

GOVERNMENT OF MADRAS.

FINANCIAL DEPARTMENT.

READ—again the following paper:—

G.O., No. 1153, Financial, dated 22nd December 1894.

ABSTRACT.—Making a further grant of Rs. 500 in aid of the artesian boring operations at Place's Garden at Kilacheri, Chingleput district.

READ—also the following papers:—

From the Revd. S. DOMINIC, Superior of the Monastery, Place's Garden, to the Chief Secretary to Government, dated the 29th February 1896.

I have the honour to report further on the artesian boring in Place's Garden since the 27th October 1894, up to which date I have had the honour of furnishing Government with a report detailing the cost and outturn of work. The Government, on the recommendation of Dr. King and the remarks passed in the Public Works Department, were pleased to sanction a further grant of Rs. 500 in their order No. 1153, Financial, dated 22nd December 1894.

2. Work was resumed on the 10th December 1894. The boring was continued to an additional depth of 1 foot 7 inches when the broken chisel end pieces of an auger impeded further progress. The soil met with was still "*limy clay*." Several special tools were locally made for extracting the broken chisel and tried, but in the first instance was not successful. Next sinking down the pipes was tried. The tubes were so rooted in the sides of the bore-hole that all hopes of letting them down had to be given up, and I was induced to think of diminishing the bore of the pipe as is generally adopted in work of this sort, as for example at Negapatam and Lucknow; but having made appropriate tools, the old $5\frac{1}{2}$ -inch pipes were extracted by the 24th April last. The remaining 56 feet of piping were so firmly adhered to the sides of the bore-hole that it was a question for further carrying out the work, more so as the tubes were disconnected. However, by means of a stronger tool made for the occasion, the 56 feet of piping were successfully got out of the bore-hole on the 10th May last, after which fresh tools were made for taking out the broken chisel ends above referred to. On the 17th May last, a chisel piece was successfully extracted and on further trials, the spiral auger broke, and caused very great trouble in taking it out; the next day after its fall it was obtained out of the bore, but its tip, about 4 inches long, broke while drawing it up as also an $\frac{1}{2}$ -inch rod iron $1\frac{1}{4}$ feet long. Before attempting further at the bottom of the bore-hole, and apprehending any slip in the sides, I ventured to let down the pipes for the sake of safety of the bore-hole. After having cleaned the pipes, and obtained rivets, the work of letting down the pipes was started on the 30th September, and 256 feet of pipes were sunk on the 23rd November last. Further piping was discontinued for want of pipes.

3. I beg to append, for the information of Government, statements A, B and C showing progress of work and cost of boring, &c., strata of earth passed through and statement showing tools and implements required for further operations. An half-open strong shell auger 5 inches in diameter is indispensably necessary for the operations, without which, I regret to say, it is not possible to continue the boring down to any further depth.

4. I have the honour therefore to request that Government will be pleased to issue orders in the Public Works Department to furnish me with a strong 5-inch shell auger, when sanctioning further grant, to start the boring operations to the depth recommended by Dr. King.

ENCLOSURE.

A.

Artesian Well Works, Place's Garden.
Statement showing progress of work and cost of boring, &c., at the different stages of work.

Date of work.	Description of work.			Total depth of boring.	Total depth of widening.	Total depth of sinking pipes.	Cost.	Remarks.
	Deepening.	Widening.	Sinking pipes.					
Total on 27th October 1894	..	..	..	FT. IN. 386 6 1/4	FT. IN. 385 3 3/4	FT. IN. 240 5 1/4	RS. A. P. 4,591 4 4	Boring was carried down to an additional depth of 1 foot 7 inches when further progress was impeded by the broken pieces of a chisel auger.
December 10th to 15th 1894	..	..	..	388 1 1/4	385 3 3/4	240 5 1/4	44 7 0	Special tools made were let down to extract the broken pieces, but without success.
March 18th, 19th and 23rd 1895	..	..	..	388 1 1/4	385 3 3/4	240 5 1/4	24 4 0	8 feet 5 1/2 inches of the old pipes were removed with very great difficulty from the bore-hole.
" 27th to 30th	..	..	..	388 1 1/4	385 3 3/4	232 0	33 15 0	Pipes were not able to be removed. The bore-hole was widened 6 inches lower down the sunken pipes.
April 1st to 9th	..	..	..	388 1 1/4	385 3 3/4	232 0	67 10 9	A shell pump was made for the work of extracting the broken pieces.
" 15th to 20th, 23rd to 25th	..	..	..	388 1 1/4	385 3 3/4	56 0	66 4 9	Further hoisting of the pipes was not possible.
May 7th to 11th	..	..	..	388 1 1/4	385 3 3/4	..	31 10 6	Special tool for taking out the sunken pipes was made and 56 feet of the same were taken out.
" 13th to 18th	..	..	..	388 1 1/4	385 3 3/4	..	40 12 9	A new contrived tool for extracting the broken pieces was made and let down, but after repeated trials, one broken piece of a chisel auger and another piece of iron rod were extracted.
" 20th to 22nd	..	..	..	388 1 1/4	385 3 3/4	..	24 7 6	Further trials were made for taking out the remaining broken pieces, but without success.
" 24th to 25th and 27th to 29th	..	..	..	388 1 1/4	385 3 3/4	..	13 2 6	Further trials were made for taking out the remaining broken pieces, but without success.
June 5th to 8th	..	..	..	388 1 1/4	385 3 3/4	..	31 5 0	Further trials were made for taking out the remaining broken pieces, but without success.
" 24th, 25th and 27th	..	..	..	388 1 1/4	385 3 3/4	..	19 14 0	Fresh tools were made and tried, but without success.
July 12th and 13th; August 1st to 3rd, 5th to 10th, 12th to 14th, 16th, 17th, 23rd and 24th.	..	..	..	388 1 1/4	385 3 3/4	..	82 13 3	Special tools were made and tried several times, but without success. Broken piece of spiral auger was got out on the 3rd August.
September 1st to 7th, 9th to 12th, 14th, 19th, 20th and 30th.	..	..	..	388 1 1/4	385 3 3/4	..	46 6 6	The bore-hole was widened for sinking the pipes and the pipes were repaired. The spring blade auger, while widening the bore-hole, broke on the 10th and the broken piece was got out the next day.
October 1st, 14th to 16th, 18th, 19th, 22nd to 24th; November 18th to 23rd.	..	..	..	388 1 1/4	385 3 3/4	256 10	72 7 3	64 pipes 4 feet each were sunk down the bore-hole, new rivets having been purchased and used for the pipes
Cost of 16 feet of pipes	..	..	..	..	..	..	32 0 0	
Total Expenditure	..	..	..	..	..	..	5,522 13 1	
Total Receipts	..	..	..	..	..	..	5,463 0 0	
Balance deficiency	..	..	..	..	..	..	59 13 1	

B.

Statement showing the different strata of earth met with and their thickness.

Stratum number.	Strata of earth passed through.	Thickness of stratum.		Total depth from surface of ground.		Remarks.
		FT.	IN.	FT.	IN.	
53	Limy clay ..	3	1 1/2	388	1 1/2	Clay mixed with great quantity of calcareous matter is met with at this depth and is of a very hard texture approaching to hard limestone.

C.

Statement showing Tools and Implements required for boring operations below 388 feet.

Names of Tools and Implements.	Number required.	Remarks.
An half-open shell auger 5 inches in external diameter.	1	One of 7-inch diameter is at hand, but cannot be used on account of greater diameter.
Pipes 5 1/2 inches in external diameter 4 feet each.	49	Cost of these will be Rs. 392.

Endorsement No. 492.

Referred to the Public Works Department with the request that the opinion of the Chief Engineer may be obtained as to the advisability of a further grant.

FORT ST. GEORGE,
5th March 1896.

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

No. 1456-C.

Referred to the Superintending Engineer, V Circle, for favour of report whether the auger asked for can be supplied, and also whether the prospects of the work are such that a further grant may be recommended.

14th March 1896.

(Signed) C. H. B. BURLTON,
for Chief Engineer, P.W.D.

From Lieutenant-Colonel C. C. RAWSON, R.E., Superintending Engineer, V Circle, to the Chief Engineer, Public Works Department, dated Chidambaram, 26th March 1896, No. 17-W.C.

In returning the papers received with your No. 1456-C., dated 14th March 1896, I have the honour to inform you that a 5-inch shell auger is not available in the Public Works Stores. One can, however, be made at the workshops, which have already turned out such implements.

2. I recommend that a further grant of Rs. 1,000 be made for this work, of which Rs. 400—500 will be required to pay for pipe and the steel auger and the rest for labour for carrying on the boring.

No. 1817-C., Public Works.

Transferred to the Financial Department and the referred papers returned. The Chief Engineer supports the recommendation of the Superintending Engineer.

2nd April 1896.

(Signed) D. McNEIL CAMPBELL, Col., R.E.,
Joint Secy. to Govt., P.W.D.

ORDER—No. 296, Financial, dated 28th April 1896.

A further grant of Rs. (1,000) one thousand will be made in aid of the borings.

(True Extract.)

J. H. Under Secretary
Chief Secretary.

To the Revd. S. Dominic.
" Accountant-General.
" Public Works Department.
" Superintendent, Geological Survey.

Gobt. of {1896} Madras.
FINANCIAL.

No. 1817 cad/2-11-96
1456 cad/11-3-96
55 w ad/10-1-95
3961 cad/8-12-94
1623 w ad/29-6-94
1405 w ad/7-6-94 ✓
930 D ad/27-7-93
716 w ad/15-3-93
80 w ad/16-1-93
115 w ad/12-1-92 ✓
3313 w ad/9-12-91
Issued 3127 w ad/20-11-91
4912 cad/7-11-91
Recd. 2939 w ad/2-11-91 ✓
2607 w ad/30-9-91
4247 cad/25-9-91

G.O., No. 296, 28th April 1896.

2366w/d/5-9-91
2309w/d/22-8-89

✓ 216562 30 8 95
28378 25 3 95

APRIL.

ALL TALL.

2399	w	8	19-9-73
3147	w	8	21-11-87
1128-9	w	8	5-5-86 ✓
328	w	8	6-5-86
2676	w	8	10-11-85
1732	w	7	28-2-85
1137	c	8	4-7-85
867	c	8	4-5-85

Artesian Boring Operations.

Sanctioning a further grant of Rs. 1,000 in aid of the artesian boring at Place's Garden.

EJ
2-6-96

Communicated
to the Supp. Engineer
by the
V circle.

16/5/96

18.5.86

DESPATCHED

28 MAY. 96

S.S. V. C. 100
1/2 5th block

O.L.S. 100 R 21/5