

GOVERNMENT OF MADRAS.

FINANCIAL DEPARTMENT.

READ—the following papers : —

From C. A. GALTON, Esq., President of the Municipal Commission, Calicut, to the Chief Secretary to Government, dated Calicut, 18th September 1884, No. 435.

In submitting herewith copy of a letter from the Vice-President, Calicut Municipality, I have the honor to request that Government will be pleased to furnish me with a copy of the estimate referred to by the Vice-President.

ENCLOSURE.

From B. C. LEGGATT, Esq., Vice-President of the Municipal Commission, Calicut, to the President of the Municipal Commission, Calicut, dated Calicut, 16th September 1884, No. 671.

Looking into the budget programme for the current year, I find that a gunpowder magazine has been provided for and has to be built in the course of the year; but I find no estimate was received with the standard plan circulated with G.O., dated 27th August 1883, No. 1880, (Financial). As it is impossible to make out the details and materials of the work without an estimate, I request you will be so good as to obtain a copy of the estimate promised in paragraph 5 of the first letter read in the Government Order above quoted. I beg to add that we should be furnished with the estimate, *as early as possible*, with a view to completing the work within the year.

From Lieut.-Colonel J. L. L. MORANT, R.E., Officiating Consulting Architect to the Government of Madras, to the Chief Engineer, Public Works department, dated Chepâk, 13th November 1884, No. 1245.

In compliance with your memorandum, No. 1664-C., dated 9th October 1884, I have the honor to submit a specification with schedule of quantities. One specification with schedule of quantities. I have the honor to submit a specification with schedule of quantities for the standard design for a gunpowder magazine. I have appended a detailed estimate prepared by the Superintendent, Public Works Workshops, for the lightning conductor.

ENCLOSURES.

GENERAL Specification of Works to be undertaken in constructing a Magazine for the storage of gunpowder according to the standard design, dated 18th July 1883, and circulated with G.O., No. 1880, Financial, dated 27th August 1883.

Foundations.—The foundations will rest on a bed of concrete 18 inches thick for the magazine and 1 foot for the enclosure wall and shed. The depth of foundations shall be determined by the officer responsible for the execution of the work, the estimate allows 4½ feet for the magazine and 3 feet for the shed and enclosure wall.

Brick-work.—The brick-work will be carried up (according to the thicknesses and heights shown on the plan) with burnt brick in chunam.

Roof.—The magazine will be covered by a semi-circular arched roof one brick in thickness with concrete backing 4½ inches thick on the haunches but thicker at the crown according to the section.

The shed will be roofed with flat and pan tiles over teakwood couples and reepers in the usual way.

Floor.—The floor of the magazine will be paved with asphalt ¾ of an inch in thickness over a bed of concrete 12 inches thick well rammed and consolidated. A layer of asphalt ¾ inch thick will be placed beneath the walls at floor level as a damp-proof course, or the vitrified perforated stoneware, supplied by Messrs. Doulton and Co., can be substituted for it.

The shed will be floored with 8-inch square bricks over a levelling course of wall bricks.

Plastering.—The interior and exterior of the magazine will be fine plastered three coats with lime and polished. The shed and enclosure wall will be plastered with two coats.

Doors and Windows.—The magazine will have a framed and braced door hung on a frame 4" x 5", the dimensions of the various parts will be as follows:—

Styles	6" x 1"
Top rail	5" x 1"
Bottom rail	8" x 1"
Lock rail	9" x 1"
Braces	4" x 1"

The above will be screwed to 1 inch planking grooved and tongued. The bottom of the door will be protected by a weather-board $\frac{3}{4}$ inch thick. It is most important that the door and ventilators of the magazine should be very carefully framed with the best seasoned wood and be closely fitted to avoid the possibility of rain water entering, and for this purpose the hooding over the door and ventilator should be provided with drips to prevent the water running down the wall.

The door should be provided with a superior rim lock.

The doors, ventilators, and windows for the shed to be painted with three coats of Carson's oak paint.

Wooden Trestles.—The trestles for the magazine to be strongly framed of the best seasoned teak-wood, and their feet encased in copper sheeting $\frac{1}{16}$ inch thick and painted with two coats of wood-oil.

Lightning Conductor.—The lightning conductor to be fixed in accordance with the specification printed with G.O., Public Works department, No. 516, dated 1st August 1877, and plan, dated Fort St. George, 14th May 1877. The materials for the lightning conductor will be supplied by the Public Works Workshop, Madras, for Rs. 350, as per details annexed.

(Signed) J. L. L. MORANT, Lieut.-Col., R.E.,
Offg. Consulting Architect to Govt.

DETAILED Estimate for fixing a Lightning Conductor to a Powder Magazine as per standard design printed with G.O., No. 516 of 1st August 1877.

Particulars of work.	No.	Quantity.	Rate.	Per.	Amount.	Total.
Straps to gable ends	2	59	RS.		RS.	RS.
" to eaves	2	55				
" to ridge	1	27 $\frac{1}{2}$				
Saddle plates	2	6				
Ties	2	4				
Straps for conducting rods	2	2				
Strap to earth connection	1	27 $\frac{1}{2}$				
Harrow or earth connection	6	16				
Blocks for conducting rod	2	18				
Conducting rod 5' x 1" diameter	2	30				
Earth conducting rod 10' x 1" diameter.	1	30				
Copper wire rope, $\frac{1}{4}$ "	20	4				
" rivets, $\frac{1}{4}$ "		10				
" wood screws, 2 $\frac{1}{2}$ "	6	3				
Allowance for wastage		8				
Platinum tips	300	1	lb.		300	
Superintendence and contingencies	2		9	each.	18	
					32	350

MADRAS,
12th November 1884.

(Signed) W. L. C. BADDELEY, Captain, R.E.,
General Supdt., Public Works Workshops.

NOTE.

Provision is made in this estimate for lightning conductors as shown in the standard design issued with G.O., dated 27th August 1883, No. 1880, Financial, but modification of the height, or position, or number of terminals is necessary according to the report issued as Appendix A to the standard specifications of the Public Works department.

(By Order)

(Signed) C. BOWEN, Major, R.E.,
Deputy Chief Engineer, P.W.D.

Detailed Estimate.

Detail of work.	No.	Measurements in feet.			Area or contents.	Total quantity of each description of work.
		L.	B.	D.		
Excavation for foundations and refilling trenches—						
Side walls	2	22 6	6 3	4 6	1,266	
End wall	1	7 0	5 0	4 6	158	
Do.	1	7 0	4 6	4 6	142	
Well for lightning conductor, 3 feet diameter.	..	7 0	Area.	4 0	28	
Trench for lightning conductor, 3 feet diameter.	1	17 0	2 0	2 0	68	
Total cubic feet	..	..	..	..	1,662	
Concrete in foundations—						
Side walls	2	21 6	5 3	1 6	339	
End wall	1	8 0	4 0	1 6	48	
Do.	1	8 0	3 6	1 6	42	
Below inclined plane at entrance	1	3 6	4 6	1 0	16	
Total cubic feet	..	..	..	..	445	
Brick-work in chunam for foundations and basement—						
Side walls	2	19 0	2 10 $\frac{1}{2}$	4 0	437	
Pilasters	4	1 6	0 6	4 0	12	
End walls	2	10 0	1 6	4 0	120	
Pilasters	2	1 6	0 6	4 0	6	
Inclined plane at entrance	1	3 6	4 6	0 6	8	
Drain	..	74 0	1 3	0 10 $\frac{1}{2}$	81	
Total cubic feet	..	..	..	..	664	
Brick-work in superstructure—						
Side walls to springing of arch	2	19 0	2 0	5 0	380	
Pilasters	4	1 6	0 6	5 0	15	
End walls	2	10 0	1 6	5 0	150	
Semi-circular gables	2	39 3	Area.	1 6	118	
Pilasters	2	1 6	0 6	5 0	8	
Coping for side walls	2	19 0	0 7 $\frac{1}{2}$	1 0	24	
Do. over doorway	1	6 0	0 6	0 6	2	
Do. over ventilators	2	2 6	0 4 $\frac{1}{2}$	0 4 $\frac{1}{2}$	1	
Deductions—						
Doorway	1	4 0	1 6	6 0	36	
Circular vents in gables 1' diameter	2	0 9	Area.	1 6	2	
Archwork over door and ventilator as per detail.	..	..	..	..	12	
Total cubic feet	..	..	..	..	698	
Archwork in chunam—						
Over door	1	5 0	1 6	0 9	12	
Over ventilators	2	3 0	1 6	0 9	242	
For roof	..	19 0	17 0	0 9	254	
Total cubic feet	..	..	..	..	254	
Concrete backing for arch—						
Over arch	..	19 0	18 9	0 4 $\frac{1}{2}$	134	
At ridge	..	19 0	4 6	0 10 $\frac{1}{2}$	75	
Total cubic feet	..	..	..	..	209	
Concrete for flooring	..	16 0	10 0	1 0	160	Cubic feet.
Paving with asphalt $\frac{3}{4}$ inch thick over concrete floor and for damp-proof course—						
For floor	1	16 0	..	10 0	160	
For inclined plane	1	4 6	..	4 0	18	
Damp-proof course	2	19 0	..	2 6	95	
Do. do.	2	10 0	..	1 6	30	
Do. pilasters	6	1 6	..	0 6	5	
Total square feet	..	..	..	..	308	

Detailed Estimate—continued.

Detail of work.	No.	Measurements in feet.			Area or contents.	Total quantity of each description of work.
		L.	B.	D.		
Batten door with frames and fastenings and patent rim-lock complete	1	4 0	..	6 0	24	Square feet.
Ventilator in gables with swinging shutter	2	1 0	..	1 0	2	Square feet.
Frames with perforated zinc to be placed outside ventilators	2	1 0	..	1 0	2	Square feet.
Teakwood in trestles—						
Uprights	24	0 3	0 3	4 6	7	
Longitudinal ties	12	15 0	0 2	0 3	8	
Cross ties	66	2 10½	0 2	0 3	8	
Reepers	48	15 0	0 2	0 1	10	
Total cubic feet	..	..	..	..	33	
Sheet, copper 1/4" thick for casing feet of trestles	24	1 0	..	0 6	12	
Do.	24	0 3	..	0 3	2	
Square feet	..	..	..	..	14	
14 Square feet, at 2-9 lb. per square foot =	..	..	..	..	..	40-6 lb.
Plastering with 3 coats of chunam—						
Interior sides and intrados of arch	..	16 0	..	25 9	412	
End wall square portion	2	10 0	..	5 0	100	
Do. semi-circular portion	2	39 3	Area.	..	79	
Exterior—						
Sides and surface of roof	..	19 0	..	34 0	646	
Pilasters, sides	12	0 4½	..	6 0	27	
End walls	2	13 6	..	7 0	189	
Do. gables	2	9 0	..	3 1½	56	
Sides and soffits of doorway	1	16 0	..	1 6	24	
Sides of ventilators	2	3 1½	..	1 6	9	
Deduct—						
For doorway	2	4 0	..	6 0	48	
For ventilators	2	0 9	Area.	..	2	
Total square feet	..	..	..	..	..	1,542
Plastering drain with Portland cement	..	74 0	..	2 0	148	Square feet.
Painting with 3 coats of Carson's oak paint—						
Door	2	4 6	..	6 6	59	
Ventilators	6	1 0	..	1 0	6	
Square feet	..	..	..	..	65	
Wood-oiling trestles 2 coats—						
Uprights	..	108 0	..	1 0	108	
Longitudinal ties	..	180 0	..	0 10	308	
Cross ties	..	189 0	..	0 10	360	
Reepers	..	720 0	..	0 6	360	
Total square feet	..	..	..	..	776	
Quantities for enclosure wall and shed—						
Excavation for foundations—						
Wall	..	179 6	4 6	3 0	2,423	
Gate piers	2	5 6	5 6	3 0	182	
Shed inner walls	..	13 9	4 6	3 0	186	
Steps	1	5 0	2 0	1 0	10	
Total cubic feet	..	..	..	..	2,801	
Concrete in foundations—						
Wall	..	180 6	3 6	1 0	632	
Gate piers	2	4 6	4 6	1 0	41	
Shed inner walls	..	14 9	3 6	1 0	52	
Steps	1	5 0	2 0	1 0	10	
Total square feet	..	..	..	..	735	

Detailed estimate—continued.

Detail of works.	No.	Measurements in feet.			Area or contents.	Total quantity of each description of work.
		L.	B.	D.		
Brickwork in chunam for foundations and basement—						
Footings—						
Wall	..	182 3	2 ¾	1 0	376	
Gate piers	2	2 9	2 9	1 0	15	
Shed inner walls	..	15 10½	2 ¾	1 0	33	
Above footings to floor level wall	..	183 0	1 6	2 0	549	
Gate piers	2	2 0	2 0	2 0	16	
Shed, inner walls	..	16 7½	1 6	2 0	50	
Steps	1	5 0	2 0	0 6	5	
Do.	1	3 0	1 0	0 6	2	
Total cubic feet	..	..	..	..	1,046	
Brickwork in chunam for superstructure—						
Wall	..	164 1½	1 1½	3 0	554	
Coping	..	164 1½	1 4½	1 0	225	
Gate piers	2	1 6	1 6	4 0	18	
Do. heads	2	2 0	2 0	1 0	8	
Shed walls	..	36 6	1 1½	6 0	246	
Gables	2	8 0	1 1½	1 6	27	
Deduct—						
Doorway	1	3 0	1 1½	6 0	20	
Windows	2	3 0	1 1½	3 0	20	
Archwork as per details	..	..	..	..	15	
Total cubic feet	..	..	..	..	..	1,078
Flat archwork in chunam—						
Over door	1	4 0	1 1½	1 1½	15	
Do. windows	2	4 0	1 1½	1 1½	15	
Total cubic feet	..	..	..	..	..	55
Batten door with frame	1	3 0	..	6 0	18	Square feet.
Venetian windows with frames	2	3 0	..	3 0	18	Square feet.
Entrance gate with bolts and hinges, complete	1	6 0	..	5 0	30	Square feet.
Teakwood wrought and put up—						
Rafters	18	7 1½	0 3	0 3	8	
Collar pieces	9	4 6	0 2½	0 3	2	
Wall plates	2	11 3	0 2	0 3	1	
Ridge pieces at ends to support rafters at gables	2	1 7½	0 3	0 3	1	
Total cubic feet	..	..	..	..	12	
Roofing with flat and pan tiles including teak reepers	..	11 3	..	14 9	166	Square feet.
Flooring with 9" square bricks over a levelling course of wall bricks—						
Shed	1	8 0	..	8 0	64	
Door piece	1	3 0	..	1 1½	3	
Steps	..	10 0	..	1 0	10	
Total square feet	..	..	..	..	77	
Plastering with two coats of chunam—						
Wall	..	164 1½	..	11 0	1,805	
Gate piers	2	5 0	..	7 0	70	
Shed exterior	..	41 0	..	7 0	287	
Gables	2	10 3	..	1 9	36	
Interior walls	..	32 0	..	6 0	192	
Do. gables	2	8 0	..	1 3	20	
Door jambs	1	15 0	..	1 1½	44	
Window jambs	2	12 0	..	1 1½	44	
Deduct—						
Door	2	3 0	..	6 0	36	
Windows	4	3 0	..	3 0	36	
Total square feet	..	..	..	..	..	2,454
						72
Total square feet	..	..	..	..	..	2,382

Detailed estimate—continued.

Detail of works.	No.	Measurements in feet.			Area or contents.	Total quantity of each description of work.
		L.	B.	D.		
Painting with three coats of Carson's paint—						
Gate	2	6 0	..	5 0	60	
Door	2	3 6	..	8 6	60	
Windows	3 X	3 6	..	3 6	74	
End rafters	2	7 1½	..	0 9	21	
Collar pieces	2	4 6	..	0 11	8	
Ends of rafters	14	1 0	..	0 9	11	
Wall plate ends	4	0 6	..	0 10	2	
Ridge piece at ends	2	0 6	..	1 0	1	
Total square feet					237	
Wood oiling roof timbers, two coats—						
Rafters	14	6 1½	..	0 9	54	
Collars	7	4 6	..	0 11	29	
Reepers	..	673 0	..	0 3	168	
Total square feet					261	
Gravelling compound—						
.. .. .	..	49 0	..	45 0	2,205	
.. .. .	..	6 0	..	1 6	9	
Deduct—						2,214
Magazine	..	21 6	..	17 6	376	
Shed	..	9 1½	..	9 1½	83	
Step	..	5 0	..	2 0	10	
Total square feet					469	
.. .. .						1,745

Abstract estimate.

Quantity.	Description of work.	Rate.	Per.	Amount.	Total.
	<i>Magazine.</i>	RS.		RS.	RS.
1,662 c. ft.	Excavation for foundations				
445 "	Concrete in foundations				
664 "	Brickwork in chunam for foundations and basement				
648 "	Brickwork in chunam for superstructure				
254 "	Archwork in chunam including cost of centering				
209 "	Concrete backing to arched roofing				
160 "	Concrete for flooring				
308 s. ft.	Paving concrete floor with asphalt, ¾ inch thick				
24 "	Batten door with frames and fastenings and patent lock, complete				
2 "	Circular ventilators in gables with swinging shutters				
2 "	Frame with perforated zinc to be fixed outside ventilators				
33 c. ft.	Teakwood in trestles				
40·6 lbs.	Sheet copper casing for feet of trestles fixed, complete				
1,492 s. ft.	Plastering with 3 coats of chunam				
148 "	Plastering drain with Portland cement				
65 "	Painting doors and ventilators with 3 coats of Carson's oak paint				
776 "	Wood oiling trestles, 2 coats				
	Lightning conductor complete				
	Contingencies, at 5 per cent.				
	<i>Enclosure wall and shed.</i>				
2,801 c. ft.	Excavation for foundations				
735 "	Concrete in foundations				
1,046 "	Brickwork in chunam in foundations and basement				
1,023 "	Do. in chunam for superstructure				
15 "	Archwork in chunam				
18 s. ft.	Batten door with frame				

Abstract estimate—continued.

Quantity.	Description of work.	Rate.	Per.	Amount.	Total.
		RS.		RS.	RS.
18 s. ft.	Venetian windows with frames				
30 "	Entrance gate with bolt, complete				
12 c. ft.	Teakwood wrought and put up				
166 s. ft.	Roofing with flat and pan tiles including teak reepers				
77 "	Flooring with 9 inch square bricks over a levelling course of wall bricks				
2,382 "	Plastering with 2 coats of chunam				
237 "	Painting with 3 coats of Carson's paint				
261 "	Wood-oiling roof timbers, 2 coats				
1,745 "	Levelling compound, making slopes for drainage and gravelling, 3 inches thick				
	Contingencies, at 5 per cent.				
Total					

(Signed) MORANT, Lieut.-Col., R.E.,
Offg. Consulting Architect to Govt.

No. 1920-C

MEMORANDUM.

Forwarded to the Financial department with advertence to its endorsement, No. 2234, herewith returned.

2. It is suggested that the specification and schedules of quantities be printed and circulated to all municipalities in continuation of G.O., dated 27th August 1883, No. 1880, Financial, and that copies be supplied to the Public Works department for circulation to officers of the department.

3. Special attention might be called to the foot-note added by this office to the detailed estimate for lightning conductor.

(By order.)—

CHEPAUK,
21st November 1884.

(Signed) C. BOWEN, Major, R.E.,
Under Secy. to Govt., P.W.D.

To the Financial department, with papers in original.

ORDER—dated 4th December 1884, No. 2797, Financial.

Communicated to the President, Municipal Commission, Calicut, and to all Presidents of Municipalities, in continuation of G.O., No. 1880, dated 27th August 1883, Financial. Special attention is directed to the foot-note to the detailed estimate for lightning conductor.

(True Extract.)

To the President of the Municipal Commission, Calicut,
„ all other Presidents of Municipalities.
„ the Public Works department. ✓

Chief Secretary.

Exd. J. Wright.

With order
in the order

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