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MADRAS RECORD OFFICE.

Government of Madras.

Publications DEPARTMENT.
Cons. 17.5.57

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11/6/57

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Public Works Dept. in
No 462

Lieut Col. W. E. Baker
Secy. Govt of India,

Sir,
I am directed by the
Right Honble the Govt.
Council to transmit for trans-
mission to the Govt of India,
the accompanying statements
Nos 1 and 2 of proposed Public
Works proposed to be undertaken
during the official years 1850/51
2. Statement No 1, con-
taining works of upwards of
25,000 Rupees each in estimated
cost, and hence requiring the
sanction of superior authority,
brings forward but thirteen new
projects. Including others how-
ever ~~entirely~~ proposed in former
budgets but still awaiting sanc-
tion, the number of works in
Statement No 1 is altogether
twenty four, involving an approxi-

At
G
H. E. M.
3

expenditure of Rs. 24,92,343.
of which the portion proposed
to be expended during 1857/58
is Rs. 4,90,050. It seems hardly
necessary to explain that this
limited number of new projects
of large cost is owing to the con-
sideration paid by this Govt
to the orders of the Supreme
Govt restricting the expenditure
in the Public Works Dept of
this Presidency during 1856/57.
In consequence of these orders,
many of the projects entered in
Statements No. 1 and 2 of the
Budget of that year, and sanc-
tioned by the Govt of India, were
at once arrested, and have now
been brought forward in this bud-
get for execution in 1857/58; while
a regard for the ^{possible} continued
financial pressure in India
has induced this Govt to ~~omit~~
~~omit discussion in bringing~~
forward only a very limited number

such ^{only as}
~~new projects which could~~
would not ~~properly~~ admit of delay,
and postponing a great many
which, though recommending
themselves on ~~the~~ strongest grounds
of public convenience & benefit,
^{can} may still ~~withstand~~ ^{be} dis-
advantaged by being left for execution
in future years.

3. Statement No. 2, exhib-
ing sanctioned works exceeding
in estimated cost Rs. 25,000 each
brought forward from the last
budget for execution during the
approaching official year, and
also, works not exceeding that
estimated cost (with one exception
noticed in para 42)
sanctioned by this Govt for execu-
tion during the same year, con-
tain ^{the estimate for} 458 projects amounting
in the aggregate to Rs. 112,12,920
of which Rs. 46,81,846 is entered
in column 9 as the proposed
computed expenditure to the
end of the current official year,
that required for the expenditure

7. 1857/58 being entered in co-
lumn 10 at No. 37,46,292. It
will be observed that seven sanc-
tioned works appear in this state-
ment without any amount
being entered in the column of
expenditure for the approaching
official year. In regard to this,
I have to explain that it is not
intended to proceed with these
works during 1857/58, as they
have been made to give way to
others of more pressing impor-
tance; and that they are only
brought forward in the budget
in order that they may not be
lost sight of in future years,
~~a result which may probably~~
~~be secured by omitting to keep them~~
~~in sight now.~~ This Govt ^{had} ~~was~~
^{determined} ~~has~~ determined that the expendi-
ture of the year should be confined
to within ^{such} an amount, ~~which~~ ^{as} under
existing circumstances there was
reason to believe, ~~that it should~~ ^{would with Govt it should}
~~be restricted to.~~ ^{be restricted to.}
The Govt of India. This
amount was assumed at fifty lacs

and this sum has on a careful
review of the works been still
further reduced to a little
more than forty two lacs

of rupees on new works of all
kinds, and I am directed here
to state that estimates to a far
larger amount were actually
before this Govt, but that they
have restricted their recommend-
ation to the amount just stated,
under the belief that the Su-
preme Govt would not be prepared
to sanction ^{a larger sum} ~~more~~. With this view
and to give preference to works
of the greatest importance, the
selection of projects for execution
in the coming year was ordered
to extend to all those already
sanctioned and remaining
unexecuted, as well as to those
conditionally authorized by
this Govt for entry in the present
budget; and the principles laid
down to govern this selection
were first, to select works of the
greatest practical utility in
proportion to the expenditure
required, in pursuance of which
rule, bridges of large cost would

give way to works of less shew
 but of more constant use; 2.
 Cond, the whole expenditure
 was to be fairly divided among
 the Districts in general proportion
 to their respective wants; and
 third, works respecting which
 the information supplied by
 the local officers was defective,
 were to be postponed in favor
 of such as ^{had been} more completely
 investigated and reported on.
 4. Combining the two
 statements, it ^{will be} seen that the
 total estimated cost of works, other
 than repairs, proposed to be under
 execution, wholly or in part during
 the ensuing year ^{is} ~~under~~ this
 Presidency, amounts to Rupees
 137,05,263 of which amount,
 Rs 46,81,846 it is computed will
 have been expended by 30th
 April 1857, and Rs 42,36,342 in the sum which
 it is proposed to lay out
 in the next Official year,
 leaving Rs 47,87,075 for future
 years as shown below.

	Amount of Estimate	Actual Ex- penditure to Dec 1856 and probable to 30 th April 1857	Amount re- quired for ex- penditure of 1857/58	Remaining amount avail- able for con- -pletion.
	Rs	Rs	Rs	Rs
Statement, No. 1.....	24,92,343	"	4,90,050	20,02,293
Statement, No. 2.....	112,12,920	46,81,846	37,46,292	27,84,782
Total	137,05,263	46,81,846	42,36,342	47,87,075

5. Statement No. 3 exhibits
 as in the last year, the proposed
 expenditure under statements
 Nos. 1 and 2 in a condensed form,
 and also shows the proposed or
 probable amount of expenditure
 in each District on account of
 repairs on each of the three
 main divisions of works. The
 following table is an abstract
 of that statement; and from it,
 it will be seen that, inclusive of
 repairs, the total expenditure pro-
 posed for 1857/58 ^{is} ~~will be~~ Rs 64,16,284.

	Irrigation works.	Communica- -tions.	Buildings.	Total.
Budget, No. 1.....	165,000	302,050	23,000	490,050
Budget, No. 2.....	10,82,226	19,99,388	664,678	37,46,292
Total	12,47,226	23,01,438	6,87,678	42,36,342
Repairs.....				21,79,941
Grand Total.				64,16,284

1875

by the Chief Engineer, the Govt resolved
at first to detain it until ^{the} receipt
^{of information} on all the other points
noticed in your letter; and they
~~therefore~~ instructed ^{Colonel Sale} that officer
on the 29th Sept to report on the
whole of the points at once, in-
stead of writing separately on
each, but as ^{His} Col. Sale has
not yet been enabled ~~to~~ ^{to}
~~the~~ ^{so far} finish of report, they have
thought it best, in order to avoid
delay in so important a project
as the extension of the East Coast
Canal, to bring it forward in the
present budget, and to furnish
the explanation which ^{in his Majesty's} has been
supplied to them ~~in their instance~~
In regard to the remaining points,
the information called for by the
Govt of India will be furnished
as soon as the Chief Engineer is able
to comply with the ^{orders} ~~request~~ of this
Govt; and pending ^{the} ~~the~~ works in question
are included in the ^{present} ~~present~~ budget.
The exception taken by
the Govt of India to the project
for extending the Sadras Canal

to the Pondicherry frontier, was
that it did not appear clear how
its level could be steadily main-
tained unless there ^{were} a lock at
each point where it enters and
emerges from the tidal lagoons,
thus which it passes. To this
Lieut Chambers the Supt, ^{copy}
of whose letter accompanies, replies
that though locks formed no part
of his original project, yet two of
them were included in the revised
estimate drawn up in the Central
Office; that such works would not
have been thought so indispensable
to maintain a sufficient depth
for navigation, had the fact been
known that the extreme difference
of level between spring and neap
tides in these backwaters is under
two feet, while the usual rise and
fall is only from six to nine inches,
and that the depth of the bed
of the Canal being assumed at
4' 6" below mean tide, and the
fall of tide in neaps being as
above stated only one foot below
this level, it follows that the
minimum depth of water lasting

* Letter from Supt East Coast Canal
30th August/56, No 219.

perhaps not more than a few
hours once a fortnight, would
still be 3' 6". He adds that the
locks introduced into the project
in the Central Office were doubt-
less for increasing the depth of
water ^{in the canal} by the retention of land
floods, and though not quite suf-
ficient in number to effect that
object entirely, would still add
greatly to the efficiency of the
communication; but that his
own opinion upon tidal locks
in estuaries with such little
rise and fall as those on the
east coast, is that they are not
of unmixed good to the canals
on which they are constructed.
He holds that in connection with
weirs their admittance, they offer
obstruction to the free flux and
reflux of the tidal wave, and
diminish greatly its scouring
power; and he is of opinion there-
fore that their construction
need not be simultaneous with
the establishment of any one
section of the coast line; in

fact that the locks should not
be built until after experience shall have
pointed out their necessity, ^{or}
~~manifest~~ utility, - at least not
until after a few years more,
to allow the banks, berms, and
sides of the main channel and
of the drainage cuts of a true
canal, to assume their normal
shapes and slopes. In this opinion
the Supt of Engrs of the Southern
Circle agrees; and Col. Faber records
his opinion in the following
words. "I concur with Lieut
Chambers in considering that the
construction of locks to the canal
must succeed its full excavation
and development, as a connecting
link between the tidal back-
waters which run along the coast.
The two locks added to that officer's
estimate were intended for the
junction of the canal with
the estuary of the Palour on the
north and that of the Mercamun
river on the south; between which
points there exist no drainage
cutfalls which may not be regu-

lated by simple weirs, which
being provided with ample
sluices will always admit as
much tidal water, as will
keep the canal full when the
bars are open. These locks are
however in my opinion necessary
to prevent or retard the subsi-
dence of the canal surface,
with the evaporation of the
backwaters during the hot
season. When fully completed,
the canal will in fact form
one long backwater or lagoon,
receiving all the drainage of
the country it traverses, and
discharging its surplus by the
waste weirs, both intermediate
and terminal; and on the proper
construction of these works will
greatly depend the freedom of
the channel from deposits. The
Govt trust that this explana-
tion will convince the Govt
of India that the project
was well considered both by
the officer who planned it

and by the supervising authorities at the Central office, and that the details will now be deemed sufficient to justify a recommendation of the project for the early sanction of the Honble the Govt of Directors.

8. Of the thirteen projects newly brought forward and requiring the sanction of the Govt of India, only one comes under the head of irrigation, two under that of buildings, and the remaining ten under communications. They will be treated of in the following order.

Irrigation Project
Trunk Lines.
District Roads.
Buildings.

67
No. 17.
Regulating dam across the
Cauvery and Verasholen
rivers in Tanjore.

Rs. 40,000-

1 Estimate

1 Specifications

1 Sketch.

3 Plans

Civil Engineer's letter

18 Nov. 1856 No 744.

Col. Faber's Report

1st Sept. 1854.

9. The Chief Engineer reports that the necessity for a regulating dam to control permanently the supply of water in the Cauvery, and its affluent the Verasholen, has long been felt, as one or other of the rivers is continually subject to deficient supply, to the great risk of the dependent cultivation; this result being caused by the action of the stream deepening the bed of one and raising that of the other river. The project to remedy this defect was designed by Lieutenant O'Connell in 1854; it was afterwards reported upon
to

to the late Board of Public
Works by Colonel Taber as
Chief Engineer on a tour
of inspection; and has
been finally revised by
Major Doileau, and
adapted by him to include
the improvements sug-
gested by the inspecting
Officer. The dam is to be
built across the two
rivers, at the head of
the Verasholen near Com-
bacomm; and the pro-
posed work will consist
of two bridges, exactly
similar to each other,
each of six arches of
30 feet span, with a
dam of varying height
beneath the arches. The
bridges

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bridges will meet on the
tongue of land between
the two rivers, and will
be connected firmly to-
gether by a cross wall
strengthened by counter-
forts; two of the arches
of each bridge nearest
the intervening tongue
of land being provided
with sluices. The
dam under each arch
is to consist of a wall,
^{six feet broad, capped with cut stone,}
^{and supported by a retaining wall,}
but the height above the
bed of the river is not
to be great, and will vary
from one foot and nine
inches at the ends, to
nine inches towards
the middle of the work,
in order to throw the
stream

streams will thro' the centres
of the bridges; provision
will be made for receiving
either dam by plank,
one arch being left free
for the passage of boats.
These details will however
be better understood by
a reference to the plan,
and full particulars of
the entire work will be
found in the accompany-
ing specification framed
by Major Dokeau. The
object of the work is, first,
to provide the means of
equalizing the supply of
water to the two rivers
when water is abundant,
so that one may not draw
more than its dependent
cultivation

cultivation requires while
the other is comparatively
dry; and second, to allow
of the ^{whole} ~~main~~ stream being
alternately turned into
each river when the
supply of water is so
small as to be compa-
ratively useless if divided.
The Chief Engineer states
that the quantity of
water required for a full
crop is about 280,000 Cubic
Yards per hour, and
that this may sometimes
fail during the critical
month of September; but
that by alternating the
supply, the crops under
both rivers may be saved
until the rains of the
North

North East Monsoon. The revenue derived from the irrigated land under both rivers amounts to 4,60,592 Rupees, as shown in the subjoined statement taken from Major Boileau's letter, and furnished by the Sub Collector of Tanjore.

Total Land Revenue Total

Extent in Acres
* Vaylias Rupees Vaylias Rupees Vaylias Rupees

Canvey below the head of Verasholam	6929	227611	408	657	7387	225268
Verasholam	6828	231765	144	359	6972	232324
						4,60,592

10 Other works of minor character are included in the project to give full effect to it; such as the formation

* The Vaylie of Tanjore is equal to 6 1/2 acres, or 288,000 square feet.

formation of about a mile and a half of road to connect the roads on either side of the work, and thus afford ready means of access to the bridge, a new head to the Verasholam river, and new regulating sluice for a channel taken off on the north above the separation of the two streams; and sundry improvements to the embankments of the rivers. As the value of the animal produce dependent on these rivers is large, being estimated at not less than nine lacs of Rupees,

rupees, the estimate of 40,000
 Rupees, as now submitted, framed
 on moderate data and
 providing means of
 preserving valuable
 property in bad seasons,
 is strongly recommended
 for sanction. The follow-
 ing works are comprised
 in the estimate. —

Cumy dam — 15,589.

Norasholen do — 15,589.

Road to connect
 the work with
 roads on either
 side of it. — } 2,222.

Head Sluice &c — 1,312.

Improving
 embankments
 & Sundries — } 5,288

40,000

Trunk Lines.

N. 12.

Bridge over the
 Palour, Trunk Road No. 8.
 Rs. 47,780.

In Para 65 of
 the Budget Report
 of 1856/57, it was stated
 that, when the bridges
 proposed for the
 Pennaur and Vellour
 on Trunk Road No. 8.
 obtained sanction, —
 Bridges would have
 been provided for
 all the streams
 intersecting that road
 with the exception of
 the Palour and the
 Mullettaur. This desi-
 deratum is now pro-
 posed partially to be
 supplied by the above
 project. This Estimate
 and

and another of \$42,670
Rupees for bridging
the Mulletan were
laid before Govt. in
July 1855 by Captain
Johnston, when super-
intendent of Roads,
but as it was observed
that several estimates
to a total amount
of nearly two and
a half lacs of Rupees
had shortly before
been sanctioned for
the same tract of
country, it seemed
doubtful to the Govt.
whether all could be
executed or even com-
menced during 1856/57;

and

25
and the estimates for
bridging the Palour and
Mulletan were there-
fore postponed. The
works to which reference
was made by the Govt.
at the time, were 1 Bridge
for the Guddilum, Pen-
=nan, and Vallam, both on
Trunk road N^o 8 and its
branch N^o 9, but it was
afterwards explained that
these works, tho' on these
lines of road were in differ-
ent districts, and that one
set of works would in no
way interfere with the
execution of another set.
The estimates were accord-
ingly ordered to be entered
in the present Budget,
as the Govt. considered
it very necessary to complete
so important a communi-
=cation as Trunk Road N^o 8,
between

between Chodras and Trichinopoly, but in the selection of Propets, which the Ch. Engr. was called upon to make from among all those sanctioned, he omitted that for bridging the Mulletaur, so that the Estimate for bridging the Palaur alone is now brought forward, leaving that for the Mulletaur to be recommended on a future occasion.

12... The Bridge ^{at the} Palaur is to be built across the causeway near Chingleput. As the causeway has been built with foundations for Wing Walls, abutments, and Piers for a Bridge of 58 Arches, the present Estimate of Rs. 147,780 provides for the superstructure only. The Bridge is to consist of 50 Arches of 12 yds span and 8 of 6 yds span, in all 58 Arches. The following items are comprised in the Estimate.

Brickwork above foundations	— 21,196.
Archwork	— 120,444.
Plastering	— 1,444.
Earthwork	— 281.
Centrings	— 6,480.
Sundries	— 3,335.
<u>Total</u>	<u>Rs. 147,780.</u>

Note. The Estimate provides for a width of road-way of only 18 feet, and as it is the opinion of the Govt. that so large a bridge should be not less than 22 feet between the parapets, a supplemental Estimate will be hereafter submitted for sanction to provide for the increased width required.

N^o 16.
Improvement of Trunk road, N^o 9.

Rs. 30,750.

4 Estimates
3 Plans
2 Letters
1 Traffic return

N^o 13 provides for the improvement of Trunk Road N^o 9, at an estimated expense of 30,750 Rupees, thus.

Metalling	— 24,900.
Bridge over the Mulletaur	— 3,630.
do over the Peria Chengall Oday	— 1,380.
do over the Chinna Chengall Oday	— 840.

Rs. 30,750.

The Government of India are aware that Trunk road N^o 9 branches from N^o 8 at the Village of Panperumpet and ends at Combacorum in Tanjore; and in the last Budget Report, para 67, they were informed that there only remained a few tunnels to be built to complete the line, but

but that the metalling
had still to be added.
The District Engineer of
South Arcot reports that
the whole of the line
lying within that District,
a distance of sixty two
miles and a half, is
entirely unmetalled, with
the exception of three
miles under the Wallajah
tank made out of the
maintenance allowance. The
greatest portion of the above
estimated sum of Rupees
30,750 is made up of the
cost of metalling, vizt -
24,900 Rupees; and this
only provides for the worst
parts, or those really re-
quiring metal, the parts
where the soil is naturally
good, and portions where
metal

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metat can be readily had
and paid for out of the
maintenance allowance
being omitted from cal-
-culation. In those parts
for which the present
estimate provides, the soil
is said to be so bad
that, if the surface is
left exposed, the road
will become difficult
to travel over, and will
besides be expensive to
repair. The parts to be
metalled measure sixteen
miles in all, thus making
the cost 1,500 Rupees per
mile. The remaining por-
-tion of the estimated sum,
as shown above, provides
for three bridges; one over
the Mulla-tam at a cost
of 3,630 Rupees, and two over
the

the Perin and Chinna-
Chingall today, at the
outlay respectively of 1380
and 840 Rupees. These
works are considered neces-
sary for the completion
of the road, which
is becoming very much
frequented. The accom-
panying return shows
that the traffic on
Trunk road No 9 averages
~~about~~ 267 laden carts a
day; and the Chief
Engineer is of opinion
that this traffic must
increase as soon as the
lower Annicut bridge,
and that at the Villavar
Annicut are completed.
The rates of the estimates are
considered moderate & sufficient.

N^o 6. District Roads.

31.

Supplemental outlay
required for the com-
pletion of the Ibra-
hampattam and
Hyderabad road
Rupees 44,170.

Estimate
Rupees 9450 of Capt Orr's
letter of Octr/56, c. 183.

14. In Para. 73 of the
Budget Report of 1856/57
a brief history was fur-
nished of the Project for
reconstructing the ^{great} ally
road from Ollaslypattam
via Ibrahimpatnam
to the Eastern frontier
of the Nizam's Dominions,
at an aggregate estimat-
ed expense of 1,73,369 Rupees.
~~It will be observed that~~
The project was divided
into two parts; one was
the construction of the
portion of the road from
the Nizam's frontier to
Ibrahimpatnam, at an
estimated expenditure
of

of 55,832 Rupees; and in the other was involved the question whether the road should be continued, or Water Carriage be made available to Masulipatam. It is necessary here however to refer only to the first portion. Under authority conveyed in a despatch from the Honble the Govt of Directors communicated with Mr Secretary Allen's letter of the 23^d June 1854, the road from the Nizami's frontier to Ibrahimpatam was

was commenced on its Estimate of 55,832 Rupees; and at the period of the last Budget Report, Rupees 2,200 had been expended on the work; Rupees 9,000 being computed as the probable further expenditure to the 31st April 1856, and the remaining sum of 44,632 Rupees being brought forward in N^o 2 Statement of the last Budget for expenditure in 1856/57. It is now reported that the estimated sum of 55,832 Rupees is quite inadequate for the completion

completion of the road;
the data on which the
Estimate was framed
having been those exist-
ing in 1852, ^{for} ~~for~~ lower than
those ^{for} ~~for~~ which the
contemplated work can
be executed at the present
time, owing to the trans-
fer of the Executive from
the Collector's to the Engineer's
Department. Labor and
materials, it is said, have
now to be paid for at
their full market
value, and prices have
moreover greatly increas-
ed during the last 2 years.

The following further
causes

causes are assigned for
the deficiency of the origi-
nal Estimate; the length
of time that has elapsed
since it was framed, during
which greater damage
has been done to the road,
and to many of the partial-
ly ruined Tunnels and
Bridges; the entire omis-
sion of any allowance for
repairs to the drains and
inverted arches, now de-
manding considerable
attention; the greater
cost of the gravel for the
surface of the road, care
not having been formerly
taken accurately to
ascertain

ascertain the places from which good material was procurable; and the disinclination felt generally at the time to making large estimates, which led the Surveyor who framed the estimate to underestimate the work, Captain Orr's own time and attention having been wholly devoted to the Krishna annicut.

15. These circumstances have necessitated the preparation of the revised Estimate herewith submitted, amounting to 1,00,002 Rupees, from which deducting

deducting the amount already authorized, the sum now remaining to be sanctioned is Rs. 44,170. The Civil Engineer, in concluding his Report on this subject, states that the estimate has been prepared by Lieut. Farewell in communication with himself, and that that Officer has been indefatigable in his attention to the progress of the road, and has acquired a thorough knowledge of its state; he adds that the estimate is founded on the closest calculation, and only provides for what is

is absolutely necessary, that the Country is a difficult one, the population scanty, & not well disposed to afford their labor, and good materials in many places difficult to procure. The Chief Engineer considers the data of the revised estimate to be moderate and sufficient, and the Govt. hope that, under the foregoing explanation, the supplemental expenditure now applied for will meet with sanction in consideration of the great importance of completing a communication which recommends itself on political and military, as well as on commercial grounds.

N^o 9.

Road from Venkataramangalpett to Royachoty in Budda District.

Rspees 41,300.

1 Estimate

1 Sketch.

2 Specifications of Bridges.

2 Plans of masonry works.

1 Return of Traffic

Civil Engineer's letter 10 June 56. N^o 271.

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This is an estimate for constructing a road from Venkataramangalpett in the Chittoor talook of Budda District to Enbala Royachoty in the same District. and it forms the continuation of the line from Gooden in Taluk to Venkataramangalpett in Budda taluk, reported on in paras of this letter. From Venkataramangalpett, which is on the high road from Madras to Budda taluk, the proposed line runs nearly due west to Royachoty crossing the Cheyane river at Galamangalpett, and descending on Royachoty by the Sompoy pass. From Venkataramangalpett to Streerungaranga pollam at the foot of the eastern range of hills, a distance of eight miles

and

and four furlongs, the road runs over favorable ground abounding with good materials adapted for road making. From Streerunga-rangepollim there are three routes across the Hills to Royachoty, one winding a little to the north, another more direct in its course, and a third branching off southwards from the second and reaching Royachoty by a very circuitous course. The middle or direct path is selected for improvement, but with some variation. After reaching Palranze-pully and crossing the Chayan, the road abruptly ascends the present long ghaut. For this portion of the line forming right miles

41
miles of ghaut road, a thousand rupees a mile only is provided in the estimate for marking out a road three yards broad, as at present it is found difficult to estimate correctly for a cart road over a ghaut upon a mere survey and reconnaissance. The District Engineer Lieutenant Armer has traced a line with a slope of 1 in 18 from the summit to the western foot, and he states that there will be no difficulty whatever in tracing a line with a slope of one in 18 or 20 over the whole Pass. He estimates that a road three yards broad may be made for about 3000 rupees a mile; and from this
Officer's

officer's experience and skill in works of this nature; and his habitual carefulness and judgment, the Government believe that this estimate may be safely accepted, tho' not formed on exact investigation. Eventually he proposes to widen the three yards road to six yards. From Sonepoy to Royachetty a distance of fourteen miles and three quarters, the road runs over open undulating ground thickly strewn with rocks, the removal of which it is said will be attended with some little difficulty, but the fragments of which will serve very well for the masonry

masonry works of the road and for metalling. With the exception of the ghaut portion, the road is easy to construct, with good materials at hand, and intersected by few and inconsiderable streams; the general width allowed being eight yards.

17. The piece of road here proposed is one of some importance; and with other roads formed, or about to be formed, it will open a direct communication between Bangalore and Bellary, and connect the interior with the East Coast Canal. The traffic on the present track practicable as it is for cattle only, shows that the proposed road will supply

supply an existing want.
According to the return submitted, nearly a thousand loaded bullocks pass weekly along the road, upwards of two hundred of which are from Daingalore. The most important use of the road however will be to open out some rich tracts of country shut in by natural barriers from access to external markets. The Southern parts of Coimbatore consist of rich valleys separated by low but rugged ranges of Hills running North and South. The present road will give efficient means of crossing one of these ranges, and will thus give to the rich Taluk of Rayachoty access both to

to Nellore and the coast canal, while it will open the west to Chittoor. The District Engineer writes as follows of one of the seats of the local trade. "Rayachoty is a large village four miles north east of Tanjore. Rayachoty is a great emporium for the grain of the Southern Taluk, having a weekly market at which the salt and salt fish from Nellore are exchanged for the produce of Muddenpally, Gorumcondah, and Rayachoty." 18. The total distance provided for is thirty one miles and two furlongs, and the estimate of Rs. 1,300 is accordingly at the rate of about 1,300 rupees per mile, which the Chief Engineer considers

considered moderate yet sufficient. Colonel Faber thinks the project an excellent one, calculated to open a most difficult part of a rich District, and he therefore strongly recommends it for sanction. Very little has yet been done to open bundles of palm by roads, and it is now the earnest desire of this Government that this fine District shall no longer languish under this want. They therefore strongly recommend this Estimate for the sanction of the Government of India. The works provided for are the following:

Earthwork	23328.
Eight miles of ghant road @ 1000 Rs per mile	8000.
14 Animals	1055.
6 Bridges	3915.
9 road clamps & 6 chains	390.
Tools and Sundries	1612.
Superintendence	3000.
<u>Rupies</u>	<u>41300.</u>

N: 10.

Completion of Muddy
Cannama Papp between
Nurwood and Cuddapah
R: 50,000

Estimate

3 Specifications

1 Sketch of road over papp

1 Survey of the Papp

7 Plans

Civil Eng^r's letter

Sub Col^r — do.

1 Traffic return.

vide order Home Dept 11 June 1882 at 47/2

47

19. This estimate is for the completion of the muddy Cannama Papp and the road on either side, between Gazulully in Nurwood and Nistnamachetty pollim in the Cuddapah district, a distance of nearly twenty two miles. The opening of the papp was commenced under authority granted by the Government of India dated 28th May 1882. An estimate of 15,698 Rupees, which only provided for tracing and forming a road three yards wide over the papp with a slope of one in 18, to admit of the practical use of Carts. The object of the work was to bring Bellary and Nurwood into direct communication with Cuddapah and the Sea Coast, a result calculated

calculated to be of the greatest
advantage to the trade of
those districts. In December
1853, the late Board of Public
Works reported the comple-
tion of the track, and
strongly recommended
that the road should at
once be opened to the full
width of twenty feet, and
with the view of pro-
viding employment for
the destitute population
during the scarcity, they
asked sanction for a sum
of Rupees 30,000 roughly
estimated for the comple-
tion of the Ghaut and the
road on each side. On this
strong recommendation
the Government sanctioned
in addition to the Rs. 1,498
Rupees already authorized,
the

File No 927, order in the Home
Dept. 22^d March 1854, No 365.

49
the further expenditure of
Rupees 32,700 inclusive of
superintendence, required
for completing the Ghaut
and road, so raising the
sanctioned outlay to Rupees
48,398. This proceeding was
reported in Sir Henry
Mordaunt's letter of the
13th February 1854, No 64, and
obtained the confirmation
of the Government of India
on the 17th March following
20. The actual outlay
which has been already
incurred in opening the
Randy Annam Pulp has
amounted to Rupees 19,233;
but the work is still very
incomplete, and the com-
munication very imper-
fect. The present estimate
is therefore brought forward

to

to place the pass in an efficient condition to allow of the free passage of trade. The sum of 58,700 Rupees was at first estimated for this work by Major Boileau, but the outlay has been now reduced to the present amount of 50,000 Rupees after careful revision by St. Hemy. This Officer reports that on the west side of the Ghant there is a ravine, over which he proposes to build a viaduct, that to the east of this ravine up to the side of the viaduct, the road had been formed by building an expensive rough stone revetment 750 yards long by about ten yards in height, but that from want of proper precaution to protect it against the
flow

4
Noted
G. H. H.

51
flow of water during the monsoon, the whole of ~~the~~ ^{it} has fallen, carrying away the greater portion of the road, which at this point is now hardly passable on foot. To avoid a similar disaster, Saint Hemy proposes to cut the road out of the solid rock, properly providing it with side drains and a channel. A tank and two choultries at Motta and Puteherla are also to be constructed, the former in consequence of the great scarcity of drinking water in this locality after the month of March, and the latter as a convenience for native travellers for whom it is stated there is not a single place of refuge in the whole distance between Gazulpully and Krishnamachettypollam.

M.

21. Mr. Wedderburn the sub Collector of Guddafiah, whose letter accompanies, is strongly in favor of the project. He remarks that the chief importance of the line of which the pass forms a necessary part, must be looked for in the commercial advantages bestowed by it; in that the costly produce of the ^{or islands} ~~islands~~ of the Krishna, viz Tobacco and Manufactured cloths, forms the chief inland traffic, being carried to Bellary, and that the productions of the inland districts and western coast are received in return by the same route. The value of the traffic in the last fortnight of 1851 carried by bullocks and coolies over the then unimproved path amounted to Rs 3,000 Rupees, but bandies are now used, causing no doubt considerable saving

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saving in the expense of carrying. Mr. Wedderburn also points out of what advantage the pass was in the years of scarcity to the poor ryots of Canara, affording them the means of largely exporting their rice and gaining high prices in Munnool, while in years of plenty they could hardly dispose of their crops ~~and~~ ~~the heavy expense~~. The traffic which passed over the new Cannara path between the 23rd Oct/55 and March 1856, as shown in the return furnished by the Subcollector, is as follows.

Bandies	1,505
Cattle	6,319
Coolies	755
Papungers	4,939

This return does not include the 15th Regt. who passed over about the time from Munnool. to Bellary & return. The Corps mustered in Depot & camp followers 500, and 300 bandies but though the return is otherwise also somewhat defective, it is sufficient to show that the line is much used

and will be more frequented as it is improved. It was recommended by the local Officers and the Chief Eng^r that the estimate should be proceeded with at the opening of the working season in January of this year, but the Govt. declined to sanction this course, altho' they fully recognized the importance of the road and its early completion. The estimate has accordingly been included in the present budget, and it is strongly recommended for the sanction of the Supreme Govt. as being designed to complete an important channel of traffic. This pass is one of those lines from the Coast into the interior which, it is considered by the Govt., so important to open in the districts of this Presidency. The Estimate was framed by St. Hemery, after a careful examination of the ground and of the work already performed; and provides for the following work:

Cutting and uprooting jungle, excavating earth, gravel, rocks &c.	14370	
1 Bridge, or viaduct for the west of the river	4,642	
1 do over the Suddaivoo river	4,466	
8 Minor bridges	2,152	18,290
16 Drains		3,259
5 Road Chans		174
Forming tank bund		947
Constructing 2 Choultries @ 1,560 each		3,120
Superintendence		9,840
		<u>Rs. 50,000</u>

N^o 11.

Constructing four Bridges on the road from the Nundy Cunnama ghats via Cunnama to the Nellore Coast. Expend 6,790.

- 4 Estimates.
- 4 Specifications.
- 4 Plans.
- 1 Sketch.
- 1 Traffic return.
- 1 Letter of building &c.

Y. J. J. J.

55

The estimate comprises four estimates providing for the construction of four bridges on the road from Kistnainachetty Jollim at the foot of the Nundy Cunnama ghats to the Coast, via Cunnama, the Tannalapanal pass, and Ongole. The sites of the proposed bridges and the position of the streams are shown in the accompanying sketch. One is a bridge of three elliptic arches of forty one feet span and ten feet rise at the site marked A, across the Suddaivoo near Giddalavolu. The other is of three elliptical arches of thirty feet span and seven and a half feet rise, at B, across the Sully Vangoo in the neighbourhood of Cunnama. A third has nine elliptical arches of fifty feet span and twelve & two thirds feet rise at C, across the Gannalavoo also in the neighbourhood of Cunnama. The fourth is of two elliptical arches of

of twenty feet span and six and three quarters rise at D. across a jungle stream called Pilly-
vangoos near Enaypand not far from Cunnam. All these bridges are to be eighteen feet wide between the parapets and will be constructed of brick in Cunnam. Their dimensions and other engineering features may be readily ascertained on reference to the specifications and plans which accompany this report. The whole four are estimated to cost Rs 46,790 as follows:-

3 arch Bridge over Suggalaam - 8,350
3 arch Bridge over Pullyvangoos - 6,800
9 arch Bridge over Yamannalaam - 30,000
2 arch Bridge over Pillyvangoos - 16,400
Rs 46,790

23. Estimates for the first three were originally submitted by the Chief Engineer for entry in the Budget of 1856/57; but owing to the lateness of the period at which they were sent

sent up, they were returned with others for resubmission in time for the present budget. The opportunity was taken in the interval to verify the correctness of the plans by taking cross-sections at the sites of the bridges, and in resubmitting the estimates the District Engineer added the fourth. The bridges are represented to be urgently required to complete the communication from the east side of the Nandy Cunnam ghant to the Nellore frontier, a distance of thirty one miles, the whole of which will, it is stated, be metalled and completed ~~throughout~~ in a few months. From a return taken at Popaypully for the month of May last year, the state of the traffic was ascertained to be as follows.

Carts — 872
Cattle — 637
Passengers — 1660

The

The Chief Engineer considers the rates to be moderate in all particulars except in the item of arch work, which is calculated at the high rate of 5 Rupees and one anna the cubic yard. Colonel Seabrook has reported his intention to address the present District Engineer on this subject, but in the meantime he recommends for sanction the full sum calculated for the late District Engineer, with whom a correspondence on the matter has taken place, has said that the work cannot be done cheaper. It is hoped however that this item will eventually be ~~reduced~~ materially reduced. It may be added that the line of road on which these bridges are to be built is a very important one, connecting Bellary and the northern part of the Cooldapah District with Guntoor and the sea board of Bellary.

No. 14.

1st Class Road between
Chittoor and Gooriatum.

Rupees 51,734.

1 Abstract Estimate

1 Sketch

1 Traffic return

24. No. provides for the construction of a first class road from Chittoor via Purdaramah to Gooriatum in the North Arcot District, a distance of 24 miles, at a total expense of 51,734 Rupees, or little more than 2000 Rupees per mile. It is a work which has been long required, as the route is of great importance in a commercial point of view, and is one of the chief lines of communication in the district. The comparatively heavy expenditure owing to the present road being wholly

wholly unmade; and more than half the outlay is required for bridges and other masonry works, for the many drains and water courses by which the road is crossed. The ground too is extremely bad; being rocky and broken, lying as it does along the bottom of the range of ghats; so that the estimate must be considered as very moderate, for providing a first class road over such rugged and unfavorable ground.

25. Chittoor is the head station of the North Arcot Collectorate, and Goudattur is the civbahr of a talook. Not only does

61
does the road thus connect the chief station with a civbahr town, as all civbahr ought to be connected, but it is also the road to the town of Tripattur in Salem and the eastern parts of that District. It is also a part of the line from the Northern Districts via Chittoor, to Salem, Coimbatore, and the South. Returns of traffic taken for 30 days from the 23^d March to 21st April 1855, show

show that the road is used
to the extent detailed
below even in its pre-
sent extremely bad
condition.

Bundies. *Attals*

From Chittoor to Gorrattum	881	858
From Gorrattum to Chittoor	1,858	2,836
<u>Total</u>	<u>2,739</u>	<u>3,694</u>
<u>Average per day.</u>	<u>91.</u>	<u>123.</u>

26. The Estimate
comprizes the following
items

Earth work	11,752
Travelling	10,548
Bridges &c	26,531
Superintend- ence	2,903

Rspees 51,734

No. 18.

Four Bridges on Campanassam
and Sabistalum roads in Enijore.

Oct 4, 1880

4 Estimates.
2 Sketches.
2 Plans.
2 Letters.

27. The four estimates
embraced by this project
were originally submitted
in 1855 for entry in the
Budget of 1856/57, but they
were then rejected on ac-
count of defective in-
formation as to the ne-
cessity for the works.
The estimates are for four
bridges over the Camy,
Arilain, Trimbujent,
and Godamooty rivers
on the road from Campa-
nassam to Sabistalum
in the Enijore District.
The collector has since
reported that these
bridges are perhaps
more needed than
any

any other works in the
Province, and that the
only way in which he
can account for their
having been deferred so
long is that the road, tho
thronged by natives, is
one not often traversed
by Europeans. It is but
one mile in extent, &
yet in that short distance
no less than four broad
rivers intervene to obstruct
the traffic: which may
be estimated at no less
than 15,000 carts, cattle
^{in a month}
and people, and as the
ferry boats cannot hold
more than two or three
carts

carts at a time, the
inconvenience arising
from detention may be
easily imagined. The
collector states that there
is no part of Tanjore
more richly cultivated
than that through
which the Campanassam
and Labistalam road
runs, and he points
out that if the river
be not crossed on
this road, the traffic
will have to be long
detoured either by
Tanjore or Combar-
cum, in which
case the new road made
and

and bridged from
 Compaigsem to Shalia.
 : mungalini on the
 high road to the coast,
 will be lost to parties
 taking either the Tanjore
 or the Combaconum
 route. These are power-
 : ful reasons in support
 of the project, and the
 Government strongly
 recommended sanction
 being granted for the
 estimated cost of the bridges,
 viz Rupees 41,880, as follows.

Bridge over the canary	14,500
Do. — Do. — Arselam	7,150
Do. — Do. — Trimulrajem	5,570
Do. — Do. — Kodamoorthy	14,660
	<u>Rs. 41,880.</u>

No. 19.

Road from Madura 28.
 to Cooroomoorthee.

Rup. 101,200.

1 Estimate
 1 Sketch
 1 Return of Traffick
 1 Plan of Bridge
 Order 1 to 7 of Civil Eng. Letter
 15th December 1855 No. 140.

Like all the
 I reported on
 This project has

been under very careful
 consideration. It was
 submitted by the Chief
 Engineer in January
 1856 in time for entry
 in the last Budget;
 but sanction was then
 withheld, as the Govt.
 had not sufficient infor-
 mation before them.
 The proposed road is to
 run Southwards from
 Madura, via Caridputty
 and Thoochooly, to Cooro-
 oomoorthee, a distance of
 Forty four miles and
 a fraction. As it will
 lie

chiefly in the Ramnad
and Shevagunga Zemin-
daries, Govt. were at
first of opinion that
those Estates should
bear a part of the cost
of construction. For a
part of the distance
also, viz from Cariaputty
on the frontier of the
Ramnad Zemin-dary, to
Aroopocottah on the
line of the Cotton Trunk
road from Tuticorin, the
proposed road runs nearly
parallel with the Cotton
line; and it occurred to
Govt. that that part of
this line between
Cariaputty

* Vide sketch accompanying

Cariaputty and Aroopoc-
cottah might be made
available for both, and
a line from Aroopocottah,
if necessary, formed to
Cooromoorthee. Govt. also
desired to have the opinion
of the Collector and the
Civil Engineer, as to the
desirableness of carrying
on the road from Aroopoc-
cottah, instead of in a
direct line from Cariaputty
to Cooromoorthee. In reply
to a preference made to
the Collector, the Govt.
learned that the Zemin-
dar would not volunta-
rily contribute towards
the

the cost of the work;
and as regards the line
from Anoopocottah
to Cooromoorthie suggested
by Govt; they were in-
formed that the collector
thought it better, if the
original proposition were
rejected, that the road
should go from Anoopo-
cottah to Tiruchooly and
thence to Cooromoorthie.
But this would be a
circuitous way from Ma-
dura to the Coast, com-
pared with the original
proposition. It appeared
also that the Cotton road
from Tuticorum only extends
to

Palani

71
to Anoopocottah, and
not so far North as Arias-
putty as had been supposed
by Govt; so that their
proposal to take advan-
tage of the Cotton line
could not be realized
29. The road is
designed to extend the
export of Cotton from
Rannod, and to develop
the salt trade from the
Southern parts of the Ma-
dura Coast, and it is expect-
ed that the expense will
be recovered in a great
measure by the increase
of salt revenue. Under
all these circumstances
and

and considering the im-
mediate profit accruing
to Govt. from the increas-
ed sales of salt, the origi-
nal proposition of the
local Officers has since
been approved; viz that
the road should run from
Madura via Cariaputty
and Troochooly to Coroo-
moorthie, and that it
should be constructed at
the Govt. expense. This
Govt. were further moved
to this decision by the
consideration that the pro-
posed line falls within
the category of main
lines, especially with
reference

Ex. Min. Con: 27th May 1856.
No 785.

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reference to the large
salt traffic on it, and
it has been determined
that the main lines
in pzemindaries should
be made at the public
cost. The Govt. regard
this road as one of much
importance, on account
of both the cotton and
of the salt trades; it
runs thro' the cotton
Talooks of the Rannad
pzemindary, and carries
up the salt from the
Southern pans of Madura
to Peromingalum,
Madura, and Thencurray.
The traffic according to
the

the Return submitted is already considerable, amounting to nearly forty carts daily. There has been no expenditure on the road for ten years past.

30. The distance to be formed being forty miles and a fraction, the estimate of Rs. 101,200 is at the rate of 2,530 Rs. a mile. It provides for the following work.

Earthwork	15,305.
Metalling	39,769.
8 New Bridges and repairing one	11,388.
22 New Tunnels and repairing seven.	2,282.
12 side dunnies	269.
46 Pavements	20,406.
Toll and Contingencies	4,502.
Superintendence	7,284.
<u>Rs. 101,200.</u>	

It

It may be added that as Cooromoorthee did not appear to be a good specimen for a road of this class, especially as one object was to keep open a communication with the salt pans, the Govt. called for a report of the character of the roads Eastward of Cooromoorthee to the salt stations, and for estimates for such improvements to them as might be necessary to establish Cart communication between those stations and Madurai; but they have learnt in reply that the Annual

annual allowance granted
in 1854 of fifty Rupees
for each of the branch
Salt roads, will be suffi-
cient to maintain them
in repair. The road
from Cooromoorthee
to Sayelgoody was
stated however to be
extremely bad, and an
estimate of 2565 Rupees
was framed for its
repair. This has
been since approved,
and the repair au-
thorized to be executed
by the Rannad Jemindar,
she having previously
stated her readiness to con-
tribute 2000 Rupees.

N. 21.

Improvement of Road between
Palamcottah & Travancore
frontiers. Rupees. 25,310.

1 Estimate.

1 Letter.

77

An estimate of
Rupees 7470 was entered
in the Budget of 1855/56
for the repair of a portion
of the road between Palam-
cottah and the Brambooly
lines in the Linnelly co-
district. This sanction
has been acted upon,
but from the accompany-
ing letter from the
Engineer of the district
it will be seen that
great portions of the
road are still in a most
wretched state: while the
extent brought into good
order under the above
small estimate is com-
paratively trifling. Sanction
is now therefore solicited
for

for an estimated sum
of 25,310 Rupees, for plac-
ing in thorough repair
the whole portion of
the road south of Palam-
cottah to the Travancore
frontier, a distance of
34 miles, not included
in the former estimate
of 7,470 Rupees. From
Lieutenant Roberts's
description, it would
appear that for five
miles from the fifth
mile stone from Palam-
cottah, the road is almost
impracticable for carts,
that for the next eight
miles there is an alternation
of

of very good and very
bad roads; and that for
fourteen miles further
on the road is in some
parts sadly out of order,
and in others generally
in a very bad state, and
indeed from Punn-
gudy to the Travancore
frontier it is described
as almost the worst road
the collector has ever seen.
The road is part of the
great military line from
Maddur to Travancore, and
and its general condition
within the Ponnemully
district is stated to be
"rocky, stony, sandy, or other-
wise difficult and even
dangerous for heavy traffic."
Lu

In short the necessity of
 putting this important
 line into an efficient
 condition is so apparent,
 that the Government have
 nothing to add to the strong
 recommendation of the local
 officers on the subject. The
 rates of the estimate are
 considered moderate and
 sufficient, and the following
 are the works provided for.

Earthwork	8528.
Metalling, &c.	14831.
Constructing 29 tunnels	2156.
Improving 20 & removing 1 old do.	740.
Constructing 11 bridges	2114.
Improving 6 old ones	742.
Constructing 18 roads & mounds	889.
Tools and contingencies	1274.
Superintendence	2769.
Deduct.	33243.

Amount of former estimate --- 7470-6-

Amount set aside for the Mumbys
 & bridges & approaches. } 452-10-4

7933
 Rs. 25,310.

No 22.

New Jail at Salem.

Rupess 36,000-

7 Estimates

1 Plan.

District Engineer's Report.

Buildings.

81

32. The project of erecting a
 new jail at Salem forms part
 of a general proposal for the
 removal of the judicial establish-
 -ments at that station, from the
 buildings they now occupy to
 others in some convenient and
 more desirable locality in the
 neighbourhood. The town of Salem
 has been reported to be extremely
 unhealthy, being subject to an
 epidemic diseases, such as
 fever, diarrhoea and dysentery,
 but the ravages of cholera have
 been specially felt in the jail,
 and it has become a matter
 of duty on the part of Government
 to erect a prison on a site not
 open to the grave objections,
 which are found to exist
 against the scattered buildings
 in which the prisoners are at
 present confined. These build-
 -ings, three in number, are
 their

their extreme unhealthiness
 to their immediate vicinity
 to numerous halting places
 for carts and choultries which
 are crowded by travellers who
 bring disease, and to the stag-
 nant state of the river during
 the hot weather from which
 all the water for jail purposes
 is drawn. Mr. Rhode, the
 Inspector of Prisons, visited
 the Salem jail early in 1855,
 and he ascertained that
 already during that year
 25 cases of cholera and 24 of
 dysentery or diarrhoea had
 been admitted into hospital;
 of these cases, 37 had ended
 fatally; 34 deaths having been
 from cholera, and 3 from
 dysent^{ery}~~ery~~. On reference to
 former returns, he found
 that the mortality of the
 jail in fourteen years had
 been

been 592 out of $\frac{3390}{14}$ prisoners,
 of whom 305 died from cholera,
 the total deaths to strength
 being, about $17\frac{1}{2}$ per cent, of
 which $8\frac{1}{2}$ per cent were from
 cholera alone. In his report of
 1855, Mr. Rhode thus describes
 the jails. "The buildings are
 very indifferent, and badly
 arranged; the principal jail
 is a mud built building
 attached to the court; the floor
 is on a level with the ground;
 the roof is bad; an attempt
 has been made to improve
 the ventilation by sticking
 tin tubes about 5 inches in
 diameter and 5 or 6 feet high
 on the ridges, but from want
 of a flange about the junc-
 tion of the roof, the water
 trickles down and finds
 its way into the ward as
 I found at the time of
 my

my visit. The building, ^{now} should contain 120 prisoners allowing 500 cubic feet to each; there are no means of separating one class of prisoners from another here, unless it be by placing a guard or building cross walls, to prevent those in the wards which open outwards from intercourse with those in the wards opening inwards; females are confined in the debtor's prison, a separate building, probably 800 yards off and situated within the old fort; this building is in fact a ^{small} choultry, and appears to be pretty much in the same state as it may have been when first taken for its present purpose; an extra guard of 12 peons and

a

a duffadar costing 804 Rupees a year are kept up for guarding this building, only; the site is most objectionable, being in the midst of a very dirty and crowded part of the town. A third building, now used only as a hospital is an old bombproof and but for its situation and distance from the main jail is open to as few objections as bombproof buildings in general.

33. The proper site for the new jail, the form of building, and the extent of accommodation to be provided, have received much consideration at the hands of Government and the Judicial authorities. The site which has at last been selected, has been approved by all the officers consulted, judicial and medical; it is very nearly

nearly two miles east of the town of Salem on the road to the Sherbrooke hills, and is on a rising ground, apparently the highest in the valley; the soil is said to be good, and there is every prospect of obtaining good water, with ample space on either side of the road for jail purposes. As the plan of the building proposed by the Inspector was circular, as to the adoption of which the Honorable Court of Directors had expressed doubts, the Chief Engineer was called upon to give his opinion on the relative merits of the circular plan or that of segments of circles ^{and} a rectangular building, and on their comparative costs. Colonel Forbes reports that "segments of circles having

a common centre allow a guard placed in a central building to see into every cell when the doors are opened, a peculiarity special to radiating lines from the generating centre. The counterbalancing disadvantage that presents itself," he states, "is that a much greater space of ground is required on the promiscuous principle than would be necessary if a rectangular building were constructed." The cost however of the buildings he adds would be very nearly the same; "for in the segmental system each range of cells has a verandah in front of it while in the rectangular one a central passage would divide two ranges; this passage would cost a somewhat more than two verandahs, but

but the outer wall of the rectangular plan would be shorter than that of the circular one; so that on the whole there would be but little difference between the two plans in regard to cost. The accommodation to be provided has been regulated with reference to the measure contemplated for future adoption of confining prisoners under sentences of long imprisonment in large central jails.

34. The estimated cost of the building as finally determined amounts to 36,000 Rupees, and it comprises the following

following works.

Five blocks of single cells ranged in a circle; three containing 21 cells each, 12' x 7'; somewhat advanced inwards; and three containing 27 cells somewhat thrown back, as shown in the plan	20,235.
Outer and Partition Walls	5,779
Two Blocks constituting the Hospital	5,473
Central guard House	1,771
Iron gates and Railings for the front entrance and for the spaces between the several blocks of cells	1,000
Excavating foundations	500.
Sundries	1,242
Rupees — 36,000.	

The cells and hospital are to be erected on a basement two feet above the foundation; the principal walls and pillars will be 12 feet and the verandah pillars 9 feet in height. Each cell will have an open verandah

6 feet in width facing the central guard house. This guard house is to be octagonal in shape with an upper room, from the windows of which the sentry on duty will have a clear view of the foot of the outer walls; it will be raised on a basement 12 feet in height; the walls of the lower room being 18 feet with arched doorways and windows, and those of the upper room 12 feet in height. The building will be surrounded by an open verandah 12 feet in width with pillars 12 in height. The hospital consisting of two blocks will be placed on either side of the front entrance. Each of these blocks is to contain 10 cells (12' x 9'), one general ward

ward

ward (30' x 20') and one privy. In one block near the entrance there will be a surgery and office; and in the other a guard room. The entire hospital blocks will have an open verandah 8 feet wide facing the central guard house.

35. Besides the advantages resulting from an improved building on a healthy site it is to be noticed that 804 Rupees ^{are} a year now incurred merely in guarding an additional building used for the confinement of female prisoners, ^{their} and the whole pay of the extra guard will be saved under a better system of discipline. The estimate has been prepared by the District Engineer from a specification furnished to him by the Inspector of Prisons, and the rates allowed are considered by

by the Chief Engineer moderate
and sufficient. I am direct-
ed to state that as the
Inspector reported that cholera
had again broken out
with violence in the
Salun jails, and that he
was anxious another season
should not be allowed to
pass without providing
for the removal of the prisoners
from the pestilential site
now occupied by them,
the Government have been
induced to authorize the
collection of materials during
the four months preceding
May, in order that work may
be commenced at the opening
of that month; and it is
hoped that, considering the
pressing nature of the case, the
Government of India will approve
a departure from ^{rule} so far.

N^o 23.

New General Post and Electric 36. This project is
Telegraphs Office with Exchange - intended to provide a building
Hall, to be erected on the North on an eligible site, sufficient
Breach Madras.

Estimated 18,000.

Plans and Estimate with
Director General of
the Post Office in India.

erily spacious to accommo-
date the General Post Office
and Electric Telegraph De-
partment, containing ac-
commodation to be used as
an Exchange by the Members
of the Mercantile Commu-
nity. The project origina-
ted with the Government
of India, who in authorizing
on the 14th September 1855
the transfer of the General
Post Office at Madras
from within the Fort to
some suitable locality be-
yond its precincts, requested
His Govt to mature a
project

project for a building to be
erected expressly for the services
of the General Post-Office
and Electric Telegraph at
this Presidency, and to sub-
mit the project for their
approval. Plans and Esti-
mates were accordingly
prepared by the Engineer
and Post-Office authorities,
but in direct communication
with each other, and were
received by this Government
with Colonel Baker's letter
dated 11th February 1856, N^o 478,
to be included in the Bud-
get of 1856/57 if approved
by the Governor in Council.
The amount of the estimate
exclusive of out-Offices was
at this time 82360 Rupees,
but

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but the Director General in
his letter to the Government
of India 24th December 1855,
calculated that the expense
might eventually amount
to a lac of Rupees. The
only objection taken by
the Director to the proposed
plan of the building was
in regard to the height of
the walls, eighteen feet,
which he considered to be
too low. The plan included
a Time Ball for the
purpose of giving correct
time to the shipping in
the roads, the utility of
which is fully recognized
by this Government. In
considering the design,
it occurred to Gov^{ts}, that
the

the opportunity should be taken
of turning to still greater
account the very eligible site
on which it is proposed that
the structure shall be placed,
viz an enclosed space on
the North beach known
as Abercrombie's Battery,
immediately facing the
sea, and in the vicinity
of all the mercantile es-
tablishments of Madras.
Their proposal was to
raise such an edifice
on this battery as besides
accommodating the Post
and Telegraphic Office,
would serve as an Exchange
Hall; and this object, they
suggested, could be secured
by making the lower or
ground

original plan proposed

ground floor consist of an
open Colonnade to be devoted
mainly to the Exchange,
and to adapt the first
and second stories for
the purposes of the
Electric Telegraph and
Post-Office. The Chief
Engineer was, therefore
directed to submit a
fresh plan; and the
Chamber of Commerce
were addressed with the
view of ascertaining
what amount the mer-
cantile community
would be willing to
contribute towards the
additional expense, arising
from a change of plan
designed for their benefit
and

and convenience.

37. In pursuance of this requisition, the Chief Engineer submitted a fresh design on the 1st September last, the plan of the building having been prepared by the Civil Architect under instruction from the Central Office of Public Works and under approval of the Post Master General at Madras. The building as designed by the Civil Architect is thus described by the Chief Engineer: "The East, which is the principal front of this building, faces the sea, and has a length of 304-9. The centre is marked

marked by a hexastyle Portico of the Ionic order, the columns being 42 feet in height, the width of the Portico being 60 feet, and its projection 18-10¹/₂. It would have had a better effect, had it been somewhat further advanced and its general effect improved, if the wall behind the Portico had been recessed. On either side of this centre, is a double range of arcaded Verandahs, carrying the circulation of the Portico in an unbroken line. To break the great length of one uniform frontage, there is at each extremity

extremity a projecting Colonnade
similar to those of the centre;
and further to improve
the otherwise continuous
horizontal line of the
building, the wings are
surmounted by an attic
the north and south
fronts which are each
about 100 feet long as well
as the west front, facing
the second line Beach Street,
are (not as the drawings
now submitted) adorned
with any architectural
features; they have a
triple range of windows,
and the entablature as
in the east front surrounds
these three fronts. The
building is to be surmounted

by

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a clock
by turret, and on its summit
a time ball is to be exhibited
in a conspicuous position,
for observation from the
shipping in the roadstead.
The ground floor of the
building is in the centre
part appropriated to
the Post Office; it has
a front verandah of 12 feet
and a back verandah
of 10 feet in width; the
rooms are spacious, and
20 feet in height. In the
wing to the north there
is a colonnaded room
65 long by 37 9/16 in width
which is intended for
an Exchange; it has a
verandah on the sea face,
and two rooms off it

25 by 15-7 1/2 each, for Committee rooms, or other purpose that they may be required for. The South wing is appropriated to the Electric Telegraph Department. The second floor of the building has the centre portion also allotted to the Postal Department. The upper floor of the right wing is occupied by one large Hall 65'-3" x 38 x 32 which is to be used by the Mercantile Community for meetings and other purposes; it has two small rooms each 25'-3" x 15-10 1/2 attached to it for Committee rooms and a Verandah

38'-6" by 12'-3" on the sea face. In the South wing there is a second and third floor; the second being partly designed as a dwelling house for the Superintendent of the Electric Telegraph, and partly for the Post-master to whom the whole of the 3^d story is also assigned. These two stories are each 14 feet in height. Taking the building as a whole Colonel Tates considers that it will be suitable, and that its elevation modified from the London Post Office will be improving. He has suggested

af

a few alterations intended to improve the interior arrangements; but these as remarked by him will not materially affect the amount of the estimate, which it will be observed is now calculated at 1,87,000 Rupees, comprising a charge of 10,000 Rupees for a new clock with chimes, and of 2,000 Rupees for the Time Ball and apparatus.

38. The Govt. approve the plan with the alterations suggested by the Chief Engineer; and they cannot consider the amount

amount 1,87,000 Rupees as too large for a work of this nature, so greatly required for the Chief City of the Madras Presidency. As the Govt. of

Ex: Pro: Govt. of India, Home India had recently ordered Sept 9th Sept 56 No 1397-

that all projects for new Post offices or other works connected with the Post Office Dept. should be submitted to the Director General of the Post Office of India, this Govt. directed the submission of the Plans and estimate to the Director thro' the Post Master General at Madras. The Govt have however

however been informed
in reply, that Mr Riddell
is on extended leave in
England in order to
make himself acquaint-
ed with the working of
the British Post Office,
and the accommodation
found in London to be
best adapted to the pro-
per division and economy
of work in a large Postal
Establishment; and
that the Officiating Direc-
tor wished that the plan
of the Building designed
for Madras should lie
over for Mr Riddell's
consideration. On a
renewed

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renewed reference to
Mr Paton for his ^{own} opinion,
in order to admit of the
project finding a place
in the present Budget,
that Gentlemen again
urged that it would be
better that the project
should wait the considera-
tion of Mr Riddell; but
as the wants of the Madras
Presidency in this respect
will not admit of unnec-
essary delay, this Govt.
have deemed it proper
that the project should
be entered in the present
Budget. They would beg
strongly to recommend
the

the general plan of the building at the estimated expense of 1,87,000 Rupees, and in so far as regards the Post Office arrangements, would leave it to the Govt: of India to take the opinion of Mr. Riddell, who it is believed will be shortly in India. Mr. Paton returned the ^{original} Plans and Estimate for submission to Mr. Riddell; and this Govt: must therefore refer the Govt: of India to that Gentleman for the original documents, but for the sake of convenience and to avoid

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avoid any mishap, a tracing of the Plans and an abstract of the Estimate have been obtained from the Chief Engineer and are forwarded with this Report to aid the Supreme Govt: in the consideration of the project.
39. It may be added that, in reply to the first reference to them, the Chamber of Commerce offered their acknowledgments for the consideration given for the interests of the mercantile community and the convenience of the public generally, and stated that on receipt of the revised Estimate, they would invite all parties connected with the trade of Madras to consider the subject, and they felt assured that all parties

parties would be happy
to render all the
assistance in their
power to enable the
Govt. to carry out in a
suitable manner so
very desirable an object.
The revised Estimate
was accordingly laid be-
fore the Chamber, but
no reply has been yet
received, doubtless, be-
cause sufficient time
has not elapsed to admit
of their taking the sense
of the Mercantile public.
The Govt. will not how-
ever fail to submit the
reply of the Chamber
when received, for the
information of the
Supreme Govt.

40. As the question as to
the proper authority to have
charge of the Military Build-
ings in the Mysore Division
is still pending before
the Govt. of India, and that
in regard to Hyderabad
had been^{so} until receipt
of your letter of the 14 July
1874 otherwise disposed of,
this Government did not
take any steps to make
provision in the present
Budget for the works in
those territories. On the
2^d Instant indeed, a letter
was received from the
Offg. Resident at Hyderabad
forwarding copy of one from
the Chief Engineer in that
Territory, and the Budget
framed by that Officer
for the Military Buildings
within the range of the
Subsidiary force; but as
these papers were received
after the Madras Budget
had been closed, it was
not in the power of this
Govt. to examine the items
enclosed.

included in the Hyderabad budget, and being then forward in the general budget of the Madras Presidency.

41. The ~~estimates~~ Budget for the Hyderabad buildings will therefore form the subject of a separate communication, but I am desired to signify in the meantime for the information of the Govt of India, a list of works which have been hitherto sanctioned by this Govt for the Mysore Division and for that of the Hyderabad Subsidiary Force, and which should find a place in the Budget of 1857/58.

Statement No 1.

No	Description of Work	Estimated cost	Estimated time required for completion	Estimated expenditure in 1857/58	Remarks
		3	4	5	
1	Mysore Division Building two blocks of married men's quarters in the Dragoon Barracks at Bangalore	83,400	"	"	An estimate of Rs 90820 was sent in 1st Budget of 1856/57, but the Govt has been remiss with reference to the instructions of the Comd. in Chief of the Madras Army of 9 March 1857.
2	Hyderabad Subsidiary Force Making several improvements in the Auxiliary buildings of the Barracks at Secunderabad, in lieu of and in addition to some works already sanctioned	109,829	"	"	Approved by this Government on the 24 Nov 58 for entry in this Budget for the orders of the Government of India.

Statement No 2.

No	Description of Work	Amount required of sanction	Amount for expenses already incurred	Remarks
		3	10	12
	Mysore Division			
3	Improving the Dragoon Barracks at Bangalore intended for occupation by the Infantry	155,000	"	Item 457 of Statement No 1 of the Budget of 1856/57 sanctioned by the Government of India in letter of 4 th July 1856 etc 3134

Constructing new Barracks for the Dragoons at d?

Sanctioned by Government of India in Sept 58. As per telegraph message to His Excellency the Comd in Chief of the Madras Army of 18 Nov 58. The estimate for this work amounted to nearly 5 lacs, but revised estimates have been called for in reference to the letter from the Govt of India of the 15th Decr 1856 etc 5825.

Constructing sixteen quarters with put-house for Color Serjeant in the Dragoon Barracks square

Sanctioned by this Government on the 3 May 58 for entry in the Budget

Statement No 2

No	Description of Work	Amount required for the Sanctioned expenditure of 1857/58		Remarks
		5	10	
	Hyderabad Subsidiary Force			
6	Constructing new Infantry Barracks at Trimulgherry near Secunderabad and auxiliary works.	115,907		Items Nos 8 of Statement No 1 and 405 of C. 1. 2 of the Budget for 1856/57 and both entered here as one item in reference to the observation made in para 37 of Genl. Colonel Baker's letter of 11 th July 1856 and 3173.

Records the above, Statement No 2 should contain such of the works entered in the corresponding Statement of the previous years Budget as may still be in progress and not likely to be completed by the end of the current financial year. No particulars of expenditure for items 3, 4 and 5 are before Government.

4th. Having thus reviewed the projects newly brought forward in the present budget and detailed the grounds of recommendation in each case, it is necessary ^{now} to notice the exception of a work above the estimated cost of 25,000 Rs. the expenditure of which has been sanctioned by this Govt. I refer to the entry of 56,900 Rs for improving and strengthening the embankments on the eastern bank of the Krishna from Yamama-lacoodooras to Mopadury, a distance of thirty three miles in the Masulipatam District. The estimate for this work was submitted by the Chief Supt on the 18 Novr/56, and he then pointed out that danger would accrue to the banks if operations were suspended, adding that the emergency of the case induced him to submit the estimate with the special request that

the work might be ~~allowed~~
to be proceeded with in anticipa-
tion of sanction, the too proba-
ble consequence of delay or neglect
being so serious as to involve a
responsibility which must rest
on the Govt alone; and that it would
be true to point out that the
greater the improvements that
have been made, and the greater
the capital expended by Govt
and the land holders, so much
more ruinous would be the effects
of an inundation from insuffi-
cient dykes. As the Govt concurred
with the Chief Engineer as to the ab-
solute necessity of the undertaking
to the successful working of the
Kishnah irrigation project, &
felt no doubt that if the embank-
ments were neglected consequences
might ensue involving loss, pub-
lic and private, they granted sanc-
tion for the execution of the work
in emergency on the 23^d Dec^r
following. On the receipt how-
ever of your letters of the 19th

11
Dec^r and 20th January convey-
ing the observations of the Govt
of India ^{on the above} ~~on the above~~
~~of the Govt~~ ^{on the above} ~~of the Govt~~
of the term "Emergency," orders
were issued by this Govt on the 18th
February to transfer the above
and other works to the Budget
of 1857/58, but as some expendi-
ture must have been incurred
before the orders arresting the
execution could reach the Eng^r,
it has occurred to the Govt that
it could not properly be treated
as a bona fide new work and
be entered in Statement No. 1.
It has thus found a place in
Statement No. 2; and I am
directed to refer to para 9 of my
letter of the 23^d Feb, No 352,
where the opinion of the Govt
sent in Council is requested
upon certain works described,
in order that the Govt ^{may} possess a
standard as to emergency, and
of which works that of the Kish-
nah embankments forms the
first case, being accompanied by

a sketch of the reasons on which it was considered urgent.

43. I have now to state that in accordance with the third of the ^{modified} Budget rules furnished to this Govt. with Ex. from the Pro. of the Govt of India, 31st March/56, No 1584, a copy of the resolution based on the annual review of the several projects which have come before this Govt during the year, accompanies this letter; and that a classified list or synopsis is also submitted of all the works entered for execution in the present Budget, shewing as required in para 4 of your letter, 30th May/56, No 2431, the estimated expenditures both on new works and for repairs. The following is an abstract of this classified list, classified according to the established departmental headings. The following is an abstract of this synopsis.

	New Works.	Repairs.	Total.	
Public	Roads & Communications.	23,04,280	7,18,958	30,23,238
	General.....	95,425	25,311.	1,20,736
	Political.....	"	21,000	21,000
	Revenue General....	58,706	16,1469	75,175
	Revenue Irrigation....	12,47,226	12,77,316	25,24,542
	Judicial.....	45,613	10,162	55,775
	Ecclesiastical.....	2710	9,162	11,872
	Educational.....	"	"	"
	Marine.....	18,370	4913	23,283
	Military.....	4,64,012	100,151	5,64,163
Total		42,36,342	2,17,9942	64,16,284 64,19,484

44. In closing my dispatch, I am directed by the Right Honble the Govt. in Council to submit the apology of this Govt for the late transmission of the Budget. Notwithstanding their endeavours to expedite this work, and with this view their express orders fixing a day for closing local budgets, so as to admit of

present time for the considera-
tion and examination in their
own office of the several pro-
jects brought to their notice,
as well as for the subsequent
casting of the Budget itself
and the completion of the
report to accompany it, and
for the dispatch of the whole
in an early part of the year,
the Govt have been unable to
accomplish the work before
this date; but I am directed to
state that strict orders will
again be issued to prevent the
delay the Govt have had to de-
plore, and that it is hoped
that ~~at the next session~~ the
Budget of this Presidency will
be placed before the Govt of
India at a ~~much~~ earlier part
of the year than ~~was~~ ^{has been} practica-
ble at the present occasion.

As requested by the
Govt of India in your letter
the 31st October 1856, No 5164,

this report is accompanied by
five copies of the General Budget
Map exhibiting at one view
all the projects of improve-
ment included in the present
budget and all those already
existing. It is hoped that this
Map will be found to be an
improvement ^{on that submitted last year} and fully answering
the expectations of the Govt of
India. R. D.

Fort St. George
12th March 1857

No. 31
Public Works 1857 Dept.
D^o to Com^r March.

No 462.

To the Secretary to the
Gov^t of India.

D/12th March/57.

From the Com^r of India 3rd July/57
on Com^r 21st July No 22 & 23.
Suspending all Public Works
with certain exceptions specified
in the Gov^t of India's L^o 1155
of 1857.

Submitting statements of
land & projects of Public
Works proposed to be undertaken
during the official year 1857-58.

No 15.