

M.R. 1-10,006-23-2-50.

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(3) Initials of the Referencer _____

MADRAS RECORD OFFICE

Government of Madras

Public Works

DEPARTMENT

G.O. No.	190	Press
~~B.P. No.~~		~~Mis.~~
Dated	23 - 1 -	195
		6875

Not to be folded or roughly handled

By order of the Madras Government, Public Works Department.
2nd January 1875.

Read the following :—
No. 1 is Endorsement of the Chief Engineer for Irrigation, dated 11th December 1874, No. 1,027.
From J. SAGE, Esq., District Engineer, South Arcot, to L. J. MULLINS, Esq., Engineer for Irrigation, dated Malabar, 11th November 1874, No. 175.

I have the honor to report another flood in Pooniar, which occurred on 26th ultimo, and which has done much damage to the Range Officer's report dated 10th instant. The height to which flood rose has not been reported.

2. The two extra Overseers that I have, have done some work, but have so little experience that in an emergency of this sort they are useless. Stewart, the Sub-division Officer, has sufficient work to look after in the other three Taluqs, and I would suggest the assistance of another Sub-division Officer for the Villapuram Taluq to help to get things to rights; the Range Officer would then have one taluq and supervision of the other two, and without assistance if things are to be got at all into order before next May when cyclones may be expected, matters will be quite hopeless.

From G. E. WIFFEN, Esq., Officer in charge No. 1 Range, South Arcot, to G. S. SAGE, Esq., District Engineer, South Arcot, dated Camp at Vanoor, 6th November 1874, No. 485.

In continuation of my demi-official letters, I have the honor to inform you that the Pooniar came down in very high flood on the morning of the 26th ultimo, and has caused great damages to roads and irrigation works in the No. 1 Range; they are, as far as personally seen and reported up to present, as follow :—Pooniar anicut, north wings washed away. Flood embankment on north side gone as far as the groynes; all the bricks and stone collected for rebuilding the Pombay channel head sluice swept away. Lime which was stored on the channel bank safe. "Malatar channel," about a quarter of a mile from the head sluice the river has cut away its sides and nearly breached into the channel; this has now been made safe by putting up a strong bund with slopes of 3 to 1 and revetted with durbah rollers.

"Corayar embankment" entirely swept away, except 42 yards on one side and 84 on the other.

"Akadvelly tank" and channel tank, only the ends and a small piece in centre left of the bund, channel bund entirely swept away.

"Hundracottah" tank; one large breach in centre on south side of the village, also one at each end; all the river and spring channels without exception are breached and filled up with sand; the river embankment running from Thittalore to Kanaramungalum hardly a vestige is left of the same; will have to be entirely remade.

"Audaly" embankment gone in its entire length.

"Oopalavady" channel, all the earthwork done to the last 1½ miles since May last is destroyed, and breaches have occurred in the embankment in the first 1½ miles; no masonry works as far as I can see are injured, although the bank on both sides of the concrete foundations have been washed away; the revised estimate which I had made out the second time is now of no use, as the sections I took for that purpose are now incorrect; as for the villages laying on the bank and within half a mile of river hardly one has escaped. I have seen several, of which two-thirds of the houses has been washed away; with reference to what loss of life has occurred I cannot with any certainty state. I have not yet received all reports of damages to works. I have been over the whole of the submerged ground in the Cuddalore Taluq, and am now going over the Villapuram, and will send a further report after having inspected the same. The roads have suffered greatly.

the AMads Government,
23rd January 1937

of road
4th Dec
arch
rear.

Road from
two large breaches.
170 yards, one cut
away; twenty-first mile,
20th mile gone, and a by
all correct; approach
Trunk Road N
9 from the sea

Cadalore, 114th mile, meta
breaches, metal all washed
large bridge over the Pooniar 1st
cracked; both horizontally and
I could see that they are
to Sa'em frontier vi
Acuc villa, Say
Trentieth mile
for its entire length breached and sides cut away, the
each 26 yards in length by 8 in depth. Bridge over the Malaur, 22nd mile,

of the
cut away t
with Dec
5th arches
District
very deep hole
third
metal all washed
breached for a d
one, all side of
the met culve
Bridge over the Malaur, 22nd mile,

bridges gone; could not tell exactly as there was no means of getting down, and the stream was too swift to allow of swimming. Trunk Road No. 8, Tricalore Taluq, breached for nearly half a mile in the 106th and 107th miles. Another road breached in the 4th and 4½ miles. Road from Trivane-
nellore to Villapuram, half a mile of the road breached and washed away; what damage has been done north of the dam, I am not yet aware of, but am now on my way out to inspect, and will report as soon as I can.

I have not yet the information.

I have made it a practice to place bench-marks wherever I could showing the height of the flood, on all masonry works and near tanks, etc., then I will have made permanent as soon as I possibly can. I beg to request you will allow me two Surveyors and two extra Overseers as soon as possible, so that as soon as the monsoons are over I may be able to push on with the works, in clearing out channels, filling in breaches, etc., so that there may be no loss to the Government revenue in this range. My present staff is quite unable to grapple with the amount of work now to be undertaken.

No. 1,027.

No. 1,027.
 SUBMITTED for the information of Government in continuation of the endorse-
 ment, No. 928, of the 10th ultimo.

CARRYPUTTY,
11th December 1874.

(Signed) JOHN MULLINS, Lieut.-Colonel, R.E.,
Chief Engineer for Irrigation.

No. 396. From G. S. SAGE, Esq., District Engineer, South Arcot, to Lieutenant-Colonel J. MULLINS, R.E., Chief Engineer for Irrigation, dated Camp at Trinomalee, 22nd November 1874, No. K-65.
In reply to your No. 220, 1874.

In reply to your No. 929 of 10th instant, I have the honor to invite your attention to the third paragraph of my No. 167 of 1st instant, from which you will observe I ask sanction for two Surveyors at Bunees 100 each per mensem, and

272 Rusees per mensem, or Rusees 3,264 for twelve months, for the of making the necessary

of making the necessary surveys and levels for embanking the river from its mouth to above Trickalore about 50 miles or for both sides 100 miles roughly; the section will be about 27 square yards per yard run, with a breadth of 2

the cost of the establishment, Rs. 3,300 per mile, or 3,30,000 for 100 miles.

2. Regarding the pay of the Surveyors proposed, I can get men for Rs. 100 per yard run, or Rs. 3,300 per mile, or 5,500 per furlong, but they can hardly be depended on for such work, being generally men from the establishment would be just 10 per cent. on estimated cost.

hardly be depended on for such work, being 60

Secretary of the Massachusetts General Court, Civil Works Department.
2nd January 1875.

For stones are necessarily a very rough approximation based upon
 No. 1. It is not possible to do work in a rough sort of
 From the fact that the embankment is not a straight line, but an
 My reason for not doing so is that the average cost of the work will be much
 if his service is not available. The average cost of the work will be much
 the damage done by Poonier and his staff. The average cost of the work will be much
 work that the present staff can do, without the aid of the present staff.

No. 1,028.

No. 396A.

Note by the Chief Engineer for Irrigation.

THE embanking of the Pooniar in South Arcot is a work which should not be postponed beyond the time that the details can be satisfactorily settled, and for determining these details a survey of the river and levels along its two banks, with cross sections at intervals, will be necessary. It was at first thought that sanction for an establishment could be given by this office on the conditions prescribed in Circular No. 62, but the work to be done will be for the protection of large tracts of country on both sides, and to prevent injury to roads as well as Irrigation works; consequently it will, it is supposed, be classed under Agricultural Miscellaneous, and the establishment will require sanction by Government.

2. Mr. Sage has not drawn up a programme of the work to be performed by the Surveyor, and there seems to be little chance of his being able to do so. He asks for the money to pay experienced Surveyors, and it may be inferred that he expects them to know where to go and what to do, but this can be determined only by those who have the qualifications of Engineers, and he is not likely to find Surveyors with these even if he offers 100 Rupees a month.

3. Mr. Sage wants Surveyors badly for a great deal of work in his district, but he has obtained no assistance of this kind as yet because he has failed to understand that the requirements of Circular No. 62 are necessary, and that he must be prepared to write out in detail exactly what Surveyors are to do, or they will waste their time in doing what is useless.

4. In the present case what was wanted was an outline of the work to be done, which, if Mr. Sage had written out instructions for it, could very easily have been furnished. The embankments should be as nearly as possible parallel to the axis of the river; there should be no abrupt bends in them; their distance apart should everywhere be somewhat in excess of the mean width of the river.

The first thing to be done then is to make a survey of the river, and a line of levels from the sea to Trikalore, or possibly somewhat beyond town; the levels and the survey of one bank can go on together.

Cross sections at every mile will be needed, and these should extend to a quarter of a mile on each side of the river.

When this part of the work has been completed, the District will settle the alignment of the embankments, and then upon these line be taken showing ground level at every 33 feet for the preparation of

The Madras Government, Madras
23rd January 1875

Madalore, 114th mile, meta-
breaches, metal all washed
large bridge over the Pooniar 1st
cracked; both horizontally and
I could find that they are
me
the en

5. The work
is to do, is sim-
there is no necessity
consist of—
to Salem frontier with
curvilinear, metal
away, metal
for a high rate of pay. Consequently a survey

A Surveyor	...	Rs.
Five Lascars	...	60
Coolies, pots, at 6 Rupees each	...	30
ms, and contingencies	...	10
Total	...	100

The survey
and the cross-
for side-
fairly accurate survey will be obtained. All heads of irrigation channels should
be shown on the survey, also road crossings, and other similar details; the bed
levels of channels, byewashes, etc., on the line of the longitudinal levels should

* Cultivated { dry.
Waste. { wet.
likewise be noted, and the description*
of ground on the traverse, level, and
cross section, lines should be exhibited
on the survey.

The District Engineer will then have most of the information that a Surveyor
can give him, and, if he be well acquainted with the ground generally, he may
be able to decide on the alignment of the banks without going over the line in
detail on the spot, but probably at some points a personal examination will be
necessary.

6. The work to be done involves—
Fifty miles of levels and traverse combined, say—
" " of cross sections,
" " of traverse with theodolite,

and if this be very well done it would take one man perhaps six months.
Then there will be 100 miles of levelling along fixed lines, with offset connec-
tions with the former traverses, or with the river bank; this will not occupy more
will observe 0 days or two working months. Altogether then there will be about eight
lascars' work for one man, or four months for two men, and this is a sufficiently
pragmaticate. Sanction is therefore recommended for the following

Two Surveyors	...	Rs.
for four months, at Rupees 100 each	...	800
...	...	75
...	...	175
...	...	50
Total	...	1,100

2. Regard
but they can have

Proceedings of the Madras Government, Public Works Department
23rd January 1875.

ms for stones are necessarily a very rough approximation based upon
what has been done elsewhere, but, as the District Engineer has afforded no inform-
ation, it is necessary to do so on a rough sort of
It is to be hoped that the embankment
anything like 3-30 lakhs of rupees. The average
under three yards for the count, would have been
to the depth implied by that average level
rate will suffice for earthwork. Some turning
river banks of equal cross section, slopes of 2 1/2 to
preferable to 2 to 1 on both sides.

CARRYPUTTY, (Signed) JOHN MUL
11th December 1874.

No. 397. ORDER THEREON, 23rd January 1875, No. 190.

IRRIGATION, No. 43.

The estimate of Rupees 1,100,
recommended for sanction in the fore-
going note, for surveys and levels in
connection with the proposed embanking of the Pooniar in South Arcot, is sanc-
tioned, and will be charged, against the provision for temporary establishments,
to Agricultural Miscellaneous, Pooniar embankment, preliminary expenses.

2. The District Engineer, South Arcot, should in future applications for
survey establishments prepare a proper programme of work to be done, on which
to base his estimate of their cost.

(True Extract.)
(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

To the Chief Engineer for Irrigation.
" District Engineer, South Arcot.
" Controller of Public Works Accounts.

Exd. J. Wright.
Spare Copies

D. P. W.
South Arcot.

No. 175

DISTRICT ENGINEER'S OFFICE.

Camp *Tirumalay*

Dated *11th Novemr* 1874.

From

The District Engineer,
South Arcot.

To

The *Chief Engineer*
for *Irrigation*

Enclosures.

1 Copy of letter

No 485 of 6th inst.

Sir,

I have the honor to report another flood in Ponnai, which occurred on 26th ultimo; and enclose a copy of Range officers report detailing damages, the height to which flood rose has not been reported.

2— The 2 extra overseers that I have, have done some work, but they have so little experience that in an emergency of this sort they are useless. Mr. Stewart the Sub division officer has sufficient work to look after in the Enchalore Talug. and I would suggest the assistance of another Sub-division officer for the Villapuram Talug to help to get things to rights, the Range officer would then have one Talug and supervision of the other two, and ^{without assistance} if things are to be got at all into order before next May when ^{rain} may be expected matters will be quite hopeless.

I have the honor to be
Sir
your most obedient servant

W. H. G.
District Engineer

No 485

No 1, Range office & arch
Camp Panwar 6th November 1874



From The Officer in charge of
No 1 Range & arch
To The Dist Engineer
& arch

Sir
In continuation of my semi-official
letters I have the honor to inform you that
the Pomur came down in very flood on the morn-
-ing of the 26th ultimo. and has caused great
damages to roads and irrigation works in the
No 1 Range, they are as far as personally seen,
and reported up to present as follows. Pomur
as ancient, North wing washed away. Flood
embankment on north side gone as far as the
groynes. all the Buicks and stone collected
for rebuilding the Pomur channel. Timber
since swept away. Lines which were stored
in the channel bank safe. Metata channel
about 1/2 mile from the flood place the river has
cut away the sides and very nearly breached
into the channel. this has now been made safe
by putting up a strong bund with slope of 3 to 1
and settled with Dumbat rollers.

Corayor Embankment entirely swept away
except 42 yds on one side and 84 on the other.
Madially tank and channel. Tank only
the end and a small piece in center left

From
SOUTH ARCOT D. P. WILKES
The District Engineer
South Arcot

To
The Chief Engineer
Irrigation
Dated 11/11/74
Despatched 11/11/74
Received 11/11/74
1874

No 115
Enclosures 1

Of reports with attached
copy of Range office
report on damage and
irrigation work by the
Major, Major & Commr
in No 1 Range Panwar 1874

left of the bund channel bund entirely
swept away.

Kundracottah Tank one large breach
in centre on south side of the village, also one
at each end. all the river and spring chan-
nels without exception are breached and
filled up with sand. the river embankment run-
ning from Ittialore to Kanaramangalam
hardly a vestige is left of the same will have
to be entirely remade.

Studaly Embankment gone in its entire
length.

Copalavady channel, all the earth
work done to the last $1\frac{1}{2}$ miles since May
last is entirely destroyed and breaches have
occurred in the embankment in the first $1\frac{1}{2}$
miles nine of the masonry works as far as
I can see are injured, although the bank
on both sides down to the concrete foundations
have been washed away. the revised estimate
which I had made out ^{for the} second time is now
of no use, as the sections I took for that
purpose are now incorrect; as for the villages
lying on the bank and within $\frac{1}{2}$ mile of river
hardly one has escaped. I have seen several
of which $\frac{2}{3}$ of the houses has been washed away
with reference to what loss of life has occurred
I cannot with any certainty state. I have
not yet received all reports of damages to
works.

works. I have been over the whole of the salt
merged ground in the Cuddalore Taluq and
am now going over the Villapuram and will
send a further report after having inspected
the same. The Roads have suffered greatly.

Road from Pundichery to Cuddalore
114th mile metal washed off and sides of
Road destroyed, 116th same, 117th two large
breaches, metal all washed off and sides of
Road cut away to a depth of 4 ft. in places.
Large Bridge over the Ponnai 1st 2nd 3rd
4th & 5th arches cracked, ^{the} 4th sunk 5" and
badly cracked both horizontally and vertically.
I have examined the floor of these arches and
as far as I could find that they are all
correct but there is a very deep hole some 10
feet.

Road from Cuddalore to Salem further via
Punrothy. 3rd mile metal all washed from
Road. 2 large breaches, side of road cut away
very badly. 20th mile road breached for
a distance of 170 yds. one culvert washed away
metal washed off road up to 20th mile and side
of road cut away, 21st mile for its entire length
breached and sides cut away. the 9 ft culvert
in the 20th mile gone and a breach 26 yds in
length by 8 in depth. Bridge over the Malabar
22nd mile all correct approach on south west
side cut through.

Small Road N-9 from the 105th to 106th
mile road clean swept away either one or
two

Two Bridges gone could not tell exactly
as there was no means of getting down and
the stream was too swift to allow of swimming

Trunk Road No. 8 Truckee Valley
Breached for nearly $\frac{1}{2}$ mile in the 106th
and 107th miles. Another road breached
in the 14th and 15th miles. Road from Tusculum
to Villaputnam $\frac{1}{2}$ mile of the road breached
and washed away, what damage has been
done north of the river I am not yet aware
of but am now on my way out to inspect and
will report as soon as I can get the information

I have made it a practice to place
B.M. whenever I could showing the
height of the flood, on all masonry works
and ~~in the trunk road~~ ~~then~~ ~~shall have~~
permanent as soon as I possibly can. I
beg to request you will allow me two surveyors
and 2 extra overseers as soon as possible, so
that as soon as the seasons are over I
may be able to push on with the works,
in clearing out channels, filling in breaches
so that there may be no loss to the Government
revenue in this Range, my present staff
is quite unable to grapple with the amount
of work now to be undertaken.

I have recd
1541 G. E. Woffen
Principal Range officer
C. H. M. G.
D. F. G.

1881 May 9

4

134

without practical experience, whereas for
the larger pay I may by advertising get
men

D. P. W.
SOUTH ARCOT.

No. 65

DISTRICT ENGINEER'S OFFICE.

Camp.

Dated

Chinnamalai
22nd November 1874

From

The District Engineer,

South Arcot.

To

The

Chief Engineer for
Irrigation

Enclosures.

Sir,

I am replying to your No. 929 of 10th instant. I have the honor to invite your attention to the 3rd para of my No. 167 of 10th instant, from which you will observe I ask sanction for 2 Surveyors at Rs. 100 each per annum, and 6 lascars for each or all 12 lascars at 6 Rs. each or 72 Rs. per annum, making 272 Rs. per annum or Rs. 3264 for 12 months; for the purpose of making the necessary surveys and levels for embanking the River Ponnai from its mouth to above Sirkaloor about 50 miles or for both sides 100 miles roughly. The section will be about 27 sq. yds. per yard run, with top breadth of 3 yards, slope 2 to 1, and height of 3 yards, which at 1 anna per cub. yard = 1.11.0 per yard run, or Rs. 3300 per mile, or 330000 for 100 miles; the cost of the Establishment would be just 10 per cent on Estimated cost.

2 — Regarding the pay of the Surveyors proposed, I can get men for Rs. 60 but they can hardly be depended on for such work, being generally men fresh from College and without practical experience, whereas for the larger pay I may by advertising get men

P. W. 1874 De
No. 78
The Chief Engineer
for Irrigation
P. W. Secretary
to Govt
No. 1027

Dated 11th Dec 74
Rev. 153 Dec 74
Encls. 2

Submits report
on the damage
done to certain
works by the
floods of the
on the 26 Oct
G. No. 150.27-1

40395

18-12-74 D. P. W. 1875

District Engineer

men who had some practical experience,
under any circumstances I would not
give the full \$2. 100 until a main work
had been tested; both as to quantity and
quality.

3 — My reason for asking for Mr. Schreyer
is that I know his fitness for the work,
but if his services are not available I
hope some other fit person will be sent, as
the damage done by Louisa and the North
East Missouri have given us more work
than the present staff can do, without
these levels and surveys.

I have the honor to be
Sir
your most obedient servant

W. H. C.
District Engineer

No 1028
 Note by the Chief Engineer for Irrigation.
 The embanking of the Ponias in South Arcot
 is a work which should not be postponed beyond
 the time that the details can be satisfactorily
 settled, and for determining these details a
 survey of the river and levels along its two
 banks, with cross sections at intervals, will be
 necessary. It was at first thought that sanc-
 tion for an establishment could be given by this
 Office on the conditions prescribed in Circular
 No. 62, but the work to be done will be for the
 protection of large tracts of Country on both sides,
 and to prevent injury to roads as well as irrigation
 works, consequently it will, it is supposed, be
 classed under Agricultural Miscellaneous,
 and the establishment will require sanction by
 Government.
 Mr. Sage has not drawn up a program-
 me of the work to be performed by the Surveyor, and
 there seems to be little chance of his being able to
 do so. He asks for the money to pay experi-
 enced Surveyors, and it may be inferred that
 he expects them to know where to go and what to
 do, but this can be determined only by those
 who

SOUTH ARCOT D. P. IV.
 From Es No 2186
 The District Engineer
 South Arcot.

To
 The
 Chief Engineer
 Irrigation

Dated 22-2
 Despatched 22-2
 Received 24-2
 1894

No. 65
 Enclosures

The quantity of work
 sanctioned for taking surveys
 levels &c. for embanking
 the whole length of the
 river is about 100 miles
 50 miles from the line

No 236

Mr. Sage 1/4

who have the qualifications of Engineers, and he is not likely to find Surveyors with these even if he offers 100 Rupees a month.

3. Mr. Sage wants Surveyors badly for a great deal of work in his District, but he has obtained no assistance of this kind as yet because he has failed to understand that the requirements of Circular No. 62 are necessary, and that he must be prepared to write out in detail exactly what Surveyors are to do, or they will waste their time in doing what is useless.

4. In the present case, what was wanted was an outline of the work to be done, which, if Mr. Sage had written out instructions for it, could very easily have been furnished. The embankments should be as nearly as possible parallel to the axis of the river, there should be no abrupt bends in them, their distance apart should everywhere be somewhat in excess of the mean width of the river.

The first thing to be done there is to make a survey of the river, and to run a line of levels from the sea to Trikalore or possibly some what beyond that town. The levels and the survey of one bank can go on together.

Cross

Cross sections at every mile will be needed, and these should extend to about $\frac{1}{4}$ of a mile on each side of the river.

When this part of the work has been completed, the District Engineer can settle the alignment of the embankments and then upon these lines levels should be taken showing ground level at every 33 feet for the preparation of the estimate.

The flood levels should be marked on the longitudinal levels at the points where they have been ascertained and noted, and from these the general surface fall can be deduced. Bench mark stones should be fixed at miles and furlongs, the mileage being measured from west to east, and the stones should be laid down before the levels for the embankments are taken.

5. The work as regards the Surveyor, when he has been told exactly what he is to do, is so simple enough, and so little or nothing is to be left to his discretion, there is no necessity for a high rate of pay. Consequently a survey party may consist of

a Surveyor on Rupees 30
5 Peons at 6 Rupees each 30
Coolies and contingencies 10 Rupees 100.

The Survey traverse of one bank of the river should be done with a theodolite and the cross sections being connected with this traverse and with that on the other side, which can be done with the Compass of the levelling instrument a fairly accurate survey will be obtained. All heads of irrigation Channels should be shown on the survey also road crossings and other similar details; the bed levels of channels, byewashes ~~see~~ on the line of the longitudinal levels should likewise be noted, and the description of ground on the traverse, level, and cross section, lines should be exhibited on the survey.

The District Engineer will then have most of the information that a Surveyor can give him, and if he be well acquainted with the ground generally he may be able to decide on the alignment of the banks without going over the lines in detail on the spot but probably at some points a personal examination will be necessary.

The work to be done involves
 50 miles of levels and traverse combined
 say 50 — of cross sections
 50 — of traverse with theodolite and
 if this be very well done it would take 1 man perhaps 6 months.

Then there will be 100 miles of levelling along

+ Cultivated dry waste

along fixed lines, with offset connections with the former traverse or with the river bank. This will not occupy more than 50 days or two working months. Altogether then there will be about 8 months work for one man or 4 months for 2 men and this is a sufficiently close estimate to begin with. Sanction is therefore recommended for the following estimate.

2 Survey parties for 4 months	800
at Rupees 100 each	75
50 Mile stones	175
350 Furlong stones	50
Fixing	
Total Rupees	1100

The items for stones are necessarily a very rough approximation based upon what has been done elsewhere, but as the District Engineer has afforded no information, it is necessary to do his work in a rough sort of way for him.

It is to be hoped that the estimate will not amount to anything like 3.3% like that of the average height of the country. The average height of the country would have been 3 yards for the

[illegible]

The estimate of Rupees 1,100, recommended for sanction in the foregoing note, for Surveys and levels in connection with the proposed embanking of the Pooniar in South Arcot is sanctioned, and will be charged, against the provision for temporary establishment, to Agricultural Improvements, Pooniar embankment, preliminary expenses.

2. The District Engineer South

10/18/12

7834 ✓
7855 ✓

Govt. of Madras.

PUBLIC WORKS.

To

The Chief Engineer
- Irrigation

Dated

Recd.

Encl. 3

G. O. 23 June 190

Nos. 395-397

Pennair Embankment

South Arcot R. Co.

Sum of Rs 1100 for
survey and levels in
connection with the pro-
posed embankment of the
Pennair sanctioned
with certain instructions