

Public Works (1895) Department.

ORDINARY.

G.O. No. 2.76 W

DATED 5. 2. 95.

[Despatch Abstract.]

BACK PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

GOVT. of {1895} Madras.

31-1-95 No 363-C
16-1-95 No 146-C
19-10-94 No 2659W
12-1-91 No 128W

To

The Public Works Dept.

276 Wd, 5 February 1895

Communicated to the
Subty Engineer in Charge

Decs. 1.2.95

Copy
9/11
S. C.

Proceedings, dated 29th Jan 4 1895.
No. 74

S. C. in Charge
En P. W. D.

DESPATCHED
5 FEB. 95

Subject.
Exempting T. Bapiraju
from the Examination
rules in view to his
employment as a clerk
5th class, 18th grade
Public Works Dept.

S. C.

With order

10/2/95

Educational Department.



PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following paper:—

*Endorsement of the Public
Works Department, dated 16th
January 1895, No. 146 C. on letter
from the Superintending Engineer,
2nd Circle of 9th January 1894, No. 22988.*

Order: 29th January 1895, No. 74.

*S. Bapiraju will be exempted
from the examination rules in view
to his being employed as a clerk
5th class, 1st Grade, Public Works
Department.*

/ True Extract

*W. H. C. Muttiah
for Chief Secretary*

To The Public Works Dept.

Adm

When given for copying _____
When copied _____
When examined _____
When signed _____ } 191

READ AGAIN G.O., No.
191

DATED

CURRENT No.

ENCLOSURE NO.

ORDER OF GOVERNMENT.

A A A A A A A

LETTER OF GOVERNMENT.

ATTACHMENT WITH DEDUCTION.

PAPERS NOT FILED UP, BRING MEANT FOR DEPT. IN ORIGINAL.

N.B.—

A = Copy in full.
B = Not to be copied.
C = Copy abstract only.
D = Copy heading only.

CN^o 9039
Govt. of (1895) Madras.
PUBLIC WORKS.

Dated

7/2

Recd.

Encl.

G.O.,

5/2

1895, No.

277W

Medical College, Madras.

Estimate of Rs 17,410 for
extending the Chemical
Laboratory of the — sanc-
tioned, with remarks for
execution when funds are
available.

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Is 277 W d 5 February 1895. PUBLIC WORKS DEPARTMENT.
B.P. W. d. 5
but W. d. 5

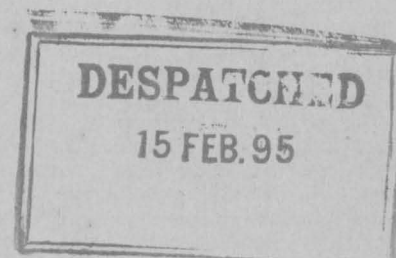
PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following

Proceedings of Govt in the Educational Deptt No 883 d 21 Nov 1894
Note by the Chief Engineer P.W. Deptt d 1/2/95
3 Pra

The estimate amounting
to Rs 17,410 as reduced by the Chief
Engineer P.W. D. for extending the
Chemical Laboratory of the Me-
dical College at Madras is
sanctioned for execution when
funds are available.

2. Attention is drawn to the
Chief Engineer's note recorded above.
3. This sanction has been
registered as Provincial No 101
W of 1894-95 and classified
as Civil Buildings, Original
Works.



Is The C.A. to Govt with 9 enclos.
" Exar P.W. Accep
" Educational Deptt
(40-1,000-26-11-94.)

C. W. d. 5
3/2/95

Dr

Cu

Estimate for the extension
of the Chemical Laboratory of
the Medical College, Madras.

T. H.
B. C. M.

C. No 9039

P. W. D.

2 Piece

Note by the Chief Engineer P.W.D.

The foundations of the
extension to the Chemical La-
boratory are proposed to be
laid partly of concrete and
partly of masonry. The under-
signed considers that they should
be made of concrete throughout
to ground level particularly
as a saving of Rs 230 will
be thereby effected. The estimate
has accordingly been reduced.

S

E. W.

Cur
31/55

Cur

No. 277 Wd 5 February 1895.

Current No. 9039

Letter No. 883

Dated 21 November 1894

From the Educational Dept.

NOTE BY TECHNICAL SECTION.

Name of work. Extending the Chemical Laboratory of the Medical College, Madras.

Amount of Estimate Rs 17640.

The plans & estimates under review, amounting to Rs 11960 + 5680 = 17640 in all, have been framed with reference to G.O. No. 2022 W dated 7th August 1893 & provide for extending the chemical laboratory of the Medical College at Madras & for fittings & fixtures &c. thereto.

The proposed extension will be 47.6' in length & 25 feet in breadth with a verandah 9.3' in breadth. The end or south wall of the existing laboratory will be removed also the wall immediately above, in the first floor, as per plan submitted.

A mild steel girder of a section 20" x 17" will be introduced in place of the south wall proposed to be removed & the upper wall rebuilt on it, as shown on plan.

To find section of girder to carry 55 tons.

Let R = moment of resistance in square inches

$W = 55$

$L = \text{span } 26 + 12$

$C_0 = \text{constant} = 12$

$K = \text{co-efficient of safety} = \frac{\text{modulus of rupture}}{3}$

$$= \frac{32}{3} = 10.66.$$

$$R = \frac{WL}{C_0 K} = \frac{55 \times 26 \times 12}{12 \times 10.66} = \frac{17160}{127.92} = 133.44$$

$$= 218.$$

By table, if $R = 182.51$, section of girder will be 20" x 8" with mean thickness of flange = .97

As allowed 3 girders of flange .5" each, as he has a surplus in stock so he tells me. The provision is more than ample.

By the same formula 907 girders will be found to be strong enough.

The foundations should be made of concrete to ground level, particularly as a saving of Rs 2200 will be thereby effected.

20/95

C.S.B.

The brick girders which will weigh 266 lbs per Rft. is stated to have been calculated to carry a load of 58.64 tons over a space of 26 feet & the weight proposed to be laid over it is stated to be 54.26 tons, calculated as follows:

Weight of floor at 1.5 cwt per sq ft -	10.31	Tons
Live load — 1.0 cwt — do —	6.87	
Weight of wall — 1.0 cwt per Cft. —	23.33	
- do - of wot at 2.0 cwt per sq ft. —	13.75	
<u>Total weight tons</u>		<u>54.26</u>

The brick girders has been proposed at the request of the Professor of Chemistry in preference to an arch in the existing outer wall, as it is considered absolutely necessary to have the exterior of the side walls in an unbroken line, which by the introduction of an arch will not be gained, owing to the abutments.

The verandah around will be in continuation & in keeping with the existing verandahs.

Provision has been made for slight alterations such as increasing an archway & 2 windows between the lecture & laboratory rooms, fitting iron bars to existing archways leading to the stove room & for flooring the whole length of the laboratory with Cuddesbush slabs instead of the existing asphaltic floor, also for alterations to gas & water pipes.

The surface soil is stated to be loam & the sub soil loamy clay.

The foundations are designed to carry an upper floor. They will be laid to a depth of 3 1/2 feet for the main walls & 5 feet for the verandah walls. The lower 2 1/2 feet of the main wall foundations will be laid with concrete & the upper 5 feet built of stock bricks in chum. The basement will be raised 4 feet & the superstructure walls 23 ft to bottom of terrace & built of stock bricks in chum with flat & semicircular arches. Work over doors, windows & arches. The interior & exterior faces of walls will be plastered with 2 coats of chum & polished, except the plinth face which will be pointed with Portland Cement. The roof will be terraced with brick on edge & laid over teak joists & supported on steel girders of a section 15" x 5" weighing 42 lbs per Rft. Doors & windows will be of the description noted in the estimate of teakwood & painted with 3 coats of Silicate Zinc white paint.

A separate estimate with plan have been submitted for providing furniture, new working benches & other fittings throughout prepared in consultation with the Professor of Chemistry.

The scoundlings for woodwork & rolled steel beams are correct & the rates fair.

The foundations are prepared & the
laid partly of concrete & partly of masonry.
Every ft. of concrete is laid to ground
level throughout a saving of Rs 230
will be effected.

The plans & estimates have been
considered & approved by the Director of Pub.
Works & sanctioned by the
Educational Dept.

The load on the brick girders
will be as follows:-

Weight of masonry upper wall.

Wall with parapet $1 \times 25' \times 1'4" \times 15'9" = 525$

cornice work $1 \times 25' \times 0'6" \times 0'9" = 9$
534.

Deduct

Windows - $2 \times 4' \times 1'4" \times 9'6" = 101$

do - sills $2 \times 4' \times 0'8" \times 2'6" = 13$ — 114

Total Cft of masonry 420.

420 cft of brickwork at 120 lbs per cft = 50400

Weight of tiling (Floor).

Part of 1st floor - $25 \times 7\frac{1}{2} \times \frac{3}{4}" = 141$ cft

Wt. of tiles imp. $25 \times 3\frac{1}{2} \times 1' = 68$ cft = 209

209 cft of tiling at 120 lbs per cft = 25080

Weight of joists

Joists of floor & roof $18 \times 11' \times 3" \times 5" = 21$ cft

21 cft of teakwood at 46 lbs per cft = 966

Live load on part of terrace floor & part
of roof less thickness of upper wall
assuming that at some future
date the terrace roof may become
first floor.

Floor & roof - $11' - 1'4" = 9'8" \times 25' = 241$ sq ft

241 sq ft at 168 lbs per sq ft = 40488

$\therefore$ Weight of masonry & cornice = 50400

- do - terrace floor & roof — 25080

- do - joists — 966

Accidental load — 40488

Total weight lbs 116934

or 52.10 tons against

against 54.26 tons

by the Consulting architect

The details of weight given in
the report cannot be verified

Weight on roof girders:

Roofing $25 \times 6\frac{1}{2} \times 1' = 162.5$ cft

162.5 cft of tiling at 120 lbs — 19500 lbs

Joists — $18 \times 6\frac{1}{2} \times \frac{3}{4} \times \frac{5}{12} = 12$ cft

12 cft of teakwood at 46 lbs per cft = 552

Live load. $25 \times 6'6" = 162.5$ at 168 lbs

= 27300

Roofing — 19500

Joists — 552

Live load — 27300

Total weight lbs 47352

or 21.1 tons

No. 25.1.55.

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1895} Madras.

PUBLIC WORKS.

Dated February, 5th.

Recd.

Encl.

G.O., 5th Feb. 1895, No. 277 W.

FEBRUARY.

Medical College, Madras

Estimate of Rs. 17,410 for extending the
Chemical Laboratory of the — sanctioned,
with remark, for execution when funds are
available.

5TH FEBRUARY 1895, No. 277 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following papers:—

G.O., dated 21st November 1894, No. 883, Educational.

Read—again G.O., dated 24th July 1893, No. 545, Educational.

Read—also letter from the Director of Public Instruction, dated 14th June 1894, No. 5700.

ABSTRACT.—Submitting, for sanction, plans and estimates for the extension of the Chemical Laboratory of the Medical College, and requesting that funds may be placed at the disposal of the Consulting Architect for the execution of the work.

From the same officer, dated 7th July 1894, No. 6307.

From the same officer, dated 22nd September 1894, No. 9044.

In returning the plans and estimate for the extension of the Chemical Laboratory, Medical College, received with Official Memorandum No. 1499, dated 24th July last, I have the honour to submit the enclosed letter from the Consulting Architect, together with a plan and estimate for Rs. 5,680 for fittings and fixtures. It will be seen therefrom that no further expenditure is needed for providing an installation of gas.

* * * *

From the Chemical Examiner, dated 18th October 1894, No. 1008.

ABSTRACT.—Objecting to the proposal of the Principal, Medical College, to transfer the Chemical Examiner's Laboratory to the buildings at present occupied by the Women and Children's hospital.

Order—dated 21st November 1894, No. 883, Educational.

The plans and estimates are approved and will be transferred to the Public Works Department.

(True Extract.)

(Signed) J. F. PRICE,
Chief Secretary.

5TH FEBRUARY 1895, No. 277 W., PUBLIC WORKS.

Note by the Chief Engineer, Public Works Department.

The foundations of the extension to the Chemical Laboratory are proposed to be laid partly of concrete and partly of masonry. The undersigned considers that they should be made of concrete throughout to ground level, particularly as a saving of Rs. 230 will be thereby effected. The estimate has accordingly been reduced.

(Signed) J. PENNYCUICK, Colonel, R.E.,
Chief Engineer, P.W.D.

ORDER—dated 5th February 1895, No. 277 W., Public Works.

The estimate, amounting to Rs. 17,410 as reduced by the Chief Engineer, Public Works Department, for extending the Chemical Laboratory of the Medical College at Madras, is sanctioned for execution when funds are available.

2. Attention is drawn to the Chief Engineer's note recorded above.

3. This sanction has been registered as Provincial No. 101 W. of 1894-95 and classified as Civil Buildings, Original Works.

(True Extract.)

Under Secy. to Govt., P.W.D.

To the Consulting Architect to Government, with nine enclosures.
" Examiner, Public Works Accounts.
" Educational Department.

Govt. of { 18 } Madras.

No. 2022 W of 7-8-93 ✓

To

*The Public Works Department**Estimate: 9 (3 plans)**Recd: 26. 11. 94*

Proceedings, dated *21 November* 1894
No. 883

Subject.

*Approving and transferring
to the Public Works Department
plans and Estimates for the
extension of the Chemical
Laboratory of the Med
College.*

27-11-94

Copy 27/11/94

Educational Department.



PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following paper:—

x B.M. 2022 W 87.8.93 Again also of 24th July 1894, No. 545.

Read also letter from the Director of Public Instruction of 14th June 1894, No. 5400, [submitting for sanction plans and estimates for the extension of the chemical laboratory of the Medical College and requesting that funds may be placed at the disposal of the Consulting Architect for the execution of the work.

From the same officer of 4th July 1894 No. 6204.

From the same officer of 22nd September 1894, No. 9044.

In returning the plans and estimates for the extension of the chemical laboratory, Medical College received with official memorandum No. 1499 of 24th July last. I have the honor

2

Abstract.

submit the enclosed letter from the
consulting Architect together with a
plan and estimate for Rs 5680 for
fittings and fixtures. It will be
seen ^{from} ~~therefore~~ that no further expense
- here is needed for providing an
installation of gas.

Letter from the Chemical Examiner,
dy 18th October 1894, No. 1008, ^{Abstract} objecting
to the proposal of the Principal Medical
College to transfer the chemical
Examiner's laboratory to the buildings
at present occupied by the women
and children's hospital.

Order 21st November 1894, No. 883

The plans and estimates
are approved and will be transferred
to the Public Works Department.
* [Free Abstract]

Donald Davidson
21/11
S. [unclear]
for chief secretary.

4.
The Public Works Dept. with plans & estimates
" Director of Public Instruction
" Public Department