M.R.O. 1—77,006—8-6-37.

(1) Number of pages 24

(2) Date of repair 23-6-40

(3) Initials of the Referencer

MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No. 578 Press Mis.

489-490.

Dated 26-3- 1862.

Not to be folded or roughly handled

Proceedings of the Madras Government, Public Works Department, 26th March 1862.

No. 489. Read the following letter from Lieutenant-Colonel W. H. HORSLEY, Chief Engineer, to J. D. SIM, Esq., Secretary to Government, Public Works Department, Fort Saint George, dated Chepauk, 8th January 1862, No. 9,068 :—

SIR,

1. Agreeably to the orders of Government conveyed in Proceedings of Madras Government marginally noted,* I have the honor to forward the accompanying plans and estimates, amounting in the aggregate to Rupees 1,89,300, for the improvement of the Harbour at Negapatam as follows:

* No. 1,785, dated 26th September 1861.

2 Letters from the District Engineer, Nos. 183 and 184, dated 25th October 1861.
1 Sketch 1-10,185, 1861.
1 Section 3-10.184, 1861.
1 Sketch of Harbour 1-10,184, 1861.
1 Section 7-10,184, 1861.
2 Abstract Estimates prepared in this Office.

	Rs.
Rebuilding and extending northern groyne	14,000
Constructing groyne on southern side	46,700
Constructing four groynes for the protection of sea face	12,250
Protecting sand spit on river side and throwing bank forward to old line of bank	62,000
Constructing one groyne and repairing the present one	48,300
Protecting the existing jetty for 75 yards from its extremity on the south side.	6,050
	1,89,300

2. No provision has been made in the estimate for raising the bank of the spit between the river and sea, as the bank at present varies from 5 to 7 feet above the highest floods, and is being gradually increased by the creepers and prickly pear lately planted, which arrest the drift sand, added to which it is intended that the spoil obtained by dredging the river bed shall be deposited there.

Vide District Engineer's letter, No. 182, dated 25th October 1861.

3. During the freshes the river bed marked A. A. in the plan is scoured to a depth of from 12 to 14 feet below low water mark; this will be protected by a facing of piles and rough stone, and for the present a small bank of earth will be formed immediately above the facing to keep the sand bank in its proper position.

4. With the view of protecting and, at the same time, widening the remaining portion of the spit of land, where it is generally breached, it is proposed to take advantage of the remains (220 yards in length) of an old revetment, marked b. b. b. in red ink and to form a strong berm in rear of it.

5. The groynes, four in number, on the sea face, varying from 33 to 100 yards n length at intervals of about 75 yards, will be constructed of rough stone.

6. The jetty on the north of the entrance will be extended 49½ yards, or to the point where it originally terminated, the groyne on the south side will be 100 yards in length—for these works a double row of piles will be driven into the ground when the river freshes have subsided for the season and their tops connected together with iron tie rods, between which large rough stone will be thrown in, up to low water level, filling in as the work settles down or until the mass appears not to be affected by the tide. On this foundation there will be a superstructure of masonry in large blocks laid longitudinally, so that should the scour formed by the freshes in the river disturb the foundations in any one part, the mass will not be injured, and the damage would be more easily repaired; the upper covering or levelling course will not be laid on certainly till the second year, and perhaps during the third year, by which time it may be anticipated the foundation and lower portion of the brickwork will have settled down into one compact mass.

7. In the accompanying estimate provision has been made for protecting with rough stone the easterly portion of the present jetty for a distance of 75 yards where, during the freshes in

August last, there was a slight settlement. Allowance also is made for planting creepers to accelerate the accumulation of drift sand, and removing the foundation of the old Bastion, marked i. in the plan.

8. For the construction of these works, 12,000 cubic yards or 19,200 tons of stone, to be procured from Ceylon at a cost of 7 Rupees per cubic yard, 83,400 Rupees, will be required; the District Engineer therefore suggests that blocks of concrete, which can be prepared at a cost of Rupees 3-3-0 per cubic yard, or less than half that of stone, should be used for all the facing work above low water mark, viz., that to the groynes on the east or sea side of the spit, and to the upper portion of the work for the protection of the spit on the river side. This material made in large blocks and built in cases laid close together would afford little room for the action of water, by this means a saving of Rupees 31,000 on the estimate of Rupees 1,41,000 might be effected. Stone however must be used to protect the foot of the piles and the foot of the northern jetty. I would therefore strongly recommend that in the event of Government sanctioning the entry of this work in the Budget for the ensuing year, that the District Engineer be authorized at once to expend Rupees 500 for the purpose of making the necessary experiments in the preparation of some large blocks of concrete, and submitting the same to the action of salt water in order to test their durability.

9. As regards the question of adhering to the present course of the stream, the District Engineer states, "If an opening were made in

Letter No. 133, dated 25th October 1861.

"the direct line of the course of the river, the present wharfage of 300 yards from the jetty "to the Government school would be lost, and the ground on the north side of the new opening "only would be available for wharfage after a large outlay had been made on raising it, for at "present the margin of the river on the north side is very low at the site of the mud Docks. "A wharfage of about 300 yards could thus be obtained on the north bank of the Valayár, but "constant dredging would be necessary to keep the channel clear, for, during the monsoons, "the larger body of water discharged by the Kaduvyár into the harbour, arrests the water "brought down by the Valayár, and accumulations are formed above their junction in the Valayár, "where a great portion of the wharf would be formed."

"The portion of the river face which at present forms the wharfage belongs partly to "Government and partly to the Railway Department, while the land west of the road, which is "occupied by Godowns, &c., is the property of private individuals, with the exception of the "strip upon which the old Sea Customs House formerly stood, and upon which the new one is "about to be erected. Were the course of the river altered, the Railway Department would have "to bandon the ground they now occupy on the present river face, and to obtain a portion higher "up the river at the new wharfage."

"The Sea Custom House as at present situated, would be from 5 to 600 yards from the wharf, "the value of the property of merchants and others in proximity to the present wharf would be "much deteriorated, and the wharfage would be limited to about 300 yards in length, with no "possibility of its extension were the trade of the port to increase so as to require an enlarged "wharfage."

10. It will be observed from the above extract that it is most desirable to adhere to the present coure of the stream, as otherwise both public and private interests would be greatly interfered with.

11. The Estimates now submitted appear to provide for the several works enumerated in the Proceedings of Government No. 1,785, dated 26th September 1861. They have been examined and corrected in this Office, and the rates given therein, the District Engineer considers, are not higher than are absolutely necessary to carry out the proposed works. I would, therefore, recommend the Estimate, viz., Rupees 1,89,200 for entry in the Budget for 1862-63, in which, in anticipation for such sanction, a provision of Rupees 25,000 has been made but with the letter A. opposite thereto. It will be necessary, therefore, to make a grant from the Reserve Fund of 1862-63 for this work if any expenditure thereon is to take place in that year.

Proceedings of the Madras Government, Public Works Department, 26th March 1862.

No. 490. ORDER THEREON, 26th March 1862, No. 578.

1. The Plans and Estimates forwarded with this letter have been prepared in accordance with the Order of Government, No. 1,785, dated 26th September 1861.

2. On a reconsideration of the subject, the Government would limit the works to be undertaken in the first instance to the following:—

1st.—The erection of groynes on the east side of the sand spit to protect it from the action of the sea;

2nd.—The construction of an earthen embankment along the sand spit;

3rd.—The protection of the inner or western face of the embankment by a continuous revetment of rough stone and piling as shown in the section accompanying the estimate. The revetment should be carried round the northern end of the embankment to prevent it being carried away in the North East Monsoon.

4th.—To rebuild the northern jetty, but not to extend it beyond the point where it terminated originally, filling in the back with rough stone or other material capable of resisting the action of the North East Monsoon.

3. The training wall at the south side of the entrance, as well as the extension of that on the north are not to be undertaken at present, nor the enlargement of the tidal basin or the removal of the bend near the Government School. The Government are of opinion that further inquiry and observation of the effect of the land freshes, after the permanence of the embankment between the river and the sea is secured, are necessary, before entering upon so large an expenditure as these last mentioned works would involve.

4. The Deputy Chief Engineer Southern Circle will obtain from the District Engineer Tanjore a revised estimate of the expense required to carry out the works now ordered, and means will be provided from the Reserve Fund of 1862-63 should the sum (Rupees 25,000*) entered in the Budget of that year for the work in question not be available.

* Marked A.

5. In the meantime there is no objection to the District Engineer spending Rupees 500 out of his general allotment for this year for the purpose of making experiments in the preparation of blocks of concrete, as suggested in paragraph 8 of Chief Engineer's letter No. 9,068, dated 8th January 1862.

(Signed) W. H. HORSLEY, Lieut.-Colonel,
Secretary to Government.

Public

No 19068

Consular Office of Spain
Whitehaven
8th January 1862.

Sir

I have the honor to transmit herewith a Royal Order of the 26th ult. for the information and guidance of the Spanish Consular Officers in the Ports of Morocco.

I have the honor to be
Sir
Your most obedient
humble Servant
[illegible]

To
The Right Honble
Lord John Russell M.P.
&c &c &c

No 1785 of the
Political Series

Spanish Consulate
Whitehaven
8th January 1862

Sir

I have the honor to transmit herewith a Royal Order of the 26th ult. for the information and guidance of the Spanish Consular Officers in the Ports of Morocco.

I have the honor to be
Sir
Your most obedient
humble Servant
[illegible]

To
The Right Honble
Lord John Russell M.P.
&c &c &c

No 1862 Despatch
Pro: of Govt for Morocco

No 578

Pro: of the Moorish
Government
Of 26th March 1862

Regarding improvements of the
Harbours of Negapatam

No 489-490

Case Box 60,700

Constructing four Groynes for the protection of sea face	60,100
Protecting sand spit on River side and throwing Bank forward to old line of Bank	12,250
Constructing one Groyne and repairing the fore shore one	12,000
Protecting the existing jetty for 75 yards from its extremity on the South side	4,050
	189,300

2. No provision has been made in the Estimate for raising the Bank of the Spit between the River and Sea, as the Bank at present varies from 5' to 7' feet above the highest floods and is being gradually increased by the creepers and prickly-pears lately planted, which arrest the drift sand added to which it is intended that

Circular Dated 28th Oct 61

2

that the spoil obtained by dredging the River bed shall be deposited there.-

3. During the freshes the River bed marked A.A. in the Plan is scoured to a depth of from 12 to 14 feet below L.W. mark, this will be protected by a facing of piles and rough stone, and for the present a small bank of earth will be formed immediately above the facing to keep the sand banks in its proper position.

4. With the view of protecting and, at the same time, widening the remaining portion of the Spit of land, where it is generally breached, it is proposed to take advantage of the remaining 1220 yards in length of an old Revetment, marked b.b.b in red ink and to form a strong berm in rear of it.-

5. The Groynes, 4 in number, on the Sea face, varying from 36 to 100 yards in length at intervals of

of about 75 yards will be constructed of rough Stone.

6. The jetty on the north of the entrance will be extended 119½ yards, or to the point where it originally terminated. The groyne on the South Side will be 100 yards in length. For these works a double row of Piles will be driven into the ground when the River Freshes have subsided for the Season and their tops connected together with Iron tie Rods, between which large rough Stone will be thrown in, up to L. W. level, filling in as the work settles down or until the mass appears not to be affected by the Tide. On this foundation there will be a superstructure of masonry in large blocks laid longitudinally so that should the Scour formed by the freshes in the River disturb the foundations in any one part, the mass will not

not be injured and the damage would be more easily repaired; the upper covering or levelling course will not be laid on certainly till the second year and perhaps during the third year, by which time it may be anticipated the foundation and lower portion of the Brickworks will have settled down into one compact mass.

7. In the accompanying Estimate provision has been made for protecting with Rough Stone the Eastern portion of the present jetty for a distance of 75 yards where, during the Freshes in August last, there was a slight settlement. Allowance also is made for planting Creepers to accelerate the accumulation of drift Sand, and removing the foundation of the old Bastion, marked C. in the Plan.

8. For the construction of these

these works 12,000 Cubic yards or 19,200 tons of stone, to be procured from Ceylon at a cost of 7 Rupees per Cubic yard, 83,400 Rupees will be required. The District Engineer therefore suggests that blocks of Concrete, which can be prepared at a cost of Rupees 3-3-0 per Cubic yard, or less than half that of stone, should be used for all the facing work above L.W. mark, viz that to the frontages on the east & sea side of the Spit, and to the upper portion of the work for the protection of the Spit on the River side. This material made in large blocks and built in cases laid close together would afford little room for the action of water, by this means a saving of Rupees 31,000 on the Estimate of Rupees 141,000 might be effected. Stone however must be used to protect the foot of the Piles and the foot of the northern jetty. I would therefore strongly recommend that in the event of Government sanctioning the entry of this work in the Budget for the ensuing year that the District Engineer be authorized at once to expend Rupees 500 for the purpose of making the necessary experiments in the preparation of some large blocks of concrete and submitting the same to the action of salt water in order to test their durability.—

Letter No. 183 of 25th Oct. 1870

9. As regards the question of altering the present course of the stream, the District Engineer states: "If an opening were "made in the direct line of the "course of the River, the present "wharfage of 300 yards from the "jetty to the Government School "would be lost, and the ground "on the North side of the new "opening only would be available "for wharfage after a large "outlay had been made in "raising it, for at present the

"the margin of the River on the North
"Side is very low at the site of
"the mud Docks. An harfage of
"about 300 yards could then be
"obtained on the North Bank
"of the Valayar, but constant
"dredging would be necessary
"to keep the channel clear for,
"during the monsoons, the large
"body of water discharged by
"the Kadinyán into the Harbour
"arrests the water brought down
"by the Valayár and accumulations
"are formed above their junction
"in the Valayár, where a great
"portion of the wharf would
"be formed."

"The portion of the River
"face which at present forms
"the wharfage belongs partly
"to Government and partly to
"the Railway Department, while
"the land back of the Road, which
"is occupied by godowns &c.,
"is the property of private
"individuals, with the exception
"of the strip upon which the
"old Sea Customs House formerly
"stood, and upon which the new
"one is about to be erected. Were
"the course of the River altered,
"the Railway Department would
"have to abandon the ground
"they now occupy on the present
"River face, and to obtain a
"portion higher up the River
"at the new wharfage".

"The Sea Custom House as
"at present situated, would be
"from 5 to 100 yards from the
"actual face of the property
"of Merchants and others in
"proximity to the present wharf
"would be much deteriorated,
"and the wharfage would be
"limited to about 300 yards in
"length, with no possibility of
"its extension were the trade
"of the Port to increase so as to
"require an enlarged wharfage."

10. It will be observed from the above extract that it is most desirable to adhere to the present course of the Stream

stream, as otherwise both public and private interests would be greatly interfered with.-

11.- The Estimates now submitted appear to provide for the several works enumerated in the Proceedings of Government No 1785, dated 26th September 1861.- They have been examined and corrected in this Office and the rates given therein the District Engineer considers not higher than are absolutely necessary to carry on the proposed works.- I would, therefore, recommend the Estimate, viz Rupees 1,59,300, for entry in the Budget for 1862/63, in which, in anticipation of such Sanction, a provision of Rupees 25,000 has been made, but with the letter A opposite thereto.- It will be necessary, therefore, to make a grant from the Reserve

June

funds of 1862/63 for this work if any expenditure there-on is to take place in that year.-

Central Office of Pbn
Chepauk
8th January 1862

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

Lt Colonel
Dy Ch Engr &c &c

D. T. Moorsom Lt Colonel
Chief Engineer

To
J. D. Sim Esquire
Secy to Govt P.W.D.
Fort St George

No. 578 –

Public Works Dept.

Proceedings of the Madras Government.

Under date the 26th March 1862.

Read the following letter from the Chief Engineer.

Submits, for sanction and entry in the Budget for 1862/63, Plans and Estimates amounting to Rs. 189,300 for improving the Negapatam Harbour in the District of Tanjore – – – – – – – –

A. E. 8th Jany 1862 No. 9068.

The Plans and Estimates forwarded with this letter have been prepared in accordance with the Order of Government No. 1785 dated 26th September 1861.

On a reconsideration of the subject, the Government would limit the works to be undertaken in the first instance to the following –

1st.

Pro. 5 June / 62 P. 60.61
" 13 April " — 216.219
" 26 March — [illegible]

Copy in a letter to Eng. 18th July 1862 No. 685

15th – 71

No. 489

G 30 Jany 1862 Friday

Fr. P. 1862 Public 4

No. 421.

Chief Engineer

Dated 8th Jany /62

Rec. 9th Jany /62

Submits for sanction and entry in the Budget for 1862/63 Plans and Estimates amounting to Rs. 189,300 for improving the Negapatam Harbour in the District of Tanjore

No. 578 – 26 March

1st. The erection of groynes on the East side of the sand spit to protect it from the action of the sea;

2nd. The construction of an earthen embankment along the sand spit;

3rd. The protection of the inner or western face of the embankment by a continuous revetment of rough stone and piling as shewn in the section accompanying the Estimate. The revetment should be carried round the Northern end of the embankment to prevent it being carried away in the North East Monsoon.

4th To rebuild the Northern Jetty, but not to extend it beyond the point where it terminated originally, filling in the back with rough stone or other material capable of resisting the action of the North East Monsoon.

The training wall at the South side of the entrance, as well as the extension of that on the North are not to be undertaken at present, nor the enlargement of

the tidal basin or the removal of the bund near the Government School - The Govt are of opinion that further enquiry and observation of the effect of the land freshes, after the permanence of the embankment between the River and the sea is secured, are necessary, before entering upon so large an expenditure as these last mentioned works would involve -

The Dy Ch Engr Southern Circle will obtain from the District Engr Tanjore a revised Estimate of the expence

× marked A

required to carry out the works now ordered, and means will be provided from the Reserve Fund of 1862/63 should the sum (Rs 25,000) × entered in the Budget of that year for the work in question not be available -

In the meantime there is no objection to the District Engineer spending Rs 5000 out of his general allotment for this year for the purpose of making experiments in the preparation of blocks of concrete, as suggested in para 8 of Chief Engr's letter No 9068, dated

Dated 8th. January 1862

W.W.P.

To The Deputy Chief Engr. & Cncle with 8 Encls.
Disp.d 29 ?.

Copying in a letter to England
18th July 1862 No. 65.

15 — 7/V

Negapatam Harbour Improvements —

Public Works 1862 Desp.
Pro of Govt for March
No 578

Pro. of Mad Govt
Dated 26th March 1862.

No 489-490.

Requesting Copy of Chief Engineer Southern Circle to obtain from the District Engineer Tanjore a report & estimate for certain works necessary for the improvement of the Harbour at Negapatam and providing means for the expenditure of the same & also sparing Lieut Bigham Engineer to spend 500 Pagodas in experiments for the preparation of Blocks of concrete —