

(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.

B.P. No.

3345

Press

Mis. _____

Dated

7 - 12

4876

195

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
9th December 1876. No. 3,315.*

No. 217. Read the following endorsement of the Chief Engineer for Irrigation, dated 1st December 1876, No. 279 W:—

From Major J. O. HASTED, R.E., Superintending Engineer, Kistna, to Lieutenant-Colonel J. MULLINS, R.E., Chief Engineer for Irrigation, dated Camp at Bezvada, 24th November 1876, No. 103.

I HAVE the honor to submit herewith statements showing how I would propose to dispose of the available labor in case of Famine Relief Works being necessary in the southernmost part of this district, and the superintendence, &c., required.

2. The two works I here propose to take up are:—

I.—The prolongation of the Commamore canal from near Santaravoor, up to which place it is already navigable, to the Pedda Ganjam Creek, into which the East Coast Canal will be brought.

II.—The excavation of the Rampairu drain.

These works form part of the Delta completion scheme, and the plans and estimates have already been revised in accordance with instructions given by you.

3. On the first of these works, it will be seen, I propose to employ 4,000 coolies; on the second 6,000.

4. I have allowed that the 4,000 coolies employed on the Commamore canal extension shall, on the completion of that work, take up the lower part of the Rampairu drain below Kadnakuduru bridge; this they could do without removing from their sheds, as the distance across the swamp is inconsiderable. Should, however, the work not progress according to my anticipations, it might be well to take up the lower part of the Rampairu drain separately, in which case I could employ another 4,000 men on it.

5. The commencement of the Rampairu drain, or more properly the drainage channel from the Sakicalva calingulah to the Rampairu, could also be taken up at the same time, and would employ 2,000 men for four months. I am therefore prepared to employ from 10,000 to 16,000 men on these works, and am ready to commence marking out work immediately.

6. Should it be necessary to make further provision for Relief Works, I can take up the Tungabhadra drain (the estimate for which I have telegraphed for) and the Repally main drain. I could employ 5,000 men on each of these works, the arrangements being such as I have proposed for the Rampairu drain.

7. In connection with the junction of the Commamore canal with the East Coast Canal, I would observe that, in addition to the earthwork now proposed to be done, two locks, two inlets and outlets, and one under tunnel have to be built before navigation can be opened. I think I could complete one lock and the minor masonry works before next season and make a temporary second lock; but I require immediate authority to collect materials.

8. The width of cutting in the Rampairu drain has been estimated as follows: one-fifth of the total maximum discharge from the lands drained above the canal has been allowed to pass freely into the swamp, and the cutting in the swamp has been allowed of such fall and dimensions that one-sixth of this lesser quantity will be discharged by it. The cutting being nearly all on one side of the drainage channel,

and the other bank being thrown so far back that space is afforded for the passage of the full amount of drainage water received.

9. In providing supervision for the works, I have allowed for the pay of two third grade Overseers in each estimate. I may possibly be able to spare one or two Overseers from the ordinary work of the district, and possibly some may be available from other districts; if not, I have one or two men in the district who are fit to act as Overseers. As regards maistries and head coolies, I shall be somewhat put to it to find the requisite number, and if any Sappers can be made available, I shall be very glad to have them. The two works here referred to will be under the charge of an Assistant Engineer, or a good Upper Subordinate. Should the Tungabhadra and Repally main drains be also put in hand, these will form the charge of another Assistant Engineer or Upper Subordinate, the whole being under an Executive Engineer. In all I should probably require two Assistant Engineers and one Upper Subordinate.

10. At present, I am quite unable to form any estimate of the labor that is to be expected. It is true that the north-east monsoon has been an almost entire failure in this district, but the crops that have been sown will yield some return, and the people are all engaged in cultivation. Relief Works are not needed here yet, nor would they attract more than a limited number of laborers. As regard the numbers to be expected from other districts, I am quite in the dark. It has been reported to me that some Kurnool coolies have come into the Palnad for work, but I am not sure of the numbers, and I do not hear that they have appeared on our road works, which are being pushed on vigorously in the dry taluqs. The only place that there has been a cry for work from is Divi, and to meet this demand, as well as drain away the ordinary labor of the Delta from works which will have to be considered purely relief works, I have, in communication with the Collector, started the Bank Canal Eastern Delta (the only part of the Delta in which we could at present work), and I expect soon to have 4,000 men at work on task work. I am anxious that this work should be pushed on, as the river embankment is to be so much enlarged by the earth excavated for the canal, that I hope all danger of damage from floods such as we have suffered so much from of late years will be averted; and because the first step towards bringing the river water into Divi is the excavation of a canal to bring down materials for the masonry work which has to be constructed to convey the water across a branch of the river. I have telegraphed to apprise you of the steps I have taken, and I trust that my action may be approved.

SUBMITTED for the information of Government.

In a note of yesterday's date the undersigned specified the considerable works in the eastern and western sections of the Kistna Delta which might be considered available as Famine Relief Works, and several of these are referred to in the Superintending Engineer's letter of the 24th ultimo.

2. Major Hasted now shows the extent of earthwork to be done on the lower part of the Commamore Canal (10 miles) and on 19 miles of the Rampairu main drain, the cost of this as provided for in the Delta completion estimates, and its probable cost if undertaken as relief work. The difference is due to Tools and Plant, which must be provided to a greater extent for famine labor than would be requisite were the work undertaken by wuddars, to hutting, and to superintendence.

3. The system of task work will be likely to reduce waste to a minimum, and its adoption on all relief works when practicable is desirable. It may be added that the work to be taken up should, as far as may be practicable, be such as to admit of task work.

4. It should be borne in mind that main drains, where in cutting, are not intended to be taken out in the first instance to more than from one-half to one-third of the full dimensions, and that they will be much more useful if cut through from end to end to a moderate width than for a limited distance to a greater width; where in embankment the banks will be aligned at the full distance apart, and they must be made up to the proper level.

5. It has yet to be settled what proportion of the cost of drainage works will be charged ultimately against the Delta Irrigation System. In reference to the present question all that is needful is that the actual cost should be properly recorded for every work taken up for famine relief purposes, together with the best information possible as to what it would have cost if executed in the ordinary manner.

6. The requirements of the Superintending Engineer as regards superintendence are believed to be already under consideration.

FORT ST. GEORGE,

(Signed) JOHN MULLINS, Lt.-Col., R.E.,

1st December 1876.

Chief Engineer for Irrigation.

To the Secretary to Government, Public Works Department.

No. 218.

ORDER THEREON, 9th December 1876, No. 3,345.

IRRIGATION, No. 20.

COMMUNICATED to the Revenue Department, in continuation of G.O., No. 3,304, of the 7th instant.

(True Extract.)

Major-General, R.E.,
Secretary to Government.

To the Revenue Department, with copy of note by the Hon. R. S. Ellis.

- „ Superintending Engineer, Kistna.
- „ Chief Engineer for Irrigation.
- „ Examiner of Public Works Accounts.

Exd. E. C. Shunker.
Spare Copies

Endorsement of the Chief Enquirer for Emigration,
No. 279- W. dated 1st December 1876.

For orders.

I think these works, *Handbook* L. Col. R. Co.
should be recognized. Joint Secretary to Government.
as chief works
& widely available
known in adjacent
countries - Collecting
to be asked to
take personal
part in survey
and surveying

8793

What has been done
 before 30 minutes
 it will be convenient
 makes and if
 delay will be made
 by 7/12

Ans-12-76

Statement showing the cost of cutting Romperu
 drain from Kasavakuruvu Bridge to Peda
 Ganjam Creek.

Miles	Cubical Contents Excavation	Rate	Amount	Remarks
1 st	165,341			
2 nd	140,420.63			
3 rd	150,444.32			
4 th	177,907.88			
5 th	127,197.15			
6 th	64,666.92			

Total C. yds. 825,977.90. - 136818713 As per Report.

Work to be executed by
 the same 4000 coolies in.
 = ployed on Commamoor
 canal extension. Camps will
 not require to be removed.
 at the same rate of working, the
 work may be completed within
 3 Months.

<u>Superintendence</u>			
2	Overseers for 3 Months	at 60.	360.
	Travelling allowance for 30.		180.
8	Chaisies 1 for every 500 men	15.	360.
80	Head Coolies 1 for every 500	7.	1680.
1	Hospital Assistant		
	Carries forward	2580.	Can be spared from Revenue Dept.

No	Particulars	Rate	Amount	Remarks
	Brought Over		2580	
1	Hospital Sweepers	6	18	

Total 2598



Tools
Repair and removal 1500

Hutting
Repairs 900

Sundries
Medicines 150

Ropes, pegs &c for marking
out work and Camps 500

Labor for digging latrine
trenches & burying the dead 100

750

Abstract

Cost of earthwork as per
Project estimate 68187 1/3

Tools and Plant 1500

Superintendence, Cutting
and Sundries 6248

7935 1/3

7936

Superintending Engg. Office Kistna
Camp Bezawada
24 November 1876

John Astle Major D. L.
Supg Engineer, Kistna

Statement showing the cost of cutting Rousper
drainage from 7 miles from Sahicalua Calinguloh
(Commencement of swamp) to Kadana Kudana Bridge
as a relief work.

Miles.	Cubical Contents Excavation	Rate	Amount	Remarks
8 th	1,28,229	33		
9 th	1,24,518	28		
10 th	1,43,790	80		
11 th	1,48,211	24		
12 th	1,27,687	02		
13 th	1,66,601	91		
14 th	1,56,821	02		
15 th	1,94,744	08		
16 th	1,86,672	26		
17 th	1,77,414	68		
18 th	1,77,582	68		
19 th	1,79,023	91		
20 th	1,30,463	99		
Total C. gain	20,41,761	20	170,146 11/7	Contractor's Project estimate

Labor to be employed 6000 Coolies
or 500 to each mile. Work to be
Completed in between 8 & 6 months

No	Particulars	Rate	Amount	Remarks
2	Overseers	80	160	
	Travelling allowance for 2	30	330	x there is a local fund Dispensary close to the line of Channel
12	Maistries, 1 for every 500 men	15	990	
120	Head Coolies, 1 for every 50 men	7	4620	
x 1	Hospital Assistant	40	1210	
1	Hospital Sweepers	6	33	
			6953	

No. Particulars Rate amount Remarks

Tools

1200 Crowbars	1 4	1500	
2400 Mattocks	1	2400	
14400 Baskets	1 6	1200	
Repairs		900	
		<u>6000</u>	

Hutting

240 Huts for 25 men each including latrines	2 4	13500	
2 Dispensary Sheds		100	
4 Hospital Sheds		200	
4 or Latrines		40	
4 Bazar Sheds		120	
		<u>13960</u>	

Sundries

Medicines		200	
Ropes, pegs &c		800	
Labour for digging trenches		150	
		<u>1150</u>	

Abstract

Cost of Earthwork as per Project estimate	172,146 11 7
Tools and Plant	6000
Superintendence, Hutting & Sundries	21,963
Total Rupees	<u>198,109 11 7</u>
	<u>198,110</u>

Superintending Engineer Office Khetra
 Comd. Bazar
 24th November 1876.

Major
 Sup. Engineer



P.W.D.

400076

8793

3 Enclosures in
letter from the
Superintending Eng^r
Peshwa to the Chief
Engineer Govt. Indus^{try}
No 103 of 24 - Nov 76

Statement showing the cost of prolonging Conma-
moor Canal from near Santaravoor to Peda
Gangam creek as a relief work.

Miles	Cuttings Excavation	Rate	Amount	Remarks
47 1/2	79 956.80			
48	700 911.73			
49	61,538.22			
50	99 439.65			
51	126 866.25			
52	127 714.86			
53	83 360.48			
54	60 251.87			
55	62 788.64			
56	52 817.48			
57	32 66.91			

Total 831130.89 1364931252 Superintendence estimate

Labor to be employed -
4000 coolies or about 1400 to
each mile - supposing 2 cubic
yards per coolie to be excavated
the work will be completed
within 3 months

Superintendence

2 Overseers for 3 months at 60 360

Travelling allowance for 30 180

8 Maistries 1 for every 500 men 15 360

Carries forward 900

No.	Particulars	Rate	Amount	Remarks
-----	-------------	------	--------	---------

	Brought Over		900	
80	Head Coolies 1 for every 50 men	2	1680	
1	Hospital Assistant			Can be spared from No. 2 Dept.
1	Hospital Sweeper	6	18	

Total 2598

	Tools		
800	Crossbars	1 4	1000
1600	Namooties	1	1600
9600	Mallets baskets	1 6	900

Repairs 500
14500

160	Huts for 25 men including latrines	2 4	9000
1	Dispensary shed		250
2	Hospital Sheds		7000
2	do Latrines		1200
3	Bazaar Sheds		30

9200

	Sundries		
	Medicines		150
	Ropes, pegs &c for marking out work and camps		500
	Labor for digging latrine trenches and burying the dead &c		100
			750

No.	Particulars	Rate	Amount	Remarks
-----	-------------	------	--------	---------

<u>Abstract</u>			
	Cost of harkwork as per Report submitted		64932
	Tools and Plant		4000
	Superintendence, Hutting and Sundries		12548
			81480

Superintending Engineer, Kistna
Camp Berwada
21st November 1876

For attest Major R.C.
Superintending Engineer, Kistna.



P.W.D.

111076

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Received of India 1/4

and 1/4 of the same

No. 103

Superintending Engineer Office
Camp Buzawa
24 November 1876

From
Major J. O. Hasted, M.E.
Superintending Engineer, District
To
Lieut. Col. John Mullins, M.E.
Chief Engineer for Irrigation

3 Statements

Sir,
I have the honor to submit
herewith statements showing how
I would propose to dispose of the
available labour in case of famine
relief works being necessary in the
subsequent part of this District,
and the superintendence required.

2. The two works I here propose to
take up are:

1. The prolongation of the Commamone
Canal from near Santaravoor
upto which place it is already
navigable, to the Pedda Gangam
Creek into which the East Coast
Canal will be brought.

2. The excavation of the Rompoin
drain.

These works form part of the Delta
Completion Scheme, and the plans
and estimates have already been
revised in accordance with instructions
given by you.

3. On the first of these works, it will
be

be seen I propose to employ 4000 Coolies, on the second, 6000.

4. I have allowed that the 4000 coolies employed on the Commamone Canal extension, shall on the completion of that work take up the lower part of the Romperu drain below Kadnakuduru bridge. This they could do, without removing from their sheds, as the distance across the swamp is inconsiderable. Should however the work not progress according to my anticipations, it might be well to take up the lower part of the Romperu drain separately, in which case I could employ another 4000 men on it.

5. The commencement of the Romperu drain or more properly the drainage channel from the Sakicalua Salingalah to the Romperu, could also be taken up at the same time, and would employ 2000 men for 4 months. I am therefore prepared to employ from 10000 to 16000 men on these works and am ready to commence marking out work immediately.

6. Should it be necessary to make further provision for relief works

works I can take up the Tungabhadra drain (the estimate for which I have telegraphed for) and the Repally main drain. I could employ 5000 men on each of these works, the arrangements being such as I have proposed for the Romperu drain. In connection with the junction of the Commamone Canal with the East Coast Canal, I would observe that in addition to the earthwork now proposed to be done, 2 locks, 2 inlets and outlets, and 1 under tunnel have to be built, before navigation can be opened. I think I could complete the lock, and the minor masonry works before next season, and make a temporary 22 lock. but I require immediate authority to collect materials.

8. The width of cutting in the Romperu drain has been estimated as follows: $\frac{1}{5}$ of the total maximum discharge from the lands drained along the canal has been allowed to pass freely into the swamp, and the cutting in the swamps has been allowed of such fall and dimensions that $\frac{1}{5}$ of this lesser quantity will be discharged by it. The cutting being nearly all on one side of the drainage channel, and the other bank being

thrown so far back that space is afforded for the passage of the full amount of drainage water received.

9. In providing supervision for the works I have allowed for the pay of two 3rd grade Overseers in each estimate. I may possibly be able to spare 1 or 2 Overseers from the ordinary work of the district, and possibly some may be available from other districts, if not, I have one or two men in the district, who are fit to act as Overseers. As regards Maistries and head coolies, I shall be somewhat put to it to find the requisite number, and if any Sappers can be made available, I shall be very glad to have them. The 2 works here referred to will be under the charge of an Assistant Engineer, or a good Sapper Subordinate. Should the Tungabhadra and Kalyani main drains be also put in hand, these will form the charge of another Assistant Engineer, or Sapper Subordinate, the whole being under an Executive Engineer. In all, I should probably require 2 Assistant Engineers and 1 Sapper Subordinate.

2.
10. At present, I am quite unable to form any estimate of the labor that is to be expected. It is true that the A. E. Monroon had been an almost entire failure in the district, but the crops that have been sown, will yield some return, and the people are all engaged in cultivation. Relief works are not needed here yet, nor would they attract more than a limited number of laborers. As regards the numbers to be expected from other districts, I am quite in the dark. It has been reported to me that some Marwar coolies have come into the Palnad for work, but I am not sure of the numbers, and I do not hear that they have appeared on our road works, which are being pushed on vigorously in the dry Taluqs. The only place that there has been a cry for work from, is Duri, and to meet this demand, as well as to drain away the ordinary labor of the Delta, from works which will have to be considered purely relief works, I have, in communication with the

the Collector, started the Bank
Canal Eastern Delta (the only part
of the Delta in which we could at
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soon to have 4000 men at work
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the river embankment is to be
so much enlarged by the earth
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I hope all danger of damage
from floods such as we have
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will be averted, and because the
first step towards bringing the
river water into Durr, is the
excavation of a canal to
bring down materials for the
masonry work which has to be
constructed to convey the water
across a branch of the river. I
have telegraphed to apprise you
of the steps I have taken
and I trust that my action
may be approved.

I have

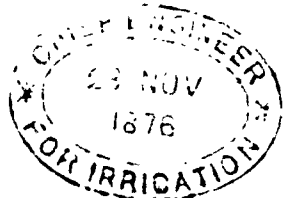
3 4
I have the honor to be

Sir

Yours most Obedt Servt

James M. Major, M.E.

Supy. Engineer, Khartoum



From W. B. H. S.
The Supt Engineer Krishna
P.W.D.

400076

To NR 8793
The Chief Engineer for
Irrigation, Madras.

Dated 24 November 1876
Received

No 103.

Enclosures 3.

Famine Relief Works in
Krishna District

Submits statements
showing the proposals
to be made under —
to find employment
for the poor people and
requests authority
for the collection of
materials for Project
Works herein stated.

11-279-W.

Encls. 4

Submitted for the information
of Government.

In a note of yesterday's date
the undersigned specified the
considerable works in the Eastern
and Western Sections of the Krishna
Delta which might be considered
available as Famine relief Works
and several of these are referred
to in the Superintending Engineer's
letter of the 24th Ultimo.

Major Hasted now shows
the extent of earthwork to be done
on the lower part of the Commamoor
Canal (10 miles) and on 19 miles of
the Rampain main drain, the cost
of this as provided for in the
Delta Completion estimates, and
its probable cost if undertaken
as relief work. The difference is
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by waddars, to hitting, and to
superintendence.

3. The system of task work will be likely to reduce waste to a minimum, and its adoption on all relief works when practicable is desirable. It may be added that the work to be taken up should as far as may be practicable be such as to admit of task work.

4. It should be borne in mind that main drains, where ~~is~~^{are} cutting, are not intended to be taken out in the first instance to more than from one half to one third of the full dimensions and that they will be much more useful if cut through from end to end to a moderate width than for a limited distance to a greater width. Where in encumbrance the banks will

be aligned at the full distance²⁷⁶ apart and they must be made up to the proper level.

5. It has yet to be settled what proportion of the cost of drainage works will be charged ultimately against the Delta irrigation system. In reference to the present question all that is needful is that the actual cost should be properly recorded for every work taken up for famine relief purposes, together with the best information possible as to what it would have cost if executed in the ordinary manner.

b. The requirements of ⁴⁵⁴Supg Engineer as regards superintendence are believed to be already under consideration.

Fort. St. George
1st Decr. 1876

To The Secretary
D. W. Dept.

whelanlinlin. L. Hol. R. de.
Chief Engineer for Irrigation

GO 21-11-76 No. 3133.

P.W.D.

156 4 100076

NR. 5703

200
The Chief Engineer for Irrigation

Dated 1st }
Desp. 4 } December 1896

Encls 4

No. 279-41.

Famine Relief Works - Kistna District.
— I forwards for information S.E.
letter submitting proposals to dispose of the
available labours, should it be considered
necessary to open out — in the District,
with remarks.

No. 217

Cis 5-12-76

E. I. Form No. 22.

No. 3345

Public Works Department.

PROCEEDINGS of the MADRAS GOVERNMENT.

UNDER date the 7th Dec 1896.

Read the following:—

From the Chief Engineer for Irrigation (H.S. No. 279 of 1 Dec 96)

Communicated to the
Revenue Department
in continuation of G.O.
No. 3304 of the 7th Inst.

by 9/12
Amr

To

MS. No. 9-12-76.
Revenue Dept. with copy of note by the Honble M.S. Ellis.
" Super Engineer Kistna ✓
" Chief Engineer for Irrigation ✓
" Examiner P.W. Dept. ✓

Desp. - 15 - 12 - 76

52

8/93



Gobt. of Madras.
PUBLIC WORKS.

To *The Revenue Department*

Dated

Issued

Recd.

Encl.

G. O., 9th December 1876, No. 3315

Nos. 217/18

Public Works
Division

Enclosure of the Chrg.
for irrigation submitting
proposals by the Subd Engr
for the opening out of
Communicated to the
Revenue Dept.

Handwritten signature