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Govt. of [1869] Madras.

PUBLIC WORKS.

To

THE SUPERINTENDING ENGINEER,

[illegible] Division,

&c. &c.

Dated August 2nd.

Read "a 3rd"

G. O., 2nd August 1869, No. 2536.

AUGUST.

Nos. 20 21

Copied

Newcastle map sent
Buckingham map Bund
Inspection R.C.

Fish-Ladder.—The form of fish-ladder which the Superintending Engineer of the 4th Division proposes to erect at the Lower Coleroon Anicut at an estimated cost of Rupees 3,060, approved with remarks.

Work Order
No 107- 25 aug 69.

No. 20. Read the following letter from the Superintending Engineer, 6th Division, to the Secretary to Government, Public Works Department, dated Tanjore, 14th July 1869, No. 477:—

1 Plan.
1 Estimate, Rupees 3,060.

With reference to G. O., No. 1,580, dated 13th May, I have the honour to inform you that I am of opinion that the design of the fish-pass proposed by Dr. Day is not suitable for the Lower Anicut. It could not be constructed without laying foundations for the side walls of the basin or lock, and in laying the foundations the existing work might be disturbed and injured.

Paragraph 34.

2. With regard to the European form of fish-dam, I would observe that the foot-walls or steps are very slight, being only one foot broad. I have made them 1½ feet; they would have to be formed of large blocks of stone carefully jointed and let into the masonry work below, and be connected above by clamps. The basins would have to be lined with cut-stone to prevent pebbles, &c., from working holes in them. The parapets or side-walls are very slight, but if carefully built and faced with cut-stone, and made 2 feet wide instead of 1 foot, I think they may stand; but the large quantity of stone required would render the work an expensive one (Rupees 3,060) though I do not propose to lay any foundations for the ladder, but merely to build it on the existing apron which is 3 feet thick. I would however take off the covering of stone to satisfy myself that the flooring was sound below the fish-ladder.

3. The fish-ladder could not be built on any portion of the rough stone apron. At the site selected by Dr. Day, therefore, there would be only 24 feet of apron available for the ladder, and he estimates the length of the ladder at 53 feet; the rough stone apron would therefore have to be removed and solid foundations laid for the ladder for a distance of 29 feet, and three sides of the ladder would have to be protected by an extended apron, or by large quantities of rough stone which would render the work proposed ver y costly.

Paragraph 32.

4. The site I have selected is immediately south of the second set of sluices from the north end of the south branch of the Lower Anicut, and near this sluice the water is deep. Here, including all the aprons, there is a length of 56½ feet of apron; but from the floors of the lower aprons being each 1 foot below that immediately above it, the total height of the dam above the lowest apron is 9½ feet, and I have proposed to give each step of the ladder a rise of 1¼ feet; this, in five steps, gives 6¼ feet, and the rise to the first basin is 3¼ feet, or only ¼ of a foot higher than is proposed by Dr. Day. I must observe, however, that the proper level of the bed of the Coleroon is about 2 feet higher than the lowest apron, but the bed has been scoured below its proper level by the breaches which occurred in the anicut in 1862, 1864, and 1865, and efforts are being made to assist the formation of deposits, and so to raise the bed below the dam to its normal level of about 7½ feet below the crest of the dam.

24½ feet at 7½ feet below crest of anicut.
20 ,, at 1 foot lower or 8½ ,,
12 ,, at 1 ,, ,, or 9½ ,,

1 or 1½ feet the limit given by Dr. Day, paragraph 31.

5. By placing the fish-ladder immediately adjacent to the sluices I am able to get the whole of the ladder as well as footings of 3 feet and 6 feet on to the aprons. When the current is not too strong for the fish to pass up the ladder, the adjacent sluices will have to be closed. In the sketch of the ladder, forwarded by Dr. Day, the water is supposed to be just trickling over the crown of the dam; under such circumstances probably the fish could ascend with the greatest facility; then, as far as n ay be judged by the Water Returns, the depth of water in rear would be about 2 feet 3 inches, and the height of the first or lowest basin would be 1 foot above the water-level in rear of the anicut; this difference would be reduced to 10 inches and 6 inches when the water over the dam rose to 6 inches and 1 foot; but whether fish would be able to ascend the ladder when 6 inches or 1 foot of water were passing over the dam, I am not aware.

6. I am inclined to think that the pass in the form of a lock would be far more effective than that for which I now submit an estimate; but as stated above, the former could not be constructed without foundations, and in laying them the foundations of the anicut or rather of the bridge over it might be disturbed, and it does not seem to be worthwhile to risk this.

7. As Dr. Day probably misunderstood the information afforded him when in the district, and was led into error, I deem it right to point out the errors into which he has fallen, as their correction may induce him to modify his views in some respects as regards the number, &c., of fish-ladders required. In paragraph 32 he says: "one arch in one branch breached, the *sable* freely ascended the river." It was not one arch but one section of the anicut under six arches which was destroyed, and the gap in the dam itself was nearly 200 feet.

8. In paragraph 31 Dr. Day says that fish-ladders are not required for the Upper Anicut, because the dam is only across one branch of the river, and fish may consequently ascend by the Cauvery on the other side of the island of Seringham, not being aware apparently that the fish cannot pass from the Coleroon to the Cauvery without surmounting the grand anicut or the Coviladi, or the 150-yard calingulahs or weirs—obstacles more formidable perhaps than anicuts of the form of the Upper and Lower Anicuts.

No. 21. ORDER THEREON, 2nd August 1869, No. 2,530.

CIVIL WORKS, No. 3.

HIS Excellency the Governor in Council approves of the form of fish-ladder which Captain Oakes proposes to erect at the Lower Anicut at an estimated cost of Rupees 3,060, but regrets that he is not at present in a position to allot the requisite funds.

(True Extract.)

Colonel, R.E.,
Secretary to Government.

To the Superintending Engineer, 6th Division.
,, Controller of Public Works Accounts.
,, Revenue Department.

Exd. F. R. Bantleman.

No. 107.
Comm^r. to the
Revenue Board. Ho
Dr. Day-