

(1) Number of pages 58

(2) Date of repair 8-3-43

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No.	3861	Press
80-81		Mis.
Dated	6-12-	1866.

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
6th December 1866.*

No. 80. Read the following letter from the Acting Superintending Engineer, 2nd Division, to the Secretary to Government, Department Public Works, dated Nellore, 22nd November 1866, No. 60:—

- 11 Estimates amounting to Rupees 48,757.
- 8 Plans of masonry works.*
- 16 Sections of levels, &c.*
- 1 Specification Report.
- 1 Explanatory memorandum.
- 1 Comparative Statement.
- 1 Lieutenant Vibart's original letter, No. 312, with Collector's Telegram.

* No Office copies kept here.

1. I have the honor to forward, for the sanction of Government, an estimate prepared by Lieutenant Vibart, R. E., for the construction of east and west side-channels to the Nizampatam Canal. The principle upon which these works have been designed was recognized by Government in their Order No. 3,342, dated 19th ultimo, communicating sanction to similar arrangements on the Masulipatam side of the river, while their general arrangement is that proposed by Colonel Anderson in his letter No. 143, dated 6th January 1863, paragraph 31.

2. The date fixed for the submission of estimates entered in the Budget of 1867-68 left no time for sending the project in the usual course, through the Collector, but I beg to forward, attached to Lieutenant Vibart's original letter,† a Telegram from the Collector, giving his entire approval, and urging the early execution of the work.

† No. 312, dated 15th instant.

No. 81. ORDER THEREON, 6th December 1866, No. 3,861.

CIVIL WORKS, No. 17.

1. Owing to the excessive deposition of silt which is found to take place in the Kistna Canals, and to the heavy expense which would attend the enlargement of the main channels to a width sufficient to enable them to carry the water required for irrigating all the land under their command, it was suggested by Colonel Anderson, when District Engineer, to retain the main channels almost as still water lines of navigation, and to carry water for irrigation by means of side-channels having such a fall as to create a current strong enough to carry off silt. The Government recognized the expediency of this arrangement, and in their Proceedings dated 19th October 1866, No. 3,342, sanctioned estimates for the construction of channels along the western and eastern banks of the Masulipatam Canal.

2. Such channels have already been excavated on both sides of the Nizampatam Canal; but to effect completely the object in view, Colonel Anderson was of opinion that they would require to be considerably enlarged, and that several calingulahs would be necessary to regulate the fall. It is to carry out these arrangements that the Superintending Engineer now submits an estimate of Rupees 48,757, which the Government accordingly sanction.

3. Provision will be made for the works in the outgoing Budget.

(True Extract.)

Colonel, R. E.,

Secretary to Government.

To the Superintending Engineer, 2nd Division.

„ Controller of Public Works Accounts.

„ Accountant General.

Exd. S. T. Augustin.

no usual course through the collector

		<u>Memo</u>	
11 Estimates —	} x	x In 4 packets separately despatched this day by letter post only —	3
8 Plans —			
16 Sections —	*:	* By Bantley	
1 Specification			
1 Explanatory Memo	} x		
1 Comparative Statement			
1 Smith Vibrator letter —			
<u>39</u>			

No 60

Mellore 22 Nov 66

From

Captain L. J. Smith. R.E.

Acting Superintending Engineer
D. Division

To Colonel C. A. Orr

Secretary to Government. S.O.M.
Madras

Sir

I have the honor to forward for

- 11 Estimates amtg to Rs 48,757
- 8 Plans of masonry
- 16 Sections of lines
- 1 Specification
- 1 Explanatory Memo
- 1 Comparative Statement
- 1 Lt Vibart's original letter No 312 with Collector's Telegram

the sanction of Government an Estimate, prepared by Lieut Vibart R.E. for the construction of East and West side Channels to the Kanganpatam Canal. The principle upon which these works

no office copies kept here -

have been designed ~~which~~ recognized by Government in their order No 3342 dated 19th Decemr, Communicating sanction to similar arrangements on the Masulipatam side of the river while their General arrangement is that proposed by Colonel Anderson in his letter No 43 dated 5 January 1863. Para 31.

The date fixed for the submission of Estimates entered in the Budget of 1867/68 left no time for sending the project in the usual course through the Collector,

but they forward, attached to Lieut
Vibart's Original letter, a Telegram
from the Collector giving his entire
approval and urging the early
execution of the work.

I have the honor to be
Sir.

Superintending Engineer
Camp Bellona
22nd November 1866
Your most obedt Servt
C. Smith Capt 26
Acting Super Engineer

Detailed Estimate No. 9 1867/68
 Krishna & District Poultry Taluk
 for Constructing Calingalas of 15 ft. water
 with height of the
 near Loose mulla - West side -

Particulars	No.	Measurements			Superficial Content	Cubic Content
		Length	Breadth	Depth or Height		
Concrete in channel under body walls	1	13.	4.	0.5	✓	26.0
Do under wings	2	21.	3.5	0.5	✓	73.5
Do under Retaining walls.	1	18.25	2.5	0.5	✓	22.8
					cf	122.3
		or cys				4.53
Foundation of the body walls	1	14	3.0	3.0	✓	126.
Do of the wing walls	2	20	2.5	3.0		300.
Do of the Retaining wall	1	19.25	1.5	3.0	✓	86.5
Wing walls above	2	19.	1.5	5.5	✓	313.5
Floor	1	18.	4.5	1.5	✓	121.5
Pointing to wings	2	22	8		362	947.5
Do of floor & body walls	1	18	11		198.	3529
				2 1/2	ref	5.50
Rough Stone apron	1	21	6	1.5	✓	189.
Neweliment in Rear	2	6	1.5	8.5	✓	153.
Do in front	2	3	1.5	8.5		76.5
Iron posts Height top 3'						cf 418.5
bottom 2' with double grooves	3					cys 152
Do with single grooves	2					
Planks for shutters with Iron Rings Complete	12	3.75	0.8	0.2		72.2
Excavating foundation for approach	3					5.

Wm. Smith Capt. U.S.A.
Asst. Superintending Engineer 2nd Dist.

The Secretary
 to the Convention
 of the American
 People
 22 Nov 1888
 No. 28
 Dear Sir,
 I have the honor to acknowledge the receipt of your letter of the 15th inst. in relation to the proposed amendment to the Constitution of the United States, and in reply to inform you that the same has been forwarded to the proper authorities for their consideration. I am, Sir, very respectfully,
 Yours,
 Wm. H. P.

2302, 2180m 1866 O. S. 2000 11/16

12.3861 - 6th Dec. 1866

Abstract Estimate of 1867/68
Norton District Regularly July

*Work Constructing Calingulah of 15 feet waterway
 flush with bed of Channel near Sooremella West side*

<i>Qty</i>	<i>Description of Charge</i>	<i>Rate</i>	<i>Amount</i>	<i>Total</i>
<i>4.53</i>	<i>Cy of Concrete in Channel</i>	<i>\$4.00</i>	<i>181.11</i>	
<i>35.00</i>	<i>Do Rubble masonry</i>	<i>\$5.00</i>	<i>175.72</i>	
<i>5.50</i>	<i>Squares of pointing</i>	<i>\$1.00</i>	<i>5.80</i>	
<i>15.5</i>	<i>Cy of Rough stone for</i>			
	<i>Apron & Revetment works</i>	<i>\$2.80</i>	<i>38.12</i>	
	<i>Iron posts of double grooves</i>	<i>\$12.00</i>	<i>36.00</i>	
	<i>Do Single do -</i>	<i>\$8.00</i>	<i>16.00</i>	
	<i>Cy of Planks for shutter</i>			
	<i>with iron Rings complete</i>	<i>\$2.80</i>	<i>45.00</i>	
	<i>Excavating foundation</i>		<i>8.00</i>	
	<i>Contingencies per cent.</i>		<i>7.21</i>	
	<i>Total</i>			<i>323.94</i>
				<i>326.00</i>

274785/10

*1st Range Officer
 Dupiralla
 15th November/66*

*AS
 H.A.*

*George Herbert
 Acting Ex Engr R.D.
 Smith
 Captain R.C.
 As Superintending Engineer R.D.*

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Detailed Estimate No. of 1867/68
 Kristna District Kapilly Taluk
 Work for constructing a bridge of 2 arches at Annally on
 Eastern side Channel with fall of 2 feet

Particulars of Work	Measurements in feet and Decimals					
	Number	Length	Breadth or Thickness	Depth or Height	Content	Quantity
<u>Foundation</u>						
Abutments	2	16.0	5.5	5.0	880.0	
Counterforts	2	6.0	3.0	5.0	180.0	
Piers	1	14.0	4.5	5.0	315.0	
Cutwaters	2	2.0	3.15	5.0	163.0	
Front Wings	2	10.0	2.0	5.0	200.0	
Rear Do	2	10.0	3.0	5.0	300.0	
Do Returns	2	7.5	3.0	5.0	225.0	
Front retaining wall	1	36.0	1.5	5.0	270.0	
Rear Do Do	1	36.0	1.5	3.0	162.0	
Flats	1	13.5	36.0	1.5	702.0	
						3337.5
<u>Superstructure</u>						
Abutments	2	16.0	4.5	4.0	576.0	
Counterforts	2	6.0	3.0	4.0	144.0	
Piers	1	14.0	4.0	4.0	224.0	
Cutwaters and Caps	2	2.0	3.0	4.5	54.0	
Front Wings	2	10.0	2.0	9.5	380.0	
Rear Do	2	10.0	2.0	4.5	160.0	
Do Returns	2	7.5	2.0	6.0	168.0	
Blocking course	1	132.0	1.5	0.5	99.0	
Parapet walls	1	132.0	1.0	1.0	132.0	
Working portion of Abutments and counterforts	2	14.0	12.0	1.5	504.0	
Spandrels	1	14.0	3.5	1.5	73.5	
Face walls	2	19.0	3.0	3.5	399.0	
						3213.5
<u>Arch</u>						
Arch	2	14.0	22.5	1.5	472.5	
						472.5
<u>Other</u>						
Box foundation & superstructure						66.0
Rubble stone in Channel						242.5
						924.0
						242.5
						472.5
						34.2
						5.0

The above estimate is for the bridge of 2 arches at Annally on Eastern side Channel with fall of 2 feet. The estimate is for the bridge of 2 arches at Annally on Eastern side Channel with fall of 2 feet. The estimate is for the bridge of 2 arches at Annally on Eastern side Channel with fall of 2 feet.

Total Estimate Rs. 3337.50

Particulars of Work

Particulars of Work	Measurements in feet & Decimals					
	Number	Length	Breadth	Thickness	Height	Content
Spout	1	54.0	8.0	2.0	8 1/2	
Rough stone revetment	1	56.0	10.0	2.0	1120	
	2	10.0	12.5	1.0	125	
Total Rough stone						2194
Plastering						
Face of Abutments	2	14.0	4.0		112	
De Piers and Cutwaters	1	40.0	4.0		160	
Floor	1	17.0	36.0		612	
Front Wings	2	10.0	10.0		300	
Rear Wings	2	10.0	10.0		300	
De Returns	2	4.0	7.0		60	
Parapets	1	26.0	0.0		792	
Strikes	2	17.0	21.0		714	
Face walls	2	19.0	3.0		133	
Total Square feet of Plastering						3136
Square of Plastering						32

C. Smith Capt. R.E.
S. Superintendent Eng. 2nd Div.

0.24.7085/66

Abstract Estimate No. 4 of 1867/68

Mistra District. Rahilly Taluk

15

Work Constructing a bridge of 2 arches at Sonally on Eastern side channel with fall of 2 feet.

Quantity	Materials	Description of Work	Rate	Amount	Total
21 1/2	Pubble stone in channel		1 8	1091 11 2	
3 1/2	Arch work		5	17 1/2	
1 1/2	Rough stone		2	3 1/2	
32	Plastering		3 8	112	
	Excavating foundation			150	
	Baling			100	
	Sundries			177 8 1/2	
	Deduct for one arch already built			915 8	
	add for replastering the old bridge which is omitted above by an oversight -			915 8	
	16 Plastering square at		3 80	56 80	
	Total Estimate			966 00	
	Rs. 3			972 00	

1st or Rahilly Range
Office
Dugirulla
15th November/66

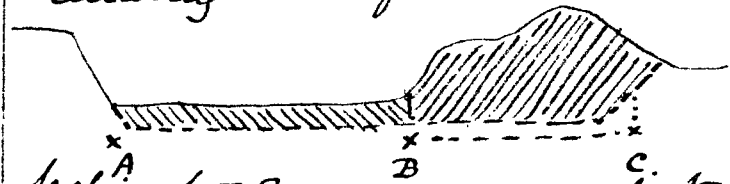
Placing the stone - Lieut. R.E.
Acting Ex. Engr. Mistra

C. Smith Capt. R.E.
S. Superintendent Eng. 2nd Div.

Estimate of probable ^{expense} of completing western side channel from Doggeraltu towards Bullavada

No.	Widening			Deepening		
	Breadth	Depth	Area	Breadth	Depth	Area
1	7.0	4.7	32.9	24	1.2	28.8
2	11.0	4.8	52.8	19	1.0	19.0
3	12.0	4.3	51.6	18	0.7	12.6
4	12.0	5.1	61.0	20	0.8	16.0
5	16.5	3.7	38.85	18	0.7	12.6
6	10.5	4.4	46.20	19	0.7	13.3
7	10.0	3.7	37.0	19	0.8	15.2
8	12.0	3.2	38.4	16	0.7	11.2
9	10.0	3.4	34.0	18	0.9	16.2
10	11.5	4.0	46.0	19	0.7	13.3
11	13.0	4.1	53.3	20	0.5	10.0
12	12.5	4.0	50.0	19	0.7	13.3
13	11.0	3.0	33.0	20	0.6	12.0
14	14.0	3.9	54.6	18	0.5	9.0
15	12.5	3.7	46.25	20	0.6	12.0
16	11.5	3.8	43.70	18	0.9	16.2
17	13.0	4.0	52.0	18	0.7	12.6
18	12.5	2.9	36.25	18	0.7	12.6
19	14.0	3.2	44.8	18	0.4	7.2
20	16.0	2.7	43.2	16	0.3	4.8
21	15.0	4.0	60.0	18	0.7	12.6
22	16.0	3.3	52.8	16	0.5	8.0
23	16.0	3.7	59.2	15	0.4	6.0
24	17.5	4.0	70.0	16	0.7	11.2
25	16.0	4.5	72.0	17	0.4	6.8
26	14.0	4.4	61.6	16	0.5	8.0
27	16.5	4.1	67.65	14	0.8	11.2
28	15.5	4.6	71.30	11	0.5	5.5
29	17.0	4.1	69.7	12	0.7	8.4
30	18.0	3.6	64.8			
31	15.5	3.4	52.70	14	0.6	8.4
32	14.5	2.2	31.90	15	0.2	3.0
33	17.0	2.2	37.4			
34	16.0	2.6	41.6			
35	16.0	2.3	36.8	14	0.2	2.8
36	17.0	2.9	49.3			
37	8.5	2.0	17.0			
38	14.5	3.4	49.30			
39	15.0	2.8	42.0			
40	14.0	2.5	35.0			
41	11.6	2.3	26.68			
42	15.0	2.5	37.5			
43	14.0	2.8	39.2	14	0.2	2.8
44	12.0	2.5	30.0			
45	12.5	3.4	42.50	16	0.2	3.2
46	17.0	4.4	74.8	14	1.3	18.2
47	18.5	4.4	81.40	11	1.2	13.2
48	18.0	4.7	84.6	15	0.7	10.5
49	15.5	3.8	58.90	11	1.0	11.0
50	15.0	3.5	52.5	11	0.8	8.8
51	15	3.8	57.0	10	0.8	8.0
52	17	2.6	44.2	10	0.7	7.0
53	9	1.4	12.6	16	0.7	11.2
54	10.5	1.7	17.85	12	0.5	6.0

Diagram showing method of calculating Area of sections



Section for } Deepening = $AB \times \text{Average depth}$

Section for } Widening = $BC \times \text{Average depth}$

BC being distance from foot of side slope of present bed to middle of slope of proposed bed

Is usually Drop

1863/68
 The Eastern Channel
 is being kept in water
 by the side of the
 side channel and
 side of 2 feet -
 The Eastern Channel
 is being kept in water
 by the side of the
 side channel and
 side of 2 feet -

No.	Widening			Deepening		
	Breadth	Depth	area	Breadth	Depth	area
55	10.5	1.2	12.60	14	0.7	9.8
56	12	1.8	21.6	13	0.3	3.9
57	11	1.6	17.6	13	0.5	6.5
58	11	1.7	18.7	13	0.3	3.9
59	14	1.7	23.8			
60	9	0.7	6.3			
61	4	0.7	2.8			
62	6	1.2	7.2			
63	7.5	1.7	12.75			
64	7	1.8	12.6			
65	8	1.2	9.6			
66	8	1.8	14.4			
67	7	2.0	14.0			
68	12	3.1	37.2			
69	5	1.8	9.0			
70	5.5	1.3	7.15			
71	3	3.0	9.0			
72						
9) 2821.95						
313.55						
x 220 Widening 63981						
9) 483.8						
53.76 x 220 Deepening 11827.20						
80808.20						
73	7.5	4.5	33.75	15	1.4	21.0
74	10	4.4	44.0	11	0.8	8.8
75	7	4.6	32.2	15	1.2	18.0
76	12.5	4.25	53.125	11	0.6	6.6
77	12	2.7	32.4	8	0.2	1.6
78	10	3.8	38.0			
79	11.5	2.8	32.2			
80	9.5	2.2	20.9			
81	4	1.8	7.2			
82	4	0.8	3.2			
83	6.5	0.8	5.2			
84	3	1.5	4.5			
85	7	2	14.0			
86	2.5	1	2.5			
87	5	1.5	7.5			
88	7	2	14.0			
89	6.5	1.25	8.125			
90	4	3	12.0			
91	7	2	14.0			
92						
93	5.5	1.5	8.25			
94						
95						
96	5.5	1.5	8.25			
97	2	1.5	3.0			
98	3.5	1.5	5.25			
99	5.5	1.5	8.25			
100	4.0	1.5	6.0			
101	3.0	1.0	3.0			
160.5						
448.80						
53.8						

No.	Widening			Deepening		
	Breadth	Depth	area	Breadth	Depth	area
			448.80			53.8
102						
103						
104						
105						
106						
107						
108						
109						
110						
111						
112						
113						
114						
115						
116						
117						
118				21	0.2	4.2
119				18	0.2	3.6
120				15	0.2	3.0
121						
122						
123						
124						
9) 448.80						
49.87						
x 500 Widening 24935						
9) 64.6						
7.18 x 500 Deepening 3590						
Total most side app 38525						
119333.2						

Henry J. Bartlett
Asst. Eng.

40
*Estimate of probable expense of completing
 Western side Channel from Sograton tower to
 Mullamadee*

No.	Widening			Deepening		
	Length	Width	Area	Length	Depth	Area
1	24	7.4	177.6	25	0.3	7.5
2	27	4.9	132.3	24	0.4	9.6
3	24	5.8	139.2	24	0.8	19.2
4	26	5.2	135.2	22	1.0	22.0
5	25.5	6.7	171.85	22	1.0	22.0
6	24.5	4.7	115.15	24	1.0	24.0
7	26.5	4.0	106.0	21	0.9	18.9
8	23.5	4.7	110.45	24	1.0	24.0
9	25	5.1	127.5	22	1.1	24.2
10	25	5.0	125.0	22	1.0	22.0
11	24	4.4	105.6	22	1.0	22.0
12	22	4.6	101.2	24	1.1	26.4
13	25	4.9	122.5	22	1.1	24.2
14	22	4.9	107.8	24	1.2	28.8
15	22	4.8	105.6	22	1.0	22.0
16	24	5.2	124.8	22	0.9	19.8
17	26	5.3	137.8	19	1.2	22.8
18	24	4.9	117.6	21	1.4	29.4
19	25	3.9	97.5	20	1.2	24.0
20	24	4.8	115.2	21	1.0	21.0
21	24.5	4.0	98.0	20	1.1	22.0
22	24	4.6	110.4	21	1.2	25.2
23	25.5	4.1	104.55	19	1.2	22.8
24	27	4.8	129.6	19	1.1	20.9
25	23.5	5.0	117.5	22	0.8	17.6
26	22.5	4.9	110.25	20	0.7	14.0
27	21	5.3	111.3	20	0.7	14.0
28	22	4.7	103.4	20	0.7	14.0
29	20	4.2	84.0	21	0.6	12.6
30	20	4.2	84.0	20	0.8	16.0
31	21.5	4.5	96.75	20	0.9	18.0
32	21	4.3	90.3	20	0.7	14.0
33	22.5	3.5	78.75	20	0.6	12.0
34	24	3.9	93.6	18	0.6	10.8
35	21.5	4.1	88.15	20	0.2	4.0
36	21.5	4.1	88.15			
37	20.5	3.7	75.85			
38	20.5	3.4	69.70			
39	20	3.2	64.0			
40	19.5	3.3	61.05			
41	19	3.4	64.6			
42	20.5	3.2	65.60			
43	19	3.2	60.8			
44	16.5	2.9	47.85			
45	17.5	3.4	59.50			
46	17	5.5	93.5	25	1.2	30.0
47	23	5.6	128.8	18	1.2	21.6
48	20.5	5.3	108.65	21.5	1.2	25.80
49	26	7.2	187.2	18	1.4	25.2
50	24	6.5	156.0	18	1.0	18.0
51	24	7.0	168.0	18	0.7	12.6
52	22	6.8	149.6	18	0.8	14.4
53	19.5	2.9	56.55	20	0.5	10.0
54	21	4.0	84.0	19	0.7	13.3
55	18.5	3.7	68.45	20	0.7	14.0

Totally 1500

No.	Wire lining			Deepening		
	Breadth	Depth	area	Breadth	Depth	area
65	19.5	3.2	62.40	19	0.6	11.40
66	19.5	4.2	81.90	20	0.6	12.0
67	19.5	3.2	62.40	20	0.8	16.0
68	20.	7.8	156.0	20	0.3	6.0
69	18.5	3.4	62.90	20	0.3	6.0
70	34.	11.5	391.0	20	0.3	6.0
71	34.	2.3	78.2	20	0.3	6.0
72	34.	1.0	34.0	20	0.3	6.0
73	24.	3.1	74.4	20	0.3	6.0
74	26	2.5	65.0	20	0.3	6.0
75	23	2.8	64.4	20	0.3	6.0
76	18	0.2	3.6	20	0.3	6.0
77	20	2.2	44.0	20	0.3	6.0
78	26.5	2.1	55.85	20	0.3	6.0
79	29	2.8	81.2	20	0.3	6.0
80	24.5	2.7	66.15	20	0.3	6.0
81	25	2.4	60.0	20	0.3	6.0
82	22	3.0	66.0	20	0.3	6.0
83	19.5	3.2	62.40	20	0.3	6.0
84	19.5	4.2	81.90	20	0.3	6.0
85	19.5	3.2	62.40	20	0.3	6.0
86	20.	7.8	156.0	20	0.3	6.0
87	18.5	3.4	62.90	20	0.3	6.0
88	34.	11.5	391.0	20	0.3	6.0
89	34.	2.3	78.2	20	0.3	6.0
90	34.	1.0	34.0	20	0.3	6.0
91	24.	3.1	74.4	20	0.3	6.0
92	26	2.5	65.0	20	0.3	6.0
93	23	2.8	64.4	20	0.3	6.0
94	18	0.2	3.6	20	0.3	6.0
95	20	2.2	44.0	20	0.3	6.0
96	26.5	2.1	55.85	20	0.3	6.0
97	29	2.8	81.2	20	0.3	6.0
98	24.5	2.7	66.15	20	0.3	6.0
99	25	2.4	60.0	20	0.3	6.0
100	22	3.0	66.0	20	0.3	6.0
101	19.5	3.2	62.40	20	0.3	6.0
102	19.5	4.2	81.90	20	0.3	6.0
103	19.5	3.2	62.40	20	0.3	6.0
104	20.	7.8	156.0	20	0.3	6.0
105	18.5	3.4	62.90	20	0.3	6.0
106	34.	11.5	391.0	20	0.3	6.0
107	34.	2.3	78.2	20	0.3	6.0
108	34.	1.0	34.0	20	0.3	6.0
109	24.	3.1	74.4	20	0.3	6.0
110	26	2.5	65.0	20	0.3	6.0
111	23	2.8	64.4	20	0.3	6.0
112	18	0.2	3.6	20	0.3	6.0
113	20	2.2	44.0	20	0.3	6.0
114	26.5	2.1	55.85	20	0.3	6.0
115	29	2.8	81.2	20	0.3	6.0
116	24.5	2.7	66.15	20	0.3	6.0
117	25	2.4	60.0	20	0.3	6.0
118	22	3.0	66.0	20	0.3	6.0
119	19.5	3.2	62.40	20	0.3	6.0
120	19.5	4.2	81.90	20	0.3	6.0
121	19.5	3.2	62.40	20	0.3	6.0
122	20.	7.8	156.0	20	0.3	6.0
123	18.5	3.4	62.90	20	0.3	6.0
124	34.	11.5	391.0	20	0.3	6.0
125	34.	2.3	78.2	20	0.3	6.0
126	34.	1.0	34.0	20	0.3	6.0
127	24.	3.1	74.4	20	0.3	6.0
128	26	2.5	65.0	20	0.3	6.0
129	23	2.8	64.4	20	0.3	6.0
130	18	0.2	3.6	20	0.3	6.0
131	20	2.2	44.0	20	0.3	6.0
132	26.5	2.1	55.85	20	0.3	6.0
133	29	2.8	81.2	20	0.3	6.0
134	24.5	2.7	66.15	20	0.3	6.0
135	25	2.4	60.0	20	0.3	6.0
136	22	3.0	66.0	20	0.3	6.0
137	19.5	3.2	62.40	20	0.3	6.0
138	19.5	4.2	81.90	20	0.3	6.0
139	19.5	3.2	62.40	20	0.3	6.0
140	20.	7.8	156.0	20	0.3	6.0
141	18.5	3.4	62.90	20	0.3	6.0
142	34.	11.5	391.0	20	0.3	6.0
143	34.	2.3	78.2	20	0.3	6.0
144	34.	1.0	34.0	20	0.3	6.0
145	24.	3.1	74.4	20	0.3	6.0
146	26	2.5	65.0	20	0.3	6.0
147	23	2.8	64.4	20	0.3	6.0
148	18	0.2	3.6	20	0.3	6.0
149	20	2.2	44.0	20	0.3	6.0
150	26.5	2.1	55.85	20	0.3	6.0
151	29	2.8	81.2	20	0.3	6.0
152	24.5	2.7	66.15	20	0.3	6.0
153	25	2.4	60.0	20	0.3	6.0
154	22	3.0	66.0	20	0.3	6.0
155	19.5	3.2	62.40	20	0.3	6.0
156	19.5	4.2	81.90	20	0.3	6.0
157	19.5	3.2	62.40	20	0.3	6.0
158	20.	7.8	156.0	20	0.3	6.0
159	18.5	3.4	62.90	20	0.3	6.0
160	34.	11.5	391.0	20	0.3	6.0
161	34.	2.3	78.2	20	0.3	6.0
162	34.	1.0	34.0	20	0.3	6.0
163	24.	3.1	74.4	20	0.3	6.0
164	26	2.5	65.0	20	0.3	6.0
165	23	2.8	64.4	20	0.3	6.0
166	18	0.2	3.6	20	0.3	6.0
167	20	2.2	44.0	20	0.3	6.0
168	26.5	2.1	55.85	20	0.3	6.0
169	29	2.8	81.2	20	0.3	6.0
170	24.5	2.7	66.15	20	0.3	6.0
171	25	2.4	60.0	20	0.3	6.0
172	22	3.0	66.0	20	0.3	6.0
173	19.5	3.2	62.40	20	0.3	6.0
174	19.5	4.2	81.90	20	0.3	6.0
175	19.5	3.2	62.40	20	0.3	6.0
176	20.	7.8	156.0	20	0.3	6.0
177	18.5	3.4	62.90	20	0.3	6.0
178	34.	11.5	391.0	20	0.3	6.0
179	34.	2.3	78.2	20	0.3	6.0
180	34.	1.0	34.0	20	0.3	6.0
181	24.	3.1	74.4	20	0.3	6.0
182	26	2.5	65.0	20	0.3	6.0
183	23	2.8	64.4	20	0.3	6.0
184	18	0.2	3.6	20	0.3	6.0
185	20	2.2	44.0	20	0.3	6.0
186	26.5	2.1	55.85	20	0.3	6.0
187	29	2.8	81.2	20	0.3	6.0
188	24.5	2.7	66.15	20	0.3	6.0
189	25	2.4	60.0	20	0.3	6.0
190	22	3.0	66.0	20	0.3	6.0
191	19.5	3.2	62.40	20	0.3	6.0
192	19.5	4.2	81.90	20	0.3	6.0
193	19.5	3.2	62.40	20	0.3	6.0
194	20.	7.8	156.0	20	0.3	6.0
195	18.5	3.4	62.90	20	0.3	6.0
196	34.	11.5	391.0	20	0.3	6.0
197	34.	2.3	78.2	20	0.3	6.0
198	34.	1.0	34.0	20	0.3	6.0
199	24.	3.1	74.4	20	0.3	6.0
200	26	2.5	65.0	20	0.3	6.0
201	23	2.8	64.4	20	0.3	6.0
202	18	0.2	3.6	20	0.3	6.0
203	20	2.2	44.0	20	0.3	6.0
204	26.5	2.1	55.85	20	0.3	6.0
205	29	2.8	81.2	20	0.3	6.0
206	24.5	2.7	66.15	20	0.3	6.0
207	25	2.4	60.0	20	0.3	6.0
208	22	3.0	66.0	20	0.3	6.0
209	19.5	3.2	62.40	20	0.3	6.0
210	19.5	4.2	81.90	20	0.3	6.0
211	19.5	3.2	62.40	20	0.3	6.0
212	20.	7.8	156.0	20	0.3	6.0
213	18.5	3.4	62.90	20	0.3	6.0
214	34.	11.5	391.0	20	0.3	6.0
215	34.	2.3	78.2	20	0.3	6.0
216	34.	1.0	34.0	20	0.3	6.0
217	24.	3.1	74.4	20	0.3	6.0
218	26	2.5	65.0	20	0.3	6.0
219	23	2.8	64.4	20	0.3	6.0
220	18	0.2	3.6	20	0.3	6.0
221	20	2.2	44.0	20	0.3	6.0
222	26.5	2.1	55.85	20	0.3	6.0
223	29	2.8	81.2	20	0.3	6.0
224	24.5	2.7	66.15	20	0.3	6.0
225	25	2.4	60.0	20	0.3	6.0
226	22	3.0	66.0	20	0.3	6.0
227	19.5	3.2	62.40	20	0.3	6.0
228	19.5	4.2	81.90	20	0.3	6.0
229	19.5	3.2	62.40	20	0.3	6.0
230	20.	7.8	156.0	20	0.3	6.0
231	18.5	3.4	62.90	20	0.3	6.0
232	34.	11.5	391.0	20	0.3	6.0
233	34.	2.3	78.2	20	0.3	6.0
234	34.	1.0	34.0	20	0.3	6.0
235	24.	3.1	74.4	20	0.3	6.0
236	26	2.5	65.0	20	0.3	6.0
237	23	2.8	64.4	20	0.3	6.0
238	18	0.2	3.6	20	0.3	6.0
239	20	2.2	44.0	20	0.3	6.0
240	26.5	2.1	55.85	20	0.3	6.0
241	29	2.8	81.2	20	0.3	6.0
242	24.5	2.7	66.15	20	0.3	6.0
243	25	2.4	60.0	20	0.3	6.0
244	22	3.0	66.0	20	0.3	6.0
245	19.5	3.2	62.40	20	0.3	6.0
246	19.5	4.2	81.90	20	0.3	6.0
247	19.5	3.2	62.40	20	0.3	6.0
248	20.	7.8	156.0	20	0.3	6.0
249	18.5	3.4	62.90	20	0.3	6.0
250	34.	11.5	391.0	20	0.3	6.0
251	34.	2.3	78.2	20	0.3	6.0
252	34.	1.0	34.0	20	0.3	6.0
253	24.	3.1	74.4	20	0.3	6.0
254	26	2.5	65.0	20	0.3	6.0
255	23	2.8	64.4	20	0.3	6.0
256	18	0.2	3.6	20	0.3	6.0
257	20	2.2	44.0	20	0.3	6.0
258	26.5	2.1	55.85	20	0.3	6.0
259	29	2.8	81.2	20	0.3	6.0
260	24.5	2.7	66.15	20	0.3	6.0
261	25	2.4	60.0	20	0.3	6.0
262	22	3.0	66.0	20	0.3	6.0
263	19.5	3.2	62.40	20	0.3	6.0
264	19.5	4.2	81.90	20	0.3	6.0
265	19.5	3.				

abstract estimate of 1867/68 No 11.
Pristine District Stapilly Valley
 Work - fitting posts & masonry falls at Snally
 & Gintoon on East & West side Channels -

Quantity	Description of Work	Rate	Amount	Total
<u>East side</u>				
<u>Snally bridge</u>				
11 1/2	cys of masonry — at —	5 00	57 80	X
6	Iron Double groove posts each	12 00	72 00	X
4	do single do — do	8 00	32 00	X
15	36 Planks 2 1/2 x 2" — each per ft	2 80	37 80	X
	Sundries —		4 00	X
				203 00 X
<u>Gintoon bridge</u>				
8	cys of masonry — at —	5 00	40 00	X
4	Iron — Double groove posts at	12 00	48 00	X
4	do — single do —	8 00	32 00	X
10	24 Planks 2 1/2 x 2" each per ft	2 80	25 00	X
	Sundries —		4 00	X
				149 00 X
	<u>Grand Total of East side</u>			352 00 X
<u>West side</u>				
<u>Snally bridge</u>				
8	cys of masonry — at —	5 00	40 00	X
4	Iron Double groove posts at	12 00	48 00	X
4	do single —	8 00	32 00	X
10	24 Planks 2 1/2 x 2" each per ft	2 80	25 00	X
	Sundries —		4 00	X
				149 00 X
<u>Gintoon bridge</u>				
4	cys of masonry — at —	5 00	20 00	X
2	Iron Double groove posts at	12 00	24 00	X
2	do single do — at	8 00	16 00	X
5	12 Planks 2 1/2 x 2" each per ft	2 80	12 80	X
	Sundries —		2 80	X
				75 80 X
	<u>Total of West side</u>			224 00 X
	<u>Grand Total Estimate</u>			576 00 X

1867/68
 District
 Reservoir
 15th of May 1868
 1st Range Office
 Engineer
 15th November 1868

1st Range Office
 Engineer
 15th November 1868
 1st Range Office
 Engineer
 15th November 1868

2

24

25

2

District for old bridge 1417
 709 1/2
 709 1/2 26 1/2
 1st cft
 eyes

Plastering

Floor	2	16	12	"	384
Chimneys	2	16	5	"	160
Pier	1	34	5	"	170
Front Wings	2	11	5.5	"	187
Rear do	2	11	10.5	"	231
Partners	2	10.5	6	"	126
Face Wall,	2	36	3.25	"	234
Parapets	2	56	3	"	336
Soffit	2	13.5	14	"	378
					22.06
					22

Square,

Smith
 Capt. B. C.
 & Superintending Eng.

1705 1/2

District Estimate No 3 of 1867/68 33
 Kristian District Rapidly falling
 North Constructing Catapults bridge of 2 arches
 of 12 feet span on Western side the at usually
 & on Eastern side channel at Gunter
 fall 2 feet

Quantity	Description of Work	Rate	Amount	Total
86 1/2	ends of rubble masonry	1 120	408 9 11	
12 1/2	ends of arch work	5 00	62 3 7	
13 1/2	ends of rough stone apron	2 00	52 8 0	
26 1/2	ends of Plastering	3 00	77 0 0	
22	Squares of Plastering		50 0 0	
	Excavation, filling in & 2.50			649 5 6
	making road way 40			656 10 6
				16 10 6
				673 0 0
	Contingencies			673 0 0
	Similar one			1346 0 0
	Grand Total			1352 0 0

1st or Rapidly Range
 Office
 Original
 15th November 1866

Acting Executive Engr. R.

Smith
 Capt. B. C.
 & Superintending Eng.

Estimate No 6 of 1867/68
 Krishna District Stability Table
 for constructing Catingulak bridge of 2 arches of 15 feet
 span at Kuchikudy in the Eastern Side Channel
 3 ft fall

Particulars of Work	Measurement in feet & decimals					
	Number	Length	Breadth	Thickness	Height	Volume
Foundation to abutments	2	16	5		4.5	720
do do	2	9.5	2.5		4.5	213.75
do do	2	9.5	2.5		4.5	213.75
do do	2	3.5	1.5		4.5	47.25
do do	2	3.5	1.5		4.5	202.5
do do	2	15	1.5		4.5	288
do do	1	16	4		4.5	108
do do	2	6	2		4.5	828
do do	1	46	4		1.5	264.5
Floor	2	14.5	12.75		2	183.75
do do	2	1.5	5.75		2	76.5
do do	2	5	4.25		2	76.5
do do	2	16	4		6	768
Abutments above	2	15.5	2.5		6	232.5
Piers above	1	7.5	2		10	200.0
Abutments above	2	7.5	2.25		7	244.12
Piers do	2	5.75	1.25		7	25.62
Retaining wall above	2	15	1.5		1	15
Body Wall above	1	16	3		3	144
Counterforts above	2	6	2		7	168
Steps on Body Wall	2	6.75	3		4	162
Steps on abutments	2	4.5	1.3		2	49.4
Steps on abutments	2	9.5	1.5		3.5	99.75
Steps on abutments	2	11	1.5		0.25	10.5
Steps on abutments	2	11	1.5		0.5	48.36
Steps on abutments	2	6	1		3	189
Working on the Counterfort	2	10.5	1.5		2.5	151.25
Face wall on the abutment	2	17.5	1.5		1.5	115.5
do on the pier	2	35.5	1			
Parapet Wall	2	35.5	1			
Total cost						6756.14
						524.02
						2522.12

From the Officer in charge
 of the Survey
 15th November 1868
 1867/68
 Estimate of the probable
 expense of constructing
 Catingulak bridge of
 2 arches of 12 feet span
 on Western side of the
 at Kuchikudy in the Eastern
 side of the Channel
 amounting to Rs 1346

Arch	2	20.5	14.	2	1148.
Chf					1114.8
cyd					12.5
Plastering to soffit	2	18	14.		504
Squares					5
Pointing & facing					
Floor	2	15	14.25		427.5
do	1	41.5	4.25		176.37
Retaining Wall	2	15.	3.5		105.
do	1	46	9.		414
Abutment	2	16	6		192
Pier	1	32	6		192
Front Wings	2	12	10		240
Rear Wings	2	12	7		168
Portals	2	6	7		84
Steps on front wings	2	19	2.5		95
Steps on rear wings	2	19	10		182
Face wall on the abutment	4	10.5	3.		126
do on the Pier	2	17.5	2.5		87.5
Parapet wall	2	38.5	3.5		269.5

Total Square feet					2728.87
Total Pointing squares					27
do Facing square					303
Rough stone apron	1	45.5	7.	1.5	477.75
Retement	1	46.5	4.	1.5	279
	2	4.	9.	1.5	108
Chf					864.75
Total cyd					32.
Iron Posts double doors	6				
do single	2				

Planks for shutters with Iron rings complete	1	31.5	2.	0.2	110.5
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Smith Capt. R.E.
Superintending Eng. 2nd D.

08/04/1868

Abstract Estimate No. 1867/68
Krishna District Rajahmundry
Work Constructing Calingulub bridge of 2 arches of 15 feet span at Kuchipudi on the Eastern side. Chf 3 ft fall.

Quantity	Particulars	Rate	Amount	Total
1253.250.25 cyd	Rough stone in Chunanam	4 12.0	1188 96	1201.16
42.5	do arch work	5 0.0	212 50	
303	cyd Facing	1 0.0	303 00	
127	Squares Pointing	11 0.0	1397 00	
5	do Plastering	3 8.0	178 00	
32	cyd Rough stone	2 0.0	64 00	
6	Iron Posts (double doors)	12 0.0	72 00	
	do single	5 0.0	16 00	
2	do			
102	Chf - Iron rings complete	2 5.0	2550 00	2640
	Excavation & filling in		100 00	
	Salting		100 00	
	Subsidies at 2 1/2 per cent			
	Total Estimate			2126 136

1st or Rajahmundry Range
Office
Durgam Cheruvu
15th November 1866

Deputy Quarter Master & RE
Acting Ex Engr RE

Smith Capt. R.E.
Superintending Eng. 2nd D.

22/11/66
J.S.
H.S.

Detailed Estimate No 2 of 1867/68
 Krishna District Papilly Taluk
 Work - Constructing Head Sluice of 6 vents to
 Eastern side Channel at Durgulla 39

Particulars of Work	Measurements in feet & Decimals					Total Quantity
	Number	Length	Breadth	Depth or Height	Content	
Foundations	2	14.5	4.0	5.0	580.0	
Abutments	5	18.0	3.0	3.5	787.5	
Piers below flooring	10	2.5	1.75	3.5	153.12	
Cutwaters	2	6.0	4.0	5.0	240.0	
Front Widge	2	3.5	4.0	5.0	140.0	
De Returns	2	10.0	4.0	5.0	400.0	
Rear Widge	2	5.0	4.0	5.0	200.0	
De Returns	1	14.0	1.5	3.5	215.25	
Front retaining wall	1	143.0	1.5	3.5	225.75	
Rear De De	1	37.0	6.0	1.5	333.0	
Front below	2	38.0	10.0	1.5	570.0	
Do do	1	33.0	15.0	1.5	742.5	
Flow to body of sluice						16587.12
Superstructure	10	24.0	4.0	1.5	1440.0	
Body wall in front	56	15.0	2.0	6.0	900.0	
Piers	2	14.5	3.0	6.0	522.0	
Abutments	2	14.5	1.5	3.5	152.25	
Front Widge	2	6.0	3.0	5.5	198.0	
De Returns	2	6.0	2.25	2.5	67.5	
Rear Widge	2	3.0	3.0	5.0	90.0	
De Returns	2	3.0	2.25	2.5	33.75	
Rear Widge	2	10.0	3.0	3.5	210.0	
De Returns	2	16.0	2.25	3.5	157.5	
Parapet walls	2	4.5	3.0	1.0	27.0	
Cutwaters including Caps	2	4.5	2.25	3.5	70.87	
Steps	1	130.0	1.0	1.5	195.0	
Parapet walls	10	2.0	1.5	6.5	195.0	
Steps	1	4.5	2.0	3.0	27.0	
Total Superstructure						2989.87

To the
 Mr. Secretary
 Government
 Madras
 1867/68
 Detailed Estimate No 2
 Work for constructing
 Head Sluice of 6 vents
 Eastern side Channel
 at Durgulla
 39

Particulars of Work

Measurements in feet & Decimals.

Particulars of Work	Number	Length	Breadth or Thickness	Depth or Height	Content	Total Quantity
Arches	6	8.25	10.5	1.25	649.68	7576.99
Brick Work						281
Pointing and facing						649.68
Front floor						281
Rear	1	37.0		6.0	222.0	
Flies between Piers	1	38.0		10.0	380.0	
Body wall	6	15.0		4.0	360.0	
Piers and cutwaters	1	48.0		1.5	72.0	
Abutments	5	36.0		6.0	1080.0	
Front Wings	2	15.0		6.0	180.0	
De Returns	2	12.0		8.5	204.0	
De Returns	2	7.0		7.0	100.0	
Parapet walls	2	12.0		6.0	144.0	
Arches	1	10.0		4.0	50.0	
Total Square feet	4	10.0		12.0	520.0	4102.0
Deduct						41.02
Cutwaters	10	2.0		1.5	30.0	0.31
Total Square						407.25
Filling in Between arches	1	10.5	34.0	1.25	446.25	446.25
Total filling in						17
Rough stone upon in rear	1	60.0	18.0	1.5	1620.0	1620.0
Total Cft of rough stone						60.0
Wooden Shuttles						33
Stone Beams						30

By *[Signature]*

Accepted by *[Signature]*

Detailed Estimate No 3 of 1867/68
Mistana District Stability Talag

Work for constructing Bridge of 3 arches over Eastern side Channel at Dugiralla.

41

Particulars

Particulars	Number	Length	Breadth or Thickness	Depth or Height	Content	Total Quantity
Foundation to abutments	2	15	5.5	4.5	442.5	
do do Piers	2	22.5	3.75	4.5	759.38	
do do Wings	4	10.25	4	4.5	810.56	
do do Retaining wall	4	13.375	1.5	4.5	357.75	
do do do	2	16.75	1.5	4.5	222.75	
Abutment above	2	15	4.5	4.375	540.38	
Pier above	2	18	3	4.375	432.38	
Wing walls above	4	10.25	2.5	8.25	756.625	
Face wall above abutment	4	11	1.5	2.1375	126.54	
do do to middle arches	4	12	1.5	3.41	153.6	
Parapet	2	15	1.5	1.5	225.0	
Spanchil & caps to cutwaters	2	15.0	3.125	1.5	663.0	
Parapet	2	14.0	3.5	1.5	210.0	
Parapet	2	14.0	3.5	1.5	210.0	
Deduct for old bridge						81
Total cys of Rubble stone in Channel						117.796
Arches	2	18.375	14	2.1375	964.32	
	1	21.59	14	2.1375	566.74	
Cft or cys						1531.06
Deduct for old bridge						19
Total cys of arch work						443.77
Plastering	2	14	14		392	
Floor	1	18	14		252	
do	2	15	3.25		97.5	
Abutments	2	12	3.25		183.0	
Piers	4	10.25	8.25		339.25	
Wings	2	10.25	2.5		63.625	
Face wall	2	10.25	5		102.5	
Parapet	2	15.62	14		437.36	
Loft	1	20.24	14		283.36	
do						347.47
Deduct the 9 ft for the equal						312.53

[illegible]

Abstract Estimate No of 1867/68
Wistna District Kapilly Taluk 43
 Constructing bridge of 3 arches over Eastern side
 at Angiralla
Abstract

12th or Capilly, Range }
Office }
Ingrisallen }
15th November 1866 }

HS
HOB

Smith Capt. B. C.
As Superintending Eng. N. 2^d Div.

84. 1/4

Work constructing
bridge of 3 arches
over eastern
channel at
Dugirulla.

Contracted estimate for 3

arches

at 15 hours per

arch

to the bridge

change

of

the

Sum of 2747.85

Abstract Estimate No. of 1867/68
Kistna District Rajahmundry
North Constructing Head sluice of 6 vents to Eastern side
the at Dugirulla. 45

Quantity	Materials Description of Work.	Rate	Amount	Relat.
281	Cy ^{rs} Rubble Stone	1/2 8 u	126 1/2 8 u	
21 1/2	Cy ^{rs} Arch work	5 u	120 u	
4.1	Cy ^{rs} Pointing	1 u	4.1 u	
452 1/2	Cy ^{rs} Facing	1 u	452 8 u	
17	Cy ^{rs} Filling in between arches	1/2 8 u	76 8 u	
60	Cy ^{rs} Rough stone apron	2 u	120 u	
33	Cy ^{rs} Oak wood chullur	2 8 u	82 8 u	
30	Stone Beams	6 u	210 u	
	Excavating foundation and filling in		200 u	
	Paving		150 u	
			2723 u	
	Lundries @ 2.8 - 0 per cent		67 u	
	Total Referred		2790 u	

at Rajahmundry Range
Office RD
Dugirulla
15th November 1866

Co. RD

AS
H. T.

Henry Robert - Lieut. R. E.

Acting Executive Engr RD

Clunth

Capt. R. E.
Superintending Engr

Detailed Estimate No. 8 1867/68
 Krishna District Saling Nappally 47
 Work Constructing Culivagal of 24 ft waterway
 flush with bed of Channel near Sooremella East side

Particulars	No	Measurement			Superficial or Cubic	Contents
		Length	Breadth	Height		
Concrete in chimney under body wall	1	41- 23- 24	4	0.6		46 44 60
do under wing walls	2	20- 24	3-8	0.6		73 1/2
do under Retaining wall	1	23- 27-3	2.6	0.6		35 34
					cft	154 1/2
						537 1/2
Foundation of the body wall	1	24- 23	3.0	3.0		217 210
do of the wing walls	2	19- 20	2.6	3.0		200 228
do of the Retaining wall	1	29- 28-3	1.6	3.0		127 130 1/2
Wing walls above	2	19- 26- 27	1.6	5.6		313 1/2 182 1/4
Floor	1	27- 27	4.6	1.6		168 1/4
					cft	168 1/4
Pointing to wings	2	22	8.0		352	
do to floor & body wall	1	24	3.5		84	
	1	27	4.5		121.5	
					66 1/2	
Rough stone apron	1	30	6.0	1.6		270
Revestment in Rear	2	6	1.6	8.6		153
do in front	2	3	1.6	8.6		76 1/2
						499 1/2
					or Cubic yds	18 1/2
Iron posts Height 6' 3" bottom	5					
2' with double grooves						
do do with single grooves	2					
Planks for shutters with iron	18	3.9	0-10	0.2		9.4 1/2
Rings Complete						
Excavating foundation & for approach						

Smith Capt^l B.C.
 As Superintendent Eng^r 2nd 2nd 2nd

From P. M. 4/25/88
The Office being
at
12th on Duane St.
Bangs - No. 2.
To the City Engineer
dated 15 Nov 88
Respect
1887/88
Detailed Estimate No. 2
Work on the building
and Office of John
Trattino, No. 10
at Bangs - No. 2.

Worth for constructing Calingulak of 24 feet waterway flush with
bed of the near Sooremella East side.

Total	Prizes	389
		403.00

Henry H. Bass Lieut. & JR
Acting Ex Engineer RQ

Wm. H. Smith Capt. U.S.A.
A. J. Superintending Engr. 2nd Div.

$\mathcal{L}_4^2$ 4.4

Estimated Estimate No 10 of 1867/68
 Krishna District Rajahmundry Taluk

Work for constructing latrine of 12 feet water way
 flush with head of Channel near Kullavada East
 & West sides

Particulars of Work	Measurements in feet & Decimals.					
	Number	Length	Breadth	Thickness	Depth or Height	Content
Concrete in Channel under Body wall	1	10.0	1.0	0.50	20.0	
Under Wings	2	21.0	3.50	0.50	73.50	
Under Retaining wall	1	15.25	2.50	0.50	19.06	
Cft of Concrete in Channel						112.56
Cft of De						14
Foundation of the Body Wall	1	11.0	3.0	3.0	99.0	
De of the Wing walls	2	20.0	2.50	3.0	300.0	
De of the Retaining walls	1	16.25	1.50	3.0	73.12	
Wing walls above	2	19.0	1.50	5.50	313.50	
Floor	1	15.0	1.50	1.50	101.25	
Cft of Rough stone in Channel						886.87
Cft of De						33
Pointing to Wings	2	22.0	8.0		352.0	
De to floor and body wall	1	15.0	11.0		165.0	
Sq ft of Pointing						517.0
Sq ft of De						5
Rough stone Apron	1	18.0	6.0	1.50	162.0	
Reinforcement in rear	2	6.0	1.50	8.50	153.0	
De in front	2	3.0	1.50	8.50	76.50	
Cft of Rough stone Apron and Reinforcement						391.50
Cft of De						15
Iron Pacts Right top & bottom	2					
2' with double groove	2					
De De Single groove	2					
Planks for shutters with Iron	9	3.75	0.84	0.20	5.67	
Plugs complete						
Cft of Brick work						5.67
Excavating foundation for Approach						

[Signature] Capt. R. C.
 Superintending Engineer

Shore
 The Officer in charge
 1st Rajahmundry
 26. 11. 1867
 27. 8. 1867
 Estimated 15 hours
 1867/68
 Estimated Estimate No 8
 Work for constructing
 latrine of 12 feet
 water way & flush
 with head of Chan-
 nel near Kullavada
 East & West sides

Abstract Estimate No 10 of 1867/68 63
 Krishna District Rappilly Taluk
 Works for constructing Calicupulak of 12 feet waterway flush
 with bed of Channel near Kulluvadu East & West sides

Quantity	Materials Description of Work	Rate	Amount	Total
42	Cy of Concrete in Channel	4.00	168.00	
33	Cy of Public Masonry	5.00	165.00	
8	Squares of Pointing	1.00	8.00	
15	Cy of Rough stone for apron and reinforcement work	2.80	42.00	
2	Iron Posts of Double groups	12.00	24.00	
2	Do of Single groups	8.00	16.00	
52	Cy of Planks for shutter with iron rings complete	2.80	145.60	
	Excavating foundation	-	6.00	282.00
	Contingencies			6.00
			Total Rupees	288.00
Similar one for West side (12)				288.00
			Total	576.00

12/11/68 Rappilly Taluk
 Office
 Durgasalla
 15th November/68

Henry Stuart Esq. M.A.
 Acting Dy. Supt. Krishna
 D.C.

AS
 AS

W. Smith Esq. M.A.
 Dy. Superintending Engineer

24/11/68

100/10/1868

200

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PROCEEDINGS of the MADRAS GOVERNMENT
Under date the 6th Decr

Under date the 6th Decr/66.
Read the following

From The Superintending Engineer
of the 2^d Division

(Here enter No. 60 dated 22 November 1966)

owing to the expense
deposition of silt which is found
to take place in the Kistna
Canals, and to the heavy
expense which would attend
the enlargement of the main
channels to a width sufficient
to enable them to carry the
water required for irrigating
all the land under their com-
mand, it was suggested by
Lt. Col. Anderson, when District
Engineer, to retain the main
channels almost as still water
lines of navigation, and to
carry water for irrigation
by means of side channels
having such a fall as to
create a current strong enough

Ms.

W.M.

[illegible]

to carry off silt. The Govt recognized the expediency of this arrangement, and in their Proc dt 19 Oct 1866, No 342, sanctioned estimates for the construction of Channels along the western and eastern banks of the Draughtaband Canal.

Such Channels have already been excavated on both sides of the Vijaypatnam Canal, but to effect completely the object in view, Col. Anderson was of opinion that they would require to be considerably enlarged, and that several Calingulake would be necessary to regulate the fall. It is to carry out these arrangements that the Engrs now submit an estimate of Rs 1,07,000, which the Govt accordingly sanction.

Provision will be made for the works in the outgoing Budget.

200-51
23000/66 On 5th Dec 1866

P. W. 186 . Department.

No.

PROCEEDINGS OF GOVERNMENT.

Dated

+ Plans
+ 10 sections of levels
+ 10 drawings
+ 10 specimens
+ 10 complete time tables
+ 10 estimates of expenses

The Engrs are in with
Contract
Geog. Dept.

I B Dear Sir

The estimate amount-
ing to £ 48,757 for works
connected with New-
ham Canal in the
Thames Est, sanctioned
with certain observations.

80.21