

- (1) Number of pages _____
(2) Date of repair _____
(3) Initials of the Referencer _____

MADRAS RECORD OFFICE

Government of Madras

Public Works DEPARTMENT

G.O. No.	891	(w)	Press
B.P. No.			Mis.
Dated	4-4-		1876

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
4th April 1876.*

No. 70. Read the following letter from Lieutenant-Colonel R. F. OAKES, R.E.,
Superintending Engineer, Tanjore, to Major-General G. W. W. KER,
R.E., Secretary to Government, Public Works Department, dated Tanjore,
22nd March 1876, No. 481:—

WITH reference to G.O., No. 2,794, dated 29th September 1875, I have the
honour to inform you that I made a most
thorough examination of the jetty and
Negapatam at low tide on

February, and have been waiting for a correct survey to illustrate my report, as
the so-called survey is a mere sketch and would be simply misleading, I do not
forward it, and I do not like to delay the submission of the report and estimate, because
the latter ought to be put in hand at once so as to be quite completed before the river
is freshened during the south-west monsoon.

2. The shoal or mud flat in front of the Railway wharf and which extends
northwards to the jetty has been formed partly by the throwing up of a small groyne
above or south of the original groyne which diverted the stream from the eastern
shore or tongue of sand, which separates the river and the sea; this has probably been
thrown out to protect the tongue of sand which, however, here needs no protection,
and it was the elbow formed at this point which, aided by the original groyne, threw
the set on to the western bank and kept the river from shoaling on that side to the
extent it has now shoaled.

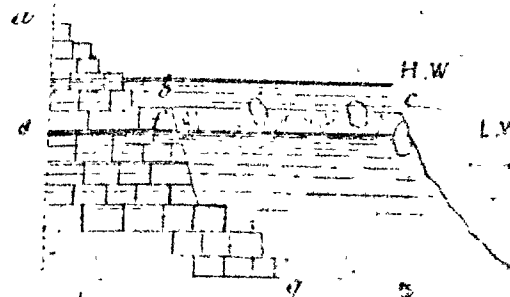
3. The shoaling on the west side is also partly due to the fact of timber having
been stacked or been allowed to lie on the shoal, and to rails being stacked there well
within H.W. mark; at one spot the shoal extends 64 yards beyond the Railway
embankment and a boat-shed is built at its eastern extremity.

4. The new groyne adverted to above must be removed, and the original groyne,
the nose of which has slipped into the river, and at the foot of which there is a depth
of 12 feet of water at low tide, must be extended 12 feet for the present, and may have
to be extended further hereafter.

5. Lower down, i.e., further north, there are four palmyra groynes below the
original second cube and stone groyne, the third of these should be extended 8 yards,
and with the aid of these two groynes it is believed the shoal will disappear or will be
materially diminished.

6. The shoal in front of the jetty, and which extends for a length of 125 yards
north of the landing place and which is 7 yards broad and is above tidal L.W., will very
soon disappear if the rough stones which

crop up in it are removed, and if, as the
sand is washed away and other stones are
exposed, these also are removed to L.W.
level at the foot of the jetty, and so as to
form a natural slope from the 3 feet margin
as *ef*, all the stone collected from *abcdg*
should be stacked on shore, and, should the
action of the floods at any time reduce the
stone below the level *ef*, stone should at
once be put in so as to maintain the rough
stone facing as at *efg*. The rough stone
cannot be allowed to fall below L.W.
mark, because the cut-stone facing of the



abcd ROUGH STONES AND SANDY SHOAL IT NOW
efg DO AS IT IS TO
ef 3ft
eg 21"

*Proceedings of the Madras Government, Public Works Department,
4th April 1876.*

jetty extends only about a foot below low tide level, and it is not desirable that there should be any direct action on the jetty below this level.

7. If care is taken to collect the stones as they become exposed in the shoal bed, a considerable quantity of stone will be secured; it would be well to keep this to maintain the rough stone facing *e f g*, as it may sink and require renewal from time to time, hence it is proposed to use only 200 cubic feet for the foot of the extended groyne.

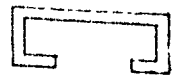
8. With the stone as at *e f g*, the ordinary boats used on the coast will be able to lie alongside of the jetty except perhaps at the lowest tide.

9. The stone coping of the jetty, much of which has been dislodged, must be replaced and be secured by cramps; and at the extremity of the jetty, the top, which has been much worn and weathered, must be covered with 6 inches of concrete as provided in the estimate.

Specification to accompany Estimate for repairing the Jetty at Negapatam.

The estimate provides for restoring to their places the coping stones that have fallen down; for placing a coating of concrete along the upper surface of the jetty near the sea end, where the surface is much cut up; and for a few petty repairs to the portion of the jetty south of the landing place.

Coping Stones.—The coping stones that have been dislodged are to be recovered and built into their places again, and firmly secured by cramps of iron measuring 6 inches, and with ends turned at right angles $2\frac{1}{2}$ inches long (as shown in the hand sketch) and $\frac{1}{2}$ inch diameter. The cramps to be of wrought iron countersunk into the stones as in lewis holes and secured by lead.



Packing.—The stones lying in the bed above L.W. mark and beyond 3 feet from jetty wall to be collected at once and stacked on the shore behind the jetty so as to be ready to be thrown in when required; as stones below L.W. become exposed they should be collected if beyond 3 feet from the jetty at L.W. and beyond the slope of 1 to 1 below that level.

Concrete.—A layer of concrete 6 inches thick is to be laid over a part of the surface as shown in the estimate. The concrete is to be composed of three parts of brick jelly, one part of fresh chunam, and one part of sand (fresh river). The jelly is to be broken up into pieces not exceeding $1\frac{1}{2}$ or 2 cubic inches, and is to be well consolidated by ramming.

Groyne No. 2 now, and No. 1 as it will be in future, is to be extended with the material shown in the estimate. The 200 cubic feet of stone provided should be placed at the foot or on the front slope. The cubes from the old sluice, hard by, should be cut as large as possible, and above tidal L.W. they should be placed, as far as possible, at right angles to the slope of the groyne being firmly embedded in the brick rubbish of which the centre of the groyne will consist; as far as possible even below L.W. the cubes will be put in at right angles to the slope or face.

The palmyra groyne to be extended by means of black Jaffna palmyra rafters driven 6 or more feet into the bed and close together, with three ties along faces and six cross ties, three at or near top and three at L.W. mark. Care must be taken that the brushwood is tied into small fascines and be put in so as not to rest upon the ties; the brushwood should be put in fresh with the leaves on and should be renewed from time to time as it sinks. Provision is made for filling the groyne three times in the season.

TANJORE,
22nd March 1876.

(Signed) R. F. OAKES, Lt.-Col., R.E.,
Suptg. Engineer, Tanjore.

*Proceedings of the Madras Government, Public Works Department,
4th April 1876.*

No. 71.

ORDER THEREON, 4th April 1876, No. 891.

CIVIL WORKS, No. 2-A.

(a) *Heads of Service.*—
Fund.—
Class.—Repairs.
Main-head.—Miscellaneous Public Improvement.
Sub-head.—Aids to Marine Navigation, Harbours.
Name of Work.—Repairing Jetty at Negapatam.
Amount.—Rupees 600.
To be carried out by the Public Works Department.

It is not quite satisfactory that the Government should be called on to pass orders on this subject, without the survey alluded to; and the Superintending Engineer should have named the person answerable for its non-submission. Trusting, however, to his full knowledge of the subject, and in order that action shall be taken

before the freshes of the south-west monsoon come down, the proposals of the Superintending Engineer are sanctioned for immediate execution, and the Financial Department will determine to what funds their estimated cost of Rupees 600 shall be charged. They are very fully explained in his letter and the accompanying specification; and every endeavour has evidently been made to combine economy with efficiency.

(True Extract.)

Colonel,

Offg. Under Secy. to Govt., P.W.D.

To the District Engineer, Tanjore.

„ Examiner of Public Works Accounts.
„ Marine Department.
„ Financial Department.

Exd. T. O'Connor.

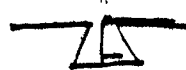
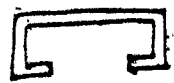
Spare Copies

37-4
Specification

To accompany Estimate for repairing the Jetty at Negapatam.

The Estimate provides for restoring to their places the coping stones that have fallen down, for placing a coating of Concrete along the upper surface of the Jetty near the sea end where the surface is much cut up and for a few petty repairs to the portion of the Jetty south of the landing place.

Coping Stones



The coping stones that have been dislodged are to be recovered and built into their places again, and firmly secured by cramps of iron measuring 6" and with ends turned at right angles $2\frac{1}{2}$ " long (as shown in the hand sketch) and $\frac{3}{8}$ " diameter. The cramps to be of wrought iron counter-sunk into the stones as in Lewis holes and secured by lead.

Packing

The stones lying in the bed above L. W. mark and beyond 3' from Jetty wall to be collected at once and stacked on the shore behind the Jetty so as to be ready to be thrown in when required, as stones below L. W. become exposed they should be collected if

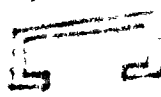
if beyond 3' from the jetty at L.W. and beyond the slope of 1 to 1 below that level.

A layer of concrete 6" thick is to be laid over a part of the surface as shown in the Estimate. The concrete is to be composed of 3 parts of brick jelly, 1 part of fresh chunam and 1 part of sand (fresh river). The jelly is to be broken up into pieces not exceeding $1\frac{1}{2}$ or 2 cubic inches and is to be well consolidated by ramming.

Groyne No 2 now and No 1 as it will be in future is to be extended with the material shown in the Estimate. The 200 cubic feet of stone provided should be placed at the foot or on the front slope. The cubes from the old sluice hard by should be cut as large as possible, and above tidal L.W. They should be placed as far as possible at right angles to the slope of the groyne being firmly embedded in the brick rubbish of which the centre of the groyne will consist. as far as possible even below L.W. the cubes will be put in at right angles to the slope or face.

The Palmyra groyne to be extended

Concrete



Extended by means of black Jaffna Palmyra rafters driven 6 or more feet into the bed and close together with 3 ties along faces and 6 cross ties 3 at or near top and 3 at L.W. mark. Care must be taken that the brushwood is tied into small fascines and be put in so as not to rest upon the ties the brushwood should be put in fresh with the leaves on and should be renewed from time to time as it sinks. Provision is made for filling the groyne 3 times in the season.

Supt & Engg Office
Tanjore, 22nd March 1876

M. F. D. N. Lieut Col R.E.,
Suptg Engineer, Tanjore

PT 2212,

Such a case in a letter
from the suff. J. J. J.
J. J. J. to the Secretary
to the N. A. S. N. A. S.
to the N. A. S. N. A. S.
to the N. A. S. N. A. S.

Specification to
accompany Journal
of the 610 for Relieving
the City of Nagasaki

Ph 4. M 76 03.1.70

Provincial

Репарта

Miscellaneous Public Improvement

Aids to Marine Navigation—Harbours.

Repairing the Jetty at Negapatam
Estimate No. 1 of 1875-76. Rupees 610.

Measurement	Amount	Description of Work	Rate Per	Total
3 1 1/2 1 1/2	✓	Filling in Gaps with Cut Stone		
11 1 1/2 1/2 8 1/4	✓			
15 1 1/2 1/2 11 1/4	✓			
8 1 1/2 1/2 3 3/16	✓			
11 1 1/2 5 1/2	✓			
2 12 1/2 1/2 6	✓			
18 3/4 1/2 6 3/4	✓			
12 3/4 1/2 4 1/2	✓			
9 3/4 1/2 3 3/8	✓			
24 3/4 1/2 9	✓			
4 3/4 1/2 1 1/2	✓			
9 3/4 1/2 3 3/8	✓			

64 3/4 Lot of c^{ts} replacing stones
in Chunnaw picked out from
the bed of River @ 26 c^{ts} 10 - 5

Carried over ————— 10.5

Brought forward 10 - 5
 Cast iron Cramps for
 5" long $\frac{3}{8}$ " thick and let into
 stone about 2" and secured
 with lead. Complete 7, 6 - each 18 12 -

300 9 $\frac{1}{2}$ 1350 Cub ft Concrete work for
 covering the surface of wall at the farther end 23 Cft 189 13 6

23 3 2 138 Repairing the North East
 angle of Jetty wall

12 3 2 72 Do a portion at South end

210 Total Cft Brick in Churnam 211 Cft 38 4 6

Replacing one coping stone
 with two Iron Cramps 1 -

Sundry Repairs etc 10 1 7 268

Repairing Groyne No 2
 4 ft at top to be 6' above

tidal L.W.

Slopes 15 1

{ 6 + 4 $\frac{1}{2}$ 10 $\frac{1}{2}$ 6 63

{ 15 + 4 $\frac{1}{2}$ 19 $\frac{1}{2}$ 15 292 $\frac{1}{2}$

2) 355 $\frac{1}{2}$

177 $\frac{3}{4}$ x 12 2133

Slope of Hoe 756

Provided as follows

12 10 $\frac{1}{2}$ 6 756 Removing old Groyne No 1 4 Cft 15 12

960 Iron Stones 6 30 -

1000 Cft Brick rubbish @ 1 - 62 8 -

200 Do Do from Reserve @ 1 - 12 8 - 120 12 -

Carried Over 388 12 -

Brought forward
 Extending Palmyra Groyne
 No 3 from No 2 from N.
 8 Yards

Jaffna Palmyra Rafters 22
 feet long driven close together
 for sin ties across & 3 along
 faces and end

@ 40 - 100 30 -

Driving piling 9 - @ 2 - each 37 8 -

24 6 12 1728 Brush-wood

36 6 6 1296 Do

3024 Cubic feet or

112 Cubic yards

224 Renew twice

336 Cft Brushwood @ 9 Cft 15 12 - 83 4 -

Picking out stones from
 River bed & stacking in
 rear of Jetty

100 -

572 -

38 -

Sundries at about 7 8 -

Total Estimate Rupees 610 -

Supt Engrs Office
 Tanjore

22nd March 1876

[Signature]

[Signature] Col R C.
 Superintending Engineer Tanjore

Pr 22/2/66
2

Boatman in a letter
from the Dutch Engineer
Janszine & the quantity
of material to be
extended at the
Setty at Nagasalem

Pr 4 Mch 76 NW 70

spot the nose extends 64 yards beyond
the Railway Embankment and a
boat shed is built at its eastern
extremity.

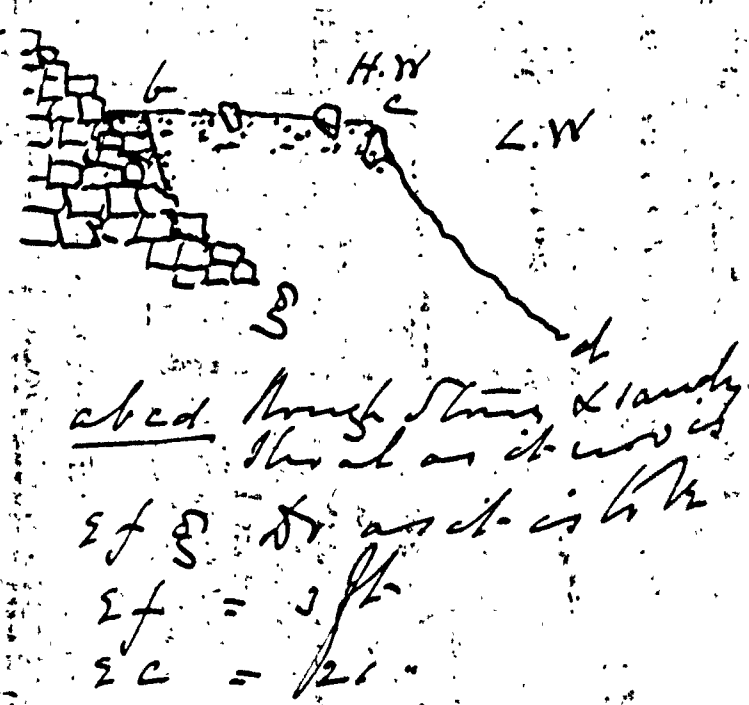
The new Groyne adjoined
to above must be removed and the
original groyne the nose of which
has slipped into the river and at the
foot of which there is a depth of
12' of water at low tide must be
extended 12 feet for the present
and may have to be extended
further hereafter.

Lower down i.e. further
North there are 4 Palmyra groynes
below the original 2nd Cube and Stone
Groyne the 3rd of these should be
extended 8 yards and with the
aid of these two groynes it is believed
the shoal will disappear or will be
materially diminished.

The shoal in front of the Setty
and which extends for a length of 125
yards North of the landing place
and which is 7 yards broad and is,
above

above tidal L.W. will very soon disappear if the rough stones which crop up in it are removed and if as the sand is washed away and other stones are exposed these also are removed to L.W. level at the foot of the Jetty and so as to form a natural slope from the 3 feet margin

as if all the stone collected from abcast should be stacked on shore and should the action of the floods at any time reduce the stone below the level of stone should at once be put in so as to maintain the rough stone facing as at ef the rough stone cannot be allowed to fall below L.W. mark because the cut stone facing of the Jetty extends only about a foot below low tide level and it is not desirable that there should be any direct action



No. 481-

Superintending Engineer's Office
Tanjore 22nd March 1876

From

Lieut Colonel N. F. Oakes M.R.
Superintending Engineer, Tanjore

To

Major General G. W. Walker M.R.
Secretary to Government
PW Department

Sir,

With reference to G.O. No. 2794 dated 29th September 1875 I have the honor to inform you that I made a most careful examination of the Jetty and Quays at Negapatnam at low tide on the 1st February and have been waiting for a convenient opportunity to illustrate my report, but as the so called Survey is more substantial would be simply misleading I do not forward it and I do not like to delay the submission of the Report and submit to you the latter ought to be put in hand at once so as to be quite complete

completed before the N. river is fresh
during the South West Monsoon.

The Shoal or mud flat in front
of the Railway wharf and which
extends northwards to the Jetty has
been formed partly by the throwing
up of a small Groyne above or
South of the original Groyne which
diverted the Stream from the Eastern
Shore or tongue of sand, which separates
the River and the Sea; this has
probably been thrown out to protect
the tongue of sand which however
here needs no protection and it
was the elbow formed at this
point which aided by the original
Groyne threw the Set on to the western
bank and kept the River from
shoaling on that side to the extent
it has now shoaled.

The shoaling on the west side
is also partly due to the fact of
timber having been stacked
or been allowed to lie on the shoal
and to rails being stacked there
well within H.W. Mark. at one
spot

sections on the Jetty below this level.
If care is taken to collect the
stones as they become exposed in
the shoal bed a considerable
quantity of stone will be secured,
it would be well to keep this to
maintain the rough stone facing
as it may sink and require
renewal from time to time, ^{hence} it is
proposed to use ^{only} 200 Cft for the foot
of the extended Groyne.
With the Stone as at £f the
ordinary Boats used on the Coast
will be able to lie along side of the
Jetty except perhaps at the lowest
tide.

The stone coping of the
Jetty, much of which has been
dislodged, must be replaced and
be secured by cramps and at
the extremity of the Jetty the top
which has been much worn
and weathered must be covered
with 6" of concrete as provided
in the plan.

in the estimate.

I have the honor to be
Sir

Yours most obedient Serv^t

A. A. Bennett Coll 118

Surfing in the Bay

(a) Heads of Service—

Fund.

Class. *Repairs*

Class. *Algebra*
Main-head. *Mis: Public Improvement*

Main-head. *Atlas of the World*
Sub-head. *Aids to Marine Navigation - Harbours*

Sub-head. *Andaman Islands*
Name of Work. *Repairing Jetty at Negapatam*

Amount. *Rs 600*

To be carried out by the P. W. Department.

Print in margin of L. A. N. 891
A 4-4-76~

2874 Jan 15 to 27.
 Extract from Journal 47089/575
 2817 = Aug 1954 16.2-orig.
 - 20th July - " 20.53.
 - 27th Aug - " 24.67.
 - 29th Sept - " 27.94 orig.

22nd 1876 Sept
 From
 The City Engineer
 To
 anyone

To
The Secretary to
Lieut. Russ.

No. 481

Dated 22. March 1876

1622-27

Enoch

Forwards our estimate of No. 610 for repairing the Jetty at Tregapalan and reports upon the same.

Ph 4-21176
RW 70
C-31-3-36

in the estimate.

No 891

Public Works Department

PROCEEDINGS of the MADRAS GOVERNMENT.

UNDER date the 4 April/76

READ the following:—

From

The Superintending Engineer

over Sanyal

(H.C. No 481 of 22nd March 1876)

It is not quite satisfactory that the Government should be called in to pass orders on this subject, without the survey alluded to; and the Superintending Engineer should have examined the person accountable for its non-submission. Trusting however to his full knowledge of the subject, and in order that action shall be taken before the freshes of the South West monsoon come down, the proposals of the Superintending

received

21/4/76

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21/4/76

22/12

G.O. of 1876 Madras.
PUBLIC WORKS.

No. 11. E. Enjore
11/11

Let. in Reg.
29-11-76

G. O. H. P. No. 891

Nos. 70/1

City at Nagapatnam
Estimate of Rs 600 for
repairs to the — cause-
— lined with remarks.

AMW

D. C. Sanjay
En. P. W. D.
Main Dept. 7
Pub. Dept. 7
Total 14
Date 29/11/76

70/1

Superintending Super-
viser are sanctioned for
immediate expenditure
and the Financial
Department will
determine to what
fund & their estimated
cost of Rs 600 shall
be charged. They
are very fully explained
in the letter and the
accompanying speci-
fications and every
particular has been
thoroughly examined
and found to be
correct and in
accordance with the
specifications.