

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—again the following papers :—

From Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Coimbatore, 16th December 1885, No. 491 E.W.

I regret having to report the failure of the tower of the district munsif's court at Tellicherry.

2. The building in question was built on the old standard design issued with G.O., No. 2294 W., of 6th September 1879. It was begun in March 1883 and finished in March 1884, while Mr. J. P. Davidson was divisional officer of the combined West Coast and Coimbatore Division. When the work was begun Sergeant Webb was in charge of the sub-division, from March to June 1883, and subsequently, June 1883 to March 1884, Mr. Marjoribanks was sub-divisional officer with Sergeant Webb as his subordinate.

3. The tower, as appears from the sub-divisional officer's report, as built is 53 feet high, "with walls $1\frac{1}{2}$ feet thick, with the exception of one side, which is 2 feet thick." According to the design the walls were to be $1\frac{1}{2}$ feet up to bottom of turret, and those of the turret were to be one foot thick only.

4. As far as I can gather from the reports of the sub-divisional officer, the turret was badly cracked probably from the material being porous and the walls so thin and unplastered, while the lower portion of the tower from the wall-plates of the record-room, about 32 feet above basement, was cracked but not dangerously, for the supervisor dismantled the turret but not the tower, awaiting instructions from the divisional officer, and covered the tower over with a cadjan roof.

5. In paragraph 3 of his letter* No. 358, the supervisor observes that "on examination I find the material" "is far inferior to the laterite used in Cannanore."

* Dated 14th November 1885.

Considering that Sergeant Webb was employed on the building from commencement to finish, he has been slow in making this discovery; probably, if it had been reported at the time of construction, and Mr. Davidson had thought so, the tower would have been plastered.

6. The reports give no information as to the state of the other buildings of the court, which the munsif was recommended to vacate; probably the recommendation was merely given because the court could not work without the use of the record-rooms which were in the tower.

7. Mention is made of some alteration in the design; but this is not mentioned in the completion report, and it is not known what is referred to.

8. I have delayed this report greatly in expectation of a full and clear report from the divisional officer, which is still awaited; and will be sent you as soon as it is received.

9. There is only one other tower of this kind on the West Coast, that at the Putur court, which has shown no signs of failure as yet; but, as it leaked, with the approval of the District Judge, the divisional officer had, in October last, decided to plaster it.

10. I think that if such towers are built in future of laterite, the lower part of the walls should be 2 feet thick throughout and the outer faces should be plastered.

Telegram to the Suptg. Engineer, IV Circle, dated 17th December 1885, No. 2185 C.

From Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Ootacamund, 5th January 1886, No. 6 E.W.

In continuation of my letter, No. 491, of 16th instant, I have now the honor to forward the report of the Executive Engineer, West Coast division, on the failure of the turret of the district munsif's court at Tellicherry, accompanied by plans showing the positions of the "turret" and "tower," and how they were built.

2. From these it appears that the failure occurred only in the turret containing the spiral staircase leading to the record-rooms in the "tower," and that the latter (the "tower") has not been affected.

3. The plans also show the alteration made in the crown of the turret during construction.

4. The Executive Engineer attributes the failure partly to the description of laterite used, which, however, appears to have been the best procurable in the neighbourhood, and to the fact of the staircase being made of wood, which was affected by leakage in the masonry of the turret.

5. If better stone cannot be discovered, Colonel Ross Thompson's suggestions for rebuilding in brick with stone steps may be adopted. If laterite be used, it should be plastered.

ENCLOSURE.

From Colonel ROSS THOMPSON, R.E., Executive Engineer, West Coast Division, to the Superintending Engineer, IV Circle, dated Calicut, 2nd January 1886, No. 1.

I have the honor to report that I inspected the Tellicherry district munsif's court building on the 21st ultimo. The "turret" containing the spiral stair leading to the rooms of the record "tower" is cracked horizontally, vertically and spirally. My opinion is that the laterite of which it is built was not sufficiently good to bear its own crushing weight when it became saturated with water during the late heavy monsoon. The spiral wooden stair has also been in some measure a cause of the turret's disintegration. It was probably dry and seasoned wood when built in, and in its most shrunken state. On becoming saturated the wood no doubt swelled and caused the spiral cracks. The crown of the turret and part of the walls above were at once removed when the cracks were first observed and danger apprehended. A temporary roof of bamboos and cadjans was also put over the remaining portion of the turret. The foundations do not appear to be in any way the cause of the partial collapse of the turret.

2. The turret should be taken down to the basement, or perhaps to the foundation level, but the record tower need not be touched. If the turret is to be rebuilt, and laterite used, I would recommend the walls being 2 feet instead of 1½ feet thick, and the outside should be plastered.

3. If bricks are to be used instead of laterite, they should be procured from the German Mission kilns at Calicut and conveyed by native boats by sea to Tellicherry. The remainder of the building is in good order, but I would recommend its being plastered outside before next monsoon as the laterite is undoubtedly of inferior quality, although it was brought, the sub-divisional officer informs me, from quarries some 5 or 6 miles distant.

4. The turret does not appear to have been built to the full height in the standard design (vide notes of inspection by the divisional officer and remarks thereon by the Superintending Engineer, herewith). I would recommend the spiral stair being supported on granite stones projecting from the interior of the new turret, instead of being built into the walls.

5. Plans showing the relative positions of the "turret" and the "tower," also the alterations made in the crown of the "turret" during construction, are herewith submitted.

6. The "turret" and "tower" are connected, but stand by themselves and have no connection with the other buildings.

7. The sub-divisional officer mentions that the walls of the "turret" are 2 feet thick in places; he now explains that they are only so when measured at the angles.

Telegram to the Suptg. Engineer, IV Circle, dated 12th January 1886, No. 144 C.

Do. from do. IV do. 12th do.
Letter from the do. IV do. 13th do. No. 13 E.W.

READ again—

G.O., dated 19th January 1886, No. 153 W., Public Works.

READ—also the following papers:—

From J. P. DAVIDSON, Esq., Executive Engineer, North Arcot division, to the Superintending Engineer, V Circle, dated Vellore, 25th January 1886, No. 435 S.E.

I have the honor, with reference to your No. 4365, of 22nd January 1886, to submit the following remarks on the Tellicherry District Munsif's Court.

2. The papers which accompanied your No. 4365, of 22nd January 1886, are herewith returned.

3. The Tellicherry District Munsif's Court was commenced some time in the latter half of the official year 1882-83 and was completed in March 1884.

4. At the commencement Mr. Webb (then an overseer, 1st grade) was in charge of Cannanore sub-division and consequently was in charge of the work; he was, however, relieved of the sub-division in or about June 1883, when Mr. Marjoribanks arrived, and from this date he was the subordinate in immediate charge.

5. Before the work was started, I inspected the site and found this to be very much on the slope, and the foundations, as allowed in the plan, were to be placed at various levels. I considered it inadvisable, with the supervision I had available, to carry out work on this plan, and accordingly levelled the site and placed the foundations on one and the same level throughout; this was approved by the Superintending Engineer.

6. On my next inspection I found that some laterite stone had been brought to site of work, but I found the quality of this stone very indifferent, and accordingly rejected it; after some inquiry into the matter, one or two quarries some miles from Tellicherry were selected as giving the best stone available in the neighbourhood, and the contractor was ordered to obtain his supplies from them subject, of course, to rejection of any really bad material.

7. On a later inspection I had cause to object to the quality of work being done, and dismantled all I considered bad work; at this time Mr. Webb was ill in Cannanore, and Mr. Timothy was temporarily in charge of all works in Cannanore sub-division.

8. When the tower was under construction, Mr. Marjoribanks pointed out that the construction of this to its full height, and finishing it off with a heavy stone finial, would be dangerous in high monsoon winds, and, as personally I had some distrust of laterite as a material, I recommended the acceptance of this suggestion to the Superintending Engineer, who approved. Wood-work was also used for the staircase as stone was not obtainable.

9. The building was, during its construction, inspected by me about half-a-dozen times; the Coimbatore division, as then constituted, was very extensive, and outlying works could not receive the attention which they deserved, and which, in a smaller and more compact division, they would have received.

10. The building was completed towards the close of the year 1883-84, and with the exception of leakage in the Bengal terrace roof of verandah, which had been expected, the monsoon of 1884 exposed no defects.

11. The building was inspected by the Superintending Engineer, Colonel Ross Thompson, and myself, in October or November 1884, when I was handing over charge to Colonel Ross Thompson, and it was then in good order throughout.

12. Colonel Ross Thompson attributes the failure of the tower not to the foundations, but to the crushing of the laterite under its own weight and also to swelling of the wood-work of staircase; he further states that the laterite is of inferior quality, and should be plastered.

13. I think, in my early notes of inspection the fact will be found recorded that the laterite available at Tellicherry was not first class, but still what I passed on my different inspections was a fairly good building material, and it was the best to be got.

14. The pointing of the building instead of plastering may have hastened the collapse of the turret, but I think the true cause of collapse is simply the crushing of the laterite under its own weight.

15. Owing to the scarcity on the West Coast of good brick earth, the price of bricks is prohibitive as regard general work, and laterite is invariably used in place of brick.

16. It has been the invariable custom for years on the West Coast to construct of laterite buildings that on this side would be built of brick, and this without in any way altering the dimensions of the walls, &c.

17. The same course was adopted in the case of the Tellicherry and Putúr District Munsifs' Courts. The estimates, which had been submitted and sanctioned long before my time, were for constructing the buildings in laterite, on exactly the same dimensions allowed in the standard plans and estimates.

18. The fact that in these buildings a new feature in the shape of a tower of some height was introduced was overlooked, or, more probably, it was assumed that what could be done in brick could also be done with laterite.

19. The failure of the tower at Tellicherry after its second monsoon, and the very leaky state of the tower at Putúr after its first monsoon, prove that, beyond certain limits, brickwork and laterite work are not interchangeable.

20. I may here mention that I had always distrusted laterite to some extent, and would always have objected to its use in arched bridges unless the arches were semi-circular.

21. If I had been able to pay closer attention to the works on the West Coast, it is possible that I might have hesitated about constructing the towers at Tellicherry and Putúr without giving them a greater bearing surface at bottom; but my visits to these works were necessarily few and far between, and I quite overlooked the fact (as also apparently had those who prepared and sanctioned the estimates) that a tower of over 50 feet built in laterite required special treatment, or, more correctly, I had not realised that the towers were of this height.

22. The tower at Putúr has been completed since I handed over charge, but considering that, after its first monsoon, it shows defects which the tower at Tellicherry did not, I should think it very probable that it may also fail; the stone obtainable at Putúr was, as far as I remember, superior to that obtainable at Tellicherry.

23. Laterite being a quarried material, it is, of course, impossible to be certain of obtaining a really first-class stone within a reasonable distance of any new work that is started, and, in such cases, the excessive cost of transport being taken into account, the only course open is to make use of the best of the material at hand.

24. I think a series of experiments as to the crushing weight, &c., of laterite of various qualities would be of use.

25. Pointing in preference to plastering is, judging after the event, probably unwise in the case of laterite except of the very best quality; still there are many cases of pointed buildings on the West Coast, and the effect is certainly to be infinitely preferred to plaster.

26. Mr. Webb's remarks that on "examination he finds the laterite to be that ordinarily used at Tellicherry, and that it is inferior to that in use at Cannanore," is to me unintelligible.

27. Considering Mr. Webb was in charge of the work from start to finish, either as sub-divisional officer or subordinate, and that, in this latter capacity, he had the passing of all material used, it is not easy to understand why it required examination on his part to find that the laterite was not Cannanore laterite.

28. The comparison of Cannanore and Tellicherry laterite is also, in my opinion, unnecessary; Cannanore lies 14 miles by road from Tellicherry, and its quarries probably lie outside the cantonment. Moreover, during the construction of the work the backwater lying $1\frac{1}{2}$ to 2 miles from Tellicherry was unbridged, the bridge having been dismantled as dangerous; also during the construction of the work, Mr. Webb, who, from his long stay at Cannanore as a subordinate in the sub-division, was in the best position to judge, was convinced that the laterite we were getting for the building was the best obtainable.

29. In conclusion, I think the true explanation of failure is that, both at Tellicherry and Putúr, a material, the qualities of which were not then, and are not now, satisfactorily known, was used for work which differed from anything previously carried out.

No. 4476.

Forwarded to the Chief Engineer, Public Works Department, with reference to G.O., No. 153 W., dated 19th January 1886.

(Signed) H. L. PRENDERGAST, Colonel, R.E.,
29th January 1886. Superintending Engineer, V Circle.

From Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Badagara, 1st February 1886, No. 79 C/E.W.

As directed in G.O., No. 153, of 19th January 1886, I have the honor to report further on the failure of the turret of the Tellicherry Munsif's Court after personal inspection, on the 30th and 31st January, and inquiry on the spot.

2. I may first state that the Munsif's Court was begun in 1882-83 and finished in 1883-84. It was handed over to the District Judge on the 16th April 1884, and I inspected it, with Colonel Ross Thompson and Mr. Davidson, on the 23rd October 1884. At that time no cracks were observed in any part of the building; no complaint was made about the turret; and the only part of the building considered defective was the sloping terrace verandahs of the clerks' rooms which had leaked, as all terracing does on the West Coast. Terracing of any kind is unsuited to the heavy rainfall of that coast, and these verandah roofs, which have since been unsuccessfully treated with the usual composition of tar and sand, will have to be covered with Mission tiles on planking (or corrugated iron) to make them water-tight.

3. In August and September 1885, Sergeant Webb, the sub-divisional officer, visited the court three or four times when the tar and sand composition was being applied to the verandah roofs, but he did not enter the turret, no cracks had been observed in its walls, and his attention was not drawn to it or to any other part of the building except the verandah roofs of the clerks' rooms.

4. I may here state that the set of three record-rooms are, as will be observed from the plan, each $13\frac{1}{2}$ feet square, and placed one above the other. The lower room is now occupied as a record-room, and I was assured by the court officials, who were present at one of my inspections, that the one room was ample for the wants of the court as regards storing records, and would always be, because every month the records disposed of are sent to the District Court, about 50 yards off, for safe custody. The upper two record-rooms, which can only be approached by the turret, have, therefore, never been used. The old munsif, who died in December, had some

intention of using one of them as a tiffin-room; but there are no signs of its ever having been used for that or any other purpose. It is a pity he did not use it, as we should then probably know about what time the cracking took place. But as the upper rooms exist, and may hereafter be put to some use, the turret will have to be rebuilt, at least to a height of 8 or 10 feet above the floor of the upper room.

5. The walls of the turret, covered with a light cadjan roof, are still standing, with the substantial wooden spiral staircase; and I was therefore able to make a very thorough inspection both of the turret and the upper record-rooms.

6. The fact of the cracked condition of the turret was not known to any one until the 9th November, the date on which the Sessions Judge telegraphed to the sub-divisional officer at Cannanore requesting him to examine the building. Its condition would not even then have attracted notice (because, as above explained, it was never used, and no signs of cracking were apparent in the lower record-room or through the entrance from it to the foot of the turret) but for the fall of a lump of plaster off the inner face of the walls on to the wooden staircase. The attention of the clerk in the record-room was thus drawn to the turret; he entered it, and, going up a little way, he observed the cracks in the plastering.

7. Externally there is nothing likely to be observed by any ordinary observer. For three feet or three feet and-a-half from the ground there is not the faintest sign of a crack. Above that level, here and there at intervals, not continuous or near one another, a few fine cracks only are discernible on very close inspection. And the first cracks in the plaster inside are at about the same level. They become more frequent in the plaster of the interior higher up, and where the plaster has fallen, or been removed, the cracks are found to extend to the masonry. At the top of the walls, we know from Sergeant Webb's report, he found them not only damp, but coming away in pieces apparently full of minute cracks. The word "saturated," in his letter, No. 375, of 23rd November 1885, gives, as I now understand, a somewhat exaggerated idea of the actual state of the stone, and the word used should more properly have been "damp." But the cracks are principally vertical, or the vertical ones are the most dangerous looking. There are also horizontal ones, but these strike me as having something to do with the sections of the masonry or plaster that were done at a time in the course of construction.

8. The substantial wooden staircase, with a wooden newel 8" diameter, and built of planking $1\frac{1}{4}$ inches thick is in perfect order, and has not been at all affected by what has happened to the walls of the turret. Sergeant Webb informs me that the treads were let 4 inches into the masonry.

9. The masonry roof of the turret, which was built of laterite and plastered in surki cement, was about 15 feet high, on 18-inch walls 38 feet high. When taken down by Sergeant Webb, he says, the masonry (of the roof) was perfectly sound and free from cracks, and the cracks only began in the walls below the level of the cornice, *i.e.*, below the level of 38 feet from the ground. When Sergeant Webb inspected the turret on 10th November, he found no signs of leakage on the walls, and when he felt them to ascertain if the cracking of the plaster was due to saturation, he found the walls perfectly dry; on taking off the roof, however, and coming to the top of the walls below the cornice, the stones were still damp and cracked, and could only be removed in bits.

10. The laterite used appears to me to be fairly good material, and I do not consider it at all inferior to the laterite in ordinary use in the buildings of the West Coast. I do not attribute the cracks to the quality of the laterite, or to leakage, or saturation, or to the woodwork of the staircase. As to crushing, if the material had failed in that way, one would naturally expect to find it in worse condition the greater the weight upon it; but the base of the turret, which has the greatest weight upon it, is in perfect order.

11. I attribute the failure to the position of the turret, on an elevated site within a furlong of the sea, exposed to the full force of the wind in the south-west monsoon. My view of the case is that the turret was too weak in section to withstand a storm, and that the cracks were the result of the shaking which the lofty ornamental top

received in some storm during the last south-west monsoon. Possibly the walls were also weakened by partial saturation from the heavy rain beating against them.

12. I observe that the loop-holes introduced into the walls to admit light and air have been placed so that two are in the same plane, though at some distance apart. This may have contributed to weaken the structure. It would have been better if these had been arranged differently, so that no two should have been in the same plane either vertically or horizontally.

13. I consider that the material has shown no signs of crushing, and that it will be sufficient to demolish the turret to about three feet above the basement, and rebuild with carefully selected blocks of the best material procurable; making the walls only just high enough to admit of entrance from the top of the staircase to the upper record-room (say 30 feet), and instead of the lofty conical roof, providing one of 6 or 8 feet only, the exterior surface of the new work to be plastered in surki. The total height of the turret would then be about 38 feet at most, instead of 53.' According to the standard design, it should have been about 60 feet high.

14. If, however, it had to be rebuilt of the same height as before, I would, for greater stability, rebuild from the foundations, giving a broader base and walls of $2\frac{1}{4}$ or $2\frac{1}{2}$ feet at bottom above the basement, reducing them at every 12 or 14 feet to 18 inches at top; 18 inches is the usual length of laterite blocks, and it is not convenient to make the minimum thickness at top of wall less.

15. One other point requires notice; viz., that the plaster of all the other walls of the court except the turret is sound and free from cracks; and as these walls are of the same thickness as those of the turret, it is evident that they are able to keep out damp though unplastered; and that if damp penetrated the walls of the turret, it must have been by the cracks.

16. I must also state that I looked for any trace of the damage having been done by lightning, but there was none. The building is, however, one of those that has still to be provided with lightning conductors.

17. I have despatched to you this day, by banghy, the four plans of the Court that I obtained from you at Madras.

ORDER—dated 13th February 1886, No. 399 W., Public Works.

In his first letter * recorded above, the Superintending Engineer, IV Circle, reported the failure of the tower of the District Munsif's Court at Tellicherry. * No. 491 E.W., dated 16th December 1885. According to the sub-divisional officer's report, it had cracked horizontally, longitudinally, and spirally, to such an extent as to render the building unsafe, and to necessitate its immediate vacation by the District Munsif.

2. Instructions were at once issued to the Executive Engineer, West Coast Division, to inspect the Court-house, and to submit a full report on the subject. The Telegram, No. 2185 C., dated 17th Dec. 1885. The Executive Engineer's reply was received under cover of the Superintending Engineer's No. 6 E.W., dated 5th January 1886, and from it the Government learnt that the failure had occurred only in the turret containing a spiral staircase leading to the record-rooms in the tower, and that the tower itself had not been affected. The Executive Engineer attributed the failure to—

- (1) The laterite used being not sufficiently good to bear its own weight when saturated with water during the late heavy monsoon.
- (2) The spiral staircase being built of dry and seasoned wood which swelled considerably when saturated by rain-water which found its way in through leaks in the turret.

3. The Court-house at Tellicherry was begun in 1882-83 and finished in 1883-84; and during the time it was under construction, Mr. J. P. Davidson was the divisional

officer in charge of the combined West Coast and Coimbatore Divisions, and Sergeant Webb was serving in the sub-division. The laterite used for the tower was all passed by the latter officer.

4. On the 19th January 1886, the Government, after recording the dissatisfaction with which they had received the reports of the failure of the turret, desired the Superintendent Engineer, to submit a full report on the subject after personal inspection of the building, and called upon Mr. Davidson for any remarks or explanation he might have to offer.

5. Replies from both officers have been received. Mr. Davidson reports that he inspected the building on several occasions while it was in course of construction; but that, owing to the large extent of the Coimbatore Division as then constituted, works could not receive the attention which they deserved. He is of opinion that the true cause of the failure was the crushing of the laterite under its own weight. Mr. Davidson further states that the laterite available at Tellicherry is not first-class, but what was passed by him at his different inspections of the work was a fairly good building material and the best to be got. He is of opinion that the laterite used both at Tellicherry and Putúr is a material the qualities of which were not and are not satisfactorily known. In this connection attention is directed to the remarks contained in paragraph 22 of Mr. Davidson's report in view to the tower at Putúr being carefully watched, and any needful precautions taken against a similar failure occurring in it.

6. The Superintendent Engineer, after careful inspection of the building, is of opinion that the laterite used is a fairly good material, not inferior to laterite in ordinary use for buildings on the West Coast. Colonel Beatty does not attribute the failure of the turret to the quality of the laterite, or to leakage, saturation, or swelling of the wood-work of the staircase. He considers that the damage was the result of the shaking which the lofty ornamental top of the turret received during some storm of the last South-West monsoon. In support of this view he states that the tower stands in an elevated and exposed position, within a furlong of the sea.

7. The Government cannot accept the Superintendent Engineer's opinion as to the cause of the failure in the turret without qualification. Without doubt the exposed position of the building had much to do with it, but the failure would not have taken place if the material used had been of proper quality. For the use of inferior laterite Sergeant Webb must be held responsible, as it was all passed by him; although he now expresses surprise to find, after the failure of the turret, that its quality was so poor. The Superintendent Engineer will convey to Sergeant Webb a severe censure, and will warn him that another such instance of carelessness and negligence will seriously interfere with his departmental prospects.

8. Although Sergeant Webb must be held to be mainly in fault, the officers and subordinates who, besides him, were officially connected with the work cannot be absolved from responsibility. The Superintendent Engineer, V Circle, will furnish Mr. Davidson with a copy of this order, and a copy will be forwarded to Mr. Marjoribanks by the Superintendent Engineer, IV Circle.

9. The proposals made in paragraph 13 of the Superintendent Engineer's No. 79 C/E.W., dated 1st February 1886, are accepted; and he will submit, at an early date, an estimate for rebuilding the turret to the height recommended by him. Care will be taken that only the best materials are used. A separate estimate will be submitted at the same time for protecting the tower from lightning in the manner laid down in the Code of Instructions.

10. The suggestion made by Mr. Davidson, in paragraph 24 of his letter dated 25th January 1886, that experiments be made as to the crushing weight and other properties of laterite of various qualities, is approved, and the Superintendent Engineer will be directed to take the necessary steps for carrying out the experiments. The results will be submitted to Government accompanied by a report from the Superintendent Engineer.

11. The Government trust that this unfortunate occurrence will serve as a warning to all officers and subordinates serving on the West Coast, to exercise the greatest care in the selection of their building materials, especially in regard to the quality of laterite.

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintendent Engineer, IV Circle.

" " " V "

Exd. E. Fernandez.

Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1886) Madras.
PUBLIC WORKS.

Dated February, 13th.

Recd.

Encl.

G.O., 13th Feb. 1886, No. 399 W.

FEBRUARY.

Tower of the District Munsif's
Court at Tellicherry

Orders on reports on the failure of the —.

No: 140
nd.

From,

To,

Sir,

Superintending Engineer's Office. 47/2
Coimbatore, 11 May 1886.

The Superintending Engineer,
4th Circle.

The Chief Engineer,
P. W. Department.

Enclosures 5

2 Estimates

2 Specifications

1 Plan

As directed in para 9 of G.O. No. 399 W of 13th February 1886, I have the honor to forward for your information the two estimates I have sanctioned, for special repairs to the Tower of the District Munsiff's Court at Tellicherry, and for a lightning conductor to protect the tower from lightning in the manner laid down in the Code of Instructions. I have sanctioned the latter estimate under para 278 (a) of the Code and the former under para 279 (a).

I have the honor to be,

Sir,
Your most obt. Servt

R. D. Batty - Colonel, M.C.

No: 399 W. 13-2-86

From

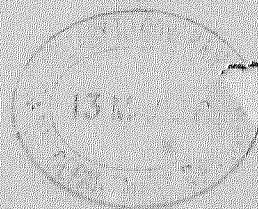
The Superint. Engineer
Fourth circle.

File No. 3694

No. 1250 Wd/17 May 1886

Recorded.

US
14-5-86



16/5/86

Dated 11th May 1886.
Recd 12th

No. 1250 Wd/17 May 1886

No. 140

Recd.
Inc: 5

Turret of District Mm
- Piff's Court at Tellicherry

S. E. IV circle
with 5 enclos.

Recd
18/5/86

Forwarding 2 refo
mates which he has sanc
tioned for special repairs
to the —, and for provid
ing a lightning con
ductor to protect the
turret. With 5 enc.

Recd 55/5
20/5 Draft