

(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.	1 67	Press Mis.
Dated	12 6	18 71.

Not to be folded or roughly handled

No 44.

Superintending Eng'g Office,
Camp Cochin 30th May 1871

From

Lieut Colonel W. Farewell S.C.
Ag. Superintending Engineer
P.O.

To

The Chief Engineer and Secretary to Govt.
P.W. Department
Madras.

Enclosures

Sir,

In accordance with the wishes con-

veyed

Let No. 3, R. 23380.

Let No. 2, R. 3570.

Cross Section of

Group at the

Cruz Milage Gap

veyed in a telegram from the Chief

Secretary to Government dated Madras

11th May 1871, I have the honor to report that

I proceeded to Cochin and arrived

here on the 18th instant. Since my arrival

I have several times inspected Vypren

Point and the coast line north of it

to the Cruz Milage Gap, as also the

coast line immediately surrounding

the town of Cochin itself. For easy

reference I enclose a plan of the Entrance

Harbour and Coast; during the

spring tides between the 3rd and 7th of

May a very heavy sea the result of a

gale some distance from the land, -

rolled heavily into the harbour and

at the point marked x x x x in the plan

overstopped the beach and road and

flowed into the hollow marked as a
such in the plan; to the south of the
Light House, Groyne A has disappeared
altogether, having sunk deeply into the
sand, Groyne B has also sunk considerably
and some yards of the beach to the south
of the Light House Groyne C was cut away,
the Light House Rampart between C and D
Groynes was washed by the waves but
no great damage was done, and the
shore end of Groyne F has sunk. For-
merly at the point marked "Sand
Bank" in plan an extensive sand
Bank existed which has hitherto pro-
tected the Island of Vyseu; this
however has nearly disappeared or,
at all events, the water over it has
deepened a great deal, and the con-
sequence is that now the waves from
the south west roll straight on to
Vyseu in the direction shown by
the parallel lines on the plan,
and where the beach was im-
proved by either groynes or stone pitching,
considerable erosion took place during
the time under notice, and the sea having
washed away the beach at the mouth
of the Drainage Channel marked a a a

in the plan, caused considerable damage
and threatened to break through some
distance beyond and to the north of the
church. At the points marked 9 9 9
in the plan to the north of Vyseu
and between it and the Cruzmalye
Isle, the waves several times topped,
though to a very small depth, the crest
of the beach and flowed quickly into
the backwater.

2. There can be no doubt that the
state of things were most critical and
had the heavy sea continued serious
damage would have been done. I
will now proceed to report what work
I deem to be absolutely necessary to be
immediately executed for the security
of the Harbour and town, and to note
the work I have, under the powers
granted in the telegram, taken in
hand and which is at present being
carried out.

3. The main Groyne G at Vyseu
has been a good deal knocked about
and requires to be raised and strength-
ened at several points. I think the
whole groyne has sunk slightly, as

during one of the high tides which
has occurred since I have been here,
I have seen nearly the whole groyne
submerged. At the commencement
of the year, to prevent this groyne
being out flanked, I undertook certain
work to secure it under the autho-

rity conveyed in G.O. No. 281 of 30 January
1871. Groyne H, which had been out
flanked was connected with the
beach, raised, and strengthened, and
a brack between Groyne G and H well
pitched with stone, which work has,
I am glad to say proved to be most
successful, and will permanently
protect Vyseer point; during the
late bad weather a good strong brack
has been found between these groynes
and the work has resisted the heavy
waves driven against it most ad-
mirably.

4. From a line of levels I have
had taken of the crest of the beach
south of the Light House and to the
north of Vyseer between the Point
and the leap, I find that it is very
irregular and liable to be topped during
high tides if the sea is at all boisterous, *vide Sections
in plan.*
and I am of opinion that if a small
embankment averaging only from 2 to 2½ feet
height

might be constructed it will be quite
sufficient to prevent any portion of it
being again overtopped by waves. Breaches
that have as yet occurred all appear
to have done so, simply from neglecting
to prevent the waves in the first in-
stance from trickling over the crest of
the sand bank separating the sea
from the backwater. I have therefore
directed the immediate construction
of this embankment at a cost of
Rs 700; the positions of the em-
bankment are defined in the
plan in dotted lines. The estimate
now submitted which I trust the
Government will accord early
sanction to, is for the reconstruction
of a groyne at A, strengthening and
raising Groyne B, revetting brack to
the south of Groyne C and strengthening
Groynes C and D at their junction with
the shore, completing revetment
of the Light House Rampart between
C and D, Groynes, strengthening
Groyne E at its head, strengthening
and repairing the main groyne at
Vyseer, construction of Groynes J. K.,
and connecting Groyne H with Groyne

1. By pitching the beach with stone
which has already been done between the
main groyne and groyne H, strengthening
groyne L by constructing bush and pile
groyne F inside of the backwater with
the view of inducing a greater deposit
of silt between I and K to strengthen
and widen the bank between sea
and backwater. In the Estimate
submitted with my letter No. 203
dated 15th December 1870 I estimated
for the construction of two groynes
M and N to protect this narrow
strip of sand, and I still consider
them necessary though they may
perhaps be deferred until after the
monsoon.

5. Of this work the following
has been taken in hand.

The small embankment noted
in the plan costing Rs 760; raising
and strengthening of groynes B & C
as noted above, and revetment of Beach
to the south of it; Revetment of light House
Rampart between C and D and the cons.
struction of groyne J & K at Typeni and
the stone pitching between H and J.

6. I have inspected the work
being undertaken by the Cochin
bircas at Malappuram where during
the last monsoon a breach occurred

which was reported in my letter⁴
published with G.O. No. 2543 of 25th Oct 1870.

The Gap has since closed spontaneously
and now I observe that an embank-
ment is being constructed across
the Estuary about $\frac{1}{2}$ of a mile
behind the site of the old Gap. This
embankment will doubtless be a very
undertaking and I think if the cost
of the present beach wherever it is only
a few inches over spring tide now,
were properly raised and strengthened
by a good embankment 2 or 3 feet in
height it would be much more
likely to prevent encroachment and
cost but a trifling amount. I
would also recommend the cons.

struction of a couple of stone groynes
on the seaward side of the low
sand Bank which would further
strengthen the beach.

7. The funds available for Harbours
Works Cochin on the 1st April 1871 were
Rupees 11,000. In G.O. No. 1105 dated 20th April
1871 I was directed to submit an Estimate
for the construction of the groyne as pro-
posed by Mr. Robertson at Cruz Milage
Gap and to commence the work in question
which has already been taken in hand;
I beg now to submit the Estimate called

1. By pitching the beach with stone
as has already been done between the
main groynes and groyne H, strengthening
groyne L, constructing bush and pile
groyne F inside of the backwater with
the view of inducing a greater deposit
of silt between I and K to strengthen
and widen the bank between sea
and backwater. In the Estimate
submitted with my letter No. 203
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for the construction of two groynes
M and N to protect this narrow
strip of sand, and I still consider
them necessary though they may
perhaps be deferred until after the
monsoon.

5. Of this work the following
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The small embankment noted
in the plan costing Rs 760; raising
and strengthening of groynes B & C
as noted above, and revetment of Beach
to the south of it; Revetment of light House
Rampart between C and D and the cons.
struction of groynes J & K at Typeni and
the stone pitching between H and I.

6. I have inspected the work
being undertaken by the Cochin
Municipality at Mallapuram where during
the last monsoon a breach occurred.

which was reported in my letter
published with G.O. No. 2543 of 25th Oct 1870.
The Gap has since closed spontaneously
and now I observe that an embank-
ment is being constructed across
the Estuary about 4 or 5 miles
behind the site of the old Gap. This
embankment will doubtless be a very
undertaking and I think if the crest
of the present beach wherever it is only
a few inches over spring tide now,
were properly raised and strengthened
by a good embankment 2 or 3 feet in
height it would be much more
likely to prevent encroachment and
cost but a trifling amount. I
would also recommend the con-
struction of a couple of stone groynes
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Rupees 11,000. In G.O. No. 1105 dated 20th April
1871 I was directed to submit an Estimate
for the construction of the groyne as pro-
posed by Mr. Robertson at Cruz Milagre
Gap and to commence the work in question
which has already been taken in hand;
I beg now to submit the Estimate called

for amounting to Rupees 8662-8-6, including
value of materials at site and already
paid for in 1870-71. The net amount required
for expenditure on the work in 1871/72
is Rs. 3510. There is further a sum of Rs.
1315, required for the urgent works for
which an Estimate of Rs. 3000 has been
sanctioned in G.O. No. 161 of 26th May 1871;
making a total of Rs. 5325 against the
Budget allotment of Rs. 11000; of which
allotment there will now remain Rs.
5675 which I request may be at once
allotted on account of the Estimate
for protective works now forwarded,
and that a further allotment of Rs. 17705
may also be provided during the
current year in order that the work
may be completed at an early date.

I have the honor to be

Sir,

Yours most Obedient servant

W. S. S. S.
Sd/- Supy Engineer, B.

One copy Engineer's
estimates amounting to Rs. 23,380, for
reconstructing and improving landing
existing, for protecting certain
portions of the beach from erosion by
pitching of stones and for forming a
small embankment along the beach
to prevent it being topped by high waves
in

Rs 25 October / 1870 No 358-359
 " 19 January / 1871 - 321-322
 " 30 " " 568-569
 " 20 April - " 272
 " 26 May - " 164 Mio

P. 76 1871, Dept
 of Public Works
 No 2497.

To the Chief Engineer
 of the Public Works
 Department

Dated 30th May 1871
 Received 1 June 1871.

Enclosures
 No 44

Reports on the fishing
 Harbours &c. with
 reference to telegram
 from Govt. dated 11th
 May 1871. —

No 1567-12 June / 71

No 163

67 June 71 A. G.

W. S. S. S. S. S. S.
 Chief Engineer &c.

Memorandum by Chief
 Engineer D. P. W.

The estimate submitted by
 the Chief Engineer of Division is
 one for Rs 8,662.8.6 for constructing a
 dyke 200 ft. long at the Cruz Milagre
 Gap as recommended by Mr. Robertson
 and approved by Government in G.O.
 No 1165, 20 April 1871. The material
 available is valued at Rs 5152.8.6
 and for the balance Rs 3510 sanction
 is now applied.

The Chief Engineer also submits
 estimates amounting to Rs 23,380 for
 reconstructing and improving sundry
 existing dykes for protecting certain
 portions of the beach from erosion by a
 pitching of stones and for forming a
 small embankment along the beach
 to prevent it being topped by high waves
 in

in boisterous weather.

I cannot say that I feel at all confident that the Groynes at the Crazy Milagre Gap will produce all the good effect that is expected of it. I view it as an experiment, but it is a desirable experiment, and the estimate should I think be sanctioned. The Supt Engineer's account of the damage sustained by the Lockins and Tyneen coasts in the late boisterous weather coupled with his drawing fully sustains the general opinion of how breaches are caused and the beach is eroded in that particular locality; and the report and the drawing both go to show that Groynes are of only limited use on the coast in question, and that alone they do not prevent serious injury from the waves at certain periods, which a massive stone pitching as a lining to the beach in connection with them would certainly obviate. I think it is most

probable that Col. Farewell will hereafter propose a more extensive use of this latter protection. In the meanwhile I recommend that the estimates which he now submits should be sanctioned. If the small embankment costing Rs 460 had not already been taken in hand I would have suggested a stone wall of similar size in lieu. The principle proposed by Colonel Farewell is obviously correct, but the means for obtaining the protection is too unsubstantial, and I fear will not withstand the wash of the waves for even one season coupled with the injury so frail a structure will be liable to from the villagers.

Port St. George
June 1871.

June 1871

Yours truly
Colonel R.E.
Chief Engineer
D.P.W.

Public Works Dept
P.W. 12 June 1911 L.L.

1567
Public Works Department

Proceedings of the Madras Government
Read the following

from

The Super Engineer
J. Division

(H. E. No. 44 dated
30 May 1891)

N
His Excellency the Governor
in Council sanctions
the estimates submitted
with these papers amounting
to Rs 8663 and 23,380
for the construction of a
Groynes at the Cruz
Milagre Gap, and for the
reconstruction and
improvement of existing
Groynes and for carrying
out

1567

1567 - 12 June 1911

67 June 1911 @ 9

out certain other protective
works at Cochin.

The amount inclu-
ded in the Budget for
works at Cochin being
Rs 11,000, an additional
sum of Rs 17,700 will
require to be provided
as shown by Colonel
Farwell in the last
para of his letter. The
Marine Department will
be requested to make an
allotment to this extent
from Port Funds, and
meanwhile the Superin-
tending Engineer is
authorized to proceed
with the works as pro-
posed by him with
the grant entered in
the Budget.

Para

9
Para 6 of this letter
will be communicated
to the Resident at Cochin
for consideration

H. Line 3.

46
5

The Superintending Engineer
Controller
Marine Department
Resident at Cochin

Recd 13/6/71

10077
Govt of 1871 Madras.

PUBLIC WORKS.

To The Asg Superintending Engr,
of the Division

Date

Recd.

Encl.

G. O. 72 June 1871, No. 1567.

Nos. 163 @ 165

Cochin Harbour - To provide
orders on estimates for
the construction and the
improvement of groynes
and for other protective
works at Cochin -