

OFFICE OF THE SUPERINTENDING ENGINEER,

No. 0567N.

6TH CIRCLE,

Trichinopoly,

19th January 1895.

FROM

W. Hughes Esquire
THE SUPERINTENDING ENGINEER,

6th CIRCLE.

TO

THE CHIEF ENGINEER,

P. W. D.

SIR,

ENCLOSURES.

5

- I have the honor to forward
1. Like plan
 1. Plan (in tracing) herewith a letter No. 553 of 94 of
 1. Detail Rate 30th November/94, from the President
 1. Abstract Rate of the District Board, Triveny,
 - with report, Spe. addressed to the Chief Secretary
 - ification & to Govt, together with its accom.
 - data
 1. Origl letters.
 - 553 of 94
 - 30-11-94
 - Resolution No. 4
 - 26-11-94

2. The estimate of Rs 24,900 therewith received for constructing a building at Kokkarkulam to accommodate the Local Fund Office in the Triveny Dh, has been approved by the District Board in their Resolution No. 4 dated 26 November 1894.
3. The amount of the estimate has been reduced by Rs 2,000

(from \$ 24,900 to \$ 22,900) in the office by reducing the scantlings of the joists over beams of main rooms of the upper and lower stories as noted below:—

	From	To.	
Joists	4" x 11"	—	3" x 6" For lower story.
	4" x 11"	—	3" x 5" For upper story.

4. There are some points which require reconsideration when the work is put in hand—

1st. Roughstone in mortar as com. —
— masonry built in timber is far inferior to brickwork for sustaining weight and it would therefore be probably advisable to use brickwork for the footings. This could be done at little, if any, excess cost since the width of the footings might be reduced.

2nd. It would probably be better to use rolled iron beams for the main rooms.

None but the best timber would be suitable and it is often difficult to get this of the large scantlings required at a moderate price.

5. With the above remarks the estimate is recommended for sanction.

I have the honor to be
Sir,

Yours most obedient servant,

W. Hughes
Superintending Engineer
W. Leitch

P. W. D. 6th CIRCLE.

FROM

THE SUPERINTENDING ENGINEER,

6TH CIRCLE.

TO

THE CHIEF ENGINEER,

P. W. D.

No. 0567N

Dated 19 January 1895.
Received 22/1

Enclosures. 11 (2 plans)

Local Fund offices in the
Tinnevely Dist.:-

submit for sanction
an estimate of Rs 24,900 for
constructing a building at
Sholapurakaulam to accom-
modate me.

22/1

main room in lieu of timber beams,
owing to the difficulty in obtain-
ing good & sound timber of the
large scantlings provided in the
estimate. With the above re-
marks he recommends the esti-
mate for sanction.

The section proposed for the
wooden girders, viz. $7\frac{1}{2} \times 19$ ap-
pears to be slightly weak, it
might be increased to 10×19 if
wooden girders are to be used,
but as the S.E. suggests iron
girders which seem to be
preferable, a section of 14×6
weighing 57 lbs per foot run
may be substituted to carry
the floor weight which is 18.08
tons, made up as follows:-

Weight of floor. (timber)
 $22 \times 7 \times \frac{3}{4} = 115.5$ cbr at 120 lbs = 13860
- do - joists $19 \times 7 \times \frac{1}{2} \times \frac{1}{2} = 16\frac{1}{2}$ cbr
at 46 lbs per cbr. = 765
- do - live load on floor.
 $22 \times 7 = 154$ at 168 lbs per sq ft = 25872
Total weight on one girder = 40497
or 18.08 tons.

The foundation as proposed
to be laid partly of concrete &
partly of rough stone is con-
sidered, but as the S.E. disapproves
of rubble masonry, the founda-
tions may be laid to ground
level throughout with one foot
projection on either side of the
masonry above. By this arrange-
ment the amount of the estimate
will

Preferable to incur
an extra cost of Rs 800

will be increased by Rs 290
including percentage charge

4.11.95

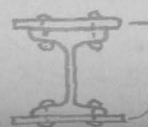
Estimate to be corrected
as follows:-

Amount as submitted	Rs 24900
Reduction by S.E. on	
acc. of joists	2000
Difference between	
rolled beams, or	
steel joists, and	
wooden beams	800
Substituting concrete	
to ground level	
for masonry	300
	Rs 24000

Costs

5.95

Estimate corrected accordingly.
Plans not provided for top & bottom
plates for the girders as the extra cost
will be Rs 1250.



not provided -

6.11.95
P.W.D.

in center 16 feet wide & a side
verandah room 12' x 22' with
two rear verandah rooms, of
14'6" x 12' & another 12'3" x 12'.

The center hall or the Engineers
Office room measuring 22' x 22'
is to divide the above two offices,
front & rear verandahs 12 feet
wide & a portico 23' x 15' has
also been provided, as per plan.

The account & Tally board
Office rooms on the upper floor
are to be each, a main room
30'6" x 22'6" divided by an arch:
way 16 feet wide, with a cen-
ter or meeting hall 22'6" x 22'6"
dividing the two offices & with
verandahs 12'6" wide all
round.

The St. VI Arch is cut:
omitting the estimate for same:
this has reduced the amount
by Rs 2,000 (24,900 - 22,900) owing
to reduction in the scantlings
of the joists in the main rooms
of the basement & first floors
from 4" x 11" to 3" x 6" & 3" x 5" res-
pectively & suggests that as
rough stone is inferior, as built
in Annamalai is far inferior to
brickwork for sustaining
weights it would be better to
use brickwork for the foundation
forming instead, also to the use
of rolled iron beams for the

Concrete better
than other

cost
5/2 95

range

Plastering or Pointing The walls are to be plastered
on both the faces with 2 coats of chun-
nam mortar.

Flooring is to be of cement concrete to a depth
of 6 inches, made up of 3 1/2" ordinary
cement & 2 1/2" cement concrete.

Roofing is to be tiled with Mangalore
tiles with brick on edge & supported on
teakwood beams & joists, joists laid
15" apart.

Doors and Windows are to be of teakwood of
the descriptions noted in the spec:
all & woodwork 2 coats.

Roof timbers are to be of teakwood & woodwork
2 coats.

Scantlings are correct except for beams
vide remarks below.

Rates are fair.

including porch
The plinth area of the main building is
6902 square feet, and the cost per square
foot will be Rs. 3-5-1-

The plans and estimates have been countersigned
by the President District Board
and approved in the Dist. Board Proceedings
Department, dated 26th November 1894.

REMARKS.

The plans & estimate under re:
view amounting to Rs 22,900 pro-
vide for constructing a building
at Karkulam to accommodate
Local Fund Office in the Tinnevely
Dist.
The accommodation proposed
is as follows:-

Basement floor:- Dist. Board Engg.
Office at the left side & the Dist. Board
Office at the right with a center hall
to be the Engineers Office room.

First floor:- Audit & account
branch on the left & the Tally Board
Office on the right with a center
hall for holding meetings.

The Engineers & Dist. Board Office
rooms are to be each, a main room
30' x 20' divided by an archway.

418 W d 19 Feb. 1895

Public Works Department.

329 W d 9 Feb. 1895

Current No. 469

Letter No. 856 T.N.

Dated 19th January 1895

From the Supy Engineer VI Circle.

NOTE BY TECHNICAL SECTION.

Name of Work Constructing a Local Fund
Office at Kotarkulam, Tinnevely Dist.

Amount of Estimate, Rs. 22,900.

PARTICULARS OF ESTIMATE.

Main Building Office. Rs. 2,1806

Subsidiary Buildings _____ "

Contingencies 2% " 439

Petty Supervision 3% " 655

Land compensation _____ "

Total Rupees ... 22,900

PARTICULARS OF CONSTRUCTION.

Surface soil }
Sub soil } Stated to be hard loam.

Foundations are proposed to be laid 7 feet deep, the lower 3 feet to be laid with concrete & the upper 4 feet built of crused rubble in mortar (curk's)
Basement is to be raised 3 1/2 feet & built of brick in curk's mortar.

Walls of both the floors are to be raised 14 feet to top of joists & the porch 15 feet & built of brick in chunam with flat & semi-circular archways over doors windows & archways.

Difference in cost between steel & timber beams

7.63 Tons of rolled steel beams of a section 12" x 6" at Rs 215 per Ton including fitting complete Rs 1,640

Deduct for 297 cfs of timberwood beams as estimated at Rs 3 per cfs 891

Difference Rs 749

Add for Contingencies & Petty Supervision 51

Total extra cost by use of steel beams Rs 800

1 copy of estimate of cost to go to P.W.D.

418 W

cut 18/11
245 W.N.

8.11.55

W: Load in tons on the whole span.
L: Clear span in inches
Co: Constant
K: Co-efficient of safety: modulus of rupture
= 32 tons per steel girder
R: Moments of resistance in square inches

$$R = \frac{WL}{Co K}$$

$$= \frac{18.08 \times 22 \times 11 \times 3}{8 \times 10.66 \times 5.33}$$

$$S 53 \mid \begin{array}{r} 9.04 \\ 27.12 \\ 27.12 \\ \hline 298.32 \\ 2665 \\ \hline 3182 \\ 3194 \end{array} \mid 56 \text{ sq. in.}$$

W: 18.08 tons
L: 22 feet
Co: 8 for girders supported to intermediate loads
K: $\frac{32}{5} = 10.66$

According to Table, page 11 - a section of 12" x 6" weighing 58 lbs per foot will suffice for both the upper & lower girders, though the lower girders are actually pinned -

6.11.55

418W d/19 July 1895

Local Fund Office at Kankakee
Tinnelly

Details for substituting rolled
steel beams for timber ones

Weights of beams

Beams of a section 12" x 6" as
sketched on plan, weighing
57 lbs per foot run.

$$\text{Weight: } 12 \times 25' \times 57 \text{ lbs} = 17,100 \text{ lbs} \\ = 7.63 \text{ tons.}$$

Conveyance of steel beams

Distance from Madras to Tinnelly
by rail 44.3 miles

Goods rate for rolled steel beams
exceeding 20 feet in length
= 7/3 pice, per maund, per mile
or 18 pice per ton of 27 maunds
per mile.

$$\therefore \text{Carriage to Tinnelly per ton} \\ \text{miles as} \\ = 44.3 \times 1.5 = 66.45 \text{ annas} \\ = \text{Rs } 41-8-6$$

Add for incidental

charges such as loading
& unloading at stations
& carriage to site, say 3-7-6

Total cost of carriage per ton 45-...

Data

Cost of rolled steel beams at Madras	160
--- carriage to Tinnelly	45
--- loading & unloading	10
Total cost per ton at Tinnelly	215

T 3

big dog on fire the
weight at 57 lbs per
running foot?

cost

572 lbs

Dr

The load that the girder
will have to bear is 18.08 tons,
as per calculations in
my note. This load multi-
plied by the clear span,
which is 22 feet, will
give the distributed load
in tons that one foot will
carry - viz. 18.08×22
 $= 397.76$ tons & according
to table of strength page
14 of Dorman Long & Co.
catalogue, allowing 1/4
the breaking strain for safety
a section of 14" x 6" weighing
57 lbs per foot run appears
to be the required section
of the girder.

Catalogue submitted.

Steel
Calculate the girder 12" x 6"
by formula $R = \frac{WL}{C \cdot K}$ assuming 5.5-55
the supports not fixed

418W

Rs 418 Wd. 19 Feb 1905

C. No 469 P.W.D

Note by the Chief Engineer P.W.D. -

The foundations are proposed to be laid ^{concrete} and partly of partly of rough stone in Susti. The undersigned considers that they should be of concrete throughout to ground level, and two feet broader than the masonry immediately above.

2. For reasons stated by the Suptg. Engineer it is

considered that rolled iron beams are preferable to the timber ones proposed for the main rooms.

3. The Estimate as marginally particularized

has been increased to Rs. 24,000 with reference to the above remarks and is recommended for sanction.

As Estimated by the District Board Engineer. Rs 24,900
Reduction by the Suptg. Engineer on account of joists. 2,000
22,900
Add difference between rolled and wooden beams (vide details accompanying). 800.
Substitution of concrete to ground level for masonry. 300
Rs. 24,000

Estimate for a local fund Office at Kothakulam, Cinnamulla.

CHIEF SECRETARY
11 FEB 1905
GOVERNMENT OF MADRAS

T. K. B. C. M.

The Honorable the Chief Secretary for favor of counterinitiate

Lo 418 Wd, 19 February 1895. PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

*From the Suptg. Engineer, VI Circle, No 856 T.N. d/19 January 1895
Note by the Chief Engineer P.W. Deptt d/ February 1895.*

READ the following

*W
18 Feb*

*The estimate, amounting
to Rs 24,000 as altered by the
Chief Engineer, P.W.D. for con-
structing a Local Fund office
at Kokarkulam, Tinnevely,
is sanctioned.*

*2. Attention is drawn to the
Chief Engineer's note recorded above.
3. This sanction has been
registered as Local No 20 W of
1894-95.*

M 13295

Note for C.S.

*The proposal has been passed in
the Budget of 1895-96, & the
Board have allotted funds.*

M 13295

*CONF
8-95*

15/2/95

DESPATCHED
2- MAR. 95

*The S.E., VI Circle
Exar, P.W. Deptt*

L & In. Deptt with 11 enclos

(40-1,000-26-11-94.)

2

19TH FEBRUARY 1895, No. 418 W., PUBLIC WORKS.

3. The estimate, as particularized below, has been increased to Rs. 24,000 with reference to the above remarks and is recommended for sanction :—

	RS.
As estimated by the District Board Engineer	24,900
Reduction by the Superintending Engineer on account of joists	2,000
	22,900
Add difference between rolled and wooden beams (vide details accompanying estimate)	800
Substitution of concrete to ground level for masonry	300
Total	24,000

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

ORDER—dated 19th February 1895, No. 418 W., Public Works.

The estimate, amounting to Rs. 24,000 as altered by the Chief Engineer, Public Works Department, for constructing a Local Fund office at Kokarkulam, Tinnevely, is sanctioned.

2. Attention is drawn to the Chief Engineer's note recorded above.
3. This sanction has been registered as Local No. 20 W. of 1894-95.

(True Extract.)

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

To the Superintending Engineer, VI Circle.
" Examiner, Public Works Accounts.
" Local and Municipal Department, with eleven enclosures.

Exd. C. A. Manisawmy.
Spare Copies

GOVERNMENT OF MADRAS.
PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following papers :—

From W. HUGHES, Esq., Superintending Engineer, VI Circle, to the Chief Engineer, Public Works Department, dated Trichinopoly, 19th January 1895, No. 856 T.N.

I have the honour to forward herewith a letter No. 553 of 1894, dated 30th November 1894, from the President of the District Board, Tinnevely, addressed to the Chief Secretary to Government, together with its accompaniments.

2. The estimate of Rs. 24,900 therewith received for constructing a building at Kokarkulam to accommodate the Local Fund offices in the Tinnevely district has been approved by the District Board in their Resolution No. 4, dated 26th November 1894.

3. The amount of the estimate has been reduced by Rs. 2,000 (from Rs. 24,900 to Rs. 22,900) in this office by reducing the scantlings of the joists over beams of main rooms of the upper and lower stories as noted below :—

	From	To
Joists	$4'' \times 11''$	$3'' \times 6''$ for lower story.
	$4'' \times 11''$	$3'' \times 5''$ for upper story.

4. There are some points which require reconsideration when the work is put in hand—

(1) Rough stone in mortar as commonly built in Tinnevely is far inferior to brickwork for sustaining weight, and it would therefore be probably advisable to use brickwork for the footings. This could be done at little, if any, excess cost since the width of the footings might be reduced.

(2) It would probably be better to use rolled iron beams for the main rooms. None but the best timber would be suitable and it is often difficult to get this of the large scantlings required at a moderate price.

5. With the above remarks the estimate is recommended for sanction.

Note by the Chief Engineer, Public Works Department.

The foundations are proposed to be laid partly of concrete and partly of rough stone in surki. The undersigned considers that they should be of concrete throughout to ground level and two feet broader than the masonry immediately above.

2. For reasons stated by the Superintending Engineer it is considered that rolled iron beams are preferable to the timber ones proposed for the main rooms.

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1895} Madras.
PUBLIC WORKS.

Dated February, 19th.

Recd.

Encl.

G.O., 19th Feb. 1895, No. 418 W.

FEBRUARY.

Local Fund office at
Kokarkulam

Estimate of Rs. 24,000 for constructing
a — in the Tinnevely district, sanctioned
with remark.

C^N 469
Govt. of Madras.

PUBLIC WORKS.

~~(Mars)~~

Dated

576, Mar, 25.6.97
R 108, Mar, 21.5.92

Recd.

Encl.

G.O., 19/2 1895, No. 418.W

Local Fund office
at Kokarkulam

Estimate of Rs 24,000
for constructing a —
in the Sivierully St.,
sanctioned with remarks

90%