah Bakery and Mill, received from the District Engineer of Coimbatore, be forwarded for the information of Government, agreeably to the Secretary's requisition.

(Signed) C. E. FABER, Colonel,
Chief Engineer.

No. 5. ORDER THEREON, No. 1276; dated 1st July 1857.

Major Lawford's report submitted with the first of the above papers furnishes a satisfactory account of the progress made in the building of the Jackattalah Barracks, of the execution, and quality of the materials, of the portions already constructed, and of the arrangements in existence for prosecuting the work. The report embraces a period of 455 working days, from the 5th October 1855, when the buildings were resumed after their suspension under orders of Government, to the 18th March last; the expenditure in this interval having amounted to 3,63,201 Rupees, being at the rate of 2½ lacs per annum, or 23,948 Rupees per month; a result regarded as satisfactory, considering the uncertainty of the weather, and the difficulty of procuring workmen on the Hills. The balance of the estimate remaining yet to be worked out, is stated by the Chief Engineer at 7⅔ lacs of Rupees; and he calculates that at the rate hitherto attained, it will require a period of three years to complete the work, although Captain Campbell, the Executive officer, assumes four years as the time required. To shorten this period, Major Lawford brings forward certain suggestions, which the Government will now proceed to notice and dispose of.

2. In para 8, he recommends that a number of European soldiers now employed on the works should be permanently retained, until the completion of the Barracks, and that they should be liable to removal, only for misconduct, and at the instance of the Executive officer. A list of these men is furnished, shewing no less than twenty one men, 14 of whom belong to H. M.'s 74th, 5 to H. M.'s 84th, 1 to the Foot Artillery, and 1 to H. M.'s 43rd. The Government are clearly of opinion that in the event of the corps to which any of these men belong, being ordered to march on any emergency, every one of them must at once return to Regimental duty. Para. 8 of Major Lawford's letter and the list referred to will however, be disposed of in the Military Department.

3. The recommendation in the 9th para. that Captain Campbell and his Subordinates should be considered extra to the regular District establishment in the Public Works Department, to prevent the hands of the District Engineer being weakened by their withdrawal from the current duties of the District, cannot be entertained. The Department has been appropriated to the several Districts according to the supposed necessities of each, and the Government cannot weaken the hands of other District] Engineers because Captain Francis has on hand a work that temporarily calls for the constant attention of a proportion of his Subordinates.

4. The next suggestion, that the Engineer Department at Trichinopoly should afford assistance in making up doors, windows, scantling &c. it is observed, the Chief Engineer proposes to refer to the District Engineer of Trichinopoly; and it will, it is presumed, form the subject of a further communication. In para 11, Major Lawford recommends that two efficient Overseers may be immediately placed under Captain Campbell's orders. To this the Chief Engineer himself objects, on the ground that Overseers are more needed elsewhere.

5. Colonel Faber supports the Superintending Engineer's fifth suggestion (para. 12) that a party of 30 or 40 good carpenters, of the Ordnance Artificer Corps, should be detached to work under Captain Campbell at the Barracks. It does not seem probable that the Superintendent of the Gun Carriage Manufactory can spare so many good workmen, without delay to his own pro-

ceedings ; but the Government resolve to enquire of Major Maitland, through the Inspector General of Ordnance how many of the Artificer Corps can be conveniently placed at Captain Campbell's disposal.

6. Orders on the last suggestion, as to the employment in the Moodoomallay Forest of four additional Elephants, from among those stated to be reserved for Military purposes at Seeroo-moogay, must be deferred until the Chief Engineer reports in compliance with the orders of the 25th May last, to what distance the Elephants would be removed from their depôt, and for how many months their services would be required for the conveyance of the timber.

7. The remarks regarding the purchase of a Mill for the purposes of a Bakery, and the working of the Moodoomallay Forest do not call for notice at present. The Government observe that both Captains Campbell and Morgan are formally mentioned by the Superintendent and the Chief Engineer, for the zealous discharge of their duties, in connection with the building of the Jackattalah Barracks.

8. Ordered that a copy of Major Lawford's report and of Colonel Faber's letter recorded above, be laid before the Government of India with these proceedings, with reference to para. 5 of the letter of this Government dated 22nd April 1857, No. 759.

9. Ordered also that the two plans for a Bakery and Mill received with the second of the papers recorded at the head of these Proceedings be transmitted to the Government of India, in continuation of the Plans forwarded to that Government with the letter of 22nd April above referred to.

(Signed) H. FORBES,
Acting Secretary to Government.

No. 6. Ordered in consequence that the following letter be despatched.

From H. FORBES, Esq., Acting Secretary to the Government of Fort St. George ; to Lieutenant-Colonel W. E. BAKER, Secretary to the Government of India, dated 1st July 1857, No. 1277.

SIR,

With reference to para. 5 of my letter dated 22nd April 1857, No. 759, I am directed by the Right Honorable the Governor in Council to submit, for the information of the Government of India, the accompanying copy of a report from Major Lawford, the Superintending Engineer of the Southern Circle, on the present condition of the Jackattalah Barracks, the progress made in the works, the probable time of their completion, and the measures proper to be taken for rendering the execution efficient

2nd April 1857, No. 104.

Copies of Colonel Faber's letter giving cover to the above report, and of the Proceedings of Government of this day, are also submitted for information.

27th May 1857, No. 729.

2. I am further directed to take this opportunity to forward two plans, recently received from the Chief Engineer, of the Bakery and Mill proposed to be erected at Jackattalah, for which an estimate, amounting to Rupees 15,000 was transmitted with my letter of 22nd April above referred to.

PUBLIC WORKS DEPARTMENT.

Military.

Fort St. George,
1*st July* 1857.

No. 1277.

From

H. FORBES, ESQ.,
Acting Secretary to the Government of Fort Saint George.

To

LIEUT.-COLONEL W. E. BAKER,
Secretary to the Government of India, D. P. W.

SIR,

With reference to para. 5 of my letter dated 22nd April 1857, No. 759, I am directed by the Right Honorable the Governor in Council to submit, for the information of the Government of India, the accompanying copy of a report from Major Lawford, the Superintending Engineer of the Southern Circle, on the present condition of the Jackattalah Barracks, the progress made in the works, the probable time of their completion, and the measures proper to be taken for rendering the execution efficient

2nd April 1857, No. 104.

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2. I am further directed to take this opportunity to forward two plans, recently received from the Chief Engineer, of the Bakery and Mill proposed to be erected at Jackattalah, for which an estimate, amounting to Rupees 15,000 was transmitted with my letter of 22nd April above referred to.

I have the honor to be,

Sir,

Your most obedient Servant,

(Signed) H. FORBES,
Acting Secretary to Government.

Central Office of P.W.O.
Fort St. George 27th May 1857.

No. 729
From
The Chief Engineer N.D.D.
To
The Secretary to Govt. F.D.
Sir,

Military
Cuddalore
Barracks.

I have the honor to forward, for the information of Government, the accompanying Report, by the Superintending Engineer, Southern Circle, No. 104, dated 2nd April 1857.

2. This Report contains in the first seven paragraphs, information respecting the present state of the works at Cuddalore. the manner in which they have been executed. the cost of the works. the progress made since the 5th October 1855. and the time required for their final completion.

Encl: 5.
1. Letter from the Superintending Engineer Southern Circle dated 2nd April 1857. with 3 Encls.
1. Memo of Estimate of Barracks &c. at Cuddalore.

3. As to the present state of the works;- there are either completed or under progress;- two Barracks the Staff Quarters. the Hospital and the Engineer Store Room. Of the barracks one is ready for being roofed in. another is

HS

is complete with the exception of one room on the ground floor which has yet to be floored and ceiled, the other two ranges have each been carried up to the level of the floor of the final story.-

4. In the Staff Quarters the lower story walls are built, and all the first flooring joists laid.-

5. The Hospital is ready to be roofed, and the Engineer Store room is complete.-

6. Of the Execution of these buildings, the Superintending Engineer cannot speak too highly- both materials and workmanship he reports to be excellent.-

7. In detailing the cost of the work, the Superintending Engineer gives the cost of brick in Chunam for both lower and upper stories- of tiled and terraced roofing of boarded flooring and of teakwood, and states, that he considers the rates to be in no wise excessive — when the losses arising from the destruction of bricks by rain in so raining a climate, and from the death of public Cattle are taken into consideration, and the arrangements for procuring bricks and Chunam

Chunam are stated by Major Lawford to be the best possible.-

8. This evidence given, after personal inspection of the buildings themselves, and communication with the Executive Officers, is very satisfactory as from this being the first public work of much importance which has been constructed on the hills, it is only by personal examination on the spot that the want of information at Madras can be supplied, there being, in fact, no data deduced from works already constructed with which the cost of materials and workmanship at the Jackatalla Barracks can conveniently or usefully be compared.-

9. With respect to the progress made since the 5th October 1855, a Statement is submitted to which I must refer Government. The total expenditure in 155 days has been 363. 201-3-2 or at the rate of Rupees 23.948 per Month of 30 days or about 2½ Lacs of Rupees a year. This amount is considered by the Superintending Engineer to be as much as could be expected

mds

under the circumstances of the scarcity of labour, from the reluctance of the work people of the plains, to remain on the hills, and from the demand for labour for the Railway.-

10. In this opinion I fully concur, and I would add, one another reason, why work cannot be carried on so rapidly at Sackatalla as in the plains, that the weather is so much more uncertain. From the subjoined table it will be evident that, much more can be done in the plains, and has been done in the Kistnah under the superintendence of two Officers and one European Supervisor/Colin Stone European Overseer/Palmer/ but this is during much drier weather than that of the Neilgherries.-

11. Expenditure at Secundrabad on new works

June 1856	Rs.	24,243	9-7
July "		19,662	6-11
August "		25,391	14-11
September "		9,993	1-4
October "		34,976	1-9
November "		27,873	13-6
December "		68,644	10-4

12. The amount spent at Sackatalla has averaged 23,948 Rs. a month, this includes, of course, a comparatively small expenditure during the first few months: it must also be noticed that the progress of work is likely to be more rapid in future than it now is.-

13. Captain Campbell states that four more years are required to complete the entire set of buildings. This seems to me over estimated, and I think that two and a half, or at most three years should suffice, if work be carried on even at only the same rate as at present; whereas augmenting expedition might fairly be expected. It appears from the Budget for 1857/58, that about 7 2/3 lacs remain to be expended, and from Major Lawford's report, it appears, that the expenditure of the first 18 months has been at the rate of 2½ lacs a year, so that at the average rate hitherto to attained only three years would be required.-

Kitts

14. With the object of expediting the future progress of the work, suggestions are made by the Superintending Engineer in the eighth and five following paragraphs.-

15. In the eighth para, stress is laid upon injurious effect which will result from the removal of Europeans from the works, and a list, which accompanies the Report, shews the numbers and descriptions of men whose services are indispensably necessary.

16 Another list slightly differing from this, has since been received from Captain Campbell, on my own requisition, and is forwarded with this letter. All the men entered in this latter, are to be paid out of the Estimate; but they are not all to receive monthly pay as some work by the piece or by Contract; their monthly Salaries and earnings will amount to about Rupees 576- 1- 8, and can be divided as follows.-

	R. A. P.
A. Book Keeper	75- 1- 8.
Estimate writer & draughtsman	60- " "
Superintendent of Carpenters	65- " "
Writer	8- " "
Superintendent of Brick layers	50- " "
Assistant do do	30- " "
In charge of brick fields 1 Man	20- " "
do do Lime burning 1 Man	20- " "
do do Cutting firewood do	20- " "
Assistant Supt of Carpenters	20- " "
In ch: of Water Course 1 Man	15- " "
do do Peat Cutting do	15- " "
do do Public Cattle do	111- " "
Asst in Store and work Yard	14- " "
	426- 1- 8.
10 Sawyers at say 15 Rs each month each	150- " "
Total	576- 1- 8

17. Of these persons it may be briefly said, that no copious an admixture of the European element for the Superintendence of public buildings destitute of all architectural character or constructive difficulty, is without any

any parallel in India; each, I would strongly recommend that they all be retained. Most of them are required to perform duties which would be done by natives in the plains, but which can be performed much more efficiently by Europeans at Jacktalla, and when the costliness of the work is considered, I think there can be no doubt of the desirableness, if not absolute necessity, of employing energetic Europeans. The Executive Officer is or ought to be the best judge as to their value to him, and he is decidedly of opinion that they are indispensable.-

18. The recommendation contained in the 16th para will be referred to the District Engineer of Trichinopoly for report, and will be duly considered.-

19. The proposition brought forward in the 11th para is one in which I am unable to concur as Overseers are, I think, very far more urgently required elsewhere than at Jacktalla.-

20 The suggestion contained in the twelfth para seems to be a good one, and if it meet with the approval of Government after Major Maitland's opinion has been expressed, its fulfilment would probably be attended to with benefit to the work.-

21 It is satisfactory to find from the 18th para that the accounts still continue to be kept clearly and regularly, and from the 17th that great care is taken not to injure the forests from which firewood for brick and lime burning is obtained.-

22 The subject alluded to in the 13th para calls for no remark at present, as Captain Campbell's report must first be obtained, before any recommendation can be made to Government.-

23 The very satisfactory results of taking the remainder of the leave for the Moodoomallay Teak forest near Segoor is alluded to in the 19th para, a report and Tabular Statement

Man.

Statement on the same subject, drawn up by Captain Morgan, accompanies, and will be found to be well worth the perusal of Government.-

24. It hence appears that all the timber required for the barracks would Cost, if obtained from the Annamullays, 3 lacs of Rupees, if obtained from Palghaut 6,66,500 Rupees if obtained from the Moodoomally Forest 112,250 Rs and that by obtaining it from the latter the saving over the Annamullay wood is 187,750 Rs and over the Palghaut wood 54,250 Rs.-

25.- In connection with this subject, Major Lawford recommends in his 13th para that four additional Elephants be sent to drag timber in the Moodoomallay Forest, and to this I earnestly request the favorable Consideration of Government, as these Elephants cannot be more usefully or profitably employed than in the Department at present, and their services are much required for the particular description of forest work described.-

26 On the whole I cannot

but

but hope that the manner in which the Pachatilla work has been carried on will be thought such as to reflect Credit on Captains Campbell and Morgan, to shew the value and advantage of adequate and ample Superintendence in undertakings of an extensive, and of a costly description. I had hoped that the visit of the Superintending Engineer Southern Circle would have led to the introduction of improvements, whether in general system or in particular details which would have ensured an accelerated rate of progress hereafter.- That such has not been the case to any notable extent, I hold to be creditable to Captain Francis, who organized the first arrangements, and to Captain Campbell, the present Executive Engineer. But it is not to be overlooked that the operations have been marked by an obviously increased expedition since they were renewed in October 1855, and it seems only fair to attribute this

to

increase to the labours of Captain
Morgan who has been indefatigable
in the forests, the Rat preys on the Brick fields,
which latter, / the actual regulators
of progress /, do not seem to admit of
further reduction. —

Fort St George
27th May 1815

I have the honor to be
Sir,
Your most obdt Servt

Alex Taylor Clerk
Chief Secy

To
Mr Secretary Le Geyt
&c &c &c

N.º 941.

Extract from the Proceedings of the Chief Engineer in the Department of Public Works. Fort St George
Under date the 5th June 1857

Read again Official Minute from the Acting Secretary to Government dated 3d March and recorded in Diary & Proceedings 8th March 57

Enclosure 2
2 Plans.

Resolved, with reference to the Official Minute recorded above, that the Drawings of the Sankaldrug Bridge & Mole, executed from the District Engineer of Coimbatore, be forwarded for the information of Government, agreeably to the Secretary's requisition

/True Extract/
W.H. Sykes Colonel
Chief Engineer

To
The Secretary to Govt.
P.W.D.

Public Works Department
Fort St George
The 5th June 1857

Respectfully forwarded to the Secretary to Government
By Order of the Chief Engineer
Lieut. Colonel
Secretary to Govt.

Dated 25th June 1857
Rec'd 29th Do. Do.
Answered 30th Do. Do.

No. 167.

To
Lieut. Colonel W.H. Sykes
Chief Engineer
Fort St George

Sir,

I am directed by the Right Honorable the Governor in Council to acknowledge the receipt of your letter No. 941 dated the 5th instant, forwarding Drawings of the Sankaldrug Bridge & Mole, executed from the District Engineer of Coimbatore.

I am &c
(Signed) C. Adams
Actg. Secy. to Govt.

Public Works Department
Fort St George
The 30th June 1857

Contractor's Copy of Plans
for the Sankaldrug
Bridge & Mole
Sept. 1857

No. 1. 1857

The orders of Government
are requested on the following
Plans & Sketch of Premises (Kitchen)
Report on the Premises & Water Supply
- ready.

Area of Encampment Barrack
Engineers Office &c. -
Plan of Cantonment & Barracks, Hospital
& Premises occupied & Married Officers
Quarters
The works, & Ground to remain
for military purposes, and
Plan of Ground required for military purposes.

Public Works 1857 Dept.
D. to Cons: 7th July -
No. 1160
Extract Proceedings of the
Chief Engineer B.W.D.

The Secy to Govt P.W.D.

Dated 5th
Recd 6th } June 1857

2 Encls: No 961
Sketch the Engr. of Bodies -
C.E. No 1276 - 1st July

Forwards, as requested,
tracings of the Jackatalla
Bakery & Mill.

104.

19 June 1857

be considered extra to the regular District establishment in the Pub: Works Dept, to prevent the Labourers in the Dist: Exp: being deranged by their withdrawal from the current duties of the District.

110. That two efficient Overseers be placed under Captain Coombellis orders. To Bo Rich: Esp: District on the grounds that Residencies are much more ... Ellis Sent.

12. Most Strongly [illegible]

[illegible]

24

sufficient cooks be sent to work under Capt: Coombellis Rich: Esp: suggests that Major Maitland should be recalled — but it seems likely enough that he can't have so many good workmen, without delay to the proceedings

13. Nil apart from the Elephants Rebellion [illegible]

[illegible]

be considered extra a

Public Works Departt

31

No 1276.

Extract from the Minutes of Consultation
Under date the 1st July 1857.

Read the Report from Convoy Papers
from the Chief Engineer
(Recd under 27th May 1857 No 729)

Extract from the Proceedings of
the Chief Engineer (Recd under 5th Dec/57 No 941)

Major Sandford's report
submitted with the first of the above
papers furnishes a satisfactory account
of the progress made in the building
of the Jackatalla Barracks, of the
execution, and quality of the mate-
rials of the portions already con-
structed, and of the arrangements
in existence for prosecuting the
work. The report embraces a period
of 455 working days, from the 5th
Oct/55 when the buildings were
resumed after their suspension under
orders of Govt, to the 10th March
last; the expenditure in this in-
terval having amounted to £63,201
Rs, being at the rate of 2½ Lacs
per annum, or 23,968 Rs per month,
a result regarded as satisfactory,
considering the uncertainty of the
weather, & the difficulty of

procuring work Men on the hills. The balance of the estimate remaining yet to be worked out, is stated by the Chief Engr at 7 2/3 lacs of rupees; and he calculates that at the rate hitherto attained, it will require a period of three years to complete the work, altho' Capt Campbell, the Executive officer, apprehends four years as the time required. To shorten this period, Major Sandford brings forward certain suggestions, which the Govt will now proceed to consider and dispose of.

2 In para 8, he recommends that a number of European soldiers now employed on the works should be permanently retained, until the completion of the barracks, and that they should be liable to removal only for misconduct, and at the instance of the Executive officer. A list of these men is furnished, shewing no less than twenty one men, 14 of whom belong to H.M. 14th, 5 to H.M. 84th, 1 to the Bot Artillery, and 1 to H.M. 48th.

The

Govt are clearly of opinion that in the event of the corps to which any of these men belong, being ordered to march on any emergency, every one of them must at once return to regimental duty. Para 8 of Major Sandford's letter and the list referred to will however, be disposed of in the Military Department.

3 The recommendation in the 9th para that Captain Campbell and his Subordinates should be considered

extra to the regular District Establishment in the Public Works Department, to prevent the hands of the District Engineer being weakened by their withdrawal from the current duties of the District, cannot be entertained. The Department has been appropriated to the several Districts according to the supposed necessities of each, and the Government cannot weaken the hands of other District Engineers because

because Captain Francis has on hand a work that temporarily calls for the constant attention of a proportion of his Subordinates.

4th The next suggestion, that the Engineer Department at Trichinopoly should afford assistance in making up doors, windows, scantling &c., it is observed the Chief Engineer proposes to refer to the District Engineer of Trichinopoly, and it will, it is presumed, form the subject of a further communication

communication Sir para 11, Major Lawford recommends that two efficient Overseers may be immediately placed under Capt.n Campbell's orders. To this the Chief Engineer himself objects, on the ground that Overseers are not produced elsewhere.

5th Colonel Fisher supports the Supt.g Engr's of the suggestion (para 12) that a party of 30 or 40 good carpenters of the ordnance artificer corps, should be detached to work under Capt.n Campbell at the barracks. It does not seem probable that the Superintendent of the Gun Carriage Manufactory

can spare so many good workmen, without delay to his own proceedings: but the first resolution to the 2nd head of enquiry to enquire of Major Maitland how many of the artificer corps can be conveniently placed at Capt Campbell's disposal.

6 Orders on the last suggestion, as to the employment in the Moodoomallay forest of four additional elephants, from among those attached to the reserved for military purposes at Seroomoorg, must be deferred, until the Chief Engr reports in compliance with the order of the 25th May last, to what distance the elephants would be removed from their depot, and for how many months their services would be required for the conveyance of the timber.

The remarks regarding the purchase of a mill for the purposes of a Battery, and the working of the Moodoomallay

Forest do not call for notice at present. The Govt observe that both Captains Campbell and Morgan are favorably mentioned by the Supts and the Chief Engr, for the zealous discharge of their duties, in connection with the building of the Peshawar Barracks.

8 Ordered that a copy of Major Lawford's report and of Col Baker's letter recorded above, be laid before the Govt of India with their proceedings with reference to para 5 of the letter of this Govt dated 22d April 57, No 759.

9 Ordered also that the two Plans for a Bakery and Mill received with the Second of the papers recorded at the head of these Proceedings be transmitted to the Government of India, in continuation of the Plans forwarded to that Government with the letter of 22nd April

April above referred to

BZ

9 Copies to the Chief Engr with 14 Drawings
3 — Military Dept with duplicate dated 22nd April
with Copies of the Chief Engr's letter
1 — Supply & Contt Department
1 — Contt of Ordnance
6 — Govt of India with 2 Plans

Public Works 1857 Departt.
Dr. to Cons. 1st July.

No 1276.

Extract Minutes of Cons.

Dated 1st July 1857.

From the Inspector Genl of Ordnance
Magazine 4th July 57 C No 1360
Requisitioning for Carpenters, Artificers
for the Barracks at Jackatalla
Encl 21 July

Ext from the Mily Depart. 16th July 1857
C No 1474 Cons 4 Aug

From the Chief Engr 8th July 57.
C No 1803 Cons.

Passing orders on Major Lawford's report on the European Barracks at Jackatallah in the Coimbatore District.

No 3 at 5.

Read 3 times & forwarded to Madras

19 June 1857

Public Works dept.

A 277.

To

Lieut Col. N. E. Baker,
Secy, Govt of India,

Sir,

With reference to para 5 of my letter dated 22d April 57, No 759, I am directed by the Right Honble the Govr in Council to submit for the information of the Govt of India, the accompanying copy of a report from Major Lawford, the Supt Engr of the Southern Circle, on the present condition of the Jackatalla barracks, the progress made in the works, the probable time of their completion, and the measures proper to be taken for rendering the execution efficient. Copies of Col Baker's letter forwarding cover to the above report, and of the Proceedings of Govt of this day, are also submitted for information

I

2d April 57, No 164.

27th May 57, No 729.

2 I am further directed to take this opportunity to forward two Plans, recently received from the Chief Engineer, of the Bakery and Mill proposed to be erected at Jackatallah, for which an Estimate, amounting to Rs 15,000 was transmitted with my letter of 22nd Ulto above referred to.

D.A.

Fort St. Geo: 1st July 1857

Public Works 1857 Deptt.
Dt. to Civil 7th July

No 1277

To The Secretary to the
Government of India.
D. of W.

Dated 7th July 57.

Recd 8th July 10th July 57
No 1479 Civil 18
From Dt. 1st Septr 57 in Copy 29th Septr

Submitting copy of a report from Major Lawford on the present condition of the Sec. Battalion Barracks, the progress made in the works, &c. and forwarding two plans of the Bakery and Mill proposed to be erected at that station.

No 6.

Ry Dunn 823