

(1) Number of pages \_\_\_\_\_

(2) Date of repair \_\_\_\_\_

(3) Initials of the Referencer \_\_\_\_\_

# MADRAS RECORD OFFICE.

Government of Madras.

*Public Works* DEPARTMENT.

|               |               |
|---------------|---------------|
| G.O. No. 2595 | Press<br>Mis. |
| 405-68        |               |
| Dated 31-10   | 1870.         |

Not to be folded or roughly handled

*AR*

No. 467. Read the following letter from the Superintending Engineer, 2nd Division, to the Secretary to Government, Public Works Department, dated Camp at Masulipatam, 26th September 1870, No. 91:—

With reference to G. O., No. 2,091, 31st August 1870, I have the honour to

- 1 Survey and Section.  
& Plans.
- 2 Detailed and Abstract Estimates.
- 1 Specification.
- 1 Level of Yazili channel.
- 1 Comparative Statement.
- 1 Detailed and Abstract Estimate of bridge.
- 1 Plan of bridge.
- 1 Detailed and Abstract Estimate of channel.
- 1 Statement of proposed capacity of principal  
Irrigation channels in Kistna Delta prepared  
by Colonel Anderson.

express my regret that I cannot discover what further information the Chief Engineer considers necessary to enable the Government to sanction it.

2. The Chief Engineer has apparently misread some parts of the papers submitted to him. Colonel Anderson, in his sketch statement, allowed for the Main Canal carrying enough water to provide for 8,000 acres under the Aramunda project. I could only find that 5,713 were immediately irrigable, but thought that there might hereafter be more than 8,000 acres. I limited the project, however, to that amount, for it by no means follows that the whole space would be cultivated each year. I have nowhere thought of any much larger area being supplied.

3. My remarks as to the condition of the Main and Commamoor channel referred only to the existing state of those works. There is no reason to doubt that, when they are completed, they will convey water enough for the country proposed to be irrigated.

4. It has been suggested to me that the Aramunda channel was originally designed with a greater width than was actually necessary, perhaps to assist the discharge of the drainage of the land lying between it and the Main Canal, which should properly be carried off by the under-tunnel near the Saudole tank.

5. I beg attention to the complication of works at the commencement of the bank. The country itself on left bank of Aramunda lies low, and the existing arrangement provides for its drainage *under* the channel, while another calingulah in immediate proximity provides for discharging the surplus water of the channel and tank.

6. The country on the right bank cannot be reached by the water of the Aramunda channel, unless it flows at least occasionally four feet deep, to which height it is raised by the obstruction of the bridge on the road from Intur to Ponnoor, and the drainage of the left bank will in considerable degree flow *into* the Aramunda channel instead of *under* it, if the banks be not made high and strong.

7. The supply in the Kistna varies so much that we are obliged in some years to construct temporary dams across the irrigation channels to reach the cultivated lands; if our banks are reduced, as the Chief Engineer proposes, we shall lose a great quantity at a time when every yard is precious.

Proceedings of the Madras Government, Public Works Department,  
31st October 1870.

No. 468. ORDER THEREON, 31st October 1870, No. 2,598.

IRRIGATION, No. 28.

UNDER the explanation afforded in the last two paragraphs of the letter of the Superintending Engineer, 2nd Division, the Government sanction the entry in the Budget of 1871-72 of the estimate, Rupees 46,420, for the Budam project in the Western Delta of the Kistna.

2. Although provision for the execution of this work in 1871-72 will be made from the ordinary grant, the Government hope that the Superintending Engineer will be able shortly to submit the estimates for this section of the delta with the complete information required by the Government of India, and, in that case, sanction for the execution of the Budam project, which is an integral portion of the Delta works from Loan Funds will be solicited.

(True Extract.)

(Signed) J. MULLINS, Major, R.E.,  
Acting Joint-Secretary to Government.

To the Superintending Engineer, 2nd Division.  
" Controller of Public Works Accounts.

" Chief Engineer for the Delta.

Exd. E. C. Shunker.

No.

MEMORANDUM.

Requested for use the undermentioned paper:—

one detailed and abstract  
Estimate of Bridge referred to  
in G.O. No. 2598, dated 31<sup>st</sup>  
October 1870.  
one detailed & abstract Estimate  
of channel referred to in the  
above G.O.

OFFICE OF THE CONTR. OF PUBLIC  
WORKS ACCOUNTS,  
Madras, 21 Feb: 1876.

C. P. D. S.  
Chief Accountant.

To

The Registrar of the

Secretariat  
P. W. D. —

Comparison of the Original & Revised Estimates of \$2000000  
 Project of Irrigation  
 A. R. P. No. 146420

3753  
 3915  
 1905  
 1910  
 1915  
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Cost to be regulated to a fall of 8 1/2 inches per mile.

4 Vents of 4' 6" each.

# Specification Report for Road and Project

The first estimate allows for improving & extending the existing Channel from Bramwood to Sandale & the Soongabudra.

The bunds which at present are of no use towards carrying supply water at proper level are to be strengthened so as to make solid bunds throughout 9 feet above the Channel bed 5 feet above present water level with top width of 5 feet & slopes of 1/2 to 1. It also allows the Channel to be extended as a Channel from A to B through the Sandale tank and thus the lands at present under the tank will be supplied by Channel direct without the necessity of filling the Sand tank first, the bed of which tank may in parts be given up for cultivation for which a Head sluice is allowed at or about B.

A further extension is allowed at the end of the Sandale surplus Channel through low ground from C to D in order to carry a direct supply across the marsh to the Bramwood surplus Channel which now springs from the Soongabudra.

In order to ensure a better supply down the present Sandale surplus Channel the second estimate is framed to improve the existing Patinjala and to convert it into a large Head sluice, arched over for the convenience of passing the old foundations will answer well enough and only a new superstructure is required.

The second estimate allows for 5 minor irrigation channels to water new lands in addition to improving existing minor channels, three smaller channels will take off about the points T.T.T. on survey plan.

Estimate No. 4. allows for 5 Irrigation sluices to supply the above Channel and one extra similar sluice at point H for supplying some new lands in this neighbourhood to the south of Sandole where there is a vada or hollow in the sand ridge -

One Vant  
3 feet.

Estimate No. 5. allows for the Sand Sluice to Sandole tank at B. and 3 similar sluices to supply existing irrigation Channel at D. E. & I on plan.

One Vant  
5 feet.

Estimate No. 6. is for an Under Tunnel of 2 Vants at C to drain all the lands to the South East of the Sandole surplus Channel, underneath that Channel and into the Drain which leads to the Swamp beyond. It is intended to improve the Drainage by extending it towards the Srongabudra (as far as it) and thus reclaim several acres of land now swamped; but as much water comes down at present from the 1st Range through the Tunnel at A under the Aramunda Channel further improvements will be required above, and more information is required from the 1st Range Officer; this will be obtained shortly and a Drainage project forwarded; the Srongabudra itself will also require embanking; the Under Tunnel now proposed will be sufficient to enable the surplus Channel to convey water to the Road on side without being breached as at present to allow the Drainage to pass this it -

Two Vants  
5 feet each.

No 7 allows for a Calingala at the Terminus of the Channel at point I. on plan, this will consist of 3 Vants of 6 feet each, and will be provided with plank shutters to keep up the water in the channel and regulate the supply accordingly.

3 Vants  
6 feet each.

No 8 allows for a regulating Calingala at point G on plan; 2 Channel, one from I. the other from I. Vant at this point and as the water

in them will have to be retained at different levels this Calingala is allowed so that the water in the I Channel may, when required, supply high lands to the South. The grooves of the Calingala will be cut sloping, i.e. deeper at top than at bottom and the planks cut to fit so that the bottom plank may be left out when the others are fixed, thus preventing a heavy fall of water over the top as would be the case, were the upper planks removed and also checking tendency to silt in the Channel by allowing the bed to be scoured well at intervals.

Two Vants  
6 feet each.

The whole of the masonry works, to be built of brick in Chunnam, pointed, with concrete foundations.

Camp Parati.  
30th May 1869.

W. Smith Secy to A. C.  
Asst Engineer in Charge  
2nd or Banpalla House. Hk

Supdys of Civil & Co  
Camp Presabpatan  
25th October 1869

H. Hoobey. Secy to C. R. E.  
Supd Engineer D. D. 4

Com. Gen. Dept.

1869

Enclosure in a letter  
from the Supply & Division  
to the Chief Engineer for  
Inspection in accordance  
with the 10th of October 1869

Enclosure in a letter from the  
Chief Engineer to the  
Division of the  
10th of October 1869

3915

3453

*777 FFFO / 70.*  
*Pres. 31<sup>st</sup> Oct / 70 L.L.G.*

*Specification Report  
for widening & extending and  
strengthening banks of Aramunda  
and Sansale tanks surplus  
channels from Aramunda  
to the Longahadra near the  
Village of Doddani*

9

1865  
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 1900

statement showing the proposed capacity of the principal migration channels in the Rio Grande Delta  
prepared by Roland C. Anderson, R. S., Capt. Dr. Edgar Jackson.

| Bottom | Depth | Surface Velocity | Discharge    | Probable      |
|--------|-------|------------------|--------------|---------------|
| width  | of    | fall             | in this year | average       |
| in     | water | per              | per          | of fallations |
| feet   | in    | miles            | second       | hour          |
| feet   |       |                  |              |               |

*Masculinatum Della*

| Location                           | Distance       | Width    | Depth | Area | Volume  | Notes        |
|------------------------------------|----------------|----------|-------|------|---------|--------------|
| Main Channel                       | 180            | 8"       | 6"    | 2.7  | 540,000 | 270,000      |
| Elbow Canal to S. Side             | 120-150        | 8-6 1/2" | 5"    | 2.1  | 270,000 | 135,000      |
| "                                  | 8" to 11" wide | 60       | 5"    | 1.9  | 88,000  | 44,000 / a/  |
| "                                  | 11" to Elbow   | 54       | 6.5"  | 2.5  | 20,000  | 29,000       |
| Branch from Casareffully to Rivier | 30             | 5        | 7"    | 1.9  | 47,000  | 23,000       |
| Woodman Channel                    | 20             | 6        | 6"    | 1.7  | 31,000  | 15,000       |
| Ryves Channel to 7 1/8 mile        | 100            | 6        | 7"    | 2.2  | 192,000 | 96,000 / l/  |
| Branch Channel                     | 32             | 4        | 12"   | 2.3  | 51,000  | 25,000       |
| Below 7 1/8 mile                   | 75             | 6        | 7"    | 2.2  | 148,000 | 74,000       |
| At junction with Pollairs          | 65             | 6        | 7"    | 2.2  | 130,000 | 65,000       |
| Pollairs at Kunkish and            | 60             | 6        | 7"    | 2.2  | 120,000 | 60,000       |
| at junction with Ryves Road        | 50             | 6        | 7"    | 2.1  | 99,000  | 49,000       |
| Pollairs below                     | 110            | 6.5      | 7"    | 2.3  | 215,000 | 107,500 / c/ |
| to Pannun to Poley Cove            | 75             | 6        | 7"    | 2.2  | 148,000 | 74,000       |
| Poley Cove                         | 30             | 5        | 5"    | 1.6  | 10,000  | 20,000       |
| Continually Channel                | 36             | 5        | 6"    | 1.8  | 52,000  | 26,000       |
| To the Cove                        | 20             | 4        | 8"    | 1.9  | 26,000  | 12,500       |

Miss Hannah Greenleaf

|                                    |     |           |               |         |           |            |
|------------------------------------|-----|-----------|---------------|---------|-----------|------------|
| Side Channel Mason's Potomac Canal | 20  | 4         | 7"            | 1.9     | 26000     | 12500      |
| Old Pooling                        |     |           |               |         |           | 10000      |
| Minor Landings                     |     |           |               |         |           | 25000      |
|                                    |     |           |               |         |           | 106000 / c |
| Mason's Potomac Canal to 1/2 mile  | 120 | 126       | 8 1/2 - 7 1/2 | 5' - 6" | 2.0 - 2.4 | 270000     |
|                                    |     |           |               |         |           | 135000 x   |
| Side Channel to 1/2 mile           | 60  | 7 1/2 - 6 | 5' - 6"       | 2       | 120000    | 60000      |
|                                    |     |           |               |         |           | 60000      |
| Poolings as above                  |     |           |               |         |           | 60000      |
| Channel to Eastern Branch of River | 90  | 6         | 7"            | 2.2     | 474000    | 87000 / c  |
| Eastern Branch Channel             | 45  | 6         | 7"            | 2.1     | 90000     | 25000      |
|                                    |     |           |               |         |           | 87000      |
| Side Channel Mason's Potomac Canal | 42  | 6         | 7"            | 2.1     | 85000     | 42000      |
|                                    |     |           |               |         |           | 147000 x   |

Yours truly  
Della

| <u>Guntur Delta</u>             |         |      |    |     |               |
|---------------------------------|---------|------|----|-----|---------------|
| Inn Channel to S. Dikes         | 196-230 | 8½ y | 6" | 2:1 | 490000        |
|                                 |         | 6½   | 6" | 2:1 | 184000        |
| Western Bank Channel to Koller  | 75      |      |    |     |               |
| To Koller to Vellatur           | 60      | 6    | 7" | 2:2 | 120000        |
| To Vellatur to Yeekapully Chope | 45      | 6'   | 7" | 2:  | 84000         |
| To "                            | 30      | 6    | 7" | 2:  | 62000         |
| To Yeekapully Chand. to temurus | 30      |      |    |     |               |
| Yeekapully Channel              | 30      |      |    |     |               |
|                                 |         |      |    |     | <u>230000</u> |
|                                 |         |      |    |     | 75000         |
|                                 |         |      |    |     | 60000         |
|                                 |         |      |    |     | diff 15000    |
|                                 |         |      |    |     | 43000         |
|                                 |         |      |    |     | - 17000       |
|                                 |         |      |    |     | - 13000       |
|                                 |         |      |    |     | - 15000       |
|                                 |         |      |    |     | - 15000       |
|                                 |         |      |    |     | <u>75000</u>  |

|                                |       |           |     |     |        |            |
|--------------------------------|-------|-----------|-----|-----|--------|------------|
| Main Channel 8" to 13" wide    | 180   | 6 1/2 - 6 | 6"  | 2   | 320000 | 160000 / 9 |
| East Side Dugout Canal         | 42    | 4 1/2     | 10" | 2.4 | 70000  | 35000      |
| West Side Channel              | 24    | 4 1/2     | 10" | 2.2 | 21000  | 20000      |
| Commons Channel to 8" wide     | 120   | 6         | 6"  | 2   | 286000 | 103000 / 2 |
| Below 8" wide                  | 100   | 6         | 6"  | 2   | 174000 | 87000      |
| Youngaburra                    |       |           |     |     | 124    | 16000      |
| Commons Channel as given 23000 | 75    | 6         | 6"  | 2   | 133000 | 66000      |
| Opposite Oapella Tanks         | 50    | 6         | 6"  | 2   | 94000  | 47000      |
| Below Oapella tank & terminus  | 50.30 | 6         | 6"  | 2   | -      | 47000      |
|                                |       |           |     |     |        | 103000     |

Forwarded to the C.E. Department for inspection with reference to the 15th January 1870

Copy Engineer Office 23rd January 1870  
 Camps & Navigation  
 23rd April 1870  
 Draft 23rd January 1870  
 J. H. Gregory, Colonel C.E.  
 Superintendent Engineering

No 91

Superintending Engineer's Office  
22 Division Camp Muscat28<sup>th</sup> September 1878

From Colonel F. J. Moberly R.E.

Superintending Engineer 22<sup>nd</sup> Div  
Colonel C. A. Orr R.E.

Secretary to Government D.P.O.

Sir With reference to G.O. No 2091. 31<sup>st</sup> Aug 78Enclosure

1 Survey &amp; Section

6 Plans

2 Details and  
also a Estimate

1 Specification

1 Section of Irrigable  
Channel

1 Comparative Table

1 Detailed Valuation

1 Estimate of Bridge

1 Plan of Bridge

1 Detailed sketch of  
Estimate of Channel1 Statement of proposed  
Capacity of main canal1 Sketch of main canal  
in further detail  
prepared by Col.  
Anderson

16 by laugy

I have the honor to express my regret that I cannot discover what further information the Chief Engineer considers necessary to enable the Government to sanction it.

The Chief Engineer has apparently misread some parts of the papers submitted to him. Colonel Anderson, in his sketch states that the main canal carrying enough

water to provide for 8000 acres under the Aramunda project. I could only find that 5713 were immediately irrigable, but thought that there might hereafter be more than 8000 acres. I limited the project, however, to that amount for it by no means follows that the whole space would be cultivated each year. I have nowhere thought of any much larger area being supplied.

3. My remarks as to the condition of the main and Commamoor Channel referred only to the existing state of those works. There is no reason

reason to doubt that when they are completed they will convey water enough for the country proposed to be irrigated.

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that we are obliged in some years to construct temporary dams across the irrigation Channel to reach the cultivated lands; if our banks are reduced as the Chief Engineer proposes we shall lose a great quantity at a time when every yard is precious.

I have the honor to

Sir

Yours Most Obedt Servant

H. Listerby Colonel  
Superintending Engineer

No. 2  
 Proceedings of the Madras Government.  
 Under date the 31<sup>st</sup> October 1870  
 Read the following

From the Supg Engineer  
 of the 2<sup>d</sup> D. H. E. No 91 of 26<sup>th</sup> Sept 1870

Under the explanations afforded in the last two paras of the letter of the Supg Engineer 2<sup>d</sup> Division, the Govt sanction the entry in the Budget of 1871-72 of the estimate, Rs 46.42 for the Budam project in the Western Delta of the Kistna.

2. Although provision for the execution of this work in 1871/72 will be made from the ordinary gran

12<sup>th</sup> Nov 1870  
 The Supg Engineer  
 2<sup>d</sup> Division

The Secretary to Govt  
 28<sup>th</sup> Nov

3<sup>rd</sup> Oct 26<sup>th</sup> September 1870  
 No 4  
 Enclosure. 16<sup>th</sup> Nov 1870  
 For your report that in an-  
 nual directions and further  
 information the Chief Engineer  
 considers necessary to make  
 Govt sanction the 30-  
 dam project the estimate  
 plans upon which are here-  
 with submitted with the  
 recommendations observations  
 No 2398-31<sup>st</sup> Oct 1870

1. The Government  
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execution of the Budam  
project, which is an  
integral portion of the  
Delta works from  
Loan Funds will be  
solicited.

By 17/10/70

19  
The Super Engineer 2<sup>nd</sup> Dy.  
Controller  
Ch. Engineer for drainage  
Desp. 1/11/70

19 Oct 70 Peto 24

22 Dec.  
C/o 3915

Govt. of 1870 Madras.

PUBLIC WORKS.

To the Superintending Engineer  
2nd. District.

dated

d.

16.

\* 2 submitted to Govt. for  
11/2/76  
2 more submitted to Govt. for  
22/4/76

G. O. 31<sup>st</sup> Dec 70. No. 2598

Nos. 467 & 468

Andam Project. The entry  
in the Budget of 1871/72 of the  
estimate Rs. 46,420 for  
the Andam project in the  
Eastern Delta of the  
River, sanctioned with  
marks.