1. Number of Pcs
2. Date of repair. 23/12/57
3. Initials of Reference 4

M.R.O. 1—82 400—23-11-50

MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

Con_23—12—57.

G.O. No. 2354 Press / Mis.

55-57

Dated 24—12—1857.

Not to be folded or roughly handled

No. 55. Read the following Memo. by the Right Honorable the President.

The enclosed Memorandum was forwarded for my information by Colonel A. Cotton through my Military Secretary.

A model of the description proposed would undoubtedly be of great service to several Departments of Government and if it could be constructed in such a manner as to give Geological sections—its value would be increased.

I think there can at all events, be no objection to authorizing Mr. Winscom to undertake a work of the kind, but I imagine, much more detailed information respecting measurements both as to altitudes and breadths, &c. &c., will be required, before much progress can be made.

(Signed) HARRIS.

MEMO. ON A MODEL OF THE PENINSULA BY COLONEL A. COTTON.

Every Engineering question Civil and Military is intimately connected with the levels of the country, and it is as necessary that both professional and non-professional men should have distinct ideas of them in any question of Public Works, &c., that comes before them as they have of the bearings and distances of places. Nothing but a Model can fully and clearly convey a just impression on this point. A Model of all India on a moderate scale was lately constructed by Mr. Martin at the India House, and a moments glance was sufficient to show how very imperfect any impressions obtained in any other way, were compared with those, from an examination of such a real representation of the ground. The want of this I have no doubt has caused most grievous waste of time and means. I may mention the instance of the projected line of Railway from Bombay to Central India which first crosses the Western Ghauts at a point 1,910 feet high and descends into the valley of the Nurbudda, then crosses another summit 2099 feet above the sea, thirdly the Judgedree range 1,873, descends into the valley of the Taptee to a level of 600 feet, crosses the Jatpoora range 1,221 feet, descends into the valley of the Nurbudda 950 feet, crosses the Vindhyas at 1,218 feet, descends to another valley, crosses the Kymere range at 1,274 feet, and descends to the foot of that range at 500 feet. It has thus crossed 6 great valleys and ridges, and a ton of goods conveyed from the end of it to Bombay will have been carried up ascents nearly or quite equal together to the height of Snowdon. Now it seems hardly possible that such a line of communication could have been thought of, with a model of the country before one's eyes, showing palpably that it was thus at right angles with the natural lines of transit from the interior to the coast.

2. Indeed it is impossible to estimate the value of the light that such a model would afford to Government and the Public Works Department, and how greatly it would clear up innumerable questions connected both with the military occupation of the country, and its material improvement by civil works.

3. Such a model need not be by any means an expensive work. That made at the India was affored to the Court for 200£ as I am informed, but it was on I think too small a scale, about $\frac{1}{3}$ or $\frac{1}{4}$ of that I would propose.

4. I think the scale of the Court's Atlas of India would exactly suit, viz. 4 miles to an inch; this would make the model 7½ feet broadat Madras, and taking as far north as the Nurbudda 21 feet long. It might be made in separate tables about 5 feet broad, running upon rails, so that they would be separated and a person by going between them, could get access to every part. The sheets of the Atlas might then be pasted in the tables, and the map of the ground would thus be given at once, and from them the heights might be marked by pins.

5. It must of course be done gradually because the materials are at present very imperfect, but altogether from the levels of various works already executed or planned, especially the Railway sections, a considerable quantity of materials are now available, which might be made use of at once, and as the work proceeded, it would be seen what particular levels were most wanted.

6. A very small monthly Establishment would be sufficient to carry on the work, and the whole cost would be very moderate, unless it were charged with the cost of new levels, but of course the supply of levels from the Public Works Department would be constant, and the ques-

tion of levels expressly for the purpose would be for future consideration. I would make it at first complete however imperfect the information was, for the minor levels are all well known already; but have it in compartments so that as more detailed information respecting any portion was obtained the original piece might be removed and a corrected one substituted. We should thus have in a very short time the full use of all the information we have, and the work migh. be rendered minutely correct, at a greater or less speed of progress as might be thought advisable.

7. As to the material, I am not certain; the Officer in charge of the work would be the proper person to decide upon that and all minor points.

8. I would have the Model coloured in contours, that is, all below 50 feet above the sca of one color, up to 250 another, 500 another, 1,000 another and so on.

9. I think this work would properly be connected with the Engineering College, and Lieutenant Winscom might put the matter in hand at once, having now more time at his disposal than he will have a little while hence. The establishment for it might consist of:

1 European,
1 Carpenter,
1 Draftsman,
4 Youths as modellers,
1 Lascar,

and the number of modellers might be increased as it appeared advisable to hasten the work.

30th November 1857.

No. 56. ORDER THEREON, No. 2354; dated 21st December 1857.

The Government are of opinion that a Model of the description proposed in Colonel Cotton's Memo. would be of great service to the several Departments of the State, and that if it could be constructed in such a manner as to give geological sections, its value would be increased. They resolve accordingly to communicate Colonel Cotton's Memo., and this resolution, to Lieutenant Winscom the Principal of the Engineering College, and to authorize him to undertake the work. Lieutenant Winscom will be requested to submit a Plan of the arrangements he would make for the purpose, as well as an estimate of the probable expense of the scheme.

(Signed) H. FORBES,
Acting Secretary to Government.

Note from
an examination of such a road as you
contemplate after personal. — The cost
of this I have no doubt but would
must previous months of time and
means. — In my opinion the best
outline of the projected line of Railway
from Bombay to Central India,
that part which lies between the valley of Panch
descends into the valley of the Narbudda,
then ascends that valley a distance of 209 ft.
above the sea, thence by the Sindwa range
1873, descends into the valley of the Tapti
to a level of 600 ft, crosses the Satpura
range 1221 ft, descends into the valley
of the Narbudda 950 ft, crosses the Vindhya
at 1213 ft, descends to another valley
crosses the Vyramir range at 1274 ft
and descends to the foot of Ratanmal
at 500 ft. At this stage crossed 6 great
valleys and rivers, and a tract of country
diverged from the end of it to Bombay

and by which executed or planned,
especially the Railway Sections, a
considerable quantity of materials
are now available, which might be
made use of at once, and as the
work proceeded, it would be seen
what particular kinds were most
wanted. —

A very small number of es-
tablishment would be sufficient to
carry on the work, and the whole
cost would be very moderate, unless
it were charged with the cost of more
lands, but of course the supply of
lands from the B. B. left would be
constant, and the quantity of lands
required for the purpose would be for
future consideration. — I could make
it at first available information upon
but the information was, further
main lands are all well known
already, but that it in confirmation

to that as much detailed information
bion respecting any Instrum. used to
found. The original field notes
be examined and a corrected one
substituted. We found them same
in a very short time. The field no
still the information we have,
and the work might be rendered
minutely correct, at a greater cost of
of progress as might be thought ad-
viseable. —

As to the natural, Com.
not certain; the Officer in charge
of the work would be the Judge
proper to decide upon that and
all minor points. —

I must here state the marks
observed in contours, that is, all below
50 ft. above the sea I am advised, up
to 250 contours, 500 contours, 1000 contours
& so on. —

will have been carried up accurately
nearly or quite equal to that to the
right of Innerdown. — Now it seems
hardly possible that such a line of Com-
munication could have been thought
of with a model of the country before
one's eyes, showing distinctly that it
runs there at right angles with the
natural lines of transit from the
interior to the Coast. —

Indeed it is impossible to ade-
quate Plans unless after light that
such a Model would afford to
Sir. and the D.W. Dept, and how prompt
it would clear up innumerable ques-
tions connected both with the Mil.
occupation of the country and its im-
proved improvement by Land Works. —

Such a model ought not to
be any means are in pursuance with.
That made at the Cabinet was offered
to the Coast for 200 £ in Sum inferred,

but it were in. I think two small a scale, about ½ or ⅓ of that I would propose.—

I think the scale of the Lunette Battn of Sabine would suit, viz 4 Feet to an Inch; this would make the model 7½ Ft. broad at the base, and taking in Jno. R. as the Man, he'd be 21 Ft. long.— It might be used in separate tables, about 5 Ft. broad, running upon rails, so that they could be separated and a person by [illegible] between them could get access to any part.— The Whole Battn Model might then be packed on the tables, and the rails of the ground would then be form at once, and from them the heights might be marked by pins.

It must however be considered because the materials are at present very imperfect, but altogether from the look of [illegible]

I think the work would progress be wanted with the Engineering College, and Lt Brinsmead might get the matter in hand at once, having two men time at his disposal then he will have a little while here.— The establishment for it might consist of

1 Foreman
1 Carpenter
1 Sculptor
4 Pointers as modellers
1 Laborer

and the number of modellers might be increased as it appeared advisable by hasten the work.—

Public Works 1857 Dept.
Dft to Cons: 23d December

No 2394

Mems: by the Right
Honble the President

Dated
Decr 30th Recd 31st Decr 1857.
Sec No 2364. 31st Decr

Copy of Col Cotton
Mems to Rt Watson
21st Dec 57

No 55.

Saying a Mems: on a
Model of the Peninsula pre-
sented by Col. A. Cotton, & observing
that the description proposed,
would undoubtedly be of great
service to several Depts, if
it could be constructed in
such a manner as to give
Geological sections, its value
would be increased. & Stating
there can be no objection to
authorizing Mr Windsor to
undertake a work of the
kind.—

C8 Dft 214

13

the Peninsula Model
[illegible] proposed
by Lt Col Cotton this
[illegible]
by Lt Col A.C.
[illegible]

the Model of the
Peninsula proposed
by Col. A. Cotton
would undoubtedly
be of great service
[illegible]

to demand Department
of Land & it would
be constructed in such
a manner as their
Geological features
it makes and be increased.

Should time can
at all permit. he of.
further to authorising
the Municipal Authorities

a work of the kind. but
I imagine - should have
detailed information
respecting measurements
both as to altitudes &
breadths - &c. &c. which be
required - before much
progress can be made -

Will Mg

Public Works Department

No. 2354.

Extract from the Minutes of Consultations

Under date the 21st December 1857.

Read the following Minute

by the Right Honorable the

President.

Saying before the Board a Memo. on a Model of the Peninsula forwarded by Lieutenant Colonel A. Cotton for His Lordship's information (Hereunder 30th Nov. 1857 No. 2396)

The Government are of opinion that a Model of the description proposed in Colonel Cotton's Memo. would be of great service to the several Departments of the State, and that if it could be constructed in such a manner as to give geological sections, its value

value would be increased.
They Resolve accordingly to
communicate to Colonel
Cotton's letter, and this
Resolution to Capt. Winscom
the Principal of the Engineer-
ing College, and to Authorize
him to undertake the ex-
amination Capt. Winscom
will be requested to submit
a plan of the arrangements
he would make for the
purpose, as well as an
Estimate of the probable
Expences ~~that would be by~~
~~to be entailed by his~~ & the
Scheme.

3 Copies to Lt. Col. Wilcocks
Dpt. of the Engineers
1 — Col. A. Cotton Chief
1 — Chief Engr. Calcutta

Public Works, 1857 Capt. Ly
to Cons. 23d December

№ 2354.

Extract Mins: of Cons:
Dated 21st Dec.r/57.

From the Principal of the
Civil Engr. College D/25th Jany
1858 & № 161 Encl: 2 Feby
80-87-

Communicating Colonel
Colton's Memo: on a model of the
Peninsula to the Principal of the
Engineering College; and authorizing
him to construct it in such a
manner, as to give geological
Sections, and to submit a plan
of the arrangements he would
make for the purpose, as well as
an Estimate of its probable ex-
pense.

Copy sent to the Chief Engr.
Consulting Engineer
for Railways —
29 March/58.
№ 570

№ 55856.

C8 Encl. 2814.