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MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.
Can 31/3/60

G.O. No.	<u>623</u>	Press Mis.
Dated	<u>26-3-1860</u>	

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
for the month of March 1860.*

No. 50. Read the following letter from Colonel J. H. BELL, Chief Engineer, to the Chief Secretary to Government, dated 3rd March 1860, No. 10,989 :—

In my letter of the 31st of August 1859, No. 4,408, I suggested that the junction of the Madras

1 Letter from Garrison Engineer,
dated 11th February 1860, No. 814.
1 Specification.
4 Plans.
2 Abstract Estimates.

Pier with the shore should be completed with iron wood-piling, the expense of which, including rails, was roughly estimated at Rupees 28,000.

In letter of October 1859, No. 29.
In Proceedings of Government, De-
cember 2nd 1859, No. 2,814.

2. The suggestion having been approved by the Secretary of State, I called upon Captain Rawlins, agreeably to the Order of Government, to prepare the necessary working Plans and Estimates. Owing to the rise in the price of teak-wood—to the necessity of strong bracing for the complete security of the piles, in consequence of the Pier being thrown out 60 feet to sea ward, as reported in my letter of the 22nd September 1859,*

* Proceedings of Government, dated
30th September 1859, No. 2,346.

No. 5,313—to the necessity, for the same reason, of coppering the advanced piles, and to other circumstances, the Estimate now amounts to Rupees 44,660, that is, to about Rupees 15,660 in excess of that which was reported in my letter of the 31st of August. On the other hand, the Engineer of the Pier Company has informed me that the expense of forming the junction by screw-piling may now be greatly reduced.

3. The wooden-piling was intended to be planted over the whole space between the beginning of the screw-piling and the solid ground; for the appearance of the structure would have been greatly injured had it been erected in three dissimilar forms. But if the screw-piling were carried back for a sufficient distance, there would be no objection to the formation of a causeway to connect it with the solid ground. I have carefully examined and considered the subject in consultation with several Officers, and we are all agreed that the permanence of the sandy beach up to about 80 feet from the Pier, as it now is, may be absolutely reckoned upon at all seasons, and that it is necessary, therefore, to pile only the said distance of 80 feet. If this is done, we have no doubt either of the stability of the causeway, or, on the other hand, of the even more important point of the present depth of water remaining undiminished, and the surf-line unaltered beyond it.

4. Mr. Gibson, the Engineer, states that he has no doubt whatever that the Pier Contractor will undertake to cover the 80 feet above mentioned for £4,332 and the Estimate for the causeway complete being Rupees 7,400, the excess of charge is only Rupees 5,780 for an arrangement superior in every respect to the wood-piling, and having particularly this advantage that the principal part of the work for which it provides will be executed by the Contractor simultaneously with his operations to sea ward, and that the communication with the shore will thus be more rapidly and much more conveniently established than it would be by a separate agency employing machinery on the same spot. The causeway being a simple work of earth and masonry will not be attended with the same difficulty, and may, therefore, be constructed under the superintendence of this Department.

5. Mr. Gibson has referred to his employer on the subject of the cost of the screw-piling for the junction; and as it cannot differ to any amount worth mentioning from Mr. Gibson's Estimate, in which he has entire confidence, I recommend that the new arrangement may be at once sanctioned, that the money which would have been required for the wood-piling be appropriated to defray the expense, that Mr. Gibson be authorized to proceed with his portion of the work, as he is prepared to do immediately on the receipt of fresh piles from England, and that the causeway be forthwith commenced.

6. If these propositions are approved, there will be but a short delay in bringing the Pier into use, for in a few months it will certainly be beyond the surf. I presume that, under the sanction of the Secretary of State, funds will be available for the necessary work of the Junction without reference to the Public Works Budget.

7. There is, however, much work to be done besides the Junction; for the Custom House should be provided with a complete system of Railways to communicate with the Pier. Captain

Proceedings of the Madras Government, Public Works Department,
for the month of March 1860.

Rawlins has estimated these at about Rupees 23,700, but as this subject is quite distinct from that of the Junction, I shall report upon it in another letter.

No. 51. ORDER THEREON, 26th March 1860, No. 623.

Pursuant to the Order of 2nd December 1859, No. 2,814, the Chief Engineer sends up an Estimate for forming the Junction of the Madras Pier with the Beach upon Irool wood-piles.

The Estimate amounts to Rupees 44,660, being Rupees 16,660 in excess of the rough calculation formerly made. He explains the causes which have led to this excess.

2. The cost being so much larger than was before expected, Colonel Bell, does not now recommend this scheme, but brings forward another plan, viz., to continue the screw-piling for 80 feet towards the shore, and complete the connection by means of a causeway—as all the Engineers consulted, agree in the opinion that for the distance the Beach may now be considered permanent. The screw-pile part of this work is to be undertaken by the Pier Contractors for the sum of £ 4,332, and the connecting causeway is to cost 7,400 Rupees. The total cost is thus estimated at Rupees 50,720. Colonel Bell

Estimate for screw-piles, &c.	Rs 50,720
Do. for wooden do.	44,660
Excess	6,060

considers this arrangement to be superior in every respect to the wood-piling, while the excess of charge, he remarks, is only Rupees 5,780, but correctly Rupees 6,060 as shown in the margin.

3. With the view of bringing the Pier into early use, Colonel Bell recommends that the Engineer of the Pier Company be authorized to proceed with his portion of the work, which it is stated he is prepared to do immediately on the receipt of fresh piles from England, and that the causeway be commenced at once.

4. The Honorable the Governor in Council is of opinion that the course recommended by the Chief Engineer may be safely and properly adopted, and he authorizes that Officer to issue orders for carrying out his recommendations.

5. This Order will be reported to the Secretary of State for his approval; and application will be made for funds for the causeway independently of the amount of the Budget.

(Signed) J. D. BOURDILLON,
Secretary to Government.

Central Office P.W.D.
Sipahkarn
3rd March 1860.

No 10989

From, The Chief Engineer
To, The Chief Secretary to Government

Marine

Sir.

No 4408

Enclosures 2
1 Letter from Genl. Engineer 21 Feb 1860 No 814
1 Specification
4 Plans
2 Abstract Estimate

In my letter of the 31st of August 1859, I suggested that the junction of the Madras Pier with the shore should be completed with Irool Wood piling, the expense of which including rails was roughly estimated at Rupees 28,000

In letter of Dctr 20th 1859 No 79.

In Proc of Govt Decr 2nd /59
No 2814

The suggestion having been approved by the Secretary of State, I called upon Captain Rawlins agreeably to the order of Government, to prepare the necessary working plans and estimates. Owing to the rise in the price of teak wood, to the necessity of strong bracing for

the complete security of the piles, in consequence of the Pier being thrown out to fort Ansonia, as reported in my letter of the 22nd September 1859, No 5313, to the necessity, for the same reason, of cospering the advanced piles, and to other circumstances the estimate now amounts to Rupees 44,660 that is to about Rupees 16,660 excess of that which was reported in my letter of the 31st of August. On the other hand the Engineer of the Pier Company has informed me that the expense of forming the junction by screw piling may now be greatly reduced.

Prog. of Work dated
30 Sept. 1859
No 2346.

3 The wooden piling was intended to be planted over the whole space between the beginning of the screw piling and the solid ground; for the appearance of the structure would have been greatly injured had it been erected in three dissimilar forms. But if the screw piling were carried back for a sufficient distance there would be no objection

3 objection to the formation of a causeway to connect it with the solid ground - I have carefully examined and considered the subject in consultation with several Officers, and we are all agreed that the permanence of the sandy beach up to about 80 feet from the Pier, as it now is, may be absolutely reckoned upon at all seasons, and that it is necessary therefore to pile only the said distance of 80 feet - if this is done we have no doubt either of the stability of the causeway, or on the other hand of the even more important point of the present depth of water remaining undiminished, and the surf line unaltered beyond it.

4 Mr Gibson, the Engineer, states that he has no doubt whatever that the Pier Contractor will undertake to cover the 80 feet above mentioned for £4332 - and the Estimate for the Causeway complete being Rs. 7,400 -

the

the excess of charge is only \$5,780- for an arrangement superior in every respect to the wood piling, and having particularly this advantage that the principal part of the work for which it provides will be executed by the Rev Contractor simultaneously with his operations to sea-ward, and that the communication with the shore will thus be more rapidly and much more conveniently established than it would be by a separate agency employing machinery on the same spot - The Causeway being a simple work of earth and masonry will not be attended with the same difficulty and may therefore be constructed under the superintendence of this Department -

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5 Mr Gibson has referred
to his employer on the subject of the
cost of the screw filing for the junctions,
and as it cannot differ to any amount
worth mentioning from Mr Gibson's
estimate, in which he has entire
confidence, I recommend that
the

the new arrangement may be at once sanctioned, that the money which would have been required for the Wood Piling be appropriated to defray the expenses, that Mr Gibbon be authorized to proceed with his portion of the work, as he is prepared to do immediately on the receipt of fresh piles from England, and that the Causeway be forthwith commenced.

b. If these propositions are approved there will be but a short delay in bringing the Pier into use, for in a few months it will certainly be beyond the surf. I presume that under the sanction of the Secretary of State funds will be available for the necessary work of the junction without reference to the Public Works Budget.

7 There is however much work to be done besides the junction, for the Custom House should be provided with a complete system

of
yourself & mine should be
sings

of railways to communicate with
the Pier. Captain ^{about} Rawlins has
estimated these at Rs 23,700 -
but as this subject is quite distinct
from that of the Junction I shall
report upon it in another letter -

I have the honor to be
Sir
Your most Obedt Servt
J H Hall Colonel
Chief Engineer

3rd March 1860

H. Gray

From the ...

Specification for the junction of the Madras River with the Road and the Sea Customs.

There is a gradual rise of 1 in 58, or a total of 5' 9" in the first 393 feet from the datum point A, at the stone sill under the main Arch of the Custom House Verandah. After this 393 feet the roadway of the Pier is on a dead level at 15' 9" above high water. The Pier is to commence at 59 feet from De Havilland's Bulwark, this distance of 59 feet being filled up with sand and metalled. At the junction there is to be a dwarf wall 2 feet deep on which the first joists will rest. From this wall to a distance of 180 feet, until the junction with the Contractor's new Piles, the pier is to be built on wooden piles from 20 to 30 feet long, driven into the sand by a Steam Pile Driver to a depth of 10 to 12 feet below low tide. The piles to be firmly tied to one another by strong longitudinal and transverse iron braces or girders fastened together and to the Piles by wrought iron double clasps. The cross beams to be fixed to the head of the piles by a cast iron cap thru' which 4 vertical bolts are driven. The cross beams will support 10 longitudinal joists and they are fastened together by iron clamps. The Roadway on the piles to be of teak boards 4" thick. There are to be two lines

W. 2. 1/2 inch 57 1/2 115 116
4 1/2 inch 10 0 125 126
10 inch 31

Aluminium
Copper 11 Zinc
No 2870

Q. 97. 1860. De Havilland
Pier of 400 feet long
shown. 17. 595.
The Chief Engineer
to the Secretary to Govt.
of Mad.

Dated 30
Received of the
17. 595.
for completing the
junction of the bridge.

Recommendation that the
Engineer of the (Pier Company)
state that the expense of
using screw piling for the pier
will be reduced that he
be allowed to complete the
work with the view to bringing
the Pier into early use.

No 57

of Madras 1860 1122

lines of Rails running thro' the Sea Customs main building and communicating direct with the Export and Import sheds, and from one point to another in the yard by 8 Turn Tables; so that the goods can be economically conveyed to any part. The rails in the yard are to be so like the lineal yard, supported in chairs with sleepers every three feet, similar to the mode adopted on the Madras Railway. Those on the Pier to be so like to the yard of the Bridge shape and nailed down to the Pier floor.

Six Goods Carriages, each capable of carrying about 6 tons are provided.

The Estimate amounts to:-

For the junction of the Pier with the Road - 43,000.

For Railway thence to the Export and Import sheds at the Sea Customs House

25,700.

Total 68,700.

W. A. R. Lines. Captain

Port Saint George

11th February 1860

Garrison Engineer

Garrison Engineers Office.

No 814

From
Captain H. W. Rawlins,
Garrison Engineer,
Fort Saint George.

To
The Deputy Chief Engineer,
Northern Circle,
Chepauk Palace.

Sir, In obedience to the orders contained in
your Proceedings, I have the honor to submit
a plan for the junction of the Contractor's River
with the Indian Road at Desharland's Bulwarke,
and for also uniting the same with the Export
and Import Sheds, in the Sea Customs yard,
at Madras. The Estimate with abstract ac-
companies and amounts to:-

For Junction Rupees 43,000-0-0

For Railway to the
Export and Import Sheds } - - - 23,700-0-0

Total Rupees - 66,700-0-0

The appended specification will give you
all the detailed information required.

I have the honor to be,

Sir,
Your most obedt. Servant,

H. W. Rawlins. Captain,
Garrison Engineer.

Fort Saint George,
11 February 1860.

To Genl. 13 March 1860 in 1898
Deanna Latta & Co
11 March 1860 c 1870

Specification for the
junction of the Madras
River with the Road and the
Sea Customs.

to Rupees 44,660 being Rupees
10,660 in excess of the rough
calculation formerly made.

From Col. Eng.
4/31 Aug^r /59. Rs. 44,660

The explains the causes
which have led to this
excess.

2 The cost being so
much larger than was be-
fore expected, Colonel Bell
does not now recommend this
scheme, but brings forward another plan,
viz to continue the screw
piling for eighty feet towards
the shore, and complete the
connection by means of a
causeway; as all the
Engineers consulted agree
in the opinion that for
this distance the beach may
now be considered perma-
nent. The screw pile part
of this work is to be under-
taken by the Pier Contractor
for

Estimate for screw piles Rs. 59,720
do for wooden - do - 44,660
Excess 15,060.

for the sum of Rs. 4,332,
and the connecting cause-
way is to cost 7,400 Rs.
The total cost is thus
estimated at Rupees 59,720.
Colonel Bell considers
this arrangement to be
superior in every respect
to the wood piling, while
the excess of charge, he
remarks, is only Rupees
5,780, ~~but~~ ^{but} ~~correctly~~ ^{but} Rs. 6,060
as shown in the margin.

3 With the view
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into early use, Colonel
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the Engineer of the Pier
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to proceed with his portion
of the work, which it
is stated he is prepared
to

to do immediately on the
receipt of fresh piles from
England; and that the
causeway be commenced
at once.

4 The Honorable
the Governor in Council
is of opinion that the course
recommended by the Chief
Engineer may be safely
and properly adopted, and
he authorizes that Officer
to issue orders for carrying
out his recommendations

5 This ^{order} ~~case~~ will be
reported to the Secretary
for his approval;
of State, and applica-
tion will be made
for funds for the
causeway independ-
ently of the
amount

amount of the
Budget.

AS

Chief Engineer Disp. 27

Comp. J. L. Smith

Copy letter to
11 April 1860 No 16.

Public Works 1860 Dept.
Pro. of Govt 31st March.

No 623.

Pro. of the Madras Govt
Df 26th March 1860

Pro. of 1739/64

11 April 1860

Chief Engineer to issue
orders for carrying out his
recommendations for continuing
the screw piling of the Madras
Pier for 80 feet and completing
the connection by means of a
Caissonway.

No 50 + 51.

1860-26th March/64