

C.A. 2,000-10-100
Public Works (1896) Department.

G.O., No.

1892

DATED

24/6/96

[Despatch Abstract.]

Public offices in South Canada &
Orders stating that the estimate
for providing lightning conductors to
may stand over.

FURTHER PAPERS.

From
The Supp. Engineers
4th Circle

Dated 30th } May 1896
 Dec^r 1st } June "

No. 264
W.

Pencil: 3.

Lightning Conductors to the
Public Offices at Puttur
South Canara District

Submitting for favor
of orders. etc. of Rs 2000 for
providing—
1631 to 1.6.96
989 to 24.6.95

No 1892W, d, 21st June 1896.
The estimate will stand over pending receipt of a reply to the general question referred to in para 17 of L.O. No: 245 Manual dated 8th April 1896.

Nos 215 W and 238 W, dated 9th + 20th May 1896
respectively, about Mangalore Lighthouse
Conductors and on the report of accidents
from lightning.

II. C. 47
Compile:

Supg. Engineer, 4 Fische

L.R. No 39
96

Report to accompany the Estimate for
Providing Lightning Conductors to the
Public offices at Puthur.



Provincial Budget
for 1895-96.
Class B. works.
Estimate No. 48.

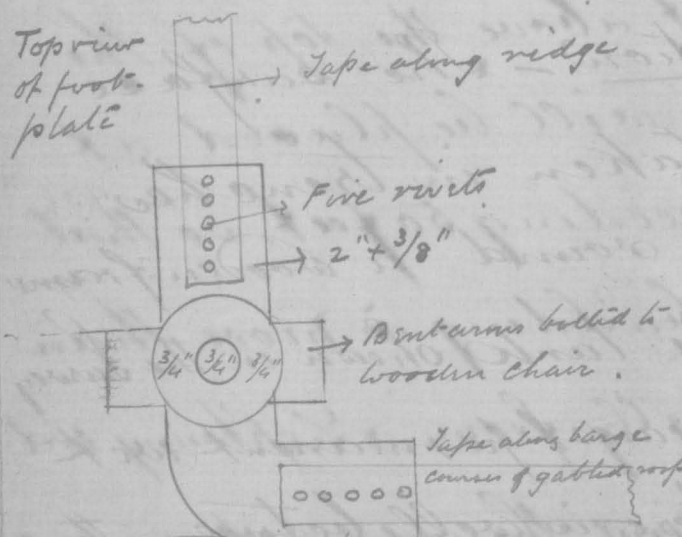
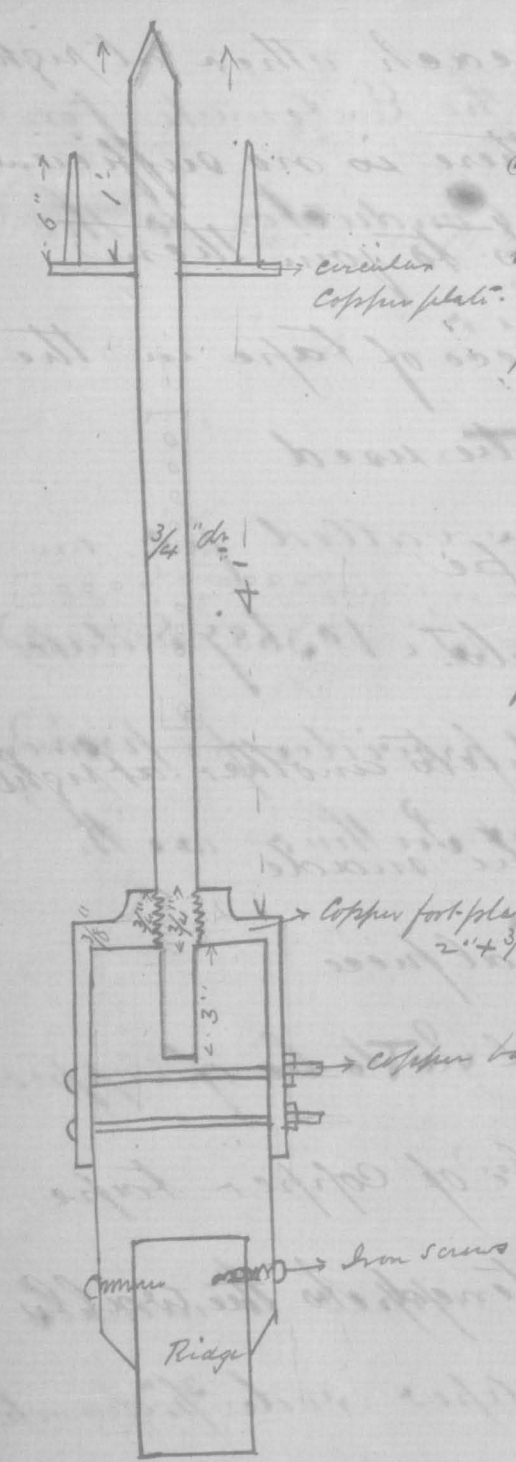
This Estimate was called for in
G.O. No 959 W. dated 24th April 1895
the Executive Engineer S. A. 36875 dated
3rd November 1893, and provides for providing
all the Public offices at Puthur with
Lightning Conductors.

Conductor material — Is to be of Copper
tape 1 $\frac{1}{2}$ x $\frac{1}{8}$ in section

Upper terminal — The upper terminals
will be of round Copper rods $\frac{3}{4}$ in diameter
& projecting 4 feet above the top of the
ridge tiles. They will be placed at
intervals not exceeding 50 feet so that
no point of the building is more than
25 feet horizontally from a Lightning rod.
The mode of fixing the upper terminals
will be as follows.

Wooden chairs will be fixed to the
ridge so that their top may be flush with
the

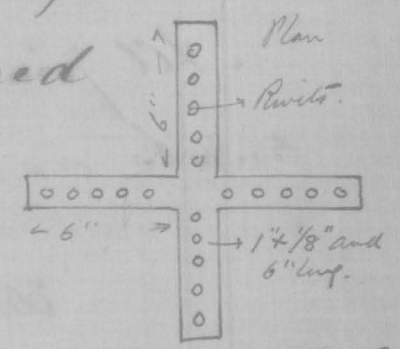
cross section.



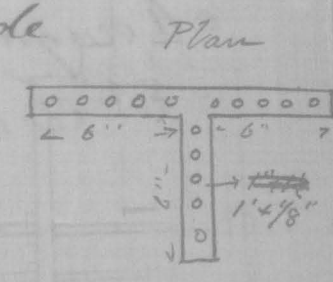
the top of the ridge tile. Foot plates of copper $2 \times \frac{3}{8}$ in section will be bolted to the wooden chairs and the rods will be screwed into a hole in the middle of the foot plates, the lower end of the terminal penetrating about 3 inches into a hole bored in the wooden chair with a view to keep the rod steady. The foot plates will be in the shape of a cross with one pair of opposite arms bent & bolted to the wooden chair by two copper bolts $\frac{1}{2}$ " dia. and the conductor tape to be rivetted to the other pair of arms vide sketch in margin

Where the tapes cross each other at right angles over the ridges there is no sufficient space to use five pivots to join them.

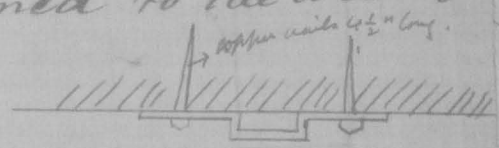
Hence an additional piece of tape in the form of a cross will be used to which the main tape will be jointed by pivots.



Whereas if one tape meets another at right angles, the joint will be made up by using an additional piece of tape in the form of a T



The holdfasts will be of copper tape $1 \times \frac{1}{8}$ and will be fastened to the walls by copper nails $4 \frac{1}{2}$ " long



Earth Connection - The surface earth will be taken in trenches $9 \times \frac{1}{2}$ and the end coiled round a wooden frame and buried into the tanks shown in the Survey Plan which is the nearest permanent wet soil available. There is a well between the Talug Cutcherry and the Sub Registrars' office but as it is used for drinking purposes it will be objectionable to use it for an Earth

a copper plate 3 square centimetres

No
to
Co
of

Earth Connection. Three inches of powdered charcoal will be spread above and below the Conductor of the surface earth.

All joints of tape will be made by rivets and not soldered.



Mangalore

13th February 1896

M. A. M. A. M.

Sub Divisional Officer

13/2/96



A. P. S. S.

Executive Engineer
West Coast Division

Y. S. S.

Collector

J. H. S.

Det. Insp. S. S.

*On 2.3
50 30/96*

Proceeding Lightning Conductor to the Public
offices at Puttur, South Canara

P. W. D. Form,
No. M 204.

ESTIMATE FORM.—Detail Measurements.

Detail of Work.	Number.	MEASUREMENTS IN FEET.			Area or Contents.	Total Quantity of each description of Work.
		Length.	Breadth.	Depth.		
1	2	3	4	5	6	7
Copper tape 1" x 1/8"						
For Salug Butcherry roof and up to 1 1/2 ft below ground	325					
— 0° — Deputy Collector's office	205					
— 0° — Munsiff's Court	515					
— 0° — Sub Registrar's office	120					
Surface earth all round the Salug Butcherry at its base	305					
— 0° — Deputy Collector's office	225					
— 0° — Munsiff's Court	215					
— 0° — Sub Registrar's office	45					
Surface earth for the buildings to tank	2010					
Drop in tank	12					
In tank	50					
Coil for wooden frame	33					4060
Total Copper tape 1" x 1/8"						4060
Upper terminals 11' 3" long 3/4" dia with needles complete						
For Salug Butcherry	5					
Deputy Collector's Butcherry	4					
Munsiff's Court	6					
Sub Registrar's office	2					
Total upper terminals	17					
Hold of fasts or wall clips of copper tape 1" x 1/8"						
Sapeildars Butcherry	10					
Deputy Collector's office	8					
Munsiff's Court	30					
Sub Registrar's office	4					
Total hold of fasts or wall clips of copper tape 1" x 1/8"					52	52

ESTIMATE FORM.—Detail Measurements.

Detail of Work.	Number.	MEASUREMENTS IN FEET.			Area or Contents.	Total Quantity of each description of Work.
		Length.	Breadth.	Depth.		
1	2	3	4	5	6	7
Brought forward	1					
Deputy Collector's office	1					
Munsiff's Court	2					
Sub Registrar's office	1					
Total List joints					5	5
Excavating trenches & refilling after surface earths	1	2800	$\frac{3}{4}$	$\frac{1}{2}$	3150	
Total Earthwork cft						3150
Charcoal powder for surface earths	1	2800	$\frac{3}{4}$	$\frac{1}{2}$	1050	
Total Charcoal cft						1050
Wooden frame	1					1
Packing, freight & cartage to Puttur S.S.	1					1
Fixing the conductor to S.S.	1					1

He. J. J.

Dist. & Thd.

100

Collector

M. A. S. S.
13/2/96

W. S. S.

Executive Engineer
West Coast Division

ESTIMATE FORM.—Detail Measurements.

Detail of Work.	Number.	MEASUREMENTS IN FEET.			Area or Contents.	Total Quantity of each description of Work.
		Length.	Breadth.	Depth.		
1	2	3	4	5	6	7
Copper nails $4\frac{1}{2}$ " long 2 for each hold fast	38				104	104
Copper rivets $\frac{3}{8}$ " dia. & $1\frac{1}{2}$ " long for joining tape Sahildar's office	120					
Deputy Collector's office	90					
Munsiff's Court	140					
Sub Registrar's office	30				380	
Total Rivets cft						380
Copper foot plates with 2 bolts and nuts $\frac{1}{2}$ " dia and 6" long for each as per upper terminals	38				17	17
+ Cross pieces of copper tape $1\frac{1}{8}$ " to connect tapes where they cross, with holes for rivets						
Munsiff's Court	1				80	1
7 Pieces of copper tape $1\frac{1}{8}$ " to connect tapes where one joins another at right angle, with holes for rivets						
Sahildar's Butchery	3					
Deputy Collector's office	2					
Munsiff's Court	2				797	
Leet joints of slotted clamp Sahildar's Butchery	1					
Carried over	1					



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ESTIMATE FORM.—Abstract.

Quantity.	Description of Work.	Rate.	Per	Amount	TOTAL.
1	2	3	4	5	6
4060	8 feet Copper tape $1\frac{1}{8}$ " $\times$ $\frac{1}{8}$ "	0-40	RS.	1015	RS. 40.60
17	Upper Terminal $1\frac{1}{2}$ " $\times$ 3" long				
	$\frac{1}{4}$ " dr. with needles & couplets				
52	Some hold fasts or wall				
	clips of copper tape $1\frac{1}{8}$ " $\times$ $\frac{1}{8}$ "	2 1/2%		13	
104	Copper nails $1\frac{1}{2}$ " long				
	2 for each hold fast	10%		10	
380	Copper rivets $3/8$ " dr. $\times$ $1\frac{1}{2}$ "				
	long for joining tape	1%		4	
17	Copper foot plates with				
	2 bolts and nuts $1/2$ " dr. $\times$ 6"	3%		51	
	6" long for each				
1	32 Cross pieces of copper				
	tape $1\frac{1}{8}$ " to connect tapes				
	where they cross with holes	1/8%		2	
	for rivets				
7	Pieces of copper tape				
	$1\frac{1}{8}$ " to connect tapes where				
	one joins another at	1/10%		7	
	right angle with holes				
	for rivets				
5	Set joints of clothed				
	clamp	1/10%		5	
	Carried over			1820	

Grand Total of Estimate . . .

STATION _____
Date _____ 189 _____

Charles
Executive Engineer

(E. No. 123).

CIRCLE —

DIVISION —

DISTRICT —

TALUK (OR ESTATE IN CASE OF ESTATE WORKS) —

ESTIMATE FORM.— Abstract.

Financial Head —

Budget Head —

Departmental Head —

Main Head —

Sub-Head —

Project of which
the work forms part —

Section —

Name of Work —

Amount of Estimate, Rs. —

To be carried out by —

REFERENCES.

ESTIMATE FORM.— Abstract.

Quantity.	Description of Work.	Rate.	Per	Amount	TOTAL.
1	2	3	4	5	6
		RS.		RS.	RS.
	Brought forward			1320	
3150	Off Earthwork (Excavating trenches & refilling)	86/40	100%	20	X
1050	Off Charcoal powder for surface earths	20/40	off	263	f.
1	Wooden frame	L.S.		25	
1	L.S. Packing freight & cartage to Puthur	L.S.		120	
1	L.S. Fixing the conductor	L.S.		120	
	Uniform requirements	L.S.		30	
	Petty Supervision	28.0	Cent	74	
	Contingencies	28.0		74	
	Total Rs			2000	2000

Circle Register No. of 1896-97

Sanctioned for Rs.

Supg. Engineer 4th Circle.

Grand Total of Estimate ..

2000
3250

STATION

Date

Mangalore
13th February 1896

M. A. M. A. M.

L.S.O.

13/2/96

J. S. S. S.

Executive Engineer.

West Coast Division

Collector

CIRCLE— *South*
 DIVISION— *West Coast*
 DISTRICT— *South Canara*

TALUK (OR ESTATE IN CASE OF ESTATE WORKS)—

Uppinangady

ESTIMATE FORM.— Abstract.

Financial Head— *Provincial*

Budget Head— *Public Buildings*

Departmental Head— *Original work*

Main Head— *Administration*
Law & justice
Miscellaneous

Sub-Head— *Land Revenue buildings*
District Courts—00
Registration—00

Project of which
the work forms part—

Section—

Name of Work—

*Providing Lightning
 Conductors to the Public
 Offices at Puttur, South
 Canara.*

Amount of Estimate, Rs.—

2000
3250-0-0

To be carried out by— *D. W. S.*

REFERENCES.



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