Public Works (1898) Department.

Send Shower Proof

G.O., No. 2/6645

DATED 25th Augt 1898

26/9/98

[Despatch Abstract.]

Lighthouse Coil Store at Mangalore

Estimate of Rs 6910 for Constructing a New ——— on the S. Canara D.t, Sanctioned

1/6

J

[P. W. 99.
1,000-12-2-98.]

Indexed.

26/8

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

BUILDINGS AND ROADS.
CIVIL WORKS.

Government {1898} of Madras.

PUBLIC WORKS.

Recd. } 1898. *Enclosures*

Regd. } *Spare copies*

G.O., No. 2166 W., 25th August 1898.

AUGUST.

Lighthouse and Oil-store at Mangalore

Estimate of Rs. 6,910 for constructing a new — in the South Canara district, sanctioned.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following papers :—

From F. W. ASHPITEL, Esq., Superintendent of Works, Lighthouse Division, to the Secretary to Government, Public Works Department (through the Presidency Port Officer, Madras), dated Madras, 18th May 1898, No. 1021.

I have the honour to forward herewith plans and estimates for a lighthouse and oil-store at Mangalore for favour of early sanction.

2. If you approve of the designs I request permission to put the collection of materials, especially the cutstone steps, in hand at once, so as to have them ready before the working season commences after the rains.

3. The estimate amounts to Rs. 6,940 against an approximate estimate of Rs. 6,000 printed in table I, page 13 of the report printed with G.O., No. 245, Marine, dated 8th April 1896. The excess of Rs. 940 is due to the provision of an oil-store which was not previously contemplated, but which has been provided at the request of the Presidency Port Officer.

—

No. 186 G.

Forwarded.

MADRAS,
20th May 1898. (Signed) H. A. STREET, Commander, R.I.M.,
Presidency Port Officer.

—

No. 2979 C.

The estimate is returned to Superintendent of Works, Lighthouse division, for revision with reference to the following remarks :—

(1) Data should be given in each case for the enormous rates entered for concrete, brick in surki mortar, &c.

(2) No reason is given for using concrete in *cement*. To use such expensive stuff under an oil-store is absurd, and it seems quite unnecessary to use anything more than surki under the tower.

(3) Cement floors are not approved. Mangalore tiles should be used instead.

(4) Laterite need not be plastered with cement for more than 2 feet above ground ; pointing should be substituted for the remainder.

(5) The timber need not be teak. There are many excellent woods obtainable from A. Brown & Co., Calicut, at much less cost.

2. Stone, bricks and laterite can be collected in anticipation of sanction to the estimate.

27th June 1898. (Signed) W. B. DEWINTON,
Chief Engineer.

From F. W. ASHPITEL, Esq., Superintendent of Works, Lighthouse Division, to the Chief Engineer, Public Works Department, dated Madras, 13th July 1898, No. 1148.

With reference to your No. 2979 C., dated 27th June 1898, I have the honour to return, herewith, the plans and estimates for a lighthouse and oil-store at Mangalore with the following remarks and a data sheet.

2. I regret that you should have thought it necessary to describe the rates as "enormous" and am inclined to think that you used the word under a misapprehension of the conditions and rates on the West Coast.

3. I have allowed Rs. 40 to Rs. 48 for concrete in cement mortar and notice that, in the schedule of rates for the Consulting Architect's division for the half-year ending March 1897, the rate *in Madras town* for cement concrete varied from Rs. 50 in this office schedule to Rs. 58 per 100 c. ft. Rates for labour on the West Coast are, as a rule, considerably higher than in Madras.

4. I have allowed Rs. 42 for brickwork in surki mortar, and my estimate is based on a task of 25 c. ft. per brick-layer per day. The price of bricks is the actual cost at the Basel Mission. I do not think the rate is excessive as I see that the West Coast schedule allows Rs. 33 for this class of work, exclusive of conveyance of materials, and is based on Basel Mission bricks at Rs. 15 per 1,000 and Re. 1 extra for surki. The Basel Mission now charge Rs. 16 per 1,000 for bricks; and I have not so far been able to obtain any quotation for surki at the rate I have allowed though I hope to do so eventually. The brickwork at Mangalore lighthouse is also not all straightforward work.

5. The rate allowed for laterite in mortar is based on a task of 33 c. ft. per mason per day and is, I believe, the ordinary district rate.

6. The reason I propose to use cement concrete for the oil-store and tower is that the quantity of concrete required is small and that in tidal water cement concrete even for small works is, in my opinion, to be preferred to surki unless the foundation is unwatered. Personally I have not the same confidence in surki as I have in cement concrete and the cost of unwatering the foundation would be greater than the saving effected by making the proposed change. Under the circumstances, I shall be glad if you will allow the small provision for cement concrete to remain in the estimate. Ordinary concrete costs about Rs. 22 at Mangalore.

7. I allowed cement plastering for buildings on the West Coast after seeing the state of a building at Calicut which had merely been pointed. On the West Coast it is usual, I believe, during the monsoon, to protect exposed walls by mats and other temporary expedients, and I provided for cement plaster in order to avoid this annual charge. The whole provision in the estimate for plastering laterite is only Rs. 96 and pointing would cost about 50 per cent. of this amount. I have not made any alteration in the estimate pending your consideration of this explanation.

8. The substitution of Mangalore tiles for cement flooring has been made in the estimate and also country wood for teak wood. The total saving amounts to Rs. 30 as the quantity of teak wood in the estimate is small.

9. I would point out that labour at Mangalore is very dear, the ordinary brick-layer being paid from As. 12 to Re. 1 per day against As. 6 to As. 10 in Madras and others in proportion, especially during the coffee season.

—

No. 3402 C.

With reference to the estimate of Rs. 6,910 for constructing a new lighthouse and oil-store at Mangalore, the undersigned is directed to enquire whether a tower 21½ feet high is necessary for the drop of weights working the machinery, and if not, why a smaller tower could not be built part of the way up the hill on which the present lighthouse stands, and so secure the necessary elevation above sea level.

2. Also, in his report at page 30 of G.O., No. 245, Marine, dated 8th Apr 1896, the Superintendent of Works says that the change of lighthouse need not b made until the scheme for the improvement of Mangalore harbour is sanctioned. I is not clear what the two have to do with each other. The Superintendent of Works is requested to explain.

3rd August 1898. (Signed) W. B. DEWINTON,
Chief Engineer.

From F. W. ASHPITEL, Esq., Superintendent of Works, Lighthouse Division, to the Chief Engineer, Public Works Department, dated Madras, 6th August 1898, No. 1191.

With reference to your No. 3402 C., dated 3rd August 1898, I have the honour te inform you that the site for the proposed lighthouse at Mangalore was selected after inspection of the locality and is believed to be the best possible. The existing light is located on the top of the hill and is obstructed by trees and, at any intermediate site, the light would be still more obstructed. The proposed light is on the beach and is not obstructed in any way and the height is, in my opinion, necessary to secure proper ventilation. A change of site would also, it is believed, necessitate compensa tion being paid for land which would amount to considerably more than the suggested reduction in height.

2. When the remarks referred to in paragraph 2 of your letter were written, it was intended to establish the light on the sand spit, the maintenance of which is believed to have formed a part of the scheme for improvement of Mangalore harbour. It was pointed out, however, that this scheme might not be sanctioned for years and that an equally good and more convenient site could be obtained in the marine yard and, therefore, any reason for postponing the change of site disappeared. I would point out that, if the proposed permanent burner is a success, and letters received recently from the Engineer to Trinity House report that this is the case, a considerable saving in establishment charges can be effected when the new light is exhibited as a single keeper will suffice for the maintenance of the light.

3. I would also point out that materials for this lighthouse are now being collected, and that, owing to the delay in the sanction of estimates, I am incurring expenditure on establishment which, in the absence of sanction to estimates, is not fully utilized. I have already lost the whole of the working season of 1897–98 on the West Coast and it is difficult for me to work my division economically or to the best advantage if these delays continue. I would, therefore, request that the estimates may be sanctioned as soon as possible, as the delay is costing much more than a few feet in height of the small tower and the uncertainty must have a very prejudicial effect on the work of the subordinate in charge.

ORDER—No. 2166 W., dated 25th August 1898.

The estimate, amounting to Rs. 6,910, for constructing a new lighthouse and oil-store at Mangalore, in the South Canara district, is sanctioned.

2. This sanction accorded in paragraph 1 has been registered as Excluded Local, No. 18 W. of 1898–99, and classified as Miscellaneous Public Improvements—Original Works.

(True Extract.)

Under Secretary to Government.

To the Superintendent of Works, Lighthouse Division,
with sixteen enclosures.
" Examiner, Public Works Accounts.
" Marine Department.

Exd. T. K. Narayana Aiyangar.

Public Works DEPARTMENT.

To the Hon'ble Sir Henry Bliss K.C.S.I.
His Excellency the Governor in Council

Papers to be read in Proceedings:—

Again G.O., dated 189 , No.

Again G.O., dated 189 , No.

Current No. 4460 of 1898, dated 20th May, from the Sof W., L. H. Divn

" " 5878 " 1898, " 14th July, " ——do——

" " 6679 " 1898, " 18th August, " ——do——

No: 2166 W 25 August '98

ORDER.

Is a tower necessary for the drop of weights working machinery? Yest, why build one? The necessary weight should be assumed above sea level and assumed Should think, by building just a short way up the hill on which the existing lighthouse stands

RS
21/7/98

Circulated to H. E. for approval. The Honourable Sir Henry Bliss has since withdrawn his objection to the erection of the tower vide C. No: 6679 (Flag Y) Sanction to start work has been given by wire

A.E.R 19.8.98.
Dy.

Ahd. A.94 22.8.98

The estimate amounting to Rs 6,910 for constructing a new lighthouse and oil store at Mangalore, in the South Canara District, is sanctioned.

2. No ~~sanction~~ allotment of funds having been made for this work in the Excluded Local Fund budget for 1898-99, the Presidency Port Officer will be requested, in the Marine Department, to report whether the expenditure may be met by reappropriation of the budget grant of Rs 6,000 for the lightkeepers' quarters at Mangalore.

~~2~~ 3. The sanction accorded in para 1 has been registered as Excluded Local No. W., of 1898-99, and classified as Miscellaneous Public Improvements, Origin Works.

D 13/7/98

20.7.98

To
The Supt of Works, L. H. Divn with 16 Enclosures
" Examiner, P. W. accounts
" Marine Department.

P. T. O.

No

[P. W. 4. 500—27-7-98]

Note

This estimate has been dealt with in the Notes flagged W and Z

Maj

20.7.98

PROCEEDINGS O

Letter from the

Lighthouse

—— Do ——

—— Do ——

Note for Press

Please print

Send proof.

25.8.98

To.

The Supt. of Work

Lighthouse Dir

" Examiner P.W.

" Marine Dep

T No.

B

[P. W. 40.
500—2-8-98.]

Public Work

NT. 60

Dear

With W's approval it is proposed to omit para 2 of the accompanying draft Lo.

Since the draft was sent up, a Sc. has been under issue transferring the Budge grant of Rs 6000. from "Light-keepers Quarters" to "Light-house & oil store" Mangalore — Para 2 of the present draft can be omitted

A.K.

26-8-98.

Lo. is thus unnecessary.

A copy of the draft Lo. with para 2 omitted has been sent to Mr Bell for perusal with other papers to be attached finished. Copies of draft will not however be required finally struck off Lo. can issue until W's sanction to omit para 2 has been received.

25/8/98

25/8/98

Note

This estimate has bee
in the notes flagged W a

Maj

2160 W

P.C.C

Please put this up with the file when proof comes from the press. Put 29.8.98.

H.C.

Hereunto
SR
30-8-98

Public Works Department. 608

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Mr Bull writes

READ the following

Letter from the Supt. of Works, Lighthouse Division, Madras } No. 1021 d/18th May 98

—— Do —— Do —— No. 1148 d/13th July 9

—— Do —— Do —— No. 1191 d/6th Augt 9

No 2166 W dt 25.8.98

Note for Press
Please print
Send proof
Put
29.8.98

The estimate amounting to Rupees 6910 for construction a new lighthouse and oil store at Mangalore, in the South Canara District, is sanctioned.

2. This sanction according in para 1 has been registered as Excluded Local No 18 of 1898-99 and classified as Miscellaneous Public Improvements, Original Works.

T Mo.
B

Dr 13/9/98

To.
The Supt. of Works
Lighthouse Division with 16 enclosures.
" Examiner P.W. Accts.
" Marine Dept.

[P. W. 40. 500—3-8-98.]

W

Note on rates at Mangalore proposed by Supdt. Lighthouses &c.

The rates for labour on the West Coast are very high, vide page 1 of Schedule attached. If my memory of this locality 18 years ago serves me right, they go up higher still in the coffee season.

2. Mr Architects' rate of 25 Rub-pees for brickwork is certainly a maximum. 20 Rub-pees is what I have usually known, & is said by C.A. to be as much as can be expected.

3. The West Coast rate for brickwork in mortar is Rs 55 at Mangalore, vide page 13 of Schedule. Mr Architects is only Rs 42.

4. The West Coast rate for Laterite in Chunam is Rs 25 at Mangalore, vide p. 16 of Schedule, whereas Mr Architects is Rs 43 ~~-~~ 22. Again the West Coast rate for Concrete in cement is Rs 39-10, whereas Mr Architects is Rs 40 ordinarily, increasing to Rs 45

This Schedule shd have been submitted with the estimate to account for the abnormally high rates

I here charge taken a cubic yard a day as the basis rate in charging for work - 20 cft. shd be done in after stg rocks

for a yearly prosperity of cultivation.

5. I must here point out that as the all schedule of rates contains no details of expenses, such as for instance, the prosperity of one or another crop, and quality of the latter, the prices of which vary greatly, there is really no means of instituting a proper comparison between them & between the rates entered in estimates.

6. My subscriber rate for Cultivated plantain is Rs 9 a square, & the district schedule Rs 10, as per p 18.

7. I have studied both the West Coast & Madras Schedules, & it seems to me that it is mere waste of labour, & leads to no practical result, to attempt to check to rate by rate by means of these & any other schedule. Added to the fact that they are not prepared in sufficient detail to enable this to be done, they abound in absurd discrepancies, and the rates vary greatly.

No. the schedules in this Gundery are as they stand inaccurate & misleading in the extreme. I hope to take this important question up when I have time to write a stupendous book

No steps - very little care is taken in the days to make rates accurate. Landowners when they ill to make a beginning. but famine upset it all

Government. let the rates in each District should be accurate one that here them to refer to in the office - Mr Duff the best chart above Collectors Head Quarters - there is in the Dis. y necessarily rate to labour a carriage that will be effectively uniform

his district the local officers could explain that there are good & sufficient reasons for such apparent discrepancies. If we are beginning to question local rates, we shall, however, get into an interminable discussion, and effect no good to for as my experience goes. I never knew any SA that was not for ever questioning local rates, nor ever did I ever know one who did not, in so doing, betray his ignorance of local conditions. There is, to my mind, no such thing as an accurate general knowledge of rates, the variations even in the same district being enormous, as is sufficiently indicated by the West Coast schedule. Local knowledge is the one thing needful; we have no business to assume that the officer who prepared the estimate has not this knowledge; and we shall most certainly

H.M. 10.8.98 P.L.G. 8.98

make blunders if we attempt to revise the rates. In future, data will always be called for, in accordance with your orders, for all rates that seem exceptionally high, but it seems to me that we should stop there.

8. These are my views and I mention them because I have hitherto not attempted to interfere with rates, believing as I do that we have not the material to do it; & that it is most unsatisfactory labour, & that the Local Offices may well be trusted in a matter which entirely depends on local experience.

9. The Substitute's visit to a comparison with Madras rates. This is hardly to the point. The rates in Madras for labour are cheap, but for work are enormous. I never could understand why. Much of the work is plain straightforward work; labour is cheap; & Madras contractors & masters abundant; difficulties in transport inconsiderable; & materials of every kind are abundant; & difficulties in execution of work such as occur in the district, unknown. AGH 16.7.98

At present we have Division patterns & the same system of calculating data, & it is surprising to me that I should be expected to introduce

touching the number of several estimates required - going to inadequate details. I don't think Local Officers can be trusted to calculate. There is room for much

improvement everywhere in this most important matter, but it will take all one's time to make it

a Contractor & his subordinates employ

16.7.98

Chr 6679

Pass 5/

This letter has not been signed - should it not be returned?

J.H. 8/8/98

To the Manager
Office of Superintendent of Works
L. H. Dn

Please obtain the signature of the Supt of Works to this letter & return it as early as possible - the matter seems urgent.

Clifford
2nd asst Works
8/8/98

Signature obtained & letter returned with thanks

H. Jackson
Manager
Light House Dn

H.Jn. 16.8.98 R. 16.8.98

398) Department.

CURRENT No. 6679

From The Superintendent of Works, Light House Dn Madras

No. 1191

Dated 6th August 1898

Received
Registered } 10-8-98

Enclosures

Spare copies

SUBJECT.

Mangalore Light House.

forming that the proposed height of — necessary to secure proper ventilation & requesting early sanction thereto —

BACK PAPERS.

No.	Date.
3402C	3-8-98
969W	14-4-98
245-W	8-4-96

FURTHER PAPERS.

No.	Date.

OFFICE OF THE SUPT. OF WORKS, LIGHT-HOUSE DIVN.,
Egmore, Madras,

No. 1191 Dated 6th August 1898.

4P

From

F. W. ASHPITEL, ESQ.,
SUPERINTENDENT OF WORKS,
LIGHT-HOUSE DIVISION,
Madras,

To

THE Chief Engineer,
Public Works Department.

SIR,

With reference to your No. 3402 C dated 3rd August 1898 I have the honor to inform you that the site for the proposed lighthouse at Mangalore was selected after inspection of the locality and is believed to be the best possible. The existing light is located on the top of the hill and is obstructed by trees and, at any intermediate site, the light would be still more obstructed. The proposed light is on the beach and is not obstructed in any way, and the height is, in my opinion, necessary to secure proper ventilation. A change of site would also, it is believed, necessitate

Compensation

compensation being paid for land which would amount to considerably more than the suggested reduction in height.

(2) When the remarks referred to in para 2 of your letter were written it was intended to establish the light on the sand spit, the maintenance of which is believed to have formed a part of the scheme for improvement of Mangalore Harbour. It was pointed out, however, that this scheme might not be sanctioned for years and that an equally good and more convenient site could be obtained in the Marine yard and, therefore, any reason for postponing the change of site disappeared. I would point out that, if the proposed permanent burner is a success, and letters received recently from the Engineer to Trinity House report that this is the case, a considerable

considerable saving in establishment charges can be effected when the new light is exhibited as a single Keeper will suffice for the maintenance of the light.

(3) I would also point out that materials for this lighthouse are now being collected and that owing to the delay in the sanction of estimates I am incurring expenditure on establishment which, in the absence of sanction to estimates is not fully utilized. I have already lost the whole of the working season of 1897-98 on the West Coast and it is difficult for me to work my division economically or to the best advantage if these delays continue. I would, therefore, request that the estimate may be sanctioned as soon as possible as the delay is costing much more than a few feet in height of the small tower and the uncertainty must have a very prejudicial effect on the work of the subordinate in charge.

I have the honor to be,
Sir,
Your most obedient Servant,

W Hutchison
Superintendent of Works.
Light House Division

C/6.8.98

No: 3402C. 43-8-98.

P. W. Department.

Memorandum

from the Superintendent of Works, Lighthouse Dn
No 1021 d/ 18th May 1898.
do —— No 1148 d/ 13th July 1898.

With reference to the estimate of Rs 6,910 for constructing a new light-house and oil store at Mangalore, the under-signed is directed to inquire whether a tower 21½ feet high is necessary for the drop of weights working the machinery, and if not why one should not be built. It is considered that the necessary height above sea level could be secured by building part or whole way up the hill on which the existing lighthouse stands.

2. Cro. in his report at Page 10 of Gr No 105 Marine of 1896, the total of

a smaller tower could not be built part of the way up the hill on which the present light house stands so as to secure the necessary elevation above sea level.

T/A

To the Supt of Works, 10/8/98
Lighthouse Dn

11/8/98

works says that the change of light house need not be made until the scheme for the improvement of Mangalore harbour is sanctioned. This will change not the two lanterns with each other, the new ones is expected to replace

WS
29.2.88

Public Works DEPARTMENT.

C. No. 2446 & 5878.

SUBJECT.

(2) HIS EXCELLENCY THE GOVERNOR.
(1) THE HON'BLE SIR HENRY BLISS, K.C.I.E.
THE HON'BLE MR. GROSE, C.I.E.

New lighthouse and oil store at Mangalore.

FOR ORDERS.

In reference to the Honorable Member's question in the accompanying note for orders, it is certain that a structure of some kind is necessary to support the lanterns. & the proposed tower is only 21½' above ground level. The necessity for moving it from its present position in the hill to the marine yard are given in the Report attached to the estimate. & on page 30 of Q.O No 1st March dated 1st Sept 1886. The existing structure is to be used, & without knowing what its precise nature I cannot give a very definite

These do not completely explain the case. They only show why the light should be brought down to a smaller elevation above sea level - If a tower above 21½ feet high may be required, but it may not; and if not, why build higher than is needed - Please ask whether the height is required for the dep of weight -

BS

[P. W. 43.
400-27-1-18.]

answer to the first part of the 4th item in this question, but the existence of existing screens means clockwork of some kind, & therefore, increased, weights -
No details of the operations are given in the plans because it is already in existence.
A reference to the Supdt. of Works L.H. Division will be made if considered necessary.
The existing tower is 65' high.
2. In this report at page 30 of 80 mentions of the 96 metres of which separates the change need not be made until the scheme for the improvement of Mangalore Harbour is carried out.
What the two letters do with one another I do not know, & the only scheme likely to be carried out here is the construction of a jetty, & certain reclamation of the foreshore adjoining it

23.7.98

Ans 1. I concur in the observation

BS
26/7/98

Public Works (1898) Department.

CURRENT No. 5878

We get Architects rates & data may be accepted. His rates, so far from being above the local rates, as given in the Schedule of rates, Order are usually below them. See accompanying Note

2. With reference to para 6 of this comment enclosed is essential unless the foundation is unwatered. & the Architect says the latter would ~~effect no saving~~ improve over his estimate. Such excess cannot be depended on to suffice under salt water. It may do so, but there is no guarantee that it will, & provision is necessary if it is used.

3. I think the current statement for the laterite is essential, as laterite weathers very badly near the sea. & I have known the part of a laterite revetment, not 20 years old, eaten out by the sea air into large hollows

A.S.K.
16-7-98

From The Supdt of Works, Light House Division Madras.

No. 1148

Dated 13th July 1898

Received 14-7-98

Registered

Enclosures 1 Data Statement, Estimate & 7 plans.

Spare copies

SUBJECT.

Returning with remarks the plans & estimates for a Light-house and oil store at Mangalore.

O.L.S. 235

BACK PAPERS.

No.	Date.
29790	27-6-98
1059 bow	27-6-98
969 w	14-6-98
245 Bo	8-6-96

FURTHER PAPERS.

No.	Date.

The estimate may be submitted
in duplicate unless preferred
I have the pleasure to be
Sir
Your most obedient servant
also I have to state that
the Contractor has left
the bottom 2 feet of the
Lamp in the Market. the
Lamp is to remain there
until such time as
the Contractor can plant
others

WS
19.2.98

/

Mangalore

Bricks 9"×4½"×2¼"

1000	Bricks at Basil mission	16/-/-	1000	16	-	-
4	Cartage from Mission to Marine yard	-/16/-	each	1	8	-
	Loading & unloading				8	
				18	-	-

Bricks in Surki mortar
(foundation & basement)

1600	Bricks	18/-/-	1000	28	12	10
13	cft lime	-/3/2	cft	2	9	2
6½	cft Surki	4/6	"	1	13	3
19½	" Sand	-/-/6	"	-	9	9
4	Brick layers	/12/	each	3	-	-
2	men coolies	-/5/-	-	-	10	-
8	women	/3/		1	8	-
6	water women	-/2/9		1	-	6
26	cft grinding mortar	-/-/9		1	3	6
	Sundries			-	13	-
	Total per 100 cft			42	-	-

Bricks in surki mortar
(Superstructure)

As per brick in surki mortar (foundation & basement)		42	-
add extra for superstructure		1	-
Total per 100 cft		43	-

Concrete stone jelly & cement mortar (1 to 3)

110	c/ft	Laterite broken 1½" cube	5/-/-	100	5	8 -
13⅓	"	Cement	2/12/-	c/ft	36	10 8
40	"	Sand	-/-/6	c/ft	1	4 0
		Labour			4	- -
		Mixing mortar dry			-	12 -
		Sundries baskets repairs etc				13 4
				Total per 100 c/ft	49	- -

Concrete stone jelly cement mortar (1 to 4)

	As above for mortar 1 to 3		49	- -
	Deduct			
3⅓	c/ft Cement say		9	- -
		Total	40	- -

Laterite stones 1'-6"x9"x6"

100	Stones @ 562 c/ft laterite	5/-/-	per 100	28	1	7
562	c/ft cartage 4½ miles	6/5/-	"	34	12	1
				62	13	8
	Loading & unloading & dressing			2	2	4
			Total	65	0	0

Laterite stone in lime mortar

180	laterite stones 1'-6"x9"x6"	65/-/-	1000	11	11	3
13	c/ft lime	13/2	c/ft	2	9	2
26	" Sand	-/-/6	-		13	-
	Labour				5	10 -
	Grinding mortar				1	3 6
	Sundries				1	1 1
			Total per 100 c/ft		23	- -

Laterite stone in surkhi mortar

180	Laterite stones 1'-6"x9"x6"	65/-/-	1000	11	11	3
13	c/ft lime	13/2	c/ft	2	9	2
13	" Surkhi	4/6	"	3	10	6
13	" Sand	-/-/6	"	-	6	6
	Labour				5	10 -
	Grinding mortar				1.	3 6
	Sundries					13 1
			Total		26	- -

Flooring with square tiles 9"x9"x1" on 4½" Concrete

37½	c/ft Concrete	22/-/-	1000	8	4	-
185	tiles 9"x9"x1"	40/-/-		7	6	5
4	Carts	16/1	each	1	8	-
5	c/ft lime	13/2	c/ft	-	15	10
10	" Sand	-/-/6	"	-	5	-
10	c/ft Grinding mortar	-/-/9		-	7	6
2	Bricklayers	12/1		1	8	-
2	Women	3/1		-	6	-
	Sundries				3	3
			Total		21	- -

Cement pointing square tiles

5/8	c/ft Cement	2/12/-	c/ft	1	11	6
5/8	" Sand	-/-/6	"	-	-	4
1	Bricklayers	12/1	each	-	12	-
½	Man Cooly	3/1	"		2	6
1	Woman	3/1	"	-	3	-
	Sundries				2	8
			Total	3	-	-

Flooring with square tiles 9"x9"x1" on 4½ Concrete	21	- -
and Cement pointing tiles	3	- -
Total	24	- -

Cement plastering 3/4 thick

3	cft Cement	2/12/-	cft	8	4	"
6	" Sand (white)	/1/	"		6	"
1½	Bricklayers	/12/		1	2	"
1	Man Cooly	/5/		-	5	"
2	women	/3/		-	6	"
	Sundries			-	9	"
	Total per 100 Sft			11	-	"

Cement plastering ½" thick

2	cft Cement	2/12/-	cft	5	8	"
4	" Sand (white)	-/4/-	"	-	4	"
1¼	Bricklayers	/12/	"	-	15	"
¾	Man Cooly	/5/	"	"	3	9
1	woman	3			3	"
	Sundries				14	3
	Total per 100 cft			8	-	-

Roofing with No 3 new patent Mangalore tiles on teak reepers 2"x1"+ 3/4" cedar planking

160	Mangalore tiles	41/8/-	1000	6	40	3
100	Sft of teak reepers	5/-/-	cft 100	5	-	"
100	" cedar planking 3/4" thick tongued & grooved & one edge headed	18/-	Sft 100	18	-	"
3	lbs Nails	/4/		-	12	"
1	Carpenter	/12/		-	12	"
2	Coolies	/5/		-	10	"
1	Tile layer	/8/		-	8	"
	Sundries				11	9
	Total			33	-	-

Mangalore Ridge tiles.

1000	R.F. Mangalore new pattern ridge tiles	100/-/-	1000	100	-	-
	Cartage			1	-	-
				101	-	-
105	R.F. Mangalore ridge tiles	10/-/-	100	10	8	"
3	cft Cement	2/12/-	cft	8	4	"
6	" Sand	-/-/6		-	3	"
2	Bricklayers	/12/		1	8	"
4	Coolies	/5/		1	4	"
	Sundries			-	5	"
	Total per 100 Rft			22	-	"
	or per Rft say			-	4	"

W Shepherd
Superintendent of works,
Light House Division.

G/B.6 11/7/98.

Cement plastering 3/4 thick

3	cft Cement	2/12/-	cft	8	4	"
6	" Sand (white)	/1/	"		6	"
1½	Bricklayers	/12/		1	2	"
1	Man Cooly	/5/		-	5	"
2	Women	/3/		-	6	"
	Sundries			-	9	"
	Total per 100 Sft			11	-	-

Cement plastering 1/2" thick

2	cft Cement	2/12/-	cft	5	8	"
4	" Sand (white)	-/1/-	"	-	4	"
1¼	Bricklayers	/12/	"	-	15	"
¾	Woman Cooly	/5/	"	"	3	9
1	Woman	3	-	/	3	"
	Sundries				14	3
	Total per 100 cft			8	-	-

Roofing with No 3 new patent Mangalore tiles on teak reepers 2"x1"+3/4" cedar planking

160	Mangalore tiles	41/8/-	1000	6	10	3
100	Sft of teak reepers	6/-/-	cft 100	5	-	"
100	" Cedar planking 3/4" thick tongued & grooved one edge headed	18/-	Sft 100	18	-	"
3	lbs Nails	/4/		-	12	"
1	Carpenter	/12/		-	12	"
2	Coolies	/5/		-	10	"
1	Tile layer	/8/		-	8	"
	Sundries				11	9
	Total			33	-	-

Mangalore Ridge tiles.

1000	R.F. Mangalore new pattern ridge tiles	100/-/-	1000	100	-	-
	Cartage			1	-	-
				101	-	-
105	R.F. Mangalore ridge tiles	10/-/-	100	10	8	"
3	cft Cement	2/12/-	cft	8	4	-
6	" Sand	-/-/6		-	3	"
2	Bricklayers	/12/		1	8	"
4	Coolies	/5/		1	4	"
	Sundries			-	5	"
	Total per 100 Rft			22	-	-
	or per Rft say			-	4	"

W Hempsell
Superintendent of works,
Light House Division.

G/36 11/7/58.

Cement plastering 3/4 thick

3	cft Cement	2/12/-	cft	8	4	"
6	" Sand (white)	/1/	"		6	"
1½	Bricklayers	/12/		1	2	"
1	Woman Cooly	/5/		-	5	"
2	Women	/3/		-	6	"
	Sundries			-	9	"
	Total per 100 Sft			11	-	"

Cement plastering ½" thick

2	cft Cement	2/12/-	cft	5	8	"
4	" Sand (white)	-/4/-	"	-	4	"
1¼	Bricklayers	/12/	"	-	15	"
¾	Woman Cooly	/5/	"	"	3	9
1	Woman	3	-	/	3	"
	Sundries				14	3
	Total per 100 sft			8	-	-

Roofing with No 3 new patent Mangalore tiles on teak reepers 2"x1¼ 3/4" cedar planking

160	Mangalore tiles	41/8/-	1000	6	40	3
100	Sft of teak reepers	5/-/-	cft 100	5	-	-
100	" Cedar planking 3/4" thick tongued & grooved & one edge headed	18/-	Sft 100	18	-	"
3	lbs Nails	/4/		-	12	"
1	Carpenter	/12/		-	12	"
2	Coolies	/5/		-	10	"
1	Tile layer	/8/		"	8	"
	Sundries				11	9
	Total			33	"	"

Mangalore Ridge tiles

1000	R.Ft. Mangalore new pattern ridge tiles	100/-/-	1000	100	-	-
	Cartage			1	"	"
				101	"	"
105	R.Ft. Mangalore ridge tiles	10/-/-	100	10	8	"
3	cft Cement	2/12/-	cft	8	4	"
6	" Sand	-/-/6		-	3	"
2	Bricklayers	/12/		1	8	"
4	Coolies	/5/		1	4	"
	Sundries			-	5	"
	Total per 100 RFt			22	"	"
	or per RFt say			"	4	"

W Shepherd
Superintendent of works,
Light House Division.

G/B.6 11/7/58.

Office of the Supt. of Works, Light-house Divn.,

Egmore, Madras,

No. 1148 Dated 13th July 1898.

2P

From

F. W. ASHPITEL, Esq.,

Superintendent of Works,

Light-house Division,

Madras,

To

The Chief Engineer,

Public Works Department.

Sir,

With reference to your No. 2979C dated 27th June 1898 I have the honor to return herewith the plans and estimate for a Lighthouse and oil store at Mangalore with the following remarks and a data sheet.

(2) I regret that you should have thought it necessary to describe the rates as "enormous" and am inclined to think that you used the word under a misapprehension of the conditions and rates on the West Coast.

(3) I have allowed Rs. 40 to Rs. 48 for concrete in cement mortar and notice that, in the schedule of rates for the Consulting Architects Division for the half year ending March 1897, the rate in Madras town for cement concrete varied from Rs. 4~~3~~ to Rs. 58. per 100 Cft.

+ Rs 50 in the Office schedule.

Rates

Desp. I
5879 (58)

Rates for labour on the West Coast are as a rule considerably higer than in Madras.

(4) I have allowed Rs 42 for brick work in surki mortar, and my estimate is based on a task of 25 cft per brick-layer per day. The price of bricks is the actual cost at the Basil Mission. I do not think the rate is excessive as I see that the West Coast Schedule allows Rs 33 for this class of work exclusive of conveyance of materials and is based on Basil Mission bricks at Rs 15/- per 1000 and Re 1- extra for surki. The Basil Mission now charge Rs 16 per 1000 for bricks and I have not so far been able to obtain any quotation for surki at the rate I have allowed though I hope to do so eventually. The brick work at Mangalore light-house is also not all straight forward work.

(5) The rate allowed for laterite in mortar is based on a task of 33 cft per mason per day and is, I believe, the ordinary district rate.

(6) The reason I propose to use cement concrete for the oil store and tower is that the quantity of concrete required is small and that in tidal water

water cement concrete ever for small works is, in my opinion, to be preferred to surki unless the foundation is unwatered. Personally I have not the same confidence in surki as I have in cement concrete and the cost of unwatering the foundation would be greater than the saving effected by making the proposed change. Under the circumstances I shall be glad if you will allow the small provision for cement concrete to remain in the estimate. Ordinary concrete costs about Rs 22/- at Mangalore.

(7) I allowed cement plastering for buildings on the West Coast after seeing the state of a building at Calicut which had merely been pointed. On the West Coast it is usual, I believe, during the monsoon, to protect exposed walls by mats and other temporary expedients and I provided for cement plaster in order to avoid this annual charge. The whole provision in the estimate for plastering laterite is only Rs 96- and pointing would cost about 50% of this amount. I have not made any alteration in the estimate pending your consideration of this explanation.

The

(8) The substitution of Mangalore tiles for cement flooring has been made in the estimate and also country wood for teak wood. The total saving amounts to Rs. 30 as the quantity of teakwood in the estimate is small.

(9) I would point out that labour at Mangalore is very dear, the ordinary bricklayer being paid from 12 annas to Re. 1- per day against 6 annas to 10 annas in Madras and others in proportion especially during the coffee season.

I have the honor to be,
Sir,
your most obedt: servant,

W Whitehead
Superintendent of Works.
Light-House Division

6.7.98.

Public Works Department.

Current No. 4460
Letter No. 1866
Dated 20th May 1898
From the Presidency Port Officer.

NOTE BY TECHNICAL SECTION.

Name of work Light house and oil store at Mangalore.
Amount of Estimate Rs 6940

W

The plans & estimate may be passed. The presence of foundations of light house is under 3/4 ths of a tree, and sand will safely bear a much greater pressure.

2. The economy proposed in the last sentence of the technical note, in regard to the foundations of the Lantern House & Oil stores, is hardly worth consideration, not judicious and is the total cost of the foundations for the Oil store being only Rs 373.

3. The Supdt of Works asks for early sanction to collect materials, & a draft memo: according such sanction, is put up for approval

AGK
18-6-98.

With reference to G.O. No. 245 Marine dated 6th April 1896 the Supdt of Works Light houses Divn submits for sanction plans & estimates for constructing a new light house and oil store at Mangalore.

The present light is reported, to be located on a hill above the town, at which too great an elevation to the lantern is stated the towers of ships recommend design. The accompanying estimate therefore provides for erecting a new light house on the marine yard with a focal plane of 33 feet above mean water level & for utilizing the apparatus from the existing tower.

The amount of the estimate is made up as follows:-

(a) Light house with Quarters &c Rs 5880
(b) Oil godown 1060
Total Estimate Rs 6940

The position of said as noted on the plan

[P. W. 60 / 250—30-9-97.]

plan, Sheet No. 1, is surfaced with as and earth to a depth of 3 feet and sub-soil latterite & sand 3 feet and sand one foot below, but in the report the soil is mentioned as "made earth" for a depth of 6 feet, as ascertained from a trial pit.

Item (a) The light column & chimney will be attached in one block. The column will be 6 feet internal diam. and the annular room 14' x 12'.

The foundations are proposed to be laid to a depth of 8 feet, the lower 3 feet of cement concrete & the upper 5 feet brick in cement mortar. The concrete bed under the column will be solid, i.e. from wall to wall & 18 feet in diam. The basement will be raised 1'6" throughout. The light column will be 20 feet high above base to lantern floor and the annular room walls raised 9 feet. The walls throughout will be built of brick in cement mortar with arches over voids and the surfaces of walls both internal & external plastered with cement.

The floor of the annular room & columns will be laid with 4½" concrete & plastered over with ¾" cement and that of the lantern floor with ⅜" chequered plates supported on rolled steel girders of a section 5" x 3", weighing 11 lbs per foot.

x The foundations proposed are suitable. A there is no real discrepancy between plan & report; the latter speaks ~~only~~ of "made earth" & says foundations will be taken down to sound. The plan shows the ~~is~~ 10, and specifies the varieties of ~~soil before the sand is reached~~ the 'made earth' met with before sound is reached. 'T' has simply assumed that the red earth & laterite, shown in Sheet 2, is not 'made earth'. He is clear it is 10.

Insert

The steps leading to the lantern floor will be of cut stone & portions of which 9 inches will be let into the wall. The risers will be 8 inches and the treads 10 inches. Doors & windows will be of teakwood & the description noted in the estimate and painted 3 coats.

The following lump sums have been provided:-

Repairing, refixing old apparatus	3[illegible]
Timber stores permanent buildings temp & galley huts	6[illegible]
Lightning conductor	1[illegible]
Sheds for materials	1[illegible]
Boring water	[illegible]
Preliminary expenses	[illegible]

Item (b) provides for erecting an oil store room 10' x 10' on ground 7 feet deep. The lower 2 feet will be laid with cement concrete & the upper 5 feet built with laterite in cement mortar. The basement will be raised 1'6" & the superstructure walls 9 feet & built with laterite in mortar with flat arch of brick in chunam over voids & the surfaces of walls plastered with ½" cement. The floor will be of 4½" concrete & plastered with ¾" cement & the roof terraced with brick jelly concrete 6 inches thick laid over 1½" cement tiles & supported on T joists of a section 4" x 4" x ½" &

x This Section is required. [illegible]

The surfaces plastered with cement: The roof will be covered with a rise of 5" in the centre.

The scantlings for roof timbers for the Service room are correct.

The rates, as far as can be examined, are fair.

The estimates have been examined by the Presidency Port Officer both as to the plans, they should be approved in the Draughtsman Dept.

The pressure per sft. at bottom of foundations will be as under:-

Concrete foundations 132.7 area × 8'0" = 398
398 cft. of concrete at 130 lbs per cft. = 51740.

Brick foundations 25 × 2'6" × 6'6" = 406
Superstructure 25 × 2'0 × 20'0" = 1000
1406 cft. of brick masonry at 120 lbs per cft. = 168720.

Wind pressure at 2/3 the vertical area of face of column at 54 lbs per sft.
Column diam.: 10 ft. = 31.4 feet
2/3 the surface = 21.0 ft.
∴ pressure = 21 × 22 × 54 = 24948

Total weight in lbs 245408

Area of concrete foundation = 133 sft.
∴ pressure per sft. = 245408 / 133 = 1845 lbs
∴ Wind pressure on soil per sft. = 0.82 Tons.

The depth of foundations for the Service room & the others appears to be unnecessarily heavy. They may be made 4 feet or 5 ~~feet~~ or 2 feet 6 inches filling.

17.6.98.

* It is not necessary to take out the wind pressure for a building of less height than an ordinary dwelling house. A wind pressure of 54 lbs is more than the max.m for a building 100 ft high, the wind pressure varying with the height above ground. As given by Stephenson in his book on Lighthouse construction, the following are the max.m pressures for lighthouses of varying height

For 50 ft. 30 lbs per sft.
" 100 " 42 " "
" 200 " 66 " "

The wind pressure for an open lighthouse like this may be altogether neglected, and is trifling in proportion to the vertical pressure

A.C.H
18-6-98.

⊗ No. the sub soil is made earth, & there would be risks of unequal settlement if the foundations were thus built

A.C.H
18-6-

A.C.H
17.6.98.

Papers to be read in Proceedings:—

(1) The Hon Sir Henry Pelly K.C.I.E
(2) The Secretary to Government

Ch. 4460 & 5878

Again G.O., dated 189 , No.
Again G.O., dated 189 , No.
Current No. 4460 of 1898, dated 20th May 1898, from The Supt of Works Lt. H. D.
" " 189 " "
" " 189 " "

Print

"No. 2976 dated 27/6/98"

Memo:

The cost of cement foundations for the Lighthouse at Mangalore

ORDER.

(1) Data should be given in each case in the Memo as to rate entered for concrete in brick in lime mortar &c.

(2) No reason is given for using concrete in cement. In some such cofferdams which under an oil store is absurd, & it seems quite unnecessary to use anything more than ordinary mortar under the lower ~~cement~~ floors are not exposed. Hereafter this should be read & noted

To ~~The S.W. Lt H.D. with 10 copies~~
~~Escd. P.W. Accts~~ & 27/6/98
~~Marine Dept~~
& P.W.D. Circle Books
& P.T.C
27/6/98

[r. w. 4. 500—24-3-98.]

T. H. B. Pigou for Secy A.H. 27-6-98.

The estimate, amounting to Rs 6940, for constructing a new Light house and oil store at Mangalore, in the South Canara district, is sanctioned.

2 No separate allotment of funds having been made for this work in the Excluded Local Fund budget for 1898-99 the Presidency Port Officer will be requested in the Marine department to report whether the expenditure may be met from the provision of Rs 6,000 made for quarters for light keepers at Mangalore.

3 The sanction accorded in para 1 has been registered as Excluded Local No W/P 1898-99 and classified as Miscellaneous Public Improvements. Original Works.

A.C.H
29.6.98.

Crs

PKS

6976/98 W

Note. This estimate has been dealt with in the accompanying technical note.

Cn

P.K.S

W

(4) Laterite used with blackened with cement for more than 2' above ground. pointing shd be substituted for the remainder.

(5) The timber used with leak. There are many excellent woods & - tamarind, punk. drum &c. Cutch, at much less cost -

2. Stone, bricks & laterite can be collected in' antici- -pation; & sanction like estimate

[signature] 21.6.98

To The S. of W. L. H. Dn with enclo.

Public Works (1898) Department.

CURRENT No. 4460

From The Supdt of works Light House Dn Madras

Order

W.

With reference to his letter No. 1021 dated 18th May 98, forwarding plans & estimates for a Lighthouse & Oil store at Mangalore, the Supdt of Works, Lighthouse Dn is authorised to put in hand the collection of materials, in anticipation of the sanction of Govt. to the estimates. ACK 18-6-98.

S.A.W

Draft G.O sanctioning estimate can be made.

ACK 18-6.

Dated 18th May 1898

Received

Registered 323-0-0

Enclosures 7 plans & 2 estimates

Spare copies

SUBJECT.

Lighthouse & oil store at Mangalore.

Submitting for favour of early sanction plans & estimates for a —

A/cr

Cn 27/7/98

OFS 1898

3037 6.98 W Supt

BACK PAPERS.

No.	Date.
1059-60w	27-4-98
969a	14-4-98
2458	8-4-96

FURTHER PAPERS.

No.	Date.

OFFICE OF THE SUPT. OF WORKS, LIGHT-HOUSE DIVN.,
Egmore, Madras,

No. 1021 Dated 18th May 1898.

17

From

F. W. ASHPITEL, Esq.,
SUPERINTENDENT OF WORKS,
LIGHT-HOUSE DIVISION,
Madras,

To

THE Secretary to Government,
Public Works Department
Thro' the Presidency Port Officer Madras.

SIR,

I have the honor to forward herewith plans and estimates for a light-house and oil store at Mangalore for favour of early sanction.

(2) If you approve of the designs I request permission to put the collection of materials, especially the cut-stone steps, in hand at once so as to have them ready before the working season commences after the rains.

(3) The estimate amounts to Rs. 6,940 against an approximate estimate of Rs. 6000 printed in Table I page 13 of the report printed with

Government

Government Order No. 245 Marine dated 8th April 1896. The excess of Rs 940 is due to the provision of an oil store which was not previously contemplated but which has been provided at the request of the Presidency Port Officer. No 940

I have the honor to be,
Sir,
Your most obedt Servant

Whitehead
Superintendent of works
Light House Division
No 1864 Forwarded.

Madras, 3
20th May 1898. 3.

for Master
Commander, R.I.M.,
Presy. Port Officer

C/ 14.5.98.

Enclosures

1 Lighthouse plan
1 Development plan
1 Detail of step
1 Staircase landing to lantern floor
1 Detail of lantern floor
1 Survey of marine yard.

} 3 estimates amounting to Rs 5880.

1 oil store plan with 1 estimate amtg to Rs 1060

6940

C/ 18.5.98.

GENERAL.
ACCOUNT.

Government {1898} of Madras.

PUBLIC WORKS.

Recd. } 1898. Enclosures
Regd. } Spare copies

G.O., Nos. 1059, 1060 W., 27th April 1898.

APRIL.

Excluded Local Fund Budget Estimate

Forwarding copy of Proceedings embodying the final issue of the — for 1898-99.

Government Order No. 245 Marine dated 8th April 1896. The excess of Rs 940 is Rs 940
due to the provision of an oil store
which was not previously contemplated
but which has been provided at the
request of the Presidency Port Officer.

I have the honor to be,
Sir,
Your most obedt Servant

W. Whitehead
Superintendent of works
Light House Division

No 1869 Forwarded.

C. 14.5.98.

Madras, 20th May 1898. for Chief Commander, R.I.M., Presy. Port Officer

Enclosures

1 Lighthouse plan
1 Development plan
1 Detail of step
1 Staircase landing to lantern floor
1 Detail of lantern floor
1 Survey of marine yard.

} 3 estimates amounting to Rs 5880.

1 oil store plan with 1 estimate amtg to Rs 1060

6940

C. 18.5.98.

GENERAL.
ACCOUNT.

Government {1898} of Madras.

PUBLIC WORKS.

Recd. } 1898. Enclosures
Regd. } Spare copies

G.O., Nos. 1059, 1060 W., 27th April 1898.

APRIL.

Excluded Local Fund Budget Estimate

Forwarding copy of Proceedings embodying the final issue of the — for 1898-99.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Account.

READ—the following papers:—

From the Superintending Engineer,	I Circle,	dated	4th November 1897,	No.	——
,, ,, ,,	II ,,	,,	25th ,,	,, ,,	2358 K.E.
,, ,, ,,	III ,,	,,	16th October	,, ,,	4152.
,, ,, ,,	IV ,,	,,	10th ,,	,, ,,	——
,, ,, ,,	V ,,	,,	30th September	,, ,,	398 W.
,, ,, ,,	VI ,,	,,	3rd October	,, ,,	1805 T.C.
,, Consulting Architect to Government,		dated	30th September	,, ,,	——
,, Superintendent of Works, Lighthouse Division,		dated	15th Jan. 1898,	No.	837.

ORDER—No. 1059 W., dated 27th April 1898.

Charges.—The budget estimate of charges for 1897–98 under Excluded Local Port Funds amounted to Rs. 2,08,799. The revised estimate has been reduced to Rs. 93,322 by the modifications of grants subsequently sanctioned.

2. *Port Funds.*—The budget estimate of charges for 1898–99 under Excluded Local Port Funds has been framed for Rs. 4,84,193 being the amount provided in the Port and Marine Fund budget of that year on account of Lighthouse works and Port improvements. The grants applied for by Superintending Engineers for certain new works and repairs have not been provided as the Presidency Port officer's approval to their execution during 1898–99 does not appear to have been obtained.

3. *University Fee Fund.*—The Consulting Architect has applied for an allotment of Rs. 3,000, or Rs. 3,735 inclusive of percentage charges, under University Fee Fund for repairs to the Senate House during 1898–99. The charge being a recurring one, the grant proposed has been included in the budget. The Syndicate of the University of Madras will be requested to arrange for the early transfer of the amount to the Public Works Department if the provision is approved.

4. The total estimate charges for 1898–99 both under Port and University Fee Funds amount to Rs. 4,87,928.

5. The officers concerned will lose no time in submitting plans and estimates for the unsanctioned works for which funds have been provided in the budget. No expenditure should be incurred on these works until plans and estimates are sanctioned by competent authority.

6. An estimate of Rs. 30,700 for a combined office and residence for the Port officer at Cochin has been received, but as the amount is very excessive, the Presidency Port officer has been requested to report how the cost could be reduced. His reply is awaited.

7. The plan and estimate for a lighthouse at Kafh Rock are under scrutiny and orders will issue shortly.

8. With these remarks the final issue of the Excluded Local Fund budget estimate for 1898–99 will be printed and circulated to the officers concerned for information and guidance and fifty copies as noted in the margin will be forwarded to the Government of India.

Fifteen to Simla, 35 to Calcutta.

[Here enter No. 1060 W., dated 27th April 1898.]

(True Extract.)

(Signed) W. B. DEWINTON,
Ag. Secretary to Government.

To Superintending Engineers.
,, the Consulting Architect to Government.
,, the Examiner, Public Works Accounts.
,, the Superintendent of Works, Lighthouse Division.
,, the Marine Department.
,, the Financial Department.
,, the Educational Department.

ENDORSEMENT—No. 1060 W., dated 27th April 1898.

Forwarded.

(By order.)

(Signed) W. B. DEWINTON,
Ag. Secretary to Government.

Exd. A. F. Eccleston.

EXCLUDED LOCAL FUNDS.
CIVIL WORKS.

MADRAS.

FINAL ISSUE.

Public Works Department.

BUDGET ESTIMATE

OF

REVENUE AND EXPENDITURE

UNDER

CIVIL WORKS

IN THE

MADRAS PRESIDENCY

FOR THE YEAR

1898-99.

MADRAS,
27th April 1898.

(Signed) W. B. DEWINTON,
Ag. Secretary to Government.

CONTENTS.

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ABSTRACT BUDGET ESTIMATE OF REVENUE	3
DITTO OF EXPENDITURE	4 & 5
DETAILED BUDGET ESTIMATE OF EXPENDITURE—	
PART I.—Detail of Estimate for Original Works	6 & 7
PART II.— Do. for Minor Works and Repairs	8 & 9

GOVERNMENT OF MADRAS.

REVENUE.

Abstract Budget Estimate of Revenue from Civil Works in Madras for the year 1898–99.

	Actuals, 1896–97.	Budget Estimate, 1897–98.	Revised Estimate, 1897–98.	Budget Estimate, 1898–99.
	Rs.	Rs.	Rs.	Rs.
Realised in the Public Works Department ...	...	...	...	...
Realised in Civil and Military Departments ...	...	...	...	...
Total ...	...	...	...	...

GOVERNMENT OF MADRAS.

EXPENDITURE.

Abstract Budget Estimate of Expenditure on Civil Works in Madras for the year 1898–99.

	Actuals, 1896–97.	Budget Estimate, 1897–98.	Revised Estimate, 1897–98.	Budget Estimate, 1898–99.		
				Works in progress.	Works not commenced.	Total.
ORIGINAL WORKS.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Civil buildings	18,422	33,040	15,761	22,300	37,300	59,600
Communications	...	...	...	...	...	...
Miscellaneous public improvements.	63,063	1,26,660	48,650	1,26,800	2,09,870	3,36,670
Total ...	81,485	1,59,700	64,411	1,49,100	2,47,170	3,96,270
REPAIRS.						
Civil buildings	4,990	3,600	2,437	...	3,950	3,950
Communications	...	...	...	...	...	...
Miscellaneous public improvements.	5,171	4,410	8,278	...	5,660	5,660
Total ...	10,161	8,010	10,715	...	9,610	9,610
TOTAL, WORKS AND REPAIRS.						
Civil buildings	23,412	36,640	18,198	22,300	41,250	63,550
Communications	...	...	...	...	...	...
Miscellaneous public improvements.	68,234	1,31,070	56,928	1,26,800	2,15,530	3,42,330
Total ...	91,646	1,67,710	75,126	1,49,100	2,56,780	4,05,880
Establishment	19,639	38,573	16,383	...	...	77,024
Tools and plant	1,265	2,516	1,813	...	...	5,024
Grand Total ...	1,12,550	2,08,799	93,322	...	...	4,87,928

GOVERNMENT OF MADRAS.

	Funds to which Grants for 1898–99 are chargeable.		
	University Fee Fund.	Port Fund.	Total.
ORIGINAL WORKS.	Rs.	Rs.	Rs.
Civil buildings	...	59,600	59,600
Communications	...	...	...
Miscellaneous public improvements	...	3,36,670	3,36,670
Total ...	...	3,96,270	3,96,270
REPAIRS.			
Civil buildings	3,000	950	3,950
Communications	...	...	...
Miscellaneous public improvements	...	5,660	5,660
Total ...	3,000	6,610	9,610
Total, Works and Repairs ...	3,000	4,02,880	4,05,880
Establishment	690	* 76,334	77,024
Tools and plant	45	* 4,979	5,024
Grand Total ...	3,735	4,84,193	4,87,928

* Percentage charges have not been calculated on Rs. 71,000 provided for lighthouse apparatus.

EXCLUDED LOCAL FUNDS.
CIVIL WORKS.

GOVERNMENT OF MADRAS.

Part I.

Detail of the Budget Estimate for Original Works in Madras for the year 1898-99.

Funds.	Executive Division.	Locality.	Item No.	Projects and Works.	Amount of Estimate.	Outlay. Actual to end of 1896-97.	Outlay. Probable during 1897-98.	Grant, 1898-99. Amount.	Grant, 1898-99. Total.	Item No.	Remarks and References.
					Rs.	Rs.	Rs.	Rs.	Rs.		
				CIVIL BUILDINGS.							
				Major Works.							
Excluded Local Port Funds.	Ganjám ...	Gopalpur ...	1	Port officer's residence	...	...	...	6,000		1	Estimate is awaited.
	Vizagapatam.	Vizagapatam.	2	Do.	10,500	...	1,128	9,300		2	G.O., No. 3278 W., dated 14th November 1896.
	West Coast ...	Cochin ...	3	Combined office and residence for the Port officer.	...	...	...	15,000		3	Further information called for from the Presidency Port Officer is awaited.
	Negapatam ...	Negapatam ...	4	Port officer's residence	...	...	...	10,000			
	Tinnevelly ...	Tuticorin ...	5	Do.	13,930	...	1,500	10,000		4	Estimate is awaited.
	Do. ...	Do. ...	6	Closed shed for goods	...	...	...	3,000		5	G.O., No. 2751 W., dated 2nd October 1897.
	Do. ...	Do. ...	7	Open do.	...	...	...	2,300		6	Estimate is awaited.
			8	Minor works	...	...	...	1,000		7	Do.
			9	Reserve with the Government for incomplete works.	...	...	...	3,000		8	
				Total, Civil Buildings ...	...	...	...	...	59,600	9	
				MISCELLANEOUS PUBLIC IMPROVEMENTS.							
				Major Works.							
	Vizagapatam.	Vizagapatam.	10	Improvements to foreshore	...	...	...	10,000		10	Estimate is awaited.
	Gódávari Eastern.	Cocanada ...	11	Dredger and improvements to bar ...	...	...	...	50,000		11	Do.
	Kistna Eastern.	Masulipatam.	12	Improvements to bar and river ...	...	...	...	10,000		12	Do.
	West Coast ...	Mangalore ...	13	Reclamation of foreshore	...	...	...	25,000		13	Do.
	Negapatam ...	Negapatam ...	14	Permanent groynes	...	...	...	15,000		14	Do.
	Do. ...	Do. ...	15	Improvements to jetty	3,740	...	1,305	2,800		15	G.O., No. 3590 W., dated 23rd December 1897.
	Lighthouse ...	False Point ...	16	Lighthouse	1,13,240	30,000	* 83,000			16	G.O., No. 670 W., dated 8th March 1897.
	Do. ...	Masulipatam...	17	Do.	...	...	4,000			17	Estimate is awaited.
	Do. ...	Kaph rock ...	18	Do.	...	...	† 68,000			18	Estimate is under scrutiny.
	Do. ...	Manapad ...	19	Do.	46,250	8,500	† 41,000			19	G.O., No. 1630 W., dated 15th June 1897.
	Do. ...	Muttum ...	20	Quarters for lightkeepers	...	...	10,000			20	Estimate is awaited.
	Do. ...	Malpi ...	21	Do.	...	...	3,000			21	Do.
	Do. ...	Mangalore ...	22	Do.	...	...	6,000			22	Do.
			23	Minor Works	...	...	8,870			23	
				Total, Miscellaneous Public Improvements.	...	...	...	...	3,36,670		
				Total, Original Works ...	...	...	...	...	3,96,270		

* Includes Rs. 25,000 for Lighthouse apparatus.
† ,, Rs. 23,000 ,,

GOVERNMENT OF MADRAS.

PART II.

Detail of the Budget Estimate of Minor Works under Civil Works in Madras for the year 1898–99.

Executive Division.	Locality.	Item No.	Name of Work.	Grant, 1898–99.	Total.	Remarks.
				Rs.	Rs.	
			EXCLUDED LOCAL PORT FUNDS.			
			MINOR WORKS.			
			Civil Buildings.			
Negapatam ...	Negapatam ...	1	Improvements to Port office ...	1,000		
			Miscellaneous Public Improvements.		1,000	
West Coast ...	Cochin ...	2	Fencing boat yard	970		
Do. ...	Ponani ...	3	Joining the existing groynes.	1,000		
Tinnevelly ...	Tuticorin ...	4	Passenger shed and platform.	900		
Do. ...	Do. ...	5	Fencing foreshore	1,000		
Light house ...	Coondapoor ...	6	Quarters for lightkeepers ...	2,000		
Do. ...	Hangerkotta ...	7	Do. do. ...	2,000		
Do. ...	Do. ...	8	Preliminary expenses ...	1,000		
			Total, Miscellaneous Public Improvements ...	...	8,870	
			Total, Minor Works ...	...	9,870	

GOVERNMENT OF MADRAS.

Part II.

Detail of the Budget Estimate for Repairs to Civil Works in Madras during 1898–99.

Executive division.	Locality.	Item No.	Name of work.	Grant, 1898–99.	Total.	Remarks.
				Rs.	Rs.	
			EXCLUDED LOCAL PORT FUNDS.			
			CIVIL BUILDINGS.			
Negapatam ...	Negapatam ...	1	Repairs to Port office ...	800		
Do. ...	Do. ...	2	Repairs to Boat Overseer's office room in the jetty.	150		
					950	
			Miscellaneous Public Improvements.			
West Coast ...	Calicut ...	3	Repairs to pier	2,360		
Chingleput ...	Seven Pagodas.	4	Repairs to lighthouse and lightkeeper's quarters.	200		
Ganjám ...	Gopalpur ...	5	Repairs to lightkeeper's shed.	50		
Negapatam ...	Negapatam ...	6	Repairs to lighthouse ...	800		
Do. ...	Calimere ...	7	Do. ...	750		
Tinnevelly ...	Hare Island ...	8	Do. ...	200		
Do. ...	Manapad ...	9	Do. ...	400		
Do. ...	Muttam ...	10	Do. ...	900		
					5,660	
			Total Repairs, Port Funds ...	...	6,610	
			UNIVERSITY FEE FUND.			
			CIVIL BUILDINGS.			
Architect ...	Madras ...	11	Repairs to the Senate House.	3,000		
					3,000	
			Grand Total, Repairs ...	...	9,610	