

(1) Number of pages _____

(2) Date of repair _____

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE.

Government of Madras.

Public Works **DEPARTMENT.**

G.O. No.	1922	(W)	Press Mis.
Dated	4-12-	1877.	

Not to be folded or roughly handled

GOVERNMENT OF MADRAS.
PUBLIC WORKS DEPARTMENT.

4th December 1877, No. 1,932 W.

Buildings and Roads.
Military Works.

Read the following paper :—

No. 45. Proceedings of the Madras Government in the Military Department,
dated 20th November 1877, No. 6,432.

ABSTRACT.—Approving the suggestion of His Excellency the Commander-in-Chief that the proposal of the District Engineer, Bangalore, to lay the flooring of the Commissariat godowns at that station with large flag stones, should be tried on a portion of the buildings in the first instance.

No. 46. ORDER THEREON, 4th December 1877, No. 1,932 W.

HIS GRACE the Governor in Council provisionally sanctions the estimate of Rupees 5,930 for reflooring with large flag stones the Commissariat store-rooms in the Bakery Square at Bangalore, subject to the success of the experiment which should be carried out on a limited area.

2. Colonel Moberly is authorised to set the work in hand at once, funds to the extent of Rupees 300 to commence with being provided from the Reserve under Military.

3. This sanction has been registered as Imperial No. 86 B of 1877-78.

(True Extract.)

Colonel, R.E.
Secretary to Government, P.W.D.

To the District Engineer, Bangalore.
„ Examiner of Public Works Accounts, with Estimate.
„ Military Department.

Exd. S. T. Austin.
Spare Copies

B. 3

Estimate of the probable cost for removing and relaying the floor of Commissariat store rooms in the Bazaar Square with 3 new stone flags laid on concrete and painted with asphaltic bit. Post. & m. G. P. No. 332 of 14th July 1877.

No.	Particulars	Particulars	Total
Removing present stone floor			
1 424 18	8685 Western Range		
1 445 10	1450 do. Durandah		
1 227 18	4086 Southern Range & Godown		
1 220 18	3960 do. Barrack Godown		
1 218 18	3924 Eastern Range Barrack storeroom		
1 281 18	5058 do. Hospital storeroom		
1 18 22 1/2	405 End room		
12 18 10	2160 do.		
Total 29728 Sq. of Removing old stone floor		6.8 p. 111	
29728 do. relaying the floor with 3 new stone flags laid on concrete painted with asphaltic		13. 3865	200

Sundries 194

Total Estimate Rupees 4170 R.E.

W. H. T. Major R.E. District Engineer

Bis. Eng. office Bangalore 23rd July 1877.

A.

C.

Estimate of the probable cost of finishing
the stone floor with asphalt of Commisariat
Store rooms in the Barrack Square. Vide Particulars
Int. G. L. In. Dr. No. 361 of 4th August 1877.

^{in a statement}
No. 2 B D Contd Description of work Rate Per Amount Total

Eastern Range

1	161 18	•	2898	Hospital Stores	
1	103 18	•	1854	Malt liquor godowns	
1	45 18	•	810	Guard room	
1	161 18	•	2898	Barrack & B. and C.	
2	18 10	•	360	Store rooms at ends	
2	22 1/2 10	•	450	do	
			<u>9270</u>		

Western Range

1	10 18	•	180	Malt liquor godowns	
1	22 1/2 18	•	405	do	
1	45 18	•	2610	do	
1	45 10	•	1450	do	
1	22 1/2 10	•	225	do	
1	161 18	•	2898	do	
1	161 18	•	2898	workshops	
1	22 10	•	220	Store rooms at ends	
1	18 10	•	180	do	

11066

Carried over 20336

Int. No. 24

Particulars

No.	Description of Work	Quantity	Unit Price	Total
1	Excavation	100	1.00	100.00
2	Foundation	50	2.00	100.00
3	Masonry	200	0.50	100.00
4	Roofing	100	1.00	100.00
5	Painting	50	2.00	100.00
6	Plumbing	100	1.00	100.00
7	Electricity	50	2.00	100.00
8	HVAC	100	1.00	100.00
9	Landscaping	50	2.00	100.00
10	Total	1000	1.00	1000.00

Southern Orange

1/3518 • 243d Gramyadown

8518, 1530 By Commissioner's officers

12018.360 Harney's room

110518 - 1890 *Druck & Zedern*

1 13518 - 2430 Small liquor godown

2 18 10 . 360 Store room Saturday
2 22 11

222/10 - 440

9440

Total 29776 Lys. 20 Oct

Sp. of Painting stone
floor with Park 1/11

5.00 Spec of Permalite

with new stone

new-stones

Leandries—3299
Total Estimate Papers—690

Distt. Cong. office
Bangalore
13th August 1971
R.W.M.

Head of service	Imperial
Ground	Ordinary
Class	Original works
Main Head	Military
Sub Head	Commisariat Building

Approximate Estimate No. of 1877/78
District Bangalore

Name of work? Paving the floor
of Commissariat Store rooms
in the Bakery square at
Bangalore.

Quantity	Description of work	Rate Per Minute	Total
297.28	Ly. of Removing present Stone floor	6. Sp.	111
297.28	Ly. of Reflooring with asphalte $\frac{3}{4}$ " thick & laid on 4" Concrete.	25.	7.432

297.28 Lg. of Reflooring with
asphalte $\frac{3}{4}$ " thick & laid
on 4" Concrete. — 25. — 7432

7543

Sundries 357

Total Estimate Rupees 7,900

Distt. Engineer
Bangalore
4th July 1877.

21st 142

Estimate of the probable cost for removing old stores and relaying the floor of Malt Liquor and Rum godowns in the South of the Bakery Square with large flag stones laid on 3" of concrete and painted with asphalt.

No.	Measurements	Contents	Particulars of work	Rate Per Sq. Yd.	Total
	L B D				
1	121 18	2178	Removing old stores		
			Drainage godowns		
1	93 18	1674	Malt Liquor godowns		
1	19 1/2 10	195	Oil godowns		
1	18 3/4 10 1/4	192 3/8	Unserviceable stores		
			Total 4239 3/8		
			Exp of Removing old stores and carting away to Engineer's yard	1	Exp 426 3
			4239 Exp of Reflooring with new large flag stones (18' x 2' x 1/2") laid on 3" of concrete and painted with asphalt	18	763 3

805 66
 Sundries 496
Total Estimate Rupees 850

Rupees Eight hundred and fifty only

District Engineer's Office
 Bangalore
 23rd October 1877
 L. H. ...

Henry M. V. ... Major P. C. ...
 District Engineer

11
Specification for removing
old stones and relaying the floor of form-
-migrariat store rooms in the Bakery
Square with large flag stones laid on
3" of concrete and pointed with asphalt.

Amount of Estimate Rupees 5930-00

The present stone floor is to
be removed and rubbish and slabs
to be carted away from site of the work
to such a distance as the Dist. Congt.
may think necessary. And afterwards
the buildings will then be refloored
with large new flag stones, each flag
will be 18 feet long 2 feet wide and 6 inches
with the edges dressed square and no
feather edged stones will be admitted,
these will be laid on a bed of concrete
3" thick well rammed. The joints
after being thoroughly raked out
will be pointed with asphalt.

Henry W. Stanger
Major D. C.
District Engineer

District Engineer's office
Bangalore
24th October 1877

Sunloar Tank -

An Estimate amounting to Rs 5930 for
removing old stones and relaying in the
floors of Commissariat Store rooms
in the Bakery Square with large flag
stones laid on 3" of concrete and pointed
with asphalt -

An Estimate amounting to Rs 850 for removing
old stones and relaying the floors of
all Liquor and Run godowns in
the Bakery Sq with large flag stone
laid on concrete and pointed with
asphalt -

Herbyth Part Major

X District Engineer

The first Estimate includes the
second - A specification will be
sent tomorrow - H. S.

STRICTLY CONFIDENTIAL

1865 Bangalore

The District Engineer.

Bangalore.

Colonel O'Connell

The

General of the

Army.

Enclosures

Dated 23rd October

1877

Received

Enclosures

is No. of

1

Has the honor to

herewith the under

Plan and Estimates as

requested

1- Survey plan of

Letter N^o 1722 of 6th July 1877 from the Asst D^r General
 " N^o 439 of 11th July " from the Executive Engineer
 Bracket N^o 1825 of 27th July " from the Asst D^r General

Mail Order 4835
 COMMISSARIAT OFFICE, M. E. RANGE

From THE EXECUTIVE COMMISSARIAT OFFICER
 Bangalore
 To The Army
 Madras

No. 2118
 Dated 27th June 1877
 Received 27th June 1877

Your Memo N^o 2118
 of 27th June 1877
 has the honor to
 forward correspondence
 as per margin regarding
 the flooring of the Com-
 missariat godowns
 being laid with Asphalt

Yours faithfully
 H. D. A. G.
 N^o 8219

Assistant D^r General's Office
 Bangalore 6th July 1877
 N^o 1722

From The Acting Asst D^r General
 Mysore Division
 To The Ex. Commissariat Officer
 Bangalore

Sir,
 I have the honor to forward the account
 showing 200 kub 6 1/4 of 5th Instant together
 with an estimate received from the District
 Engineer, for laying the floor of a Commissariat
 Godown in the Bakery Square and to request
 you will be good enough to state for the
 information of the Major General commanding
 whether you concur in the District Engineer's
 opinion that a stone flooring will answer
 the purpose as well if not better than one
 of Asphalt. It appears that the former
 if adapted will be a great saving to
 Government.

I have the honor to be
 Sir,
 Yr. Obedt Servant
 H. D. A. G.

N^o 439
 Commissariat Office, M. E. R.
 Bangalore 11th July 1877

From The Executive Commissariat Officer
 Bangalore
 To The Assistant D^r General
 Mysore Division
 Bangalore

Sir,
 In returning the enclosures which
 accompanied your letter N^o 1722 dated

1st July 1877 I have the honor to state for the information of the Major General Commanding that with all reference to the opinion of the District Engineer I am compelled to differ from him for reasons here under assigned

1. The whole of the Godowns have stone flooring and some of them have been recently repaired and laid on concrete but in spite of this the white ants made their appearance and destroyed Government property -

2. The flooring have been painted with tar but this also has proved ineffectual in keeping down the white ants -

3. The small superior Godowns in Burmah Camanor Secunderabad &c have been asphalted for many years past and no damage has been done to the flooring by the rolling of Casks thereon and the Casks have been preserved from the attacks of these destructive vermin.

4. The constant rolling of the Casks has loosened the flags and some have become broken and were replaced lately when the repairs of the said Godowns were being executed -

5. Under the above circumstances and the Godowns being much infested with white ants I should recommend that the whole of them should be asphalted as the only means of protecting Government property -

6. The question was referred for the opinion of the Commissary General

Madras who approved of the suggestion of asphaltting the whole of the Godowns

I have &c
(Signed) H. C. Wright Major
Adj. D. A. General

Assist. D. M. Secy's Office
Bangalore 27th July 1877

From the Assist. D. M. General
Mysore Division

To the Ex. Commisariat Officer
Bangalore
No 1825

Your No 739 of 11th Instant.

Informes that an estimate for Rs 4170 was submitted by the District Engineer for removing and relaying the floor of Commisariat Store Room in the Bakery Square with $\frac{1}{2}$ new stone flags laid on concrete and pointed with asphaltte and the work having been considered by the Major General as one not only cheaper but quite as lasting as asphaltte and less liable to damage from the movement of heavy weights along the floor, the estimate has been approved by his Order and returned to the District Engineer -

By Order/

(Signed) H. R. Elliot Esq
Offg. A. D. M. Secy

(True Copies)
H. C. Wright Major
Adj. D. A. General

GOVERNMENT OF MADRAS.
MILITARY DEPARTMENT.

20th November 1877, No. 6432.

Barracks and Buildings—Commissariat.

Read the following papers:—

No. 344. From Brigadier-General H. O'CONNELL, Quartermaster-General, to Colonel J. MICHAEL, c.s.i., Secretary to Government, Military Department; dated Head Quarters, Ootacamund, 8th September 1877, No. 659-6062.

I have the honor, by order, to forward, for the orders of Government, the approximate estimates as per margin.

A.—For asphaltting the floor of Commissariat store-rooms in the Bakery Square at Bangalore—Rupees 7,900.

B.—For removing and relaying the same floor with one-third new stone flags in concrete pointed with asphalt—Rupees 4,170.

C.—Pointing the same floor with asphalt—Rupees 690.

They are three different estimates for the repair or renewing of the floor of the Commissariat store-rooms in the Bakery Square at Bangalore.

2. Letter, No. 339, dated 21st August 1877, from the Officer Commanding Mysore Division, with enclosure, is also forwarded. His Excellency

the Commander-in-Chief concurs with the Major-General Commanding, that pointing the floor with asphalt is all that is needed; and he therefore approves and recommends for sanction the lowest of the three estimates—C (Rupees 690).

3. His Excellency is of opinion that the Order of Government, No. 2102, dated 28th May 1868, was not intended to mean that whenever the floor of a malt liquor store-room required repair, the existing floor was to be entirely removed, and relaid throughout with asphalt. It will be observed that such a course in the present instance would cost upwards of ten times as much as the repair of the floor.

From Major-General C. ELMHIRST, c.b., Commanding Mysore Division, to the Quartermaster-General, Ootacamund; dated Bangalore, 21st August 1877, No. 339.

I have the honor to forward, for the orders of His Excellency the Commander-in-Chief, the accompanying three estimates for repairing the floors of the Commissariat godowns in the Bakery Square at this station. The District Engineer, in submitting the first estimate, marked A, for asphalt flooring, amounting to Rupees 7,900, intimated that in his opinion a floor composed of stone laid on concrete, with asphalt pointing, would be quite as durable, if not more so than one composed entirely of asphalt, and would be less costly by Rupees 3,730, as shewn by his estimate, marked B.

Major Vibart, the District Engineer, in company with Lieutenant-Colonel Elliot, Officiating Assistant Quartermaster-General, carefully inspected the godowns, and were of opinion that by removing those flags which are broken and replacing them by new ones, and relaying those that have become loose, and pointing all the stones with asphalt, a great saving would be effected. An estimate for this last work, amounting to Rupees 690, is attached, and marked C.

The first estimate for a flooring entirely of asphalt was framed on a requisition made by the Assistant Commissary-General, but on his being informed that the District Engineer had been called upon to furnish an estimate for a less expensive flooring, he referred the matter to the Commissary-General, who in reply stated that sanction was accorded in G.O. of 28th May 1868, No. 2102, to laying all malt-liquor godowns with asphalt. The G.O. does not appear to have been communicated to the Assistant Quartermaster-General of this Division, but I beg to submit that the order can hardly be intended to apply to buildings which had already been floored with stone.

A copy of the Commissary-General's reply, above alluded to, is attached.

Memorandum from Colonel J. LOUDON, Commissary-General, Madras, to the Executive Commissariat Officer, Bangalore; dated 4th August 1877, No. 3620.

In the Order of Government, No. 2102, dated 28th May 1868, sanction is accorded to laying all malt-liquor godowns with asphalt.

If the godown in question is not for storing malt-liquor, there is no objection to the stone flooring approved by the Major-General, but the joinings should be well paved with pitch, as suggested in paragraph 5 of Colonel Moore's letter, No. 1, dated 24th October 1876.

No. 5158.

Referred to the Commissary-General.

FORT ST. GEORGE,
13th September 1877.

(Signed) J. MICHAEL, Colonel,
Secretary to Government.

No. 345. From Colonel J. LOUDON, Commissary-General, to Colonel J. MICHAEL, C.S.I., Secretary to Government, Military Department, Fort St. George; dated Madras, 2nd October 1877, No. 5298.

I have the honor to return the papers as per margin,* received for report with your reference order, No. 5158, dated 13th September 1877.

* One letter from the Quartermaster-General, to Government, No. 659-6062, dated 8th September 1877, with three estimates.

One letter from the Officer Commanding Mysore Division, to the Quartermaster-General, No. 339, dated 21st August 1877, and copy of letter from the Commissary-General, to the Executive Commissariat Office, Bangalore, No. 3620, dated 4th August 1877.

† Marked A.

† Correspondence marked B.

4. For a malt-liquor godown, the stones must be strong enough to bear malt-liquor casks, and be so firmly laid as not to shift or tilt up; and Colonel Walker reports that the floor at Bangalore fulfils neither of these conditions.

5. The rolling and shifting of malt liquor is a precautionary measure which cannot be dispensed with; it is therefore desirable that flooring which stands this operation best should be used; and for this purpose asphalt has been found most satisfactory.

6. The malt-liquor godowns in Madras were floored with asphalt about twelve years ago, and the Storekeeper-General's report§ on them shows that they have stood well and have never required repair, although the traffic on them has been heavy.

§ Marked C.

7. Treating the question on purely financial grounds, the report from Bangalore affords reason for concluding, that the greater outlay in the first instance will prove in the end the cheapest. I would therefore respectfully propose that, as the flooring of the malt-liquor godowns at Bangalore forms one-third of the whole, and as new flags appear to be required for one-third of the whole, that the other godowns forming two-thirds of the space be laid with the stones as proposed, and that the malt-liquor godowns only be laid with asphalt. This arrangement would render the purchase of any new stone flags unnecessary, admit of a considerable reduction in the estimate, and provide a piece of work suited for the wants of the department, and not likely to require further outlay on account of repairs for some time to come.

2. It appears from a report† of the Executive Commissariat Officer, Bangalore, that a portion of the flooring of the malt-liquor godowns at that station was repaired about a year ago, and that it is already in bad order and is in want of fresh repairs.

3. It further appears‡ that a portion of the stones were laid on concrete, but this was also a failure.

A.

From Colonel G. A. WALKER, Executive Commissariat Officer, Bangalore, to the Commissary-General, Madras; dated Bangalore, 19th September 1877, No. 1003.

With reference to paragraph 2 of your letter, No. 4802, dated 15th September 1877, I have the honor to state that only those godowns which are required for the stowage of malt liquor have been recommended to be laid with asphalt.

The stone flooring was repaired, about a year ago, by the Public Works Department, and is again in bad order, and requires fresh repairs.

To make a serviceable floor, the flags must be strong enough to bear malt-liquor casks without breaking, and the stones must be so firmly laid that they do not shift or tilt up when heavy casks are rolled over them. The present flooring answers neither of these conditions.

Estimate C is only for re-pointing the stones with asphalt, and replacing broken ones; but this will not suffice, as the stones will soon work loose, and the pointing give way, as it has done before; it is, therefore, objected to by this department.

Estimate B provides, in addition, that the stones shall be set in concrete. This may give the necessary stability; and, if so, the floor so laid would answer the purpose, in the event of Government not wishing to incur the expense of an asphalt floor.

C.

From Major E. S. BERKELEY, Commissariat Storekeeper-General, to the Commissary-General, Madras; dated Madras, 25th September 1877, No. 1696.

I have the honor to acknowledge your letter, No. 5016, dated 24th September 1877. I find that the malt-liquor godowns were asphalted about twelve years ago. I have been all over them and find no sign of any chipping or breaking up, although all these years the floors have been subject to having the casks coopered on them; also no repairs to the asphalt floor have been necessary.

The only damage I found was some few holes along the walls where the floor had broken in bodily from being undermined by bandycoots. These holes it will probably cost Rupees 10 to repair. So that, on the whole, I may safely say, that the asphalt is found to last well.

It is necessary that asphalt floors should be perfectly dry and hard before being brought into use. In some of our godowns, there is the marks of the casks sinking into the asphalt, from the casks having been rolled in before the asphalt was perfectly dry.

No. 5589.

Referred, for the consideration of His Excellency the Commander-in-Chief, with advertence to the Quartermaster-General's letter, No. 659-6062, dated 8th September 1877, and for favor of an approximate estimate, if His Excellency approve the Commissary-General's suggestion.

FORT ST. GEORGE,
6th October 1877.

(Signed) J. MICHAEL, Colonel,
Secretary to Government.

No. 316. From Brigadier-General H. O'CONNELL, Quartermaster-General, to Colonel J. MICHAEL, C.S.I., Secretary to Government, Military Department, Fort St. George; dated Head Quarters, Bangalore, 26th October 1877, No. 917-7195.

In returning correspondence referred to the Commander-in-Chief with your No. 5589, dated 6th instant, I have the honor, by order, to state that His Excellency the Commander-in-Chief visited the Commissariat godowns at this station, the Executive Commissariat Officer and the District Engineer being present. The latter officer stated that he considered large flag stones would be more durable and cheaper than asphalt for flooring, and that he was convinced that, laid in the way he proposed, there would be no probability of the stones tilting or shifting.

2. This being the opinion of a professional engineer, His Excellency considers that it would be well that his proposal be tried on a portion of the building in the first instance, and, if proved successful, the whole be similarly laid.

MILITARY DEPARTMENT, 20TH NOVEMBER 1877, No. 6432.

3. The proportionate cost of the two methods of flooring for the whole of the store-rooms is as follows:—

Asphalte	...	...	...	...	RS.
Large flags	...	...	...	...	7,900
	...	...	...	...	5,930

4. Memorandum, No. 785, dated 23rd instant, with two estimates and a specification, is enclosed.

No. 347.

ORDER THEREON, 20th November 1877, No. 6432.

The Governor in Council approves the suggestion of His Excellency the Commander-in-Chief, that the proposal of the District Engineer, Bangalore, to lay the flooring of the Commissariat godowns at that station with large flag stones, should be tried on a portion of the buildings in the first instance. A report of the result will be submitted in due course.

(True Extract.)

(Signed) J. MICHAEL, Colonel,
Secretary to Government.

(True Copy.)

W. H. James.

First Assistant, Mil. Dept.

To the Quartermaster-General.
" Commissary-General.

" Public Works Department, with nine enclosures. and 10 copies.

1341
No 1932 W Public Works Department.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 4 Dec 77.
Read the following

Proceedings in the Military Department } H.C. No 6432 of 20th Nov 1877.

His Grace the Governor in Council provisionally sanctions the estimate of Rs 5930 for reflooring with large flag stones the Commissariat Store rooms in the Battery Square at Bangalore, subject to the success of the experiment which should be carried out in a ~~very~~ limited area.

Colonel Moberly is authorized to set the work in hand at once funds to the extent of Rs. 300 to ^{be} commenced being provided from the Reserve.

To The Dist. Eng^r Bangalore
" Examiner P. W. Accounts
" Military Department

of Rs. 5930 D.S. 19.8.12.77

30/11
This sanction has been registered as Imperial No. 86 B of 1877-78.

W. A. R.

Govt of 1877

MILITARY.

To THE QUARTERMASTER-GENERAL.
Ac, Ac, Ac

Dated November, 20th.

Recd.

Not.

G.O., 20th November 1877, No. 6432.

S.

NOVEMBER.
Nos. 312-327.

Approving the suggestion of His Excellency the Commander-in-Chief, that the proposal of the District Engineer, Bangalore, to lay the flooring of the Commissariat godowns at that station with large flag stones, should be tried on a portion of the buildings in the first instance.

by a 4th Dec. 77 D.O. No. 45

Cur 30/11

Classified

Sept. of 1877

PUBLIC WORKS.

To

to H. B. Bangalore

Dated

Issued

Recd.

Encl.

G. O., 4 Decr 1877, No. 1932 W

Nos. 45-46

*Commissioner's Store Room
in the Bakery Square at
Bangalore. The estimate
for re-flooring with large
flag stones the —
sanctioned provisionally
and funds provided*

Sanctioned