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MADRAS RECORD OFFICE

Government of Madras

Public Works (Irrigation) DEPARTMENT

G.O. No.	493	Press
~~R.P. No.~~		~~Misr~~
Dated	23-2	1876.

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
23rd February 1876.*

Read the following papers :—

No. 428. Endorsement of the Chief Engineer for Irrigation, dated Fort St. George, 9th February 1876, No. 193.

From K. F. NORDMANN, Esq., Officiating District Engineer, Vizagapatam, to Lieutenant-Colonel J. MULHINS, R.E., Chief Engineer for Irrigation, dated Camp at Bimlipatam, 6th January 1876, No. 1,651.

With reference to your Memorandum, No. 801, dated 21st July 1875, I have the

honor to submit herewith a sketch map received from Mr. Brickwell on which all the levels taken in connection with the proposed channel west of the Panchadarla Hills have been marked, as well as the levels of the country south of a line drawn from the Ariyapalem calingulah to the Saradanuddy, together with a copy of that officer's letter, No. 255, dated 8th December 1875, which accompanied the map.

2. I beg to enclose also, for your information, a plan of the Kondakirla Ava Lake showing the contour lines, the extent of land occupied when the water is low, *i.e.*, about 2 inches below the crest of the calingulah, as well as the area that is usually cultivated within the bed, together with a copy of the Range Officer's letter, No. 66, dated 25th May 1875; and I request that both plans may be returned when no longer required.

From F. BRICKWELL, Esq., C.E., Assistant Engineer, in charge of Golconda Range, to K. F. NORDMANN, Esq., Officiating District Engineer, Vizagapatam, dated Yellamunchilly, 25th May 1875, No. 66.

With reference to your No. 83, dated Waltair, 15th April 1875, I have the honor to submit herewith a plan (by banghy post) with levels marked thereon of the Kondakirla Ava, which I beg may be returned when no longer required.

2. I have the honor to state that it is not proposed to raise the level of the calingulah so as to submerge any land which has not hitherto been swamped—*vide* Chief Engineer's No. 183, dated 20th June 1873.

3. The plan submitted explains itself. The upper contour shown on it is at a height above mean sea level of 59.80 feet. It was intended to have been taken at a height M.S.L. + 60.21 feet, or 3 inches above calingulah crest level, (*vide* your office No. 1,610, dated Waltair, 2nd December 1873,) but owing to the dilatory way in which the Surveyor did his work, the water level subsided and the contour was run at the above height.

4. The lower contour marked on the plan as being at a height above M.S.L. of 54.32 forms the lower limit of the dry weather cultivation.

5. It will be observed that the height of the B.M. at Jada Dibbalu (which is said to have been tampered with) referred to in letter from Collector of Vizagapatam to District Engineer, dated 17th October 1860, No. 1-1,103 (published with Proceedings of Board of Revenue, 4th June 1869, No. 4,246) is 59.55 + M.S.L., or about 4½ inches lower than crest of calingulah.

† Levels taken by Taluk Overseer Lafonais.

6. The floors of vaults of the sluices in the calingulah which supply the Government land under the Ava are M.S.L. + 53.40.

7. The area of the land included within the upper contour is ...	1,621.17
That included within lower contour ...	635.50

Difference is ... 885.67

and is the extent of cultivation within the water-ground of the Ava.

8. Of this the principal portion to the north and east is cultivated by tenants of the Andampally proprietor. A small tract near the ealingah crest is cultivated by Government tenants of Andampally, and is, I believe, included in their portion. The remainder is mostly waste, and sometimes left waste, according to the season; but most of the rents belong under Government, except those of Andampally, have patta for land within the tank bed, I believe.

9. The point requiring settlement, as far as the Ava Project is concerned, seems to be—whether the water is to be drawn off on the 15th December in such quantities as to depend as required for cultivation of land under the Ava, and reserved by that amount.

10. The cultivation in the tank bed is, of course, very dependent, on leading to fraudulent attempts to let the water run to waste.

11. It would be well, therefore, to take into consideration whether this cultivation, or any part of it, can be got rid of, and at what cost, if compensation be found necessary.

12. Mr. Roswell when Principal Assistant Collector stated in his letter, No. 171, dated 17th November 1875, that the proprietor has no right to put down a first crop of rice in the Ava bed, as is now the custom. Rice is now planted within the water-ground of the Ava in June, or early in July, when the water is low and before the Ava fills. As the Ava fills up, the rice grows with it, and about 15th December is fit for cutting with the water just above water. Hence the anxiety of the proprietor to draw off the water on that date to enable them to cut the crop.

13. As far as a later or earlier water crop is concerned, it is usually planted, I believe, much later.

14. Another great objection to drawing off the water suddenly on 15th December is, that it swamps the fields of Government tenants cultivating land under the Ava, just at the time when they are harvesting their crops, doing them great damage, if not blasting away the rice which has been cut.

15. The question of the various rights, &c., in the Ava bed will, of course, have to be settled in the Revenue Department, but one plan of arriving at a conclusion on the subject was discussed between Major Beatty and myself, but which I have not seen put on paper. I venture to give it for what it is worth.

16. We supposed that if the proprietor and Government were to come to an agreement to abide by the quantities, &c., entered in the Permanent Settlement Accounts, and that then an accurate survey of the villages adjacent to the Ava were prepared by the Revenue Survey Department and the results compared with the Permanent Settlement, it would then appear whether the land in the Ava bed was included or not in that account.

17. If included, the land should be made over to the proprietor without further dispute. If not included, he should give up the same.

18. This seemed to us a fair and reasonable way of ascertaining the boundary and settling the matter, but there may be objections to it which have not occurred to me.

19. Mr. Daniel, lately Acting Collector, in his letter, No. 1,616, dated 27th October 1875, to the District Engineer, authorized us not to draw off the water from the Ava except as required for the purposes of cultivation under the Ava; but the question has again been raised, and I need scarcely remind you that the scheme for the improvement of the Ava depends upon the settlement of this question—*vide* Memorandum from Chief Engineer for Irrigation, to Secretary to Government, Public Works Department, dated Nursipatam, 8th October 1875, No. 716-B, paragraph 5, published with G.O., Public Works Department, 12th December 1875, No. 2,994.

From F. BRICKWELL, Esq., C.E., Assistant Engineer, in charge of Gulgondah Range, to K. F. NORMANN, Esq., Officiating District Engineer, Vizagapatam, dated Yellamanchilly, 8th December 1875, No. 255.

With reference to your endorsement, No. 1,389, dated Waltair, 21st November 1875, I have the honor to draw your attention to this office No. 66, dated 2nd May 1875, and its enclosure.

2. The actual boundaries of the Ava can only be settled by the Revenue Department. It has been held by this department that we were entitled to hold up the water in the Ava to a height of 3 inches above ealingah crest level, only drawing it off by degrees as required for cultivation under the Ava—*vide* Proceedings of the Board of Revenue, No. 4,246, dated 14th June 1869, paragraph 13, and Chief Engineer's Memorandum, No. 716-B, dated Nursipatam, 8th October 1875, paragraph 3, published with G.O., No. 328, dated 1st March 1875.

3. This view was upheld by the Revenue Department on a reference made to them by the District Engineer in 1873—*vide* letter from the Collector to the District Engineer, No. 1,616, dated Vizagapatam, 27th October 1873.

4. This again was reversed in 1875—*vide* Collector's letter to the District Engineer, No. 1,287, dated 24th July 1875.

5. Again, in Collector's letter, No. —, dated 24th November 1875, to the Secretary to the Board of Revenue, paragraph 8, it is most distinctly stated that, if Government wish to resume the lands in the Ava bed, they must purchase them in the usual way.

6. In paragraph 6 of the same letter the Collector in discussing the Kristamraz Channel Improvements Project adverts to an antagonism which has subsisted between the Engineer in charge of the channel and the proprietors as being a likely cause of their unwillingness to support the scheme. I should extremely regret having been the cause of this, and think it right to explain that the antagonism said to subsist has been incurred in resisting encroachments on the part of the proprietors, as referred to in the Collector's letter, No. 1,003, dated Vizagapatam, 3rd June 1875, to the District Engineer, paragraph 8. The antagonism has been shared by the Principal Assistant Magistrate who has taken decisive action in cases of damming the Kristamraz Channel when brought to his notice; and it seems obvious that the support of the proprietors would be too dearly purchased at the cost of a supine indifference to such doings.

7. It seems, therefore, clear from the foregoing that the question of the rights of Government to the Ava itself have been settled adversely to the project, and that the proprietors are unwilling to contribute any part of the cost of improving the Kristamraz Channel which cannot legally be levied; and I feel sure that, under these circumstances, no plan can be proposed which will bring in a return on the outlay equal to 12 per cent., which the Chief Engineer states is required.

8. I had the honor to submit an approximate estimate for a line *via* Madutore which was estimated to produce a return of from $\frac{1}{4}$ to $\frac{7}{8}$ per cent., *vide* my letter, No. 108, of 1st July 1875.

9. I have since then taken a trial line to the west of Punchadarla Hills as requested by the Chief Engineer, and found it very unfavorable.

10. The accompanying map which is more complete than the one submitted with my letter adverted to above, and which I beg may be returned, shows the trial line.

11. The existing Mahal Calwa or Main Ava Channel is made use of for the first two miles. The line then crosses the existing cultivation under the Ava to the village of Jagannathapuram, where the ground is much broken up into isolated conical hills. It then skirts the foot of the hills over very rocky soil to Punchadarla, a village of the Vizianagram Zemindar, of which the boundaries are shown by a thick broken red line. Here it is proposed to supply, after raising the water level two yards, the Dhurmasagaram tank and Veluchuru Ava, for which purpose land will have to be purchased from the Zemindar, and where it is proposed to store some of the water which is to be drawn off from the Ava on the 15th December under existing arrangements.

12. At the lowest computation the length of the channel from its commencement to the Poodimadaka road will be sixteen miles, probably two or three miles more if the channel be run on the most favorable ground, as regards levels, that can be selected. The starting level is Ariyapalem sluice floor M.S.L. + 53.63; allowing $\frac{1}{4}$ foot per mile fall (probably more will be necessary in rocky ground to avoid a too great width of bed) the bed level near the Poodimadaka road will be M.S.L. + 33.63, and a reference to the plan will show that this will involve a cutting there of about 20 feet, and that a considerable portion of the waste land near Jangulum and Maduturu tanks is too high to be commanded, and that these two tanks cannot be supplied by the channel.

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13. The land which will be most easily supplied by this line is shown in the plan. It is already irrigated by river channels, and pays an average assessment of about 12s. 6d. per acre, except about 500 Acres of waste near Koppuguntapalem which will surely pay for the expensive works required to irrigate it.

14. The Collector in his letter No. 2,044 dated 23rd November 1875, to the effect of the District Engineer, states that a return of Ryots, &c., may be obtained from these lands (colored yellow on plan) if they are irrigated as proposed, and I have accordingly estimated the cost of works only at Rs. 60,000.

15. It will be seen by the plan enclosed that many more cross channels are required in order to determine the most favorable location for the line of channel. A line of 11 Miles has been fixed along the bank of the Saradanuddy, and also along the Mithal Canna and Panchadaria road, so that there is every facility for taking them, but until the main question of the rights of Government to the Ava bed, and of the improvements of the Kondaikula Channel are authoritatively decided, it is useless to do more in the matter.

No. 128-A. From K. F. NORDMANN, Esq., Officiating District Engineer, Vizagapatam, to Chief Engineer J. BRICKWELL, Esq., Chief Engineer for Irrigation, dated Camp at Vizagapatam, 25th February 1876, No. 1,714.

In continuation of my letter No. 1,714, dated 6th January 1876, I have the honor to forward herewith, for your information, 1 Copy of letter No. 992, of 11th October 1875, from Mr. Brickwell, copy of letter No. 992, dated 11th October 1875, from the Assistant Engineer in charge of Golconda Range, on the subject of the land to be brought under the influence of the proposed channels from the Kondaikula Ava; 1 Copy of letter No. 2,044, of 20th November 1875, from the Collector, Vizagapatam, copy of letter No. 2,044, dated 20th November 1875, from the Collector, Vizagapatam.

I have the honor to inform you that the information contained in the letter has not been furnished to you before, and you may wish to refer it to assist you in forming your final decision regarding the merits of the project.

2. The tracing (revised and completed according to instructions in your Memorandum, No. 391, dated 21st July 1875) alluded to in Mr. Brickwell's paragraph 1 was sent to you with my letter, No. 1,691, dated 6th instant.

3. Regarding the extra water-rate which may be levied in consideration of the improved supply, the Collector was referred to, and a copy of his opinion is herewith submitted, (letter No. 2,044, dated 20th November 1875.)

From F. BRICKWELL, Esq., C.E., Assistant Engineer, in charge of Golconda Range, to K. F. NORDMANN, Esq., Officiating District Engineer, Vizagapatam, dated Yellamundilly, 14th October 1875, No. 202.

With reference to Memorandum No. 391, of the Chief Engineer for Irrigation, dated Ootacamund, 21st July 1875, paragraph 1, (received with your No. 712, dated Waltair, 12th August 1875), I have the honor to enclose herewith a tracing (to be kindly returned) showing the land which would be brought under the influence of the proposed channels from the Ava and the west of Panchadaria Hills.

2. The estimate for the proposed works is, I regret to say, not yet ready, but I hope to be able to submit it shortly; meanwhile I have the honor to request you to address the Revenue Department on the subject of the extra water-rate which may be levied in consideration of the improved supply.

3. As the whole project hinges on this question, and as the definite instructions referred to in paragraph 6 of the Chief Engineer's Memorandum referred to above should be received in this office before the cold weather sets in, to enable me to carry out any further surveys at that time,

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23rd February 1876.*

if required, I have the honor to request you to take steps to obtain this information as soon as possible.

4. The total area (without deduction for village sites, roads, &c.) under command of the proposed works appears to be Acres 8,442.5. Of this, 500 Acres near the village of Koppuguntapalem are Government waste said to be cultivable if supplied with fresh water, and 480 Acres near Dhurmasagaram tank of Velour appear to appertain to the Panchadaria estate.

5. With the exception of the Government waste (500 Acres) in the village of Koppuguntapalem, the above is now under wet cultivation. No remissions of any importance, so far as I am aware, have been given during the last three years. From the census report I gather that among eight of the villages commanded, the average rate of assessment on wet land is Rupees 6 per acre, the highest (Cattubole) being 14½ and the lowest (Razzala) 3 Rupees per acre.

6. Under these circumstances, I have the honor to request you to obtain the necessary information as to the extra water-rate, if any, which may be levied and collected if the water supply to these lands is improved as proposed, in order that I may ascertain whether the conditions under which sanction is likely to be obtained for the project as adverted to in paragraph 2 of the Chief Engineer's Memorandum referred to above are likely to be fulfilled.

7. As, under the circumstances set forth in paragraph 5, it seems at least doubtful if the project is of much value, in a financial point of view, I am extremely anxious to obtain the above information as soon as possible in order to prevent what may happen to be a useless expenditure of more time and money on the investigation.

From H. Sr. A. GOODRICH, Esq., Acting Collector of Vizagapatam, to K. F. NORDMANN, Esq., Officiating District Engineer, Vizagapatam, dated Vizagapatam, 20th November 1875, No. 2,044.

With reference to your letter of the 11th ultimo, I have the honor to furnish you with the following opinion.

2. The contemplated improvements to the Kondaikula Ava will raise the area irrigated to 8,442½ Acres as stated by the Range Officer.

Hereof 480 Acres near Panchadaria appertain to the Vizianagram Estates, 500 Acres are Government waste said to be cultivable, if supplied, and 7,462½ are for the most part now irrigated by the channels led from the Ava.

3. The result of your improvements to the Ava and its feeding channel will be to render somewhat less precarious a very valuable source of irrigation.

From the ryots' point of view, Government will be fulfilling its contract. He believes that contract (as expressed by the classification and taxation of the land as irrigated from a Government source) to bind Government to supply that land as well as possible.

4. That anything like general consent will be obtained to any increased assessment in consideration of less precarious water supply, I do not believe. The land might be surveyed and a new settlement made, and the ryots would then have no alternative but to pay.

5. The Saradanuddy is inferior as a source of irrigation to the Nagavalli and Wamshadhara. These rivers have never, I believe, been reported to fail in irrigating the Chicacole Taluq. The lands there under pay a consolidated wet assessment of about 3½ Rupees per acre on an average. My recommendation that Rupees 4-8-0 should be imposed was lately regarded by the Director of Revenue Settlement as an advocacy of an excessive rate for the country. In no respect do the two tracts differ. In Chicacole the roads are better and the demands for export more active. In Survasidhi the large villages and towns cause greater demand for inland consumption. The soil of Chicacole and its irrigation are superior. The climate and the people are of the same character in either district.

6. In the villages under irrigation at present 6 Rupees is now paid on an average, and some slight rise might, in my judgment, be imposed on a settlement. I should however look on 7 as a maximum average. As no measurement has ever been made of the lands, it is impossible to say whether much would be gained to the revenue by a survey. Probably not more than

10 per cent. This increase would not be due to the improvement of irrigation. No second crop
cess is leviable in the villages in question.

7. I am of opinion that, after a survey and settlement, you might expect an increase of 6,000 on these wet lands if the irrigation be improved; without those processes the return will be nil. As to the area of waste in the marsh towards the river's mouth, I

As to the area of waste in the marsh towards the river's mouth at Koppugunta, palm the soil is not promising, being highly saline. It is very possible that it might prove fertile when irrigated, and, after population had been attracted, it might in this case be worth 3 Rupees an acre. There is nearly 500 Acres of tract of this nature.

There is nearly 500 Acres of Zemindari land near Salehur, and on this, provided the works succeeded in greatly improving the present supply, the Zemindar would, I believe, undertake to pay an extra rupee per acre.

8. You will observe that I regard the returns to be expected from the improvements to be most meagre and uncertain. The cause of this is in the nature of the scheme. In a climate like that of the Northern Circars, where, three years out of five, the most primitive irrigation works suffice, the need for elaborate works is little felt; the land proposed to be affected by the scheme already pays regular irrigated assessment, and the holders would regard it as a violation of custom to ask them for more. Unless the need of water be extreme, or the only source whence water is to be taken be one only controllable by works requiring great skill in construction, water will not fetch a fancy price. Almost any scheme which will supply sufficient water to a good area of dry land will pay well; almost any scheme merely for improving the supply to land now rated as wet will be a failure financially.

9. The intention at one time entertained of cutting a channel through the high land south-east of the Ara to a point near Modutore has been apparently abandoned. On the line which such a channel would have taken a large area of land now without any water-supply is to be found, and I regarded the project as promising well as long as the irrigation of this dry waste land was contemplated.

Submitted for the information of Government with reference to G.O., No. 101,
dated 12th January 1876.

2. Of the two plans transmitted with the District Engineer's earlier letter, one shows the area of the Kondakirla Aya at 5 or 6 inches below the full level, which is supposed to be 3 inches above the crest of the surplus weir (Ariyapalem calingulah), and also at what is called the "low level" of the Aya.

4 54.32

† + 53.40 or 53.63

0.92

R. O'a., No. 66.

The area at the upper contour is	...	...	...	...	...	Acres.
and that at the lower contour is	...	...	...	...	...	1,521-17
the difference being	...	...	...	...	...	695-50
is mentioned that the greater part of the	...	...	...	...	...	885-67

It is mentioned that the greater part of the area between the contours to the north and east is cultivated by ryots holding under the Ankapilly proprietor. The information given is much less complete than was required by the instructions given in Proceedings, Madras Government, No. 2,994, of the 12th December 1873. In paragraph 16, 4th of the Memorandum therein printed, what was wanted was fully described, but the survey submitted is entirely wanting in topographical details, and the boundary lines of Government and proprietary lands have not been shown, neither has it been stated whether the absence of this information is due to these boundaries being unascertainable or otherwise. Then, again, nothing has been said about the contents

of the Ava at different levels, and yet upon these must depend the determination of the arrangements necessary for the due supply of existing cultivation on the one hand, and of any extension of cultivation deemed desirable on the other hand. It is clear that the order of the investigations laid down in that Memorandum has not been attended to, and that the instructions given with regard to the Ava have not been attended to. Had the contours and cross sections been taken as prescribed, the data for determining what is necessary in the interests of the lands under the Ava, and of those in the bed also, would have been available. At present the rights of Government and of the proprietors may be capable of determination from the settlement records, but it cannot be shown what compromise, if any, in the interests of both may be feasible.

3. There are a few matters referred to in the correspondence submitted which may be considered worthy of attention.

1st.—The reference to the practice of cultivating an early instead of, or in addition to, a late crop in the bed of the R. O's., No. 66, paragraph 12. Ava, contrary to the late Mr. Boswell's opinion as to the right in this respect.

2ndly.—The injury done to crops under the Ava by the discharge of large quantities to surplus on and after the middle of December.

3rdly.—The suggestion made for the determination of the areas in the Awa R. O's., No. 66, paragraphs 16, 17, 18.

4. With regard to the extension or improvement of irrigation under the Ava, the tracing and papers show that two off-takes for Irrigation channels have been proposed, the one starting from the southeast of the Ava, and for this an approximate estimate was prepared on which the gross return anticipated was calculated to be $7\frac{1}{4}$ or $7\frac{1}{2}$ per cent. The addition of indirect charges would have reduced this nearly to 5 per cent., and it was thought that there was but little chance of a project for this line of channel being sanctioned. It involved a cutting two miles long and 40 feet deep at the watershed to start with, and, though the rate for this cutting was deemed capable of

8 Annas a cubic yard.

reduction, the lie of the country is certainly not favourable.

5. The District Engineer was requested to have all levels which had been taken recorded on the survey, and further to state whether water could not be conveyed from the Ava calingulah by a line running west of the Punchadarla hills. It has now been explained that there are only 500 Acres of Government land not already irrigated which could be brought under cultivation, and this area is situated in a position quite unsuitable for irrigation from the Ava, if there be no intermediate

land to irrigate. It would apparently be much cheaper and more convenient to water it from the Saradanuddy by an off-take in the neighbourhood.

6. Altogether it is by no means probable that any great extension of cultivation under the Ava will be found practicable. The sketch map shows that much of the land to the southwest is already irrigated by river channels, and it does not appear that this irrigation is ineffective. Then a large proportion of the lands is proprietary, and it is not likely that any additional rate could be obtained from lands of this class. All that

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23rd February 1876.

appears to be feasible is to improve and perhaps slightly extend the irrigation under the Ava, and what can be done in this direction must depend a good deal upon the final decision arrived at as to the rights of the Government in connection with the storage of water therein.

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

No. 429.

ORDER THEREON, 23rd February 1876, No. 493.

IRRIGATION, No. 45.

THESE papers will be communicated to the Revenue Department in continuation of G.O., No. 101, dated 12th January 1876. It is observed that the information furnished regarding the Kondakirala Ava is very much less complete than was required by G.O., No. 2,994, of the 12th December 1873. Should further details of the ground within the full level contour be essential to the settlement of the rights of Government, the Collector will intimate to the District Engineer what particulars are needed, and the latter will then lose no time in furnishing them. The District Engineer will explain why the instructions have been so imperfectly attended to, and why the prescribed order of the investigations connected with this Ava has not been conformed to.

(True Extract.)

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

To the Revenue Department.
,, District Engineer, Vizagapatam.
,, Chief Engineer for Irrigation.

Exd. W. J. Lewis.
Spare Copies.

No. 193.

From District Engineer Vizagapatam. Letter No. 1651 of the 6th January 1876 with Nos. 66 and 255 of 25th May and 8th December 1875 from Golgundah Range Officer.

do do Letter No. 1744 of 28th January 1876 with No. 202 from Range Officer.

Incl. 8.

Submitted for the information of Government with reference to Government Order No. 101 dated 12th January 1876.

2. Of the two plans transmitted with the District Engineer's earlier letter, one shows the area of the Kondakirala Ava at 5 or 6 inches below the full level, which is supposed to be 3 inches above the crest of the surplus weir (Ariya-polliem Calingulah) and also at what is called the hot weather contour, which forms the lower limit of the dry weather cultivation, and which is somewhat less than a foot above the sill of the Calingulah Under Sluices.

The area at the upper contour is 1521.17 acres and that at the lower contour is 635.50 the difference being 885.67

x
+54.32

+53.40 or 53.63
0.92

R.D. No. 66.

Ab

were included as arable in the permanent settlement.

4. With regard to the extension or improvement of irrigation under the Ava, the tracing and papers show that two offtakes for irrigation channels have been proposed, the one starting from the South East of the Ava and for this an approximate estimate was prepared on which the gross return anticipated was calculated to be $\frac{1}{4}$ or $\frac{1}{2}$ per cent. The addition of indirect charges would have reduced this nearly to 5 per cent, and it was thought that there was but little chance of a project for this line of channel being sanctioned. It involved a cutting 2 miles long and 140 feet deep at the watershed to start with, and though the rate for this cutting was deemed capable of 8 annas a Cubic yard. reduction, the ~~loss~~ ^{loss} of the Country is certainly not favourable.

5. The District Engineer was requested to have all levels which had been taken, recorded on the survey and further to state whether water could not be conveyed from the Ava Calingulak by a line running west of the Punchadara hills - It has now been explained that there are only 500 acres of Government land

land not already irrigated which could be brought under cultivation and this area is situated in a position quite unsuitable for irrigation from the Ava, if there be no intermediate land to irrigate - It would apparently be much cheaper and more convenient to water it from the Sooradamuddy by an offtake in the neighbourhood.

6. Altogether it is by no means probable that any great extension of cultivation under the Ava will be found practicable. The sketch map shows that much of the land to the South-West is already irrigated by river channels, and it does not appear that this irrigation is ineffective. Then a large proportion of the lands is proprietary, and it is not likely that any additional rate could be obtained from lands of this class. All that appears to be feasible is to improve and perhaps slightly extend the irrigation under the Ava, and what can be done in this direction must depend a good deal upon the final decision arrived at as to the rights of the Government in connection with the storage of

of water therein.

For St. George
9th Feb 1876

W. H. Miller Esq. C. P. E.

Chief Eng^r for Navigation

S

The Secretary to Government
P. W. D.

No 493 Public Works Dept.

Proceedings of the Madras Government
Under date the 2nd Feb 1876

Read the following.

Recommended by the

Chief Engineer for Navigation

W. H. Miller Esq. C. P. E.

These papers will be com-
municated to the Revenue
Department in continuation of
Government Order No 101 dated
12th January 1876. It is
observed that the information
furnished regarding the Kunda-
kula Awa is very much less
complete than was required
by Government Order No
2994 of the 12th December 1873.
Should further details of the
ground within the full level
containing

contour be essential to the settlement of the rights of Government, the Collector will intimate to the District Engineer what particulars are needed, and the latter will then lose no time in furnishing them - The District Engineer will explain why the instructions have been so imperfectly attended to, and why the prescribed order of the investigations connected with this Awa has not been conformed to.

My. 17/2

[Signature]

428-429

Recd. Sep 5
D. E. Vizagapatnam
Ch. 80 for I. with 6 enclos. & 2 plans
Recd 2 11/3/76.

Compd 88a Cir 19-2-76.
Compd 88a

FORMER CASES.

Current No. of 187
" "
" "
" "
" "

M. WORKS FORM No. 3.

Current No. 1267

From The Chief Eng^r for Irrigation

No. 193
Dated 9th / 11
Recd. 19th / 11

Feb. 1876.

Subject: - Note on letter from the Dist. Eng^r Vizagapatnam, re: the Kondakurda Awa Project.

LATER CASES.

Current No. of 187
" "
" "
" "

ENCLOSURES. 8.

From to
" "
" "
" "

Orders and Proceedings in file.

Department.	No.	Date.	ENDORSEMENTS.		
			Department.	No.	Dated.
1608	1334	15.5.71			
"	2344	22.9.73			
"	2942	6.12.73			
"	2991	12.12.73			
"	1339	20.6.74			
"	2542	8.9.75			
"	2833	1.10.75			
"	3162	6.11.75			
"	101	12.1.76			

Pro. 23 Feb 76 B1-428

Cir 19-2-76

12/6/9

Subt. of 18701 Madrid

PUBLIC WORKS.

The Rev. Deptt.

14/2

Date

Time

Place

Box

23 July 1893

No.

176-1129

Don Antonio An. Lopez,

Procurador Genl.

Passing orders on note to
the Chief Sup. for Irrigation
Submitting letter from the
Don Juan Vazquez
regarding the