Read the following papers :—

No. 38. Proceedings of the Board of Revenue, dated 8th April 1867, No. 2,192.

Read the following letter from the Collector of Tinnevelly, to the Secretary to the Board of Revenue, dated 8th March 1867, No. 136 :—

Vide Board's Proceedings, dated 5th November 1866 and 30th January 1867, Nos. 8,020 and 611.

1. I have the honor to forward, herewith, a general scheme for the expenditure of the Road Cess this year.

2. There are no Maistries and Overseers or persons acquainted with engineering in this district to superintend an extensive outlay under the Revenue Department, and before an establishment can be raised, the present working season will have passed. Labor is abundant from February till June when there is nothing going on in the fields, and during the next three months, the money now available may be spent to the greatest advantage.

3. There is no such thing as a completely made road in this district. Even the Madras Trunk Road and the Cotton road, both Imperial lines receiving maintenance allowance, are incomplete in parts. The Madras Trunk Road, especially on which there is a traffic of 1,000 carts a day, is in some places almost impassable, and the drivers here and there have to make *detours* over the face of the country; throughout sixty miles of its length, it was originally constructed of boulders or paving-stones covered over with earth or gravel; the high winds have blown off the surface-coating, and the boulders now exposed are a formidable obstruction to rapid travelling, and occasion numerous accidents both to carts and animals.

4. The efforts of the Engineers for years past have been directed to getting rid of this nuisance, and much of the maintenance allowance has been spent in digging out the boulders, breaking them up, and relaying them in the form of metal. This is an expensive and tedious process, and while it continues, there is no chance of the roadway being properly cared for throughout. North of Satur, on either side of Palamcottah and north of Panagudy, there are still some miles of road to make. The mail cart travels from Trichinopoly to Madura, but it can get no further, and even the parcels service of the Indian Carrying Company stops short of Tinnevelly; it is of the greatest importance to the district that the Madras Trunk Road should be put in repair throughout, and this is never likely to happen while the Engineer is solely dependent on maintenance allowance. Cross-roads are of little use to the district, while the main line is almost impassable, and now that we are likely to have funds to put this main line in order, it would be a pity to lose the chance; when the road is once in repair, the maintenance allowance is ample, and the Superintending Engineer and Range Officers are of opinion that with some assistance they can get the line put in thorough repair throughout in the course of the next two years.

5. The assistance needed is 30,000 Rupees; 15,000 for the break at Satur, 8,000 Rupees for that near Panagudy, and 7,000 Rupees for those on both sides of Palamcottah. This sum might be spent in two years, at 15,000 Rupees per annum, and the greatest possible boon would thus be conferred on the district.

6. When the road is once put in order the great need will be water, not only to tamp the metalling, but to allow of the growth of trees. To secure this, I propose to adopt the system so successfully carried out in parts of Salem and Coimbatore, viz., instead of digging shallow pits at hap-hazard along the side of the road,

to procure hard material, to dig one pit at every mile or two in the most likely place, and to dig this pit in the form of a square tank of the depth necessary to insure an ample supply of water; the material raised to be applied to the road and the cost of raising this material down to a certain depth, say two yards, to be borne by the road; the cost of raising a 3rd, 4th, 5th, and perhaps even a 6th yard of material would be too heavy for the road to bear unaided, and the difference between the cost of raising this and that of raising surface-material might be borne by the Jungle Conservancy Fund.

7. The surface earth if thrown out all round the tank in the form of a broad bank would carry a double row of trees, while for a quarter of a mile from the tank on either side a good avenue might be secured for the road; independently of the boon to 1,000 bandymen, and twice that number of cattle daily, digging these tanks would be a real economy, for the high winds which here prevail from June till October sweep away the finer stone and gravel from the surface of the road as fast as it is laid down, and it is thus useless to mend the road except at the rainy season (which in this district is of very limited duration) from the utter want of water with which to tamp the metal.

8. The Cotton road leading from the interior to Tuticorin is the next important line; 500 carts pass over this daily, and during the shipping season this number is increased to 1,100; the road has been made at great cost, but a portion near Tuticorin originally laid with coral has been so completely cut through, that the material is entirely lost and is buried deep in the sand; an estimate of 11,700 Rupees for the re-construction of this section has been prepared, but it is uncertain when the money may be granted; in the meantime the road is comparatively useless, and the maintenance allowance that should be spent on other parts of the road is absorbed in vain attempts to make this sandy tract more passable. If the amount of the estimate is now advanced or paid outright from the Road Cess, the Cotton road may be put into thorough repair before the next crop is shipped.

9. The next important line is the road from Tuticorin through Palamcottah to Tenkasy. The Government are anxious to see this line advance, and some temporary assistance has been rendered from the Local Funds this year; the Budget grant is 15,000 Rupees annually, at which rate it will take four years more to lay out the 6,000 Rupees necessary to complete the section between Palamcottah and Tuticorin; to the west of Palamcottah this road is almost impassable, and the first fifteen miles have for years been in a most deplorable state; beyond this the road is in good order, but the connecting links are wanting in two places; a grant of 15,000 Rupees would complete the western section of this road from Palamcottah to the boundary of the district, and I think it very desirable that this should be done at once.

10. Road No. 10 connects the Travancore country at the extremity of the Western Ghauts with the rich rice-producing talook of Ambasamudram; the traffic on this road is great, but the road itself is so neglected that the bridges constructed in former days are now being cut through for want of earth to cover them, and the roadway itself has been swept away, or is otherwise impassable in places; 10,000 Rupees would put this in good condition.

11. 66,700 Rupees would thus complete the main lines of communication which, without this aid, may not be completed for years; the money required for

this all-important commencement of a system of roads in this district will be available this year, and will be laid out to the best advantage by the Public Works Department.

12. Deducting the money thus allotted, we shall have quite sufficient to spend on cross-roads this year, and the district will be more benefited by completing the trunk lines than it possibly can be if the outlay is limited to disconnected efforts in the talooks.

13. I propose to commence the district roads from the two main starting points, the sea-board and Palamcottah.

14. First, the sea-board.—It is of great importance that there should be a free line of communication up and down the coast; none exists at present; the old cart-track passing through a series of swamps and lagoons is impassable for months in the year; the salt pans and the principal towns along the coast should be connected, and this I propose to effect by a series of zigzags, both to avoid the backwaters and to make partial use of existing lines that lead into the interior.

15. The Government have ordered the Vypar pans to the extreme north of the district to be connected with Trunk Road No. 4; this I propose to do by connecting Vypar with Velatikolam (a Sub-Magistrate's station) and Velatikolam with the Cotton road near Yetiapuram; a total distance of twenty-two miles; the line might be marked out this year at a cost of 2,000 Rupees; another line should connect Velatikolam with the Arasady pans and Tuticorin, and thus secure a thorough communication with Vypar when the ordinary cart-track is impassable. The distance twenty-five miles) might be marked out, and the earthwork between Arasady and Tuticorin completed this year at a cost of 5,000 Rupees.

16. From Tuticorin I propose making use of the new road towards Palamcottah as far as Puducottah, twelve miles inland to head the backwaters, and from Puducottah to carry a line due south through Yeril to Nallur twelve miles further with one branch to Trichendoor ten miles, and another through Manad to Colasegarapatnam eighteen miles; total forty miles; this might all be marked out this year at a cost of 4,000 Rupees, and I am now about to ride over these lines.

17. The salt pans and seaports with the exception of Viziaputty, which is far away to the south, will thus be connected with each other, and with the main roads running inland, and this I look on as the next important step after the completion of the main roads themselves.

18. Secondly, Palamcottah.—Communication between Head-quarters and the Sub-division is liable to interruption, as the road is carried along the north bank of the river which it crosses near Shermadevy; there is a road partly constructed on the southern bank, and the completion of this, with a bridge over the Pachiyar, a small tributary of the Tambrapany, would open a free line of communication at all times between Head-quarters and the Sub-division; this might be effected at a cost of 15,000 Rupees; 5,000 to be spent this year.

19. The connection of Shermadevy with Trunk Road No. 10 at Calkad, twelve miles distant, is important; this might be marked out now at a cost of 1,500 Rupees.

20. A line along the northern bank of the river, from the Saluchanum bridge through Sevalparey and Valnad to Streevyguntam, would be very useful; there is an old avenue all the way, but the road is impassable from being cut up by the drainage that empties itself into the river; culverts would have to be built, and the

roadway reformed throughout; a commencement might be made this year, and 5,000 Rupees might be spent.

21. I have called for estimates for all these works, but, as suggested by the Superintending Engineer, it is advisable to get a general sanction for the scheme of expenditure before estimates are framed in detail.

22. We shall collect about a lac of Rupees this year, and the proposed expenditure amounts to 97,700 Rupees; most of it will be spent by the Public Works Department, though lining out the roads can in many cases be intrusted to the Tashildars checked by the Range Officers.

23. The Superintending Engineer is of opinion that an establishment must be raised to control the expenditure and superintend the District roads, and I enclose his Memorandum on the subject.

24. In the accompanying Map the trunk roads are marked red, the parts to be completed and the new roads to be commenced from the District Road Cess are marked with black dotted lines.

Memorandum regarding the appropriation of Funds from the Road Cess.

1. *Main Trunk Road No. 4.*—The balance on estimate for completing unfinished portions will be about 11,000 Rupees, and a stretch of about two miles north of Sattur, never estimated for, will take about 4,000 Rupees; total requirements, 15,000; but there is a Budget allotment of 5,000 Rupees, so there may be this sum of Rupees 5,000 available for transfer elsewhere.

2. Some three miles of cotton road from the second mile out of Tuticorin northwards have suffered so severely, that they are reduced to the condition of "unmade;" to keep this portion passable has been a heavy drag on the repair allowance, and the rest of the road suffers in consequence. An estimate of Rupees 11,000 has been made to renew this part, and a grant of funds is greatly needed.

3. In the fourth Range there are required estimates for roads from Vypar through Velatikolam to Yetiapuram, and Tuticorin through Arasady to Velatikolam.

In the first Range from some point on the Tuticorin Road No. 8, not far from Pudacottah, probably through Yeril to join No. 12 road at Nallur.

A continuation of the same, being No. 12 road to Trichendoor.

In the second Range from Palamcottah on the right bank of the Tambrapoorny to Shermadevy, including a bridge over the Puchyar (a portion being in first Range.)

A continuation of the same from Shermadevy to join Road No. 10.

Completion of Road No. 10 between Tenkasy, Caillidaeurichy, and Panagudy.

In fifth Range, a portion of this latter road.

Now before estimates are put in hand for these roads, it seems very advisable that a general approval of the scheme of distribution of funds be obtained. The labor of preparing the estimates is considerable, and is an additional tax on this department, beyond the ordinary duties; some time also will elapse before the estimates are prepared, so that if any were to be rejected, and others called for instead, the commencement of the work (if necessarily consequent on sanction of estimates) would be greatly retarded.

4. The completion of Imperial lines will be carried on by the Public Works Department. The lines of road from Palamcottah through Shermadevy to Road No. 10, and the continuation of the latter as far as Panagudy, may also be taken up by this department. The Talook Overseers will have these roads under their supervision; but the charge for Maistries should fall on the Road Cess, under the head Petty Establishment. There then remain to be constructed, by the Revenue Department, the two roads Vypar to Yetiapuram, and Tuticorin to Velatikolam; also the road from No. 8 through Nallur to Trichendoor.

The works should be executed on contract, so as to save the number of petty Maistries, Gumastahs, Head Coolies, &c., that would otherwise be required. The road Vypar to Yetiapuram will be

about twenty-two miles in length; that from Tuticorin to Velatikolam about twenty-five miles. These two roads might be placed under the charge of a Head Maistry on 40 Rupees, with a Deputy Maistry under him on each line on 20 Rupees; total charge 80 Rupees per month, or 960 Rupees per annum; just about five per cent. on the proposed expenditure of 20,000 Rupees. For each section of the road from Road No. 8 to Trichendoor, a Deputy Maistry on 20 Rupees will be required; but considering that the whole length will not be more than about twenty-three miles, Rupees 35 will be sufficient salary for the Head Maistry; hence for the expenditure of Rupees 20,000, the Petty Establishment charge will be 75 Rupees per month, and Rs. 900 for the year, or 4½ per cent. Sections of the road should be taken up, convenient for the Deputy Maistry's constant supervision; the Head Maistry should have a portion under his own immediate superintendence, and occasionally go over the work that is under his Deputies. The Head Maistry will be in a position of considerable responsibility; and while answerable to the Collector and Revenue authorities for the conduct of his duties should be ready to ask and receive advice from the Range Officer; the occasions on which such would be advisable will be when slight deviations from the estimated trace appear to be perferable; before altering the waterway over road-dams or under-tunnels; when in doubt as to the quality of material available, or as to the locality from which the best material is procurable. On such and other occasions, when a Talook Overseer would require the orders of the Range Officer, the Road Maistry will do well to receive the same assistance.

5. As operations from these funds are extended, and allotments are made for completed portions of roads, and generally for adding to the net works of communications through the district, the number of Maistries must be increased; and the rates of superintendence to expenditure will be higher when small sums are devoted to a great length of miles, than when as at first large expenditure is concentrated on a few miles of new roads. Hence, to provide generally for superintendence, for minor and casual works at the discretion of the Collector, and for contingencies, supposing that one lac of Rupees be assumed in round numbers as the probable available sum for a year, the apportionment may be taken.

		Rs.
For new works and repairs		90,000
Petty establishment, at 7 per cent	7,000	
Minor and casual works, at 2 ,, ,, ...	2,000	
Contingencies, at 1 ,, ,, ...	1,000	
		10,000
Total		1,00,000

6. For main roads, the Public Works Department will probably be called on to furnish estimates for minor roads and communications between villages; when these are taken up, the Revenue Department can prepare their own estimates, subject, if the Collector thinks fit, to the estimates being checked as to calculations and rates, by the Engineer Department. Any proposed masonry works of importance would be intrusted to the Public Works Department; and for all others of an ordinary nature, the estimated cost of which exceeds a sum to be determined, say 1,000 Rupees, bills would be examined and the work inspected by the Public Works Department.

7. The Government object as a rule to Imperial allotments being supplemented by grants from Local Funds, and especially in the way of maintenance allowances, considering the objects of the roads as distinct; still grants of Local Funds have been given for Imperial lines: one of the main roads under construction in Madura District has had this assistance, and at present there is a grant for the Tuticorin and Palamcottah road. That a district road should receive an Imperial grant is certainly open to objection; but an Imperial line serves local purposes also; the local traffic of two Cusbahs, Sattur and Virdupatty, has the benefit of the Imperial line of road; and it does not appear a misappropriation of funds to make from Local Funds an unfinished part of road, which the Government are unable to take up from Imperial resources.

8. A considerable part of the Tinnevelly District is an open dry country, almost entirely clear of wood, with strong winds prevailing for some months. It is a matter of great difficulty, with the traffic sweeps away the upper-coating, and leaves the stone exposed; water is not found through the long season of drought, to repair the road surface; the action of the wind combined

for stretches of miles; and there are no trees to shelter travellers and their cattle. To have wells provided at intervals would be a great boon to the travelling public; the road would be benefited by them, and avenues may be planted with the prospect of the trees growing up, which themselves will in time produce a direct revenue. There appears to be now the opportunity of providing for wells in the estimates that are framed for the local cess operations; they will facilitate the construction of the road, and be a lasting advantage.

MADURA,
18th *February* 1867.

(Signed) H. L. PRENDERGAST, Captain,
Officiating Superintending Engineer.

(True Copy.)

(Signed) R. K. PUCKLE.
Collector.

ENCLOSURE No. 2.—Map.

1. In this letter Mr. Puckle submits his views on the subject of employing the District Road Cess in 1867-68, and forwards also a communication from the Superintending Engineer on the subject.

2. The description which Mr. Puckle gives of the present condition of the communications of the district is most unsatisfactory. The district, in fact, does not possess a single complete line of road.

3. The District Road Cess may be estimated in round numbers at a lac of Rupees per annum, and judiciously expended, will in the course of a few years furnish the district with a sufficiency of good *district* roads, to which purpose alone the funds realized under Act III of 1866, (Madras,) are applicable by law.

4. Mr. Puckle proposes that a large portion of the cess shall be devoted to Imperial lines, but this system is open to the objections that to make loans to the Department of Public Works is practically to increase the Budget annually sanctioned for Public Works; that the repayment of such loans may be a matter of future difficulty, (being uncertain, if contingent on the existence of unexpended balance of the Public Works Budget, and being simply a forestalling of future income, if met by a specific appropriation out of the Budget,) and especially that the outlay of funds raised under Act III of 1866 on Imperial works would be a breach of engagement, and shake the confidence of the people in the good faith of the Government.

5. The first step to be taken in the matter under consideration is to determine what roads are properly Imperial; and to restrict expenditure from Imperial Funds on these, leaving the others to be constructed and maintained from the District Road Fund. In their Order of the 5th January 1865, Revenue Department, No. 13, Government approved of ten roads being classed as Imperial, in accordance with the Board's recommendation; but on further consideration, the Board think that most of these may be regarded as really District lines.

6. The Board consider that the main line No. 4 trunk road is, beyond question, Imperial. It traverses the district from north to south, and is the great line of Military communication with the station of Palamcottah, and the southern extremity of Travancore.

7. For the like reasons the line from Madura *via* Streevellipootoor to Tenkasy and Quilon should be classed as Imperial.

8. The road from Palamcottah to Tuticorin, connecting the capital of the district with its chief seaport, should also, in the Board's opinion, be regarded as Imperial.

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9. To these three lines the Board are disposed to restrict expenditure from the Public Works Budget, in future, but there are several small Salt roads to which Government should fairly contribute something.

	RS.
Part II.	
Nallur to Armonagherry	3,650
Part III.	
No. 8 road	
,, 9 ,, ...	3,410
,, 12 ,, ...	2,560
,, 5 ,, ...	12,080
Shevalpatty to Yetiapuram	4,520
No. 6 ,, ...	2,820
Minor repairs	17,703

NOTE.—There is a provision of 5,000 Rupees in the Budget for this line; it is not clear whether the 30,000 required for completion includes this or not.

10. If this arrangement be carried out, it would, as far as the Board can gather from the Public Works Budget of 1867-68, liberate funds to the extent of Rupees 46,743, which would be applicable to the retained lines. The sum required for the completion of the first line is only Rupees 30,000, and the whole of this, instead of only a moiety as Mr. Puckle proposes, might be granted in 1867-68, and there would still remain Rupees 16,743 to supplement the existing grant of Rupees 15,000 for the Tuticorin road.

11. The Board wish to have the opinion of the Collector and Superintending Engineer on this proposal, in order that they may address Government without delay. It should be stated also how much the Department of Public Works can this year expend, *beyond* the Budget allotment, on Trunk Road No. 4 and the road to Tuticorin.

12. The other roads requiring to be taken in hand from the District Road Funds, are the following:—

I. Completion of the road from Tuticorin to Sattur, Rupees 11,700. The estimate of this is ready, and should be submitted without delay.

II. From Tenkasy to Palamcottah, Rupees 15,000. An estimate for this should be prepared immediately.

III. Road No. 10, Rupees 10,000. This is not shewn in the Map. The Collector will supply the omission.

IV. Vypar *via* Velatikolam to Yetiapuram. For tracing the road, Rupees 2,000.

V. Velatikolam *via* Arasady to Tuticorin. Tracing the whole way and earthwork between Arasady and Tuticorin, Rupees 5,000.

VI. Puducottah *via* Yeril and Nallur to Trichendoor and *via* Manad to Colasegarapatnam. Tracing throughout Rupees 4,000.

VII. Palamcottah to Shermadevy, Rupees 15,000, of which Rupees 5,000 to be spent in 1867-68.

VIII. Shermadevy to Calkad. Tracing Rupees 1,500.

IX. From Tinnevelly *via* Sevalparey and Valnad to Streevyguntam, Rupees 5,000 to be expended this year.

13. These works involve an expenditure in 1867-68 of Rupees 49,200, and including the sum of Rupees 46,743 received from the Public Works Budget, the total expenditure will be Rupees 95,943.

14. The Board approve of Mr. Puckle's proposals, and request that he will submit a Supplemental Budget accordingly, and request the Superintending Engi-

neer to have the necessary plans and estimates prepared as soon as possible. The Board consider it necessary that the new traces should be made under competent professional superintendence, as they attach the utmost importance to the selection in the first instance of the best line available.

15. The Collector and Superintending Engineer will decide in the case of each work, by which department it is to be executed.

16. The Board quite recognise the necessity of some extra establishment, and definite proposals should be submitted in accordance with No. 22 of the District Road Fund Rules.

17. The Collector will re-submit his Map with the lines marked as shewn in the margin, and will enter a scale and give the length of each line. The Map should shew also the work entered in his Original Budget and sanctioned.

	Completed.	In progress.	Proposed.
Imperial lines, dark red ...			
District lines, dark blue ...			

18. His plan of making excavations for metalling, so as to serve also as tanks, is good; but the apportionment of expenditure between the Road Fund and Jungle Fund is complicated.

19. The Board would like to know approximately how much is likely to be required as maintenance per mile, on the completion of the roads projected, and the present grants for this purpose.

No. 39. Proceedings of the Board of Revenue, dated 19th June 1867, No. 3,803.

Read the following letter from the Collector of Tinnevelly, to the Secretary to the Board of Revenue, dated 27th May 1867, No. 276:—

1. In reply to the Board's Proceedings, No. 2,192, dated 8th April 1867, regarding the Road Cess, I have the honor to inform you that the transfer of certain roads classed as Imperial to District, and the restriction of expenditure from Imperial Funds to the remaining main lines only, is all that can be desired, and is likely to afford greater relief to the Public Works Budget, and to be more advantageous in every way than the scheme of subsidy to complete the Imperial lines that I proposed in my letter of 8th March. I had thought of this transfer myself, but considered the matter disposed of by Government in Proceedings, No. 13, dated 5th January 1865, in which ten roads were classed as Imperial.

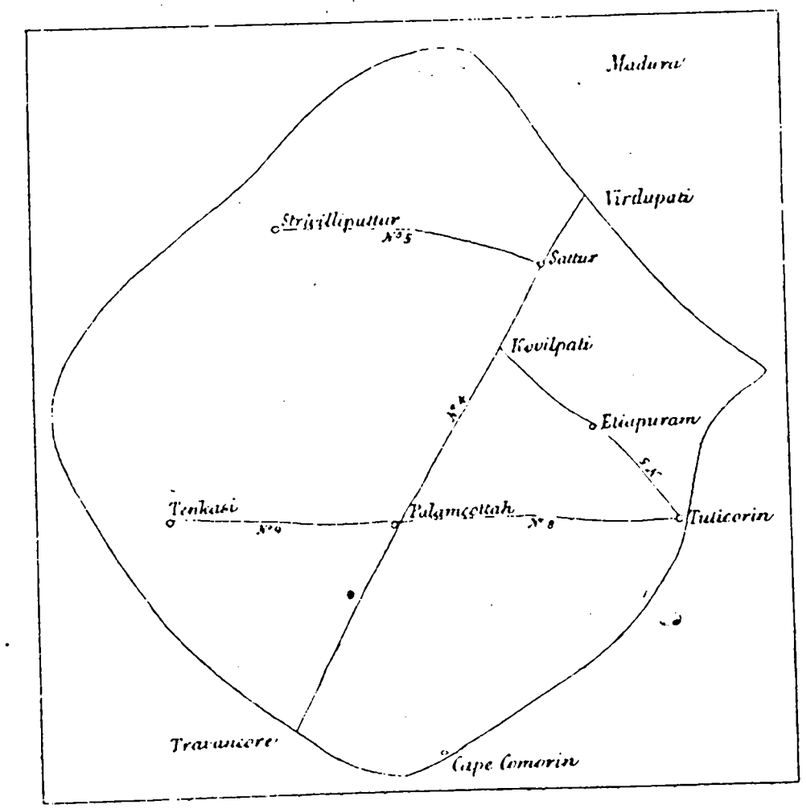
2. My proposed subsidy was not, however, intended as a loan, but as a grant from Local Funds.

3. Trunk Road No. 4 passing through the district from Madura to Travancore is undoubtedly an Imperial line; but the road from Madura *via* Streevellipootoor and Tenkasy to Quilon, alluded to in paragraph 7 of the Board's Proceedings, carries much more local than through traffic, and is a road only in name, a great part being incomplete; this might be made a District road; the entire line from Tuticorin through Palamcottah to Tenkasy being classed as Imperial, in lieu of that portion of it (between Tuticorin and Palamcottah) proposed by the Board in paragraph 8.

Budget allotment.
Original work ... ... Rs. 5,000
Repairs 19,180
Total ... 24,180
Budget allotment.
Maintenance, Rupees 1,920.

4. The Board have omitted the Cotton road which is really an Imperial line, and leads from Tuticorin to the extreme north-west, as the line *via* Palamcottah to Tenkasy leads to the extreme west of the district; both lines are crossed by Trunk Road No. 4, and one Officer might superintend all three; the lines I propose to retain as Imperial traverse the district as under:—

Budget allotment.
Repairs, Rupees 12,080.



5. The retention of these as Imperial lines will alter the calculations given in the margin of paragraph 10 of the Board's Proceedings to the extent of 15,490 Rupees, by carrying the Budget Estimate for Road No. 5* and for the Palamcottah and Tenkasy road† to the head of Imperial; and that for the Streevellipootoor‡ and Tenkasy road, and for Road No. 10§ to the head of district; this alteration will reduce the sum liberated from the Public Works Budget of 1867-68, from Rupees 46,743 to Rupees 31,253, and continue the Imperial grant to the real main lines of communication.

	Rs.
*	12,080
†	3,410
Total ...	15,490
‡	1,920
§	1,940
Total ...	3,860

6. I do not think that the Salt roads require any aid from Government; with one exception, they are made already, and in this exceptional case the road is intended more for general traffic than to carry salt; the line of Salt trade from Viziaputty being more towards the north.

Viziaputty to Valliyur.

7. The other Salt roads to pans in work, aggregate but ten miles in length, and the cost of repair is trifling.

8. The roads proposed in paragraphs 14 to 17 of my letter reviewed by the Board are exclusively district roads, and will greatly aid local traffic.

Nos. I. and II. in paragraph 12 of the Board's Proceedings will form part of Imperial lines, if my present proposition is accepted.

No. III. is marked as directed.

The points to be connected remain the same; but I have slightly altered the lines after personally inspecting them.

No. IV. should be from Vypar to Ottapedaram, instead of from Vypar *via* Vilatikolam to Yetiapuram.

No. V. should be from Velatikolam to Arasady *Salt road*, at its point of junction with the Cotton road, thus avoiding the sand near Tuticorin.

No. VI. should be *via* Yeril and Nallur to Trichendoor and from *Alwartirunagari* to Colasegarapatnam.

9. The works sanctioned from Imperial Funds, from the Road Cess, and from Local Funds, are as under—

From Imperial Funds.

		Rs.
Road No. 4	... ...	
Do. „ 5	... ...	24,180
Do. „ 8	... ...	12,080
Do. „ 9	... ...	18,270
	... ...	3,410

From Road Cess.

		Rs.
This road passes through the Yetiapuram Zemindary	No. 10	
	Vypar to Ottapedaram for tracing the road ...	10,000
Do.	Velatikolam *via* junction of Arasady Salt road with Cotton road to Tuticorin tracing the whole way	2,000
	Puducottah *via* Yeral and Nallur to Trichendoor and from Alwartirunagari to Colasegarapatnam tracing throughout	5,000
	Palamcottah to Shermadevy	4,000
	of which Rupees 5,000 to be spent in 1867-68.	15,000
	Shermadevy to Calkad tracing	1,500
This road passes through the Shivaghiri and Sattur Zemindaries.	Tinnevelly *via* Sevalparey and Valeynad to Streevyguntam	
	Road No. 1 from the Madura frontier *via* Streevellipootoor and Tenkasy to the Travancore frontier Rupees 1,920 maintenance allowance, and Rupees 3,080 for repairs.	5,000

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From Local Funds.

		Rs.
Tenkarai ...	No. 20 between Tuticorin and Trichendoor in the limits of Ahtur	776
Tinnevelly ...	Tinnevelly to Palavur	100
	to Tachanallur	250
	to Kurukutorei and Karupandorei ...	1,520
	Kokarakolam to Kurichi	250
	Palamcottah to Calkad	300
	From No. 11 through Sutamali to the river ...	1,140
Ambasamudram ...	Ambasmudram to Road No. 10	120
	Shermadevy *via* Shevel Paranjeri to junction with road from Calkad to Palamcottah (5,000 Rupees have been allotted to this from the Road Cess) ...	500
	Pattamadei *via* Kodaganallur to junction with Road No. 11	235
	Ambasamudram to Papanassam	100
	Do. to junction with the Tinnevelly and Kadayam road near Papagudi	180
	Ammandancovil to Kallur (junction with Trunk Road)...	300
	Shermadevy to junction with Road No. 11 *via* Tirtu and Kodaganallur...	400
Tenkasy	Palaya Courtallum to junction with Road No. 10...	500
	Vellam, &c., to do. No. 1 at Elanji	1,000
	Tenkasy *via* Kutukalvasy to Pambulipatnam ...	2,000
	Courtallum to Amdaruvi	300
Sankaranarcovil .	No. 2	380
	No. 17	1,300
Streevellipootoor	Streevellipootoor to Wartrap...	640
Ottapedaram ...	From Tuticorin to Vypar (not needed if road from Vypar to Ottapedaram is made)	1,000
	Vypar to Velatikolam	500
	Tuticorin to Ottapedaram	500
Nanguneri ...	Nanguneri to Calkad	500
	Calkad to Singikolam	300
	From Nanguneri *via* Vijianarayanam to Road No 14	500
	„ Radapuram to Valliyur	1,000
	„ Nanguneri on Road No. 4 to Tirukurungudi on Road No. 10	500
	„ Do. *via* Mulkarcipatti to Road No. 12 ...	1,000
	„ No. 4 at Valliyur to Yeirvadi...	1,600
	Petty repairs	480

10. As the tracing, &c., this year must be done by the Engineer's Department, a Special Establishment will be entertained as required, and in consultation with the Superintending Engineer I will submit a scale of establishment shortly.

11. No time should be lost in putting the works in hand, and I have called on the Range Officers to commence marking out as soon as possible. The Map is re-submitted marked as required.

12. With reference to the excavations for metalling, alluded to in paragraph 18 of the Board's Proceedings, perhaps the simpler method would be to excavate wells or tanks from the Jungle Conservancy Fund, and to sell the material to the road.

13. Material and labor are both very expensive here, and a maintenance allowance of less than 100 Rupees a mile would be insufficient for any road; this

will amount to Rupees 26,000 for the roads now projected when finished. The present grants from the Imperial Budget are shown in paragraphs 3 and 5.

14. The Superintending Engineer agrees as to the advantage of relieving the Imperial Budget of the cost of maintenance of roads that may fairly be classed as District, and he enumerates in paragraph 3 of his letter, herewith enclosed, four roads receiving Imperial grants in addition to the ten roads classed as Imperial in Government Proceedings of 5th January 1865. These are, however, all included in the lines I propose as District.

15. The Superintending Engineer is doubtful whether the line from Madura through Streevellipootoor to Tenkasy should be considered as leading to Quilon or from Tenkasy to Trunk Road No. 4 *via* Road No. 10. Wherever it may be considered to lead, the portion constructed lies all within the district, and is used principally for local traffic, and as such it should be classed as District. The Superintending Engineer is also doubtful whether the Palamcottah and Tenkasy road and the entire length of the Cotton road should be retained as Imperial. I do not see the advantage of different portions of any one road being classed under different heads, and I would prefer retaining these lines throughout as Imperial under one system of management; the Superintending Engineer's second letter, dated 9th instant, was written on a perusal of the draft of this letter; in it he agrees to my scheme generally, and points out certain inaccuracies which I have corrected. As the working season is advancing, I shall be glad to receive my instructions as soon as possible.

From the Officiating Superintending Engineer, 8th Division, to the Collector of Tinnevelly, dated Kodikanel, 30th April 1867, No. 194.

1. In reply to your letter, No. 83, of the 15th April 1867, and the Board's Proceedings, No. 2,162, of the 8th idem, I have the honor to state my opinion that there is no objection to grants of Local Funds being made for the completion of Imperial roads: an Imperial road is also a local road, although a local road is not an Imperial one. The Income Tax Funds were considered local: and still they were devoted partly to Imperial works. The Board propose in paragraph 10 that the Local Funds should take over a certain number of items in the Imperial Budget, which aggregate Rupees 43,743; of these, one item is for a new work Rupees 3,650, Nallur to Arumuganery, so that the proposition involves an annual outlay of Rupees 43, 693; which sum capitalized at five per cent., represents an investment of Rupees 8,61,860, or 8½ years revenue of the Road Cess. On the other hand, if there is a subsidy of Rupees 63,700 for the main lines, as in paragraph 11 of your letter to the Board; or if 30,000 Rupees more were similarly appropriated in a subsequent year from the Local Funds, there would be a capital outlay of one lac of Rupees with no further expenditure; the maintenance of the roads being a charge on the Imperial revenue. With regard to the confidence of the people in the good faith of the Government being shaken, by such an appropriation of the Local Funds, it appears to me that if the people consider the question at all, they may come to the conclusion that an outlay of one lac in a couple of years, on main lines, is not more to their disadvantage, than an annual expenditure of Rupees 43,000 on roads heretofore maintained by the Government, while the remainder of the yearly revenue is being devoted to the minor district roads.

2. I make these remarks in explanation of the views which I have expressed to you in a Memorandum of the 18th February, and I would not treat the portion of the Road Cess devoted to Imperial lines as a loan, (for there would undoubtedly be great difficulty in repayment,) but as a *bona fide* outlay; but if the levying of the Road Cess is intended to relieve the Imperial

Board's Proceedings, paragraph 4.

exchequer, it becomes necessary that the separation of Imperial from District roads be reconsidered, and distinct orders be passed by the Government.

3. In addition to the ten roads heretofore classed by Government as Imperial, (Government Order, Revenue Department, No. 13, of 5th January 1865,) there are several others, the maintenance of which has continued to be borne in the Imperial Budget, viz.,

Board's Proceedings, paragraph 5.

		Rs.
Do. included in minor Repairs, 17,703.	Shevalpatti to Yetiapuram*	4,520
	Road No. 11, Palamcottah to Calladacurichy	1,740
	No. 1, from Tirumangalam through Streevellipootoor to Tenkasy	1,920
	No. 10, Tenkasy to Calladacurichy	1,940

* Entered in margin, Board's Proceedings, paragraph 10.

The first of these is a feeder to the main Cotton road leading to Tuticorin, and the next is also strictly a District road; but the third is a portion of the general* line from Madura through Streevellipootoor to Tenkasy and Quilon, and the fourth is another section of the same line; hence these last two items are not available for transfer to the Local list.

* Board's Proceedings, paragraph 7.

I am not sure whether the Board† look upon the Imperial line from Madura to Tenkasy as leading from the latter place westward over the ghauts to Quilon; but I judge from paragraph 10 of your letter that you consider the Imperial line to be continued along Road No. 10, to join Trunk Road No. 4 at Panagudi. This being the case, I consider that the road from Tenkasy to Palamcottah may be treated as a District road; should the Travancore Government, however, open a road from Quilon over the Pullyeri pass to Tenkasy, there would then be a main line of communication through Palamcottah to the coast at Tuticorin, and No. 10 road would become of much less importance, and be, in fact, only a District road; as, however, the prospect of a main line across the Peninsula from Quilon to Tuticorin is still a distant one, only the section from Palamcottah to the coast may probably, for some years be held to be an Imperial road.

† Board's Proceedings, paragraph 7.

4. As regards the road from Streevellipootoor to Tuticorin No. 5, I am disposed to treat this still as an Imperial line; or rather the first twenty-five miles from Streevellipootoor to the junction with Trunk Road No. 4 may be considered local, as that brings only the produce of the district itself to the coast; but from the junction two miles north of Sattur to Tuticorin there is a heavy traffic of cotton coming from the Madura District and also from the Coimbatore country through the Dindigul valley. One would imagine that this stream of traffic will be diverted by the Madras Railway, and also be arrested to take the Railway at Caroor for Negapatam, but the old well-known line is still adhered to, and Negapatam has not begun to rival Tuticorin at all as a point of export.

5. Road No. 12 Palamcottah to Trichendoor, and No. 5 Vamboor to Yetiapuram may certainly be considered as Local and not Imperial. Assuming then Road No. 12 to be a district road, there is no reason why the construction of a branch‡ to the same line from Arumuganary to Nallur should not be undertaken from the Local Funds.

‡ Budget Part II, Item No. 299, Rupees 3,650.

6. For the completion of Trunk Road No. 4, I am only prepared at present to take up the unfinished balance of the estimate of Rupees 30,000 (sanctioned in Government Order, No. 3,661 of 1863,) Rupees 11,438; and the completion of the gap immediately north of Sattur, for which about Rupees 400 will be required,

Board's Proceedings, paragraph 4.

(but the detailed estimate has not yet been sent in,) or say Rupees 16,000 ; of this amount Rupees 5,000 are provided in the Budget of the current year, so that a sum of Rupees 11,000 is still wanting.

Part II., Item No. 299.

7. I have drawn up a List No. I. of the roads to be maintained as Imperial lines with their maintenance grants in the manner that I would separate the two classes of road ; and another List No. II shewing those roads that may be transferred to the charge of the Local Funds ; and this latter list gives a total of Rupees 20,450 ; a third Statement No. III. brings up a grand total of Rupees 31,500, as liberated from the Public Works Budget, and available for the retained lines.

8. Next in importance to the High Road No. 4, I think the necessity of restoring the portion of the road from Tuticorin to Sattur is the most urgent, for which a sum of Rupees 11,500 is required ; the traffic on this road is greater than that on the road between Palamcottah and Tuticorin, and there is a very awkward break in the otherwise made road, while the Palamcottah road to the sea is not yet established as a thorough communication. The balance of funds made available, however, cannot be better appropriated than to this latter line.

Board's Proceedings, paragraph 12, I.

Hence I would propose to distribute the amount of Rupees 31,500 to

Trunk Road No. 4	
Tuticorin and Sattur road	11,000
Tuticorin and Palamcottah road...	11,700
	8,800
Rupees...	31,500

9. By the scheme detailed above, there is apparently a sum of Rupees 31,500 to be received from the Public Works Budget for specific works to be carried on from the Local Funds ; but the amount in reality is Rupees 24,100, as will be seen from Statement No. 3 ; for the Item marked A. Rupees 7,400 consists of Rupees 7,100, the remainder of the discretionary grant for minor repairs, and Rupees 300 not now required for the beach road at Tuticorin. This amount, 7,400 Rupees, is therefore available for general appropriation, and the allotments in paragraph 12 of the Board's Proceedings may be considerably increased ; approximate amounts are entered in another List No. IV. of the eight roads enumerated in Clauses II to IX. of the same paragraph 12 ; these might be modified as you may deem the carrying on some of the roads as having a prior claim, as Road No. 10 and that from Palamcottah to Shermadevy ; but the total amount put down at Rupees 71,500 shews that a good deal more than tracing can be executed on the roads along the East Coast.

My letter has run on to a somewhat unreasonable length ; but the importance of the subject is such, that I have not been able to avoid entering fully into detail.

No. I.

List of Roads to be maintained as Imperial lines, and their maintenance grants.

	Rs.
Repairs to Road No. IV. *via* Tinnevelly to Arambooly	13,180
Do. to Road No. VIII., Palamcottah to Tuticorin	3,270
Do. part of road from Streevellipootoor from Trunk Road No. 4 to Tuticorin	7,130
Minor repairs to roads	8,113
	37,693

Details of minor repairs to roads.

Maintenance to Road No. 1 from Tirumavagalam *via* Streevellipootoor to Tenkasy	1,920
Do. to Road No. 10 from Tenkasy to Caladacurichy	1,940
Do. to branch road from Cotton Trunk Road to Arasady Salt Pan ...	550
General minor repairs to Roads and Bridges	3,000
Do. to Travellers' Bungalows	703
Total Rupees...	8,113

(Signed) H. L. PRENDERGAST, Captain, R. E.,
Officiating Superintending Engineer, 8th Division.

No. II.

List of Roads to be transferred from the Imperial to the Local Fund Budget, and their maintenance grants.

	Rs.
Repairs to Road No. 8 from Palamcottah to Tenkasy...	3,410
Do. do. No. XII., Palamcottah to Trichendoor	2,560
Do. do. part of Road No. V. from Streevellipootoor to Tuticorin as far as Trunk Road No. IV	4,950
Do. do. No. V., Shevalputty to Yetiapuram	4,520
Do. do. No. VI., Vamboor to Yetiapuram	2,820
Also, under the head minor repairs to roads.	
Maintenance to road from Nallur to Coilpatam	450
Do. to Road No. 11, Palamcottah to Caladicurichy ...	1,740
Total...	20,450

(Signed) H. L. PRENDERGAST, Captain, R. E.,
Officiating Superintending Engineer, 8th Division.

No. III.

Statement shewing sums liberated from the Public Works Budget and available for other Imperial Works.

			Rs.	
Amount as per List No. II				20,450
Budget List Part III., page 36, minor repairs to roads		17,000		
Deduct amount of maintenance grants under minor repairs...		6,900		
	Balance...	10,100		
Deduct amount retained in List No. I. for minor repairs		3,000		
		7,100		
Add the last item of list of maintenance grants minor repairs Rupees 6,900 for Beach road at Tuticorin		300*		
		7,400		7,400
Construction of road—Nallur to Arumuganery, Budget Part II., Item No. 299.		3,650		3,650
	Total...			31,500

*Not required, as this road is now kept up by the Municipality.

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(Signed) H. L. PRENDERGAST, Captain, R. E.,
Officiating Superintending Engineer, 8th Division.

No. IV.

Statement shewing general allotment of Road Cess Funds with approximate amounts as allotments for eight of the roads.

		Rs.
Tenkasy to Palamcottah		15,000
Road No. 10, Tenkasy to Panagudi		10,000
„ Vypar *via* Velatikolam to Yetiapuram		10,000
Velatikolam *via* Arasady to Tuticorin		10,000
Puducottah *via* Yeral and Nallur to Trichenloor and Colasegarapatnam.		10,000
Palamcottah to Shermadevy		10,000
Shermadevy to Calkad		1,500
Tinnevelly, *via* Sivalaperi and Valnad to Streevygunt.am		5,000
	Total...	71,500
	Rs.	
For construction of road between Nallur and Arumuganery.	3,650	
For maintenance grants—Vide List No. II	20,150	
		24,160
	Total...	95,660

(Signed) H. L. PRENDERGAST, Captain, R. E.,
Officiating Superintending Engineer, 8th Division.

(True Copy.)

(Signed) R. K. PUCKLE,
Collector.

From the Officiating Superintending Engineer, 8th Division, to the Collector of Tinnevelly, dated Kodikanal, 9th May 1867, No. 280.

1. In reply to your letter, No. 104, of the 27th ultimo, I have the honor to observe, that a press of work and the intervention of the Easter holidays prevented my despatching earlier my letter, No. 194, of the 30th ultimo, on the general subjects of roads; but there is not much difference of opinion in my scheme from that expressed in your answer to the Board.

2. I have observed that there is an ambiguity in paragraph 7 of the Board's Proceedings, No. 2,192, as to the extremity of the road from Madura through Tirumangalam, and Streevelliputtoor to Tenkasy and Quilon, whether the road is supposed to terminate at Tenkasy within the Tinnevelly District or to lead on, as No. 10, by Punnagudi to Travancore; and the alternative of bringing the road between Tinnevelly and Tenkasy, on the list of District roads, was on the supposition that the long western line of road was to be treated as Imperial.

3. Your paragraph 4.—We have both agreed as to the Cotton road leading to Tuticorin being Imperial, only that I have proposed to consider the northern portion from Streevelliputtoor to Trunk Road No. 4 as a local branch, instead of a part of the main line. If it is considered fitting that this portion be detached from the Imperial road, the full maintenance allowance should at any rate be retained as heretofore; for the road will lose none of its importance.

4. Your paragraph 5.—The sum liberated by you from the Public Works Budget, Rupees 31,253, is but slightly different from the sum I put down, Rupees 31,500; but, in your list of works from the Road Cess in paragraph 9, you have brought up a total of only Rupees 37,509, leaving a considerable sum without allotment. I have, however, already filled up a list of approximate amounts, and the distribution of funds amongst such as are clearly District roads will be left by the Board to your discretion.

5. Your paragraph 8, No. IV.—This line of road appears to be altogether altered, I will instruct the Range Officer accordingly; as he has directions to estimate for a line to Yetiapuram, the slight alteration in No. V., to avoid the sand near Tuticorin, is also noticed, and that the Road No. VI. is to start from Alivar, Tinnevelly, to Colasagarapatnam instead from Nallur.

6. Your paragraph 9.—I observe a slight inaccuracy.

	Rs.
Imperial Roads No. 8	18,870
The sums being,	
New Work	15,000
Repairs	3,270
	18,270

and Road Cess, "Earthwork between Arasady and Tuticorin," this by the previous paragraph not being intended. I also notice, with a view to obviate references hereafter in the Account Department, that among the roads "from Local Funds," amounts are given to the Range Officers according to their estimates—

	Rs.
Tenkarai Road No. 20	776
Tinnevelly, Palamcottah to Calkad	300

instead of Rupees 700, and Rupees 200 as entered in the Budget list—*vide* your letter, No. 76, of the 4th April. I will only further observe regarding Road No. 1, for which you have set down 5,000 Rupees under "Road Cess," that I think money will be very advantageously laid out on this line and to any available extent, for there is very little doing in the way of new work in the 3rd Range.

Enclosure No. 3.—Plan.

The Board accept Mr. Puckle's revised proposals, and request that he will submit a Supplemental Budget without delay. It should be accompanied by a Memorandum shewing the Public Works grants (repairs included) for 1867-68 for each road, and the sums which will now have to be borne by the District Road Fund.

No. 40. Proceedings of the Board of Revenue, dated 12th September 1867, No. 5,863.

Read the following letter from the Collector of Tinnevelly, to the Acting Secretary to the Board of Revenue, dated 23rd July 1867, No. 385.

As requested in the Board's Official Memorandum, No. 763, dated 15th instant, I have the honor to forward, herewith, Supplemental District Road Fund Budget Parts I. and II. for 1867-68, prepared in the proper form, together with two Memoranda of the estimated receipts and charges.

Enclosures Nos. 1 and 2.—Supplemental Budgets.

Enclosures Nos. 3 and 4.

Abstract.—Abstract Estimates of Receipts and Charges of District Road Fund.

1. With the foregoing letter, the Collector submits his Supplemental District Road Fund Budget for 1867-68.

2. The Original Budget showed an estimated income of Rupees 21,360 from the several items of receipts with an expected balance of Rupees 6,616. The Collector now estimates the entire income of the Fund at Rupees 1,22,680, of which the expected Road Cess collections alone come to Rupees 1,56,000. The actual cash balance on the 1st April 1867 is given as Rupees 66,724. Thus, the total available assets for the year may be assumed as Rupees 1,83,404.*

	Rs.
*	1,22,680
	66,724
	1,89,404

3. In the abstract estimate of receipts, the balance on the 1st April 1867 is given under the following heads:—

	Rs.
Surplus Devastanum Fund	33,855
Fort Wall Fund	1,740
Road Cess	16,246
Other items	14,883
	66,724

From the above, the Board are led to believe that the Collector keeps separate accounts of expenditure for each of these minor heads of the District Road Fund, which is an unnecessary multiplication of work in the Account Department of the Collector's Office. The Board accordingly direct that, in future, only one account be kept for the expenditure incurred from all sources of income credited to the District Road Fund.

	Rs.
†	1,89,404
	27,771
	1,61,633

4. The appropriations in the Original Budget amounted to Rupees 27,771 leaving an available balance of Rupees 1,61,633.†

5. Part I. of the Supplemental Budget contains nine works, all of which have been carefully selected both by the Collector and the Superintending Engineer.

6. The first work, which is a transfer from the Public Works Budget, is the road from Nalloor to Armuganery salt pans at an estimated cost of Rupees 4,100, and with an allotment of the same amount. It appears in the current year's Public Works Budget as Item No. 299, with the amount of the estimate given as only Rupees 3,650, which is the sanctioned sum, and which will now be entered in the Budget.

G. O., Public Works Department, 12th September 1864, No. 2,635.

7. For the remaining eight works no estimates have been submitted, and they cannot of course be commenced until the estimates are sanctioned in the usual course. The allotment of Rupees 5,000 proposed by the Collector for the road from Palamcottah to Shermadevi has been raised to Rupees 15,000, as there are sufficient funds available.

8. In the Abstract Estimate of Charges, the Collector proposes an expenditure of Rupees 34,335 on account of surplus Devastanum Funds, and no particulars thereof are given either in Parts I. or II. of the Supplemental Budget. The Board observe, however, that Government in their Proceedings,* dated 25th May 1864, No. 892, directed that a sum of Rupees 74,265, the then accumulated surplus Pagoda Funds of the district, should be devoted to the following works on the road from Palamcottah to Streevellipootoor *via* Sankerninarcovil:—

* Revenue Department.

	Rs.
1. Bridge across the river at Vaniemputty	5,750
2. Do. at Sholapuram	12,400
3. Chuttrum at do.	12,100
4. Bridge across the river at Solasury	15,700
5. Do. at Carnavanulloor	12,650
	58,700
For making portions of the above-mentioned road ...	15,665
	74,265

9. In paragraph 7 of the Local Fund Report of the district for 1866-67, the Collector states that Rupees 17,775 were spent on these works in that year, which added to former expenditure amounts to Rupees 40,410, leaving a balance of Rupees 33,855,† which is shewn above, as the balance on the 1st April 1867. The Board now direct that the above-mentioned works be entered in Part I. of the Budget, inserting 40,410 Rupees as the actual expenditure on them up to 31st March 1867, and an allotment of Rupees 34,335, as proposed by the Collector, which includes the expected surplus Devastanum receipts of Rupees 480.

	Rs.
†	74,265
	40,410
	33,855

10. Part II. of the Supplemental Budget contains six works, inclusive of a special allotment of Rupees 10,100 on account of minor repairs to roads. The whole of these are mere transfers from the Public Works Budget of the current year.

11. There are seven items exhibited in the list of works which accompanied the Government Order, Revenue Department, dated 28th May 1867, No. 1,207, as appertaining to the Tinnevelly District, and which are noticed below:—

	Rs.
No. 1. Maintenance to Road No. 11 from Palamcottah to Culladucoorchy ...	1,740
No. 7. Special repairs to roads	10,100
No. 5. Maintenance to branch road from Trunk Road to Arasady Salt Pans ...	550

Items Nos. 1 and 7 have been entered in the Budget with their respective allotments.

Item Nos. 5 is also provided in the Budget with an allotment of Rupees 1,050, instead of Rupees 550, as originally proposed.

	Rs.
No. 3. Maintenance to Road No. 1 from Terumangalum *via* Streevellipootoor to Tenkasy	1,920
No. 4. Maintenance to Road No. 10 from Tenkasy to Cullada coorchy ...	1,940
No. 6. Maintenance to Beach Road at Tuticorin	300
No. 2. Maintenance to Road from Nullur to Covilpatam Salt Pan	450

Items Nos. 3 and 4 are rendered unnecessary with reference to the allotments of Rs. 6,920 and Rupees 1,940, respectively, for these roads, as will be seen in Part I. of the Budget.

This item is omitted from the Budget, as the road should be maintained by the Tuticorin Municipality.

This item appears to have been omitted by the Collector from the Budget. The omission is accordingly supplied in the Board's Office.

Besides the works transferred as above, three other works have been taken from the Public Works Budget, and the total number of works admitted in the Budget are now seven.

12. With reference to the above remarks, the Board have caused Parts I. and II. of the Budget to be revised in their Office. The following is an abstract of the Budget as now submitted :—

		Rs.
By Public Works Department ...	Original Works ...	81,695
	Repairs	22,190
		1,03,885
By Revenue Department	Original Works	7,000
	Repairs	1,950
Add		
For Public Works Supervision at ten per cent. on the estimated expenditure		10,388
Reserve at ten per cent. on Rupees 1,00,900, difference between Rupees 1,22,200 and Rupees 21,300		10,090
		1,33,063

Rs.	
1,61,633	
1,33,063	
28,570	

This amount if deducted from the available balance of Rupees 1,61,633, shewn above, leaves a surplus balance of Rupees 28,570.* The Board request that the proposed expenditure of Rupees 1,33,063 may receive the sanction of Government. The Collector is requested, in communication with the Superintending Engineer, to submit, at an early date, further proposals to utilize the large balance of Rupees 28,570.

13. In his original proposals for the expenditure of the Road Cess, the Collector recommended certain allotments from that Fund as grants in aid of appropriations already made from the Imperial Funds for Imperial lines. The

Board's Proceedings, 8th April 1867, No. 2,192.

Board pointed out to Mr. Pucklo that this course was open to several objection and that the object he had in vie would be better met by a careful re-cla sification of the roads of the distric In this Mr. Pucklo acquiesced "likely to afford greater relief to the Public Works Budget," while otherwise ful answering the purpose of his proposed subsidies.

Collector's letter, dated 27th May 1867, recorded in the Board's Proceedings, dated 19th June 1867, No. 3,803.

14. In Government Order, Revenue Department, dated 5th January 186. No. 13, ten roads were classed as Imperial. These it is now proposed to reduce four, which are as follow :—

1st.—Trunk Road No. 4, leading from Madura by Virdupaty, Sattu and Palamcottah, to the southern extremity of the province.

2nd and 3rd.—Lines Nos. 8 and 9, from Tuticorin through Palamcotta to Tenkasy.

4th.—A portion of line No. 5 from Sattur to Tuticorin. There can be n question as to these being really of an Imperial character, and they have always bee recognized as such by Government.

15. The Salt lines of the district are properly Imperial, but their length is only about ten miles altogether, and as they have already been completed, the Board propose, as suggested by the Collector, for the sake of simplicity, to provide for their repair from the Road Fund.

16. Thus from the beginning of 1868-69 the Public Works Budget need only provide for the completion and the maintenance of the four lines above specified.

	Allotment in the Public Works Budget. Rs.
Road from Calpatti to Pannagoodi ...	2,560
Do. Palamcottah to Trichendoor ...	...
Do. Vypaur towards Madura ...	...
Do. Munjancolum to Yetiapuram...	550
Do. Arasady to Junction to Trunk Cotton Road	...
Do. Tuticorin to Carapada Salt Pans	...
Do. Strivigoondum to Palayakayel.	2,820
Do. No. 6 from Vemboor to Ettiapuram	4,520
Do. from Shelvapatti to Yetiapuram	3,650
Widening and improving the Salt road from Nallur to Arumunganeri ...	1,920
Road No. 1 from Madura frontier *via* Streevolliputtoor and Tankasy to the Travancore frontier	1,940
Road No. 10 from Tenkasy to Kulladakurchi	1,740
Do. 11 from Palamcottah to Kulladakurchi	10,100
Minor repairs to roads	450
Road from Nallur to Coilpatam Salt Pans	
	30,250

17. The other lines hitherto classed as Imperial, but now brought on the list of District roads, are specified in the margin, with the allotments assigned to each in the Public Works Budget of the current year.

18. It will be seen from this, that calculating on the allotments of the present year, the arrangements now proposed would involve a saving to Government of Rupees 30,250.

19. The district, as the Collector points out, is miserably deficient in good roads, and the Board trust, therefore, that Government will now make liberal grants for the few lines retained on the Imperial list so as to insure their early completion.

	Rs.
No. 3. Maintenance to Road No. 1 from Terumangalum *via* Streevellipootoor to Tenkasy	1,920
No. 4. Maintenance to Road No. 10 from Tenkasy to Cullada coorchy ...	1,940
No. 6. Maintenance to Beach Road at Tuticorin	300
No. 2. Maintenance to Road from Nullur to Covilpatam Salt Pan	450

Items Nos. 3 and 4 are rendered unnecessary with reference to the allotments of Rs. 6,920 and Rupees 1,940, respectively, for these roads, as will be seen in Part I. of the Budget.

This item is omitted from the Budget, as the road should be maintained by the Tuticorin Municipality.

This item appears to have been omitted by the Collector from the Budget. The omission is accordingly supplied in the Board's Office.

Besides the works transferred as above, three other works have been taken from the Public Works Budget, and the total number of works admitted in the Budget are now seven.

12. With reference to the above remarks, the Board have caused Parts I. and II. of the Budget to be revised in their Office. The following is an abstract of the Budget as now submitted :—

		Rs.
By Public Works Department ...	Original Works ...	81,695
	Repairs	22,190
		1,03,885
By Revenue Department	Original Works	7,000
	Repairs	1,950
Add		
For Public Works Supervision at ten per cent. on the estimated expenditure		10,388
Reserve at ten per cent. on Rupees 1,00,900, difference between Rupees 1,22,200 and Rupees 21,300		10,090
		1,33,063

Rs.	
1,61,633	
1,33,063	
28,570	

This amount if deducted from the available balance of Rupees 1,61,633, shewn above, leaves a surplus balance of Rupees 28,570.* The Board request that the proposed expenditure of Rupees 1,33,063 may receive the sanction of Government. The Collector is requested, in communication with the Superintending Engineer, to submit, at an early date, further proposals to utilize the large balance of Rupees 28,570.

13. In his original proposals for the expenditure of the Road Cess, the Collector recommended certain allotments from that Fund as grants in aid of appropriations already made from the Imperial Funds for Imperial lines. The

Board's Proceedings, 8th April 1867, No. 2,192.

Board pointed out to Mr. Pucklo that this course was open to several objection and that the object he had in vie would be better met by a careful re-cla sification of the roads of the distric In this Mr. Pucklo acquiesced "likely to afford greater relief to the Public Works Budget," while otherwise ful answering the purpose of his proposed subsidies.

Collector's letter, dated 27th May 1867, recorded in the Board's Proceedings, dated 19th June 1867, No. 3,803.

14. In Government Order, Revenue Department, dated 5th January 186. No. 13, ten roads were classed as Imperial. These it is now proposed to reduce four, which are as follow :—

1st.—Trunk Road No. 4, leading from Madura by Virdupaty, Sattu and Palamcottah, to the southern extremity of the province.

2nd and 3rd.—Lines Nos. 8 and 9, from Tuticorin through Palamcotta to Tenkasy.

4th.—A portion of line No. 5 from Sattur to Tuticorin. There can be n question as to these being really of an Imperial character, and they have always bee recognized as such by Government.

15. The Salt lines of the district are properly Imperial, but their length is only about ten miles altogether, and as they have already been completed, the Board propose, as suggested by the Collector, for the sake of simplicity, to provide for their repair from the Road Fund.

16. Thus from the beginning of 1868-69 the Public Works Budget need only provide for the completion and the maintenance of the four lines above specified.

	Allotment in the Public Works Budget. Rs.
Road from Calpatti to Pannagoodi ...	2,560
Do. Palamcottah to Trichendoor ...	...
Do. Vypaur towards Madura ...	...
Do. Munjancolum to Yetiapuram...	550
Do. Arasady to Junction to Trunk Cotton Road	...
Do. Tuticorin to Carapada Salt Pans	...
Do. Strivigoondum to Palayakayel.	2,820
Do. No. 6 from Vemboor to Ettiapuram	4,520
Do. from Shelvapatti to Yetiapuram	3,650
Widening and improving the Salt road from Nallur to Arumunganeri ...	1,920
Road No. 1 from Madura frontier *via* Streevolliputtoor and Tankasy to the Travancore frontier	1,940
Road No. 10 from Tenkasy to Kulladakurchi	1,740
Do. 11 from Palamcottah to Kulladakurchi	10,100
Minor repairs to roads	450
Road from Nallur to Coilpatam Salt Pans	
	30,250

17. The other lines hitherto classed as Imperial, but now brought on the list of District roads, are specified in the margin, with the allotments assigned to each in the Public Works Budget of the current year.

18. It will be seen from this, that calculating on the allotments of the present year, the arrangements now proposed would involve a saving to Government of Rupees 30,250.

19. The district, as the Collector points out, is miserably deficient in good roads, and the Board trust, therefore, that Government will now make liberal grants for the few lines retained on the Imperial list so as to insure their early completion.

SUPPLEMENTAL DISTRICT ROAD FUND BUDGET FOR 1867-68.

PART I.

Original works to be executed out of the District Road Fund.

District.	Project. No.	Locality.	Description.	Amount of Estimate.	Actual expenditure up to 31st March 1867.	Amount required in 1867-68. By Public Works Department.	By Revenue Department	Total.	Remarks.
			Communications.	Rs.	R.	Rs.	Rs.	Rs.	
TINNEVELLY.	1	.....	Widening and improving the Salt road from Nallur to Annooganerry Salt Pans.	3,650	..	...	3,650	3,650	Item No. 299 of the Public Works Budget for 1867-68.—G. O., P. W. D., dated 12th September 1864, No. 2,635.
	2	.....	Road No. 1 from Madura *via* Streevelliputtur and Tenkasy to Quilon.	6,920	..	6,920	...	6,920	Estimate will shortly be submitted to Government.
	3	.....	Completion of Road No. 10 between Cullidacoorichy and Panagudy.	11,940	..	11,940	...	11,940	Ditto.
	4	.....	Road from Velatikolam *via* Junction of Arasidi Salt road with Cotton road to Tuticorin tracing the whole way.	5,000	...	5,000	...	5,000	Ditto.
	5	.....	Road from Puducottah *via* Yeral and Nulloor to Trichendoor from Alwartirunagari to Colasagarapatnam tracing throughout.	4,000	...	...	4,000	4,000	Ditto.
	6	.....	Do. Palamcottah to Shermadevy ...	15,000	...	15,000	...	...	Ditto.
	7	.....	Do. Tinnevelly *via* Sivalaperi and Valnad to Streevyguntam.	5,000	...	5,000	...	...	Ditto.
	8	.....	Do. from Vypaur to Ootapadaram for tracing the road.	2,000	...	2,000	...	2,009	Ditto.
	9	.....	Do. Shermadevi to Calkad tracing.	1,500	...	1,500	...	1,500	Ditto.
	10	.....	Works on the road from Palamcottah to Streevelliputtoor *via* Sunkerninarcovil ... ... Rs. 74,265						
			1. Bridge across the river at Vaniempatty.	5,750	4,041	34,335	...	34,335	G. O., R. D., dated 25th May 1864, No. 892.
			2. Do. do. at Sholapuram	12,400					
			3. Chuttrum at do.	12,100					
			4. Bridge across the river at Solasoori.	15,700					
			5. Do. do. at Carnivanulloor ...	12,650					
			For making portions of the abovementioned road.	15,665					
			Total.	...	...	81,695	7,650	89,345	

(Signed) R. A. DALYELL,
Secretary.

MADRAS,
12th September 1867.

Proceedings of the Madras Government, Revenue Department, 2nd October 1867.

SUPPLEMENTAL DISTRICT ROAD FUND BUDGET FOR 1867-68.

PART II.

Repairs to be executed out of the District Road Fund.

District.	Repair.			Amount required in 1867-68.			Remarks.
	No.	Locality.	Description.	By Public Works Dept.	By Revenue Dept.	Total.	
			Communications.	Rs.	Rs.	Rs.	
TINNEVELLY.	1	.....	Road No. 12, from Palamcottah to Trichendoor.	2,560	.....	2,560	Transferred from the Repair list of the Public Works Budget.
	2	.....	Do. from Shevelpatti to Yetiapuram.	4,520	.....	4,520	Do. do.
	3	.....	Do. No. 6 from Vemboor to Yetiapuram.	2,820	.....	2,820	Do. do.
	4	.....	Do. No. 11 from Palamcottah to Callidacurichy.	1,710	.....	1,710	Do. do. G. O., R. D., dated 28th May 1867, No. 1,207.
	5	.....	Branch road from Trunk Road to Arasady Salt Pans.	.....	1,050	*1,050	* Do. do. inclusive of Rupees 550 appearing in the list.
	6	.....	Road from Nallur to Covilpatam Salt Pans.	450	.....	450	Do. do. G. O., R. D., dated 28th May 1867, No. 1,207.
	7	.....	Minor repairs to roads	10,100	.....	10,100	Do. do. do.
			Total...	22,190	1,050	23,210	

MADRAS,
12th September 1867.

(Signed) R. A. DALYELL,
Secretary.

Proceedings of the Madras Government, Revenue Department, 2nd October 1867.

No. 41. ORDER THEREON, 2nd October 1867, No. 2,299.

Local Funds, No. 3. *Account.*

1. The Government approve and sanction the Supplemental Estimates submitted with the above Proceedings, as recommended by the Board.

2. Orders will be passed in the Department Public Works for the employment of the liberated Imperial Funds consequent on the revised classification of the roads in the District.

(True Extract.)

(Signed) W. HUDLESTON,
Secretary to Government.

To the Board of Revenue.
" the Accountant General.
" the Department Public Works.

Ext. T. Cartledge.

Abstract Estimate No 9 of 1864-65

Public Road — District Unincorporated — Repairs

Work. Repairing and Straightening a portion of Road No 10 from the Junction of Road No 14 & Pannaganady to Kalakad.

Length 8 Miles and 106 yards.

Quantity	Description of work	Rate	Amount			Amount of each part
Cyds	Earthwork.					
6400	@	1 3	500	-	-	
12689/32	@	1 -	793	1	3	
	Gravelling					
1440	@	12 -	1080	-	-	
1440	@	10 -	900	-	-	
1444 3/8	@	8 -	722	3	-	
	Clearing, Rolling and					
3 Lumps	Sundries		264	11	8	
	Superintendence	- - -	200	-	-	4460 - -
	Adding Embankments each side					
41 3/4	Rough stone in Chunam	2 8 -	103	14	3	
6 1/3	Brick in Do	3 8 -	22	2	8	
7 1/2	Cut stone in Do	14 - -	14	-	-	
	Cutting direct Course to Stream & Excavating foundation and Sundries	- - -	38	15	1	240 - -
	Platform Bridge Pavement each 6 x 3.					
5 1/2	Old Rough stone in Chunam	1 12 -	112	9	5	
1	Do Do	- - -	112	5	11	4700 - -

Detailed Measurements of Tunnels &c. to be appended to the detailed Estimate.

Particulars of Work.	Measurement in feet			
	Length	Breadth	Height	Contents
Abutments & Wing Walls to a Platform Bridge				
Foundations to two walls	37	2¾	3	305¼
Do to two Wings	18	2	3	108
Walls above	36	2½	3	270
Wings above	18	1¾	4¼	133 7/8
Filling in sides of Coursing stone	18	3¾	¾	50 5/8
Flooring over Do	19½	15	½	146¼
Retaining walls	24	1½	3	108
Rough stone in Chunam Cubic yds				1122
being Equal to Cubic yds				41 5/9
Parapet walls	57	1½	2	171
Brick in Chunam Cubic yds				171
being Equal to Cy ds				6 1/3
Coursing stone	15	18	¾	202½
New Cut stone Cubic y ds				7½
Platform Bridge of 2 Men Track 6 x 3				
Foundation to 4 walls	55½	2¾	3	457 7/8
Do to 4 Wings	24	2	3	144
Walls above	54	2½	3	405
Wings above	24	1¾	4¼	178½
Filling in sides of Coursing stone	18	4½	¾	60¾

Streame			1754	15								15	8	Constructing a Road Dame of 15 yds
			1274	104	7½	½	390	✓						Raising Road to 3d Mile Stone
					5	⅛			15			104		Broken Stone
					5	1/12				43⅓				Gravelling
To 3d Mile-Stone			1378	400	7½	½	1500	✓						Raising to Streame
					5	⅛			250	✓		400		Broken stone
					5	1/12				111⅔				Gravelling
Streame		3	18	15								15	9	Constructing a Road Dame of 15 yards
	Loame		22	334	7½	½	1252½	✓						Raising to Streame
					5	⅛			208¾	✓		334		Broken stone
					5	1/12				139⅙	✓			Gravelling
Streame		"	267	15								15	10	Constructing a Road Dame of 15 yards
		"	382	134	7½	½	502½	✓						Raising Road
		"			5	⅛			83¾	✓		134		Broken stone
		"			5	1/12				55⅚	✓			Gravelling
		"	516	10	8½	1	85	✓						Raising Road
		"			5	⅛			1¼	✓		10		Broken stone
		"			5	1/12				4⅙	✓			Gravelling
Streame		"	526	12								12	11	Constructing a flat bridge
							587							of 3 Feet 8 × 4½

				528	11	5/12	1	561							Raising Road
						5	7/8			111/4			11		Broken Stone
						5	7/12				27½				Gravelling
			"	604	352	7½	½	1320							Raising Road to Stream
						5	7/8			770			352		Broken Stone
						5	7/12				114 2/3				Gravelling
	Stream		"	956	15								15	12	Constructing a Road Dam of 15 Yards
			"	971	1136	7½	5/8	2111/8							Raising Road to 1/4 Mile Stone
						5	7/8			77½			431		Broken Stone
	To 1/4 Mile Stone		"	1107	206	5	7/12				181 2/3				Gravelling
						5	7/8	77½							Raising Road to Stream
						5	7/12			125¾			206		Broken Stone
	Stream		"	1613	20						55 5/7				Gravelling
			"	1133	208	7½	½	780					20	13	Constructing a Road Dam of 20 Yards
						5	7/8			130			208		Raising to Branch Road to Mullhop
						5	7/12								Broken Stone
	Stream		4	51	15						81 2/3				Gravelling
			"	96	316	7½	½	1297½					15	14	Constructing a Road Dam of 15 Yards
						5	7/8								Raising Road to Stream
	Stream		"	1112	20						211¼		316		Gravelling
													20	12	Constructing a Road Dam of 20 Yards
	To 1/4 Mile Stone		"	1091	11	7½	½	2417½							Raising to Made Road
						5	7/8			111¼			11		Broken Stone
						5	7/12				27½				Gravelling
			"	1157	18	5	7/8			111¼					Broken Stone
						5	7/12				7½		18		Gravelling Surface
			"	1175	130										Made Road to Stream
	Stream		"	1305	7								7	3	Constructing a Plat Bridge of 2 Tons of 6 x 4
			"	1312	1324										Made Road to Road Dam
	Stream				15								15	4	Constructing a Plat Bridge of 4 Tons of 5 x 4½
			1	576	300										Made Road to Mud Dam
			"	1176	202	7½	½	737½							Raising Road to 2d Mile Stone
						5	7/8			126¼			202		Broken Stone
						5	7/12				84 1/7				Gravelling
	To 2d Mile Stone		"	1378	218	7½	½	817½							Raising Road to Stream
						5	7/8			136¼			218		Broken Stone
						5	7/12				90 5/7				Gravelling
			"	1596	15								15	5	Constructing a Road Dam of 15 Yds
			"	1111	116	7½	½	435							Raising Road
						5	7/8			72½			116		Broken Stone
						5	7/12				18 1/3				Gravelling

No. 3221 (57)

Trans: Attorney's Office
Calexico, Cal.

Clerk's Office

Clerk's No 120 of 1867-68.

Calexico, California
January 10th 1868

Recorded at the request of
Jacob Schmidt
Recorded at Page
Brawley's Calexico
Calexico No. 5000.

Public Roads — Detailed Estimate — Repairs

District Finally — Taluq Shivillisputtur

Work — Repairing a portion of Road 181 between Shivillisputtur and Srivi-
= mungalam — Length 5 Miles and 1031 Yards.

Description of Surface	Nature of Work	Point from whence the Measurement Commences: Miles	Yards	Measurement: Length	Breadth	Height	Contents: Earth 1½ Annas	Earth & Gravel at 2 Annas	Broken Stone at 11 Annas	Broken Stone at 12 Annas	Gravel at 10 Annas	Gravel at 5 Annas	Turfing at 8 Annas	Gravelling & Rolling	Number	Description of work
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Commencing from town of Shivillisputtur				66	1¼	1	82½									Widening Road on South Side
					6½	⅛	53⅓									Raising Road
					5	⅛			111¼					66		Broken Stone
					5	1/12					27½					Gravelling
					2½	⅛							20⅔			Turfing North side Slopes
	Loam		66	28	7	1/11	149									Raising Road
					5	⅛			17½					28		Broken Stone
					5	1/12					11⅔					Gravelling Surface
			94	181	5	⅛			116¼							Broken Stone
					5	1/12	135⅓				77½			181		Gravelling

B. Quantities of Bricks Laid by

Contractors Names	Measurements			Contents
	Length	Breadth	Depth	
Carried forward as Sundries 3×2.				
Allowing for 9 inch	18½	4	1	111
Allowing for 4½ inch Flemish	12	1½	1	18
Allowance for water tables	12	1½	2	36
Deduct	36	1½	2	108
Water tables	12	1½	2½	45
Allowing 3 Rows to 1 foot Course	18	1½	¾	20¼
Allowing Plinth Course	18	4	½	27
Deduct	12	1½	2	36
	Carried forward			365¼
Allowance for Quoins				14 12/24
Brought to Credit				
Carried to Brick Squares	18	4½	¾	60¾
Brought to Credit				2¼
Carried to Sundries				
Brickwork in Chimneys 8×4½				
Allowance to 1 Chimney	3'	3	3	333
Ditto to 3 Chimneys	5 6½	3	3	57½
Ditto to 4 Stacks	24	7½	3	180
Allowing 1 Row to 1 Flemish	60	1½	2½	225
Hearths	32	15½	1	496
Two side Jambs	36	2½	1½	405
Three Cradle Jambs	58½	2½	1½	624¾
Three Arches	24	2	1½	216

Sundries										
Brickwork in Chimneys										
Allowance to 1 Chimney	2	3	7½	3/8	11/16					
Ditto to 3 Chimneys	5	3	7½	3/8	11/16	33½				
Ditto to 4 Stacks	5	3	7½	1/2			22½			
Allowing 1 Row to 1 Flemish	2	3	7½	3/8	11/16					1
Hearths	2	3	7½	3/8	11/16	3	5	3/8		
Two side Jambs	2	3	7½	3/8	11/16	3	5	3/8		
Three Cradle Jambs	2	3	7½	3/8	11/16	3	5	3/8		
Three Arches	2	3	7½	3/8	11/16	3	5	3/8		
Allowing 1 Row to 1 Flemish	2	3	7½	3/8	11/16	3	5	3/8		
Deduct Fireplaces

Filling between Sides of Covering	18	6½	1	117
Flooring above Covering	44½	18	¼	200¼
Parapets	29	1¼	2½	278⅛
Deduct Solum inchumum Cubic feet				3601¼
Bring equal to Cubic Yards				133 13/27
Covering to Roof	38	18	1	684
Deduct Solum Cubic Yards				25⅓
Gravelling Roadway	44½	15	¼	500⅝
Gravel Cubic Yards				18 4/27

No 3

Constructing a Plasterne Bridge of 2 Trusses Each 6 × 4.

Foundations to 2 Side piers	37	3	3	333
Qs to Cubic piers	19½	3	3	175½
Qs to Four wings	24	2½	3	180
Retaining walls to Flooring	22	1½	2½	82½
Flooring to Trusses	12	15½	1	186
Two Side piers	36	2½	4	360
Cubic piers	18½	2½	4	185
Four wings	24	2	4	192
Filling between Sides of Covering	18	4½	¾	60¾
Flooring above Covering	19½	18	¼	87⅝
Parapets	39	1¼	2½	121⅞
Deduct Solum inchumum Cubic feet				1961⅜
Bring equal to Cubic Yards				72 20¾/27
Covering to Roof	15	18	¾	202½
Deduct Solum Cubic Yards				7½
Gravelling Roadway	19½	15	¾	219⅜
Gravel Cubic Yards				8 3¾/27

Nos 5, 8, 9, 10, 12, 14, 21.

Constructing a Piers of 15 Yards

Each Retaining walls	45	1½	3½	236¼
Each do do	45	1½	2½	168¾
Four End walls	12	1½	3	54
Deduct Solum inchumum Cubic feet				458⅝
Bring equal to Cubic Yards				16 21⅝/27
Flooring between walls	45	15	1	675
Deduct Solum Cubic Yards				15
Gravelling Surface	45	15	¼	168¾
Gravel Cubic Yards				6¼

No 6,

Constructing a Plasterne Bridge of 5 Trusses Each 8 × 4½.

Foundations to 2 Side piers	37	3	4	444
Qs to 4 Cubic piers	78	3	4	936
Qs to 4 Wings	30	2½	4	300
Retaining walls to Flooring	75	1½	3½	393¾
Flooring	40	15½	1	620
Two Side piers	36	2½	4½	405
Four Cubic piers	74	2½	4½	832½
Four wings	30	2	4½	270
Filling between Sides of Covering	18	7½	1	135
Flooring above Covering	55	18	¼	247½
Parapets	110	1¼	2½	343¾
Caps to Cutwaters	6¼	½	½	1-9/16
Deduct Solum inchumum Cubic feet				4929/16
Bring equal to Cubic Yards				182 15/16/27
Covering to Trusses	47½	18	1	855
Deduct Solum Cubic Yards				31 18/27
Gravelling Roadway	55	15	¾	618¾
Gravel Cubic Yards				22 24¾/27

Raising left bank of Channel South of bridge to direct line to boundary stone	160	33⅓	1½	900
Earth Cubic yards				900
Turfing from top slope of bank	160	3	½	60
Turf Cubic yards				60
No 1. Constructing a platform Bridge of 2 rows of 8 × 6.				
Foundation to 2 side piers	37	3	2½	277½
Qr. Centre pier	19½	3	2½	146¼
Qr. Four wings	30	2½	2½	187½
Retaining walls between piers	15	1½	2½	56¼
Two side piers	36	2½	6	540
Centre pier	18½	2½	6	277½
Four wings	30	2.	6	360
Trifling between sides of Covering	18	4½	1	81
Flooring above Covering	23½	18	¼	105¾
Parapets	47	1¼	2½	146⅞
Roughstone underneath Floor				2178 5/8
Bring square to Cubic yards				80 13/27
Covering to Arch	19	18	1	342
Rubble Cubic yards				12-18/27
Gravelling Roadway	23½	15	¾	264⅜
Gravel Cubic yards				9 24/27
No 11. Constructing a platform Bridge of 3 rows of 8 × 4½.				
Foundation to 2 side piers	37	3	3	333
Qr. to 2 Centre piers	39	3	3	351
Qr. to four wings	30	2½	3	225
Retaining walls & flooring	15	1½	2½	168¾
Flooring	24	15½	1	372

Constructing platform Bridge of 2 rows of 8 × 6

| | | | |

Abstract of Earthwork Metalling &c.

Earth Work					Brickwork					Fencing				
Nature of Strata Estimated	Cubic yards	Price per Cubic yard			Nature of Strata Estimated	Cubic yards	Price per Cubic yard			Nature of Strata Estimated	Cubic yards	Price per Cubic yard		
23	2506 15/27	"	1	3	25	1087 1/2	"	1/4	"	29	108 3/8	"	8	"
					26	2335 5/8	"	1/2	"					
Earth & Grass					Grass					Levelling and Rolling per 11 Yards &c.				
24	566 1/4	"	2	"	27	725	"	1/0	"	31	1036 Cubic yards	"	6	"
					28	2357 5/8	"	8	"					

			662	254	7 1/2	1/2	"	1165						Raising road to Stream
					5	7/8				177 1/2	254			Gravelling
Stream		"	764	11							10	11		Constructing a Road Same of 10 yards
		"	761	175	7 1/2	1/2	"	1161/4						Raising Road
					5	7/8				109 3/8	175			Gravelling
Stream		"	921	10							11	17		Constructing a Road Same of 10 yards
		"	911	216	7 1/2	1/2		810						Raising Road
					5	7/8				135	216			Gravelling
		"	1137	50	8	3/4	"	300						Raising Road
					5	7/8				31/4	50			Gravelling
		"	1207	18	9 1/2	1 1/2	"	251 1/2						Raising road to Stream
					5	7/8				11/4	18			Gravelling
Stream		"	1225	12							12	18		Constructing a plat bridge 12 Feet 8 x 6
		"	1237	28	9 1/2	1 1/2	"	399						Raising Road
					5	7/8				17 1/2	28			Gravelling road
		"	1265	11	10 1/2	2	"	376	+					Raising Road across Stream
					5	7/8				10	11			Gravelling
		"	1281	136	7 1/2	1/2	"	510						Raising East to Avenue to 55 Milestone
					5	7/8	"			85	136			Gravelling

Red Soil

| | | |

Public Head — Sheet 25

Abstract Estimate &c. of 1867.68.

District Timmerally — Taluq Shivittipatthur

Work — Repairing a portion of Head Sl between Shivittipatthur and Timmumpalaiu.

Length 5 Miles and 1031 Yards.

Quantities	Description of Work	Rate	Amount	Folio
	Head work			
2566 15/16	Cubic Yards of Earth ____ ab.	" 1 3	1958 5 8	
5630 7/16	Cubic Yards of Earth and Gravel ab.	" 2 "	707 12 6	
666 3/4	Cubic Yards of Bitumen ____ ab.	" 14 "	951 9 "	
1087/2	Cubic Yards of Bitumen ____ ab.	" 12 "	1751 11 6	
2335 5/8	Cubic Yards of ____ do ____ ab.	" 10 "	453 2 "	
725	Cubic Yds of Gravel ____ ab.	" 8 "	1175 1 8	
2350 5/8	Cubic Yards of ____ do ____ ab.	" 8 "	54 3 "	
108 3/8	Cubic Yards of Turf ____ ab.	" 8 "	54 3 "	
1036	Linear Yards of Pitching and Lining			
	& turfing edges of Head per 10 Yards	" 6 "	263 13 7	
			42 5 1	
			238 9 1/2	
	Sundries			1554
	Masonry Works			
	No 1. Constructing a Sunnel of 3 x 2:			
14 17/27	Cubic Yards of Roughstone pichuaw ab.	3 8 "	51 3 9	
2 1/4	Cubic Yards of New Cut and Roughly			
	dressed Stone ____ ab.	10 " "	22 8 "	
	Excavating foundation and Sundries		6 14 3	80
	No 2 Constructing a Platform Bridge			
	of 4 Vents Each 8 x 4 1/2.			
133 10/27	Cubic Yards of Roughstone pichuaw	3 8 "	466 13 3	

25/3	Cubic yards new Cut & roughly dressed Stone	ak	14	"	354	10	8	
12 4/27	Cubic yards of Gravel	ak	"	10	11	4	5	
4	Guard Stones	ak	"	12	3	"	"	
	Excavating foundations and Sundries				43	14	8	880
	No 4.							
	One more Bridge of 4 Arches as above							880
	No 3, Constructing a Platform Bridge of 2 Arches 6 x 4'							
72 20 3/8 27	Cubic yards of Roughstone inchmans		3	8	254	10	3	
7 1/2	Cubic yards of Rough Cut & roughly dressed Stone	ak	12	"	90	"	"	
8 3/8 27	Cubic yards of Gravel	ak	"	10	5	1	3	
4	Guard stones	ak	"	12	3	"	"	
	Excavating foundations and Sundries				17	4	6	370
	No 5. Constructing a Road Dam of 15 Yards							
16 26 27	Cubic yards Roughstone inchmans	ak	3	8	59	8	3	
15	Cubic yards Brokenstone	ak	"	12	11	4	"	
6 1/4	Cubic yards of Gravel	ak	"	8	3	2	"	
	Excavating foundations & Sundries				4	2	5	78
	Nos 7. 8. 10. 12. 14 & 21.							
	Six more Road Dams as above		78	"		"	"	468
	No 6. Constructing a Platform Bridge of 5 Arches 8 x 4 1/2.							
182 15/16 27	Cubic Yards of Roughstone inchmans		3	8	638	15	3 7	
31 2/3	Cubic yards of Roughly dressed Ashlar		14	"	443	5	11	
22 24 3/4 27	Cubic yards of Gravel	ak	"	10	14	5	2	
4	Guard stones	ak	"	12	3	"	"	
900	Cubic yards of Earth	ak	"	16	814	6	"	
60	Cubic yards of Turf	ak	"	8	30	"	"	

Two Side piers	36	2 1/2	4 1/2	405
Two Centre piers	37	2 1/2	4 1/2	416 1/4
Four wings	30	2	4 1/2	270
Walling between Sides of Coving	18	5 1/2	1	99
Stone Coving above Coving	34	18	1/4	153
Parapets	68	1 1/4	2 1/2	212 1/2
Roughstone inchmans Cubic Yds				3005/2
Bring equal to Cubic Yards				111 8/27
Coving to Arch	28 1/2	18	1	513
Raw Ashlard Cubic Yards				19
Gravelling Roadway	34	15	3/4	382 1/2
Gravel Cubic Yards				14 4 1/2 27
No 13, 15,				
Constructing a Road Dam of 20 Ft				
East Retaining wall	60	2	4 1/2	540
West do do	60	1 1/2	3 1/2	315
Four End walls	9	2	4 1/2	81
	9	1 1/2	4 1/2	60 3/4
Roughstone inchmans Cubic				996 3/4
Bring equal to Cubic Yards				36 24 3/4 27
Flooring	60	14 1/2	1	870
Brokenstone Cubic Yards				32 6 27
Gravelling Surface	60	14 1/2	1/4	217 1/2
Gravel Cubic Yards				8 21 1/2 27
No 16, 17, 19, 20				
Constructing a Road of 10 Yards				
East Retaining wall	30	1 1/2	3 1/2	157 1/2
West do do	30	1 1/2	2 1/2	112 1/2
Four End walls	12	1 1/2	3	54
Roughstone inchmans Cubic				324
Bring equal to Cubic Yards				12

Flooring	31	15	1	450
Deduct Brickwork Cubic yards				16 2/3
Gravelling Surface	31	15	1/4	112 1/2
Gravel Cubic yards				4 4/27
No 18, Constructing a platform Bridge of 23 Yards of 8 x 6.				
Foundation to two Side pieces	37	3	1 1/2	166 1/2
Do to two Centre pieces	39	3	1 1/2	175 1/2
Do to four wings	36	2 1/2	1 1/2	135
Retaining walls between pieces	22 1/2	1 1/2	1 1/2	50 5/8
Two Side pieces	36	2 1/2	6	541
Two Centre pieces	37	2 1/2	6	555
Four wings	36	2	6	432
Filling between Sides of Cribs	18	5 1/2	1	99
Flooring Above Cribs	34	18	1/4	153
Parapets	68	1 1/4	2 1/2	212 1/2
Constructing a Face Stone wall on west Side of Roadway Stoughstown Puchunawah Cubic feet	61	2	6	732
Being equal to Cubic yards				3239/8
Carting to Work	24 1/2	18	1	119 26/27
Raw Cobblestone Cubic Yards				513
Gravelling Roadway	34	15	3/4	19
Gravel Cubic Yards				382 1/2
				14 4 1/2 27
No 22, Constructing a platform Bridge of 5 Yards 8 x 6.				
Foundation to 2 Side pieces	37	3	1	444
Do to 4 Centre pieces	78	3	1	936
Do to 4 Wings	36	2 1/2	1	360
Retaining walls & Flooring	75	1 1/2	3 1/2	393 3/4

Excavating Foundations and Sundries				55 15 3	1270
No 7, Constructing a platform Bridge of 2 Yards 8 x 6.					
Cubic yards of Stoughstown puchunawah	3	8	"	282 6 8	
Cubic yards of Stoughstown Cobblestone ab	14	"	"	177 5 4	
Cubic yards of Gravel ab	"	8	"	4 15 11	
Cubic yards of Gravel ab	"	12		3 " "	
Guard Stones ab				22 4 2	490
Excavating Foundations and Sundries					
No 11, Constructing a platform Bridge of 3 Yards 8 x 4 1/2					
Cubic yards of Stoughstown puchunawah	3	8	"	389 9 8	
Cubic yards of Stoughstown Cobblestone ab	14	"	"	266 " "	
Cubic yards of Gravel ab	"	8	"	1 1 3	
Cubic yards of Gravel ab	"	12	"	3 " "	
Guard Stones ab				34 5 1	701
Excavating Foundations & Sundries					
No 13, Constructing a Stone Dam of 36 Yards.					
Cubic yards of Stoughstown puchunawah	3	8	"	129 3 4	
Cubic yards of Brokenstone ab	"	12	"	24 2 8	
Cubic yards of Gravel ab	"	8	"	4 8 5/4	
Cubic yards of Gravel ab				7 3 8	165
Excavating Foundation & Sundries					
No 15, Another Stone Dam as above					165
No 16, Constructing a Stone Dam of 12 Yards					
Cubic yards of Stoughstown puchunawah	3	8	"	42 " "	
Cubic yards of Brokenstone ab	"	12	"	12 8 "	
Cubic yards of Gravel ab	"	8	"	2 1 4	
Excavating Foundations and Sundries				3 6 8	60
Nos 17, 19, and 20, Three more Stone Dams as above	60	"	"	" " "	180

	No 18. Constructing a plain stone Bridge of 3 Yards 8 x 6.							
119 26/27	Cubic yards of Rough stone in chunam at	3	8	"	419	14	2	
19	Cubic yards of Roughly dressed Cut stone	14	"	"	266	"	"	
11 18/27	Cubic yards of Gravel ——— at	"	8	"	7	2	6	
4	Guard stones ——— at	"	12	"	3	"	"	
	Excavating foundations and Sundries ———				33	15	4	731
	No 22. Constructing a plain stone Bridge of 5 Yards 8 x 6.							
206 14/27	Cubic yards of Rough stone in chunam ———	3	8	"	721	3	3	
31 2/3	Cubic yards of Roughly dressed Cut stone	14	"	"	446	5	1	
22 24/27	Cubic yards of Gravel ——— at	"	8	"	11	7	4	
6	Guard stones ——— at	"	12	"	1	8	"	
	Excavating foundations & Sundries ———				49	8	1	1231
	Total of Estimate Rupees ———							1531

Sunkerimanei
21st June 1867

Sub Engineer in charge of
3d Class Surveys

Collector

Asst Surgeon Captain A.D.
Offg Superintending Engineer & Civil

Report

1 Estimate for repairing a portion of Road No 1 between Shevaroy Pallur and Sirimanga Coud Length 5 Miles 1031 yards —

2 Amount of Estimate Rupees (15300) fifteen thousand three hundred comprising the following items —

2301 11/11	Cubic yards of Earth work at	"	1 3 per rupee	1755—5—1
5 110 4/4	do of Earth & Gravel at	"	2 do	705—4——
1087/2	do of Metalling at	"	11 do	931—9——
2235 5/8	do of do at	"	12 do	1751—11——
725	do of Gravelling at	"	11 do	453—2——
2350 1/2	do of do at	"	8 do	1175—1—8
108 3/8	do of Turfing at	"	8 do	54—3——
7031	Linear yds of Levelling and Rolling	"	1 per lin. yard	213—13——
9 Tunnels varying in Size from 11 ft of 3 ft to 5 Tenths of 8 ft				1130——
13 Road Same varying in length from 10 yds to 20 yards				1111——
Sundries				235—7—1
Total of Estimate Rupees				15300 —

3 The Cart Surface of the road is to be 5 yards in width of which 5 yards are to be Metalled. The Metalling to Consist of 1½ inches in thickness of Stone Covered with 3 inches of hard gravel. The Side Slopes of the Embankments are to have a Slope of 2 x to 1, and to be Turfed — where the Soil requires it —

Estimate No 1867/68 215

4 All the bridges and Road Sams are to be built of Rough Stone in Chunnam and to be pointed with fine Chunnam — The beds of the platform bridges are to be Covered with roughly dressed granite slabs 1 foot thick with a flooring above them of Concrete in Chunnam 3 inches in thickness — The Roadway between the parapets of the bridges and Culverts is to be 15 feet in width —

5 This portion of the road is very much cut up and in many places has become the bed of a Stream — It requires to be made throughout from Shevalliputtur to Tirumangalam a distance of 22 Miles, of which the present Estimate provides for repairing 5½ Miles — It passes through the Villages of Tadagapatty, and Kulattupatty —

(Sd) W. C. Speir
Sub Engineer in charge
of the Ramnad Division

Sankarenarcoil
21st June 1867

Captain R.E.
Offg Superintending Engineer 8th Circle

Rec. 3221/67

Dy Genl of Wks 1865/67
Inspection

No. 142 R 1867-68

Repairing portion of Road
No 1 north of Shevalliputtur
from Roads & Bridges Fund
Rs 15,000-

From 2nd October to 31st Dec 68.

Rs 15,000

Abstract Estimate No of 1869/68

District Tinnevelly. Taluq Tinnevelly

Work. Making a portion of Road No 22 as to meet the portion of Road No 11 recently made in Range No 2 Commencing from the 3d Milestone of the Road Length.

Quantity	Description of work	Rate	Amount	Amount for each item
1116 1/2	Earth ——— per Cy yds	1 "	381 14 1	✓
5300 lbs	Frame ——— Do ———	3 "	993 13 10	✓
417 1/2	— Do ——— Do ———	6 "	156 9 "	✓
152 1/2	— Do ——— Do ———	4 "	38 2 "	✓
1,56 1/4	Rubbling ——— Do ———	6 "	171 1 6	✓
24	Surfacing ——— Do ———	6 "	9 " "	✓
14	Blasting rock ——— Do ———	3 "	42 " "	✓
4508	Levelling & Rolling ——— per 10 Cy yds	2 "	56 5 7	✓
	Sundries ———		41 2 "	✓
	Amount of Estimate Rupees			1890 —

Palamcottah
9th July 1869

J Ramanayagam Overseer
Tinnevelly Taluq

Asst Engineer in Charge
of 2nd Range Sub Div

Lieut Saunderson Captain R.E
Offg Superintending Engineer 2nd Circle

A K Ruthven
Collector

						5753 1/5					
				5	1/16		1133 1/2		364	6	Granelling
To Demarkation stone near Anonew	5	608	100	1/2	3/4		15-2 1/2				
							512 1/2		100	4	Do 4
	5	708	124	7	1/2		1,34		124		Do 4
To slope of Hill	5	832	428	7	1/2		1478		428		Do 4
To high ground	5	1260	224	2	1/2		224		224		Ditching and Dressing & Scarbeyond
To 6: Milestone	5	1484	320	6 3/4	3/4		810		320		Do Do
							3528 1/2		1508	7	

Palamcottah
9th July 1861

F. Ramasamy Pulai Peruman
Tinnevelly Taluq

1334½

1805/67

Rec: 3221/67
Rec: 2nd October 67 do Engr.

Estimate for making a portion of Road No 22 as to meet the Contract for Road No 11 recently made in Range No 2 commencing from the 3rd Mile end of the Road Jan 1890.

Rec: 3221/67

1805/67

Estimate for making a portion of Road No 22 as to meet the Contract for Road No 11 recently made in Range No 2 commencing from the 3rd Mile end of the Road Jan 1890.

Rec: 3221/67
Rec: 2nd October 67 do Engr.

1805/67

1334½

I do hereby certify that the accompanying Estimate for repairing & protecting from inundations & floods Cadjeram & Kuniathi-Kuttu Channels amounting to Rupees 3650 Rupees three thousand six hundred & fifty

and provides for every thing necessary, and that no supplementary works will afterwards be required.

Range Officer.

| | | |

		2	580	90	4	½	180						90	do do
		2	860	280	3	½	420						280	do do
		2	913	53										Good
	Earth	2	1046	133	2	½	133			2			133	Cutting trenches & repairing Road
		2	1158	112										Good
to Inniskeen		2	1236	78										do
		2	1379	143	2	½					143		143	Cutting trenches & repairing Road
		2	1462	83	2	½		83					83	Filling in trenches
		2	1562	100	4	½		200					100	do do
to 4th Milestone to Shaivmadarn south of Knockbridge		2	1684	122										Good
	Gravel	3	17	95										do
		3	52	33	6	½		99					33	Trenching on the left & repairing Road
		3	164	112										Good
to Oldcastle		3	237	73	4	½	146						73	Trenching and Repairing Road
	Constructing a Culvert						1 Yard 6 + 2 Abutments 6							
		3	404	167	2	¾	250½						167	Trenching on the left
				"	1	3/8	62⅝							do on the right
		3	537	133	3	¾	299½						133	do on the left including two Culverts repairing Road
							3988	1434		7	155	5	3441	

		3	557	50	4	1/2	100							50	Trenching
Constructing a Culvert of 1 Vent 6 + 2 Abutments															
		3	637	50	7	1	350							50	Raising from trenches
		3	770	133	3	1/2	199 1/2							133	Trenching and repairing Road
To Culvert		3	858	88	7	1	616							88	Raising from trenches
Constructing a Culvert of 1 Vent 6 + 2 Abutments															
To bed in water to the abutments		3	918	60	4	1	240							60	Trenching on the top
Culvert	Land	3	1192	274	4	3/4	822							274	Do & filling in Road
To Culvert		3	1245	53	7 1/2	1 1/4	496 7/8							53	Raising from Trenches
Constructing a Culvert of 1 Vent 6 + 2 Abutments															
		3	1291	46	7	1	322							46	Do Do
		3	1567	276	4	3/4	828							276	Do Do
Constructing a Culvert of 1 Vent 6 + 2 Abutments 10															
To Culvert		4	1	194	1.	1/2	388							194	Trenching and raising Road
Constructing a Culvert of 1 Vent 6 + 2 Abutments 11															
		4	33	32	7	1	224							32	Do Do
		4	107	16	2	3/8			55 1/2					74	Cutting trenches
		4	139	32	6	1/2			96					32	Raising from trenches
	Stones			4	2	1/4	16								Trenching

Detailed Estimate

District Seremelle Saleg (Embankments

Work. Repairing to Road from Culvert to Maintenance, Length 6 miles & 94 yards

Description of Surface	Nature of Soil	Points from whence the Measurements Commences		Measurements in Yards			Contents						Remarks
		Miles	Yards	Length	Breadth	Depth	Yards	Removing Soil	Removing Stones	Removing Stones or Blocks of Stone	Removing Stones of Stone Soil	Removing Earth	Rolling
Commencing from Beer Column limits attached to Maintenance Saleg													
				180	3	1/2	270					2	180 Cutting trenches & raising Road
			907	27	2	1/2	27			2			27 Do Do
			469	262									Good throughout the bed of Hollaspoli Column
			585	116	2	1/2	116						116 Trenching and repairing Road
			639	47	3	1	141						47 Removing Side Mounds from the Right Trench & repairing Road
					2	1/2	47						Trenching & Do
Constructing a Culvert of 1 Vent 6 + 1/2 Abutments	Red Earth		1296	663	3	1/2	994 1/2						663 Removing a mound & Do
					2	1/2	663						Cutting trenches & Do
			1505	210	3	1/2					315		210 Do & Do
							2454			2	315		1242

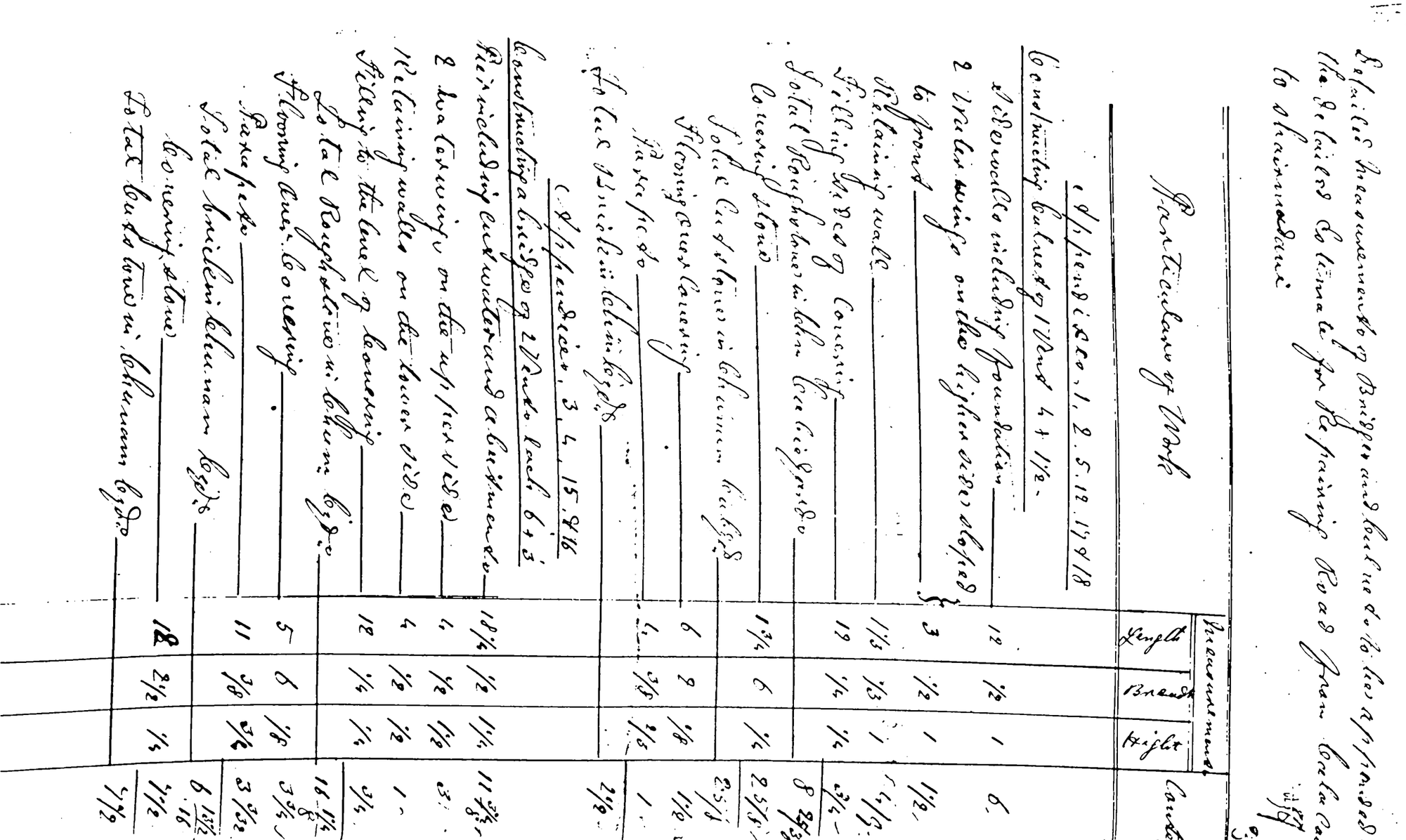
			1518	13	8	1/2				4	13		13	Trenching to be cut, the earth to be removed both from trenches & the Roads adjacent
Constructing a Culvert of 1 Vent 4 x 1½ Aperture	Earth Excavation		1735	217	4	1/4			217				217	Stones to be removed
				"	8	1/2		217						Trenching and Levelling
Constructing a bridge of 2 Vents each 6 x 2 Aperture		1	89	107	4	1/4			107				107	Stones to be removed
				"	4	1/8		214						Trenching and Levelling
		1	185	43	7	1	301						43	Raising from Trenches
To 6th Milestone		1	252	127	3	1/2	190½						197	Do Do
to Shaitmadane		1	542	290	3	1/2	435						290	Trenching and Constructing Road
		1	685	143	6½	3/4	677⅛						143	Raising from Trenches
Constructing a bridge of 2 Vents each 6 x 2 Aperture & Appendicular Works														
		1	992	237	2	1/2	237					5	237	Cutting trenches & raising Road
To the high ground		1	1062	180	3	1/2	180				1		180	Trenching and filling Do
		1	1142	100	2	1/2	100						100	Trenching
To Adminee of		1	1235	93										Good
Govinda pauty	Earth Excavation	1	1441	206										Do
		1	1707	266	2	1/2		266					266	Trenching and Levelling Road
		2	77	150	3	1/2		225					150	Do Do
		2	270	173	4	1/2	346						173	Do and repairing road
Constructing a Culvert of 1 Vent 4 x 1½ Aperture & Appendicular Works														
To 5th Milestone	Earth Excavation	2	280	10	2	1/2	10						10	Trenching and Do
Shaitmadane		2	490	210	4	3/4		630					210	Do & Levelling Do & Do

To Adai		4	578	340	4	1/2	680						340	Trenching and repairing Road
Constructing a Culvert of 1 Vent 6 x 2 Aperture & Appendicular Works													13	
		4	652	53	6½	3/4	268⅞						53	Raising Road
		4	738	80	5¾	3/8					179½		80	Do from trenches
		4	782	50	4	3/4	150						50	Trenching and repairing Road
		4	852	70	3	1	210						70	Do principally on the Right repairing Road
				"	6	1/2	910							Raising
Constructing a Culvert of 1 Vent 6 x 2 Aperture & Appendicular Works													14	
		4	898	46	2	1/2	46						46	Trenching on the left bluff
		4	984	86	4	1		344					86	Cutting on the left trenches
				"	3	3/4	193⅛							Raising from Trenches
		4	1032	48	8	3/4	108						48	Trenching on the left
To Cultivation		4	1139	100	8	1/2	1900						100	Raising on the left side of Roadway
To Adai		4	1232	100	7	1	700						100	Raising
Constructing a bridge of two Vents each 6 x 2 Aperture & Appendicular Works													16	
		4	1532	320	7C	1	2240						320	Raising from Trenches
To Adai		4	1748	196	6½	3/4	955½						196	Do Do
Constructing a bridge of two Vents each 6 x 2 Aperture & Appendicular Works													16	
To 2nd Milestone		5	298	310	4	3/4	930						310	Trenching and raising road
& Shaitmadane	Earth	5	504	206	4	5/8	515						206	Do and Levelling Road
							12998 7/7	3449	151½		25½		5427	

	Grass	5	604	100	5½	¼		137½					100	Levelling Road by Cleaning Trenches
Lo Adai		5	670	66	6	½		198					66	Raising
	Constructing a Culvert of Wood 4 + 1½ Apprentice No 17													
		5	1302	632	4	½	1264						632	do
	Loam	5	1312	10										Widening Adai
		5	1452	140	2	½	140						140	Cutting Trenches and raising Road
Lo Adai		5	1628	176	3	½		264					176	do do
	Constructing a Culvert of Wood 4 + 1½ Apprentice No 18													
Lo Road No 11		6	94	226	6	¼		339					226	Raising Road from Trenches
Nearness by Rundell	Gravelly						1411	939					1276	
							2675½	3216½	475½	9	733½	7	9511	

Adsistant Engineer Surveyor

Explanation of Bridges and Culverts on the Road from Red River Cross to Natchitoches



Description of Work	Remarks			Carried
	Length	Breadth	Height	
Culvert No 1, 2, 5, 12, 14 & 18				
All Excavation including Foundation	12	½	1	6
2 Inches Masonry on the Wings above Ground	3	½	1	1½
Plastering walls	1½	½	1	¾
Pointing Stone Work	12	¼	½	3¼
Solid Foundation in Clay	13¾	¼	½	8
Solid Excavation in Gravel	6	½	½	2
Pointing Stone Culvert	6	⅛	½	½
Paving do	4½	⅛	½	¼
Two Culverts No 3 & 16				2½
Culverts No 3, 4, 15, 16				
Excavation Except 12 Perch Each 6 & 3				
Remainder Earthwork and Embankment	18¾	½	½	11
2 Inch Masonry on the Wings	4	½	½	2
Plastering walls on the Inside	12	¼	½	1
Pointing Stone Work		½	½	¾
Solid Foundation in Clay		¼	½	¾
Stone Arches	5	⅛	½	1
Pointing Stone Work	11	⅜	½	¾
Paving				
Solid Foundation in Clay		¼	½	½
Culvert No 10	18	¼	½	½
Culvert No 11	2½	½	½	½
Culvert No 17				

Abstract Estimate
Dirinish Tinnevelli Taluq Anicut Improvement
Repairing Road from Calacaud, to Shaiduadanei

	Appendices 6, 7, 8, 9, 10, 11, 13 & 14.									
	Constructing a bridge of 1 Vent 6 × 2									
	Side walls including foundation	12	½	1¼	7½					
2	Wings on the upper side	4	½	1½	3					
	Retaining wall on the lower side	2	½	½	½					
	Filling sides of Causeway	12	¼	¼	3/4					
	Total Rough stone in Chunam Cgdo				11 3/4					
	Flooring over Causeway	6	2½	⅛	1⅞					
	Parapets	6	⅜	⅔	1½					
	Total bricks in Chunam Cgdo				3⅜					
	Coursing stone	6	2½	¼	3¾					
	Total Cut Stone in Chunam Cgdo				3¾					

Quantities	Description of work	Rate			Amount			Total		
2064 9/16	Cgdo of Earth	"	1	"	1290	9	3			
3216/2	do of Gravelly Soil	"	2	"	402	1	"			
475/2	do of Removing Hard Rock	"	8	"	237	12	"	1		
9	do of Blasting Rock	1	8	"	13	8	"			
733/2	do Gravelly and clay Soil	"	3	"	137	8	6			
7	Palmeratrees to be removed	"	8	"	3	8	"			
2,599/16	Cgdo of Embankment Sampsip	"	"	2	256	3	10			
93 11	Cgdo of Rolling (per 10 Cgdo)	"	1	"	59	7	1			
	Sundries				181	6	4	2512	"	"
	Appendix No 1									
8 25/36	Cgdo of Roughstone in Chunam	2	8	"	21	11	9			
9/9	do of Brick in Chunam	4	"	"	10	"	"			
2 5/8	do of Cut Stone in Chunam	7	"	"	18	6	"			
	Digging foundation & Sundries				1	12	3	52	"	"
	Particulars same as abone									
	for Appendices 2. 5. 12. 17 & 18							260	"	"
	Appendix No 3									
16 1/8	Cgdo of Roughstone in Chunam	2	8	"	40	6	3			
6 13/16	do of Brick in Chunam	4	"	"	27	6	"			
1/2	do of Cut Stone in Chunam	7	"	"	52	8	"			
	Digging foundation & Sundries				4	11	9	125	"	"
	Particulars the same as above									
	for Appendices 4. 15 & 16							375	"	"

	Appendices No 6									
11 3/4	Cogs of Roughstone in Chim	2	8	"	29	6	"			
3 3/8	Do of Cheeks in Chim	4	"	"	13	8	"			
3 3/4	Do of Curtain Chim	7	"	"	26	4	"			
	Digging foundation & Sundries				2	14	"	72	"	"
	For Clearing the Immediate Neighbourhood for Appendices No. 7. 8. 9. 10. 11. 13. & 14							504	"	"
	Total for Masonry							1388	"	"
	Total Amount of Estimate Respecting							3,900	"	"

(Assistant Engineer Limmer)

No 2 Range Office Simmenelee
Cantonment for progress
21st August 1867

Encl 8th

Chas Pemberton Captain R.E.
Offg Superintending Engineer & Civil

R.K. Pardon
Colln

This Estimate provides for thoroughly putting the road into good repair - but if the allowance this year, I propose that the masonry works should alone be completed in making future earth work but thereon which will tend to prevent such obstruction and prevent the rapid flow of water, which interrupts the line, from taking any other direction than that provided for it & washing away the works

J. K. Limmer
Asst to Engineer

	Appendices No 6									
11 3/4	Cogs of Roughstone in Chim	2	8	"	29	6	"			
3 3/8	Do of Cheeks in Chim	4	"	"	13	8	"			
3 3/4	Do of Curtain Chim	7	"	"	26	4	"			
	Digging foundation & Sundries				2	14	"	72	"	"
	For Clearing the Immediate Neighbourhood for Appendices No. 7. 8. 9. 10. 11. 13. & 14							504	"	"
	Total for Masonry							1388	"	"
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J. K. Limmer
Asst to Engineer

PROCEEDINGS OF THE BOARD OF REVENUE,

1867. Department

No. 7455.

Dated 12th September 1867.

No. 5,863.

Reviewing Supplemental District Road Fund Budget of Tinnevelly district for 1867-68, requesting sanction of Government, to Parts I and II of the Budget as revised by the Board, and directing Collector to submit further proposals to utilize the surplus balance of Rupees 23,57

Extd. J. Wright.

" the Collector of Tinnevelly.

3167/67

Rev-3221/67

Supplemental Estt 1867/67

Gl. 181 of 1867/68.

Repairs to Road from Shairmadevi to Palaca

Rs 3200

Rs 2nd October 67 to Rs 88

M.R.O. 14—13,000—27-9-24.

MADRAS RECORD OFFICE.

Government of Madras.

Revenue DEPARTMENT.

G.O. No. 2299 Press ~~Mis.~~

38-41

Dated 2—10— ~~19~~ 86.

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