

(1) Number of pages

(2) Date of repair

(3) Initials of the Referencer

MADRAS RECORD OFFICE.

Government of Madras.

P. L. DEPARTMENT.

G.O. No.

1691

Press

Mis

473-74

Dated

23-6

1877

Not to be folded or roughly handled

12

*Proceedings of the Madras Government, Public Works Department,
23rd June 1871.*

No. 413. Read the following letter from the Officiating Deputy Secretary to the Government of India, Public Works Department, (Buildings and Roads—Military,) to the Secretary to the Government of Madras, Public Works Department, dated Simla, 9th June 1871, No. 652 B M —

In reply to your letter No. 1,399, dated 20th May 1871, I am directed to communicate the sanction of the Governor-General in Council to the revised estimate therewith submitted, amounting to Rupees 5,640, for quarters for the Resident Medical Officer at the Race-course Barracks at Bangalore.

2. This sanction has been registered as No. 16 B.M. of 1871-72, and the plan and estimate are returned.

No. 414. ORDER THEREON, 23rd June 1871, No. 1,691.

MILITARY WORKS, No. 13.

COMMUNICATED to the Superintending Engineer of the 5th Division, with reference to G. O., No. 1,398, dated 20th May 1871:

(True Extract.)

*stone in chunam stones laid closely fitted
the bond and well flushed up*

Specification to accompany plan and ^{Works}
estimate for constructing Quarters for Resident
Medical Officer Race Course Barracks Bangalore
Amount of Estimate Rupees 5600

Excavation

The Excavation for foundation to be
taken out to such a depth as the Executive ^{Stab}
Engineer may consider necessary and the
bottom taken out perfectly level any superfluous
Excavation to be filled in again and
well rammed.

Foundation

The foundation to be laid with
stone in chunam stones laid closely fitted
with good bond and well flushed up
with chunam (3 parts of sand to two of fresh
and well burnt lime slaked on the work.
Every sixth stone at least to be a through
header.

Basement

The Basement to be similarly laid with
outer joints scraped out and plastered.

The top course of the basement to be of
flat stones of as great a length as possible.

Superstructure

The Superstructure to be of best bricks

— do — of Panelled door (4' x 8') with frames & fittings 40 . . . do 160 . .
Carried over 3075

Affly Deputy Secy. H. H.

bricks ($9 \times 4\frac{1}{2} \times 2\frac{3}{4}$) in chunam (3 parts of sand to two of fresh and well burnt lime) slacked on the work. The bricks to be soaked in water before they are used and English bond to be observed through out. Openings to be provided in the walls in the positions shown on the plan.

The arches to be neatly turned and Arch work only selected hard bricks used. The joints all to radiate correctly according to the nature of the arch. Bricks to be ground down to required shape and the key bricks to be well driven home, joints not to exceed $\frac{1}{4}$ inch thick and to be scraped out before plastered.

The description of the cornice should be of the pattern supplied by the Executive Engineer. Cornice bricks to have proper bearing not less than $\frac{1}{4}$ inches and set with strong lime.

The joints to be scraped out and the walls plastered inside and out side with

Colouring

two coats of chunam 1st coat consist of one part of lime to $1\frac{1}{2}$ of river sand well ground together and the 2nd coat to be of 3 parts of lime to one of white sand well smoothed off.

The building to be blue washed outside and to have a uniform colour throughout to be approved of by the Executive Engineer and to be white washed inside each with two coats.

The following proportions to be used in mixing the whitewash

For whitewashing 10 sqrs. One coat

$\frac{3}{4}$ Para of stone chunam

$\frac{3}{4}$ Measure of raw rice

5 Pollins of gum

For blue washing 10 sqrs one coat

Charcoal sufficient to give slate colour

$\frac{3}{4}$ Para of stone chunam

$\frac{1}{2}$ Measure of raw rice

5 Pollins of gum

The whole of the timber to be of Timber
well seasoned and sound teak free from
all shakes and knots and neatly finished
off. No timber to be put up until passed
by the Executive Engineer.

The roof of the main building Roof
and Verandah to be terraced with brick
on edge 3' of jelly 3 courses of flat tiles
and 3 coats of plastering well rubbed.
Teak beams for the main building to bear
on stone plates not less than $(1\frac{1}{2} \times 1\frac{1}{2} \times \frac{1}{4})$
The joists are to be laid $1\frac{1}{2}$ feet apart
from centre to centre.

The roof of the cook room and
stable to be of pent roof supported on
rafters each rafter to bear on wall plates
 (4×2) The rafters to be ^{of teak pland} $1\frac{1}{2}$ ft. apart from
centre to centre and to be well secured
with proper nails. The whole to be nailed
with teak reapers $(2\frac{1}{2} \times \frac{1}{2})$ and covered with
flat and pantiles (Government size)
with

with chunam borders &c. The scantlings of
the various timbers to be of those written
on the plan.

Wood oiling All wood works of the roof and
inside doors to be coated with two coats
of wood oil

Flooring The basement to be filled in
with earth well watered and rammed
till thoroughly consolidated over this a
flooring of stone slabs having a smooth
surface not less than 3" thick with
the edges dressed square to be laid in
mortar, joints scraped out and pointed
with strong lime putty. The privy to be
floored with one foot of clay and 6"
sand and the floor of the stable to be
of 6" gravel well watered and rammed
till thoroughly consolidated.

Steps Stone slabs for steps to be of one
stone of the required dimensions according
to the nature and size of the steps

— do — of Pannelled door (4×8) with frames & fittings 40 do 160
carried over 3075

Affy Deputy Secy. Hth

steps having outer sides and edges dressed square and upper surface smoothly dressed

Fire spouts having $\frac{1}{4}$ " inches inner diameter to be provided and fixed inside, not within verandah walls &c. and to be fastened to them by iron clamps at every five feet in the manner directed by the Executive Engineer.

Four pair of doors $\frac{1}{2}$ pannelled and $\frac{1}{2}$ glazed (4×8) and four pannelled doors (4×8) frames ($4\frac{1}{2} \times 3\frac{1}{2}$) Door plank $\frac{1}{2}$ " thick with strong pivot, hinges bolts of brass locks with key plates and knobs &c. complete, to be provided and fixed to the main building, and one battened door (5×7) one battened door ($3\frac{1}{2} \times 7$) two battened door ($3\frac{1}{2} \times 8$) with frames ($4\frac{1}{2} \times 3\frac{1}{2}$) door plank $\frac{1}{2}$ " thick and fittings with pivot hinges &c. to be provided and fixed to the out houses in such positions as marked on the plan.

Windows

Two pair of windows (4×6) mentioned shutters out side and glazed shutters inside and four windows (3×5) mentioned shutters outside and glazed shutters inside with frames (4×3) mention plank $\frac{1}{2}$ " thick mention bar ($1 \times 1\frac{1}{4}$) swivels $\frac{1}{6}$ " thick with strong brass plate, hinges, hooks, and eyes $\frac{3}{8}$ " rings, bottoms, brackets and other fittings complete to be provided and fixed to the main building, and two battened windows (3×4) frames (4×3) planks $1\frac{1}{4}$ " thick and fittings &c. complete to be provided & fixed to the out houses in such positions as marked on the plan.

Swing windows

Ten glazed swing windows ($3 \times 1\frac{1}{2}$) frames (4×3) and other fittings &c. complete to be provided and fixed to the main building in position as shewn in the plan.

Chocolate painting

All outer doors windows & swing windows to be coated with two coats of chocolate painting.

do of Pannelled door (4×8) with frames & fittings carried over.

Off 4

Out houses doors and windows to be coated Red painting
with two coats of red paint.

Iron rings $\frac{3}{8}$ inch thick will be Iron rings
beaded into stone blocks containing about
half a cubic foot each, and to be sunk
with their sides flush with the floor for
tethering each horse. The space around
the stone to be well tamped with stone
jelly & gravel.

The soil around the building to a gravelling
breadth of 20 feet to be levelled and land
with the best description of gravel at an
average depth of 6" from the basement of
the main building to the outer margin
and to be well watered and tamped.

A new road 250 feet long and 20 ft
wide to be laid out and formed with an
average of 1 ft earth and bunches of gravel
as marked on the plan.

Every thing necessary for the
meat

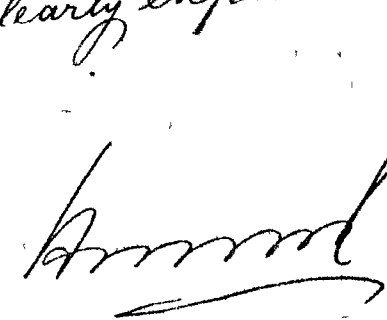
meat and workman like completion of the
building to be provided whether particulars ¹¹⁰
mentioned in the specification or not. ^{ace}

All materials and workmanship
employed to be of the best description &
subject to the approval of the Executive ^{Totals}
Engineer of ^{the} Bangalore, who shall
have the entire power of ordering the
removal of any works with which he is
dissatisfied.

The whole of the work to be
carried out as per plan and estimate
according to dimensions mentioned thereon.

Any portion of the plan not
understood can be referred to Executive
Engineer and no excuses of the details
not being clearly explained will be admitted
hereafter.

Executive Engineer Office
Bangalore 5th April
1871.

 Captain R. E.
Executive Engineer Bangalore

 Colonel B. C.
Superintending Engineer 5th Divn

do of Pannelled door (4x8) with frames & fittings
carried over -

Aff'd

Memorandum

5th Division D No 11.

Bangalore.

13

New Works.

Revised Abstract Estimate of 1871-72

Work — Constructing Quarters for Resident Medical Officers, Race Course Barracks, Bangalore.

Quantity	Description of work	Rate Per	Amount. Total
2270	Cubic feet of Excavation	1 cft 12	
2270	— Do — of Foundation stone in chunam	2 6 do 355	
799	— Do — of Basement — do	2 6 do 125	
3949	— Do — of Superstructure brick in chunam	2 9 do 679	
412	— Do — of Archwork — do	4 do 103	
246	Running feet of cornice work — do	4 do 62	
48	— Do — of Stone slabs heads for steps	3 do 9	
71 85	Squares of Plastering with chunam	2 8 do 180	
49 66	— Do — of Whitewashing two coats	3 do 9	
22 19	— Do — of Bluewashing two coats	4 do 6	
128	Cubic feet of Teak wood wrought and put up	3 8 cft 448	
24	N ^o of Nails 7 inches long	Each 1	
4	— of Stone plates under beams	4 do 1	
14.24	Squares of Terracing	27 8 do 392	
14 61	— Do — of Wood siding two coats	2 do 29	
1601	Cubic feet of Filling in basement	1/2 cft 4	
12.74	Squares of Paving	15 do 191	
294	Running feet of Zinc spouts 4 inches diameter including iron clamps	9 do 165	
4	Pairs of half pannelled and half glazed door (4x8) with frames and fittings &c	36 Each 144	
4	— do — of Pannelled door (4x8) with frames & fittings &c	40 do 160	
	Carried over	3075	

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The Supt Engineer

Bangalore

From

The Supt Engineer

Dated 25th April 1871

P. M. 2058/71

Recd

Chief Engineer Bangalore

for Resident Medical

Officers Race Course

Barracks Bangalore

6386

2058/71

for Supt Engineer

Brought forward		3075	
2	Pair of Windows venetian shutters outside and glazed shutters inside (4x6) with frames and iron work &c	51	Each 102
4	Do Do Do (3x5)	32	do 128
10	Swing windows (3x1½) with frames and fittings &c	7	do 70
7 58½	Squares of chocolate painting two coats	5	Sqrs 38
47 80	do of Graveling around the building	1	do 48
1	Marking board	5	Each 5
4	Inventory board	12	do 3
	Leveling the ground		10
			3479
Sundries			181

Total Estimate Rupees for Quarters 3660

<u>Stables.</u>				
761	Cubic feet of Excavation	1	lft	
729	— D_2 — of Foundation stone in chunam	2	6	do 114
105	— D_2 — of Basement	2	6	do 16
1693	— D_2 — of superstructure brick in chunam	2	9	do 291
45	— D_2 — of Archwork	4	do	11
67	Running feet of Cornice	4	Pft	17
24.64	Squares of Plastering with chunam	2	8	Sqrs 62
14 23	— D_2 — of Whitewashing two coats	3	do	3
10 42	— D_2 — of Bluewashing	4	do	3
32½	Cubic feet of Teak wood wrought and put up	3	8	lft 114
32	Nº of Nails 6 inches long	6	Each	1
4	Nº of Stone plate under breastsummer	4	do	1
5.91	Squares of Roofing	18	Sqrs	106
3.01	— do — of Wood oiling two coats	2	do	6
1.25	— do — of Tarring	15	do	19
1.92	— do — of Graveling	1	do	2
Carried over				770 366

Brought forward		770		3660
1	Pair of Battened door (3½x7) with frames and iron work &c complete	24	8	Each 25
1	do of Battened door (5x7) with frames &c complete	35	do	35
1 43	Squares of Red painting two coats	2	Sqrs	3
4	Nº of Iron rings to be fixed in a stone block two feet long	1	Each	4
				837
Sundries				43

Total Estimate Rupees for Stable 880

— <u>Cook room and Privy</u> —		1	lft	4	
825	Cubic feet of Excavation —————	2	6	do	123
786	— do — of Foundation stone in chunam —————	2	6	do	35
223	— do — of Basement — do —————	2	9	do	291
1693	— do — of Superstructure brick in chunam —————	4	"	do	15
59	— do — of Archwork ————— do —————	4	"	Pft	16
65	Running feet of cornice work — do —————	3	"	do	2
10	— do — of Stone slabs tread for steps —————	2	8	" Sqre	61
24.20	Squares of Plastering —————	3	"	do	3
13.46	— do — of Whitewashing —————	"	4	do	3
10.74	— do — of Bluewashing —————	3	8	" lft	112
32	Cubic feet of Teak wood wrought and put up —————	"	"	7 Each	2
42	N ^o of Nails 7 long —————	18	"	" Sqre	112
6.21	Squares of Roofing —————	2	"	do	5
2.35	— do — of Wood oiling two coats —————	"	"	1/2 lft	1
261	Cubic feet of Filling in basement —————	15	"	" Sqre	36
2.41	Squares of Tarring —————	4	"	do	2
60	— do — of Flooring with 1 foot of clay + 6" sand —————	"	"	do	"
2	Pair of Battened door (3 1/2 x 8) with frames and iron work &c complete —————	28	"	Each	56
	— do — of Battened door (3 1/2 x 7) with frames and iron work &c complete —————	12	"	do	24
	— do — of Battened door (3 1/2 x 6) with frames and iron work &c complete —————	2	"	Sqre	4
2	Squares of Red painting —————				907
1.99	Carried over —————	907			4540

Offy Deputy Secy

Brought forward ————— 907 . . 4,540 . .

Sundries ————— 43 . .

Total Estimate Rupees for Cook room & Privy 950 . .

New Road

500 cubic feet of Earthwork including ramming ————— 1 1/2 cft 20 . .

50 Squares of Graveling 6" thick well watered and
rammed ————— 1 . . 50 . .

Sundries ————— 5 . .

Total Rupees for New Road 75 . .

Planting trees and bounding fences ————— 75 . .

Grand Total of Estimate Rupees 5,640

Rupees Five thousand six hundred and forty only

Executive Engineer's Office
Bangalore, 5th April 1871

(Signed) H. W. Wood Esq. M.A. &c.
Executive Engineer, Bangalore

Boileau Colonel, R.E.
Superintending Engineer 5th Divn

No 652 B.M.

VERNMENT OF INDIA.

WORKS DEPARTMENT.

BUILDINGS AND ROADS

Secretary

The Secretary to the Govt of Madras
Public Works Department
Dated 9th June 1871

In reply to your letter No 1399 dated
10th 1871, I am directed to communicate the
order of the Governor General in Council
to the revised estimate therewith submitted
amounting to Rs 5,640, for quarters for the
Resident Medical Officer at the Race-course
barracks at Bangalore.

2. This sanction has been registered as
No 16 B.D. of 1871-72 and the plan and estimate
are returned.

I have the honor to be
Your most obedient servant

C. W. Hutchinson Col. R.E.

Brought forward

Sundries

Total Estimate Rupees

New Road

2,500 Cubic feet of Earthwork including ramming
50 Squares of Graveling 6" thick well watered or
rammed

Sundries

Planting trees and bounding fences

Grand Total of
Rupees Five thousand

Executive Engineer's Office
Bangalore, 5th April 1871

6386
2
Amount of Estimate Rs. 5
Sup

All communications
should be addressed to
the Secretary

No 652 B M

216

GOVERNMENT OF INDIA
PUBLIC WORKS DEPARTMENT.
BUILDINGS AND ROADS

Secretary

To
The Secretary to the Govt of Madras
Public Works Department
Simla 7th June 1871

Sir,
In reply to your letter No 1399 dated
20th May 1871, I am directed to communicate the
sanction of the Governor General in Council
to the revised estimate therewith submitted
amounting to Rs. 5,640, for quarters for the
Resident Medical Officer at the Race-course
barracks at Bangalore.

2. This sanction has been registered as
No 16 B.D. of 1871-72 and the plan and estimate
are returned.

I have the honor to be
Your most obedient servant

Ch. Hutchison Coll. Recd

Offy Deputy Secy. B.D.

Five thousand, six
hundred & forty Rs.

Edith Harris 1871 Department

822808

From
the Govt of India Ld.

Dated 9th June
 Received 17th Apr } 1871

6/11/11
2-2-12
2-2-12

Henricson

the revised estimate
of \$12,564.00 for quarters
for the Resident & the
-dical Officer at the
Rae House Barracks
at Bangalore -

No 1896-723 June 71.
With an order

May 20 1871

23

of the S. Dr. with reference
communicated

May 1897
J. H. Brown

[Handwritten signature]

Solt of 12871 Madr.s.

PUBLIC WORKS.

The Superintendent Engr
5th Division

Dated

Recd.

Fract

G O 23 June 71, No 1691.

Nos. 413 & 414 -

1. Extraction - The process of
 separating the components of a mixture
 by using a solvent. The solvent is added to the mixture
 and the components are separated based on their solubility.
 The solvent is then evaporated, leaving the components behind.
 2. Distillation - The process of separating a mixture
 by boiling it and collecting the vapor. The vapor is then condensed
 and collected in a separate container. This process is used to separate
 liquids with different boiling points.