M.R.O. 1—27,000—3-6-32.

(1) Number of pages.....

(2) Date of repair.....

(3) Initials of the Reference.....

MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

G.O. No. 930 Press / Mis.

5574-57

Dated 25 3 1872.

Not to be folded or roughly handled

No. 554. Read the following letter from Captain J. N. HUNTER, R.E., in charge of Superintending Engineer's Office, 4th Division, to the Secretary to Government, Public Works Department, dated Madras, 19th March 1872, No. 5,074 :—

2 Plans.
1 List.
2 Estimates.

WITH reference to G. O., No. 2,922, dated 17th November 1871, I have the honour to submit, for the sanction of Government, two plans and two estimates for the following works.

1*st.*—Putting up gas works and laying distribution pipes to certain roads and buildings, Rupees 72,800.

2*nd.*—Constructing an office and store-room for the Superintendent of the Government Gas Works, Rupees 1,200.

2. The first estimate is composed of fifteen items, six of these relate to the works for making gas, and the remaining nine to the distribution works.

3. The construction of the necessary buildings and the putting up of the apparatus for manufacturing gas have been completed at a cost of Rupees 11,205.

4. The estimated cost of the distribution works which yet remain to be done is Rupees 54,000, but this includes the value of the pipes and plant received from England, and as the plant seems to be complete, its value may be deducted from the present estimate, leaving a balance of Rupees 9,775, which is the calculated cost of laying the pipes, opening and closing roads, making holes in the walls, etc.

5. I beg, therefore, that the Government will be pleased to sanction the said sum of Rupees 9,775 for laying down the distribution pipes, and Rupees 1,200 for the construction of an office and store-room for the Superintendent of the Government Gas Works from the Reserve of 1872-73.

No. 555. ORDER THEREON, 25th March 1872, No. 830.

MILITARY WORKS, No. 19.

24th Aug.	1869,	No. 2,778,	Rs. 7,820
2nd July	1870,	,, 1,589,	,, 1,060
25th Nov.	,,	,, 2,845,	,, 1,800
11th Aug.	1871,	,, 2,059,	,, 525
			11,205

THE estimate, amounting to Rupees 72,800, submitted for sanction with this letter is that which received the sanction of Government in G. O., No. 832, dated 13th March 1868, since which date other estimates, aggregating Rupees 11,205, were passed in the orders marginally noted. It is observed from paragraph 3 of Captain Hunter's letter that the works sanctioned in these additional estimates have been completed, but it does not appear whether steps have been taken to ascertain the sufficiency or otherwise of the estimate of Rupees 72,800 which was prepared more than five years ago, and on which work to the value of Rupees 9,775 has yet to be carried out. Information on this point should be furnished, and the usual comparative statement submitted showing, after deducting the value of articles obtained from England, (1) the estimated quantity of work ; (2) the cost of work already carried out; and (3) of that remaining to be done.

(True Extract.)

(Signed) J. CARPENDALE, Colonel, R.E.,
Secretary to Government.

To the Superintending Engineer, 4th Division.

Exd. S. T. Augustin.

Abstract Estimate No. 302 of 1867-68.

For Enlarging the Gas Works in Fort Saint George & supplying Gas to such buildings as are not yet thus provided for.

Estimate item No.	Description of work	Amount of each Item
1	Removing the present Retorts and erecting 5 Sets of double bench Retorts with both ends of Hydraulic Main	1950-0-0
2	Hydraulic Main, Iron Retorts & Furnance &c.	2480-0-0
3.	Masonry Platform &c. for apparatus for extension of Gas supply	6850-0-0
4.	Constructing a masonry well to Gas Holder	6780-0-0
5.	Constructing Syphon Well	250-0-0
6.	Gas Governor	490-0-0
7	Laying down Cast & Wrought Iron Main & branch Gas Pipes in the Streets of the Fort for supplying Gas to the Lights in the buildings and Streets of Fort	19000-0-0
8	Laying down Wrought iron branch Pipes &c. for supplying Gas light to the Government Office in the Fort	2980-0-0
9	Laying down Wrought & Iron branch Pipes &c. for supplying Gas light to the Mess Houses in Fort Saint George Lower & upper Story	1490-0-0
10	Laying down Gas Pipes from main to the Regimental Recreation and Reading Rooms &c.	990-0-0
11	Laying down wrought iron branch Pipes &c. for supplying Gas light to Saint Mary's Church in the Fort	2220-0-0
12.	Laying down wrought iron Pipes &c. for supplying Gas light to the European Barracks Lower & upper Story in Fort Saint George	7560-0-0
13	Laying down wrought iron Pipes &c. for supplying Gas light to the Canteen, Bazaar, Privies, and wash House &c. attached to the European Barracks in Fort Saint George	940-0-0
14.	Laying down wrought iron Pipes &c. for supplying Gas light to the Family Barracks from 1st to 4th Blocks in Fort Saint George	7140-0-0
15	Extra Pipes &c.	11480-0-0
	Tongs and Keys &c. to the above articles	200-0-0
	Total Rupees	72,000-0-0

Presd. Ex. Engr. Office
Fort Northern Range
Fort Saint George
21st December 1867

D. Faldoe Capt. R.E.
Executive Engineer Fort & N.R. Divn.

I. W. Hurlee Captain R.E.
incharge Supg Engrs Office 4th Divn

Original

Abstract Estimate for 1871-72
Presidency District

Work . Of Constructing an Office and Store room &c. for the Superintendant of Government Gas Works in Fort Saint George.

Number	Description of Works.	Rate	Amount
2640	Cft. Brick work in chunam	" 2	426 4
80	Do Flat arch work in chunam	" 3 4	16 10 8
60	Do Cornice work in chunam	" 3 6	13 2 "
550	Sft. Roofing with palmyrah couples of 2 collar pieces	11 2 "	61 3 "
33½	Do Roofing with palmyrah rafter to the verandah	7 " "	23 10 "
1062½	Do Covering the above roofs with teakwood peepers nails flat pantiles and chunam borders	17 8 "	185 15 "
24½	Do Pair of panelled venetion door Shutters with frames folding hinges &c complete to Office room	" 154	23 7 8
27	Do Venetion window Shutters with frames folding hinges and iron bars &c complete	1 8 "	40 8 "
29	Do Pair of batten door Shutters with frames folding hinges &c complete to Store Smoking room	" 132	40 9 8
24	Do Batten window Shutters with frames folding hinges iron bars &c Do Do	1 19	59 14 6
16-4-4	Cft. Teakwood wrought and put up	2 "	46 2 4
632/4	Sft. Teakwood Shelf planks 1" thick over the brackets &c	30 " "	19 2 "
2000	Do Plastering the walls with 2 coats chunam	2 7 3	49 1 "
624	Do Do Cornices with Do	3 11 "	2 4 10
5775	Do Flooring the rooms and verandah &c with 8" of brick in chunam and a level ling course of 3" Bat wall underneath	8 14 "	51 " 6
40	Rft. Zinc Gutters with clamps &c	" 8 "	20 " "
15	Do Do Do Spunks Do.	" 8 "	7 8 "
150	Sft. Green paint 3 coats with Europe verdigris to venetion doors and windows &c	" 4 12 "	7 2 "
400	Do Red paint 3 Coats to Batten doors, windows Screen Summer and Shelf planks &c	2 " 6	8 2 "
37½	Do Black paint 3 Coats to iron bars of batten windows	2 4 "	" 136
800	Do Wood oil 3 coats to Teakwood rafters &c	1 " 9	8 6 "
1100	Do Tar 2 coats to palmyrah couples and rafters &c	" 12 6	8 9 6
	Coaly hire for Cutting the walls and fixing the windows with masonry	— " "	3 "
	Providing 2 granite Stones under the trunk including masonry bed	— " "	1 "
	Excavating foundation and levelling the ground	— " "	1 "
	Sundry Charges &c	— " "	69 8 6
		Total Rupees.	1200 " "

Fort Saint George
5th March 1872

I. L. Strachey Captain R.E. Executive Engineer Presy Div
in charge Works Engr Office 4th Do

I. L. Strachey Captain R.E.

Compd C

N. 1388/72.

Prov. 25 Marzo/72 Ll. 1554

N. 1388/72.

Prov. 25 Marzo/72 Ll. 1554

Estimate for Erecting the Brickwork in Buckhurst Sewer and Laying Glazed Brick Invert &c. &c. as per Contract Plans provided for, prepared agreeably to Government Order No. 2778 dated 10 September 1867 and Superintending Engineers No. 2985 dated 18 September 1867.

Price

		Rate	£	s.	d.
1651¾	Cartage Price for demolishing the masonry work	" "	67	5	10
	Cartage Price for cutting the Ramp walls of the north Elevation and fixing 3 double Retorts & furnace with fire bricks in clay as per plan	2 "	6	"	"
4330	Brick work in Cement	" 2 5/12 C.Ft.	654	"	2
86¼	Circular Brick work in Cement	" 4 " do.	21	3	"
15 7/8	Fire brick work in clay	" 12 3 do.	120	14	"
110 7/8	Circular Brickwork with Fire brick in clay	1 " " do.	110	14	"
Sup.t feet 2000	Plastering the Walls with 2 Coats Cement	2 4 " Sup.t	45	"	"
200	Plastering the Arch with 2 Coats Cement Cement mixed with Linseed oil	2 9 9 do.	5	3	6
562 5/8	Flooring with 2 courses of brick on edge in Cement	1 " 4 do.	97	3	6
1225	Corrugated Iron Shot roof with flat iron Purlins 1" x ⅛" thick with Screws & Nuts &c.	40 " " do.	490	"	"
	4 Granite stones each under the posts	1 " C.	5	"	"
	Cartage Price for removing the Rubbish	" " "	12	8	"
	Excavating foundation filling in & levelling	" " "	50	"	"
C. Feet	4 Teak Wood turned posts each 10" at bottom 7" at top as per plan	20 " C.	80	"	"
15-10-10	Teakwood wrought and fixt &c.	2 15 C.Ft.	46	11	5
	Granite stone 2 line dressed to support the Iron Roof	1 " "	46	"	"
Sup.t feet 100	Wood oil 3 Coats to the Ingsummers &c.	1 " Sup.t	1	"	9
	Compensation Toll Tax Dues Charges and Carting &c.	" " "	106	11	10
	No 2		1950	"	"
	Hydraulic Main, Iron Retorts, and Furnace &c.				
	Cartage Price for removing 4 Retorts and Brickwork &c.	" " "		2	"
	Cartage Price for removing the present Hydraulic Main	" " "		2	"
	Cartage Price for removing old Gas Furnace & Junction Pipes &c.	" " "		4	"
	1 Hydraulic Main as per Indent Plan	" " "		20	"
	Carried over		20	"	1950

Cubic feet

Brought over 268 1950 . .

1 Hydraulic Main as per Detail Plan " " " " 200 . .

10 Cast iron Elliptical Retorts each 7 feet long and 18 ins: by 10 ins: as per Detailed Sketch } 150 . . C. 1577 . .

10 Cast iron flanged Stand Pipes 8½ feet long 4½" Dr. on the bottom and 4" Dr. on the top as per Detail Plan } 9 8 . . do. 95 . .

10 Cast iron flanged Dip pipes 3 ft. long by Dr. Dr. 4 . . do 40 . .

10 Cast iron Bridge pipes attached to the Stand & dip pipes as per Detail Plan 2 8 . . do 25 . .

32 Cast iron caps 4" Dr. as per do do 4 8 . . do 16 . .

2 Cast iron flanged Bend pipes each 5 ft. long by 4" Dr. from Hydraulic Main to Tar vessel as per do } 6 . . do 12 . .

14 Runs: feet Cast iron flanged pipes 4" Dr. with 4 elbows Dto for connecting 2 Hydraulic Main as per do } 4 . . . 21 . .

30 Dr. . . Cast iron flanged pipes 4" Dr. for connecting Hydraulic Main with Condenser as per plan } " " " " 34 . .

5 Furnaces with Iron Setting frames and Shutters Dto as per plan 10 . . C. 50 . .

2 Wrought iron Socket pipes each from Tar vessel to Tar Cistern } " 32 Rft. 1 12 6

2 Wrought iron caps 1" Dr. " " " " " "

Carpenters for setting up above Apparatus Dto " 4 . . C. 8 . .

1 Adpon pipe for to be used for Tar Cistern " " " " 15 . .

All the flanged Pipes to be supplied with Washers bolts and nuts Dto } " " " " 30 . .

Sundry Charges Dto " " " " 111 16

2480 . .

Masonry Platform Apparatus for extension of Gas Supply

Carpenters for removing Iron Condenser Pipes, Scrubber Iron purifier and Lime purifier & pipes including Masonry bed and platform Dto } " " " " 14 . .

Cub: feet 690 Brick work in Chimney

Sup: feet 125 Plastering with 2 coats Hydraulic Cement " 25 Sft. 104 3 6

Excavating foundation filling in & levelling the earth 4 2 ft. 39½ 5 2 6

Cub. feet 89 . . 6 7 6 16 Granite Stone blocks each 2 feet dressed under the Condensers 4 " " " 20 . .

Teakwood Wrought and fixt up 1 " " C. 16 . .

2 Sheet Iron Condenser Boxes as per Detail Plan complete 2 15 ft. C ft. 261 9 6

16 Cast iron Internal Condensers 2½ inches diameter with one side flanges and another Socket as per Plan 253 . . C. 570 . .

6 4 . . do. 87 8 . .

Carried over 1008 7 1 4430

		Brought over			1005 / 1 / 2430
16		Cast iron external condensed 7 inches Diameter with flanges Tm	20	C.	280
7		Cast iron connecting pipes with do to do	12	do	54
1		Cast iron connecting pipe with flanges from Condenser to Hydraulic valves as per plan			334
16		Cast iron connecting pipes 4" Dr. with flanges to the purifier as per plan	7	do	112
3		Cast iron pipes with flanges for one purifier as per do			42
2		Cast iron pipes with flanges for Scrubber			20
2		Cast iron pipes with flanges for Iron purifier			16
7		Cast iron pipes with flanges for connecting seven purifiers			49
3		Cast iron pipes with flanges connecting from Hydraulic valve to Stand pipe as per plan			228
3		Cast iron Stand pipes with flanges each as per plan			18
2		Slide valves	80	C.	160
7		Cast iron Socket pipes each for discharging the Tar from the purifier	1 4	do	8 12
2		Cast do do each for discharging the Tar from the Condenser Boxes	1	do	2
9		Cast Iron caps with Screw Ts do	2	do	12
2		Iron Scrubber each 2 ft. Dr. 6 ft. height as per plan	150	do	300
2		Iron purifier each 2 ft. Dr. × 4½ ft. do do	125	do	250
3		Iron Lime purifier each 5 ft. Dr. 4½ ft. do do	500	do	1500
1		Iron Tar Tub 4 ft. Dr. 5 ft.			100
1		Iron Tar Tub small			35
1		Iron water cistern 5 ft. Dr. × 5 ft. height over the wooden frame			125
1		Iron Hydraulic valve 6 ft. Dr. by 5 ft. height with chains weights &c complete as per sketch Plan			700
180 Runs feet		Cast iron Socket pipes 1" Dr. for water supply from Gas well to Condenser	2	R ft.	282
2		Brass Cocks 1" Dr. with Socket	7	C.	14
1		Iron Water vessel over the Condenser as per plan			80
600 Runs feet		Cast iron Socket pipes 4" Dr. for laying down from the Gas well to Gas Meter	1	R ft.	600
9		Cast iron Elbows 4" Dr. by 1 foot Radius with Socket	2	C.	18
50		Cast iron block flanges to the 4" Dr. pipes	8	do	25
4		Cast iron Reed pipes 3 ft. by 4" Dr. with Socket	4	do	16
		Carried over			5497 / 1420

Cubic feet

Brought over 5971 4/20

3 Cast Iron Socket T Pipes 3 ft long 4" Diameter — 4 " " £. 12 "

5 Syphons each 2 ft high by 1 foot square with Syphon pipes — 20 " " do 100 "

2 Hydraulic valves — 80 " " do 160 "

Cooly hire for repairing the old Gas Holder and Syphon well and for laying down the new pipes upto 4" Diameter — " " " " 60 "

Cooly hire for excavating the earth and laying down cast iron pipes and fitting with putty &c — " " " " 300 "

All the flange pipes to be set with washers, bolts & nuts &c — " " " " 60 "

120 Rung: feet Constructing Masonry drain & plastering &c complete — " 8 " R ft 60 "

Sundry charges &c — " " " " 328 12

6850 "

Cub: feet
12955 1/4
Cub: feet
6000

Brick work in Chunam — " 2 1/2 C ft 19512 6

Plastering with 2 Coats Hydraulic Cement — 4 2 " Sq 1/2 247 8

6 Granite stones each 2 Cwt dressed with 3 Grooves — 4 " " C. 24 "

Excavating foundation filling in and levelling the earth — " " " " 300 "

1 Chunam Gas Holder 40 ft Diameter 15 ft high with 6 cast iron posts strengthened & Rafters &c complete as per plan — " " " " 3700 "

Cooly hire for setting the above &c — " " " " 200 "

30 Rung feet Constructing Masonry drain & plastering &c complete — " 8 " R ft 25 "

Sundry charges &c — " " " " 326 16

Cubic feet
370

Brick work in Chunam — " 2 1/2 C ft 55 1/2

66
Sup: feet
500

Brick work in Chunam to the Centre and side — " 4 " do 16 8

Plastering with 2 Coats Hydraulic Cement — 4 2 " Sq 1/2 201 "

1 Granite Stone grooved 2 Cwt dressed for fixing Hand pumps — " " " " 2 "

Excavating foundation filling in and levelling the earth — 4 " " " 25 "

1 Cast Iron Hand pumps of 4-1" high with pipes complete as per Indent Plan — " " " " 60 "

70 Rung feet Constructing Masonry drain & plastering &c complete — " 8 " R ft 35 "

Cooly hire for setting the Hand pumps and Syphons &c — " " " " 20 "

Sundry charges &c — " " " " 14 15 10

250 "

Carried over 1830

Brought over 1830

340	Brickwork in Cement	2 5/12 Cft	111 12 4	
	Flat Brickwork in Cement	2 " "	1 " 8	
Sup. feet 112½ Sup. feet	Paving with brick on edge in Cement over the bed on the flats	7 6 yds 9 ft	8 57	
1000 Cubic feet	Plastering with 2 Coats Hydraulic Cement	4 2 " do	41 4 "	
2 " "	1 Teakwood Beam as bought 12 inch sup.	2 15 ½ Cft	5 14 "	
	1 Swedish Iron bar for making 2 dia Cramps with Screw Bolts & Nuts for Wheels	" " "	1 8 "	
	1 Governor with spindles, wheels and weights Complete as per plan	" " "	200 " "	
	Excavating foundation pitting in and levelling the earth	" " "	30 " "	
50 Rmd feet	Constructing masonry drain & plastering Complete	" 8 ft 6 ft	25 " "	
	Carpenters for fitting the Governor	" " "	35 " "	
	Sundry charges Do	" " "	30 4 1	
				490 " "
1100 Rmd feet	Cast Iron Socket pipes 4" Diameter	1 " " Rft	1100 " "	
	3 Cast Iron socket Elbows 4" Do 1 ft Radius	2 " " Ea	6 " "	
	2 Do T Pipes 4" Diameter	4 " " do	8 " "	
800 Ft	Cast Iron Socket pipes 3" do	" 8 " Rft	400 " "	
	1 Cast Iron Socket diagonal T Pipes 3" Diameter	" " " "	5 " "	
	4 Slide Valves 3" Do	60 " " Ea	240 " "	
	5 Cast Iron Socket T Pipes 3" Do	3 " " do	15 " "	
1600 Ft	Cast Iron Socket pipes 2" Do	" 56 Rft	530 " "	
	8 do Socket Elbows 2" Do 1 foot Radius	1 " " Ea	8 " "	
	1 do Socket T Pipes 2" Do	" " " "	2 8 "	
	4 do Slide valves 2" Do	40 " " do	160 " "	
9870 Do	Cast Iron Socket pipes 1½ Do	" 4 ½ Rft	2407 8 "	
	20 do Socket Bends 1½ Do	" 12 " Ea	15 " "	
	10 do do T Pipes 1½ Do	2 " " do	20 " "	
	4 Brass Stop Cocks 1½ Do	12 " " do	48 " "	
12750 Ft	Cast Iron Socket Pipes 1" Do	" 26 Rft	1992 3 "	
	5 Brass Cocks 1" Do	7 " " Ea	35 " "	
	80 Cast Iron Socket T Pipes 1" Do	" 8 " do	40 " "	
	100 do Elbows 1" Do	" 6 " do	37 8 "	
	300 Jumbles for Inner and Outer thread	" 1 " do	31 4 "	
3000 Ft	Wrought Iron Socket pipes ¾" Do	" 36 Rft	656 4 "	
	150 Brass fitting for ¾" & ½" Pipes	2 " " Ea	300 " "	
		Carried over	8137 3 · 16800	

Centre
feet

		Brought over		8137 3 . 13500 . .
500 Runs feet	Wrought Iron Socket Pipes ½ Dia.		26 Rft.	732 . .
	60 Cast Iron Sockets at each change of Standard covered with Hinge Flaps of Cast Iron tube Dia. Complete	10	Ea.	600 . .
	24 Single light Pendants with Burners Dia. Complete	6	do	144 . .
	30 Lamp posts with Globes Dia. Complete	30	do	1500 . .
	147 Wall Lamps with Globes Dia.	20	do	2940 . .
	9 Gas meters Complete for 9 Lamp lamps	100	do	900 . .
	Excavating the earth for laying down the pipes & refilling the earth			1000 . .
	10 Cast Iron Saddles for 17 1/2 Dia. pipes	3	do	30
	Coolyhie for laying down the pipes & fitting with putty and Iron Clamps Dia.			1000 . .
	Coolyhie for removing the masonry and Granite floor and Reconstructing the same with masonry Dia. when required for laying pipes			500 . .
	Laying Road with old Broken Metal & Lime Concrete & one Jelly and Grand & thick well tramped with water			500 . .
	Construction of Masonry Tank and Plastering Dia.	10	Ea.	750 . .
	Sundry Charges Dia.			9011 .
				19000 . .
650 Runs feet	Wrought Iron pipes 1 1/2 Dia. with Socket		8 Rft.	3250 . .
	10 Wrought Iron Socket elbow 9" long for 1 1/2 Dia.		12 Ea.	78 . .
	10 Wrought Iron Socket T pipes 1 1/2 Dia.	2	do	20 . .
	50 Nimbles for inner and outer thread		1 do	32 . .
800 Dia.	Wrought Iron pipes 1" Dia.		6 Rft.	300 . .
900 Dia.	Dia. pipes ¾" Dia.		3 6 do	196 . .
700 Dia.	Dia. pipes ½ Dia.		2 6 do	1096 . .
	20 Wrought Iron Socket T pipes 1" Dia.		18 Ea.	20 . .
	156 Single light pendants 7" long with burners Complete	6	do	936 . .
	200 Brass fitting for ¾" & ½" Wrought Iron pipes	2	do	400 . .
	10 Brass Cocks 1 1/2 Dia. with Lock keys Complete	15	do	150 . .
	20 Brass Cocks 1" Dia. with Dia.	10	do	200 . .
	Coolyhie for fitting up the Wrought Iron pipes with Iron Clamps & putty Dia.			150 . .
	Sundry Charges			148 . .
				2980 . .
	Carried over			40780 . .

		Brought over			40780
10 Pcs	Brought Iron Socket pipes 1½ Ins		8	Pcs	70
	9 Wrought Iron Socket Elbows 9" long for 1½ Ins		12	Ea.	6 12
	5 Wrought Ins T pipes 1½ Ins		2	do	10
	17 Thimbles for inner and outer thread		1	do	1 1
120 Ins	Wrought Iron pipes 1" Ins		6	Pcs	45
90 Ins	Ins Pipes ¾ Ins		36	do	19 11
60 Ins	Ins Pipes ½ Ins		26	do	9 6
	3 Wrought Iron Socket T pipes 1" Ins		18	Ea.	4 8
	2 Brass Cocks 1½ Ins with Lock boxes complete		15	do	30
	6 Brass cocks 1" Ins with Ins		10	do	60
	1 Single light Pendants 6" long with burners complete		6	do	6
	2 Double light Pendants with 2 burners each complete		30	do	60
	2 Four light Pendants 7 feet long, with 4 burners each complete		75	do	150
	1 Single light Bracket with burner complete				2
	20 Brass fitting for ¾ and ½" wrought Iron pipes		2	Ea.	40
	Good deal of sundry fitting of the wrought iron pipes such as Iron Clamps and putty Ins				30
	Upper Story				
72 Ins	Wrought Iron Socket pipes 1½" Ins		8	Pcs	36
	1 Ins Socket elbow 9" long for 1½" Ins		12	Ea.	12
	4 Ins Socket T pipes 1½ Ins		2	do	8
	8 Thimbles for inner and outer thread		1	do	8
150 Ins	Wrought Iron pipes 1" Ins		6	Pcs	56 4
110 Ins	Ins pipes ¾" Ins		36	do	24 1
80 Ins	Ins pipes ½" Ins		26	do	12 8
	40 Brass fitting for ¾" and ½" wrought Iron pipes		2	Ea.	80
	3 Brass Cocks 1½ Ins with Lock boxes complete		15	do	45
	3 Single light brackets with burners complete		2	do	6
	2 Double light brackets with burners complete		5	do	10
	1 Double light pendant with burners complete				25
	2 Treble light pendant with burners complete		45	Ea	90
	1 Four light Pendant with burners complete				75
	1 Six light Chandelier with burners complete				85
	1 Seventy two Sun light Chandelier with burners complete				250
		Carried out			1365 40780

Brought over 3687 4078

Cost of fixing up & wrought Iron pipes with Iron Clamps & Screws &c. 50

Sundry Charges &c. 119

Laying down Gas pipes from Main to the Regimental Recreation and Reading Room &c. 1490

200 Rm. feet Wrought Iron Socket pipes 1½" &c.
12 do Socket Elbows 9" long 1½" &c.
9 do Socket T pipes 1½" &c.
8 Thimbles for inner and outer thread
350 &c. Wrought Iron pipes 1" &c. — 8 " Ref. 100
200 &c. &c. pipes ¾" &c. — 12 " C. 9
150 &c. &c. pipes ½" &c. — 2 " do 18
25 Wrought Iron T pipes 1" &c. — 1 " do 8
25 do Elbows 1" &c. — 6 " Ref. 131 4
50 Brass fitting for ¾" and ½" Wrought Iron pipes — 26 do 23 6
12 Double light pendants with 2 burners each complete — 18 " C. 37 8
10 Single light pendants with burners complete — 8 " do 12 8
3 Brass Cocks 1½" &c. with lock lever complete — 2 " do 100
Cost of fixing up the Wrought Iron pipes with Iron Clamps & Screws &c. 60 — 25 " do 300
Sundry Charges &c. — 6 " do 60
— 15 " do 45
491
990

Laying down wrought Iron branch pipes &c. for supplying Gas light to Saint Mary's Church in Fort Saint George.

200 &c. Wrought Iron Socket pipes 1½ &c. — 8 " Ref. 100
2 &c. Socket Elbows 9" long by 1½ &c. — 12 " C. 3
2 &c. Socket T pipes 1½" &c. — 2 " do 4
55 Thimbles for inner and outer thread for 1" Pipes — 1 " do 3 7
350 &c. Wrought Iron pipes 1" &c. — 6 " Ref. 131 4
470 &c. &c. pipes ¾" &c. — 26 do 102 13
350 &c. &c. pipes ½" &c. — 26 do 54 11
493 4326

Carried over

		Brought over			3993 . 4260 .
7	Wrought Iron Socket elbows 1" Dr.		8	Co.	3 8 .
2	" Do. Do. T pipes 1" Dr.		18	do	3 6 .
70	Brass fittings for ¾" and ½" Wrought Iron pipes		2	do	140 . .
5	Brass Cocks 1½" Dr. with Lock Levers complete		15	do	75 . .
8	Six light Chandeliers with 6 burners each complete		85	do	680 . .
2	Eight light Chandeliers with 8 burners Complete		140	do	280 . .
1	Seventy two light Chandelier with 72 burners complete				250 . .
4	Double light pendants with 2 burners each complete		30	do	120 . .
2	Iron Lamp Stands with Globes burners Dr. complete		20	do	40 . .
	Cast Iron for fitting up the Wrought Iron pipes with 2 Iron Clamps & Spuds Dr.				120 . .
	Sundry Charges Dr.				109 5 . .
					2220 4 .
	Laying down Wrought Iron pipes Dr. for supplying Gas Lights to the European Barracks Lower and Upper Storey in the Hindustan Lodge.				
1000	Wrought Iron Socket pipes 1½" Dr.		3	Rft.	300 . .
	18 Dr. Socket elbows 9" long by 1½" Dr.		12	Co.	12 . .
	18 Dr. Socket T pipes 1½" Dr.		2	do	36 . .
	6 Brass Cocks 1½" Dr. with Lock levers Complete		15	do	90 . .
1800	Dr. Wrought Iron pipes 1" Dr.		6	Rft.	675 . .
2500	Dr. Dr. pipes ¾" Dr.		36	do	5614 .
1500	Dr. Dr. pipes ½" Dr.		26	do	346 .
	100 Thimbles for inner and outer Tubes Each		1	Co.	64 .
	90 Wrought Iron elbows 1" Dr.		8	do	45 . .
	120 Dr. Iron T pipes 1" Dr.		18	do	180 . .
	10 Brass Cocks 1" Dr.		7	do	70 . .
	200 Brass fittings for ¾" & ½" Wrought Iron pipes		2	do	400 . .
	120 Iron light pendants 6 feet long with burners Dr. complete		6	do	720 . .
	32 Double light Pendants Dr. Complete		30	do	240 . .
	20 Hall Lamp Globes Dr.		20	do	400 . .
800	Dr. Complete for removing the old 3" Cast Iron pipes, laying pipes Connection Tubes Dr. of the present Gas light & supplying the Room with Light by Gas Lights & Granite Stone Slab Masonry Dr.		10	Rft.	800 . .
		Carried over			6818 8 4540 .

Brought over 695 £ 4s 0d

Digging Hole for fitting up Wrought Iron Syphon with Iron Clamps Tenty Fee } " " " 4 0 " "

Smiths Charges Fee } " " " 3 4 8 " "

£ 700 " "

Laying down Wrought Iron Syphon Pipe Fee for supplying Gas Lights to the Centre, Wings, Arms and Watch House Fee attached to the European Barracks in Fort St. Georges.

500 Cubic feet Wrought Iron Syphon 1" Fe " 6 " Pt. 19 7 8 "
400 " Fe Do Pipes 3/4" Fe " 3 6 do 8 7 8 "
300 " Fe Do Pipes 1/2" Fe " 2 6 do 4 6 1/4 "
10 Wrought Iron T Pipes 1" Fe 1 8 " Do. 15 " "
10 Wrought Iron Elbows 1" Fe " 8 " do 5 " "
30 Thimbles for Inner and outer Thread " 1 " do 1 1/2 "
4 Brass Cocks 1" Fe with Lock Irons complete 10 " " do 40 " "
20 Brass fittings for 3/4" & 1/2" Wrought Iron Pipes 2 " " do 40 " "
2 Iron Lamp Posts with Globes Fee Complete 50 " " do 100 " "
12 Wall Lamp Stobes Fee 20 " " do 200 " "
200 Fe Carry this for excavating the Holes and Laying down the Pipes Fee Filling the Same and Plaistering the Syphon with Mason Fee } " 10 " Pt. 1/2 Pt. 1 2 5 " "
Carry this for fitting up Wrought Iron Syphon with Iron Clamps Tenty Fee } " " " 50 " "
Smiths Charges Fee " " " 41 4 "

£ 918 " "

Laying down Wrought Iron Syphon Pipes Fee for supplying Gas Lights to the Family Barracks in Fort St. Georg. 1 Block 1 and 2 Storys.

700 Cubic feet Wrought Iron Socket Pipes 1 1/2" Fe " 8 " Pt. 35 " "
20 Wrought Iron Socket Elbows Long 1 1/2" Fe " 12 " Do. 15 " "
30 Fe Socket T Pipes 1 1/2" Fe 2 " " do 60 " "
10 Brass Cocks 1 1/2" Fe with Lock Irons complete 15 " " do 150 " "
750 Cubic feet Wrought Iron Pipes 1" Fe " 6 " Pt. 28 1 4 "
1500 Fe Do Pipes 3/4" Fe " 3 6 do 52 5 2 "
1000 Fe Do Pipes 1/2" Fe " 2 6 do 25 " "
60 Thimbles for Inner and outer Thread " 1 " Do. 3 12 "
30 Wrought Iron T Pipes 1" Fe 1 8 " do. 45 " "
25 Fe Elbows 1" Fe " 8 " do 12 8 "

Carried over. 1405 14 53 80

	Brought over			3993 . 4320 . .
7	Brought from Socket elbows 1" D°	1 . 8 .	D.	3 8 .
2	" D° D° T pieces 1" D°	1 8 .	do	3 . .
30	Brass fittings for ¾" and 1½" brought from pipes	2 . .	do	110 . .
5	Brass Cocks 1½" D° with Cock Keys complete	15 . .	do	75 . .
8	Six light Chandeliers with 6 burners each complete	65 . .	do	680 . .
2	Eight light Chandeliers with 8 burners complete	140 . .	do	280 . .
1	Seventy two light Chandeliers with burners complete	. . . .		250 . .
4	Double light pendants with 2 burners each complete	30 . .	do	120 . .
2	Iron Lamp Stands with Globes burners D° complete	20 . .	do	40 . .
	Cocks brass fittings etc the brought Iron pipes with }			
	Iron Clamps & Spuds D° }	. . .		120 . .
	Sundry charges D°			109 5 .
				2220 . .
	Laying down brought Iron pipes D° for Supply=			
	ing Gas Lights to the European Barracks Lower			
	and Upper Storys in D° & Sundry Jobs.			
100 Feet	Brought from Socket pipes 1½" D°	. 8 .	Rff	800 . .
	18 " D° Socket elbows 9" long by 1½ D°	. 12 .	Do.	12 . .
	18 D° Socket T pieces 1½ D°	2 . .	do	36 . .
	6 Brass Cocks 1½" D° with Cock keys complete	15 . .	do	90 . .
100 D°	Brought Iron pipes 1" D°	. 6 .	Rff	675 . .
2500 D°	D° pipes ¾" D°	. 36	do	5461¼ .
1500 D°	D° pipes ½" D°	. 26	do	2346 .
	100 Thimbles for inner and outer thread	. 1 .	D.	6 4 .
	90 Brought Iron elbows 1" D°	. 8 .	do	45 . .
	120 D° Iron T pieces 1" D°	18 .	do	180 . .
	10 Brass Cocks 1" D°	7 . .	do	70 . .
	200 Brass fittings for ¾" & ½" brought Iron pipes	2 . .	do	400 . .
	120 Single light pendants of 7 feet long with burners }			
	complete D° }	6 . .	do	720 . .
	30 Double light Pendants D° Complete	30 . .	do	2400 . .
	20 Steel Lamp Globes D°	20 . .	do	400 . .
85 D°	Carefully Examining the old 3" Cast Iron pipes Service pipes Com=			
	municators Lifters D° of the present Gas Light Distribution etc }	. 10	Rff	500 . .
	Town with Light Sheets of Plan Drawings D° }			
	Carried over			6815 8 4540 .

				1401 11 53980
120	Brass fittings for ¾" & ½" wrought Iron pipes	2	£.	240 " "
112	Single light pendants with burners complete	6	do	672 " "
1	Double light do do	"	"	25 " "
	Contractors for fitting up the wrought Iron pipes with Iron Clamps & joints &c.			250 " "
	2 = Block 1st = 2 d = & 3 = Story			
700 Rudget	Wrought Iron Socket pipes 1½" &c.	"	8 Ft.	280 " "
12	Wrought Iron Socket Elbows of 9" long by 1½" &c.	"	12 " £.	9 " "
24	do T pipes 1½" &c.	2	" do	48 " "
12	Brass Cocks 1½" &c. with Lock keys complete	15	" do	180 " "
300 Ft.	Wrought Iron pipes 1" &c.	"	6 " Ft.	112 8 "
1000 Ft.	do Pipes ¾" &c.	"	36 do	218 12 "
600 Ft.	do Pipes 1½" &c.	"	26 do	93 12 "
45	Thimbles for Inner and outer thread	"	1 " £.	2 13 "
24	Wrought Iron T pipes 1" &c.	1	8 " do	36 " "
18	do Elbows 1" &c.	"	8 " do	9 " "
50	Brass fitting for ¾" & ½" wrought Iron pipes	2	" " do	100 " "
72	Single light pendant with burners complete	6	" " do	432 " "
	Contractors for fitting up the wrought Iron pipes with Iron Clamps & joints &c.			150 " "
	3 d = Block 1st = 2 d = & 3 d = Story			
500 Budget	Wrought Iron Socket pipes 1½" &c.	"	8 " Ft.	280 " "
12	do Socket Elbows of 9" long by 1½" &c.	"	12 " £.	9 " "
24	do Socket T pipes 1½" &c.	2	" " do	48 " "
12	Brass Cocks 1½" &c. with Lock keys complete	15	" " do	180 " "
300 Ft.	Wrought Iron pipes 1" &c.	"	6 " Ft.	112 8 "
1000 Ft.	do Pipes ¾" &c.	"	36 do	218 12 "
600 Ft.	do Pipes 1½" &c.	"	26 do	93 12 "
45	Thimbles for Inner & outer thread	"	1 " £.	2 13 "
24	Wrought Iron T pipes 1" &c.	1	8 " do	36 " "
18	do Elbows 1" &c.	"	8 " do	9 " "
50	Brass fitting for ¾" & ½" wrought Iron pipes	2	" " do	100 " "
	Carried down			5290 8 9¾

Brought over 5290 8 - 5390.

72 Single light Pendant with Screwed Complete 6 " " £. 432 "
Couplings for fitting up Wrought Iron Pipes with
Iron Clamps & Bolts &c. 3 " " " " 150 " "
4 Block 1 - 2 - & 3 - Story.

220 Run. feet Wrought Iron Socket Pipes 1½" &c. " 8 " Rft. 110 " "
16 &c. Socket Elbows 4 long by 1½" &c. " 12 " £. 4 8 "
24 &c. Socket T Pipes 1½" &c. 2 " " do 48 " "
12 Brass Cocks 1½" &c. with Lock boxes Complete 15 " " do 180 " "

150 Run. feet Wrought Iron Pipes 1" &c. " 6 " Rft. 54 "
300 &c. &c. Pipes ¾" &c. " 36 " do 108 "
300 &c. &c. Pipes ½" &c. " 26 " do 46 14 "
23 Thimbles for inner & outer thread " 1 " £. 17 "
12 Wrought Iron T Pipes 1" &c. 1 8 " do 18 " "
9 do Elbows 1" &c. " 8 " do 4 8 "
25 Brass Fittings for ¾" & ½" as Wrought Iron Pipes 2 " " do 50 " "
36 Single light Pendant with Screwed Complete 6 " " do 216 " "
Complete with Iron Clamps & Bolts &c. 3 " " " " 80 " "
Sundry Charges &c. " " " " 342 9 "

Extra Pipes &c. 7140 " "

370 Run. feet Cast Iron Socket Pipes 4" &c. 1 " " Rft. 370 " "
4 &c. Socket Elbows 4" &c. 2 " " £. 8 " "
2 &c. T Pipes 4" &c. 4 " " do 8 " "
1 &c. Band 4" &c. 4 " " do 4 " "
15 &c. Block Plugs 4" &c. " 8 " do 7 8 "

280 &c. Cast Iron Socket Pipes 3" &c. " 8 " Rft. 140 " "
2 &c. Socket T Pipes 3" &c. 2 " " £. 4 " "
1 &c. Slide valves 3" &c. " " " " 60 " "

480 &c. Cast Iron Socket Pipes 2" &c. " 5 - 6 Rft. 165 " "
2 &c. Elbows 2" &c. 1 " " £. 2 " "
1 &c. Slide valves 2" &c. " " " " 40 " "

1831 &c. Cast Iron Socket Pipes 1½" " 4 " Rft. 457 8 "
16 &c. Band 1½" &c. " 12 " £. 4 8 "

Carried over. 14408 6120 " "

	Brought Over			1410 8. 6.1120.
	3 Cast Iron Socket T pieces 1½" Diam.	3	6.	9
	1 Brass Cock Socket 1½" Diam.			12
1258 Rect. feet	Wrought Iron Pipes 1½" Diam.	8	Rft.	629
	30 Diam. Elbow 1½" Diam.	12	6.	228
	42 Diam. T Pipes 1½" Diam.	2	do	84
	21 Brass Cocks 1½" Diam. with lock boxes complete	15	do	315
2825 do	Cast Iron Socket pipes 1½" Diam.	26	Rft.	5971 6
	30 Diam. Elbows 1" Diam.	6	6.	114
	24 Diam. T Pipes 1" Diam.	8	do	12
	2 Brass Cocks with lock boxes complete	10	do	20
	150 Thimbles	1	do	96
1751½ do	Wrought Iron pipes 1" Diam.	6	Rft.	656 13
	61 do Elbows 1" Diam.	8	6.	308
	81 do T Pipes 1" Diam.	18	do	1218
	12 Brass Cocks 1" Diam. with lock boxes	10	do	120
	133 Thimbles for inner Double thread	1	do	85
	3 Cast Iron Caps	2	do	6
3501 Rm ft.	Wrought Iron pipes 3" Diam.	36	Rft.	7657 6
1842 Do	do Pipes ½" Diam.	26	do	2871 3
	298 Brass fittings for ¾" & ½" Iron Pipes	2	6.	596
	181 Single light Pendant 7 feet long complete	6	do	1086
	1 Single light Bracket complete			2
	29 Double light Pendants 7 feet long complete	30	do	870
	1 Four light Pendant complete	75	do	75
	3 Six light Chandeliers do	85	do	255
	53 Hall light Lamps do	20	do	1060
	10 Iron Lamp Posts with Globes Diam. complete	50	do	500
	3 Cast Iron sockets for 1" & 1½" Diam. Pipes	3	do	9
	2 Syphons	20	do	40
	Contingencies for excavating the earth laying down Cast Iron Pipes with Earthy Diam. & depositing the earth			700
	Carried over			10267 6 1120

Brought over 1036 7. 6d 20

Cook, Son & Jenkins's Receipt for Amount of Mon Jeffs
with Messrs Clarke Spotty & Co
Lloyds Chaplin & Co

630 - -

533 9 -

1148 0 - -

Lloyds & Kings Bank Co to the above Article 200 - -

Total Rupees 12800 - -

Treasury Chief Engineers Office
Fort St George
21 December 1869

Major Genl. Goodwyn Capt. R.E.
Chief Engineer Madras
Fort St George

J. W. Struelie Capt. R.E.
Chief Engineer Madras

No. Dr. 1388/72.

Rupees 12800 - - Madras

1870.

Under date the 25th June/72.

The estimate amounting to Rs 72,800 submitted for sanction with this letter, is that which received the sanction of Government vide G.O. No 882 of 13th March 1868, since which date other estimates aggregating Rs 11,205 were framed in the interior marginally noted. If for obtained from Para 3 of Captain Hunter's letter that the unsanctioned estimates

24th Aug/69 No 2778 Rs 7820
2nd July/70 No 1889 " 1060
25th Nov " " 2846 " 1800
11th Aug/71 " 2059 " 525
11,205

P.D. Dr. 1868/72.
For. Sec. Mun. Dept.

Same been complied, but
it does not appear whether
the same been taken to
account the assessment
as aforesaid of the value
of £2,800 which was
purchased under
agreement, and on which
under the said
£2,800 there is due
(1) and (2) the said
Quantities of wood (3) the out
of which the land is carried
out.

Jul, and (8) of that
remaining to be done.

Evans Esq.

L. Engr 4th Dec.
In-s-dcop. 25/2/72
P-C— 4/4/72

No. 1338

State of New Jersey.

PUBLIC WORKS.

Office Superintending Engr.

Trenton

25th March 1830.

Nos 554 & 555

Fort Delaware Works

Proposals received in obedience to the Resolution of March 24th 1830 requiring Estimates for certain Fort Delaware Works