

Public Works (1898) Department.

G.O., No. 2740 W

✓
DATED 22nd October '98

26/10/98

[Despatch Abstract.]

Collector's Cutcherry at Kurnool 31,060

Revised Estimate of Rs ~~31,060~~ 31,060 An
Constructing an upper Storey to the Sanctuary
with rework; And the Specification for terrace roofing
with "Mogul" plaster, Submitted by the Consgr.
Architect, circulated to offices of the Department
for general guidance.

280/15

J/S/CS

Government {1898} of Madras.
PUBLIC WORKS.

Spare copies

OCTOBER.

Revised estimate of Rs. 31,060 for constructing an upper storey to the —, sanctioned, with remark ; and the specification for terrace roofing with "mogul" plaster, submitted by the Consulting Architect, circulated to officers of the department for general guidance.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following papers:—

From Lieut.-Col. W. L. C. BADDELEY, R.E., Superintending Engineer, III Circle, to the Chief Engineer, Public Works Department, dated Bellary, 3rd August 1898, No. 1604 W.

Adverting to your memo. No. 1920 C., dated 29th March 1898, I have the honour to submit, for sanction of Government, a revised estimate with comparative statement, amounting to Rs. 30,500,* for constructing an upper storey to the Collector's office at Kurnool.

* Or Rs. 32,400, if the pencil alterations be adopted.

2. The excess of Rs. 4,700 over the original estimate of Rs. 25,800 sanctioned in G.O., No. 1618 W., dated 3rd July 1895, is chiefly due to the alterations proposed by the Collector, and increase of rates.

3. The cause of excess has been explained in the comparative statement for each item.

From the Consulting Architect to Government, dated 26th September 1898, No. 2010.

ABSTRACT.—Submitting a specification for terrace roofing with mogul plaster and directions for making and laying the latter.

ENCLOSURE.

Specification for Terracing.

Over the usual course of terrace bricks on edge lay and ram, to the proper slopes, concrete composed of—

- 2 parts brick broken to $1\frac{1}{2}$ inch cubes;
- 1 part slaked lime.

Wet the broken brick first thoroughly, then add the layer of slaked lime to measure, and turn it over and over till well mixed, adding so much water as will ensure a proper stiff admixture, and not drain out any of the brick dust or lime water. The terrace plaster to be laid over this.

Concrete should be composed of—

- 2 cubic feet slaked lime.
- $\frac{1}{2}$ cubic foot surki.
- $1\frac{1}{2}$ " sand.

Note.—This is for shell lime; for kunkur and stone lime, no surki is required. The proportion for latter should be—

- 1 lime, $1\frac{1}{2}$ sand to $1\frac{1}{2}$ sand.

The lime, sand and surki should be screened through wire screens 16 mesh, mixed dry in above proportions, and then ground with water, in which—

- 6 lb. jaggery,
- 2 " glue,
- 1 " gallnut,

has been mixed—the gallnut having been well pounded and soaked for 24 hours previously; after grinding the above to a good stiff paste (it can hardly be too stiff), add $1\frac{1}{2}$ lb. of gunny (hemp) chopped up fine, great care being taken to distribute it evenly through the mortar, for it should not be allowed to work into balls. Coarse hair, if available, is to be preferred, but it should have all grease boiled out of it. Continue grinding till all is thoroughly mixed. The consistency of the mixture, when properly made, should be such that it should stick fast to the fingers.

Having saturated with ordinary water the roof concrete, float a $\frac{3}{8}$ " to $\frac{1}{2}$ " coat of the above, evenly over all. Then place women and children in line to whip the mortar till it hardens, throwing a little sugar water over it from time to time. Then beat it briskly with tarpies or wooden knives, and afterwards finish with a rendering of the same mortar, working it up to a level surface with wooden floats and keep on rubbing the surface and sweeping off the sand which is expressed from the mortar for sometime, using jaggery and gallnut water freely. No fine coat of plaster is necessary.

The work should, if possible, be carried on continuously; the edge of one rendering ought not to harden before the next rendering is put on.

When a section of roof is complete stop up all weep holes, and let 3" to 9" of water lie on the roof for a long time, say, 6 weeks or more; the longer the better. The water will not percolate.

(Signed) G. S. T. HARRIS,
Consulting Architect to Government.

From the Superintending Engineer, III Circle, dated 6th October 1898, No. 44 C.

Note by the Chief Engineer, Public Works Department.

An estimate of Rs. 31,060 for constructing an upper storey to the Collector's office, Kurnool, is recommended for the sanction of Government in lieu of the estimate of Rs. 25,800 sanctioned in G.O., No. 1618 W., dated 3rd July 1895, with the following remarks:—

(1) Terrace roofing with "mogul" plaster, in accordance with the accompanying specification, should be employed for the roof. The rate allowed, viz., Rs. 28-8-0 per 100 square feet, was arrived at from work executed departmentally at Madras, details of which are given in a footnote on the comparative statement, page 3.

(2) Steel girders of the sections provided in the comparative statement should be used. The slope of the roof, about $\frac{1}{2}$ inch to the foot, should be obtained by fixing wooden battens to the upper flanges of the girders.

(3) Plastering has been allowed for the inside-walls of the rooms instead of pointing, to provide sufficient light; but the Executive Engineer can use his own discretion in the matter.

(4) The item Rs. 1,000 allowed for lightning conductors has been struck out. The improved method of lightning conductors has now been settled, and a circular will shortly issue on the subject. A supplemental estimate for the lightning conductor for this building can be forwarded in due course.

(5) The amount of the estimate as now revised will be Rs. 31,060.

7th October 1898.

(Signed) W. B. DEWINTON,
Chief Engineer.

No. 2740 W., 22ND OCTOBER 1898.

ORDER—No. 2740 W., dated 22nd October 1898.

The revised estimate, amounting to Rs. 31,060, as modified by the Chief Engineer, for constructing an upper storey to the Collector's cutcherry at Kurnool, is sanctioned, in supersession of the estimate of Rs. 25,800 sanctioned in G.O., No. 1618 W., dated 3rd July 1895.

2. Attention is invited to the note by the Chief Engineer recorded above.
3. The specification for terrace roofing with "mogul" plaster, submitted by the Consulting Architect, is circulated to officers of the Public Works Department for general guidance.
4. The sanction accorded in paragraph 1 of these proceedings has been registered as Provincial No. 76 W. of 1898-99, and classified as Civil Buildings—Original Works.

(True Extract.)

Under Secretary to Government.

To the Superintending Engineer, III Circle,
with enclosures.
,, other Superintending Engineers.
,, the Consulting Architect to Government.
,, the Superintendent of Works, Lighthouse division.
,, the Examiner of Public Works Accounts.
,, the Revenue Department.

Exd. T. K. Narayana Aiyangar.

Again G.O., dated

189 , No.

Again G.O., dated

189 , No.

Current No. 6522 of 1898, dated 3-Aug. 98, from S.E. the Circle.

Printed with the 8045 " 1898, " 26-Sept-98, " Cons. Architect to Govt.
Printed with the 8393 " 1898, " 6.10.98, " S.E. the Circle.
Printed with the 8393 " 1898, " Oct-98, Note by the Chief Engineer
D.W.D.

ORDER.

No 2740 W of 22.10.98.

The revised estimate
to Rs. 31,060,
amounting as modified by
the Chief Engineer, to Rs. 31,060 for
Constructing an upper storey
to the Collector's Cutcherry at
Kurnool, is sanctioned, in
Supersession of the estimate of
Rs. 25,800 sanctioned in G.O. No.
1618 W of 3. July 1895.

To the Secretary to Govt.
Revenue Dept.
for favour of Countermanding.

2. Attention is invited to the
note by the Chief Engineer re-
corded above.

3. The specification for
terrace roofing with "mogul"
plaster, submitted by the Cons.
Architect, is circulated to Officers
of the Public Works Department
for general guidance.

4. The sanction accorded
in para 1 of these Proceedings

No.

From the P.W.D. Draft order for counter initials
sanctioning revised estimate for constructing an
upper storey to the Collector's office Kurnool
Dated 7th October 1898

FOR ORDERS.

To M.S.

In G.O. 1618
3-7-95 the P.W.D.

sanctioned an estimate of Rs 25,800
for constructing an upper storey
to the Collector's office Kurnool.
This draft order now sent for
counter initials proposes to
sanction a revised estimate
of Rs 31,060, the excess over
the original estimate being
mainly due (1) to alterations
and additions proposed by
the Collector (2) to higher rates
and outside measurements
and (3) to omissions in original
estimate.

2. The draft may be counter initialed

rs.
8-10-98

For
10-11-98
S. H. 1078

Slipped X

has been registered as Pro-
vincial No 76 W of 1898-99 and
classified as Civil Building
Original works.

ACK
7.10.98
H. H. 1078

To the S.E. of the line with the
" Other Supts: Engineer
" Cons: architect to Govt
" Supt of Works Dis. House
" E. of P. W. Account
" Revenue Dept.

Note. The estimate is re-
viewed in the Chief Engineer's
note recorded above and in
the technical note, Slipped

ACK
7.10.98
H. H. 1078

The work has not yet been
commenced; no work
funds been allotted
H. H. 1078

Sum
H. H.

FOR ORDERS.

P. W. Department

Note by the Chief Engineer

An estimate of Rs 31,060 for constructing an upper story to the Collector's office, Kinnool, is recommended for the sanction of Government in lieu of the Estimate of Rs 25,800 sanctioned in G.O. No. 16184 dated 3rd July 1895 with the following remarks:—

1. Terrace roofing with "Mogul" plaster, in accordance with the accompanying specification, should be employed for the roof. The rate allowed, viz., Rs 28.8.0 per 100 sq. ft., was arrived at from work executed departmentally at Madras, details of which are given in a foot note on the Comparative statement page 3.
2. Steel girders of the Sections

sections provided in the comparative statement should be used. The slope of the roof, about $\frac{1}{2}$ inch to the foot, should be obtained by fixing wooden battens to the upper flanges of the girders.

3. Plastering has been allowed for the inside-walls of the rooms, ^{instead of painting} to provide sufficient light, but the Executive Engineer can use his own discretion in the matter.

4. The item Rs. 1000 allowed for Lightning Conductors has been struck out. The improved method of Lightning Conductors has now been settled, and a Circular will shortly issue on the subject. A supplemental estimate for the Lightning Conductor for this building can be forwarded in due course.

5. The amount of the estimate as now revised will be Rs. 31,060.

W. H. S.
7.10.98
E. W.

C.D. sanctioning estimate
can now issue

A. R.

1.10.98

Note by E. W.

An estimate of Rs. 31,060 for constructing an Upper Story to the Collector's office, Kuruvol, is recommended for the sanction of Govt. in lieu of the estimate of Rs. 25,800 sanctioned in G.O. No. 1618 W dated 3rd July 1895 with the following remarks:-

1. Terrace roofing with Mogul plaster, ~~will be done~~ in accordance with the ^{accompanying} specification, ~~which has been employed for the roof of the Consulting Architect to Government.~~ The rate allowed, viz. Rs. 28-8-0 per 100 sq. ft., was arrived at from work executed departmentally at Madras, details of which are given in a footnote on the Comparative Statement page 3.

2. Steel girders of the sections provided in the comparative statement ~~will~~ ^{shall} be used.

The slope of the roof, about $\frac{1}{2}$ inch to the foot, ~~will be~~ ^{shall be} obtained by fixing wooden battens

obtained

2 inches
to the foot

to the upper flanges of the girders
3. Plastering has been allowed
for the inside of the rooms
as it has been pointed out
that with pointing, there
will not be sufficient light.

shd. - The item Rs 1,000 allowed
for lighting conductors

has been struck out. as the
improved method of lighting
conductors is under consideration
conductors has now been killed,
negatives. A circular will shortly come on the subject. A

The amount of the estimate
as now revised will be
Rs 31,060.

APK
1-10-98.

[Signature]
7-10-98

*Resub to the
Copies*

Plastering has been allowed
in the inside walls of the
rooms, to provide sufficient
light, with the balance can
be in my discretion in
the matter

supplementary estimate for
the lighting conductors for
this building can be
forwarded in due course

Public Works (1898) Department.

CURRENT No. 8393

From The Superintending Engineer,
M. Circle,
Bellary

Order

No. 44C

Dated 6th October 1898
Received 3 8.10.98
Registered 3
Enclosures 2
Spare copies

SUBJECT.

Collector's Office at Kurnool -
Stating that if terracing with
slab stone and concrete is to be
provided for the upper story of the -
a rate of Rs 28 must be allowed.

6522-37502
8045

to the
R
for
a
16
w
L

Copy of letter from John C. Johnston Esq., Executive
Engineer, Kurnool Division, No 3242 dated 28th
September 1898 to the Superintending Engineer, III
Circle, Bellary.

Reference your N^o 1605 of 3-8-98.

With reference to your last para, I have the honour to state, as my opinion, that the ordinary Madras terracing is superior to that with slabs and concrete - provided good terrace bricks can be obtained - The slab roof is so much heavier than the Madras roofing - there is more dead weight with it. The present roof of the Cutcherry is of the ordinary Madras style, was put up about 20 years ago - and has not given the least trouble since. There is always a difficulty in obtaining good bricks in Kurnool; but the difficulty exists in the case of small works only. There is good brick soil to be obtained near Kurnool - but the land is private property and it becomes expensive to attempt to make a few bricks. The case is different when a large quantity is required. The bricks for the old roof were made on this private property, and the supplier was enabled to make satisfactory arrangements with the owner, and there seems no reason to doubt but that satisfactory arrangements can be made again.

(True Copy)

Wm. B. B. B. / Lieut. Col. R. B.

Sept: Engineer, III Circle.

0. W. C. 2
8393/98

3RD CIRCLE.

3RD CIRCUIT.
Bellary 6th October 1898.

No. 44C

FROM

Lieut. Col. W. L. C. Baddeley R. E.
SUPERINTENDING ENGINEER,
IIIRD CIRCLE,

To

THE Chief Engineer
P. W. Department,
Madras.

Sir,

2 Enclosures.

* card 8045/98
sent to W on 3/10

Sir,

With reference to my note attached to the revised estimate of Rs 30,500 for constructing an Upper Story to the Collector's Office at Kurnool submitted with this Office No 1604 dated 3 August 1898, I have the honour to forward herewith copy of letter No 3242 dated 28 September 1898 from the Officer in charge of Kurnool Division with a data sheet for the rate of Rs 28 per Sq. ft. for terracing with 2" thick slab stones and 6" concrete and to state that if this description of roof is to be provided for the Upper story of the Collector's Lutcherry at Kurnool a rate of Rs 28 must be allowed in the estimate which is under disposal in your Office.

I have the honour to be,

I have the honour to be,
Sir,

Your most obedient servant,
 Geo. B. Gordon, Lieut. Col. R. I.

Sept: Engineer, III Circle.

28. 8.

925416

Public Works (1898) Department.

CURRENT No. 8045

Order

From

The Surveying Architect
to the Government
of Madras

No. 2010

Dated 26th September 1898

Received

Registered

Enclosures /

Spare copies

SUBJECT.

Submitting a specification
for terrace roofing with
Mogul plaster and
directions for making
& laying the latter.

7861-4232

C.A.'s Specification for Mogul
plaster, as revised by me, still
issue as a separate Circular

AsK 29.9.

925416

From

The Superintending Engineer,
IIrd Circle,
Bellary.

To

The

Dated

Received

189

Enclosures.

No.

Subject.

Cus 8393

Submitted.

The estimate for
an upper story for the
Collector's office at
Kumarak was sent to
you on 3rd inst.

This paper is now
awaiting its return.

Cus
11.10.98

T

You had better keep this
until return of estimate,
and after, if necessary,
rate for terracing to the 26th.

AsK

11.10.98.

Wm

The estimate may be recorded.
You have since altered the work
from Cuddalore slab terrace to brick
on edge terrace with Mogul plaster.

AsK

25.10.98. 23.11.98.

Specification for Terra cing

W
This had better be
printed & issued
for General Hindland.
A.H.
1.10.98.
Cm
Egg
com

Over the usual course of terrace bricks on edge, lay & ram, to the proper slopes, concrete

composed of -

2 parts brick broken to $1\frac{1}{2}$ inch cubes

1 " slate limo.

Wet the broken brick first thoroughly, then
add the layer of slaked lime, ^{1/5} measure, &
turn it over & over till well mixed, adding so
much water as will ensure a proper stiff
admixture, and not draining out any of the
brick dust or lime water:—

The Trench plaster to be laid over this.
Concrete should be composed of-

2 cubic feet slaked lime

$\frac{1}{2}$ cubic ft. soon new

1 1/2 " sand

Note:- This is for shell
lime; for Kunkers, &
stone lime, no sort
is required. The propor-
tion ^{for latter} should be
1 lime $1\frac{1}{2}$ sand to $1\frac{3}{4}$ sand

The lime sand & soother should be screened
thru. wire screens 16 mesh, mixed dry
above proportions, & then ground with water
in which

6 lbs jaggers } has been mixed the gall-n
2 " ^{chire} nut } having been well powdered &
1 " ^{gall-n} nut } soaked for 24 hours previous.

After grinding the above to a good stiff paste,
 (it can hardly be too stiff) add $1\frac{1}{2}$ lbs of
 gunny (hemp) chopped up fine, great
 care being taken to distribute it evenly,
 thus: the mortar, for it should not be allowed
 to ^{work with balls} ~~ball~~. Coarse hair, if available, is to be ~~a~~ ⁱⁿ ~~case~~ ^{of}
 preferred, but it should have all grease
 boiled out of it. Continue grinding till
 all is ^{thoroughly} ~~intimately~~ mixed. The consistency
 of the mixture, when ~~perfectly~~ ^{properly made}, should
 be such that it should stick fast to the
 fingers.

Having saturated with ordinary
 water the roof concrete, float a $5\frac{1}{8}$ " to $3\frac{1}{4}$ " coat
 of the above evenly over all. Then place
 women & children in line to whip the
 mortar till it hardens, throwing a little
 sugar water over it from time to time. Then
 beat it briskly with tarps or wooden
 knives, ^{and afterwards} ~~afterwards~~ finish with a
 rendering of ^{the} same mortar, working it
 up to a level surface with wooden floats,
 & keep on rubbing the surface & sweeping
 off the sand which is expressed from the
 mortar

What this
 is meant is
 unknown.
 C. A. says it is
 a technique.

mortar for some time, using jaggery and
 gall-mush
 galam water freely. No fine coat of plaster
 is necessary.

The work should if possible be
 carried on continuously; the edge of one
 rendering ought not to harden before the
 next is put on.

When a section of roof is complete,
 stop up all weep holes, and let 3" to 9" of water
 lie on the roof for a long time, say 6 weeks
 or more, the longer the better. The water
 will not percolate.

C. A. Davis
 Consulting Architect
 to Government

It means force is squeezed out
 by pressure & several wh.
 a solid before & several more of
 it has appeared to me that
 wet sand should be used
 2-10-10

No. 3750C.

Government of Madras.

DEPARTMENT.

Madras, 26 Aug 1898.

OFFICE NOTE.

From

P. W.

To

C. A.

No. 2010 of 26 September 1898.

I.

W.W.

Herewith.

Consq. Archt.
Wg. out.

W wants a specification for terrace roofing with 'Mopul' plaster, and with directions for making & laying the latter. Please supply it, as we propose such roofing instead of the ordinary terrace roofing.

A.P.W.

24.8.98.

845/58

Current No. 6522

Letter No. 1604 W

Dated 3rd August 1898

From the Sups. Engineer III Circle

NOTE BY TECHNICAL SECTION.

Name of work Collector's Office, Kurnool.

Revised Estimate.

Amount Rs 30,500.

The Sups. Engineer III Circle

Submits for sanction of Govt.

a revised estimate with com-

parative statement amounting

to Rs 30,500 for constructing

an upper story to the Collector's

office at Kurnool with reference

to Chief Engineer's Memorandum

No. 1920 C dated 29th March 1898.

The necessity in this revised

estimate and comparative

is shown in Technical note, viz

(Flag C) dated 16.3.98, as also

the history of the estimate from

date of sanction of original

estimate in Rs 25,800 in G.O. Dated

No. 1618 W dated 3rd July 1898. This

as will be seen from the

Sups. Engineer's note & letter

from Executive Engineer

1. When the above C. Stabs
were employed for fencing,
as they have been used in
the L.M.R. with success, &
are cheap & easily procured
in Ceded Districts. But they
are certainly heavy, & were tried
on the bridge, coast at Cuddalore
where not altogether a success.
Hence at a specimen for fence
copying from C.A. with line

Thos. J. Blaxter, with direction
for making, & laying the letter
& substitute it in this
estimate for the copying
W provided. The other

See remarks within
alterations proposed
are approved. The est.
can then be submitted
for sanction

L.H.C.

24.8.98

1. When C.A. submit specifica-
tion, revised estimate, & make
draft note & G.O. sanctioning
it
A.H.
24.8.98.

Division (Flag R) the
Estimate for Rs 30,500 can hardly
be called a revised estimate
as 'no work has been commen-
ced and no funds have
been allotted'. The Estimate
originally sanctioned for
Rs 25,800 did not bear the
Collector's signature ^{in token} of approval,
and it was ordered that
this should be done be-
fore the work was commenced.
When the Collector was applied
to for his countersignature
he suggested several alterations
and the Estimate was
recast to meet his wishes.
The Govt need not accept
these alterations if they do
wish to do so, and may
order that the original
Estimate for Rs 25,800
should stand.

The excess on Estimate
from Rs 25,800 to Rs 30,500
is said, by the Executive
Engineer, to be due entirely
to alterations in design pro-
posed by the Collector
and minor, if approved,
he accepts as an original

This clear, from the Comparative
Statement, to which the excess is
due, viz
(1) To alterations & additions pro-
posed by Collector
(2) To higher rates, & outside
measurements
(3) To omissions in original esti-
mate.

It does not seem that
it is necessary to enter into all
this detail. There is nothing
brought at in the Collector's
suggested alterations, & the ap-
proval of the Rev. authorities
is essential.

It is not at all clear why the
Cuddalore slab roof was re-
suggested, or what advantages
over the ordinary slab terrace
are claimed for it. Its weight
as given by Mr. Johnston is
200 lbs per sq. ft. against
90 lbs for ordinary terrace
roofing. The former figure seems
too large, but such a roof is
presumably a good deal heavier
in than ordinary terrace.

In the original estimate
a rate of Rs 16 per square was
allowed for terrace roofing,
but this was struck out, and
a Cuddalore slab roof allowed
for at a rate of Rs 16 per square.
The E. & S. now report that
this is an impossible rate,
& that such roofing cannot
be done under Rs 30 per
square. For this rate, it did

Estimate. The explanation of
excess is given, item by item, in
the comparative statement
forwarded with the Estimate,
and condensed in Statement
A of this note.

The Sups Engineer offers certain
suggestions from para 4 of his
note which would raise
the amount of the Estimate
to Rs 32,400. These altera-

are noted in pencil in
Estimate, and exhibited in
Statement B of this note.
The sections of rolled steel
girders are modified to
suit a roof made of 2"
Cuddalore Slabs and 6"
concrete. - Vide. Calculation
Sheet attached.

The rate Rs 16 per square for
roofing with 2" Cuddalore
Slabs + 6" concrete plastered,
is commented upon by the
Executive Engineer in his
letter No 1646 dated 25th July
1898 to the Sups Eng. III Circle.
The rate proposed by him
was Rs 30 a square. Data
may be called for if this
form of roof is to be
advised to. The Sups

Engineer prefers ordinary
Madras Terracing and
remarks that the type
of roof proposed was based
on a Circular of the Super
Engineer III Circle in 1896.
It is also pointed out that
that plastering, and not
pointing, should be allowed
in the inner rooms as
with pointing there will not
be sufficient light.

The item Rs 1,000 allowed
for Lightning Conductor
may be omitted, for the
present, as the matter
is under investigation
by Mr. Aschpitz.

St. C. W.
17.8.98.

W I would suggest that the
S.E. be asked to give data for
the cost of ordinary terracing at
Kurnool, as it is not likely that
a roof of Cuddalore slabs & 6" of
concrete can - especially off the
railway line - be any cheaper
than the ordinary terrace-roof of
terrace bricks, flat tiles, & concrete.

A.E.K.

21.8.98.

be possible to do ordinary
terracing. The S.E. gives a
rate for such terracing, but
he appears to have arrived
at it quite arbitrarily, since he
takes of Madras rates of several
years old. The Cuddalore rate
for such roofing is Rs 30 per square
& there is no reason why it
should be more at Kurnool.

This can be allowed.

12-4

Can be cut out

10-2

* When we have got the, the
section of piers can be
calculated

The rate he proposes of Rs 35
per square seems far too high.

Collector's Kutchi Kurnool

Calculation Sheet for Rolled

Steel Girders.

Side Rooms-

Cuddalore Slabs - 21465
Terrace 26'6" x 9' x 1/2" x 120 = 5764

Concrete 26'6" x 9' x 1/2" x 120 = 14310

Joists 19 x 9 x 3" x 5 3/4" x 46 = 942
21016

Accidental load

26'6" x 9 x 80 = 19080

Total - 40096

Total - 18.5

* I have brought these
slabs myself. & 170 lb
in weight is the proper
weight

Note & enter in the
Circular

A.E.K.

24.8.98.

Wrote the
25/8.

W = L x W
= 26.5 x 18 = 477

Side page 23 Down an Long 40's
handbook opposite 545.43

the normal height of girder is 18" x 7"
75
82 lbs per foot run - safe against deflection

Center rooms-

Cuddalore Slabs - 11981

Terrace 17 3/4 x 7 1/2 x 1/2" x 120 = 3217

Concrete 17 3/4 x 7 1/2 x 1/2" x 120 = 7988

Joists 13 x 7 1/2 x 3" x 5 3/4" x 46 = 587

Accidental load

17 3/4 x 7 1/2 x 80 = 10650

Total the 22392

Total Tons 10.3

W = L x W
= 17 3/4 x 10
= 177.5 say 180

Side page 25 D L 40's handbook opposite
180.96 - the normal height of girder
is 12" x 5" - 39 lbs per foot run -
safe against deflection -

17-8-98

N.B. Calculating for ordinary
Terrace Roofing the sections
of piers are not altered.
Side pencil figures.

A.E.K.
1.10.98

The principal items of Excess are the following.

Item No	Sub. Head	Amount of Excess - Rs.	Reasons
<u>Lower Storey</u>			
2	Removing Windows & re-fixing doorways etc.	150	asked for by Collector
6	Providing iron railings near Verandah	245	do
7	Leak doors $\frac{1}{3}$ P & $\frac{2}{3}$ V.	416	do
3, 4, 5, 8, 9.	Petty Excess	136	do
<u>Upper Storey</u>			
10	Coursed rubble Stone 1 st floor	600	asked for by Collector & increase of rate as per detailed data which accompanied Est.
11	Flat Archwork	431	Introduction of archways & windows by Collector
12	Chisel dressed Ashlar Work	160	Less quantity due to introduction of archways & excess rate found necessary.
14	Stone cornice in Chuanam	105	orig. Est. No. 1 too low in rate. Rs 1-4-0 kind
16	Pointing with Chuanam	358	Pointing Arches & Windows ^{ways} proposed by Collector.
17	Cuddalore Slab & concrete Terrace	1041	Instead of ordinary Terrace.
19	Leak wood doors & Windows $\frac{1}{3}$ panelled & $\frac{2}{3}$ Venetian	2161	In place of $\frac{1}{2}$ P & $\frac{1}{2}$ V & additional doors proposed by Collector
21	Leak wood V. Windows	216	Extra, proposed by Collector.
22	- do - with glazed fanlights	96	"
24	Leak wood wrought & painted	90	Quantity less & excess in rate
25	Steel Girders	1870	Introduced in place of girders of less section.
26	do	560	
27	do	80	
28	do	52	
30	Screens - Black, with planks $\frac{3}{4}$ "	700	Required by Collector
32	Special Staircase - near Verandah	200	do
35	Lifting conductor	700	do
40	Zinc downfall pipes 50'	448	In place of Zinc water shoots
13, 18, 20, 23	Petty Excess	208	
29 & 37		224	
		370	
		11617	
	Savings as detailed above	6917	
	Total Excess	4700	

H.M.
17.8.98

P.F.O.

No 35
high.

Khan
Terrace bridge
Alk
21.8.98.

Savings.

Item No	Int. Head	Amount R ^s	Reasons.
15 ^a	Planking 2 coats	4 17	Painting provided instead.
16 ^a	Ordinary Terraceing	16 69	Replaced by Cuddalore Slab Concrete Terraceing
18 ^a	Peak Dors + Windows $\frac{1}{2}$ haw ellus + $\frac{1}{2}$ Ventilation	16 75	Replaced by $\frac{1}{2}$ Panel + $\frac{1}{2}$ Ventilation ironwork by Cuddalore
24 ^a	Girders Steel	24 68	Replaced by girders of Laysa Section.
29 ^a	Live water shoots	4 48	Replaced by Live down fall pipes
6 ^a 7 ^a 7 ^b 38 & 39	Petty Savings	240	
	Total Savings	69 17	

H-2-11.
17/8/98

B.

Alterations suggested by Sup. Engineer

B

Item No	Int. Head	Amount R ^s	Reasons.
17	Terracing	12 35	Substituting ordinary masonry Terraceing for Cuddalore Slab Concrete Terraceing
25	Steel Girders	5 50	* Increased Section of Girders
26	— do —	8 0	
28	— do —	12	
	Contingencies	61	
	Petty Supervision	42	
		19 80	
27	Wall plate girders	80	omitted
	Net increase	19 00	over Est R ^s 30,500 making Est R ^s 32,400.

Yes, unnecessary

H-2-11.

17/8/98

* Why the girders should be increased for an ordinary terrace roof is not apparent. It is not worked out anywhere. As a terrace roof, when it is practically self supporting, it is quite safe to allow, as is very commonly done, that its outside weight, including live as well as dead load, is no more than 100 lbs per sq. ft. The girders, as C. A. has AOK limited, did of course bear the weight until the terrace was built.

True
is
pro
to

Public Works (189⁸) Department.

CURRENT No. 6522

Order

From The Superintg. Engineer
Cleveland
Bureau
No. 1604 W

Dated 3 — 8 — 98

Received

Registered } 5. 8. 58

Enclosures 22 (6 plans)

Spare copies

SUBJECT.

Collectors Office
Removal.

Forwards for sanction
of Government a revised estimate amounting to
Rs 30500 for construction of an upper storey to

U. S. 298

12/8

15416

For sanction
12-8-98
m/

BACK PAPERS.

FURTHER PAPERS.

No.	Date.	No.	Date.
1920C	29-3-98		
3736C	3-7-97		
1618W	3-7-95		

Letter from John L. Johnston Esq. Esq. Engineer
Kurnool Division, N. 1101 dated 25th July 1898.
to the Superintending Engineer, III Circle, Bellary.

With reference to N. 1101 of 1-7-98 returning
the plans and estimates for building a store to the
Collector's Office at Kurnool, I have the honour to
inclose calculations for rolled steel girders for the
centre and side wings for approval. The plans
and estimates bear the countersignatures of two
Supt. Engineers and although the results obtained
by me in my calculations differ considerably
from those arrived at in the estimates. I do not
feel at liberty to make any alterations. The
data assumed by me were those used for
ascertaining scantlings of steel girders for the
Police Office at Kurnool and Sub Magistrate's Office
at Nandyal, with Mr. Larrinier's approval.

2. The wall plate girder should be omitted
in my opinion. My draftsman says Mr.
Longston considered it necessary and allowed
for it in the estimate. But it is not required.

3. There are two sections A A. one on a
sheet prepared in 1894 and the other showing
the alterations proposed by the Collector subsequently.

The

The older section should be cancelled.
4. A new copy of the comparative statement is enclosed as also a report accompanying the estimate.

6. I beg to call attention to the rate for roofing with slates & concrete for which a span is allowed against Rs. 300 proposed in this Office. The higher rate allowed for flat tiles and plaster, which are necessary if the roof is expected to be watertight.

6. The inner rooms should be plastered and not merely painted. With painting alone there will not be sufficient light.

(True copy)

Wm. B. B. B. Lieut. Col. R. E.

Supt. Engineer, III Circle.

3-8-98

30-7-98

221

Collector's Lutchery Room

Calculations for rolled steel girders for
Upper roof

Side wings.

Span = 26 1/2 feet

Centre to Centre = 9 feet

Weight of roof per sq ft = 200 lbs

Total weight on each girder = $\frac{26.5 \times 9 \times 200}{2240} = 21.3$ tons

This is no doubt due to the addition of flat tiles & plaster to the Cuddalore slates & 6" of concrete originally proposed.

Factor of safety = 4 for a slab of concrete roof it should not be less than 4.

Actual load multiplied into spans
= $21.3 \times 26 1/2 = 564.45$ tons.

From Dorman and Long's Tables it is seen that a girder 18" x 7" x 82 lbs will suit.

Length of girder should be 29 1/2 feet.

Centre rooms.

Spans = 17 3/4 to 17 1/2

Centre to Centre = 7 to 7 1/2

Girders should bear on the walls more than 9" at each end.

18" at each end is correct and they need not be arranged end to end in a straight line

The plans appear to have been drawn up under the direction of various officers, and the ones now submitted have been clearly marked to show that they refer to the revised estimate of Rs 30500. I would offer the following suggestions.

This was arrived at by allowing the maximum line load of 120 lbs per sq. ft.

The

The wall plate girders 25x10" 5' long 11 in all. (1)
 The 11 long rolled steel girders should be 12x12" x 7' and the 8 shorter ones 20x12x6'. The weights will respectively 75 & 39 lbs per foot runs. The former will carry a distributed load of a little over 25 tons with a factor of safety of 2. The latter will carry a little over 12 tons under the same conditions.

I should make the two small girders for the clear span of the following dimensions 10x8x6; they will carry nearly 10 tons conditions as before.

The prices of them would be as follows:
 11 girders 18x7" Rs. 2,400
 8 girders 12x6" Rs. 640
 2 girders 8x5" Rs. 600

I understand that in Northern India it is considered a good plan to make terrace roofs of slab stones with concrete over them, omitting all flat tiles and plaster.

This I presume is the reason why the rate for the terracing is taken as Rs. 16 per square.

Ordinary terrace roofing as constructed in Calcutta would be double the rate.

I have no experience whether the cheaper form will be found satisfactory, but it might

What is the matter with advantage over ordinary terrace? It is cheap & efficient.

There is nothing to show the rafters ever worked out.

Would it? I should like to see that proved.

might be tried. All the rooms should in my opinion, be plastered inside.

For convenience of check, the alterations in the estimate that would be caused by my proposals, have been entered in pencil.

The rate of 16 Rs. per square for the terrace roof appears to be too low, as all the materials will have to be carried to a height of 36 1/2 feet above the ground level. The type of roof is based on a circular by the Superintending Engineer, III Circle, dated 13th August 1896, but in the design for the building under consideration wooden joints are provided, and it is also not practicable to carry out one of the provisions of the circular or specification viz. "parapets of all kinds are absolutely prohibited."

Why not?

Wm. Baddeley Esq. Ld. Col. Rd.

1.8.97

Super. Engineer III Circle.

30-7-97

No. 1604, W

Superintending Engineer's Office,

3RD CIRCLE.

Bellary 3rd August 1898.

FROM Lieut. Col. W. L. C. Baddley B.E.
SUPERINTENDING ENGINEER,

IIIRD CIRCLE,

To

THE

Chief Engineer,
P. W. Department,
Madras.

Sir,

Enclosures, 15

1 Revised estimate
with abstract (11 sheets)

1 Comparative statement
(6 sheets)

2 Reports

1 Specification.

2 Copies of Engr's
letters with a
calculation sheet
for strength of
girders.

1 File of original
estimate.

1 Supy. Engr's note.

6 Sheets of plans &
sections of the
building.

15

15

X or Rs 32,400

if the pencil alterations
be adopted -

Adverting to your Memorandum No. 1920C dated 29th March 1898, I have the honour to submit for sanction of Government a revised estimate with comparative statement amounting to Rs 30,500 for constructing an Upper storey to the Collector's Office at Kurnool.

2. The excess of Rs 4,700 over the original estimate of Rs 25,800 sanctioned in G.O. No. 1618W dated 3rd July 1895 is chiefly due to the alterations proposed by the Collector, and increase of rates.

3. The cause of excess has been explained in the Comparative statement for each item.

I have the honour to be,

Sir,

Your most obedient servant,

Lieut. Col. Baddley B.E.

Supy. Engineer, III Circle.

WLB
30-7-98

Over 3
5522/50

5522/50

From

The Superintending Engineer,
IIIrd Circle,
Bellary.

To

The

Dated

Received

189

Enclosures.

No.

Subject.

1. The enclosed
2. The enclosed
3. The enclosed
4. The enclosed
5. The enclosed
6. The enclosed
7. The enclosed
8. The enclosed
9. The enclosed
10. The enclosed
11. The enclosed
12. The enclosed
13. The enclosed
14. The enclosed
15. The enclosed
16. The enclosed
17. The enclosed
18. The enclosed
19. The enclosed
20. The enclosed
21. The enclosed
22. The enclosed
23. The enclosed
24. The enclosed
25. The enclosed
26. The enclosed
27. The enclosed
28. The enclosed
29. The enclosed
30. The enclosed
31. The enclosed
32. The enclosed
33. The enclosed
34. The enclosed
35. The enclosed
36. The enclosed
37. The enclosed
38. The enclosed
39. The enclosed
40. The enclosed
41. The enclosed
42. The enclosed
43. The enclosed
44. The enclosed
45. The enclosed
46. The enclosed
47. The enclosed
48. The enclosed
49. The enclosed
50. The enclosed
51. The enclosed
52. The enclosed
53. The enclosed
54. The enclosed
55. The enclosed
56. The enclosed
57. The enclosed
58. The enclosed
59. The enclosed
60. The enclosed
61. The enclosed
62. The enclosed
63. The enclosed
64. The enclosed
65. The enclosed
66. The enclosed
67. The enclosed
68. The enclosed
69. The enclosed
70. The enclosed
71. The enclosed
72. The enclosed
73. The enclosed
74. The enclosed
75. The enclosed
76. The enclosed
77. The enclosed
78. The enclosed
79. The enclosed
80. The enclosed
81. The enclosed
82. The enclosed
83. The enclosed
84. The enclosed
85. The enclosed
86. The enclosed
87. The enclosed
88. The enclosed
89. The enclosed
90. The enclosed
91. The enclosed
92. The enclosed
93. The enclosed
94. The enclosed
95. The enclosed
96. The enclosed
97. The enclosed
98. The enclosed
99. The enclosed
100. The enclosed

81