

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Account.

READ—the following letter from D. C. GORDON, Esq., Examiner, Public Works Accounts, to the Secretary to Government, Public Works Department, dated Madras, 15th September 1886, No. 92 W :—

I have honor to forward, for information and orders of Government, notes by Mr. Rainier, Deputy Examiner, of his inspection of the Kurnool division.

2. The improvement which was noticed in the last report is maintained; but there is still room for further improvement and for remedying the defects referred to in the present report, and it is hoped the Executive Engineer will use his best efforts to this end. There are still instances of delay in the submission of initial works accounts, though better punctuality has been observed than used to be the case formerly.

3. The Superintending Engineer's notice is necessary in regard to the very great delays in payments for work done and to the unsatisfactory state of accounts for materials at site and for stock generally. He should require stock to be taken, quantities verified, and values determined, so that the half-yearly returns to the end of September may show correct results. The actual count should of course be taken in ordinary case, but apparently special orders from the Superintending Engineer are requisite, and a report on the result should be made to the Chief Engineer if there is any serious difference between book and actual quantity and value.

4. The Superintending Engineer's orders are desirable regarding the valuation of Government buildings on the Executive Engineer's register of buildings (paragraph 15).

ENCLOSURE.

NOTES of inspection by H. RAINIER, Esq., Deputy Examiner, Public Works Accounts, Madras, of the office of the Executive Engineer, Kurnool division, on the 2nd, 3rd, and 4th September 1886.

The Executive Engineer, Mr. A. H. Garrett, and the accountant, K. S. Kodandarama Aiyar, B.A., were present. The last examination of the office by an Accounts officer was on the 12th to 14th April 1886 (*vide* papers with G.O., No. 1131 W., of 5th May 1886).

2. The sub-divisions remain the same. The disbursers are now—

- (a) The Executive Engineer.
- (b) Mr. G. P. Carless, Executive Engineer, in charge of Central sub-division.
- (c) Sub-Conductor Frankland, Sub-Engineer, in charge of Upper sub-division.
- (d) Mr. Ottmann, Honorary Assistant Engineer, in charge of Lower sub-division.
- (e) Mr. Nicholson, Sub-Engineer, in charge of Cumbum sub-division.

The above have each a drawing account. The following are imprest-holders :—

Central Sub-division.

- (1) G. M. Subbarayulu Nayudu, overseer, Rs. 50—frequently recouped.

Upper Sub-division.

- (2) Mr. T. A. Monisse, overseer, Rs. 100—recouped about once a-month.

Lower Sub-division.

- (3) S. Panchapakasa Aiyar, supervisor, Rs. 50—frequently recouped.
 (4) Mr. E. A. French, supervisor, Rs. 50—infrequently recouped and for trifling amounts.

Cumbum Sub-division.

- (5) P. Krishnamachari, supervisor, Rs. 200—frequently recouped.
 (6) Sergeant L. Donaghue, overseer, Rs. 25—frequently recouped.
3. Cash extracts from sub-divisional officers are received by the Executive Engineer three times a-month, with fair punctuality. The Executive Engineer's cash-book is properly kept, and regularly audited; the imprest accounts are in order; imprests (2) and (4) are likely to be reduced, the Executive Engineer said.
4. The pass-books not having been received, though duly applied for, the balance of the drawing account could not be proved.
5. There have been payments considerably after completion of work, indeed long after measurement of it, thus—
- Constructing inspector's bungalow at Lockensula, Central sub-division.*—Measurement for final payment of contractor on 20th February 1886; date of payment 31st August 1886.
- Silt clearance in main canal, Upper sub-division.*—Measured on 25th and 26th June 1886; paid (Rs. 2,129-8-6) on 10th August 1886.
- This delay is said to be caused by the delay in sanctioning the estimate, but the liability having been incurred, it should have been liquidated, regardless of want of sanctioned estimate. The measurement sheets of above work show unacknowledged alterations.
- Repairs to breach on Sunkesala anicut.*—Work done by departmental labor from 11th to 31st May 1886 paid on 26th June 1886; contractor's work measured on 6th May 1886, paid for on 29th June 1886.
- Building blue stone revetment from 60th mile, Upper sub-division.*—Contractor Hyder Saib's work measured for final payment on 7th July 1886, paid on 31st August 1886.
- Constructing masonry weir to Yerragondapalem tank.*—Measurement on 8th March 1886, payment on 19th April 1886.
- Repairs, closing breaches in the Yerragondapalem tank.*—Measurement on 17th February 1886, payment on 19th April 1886.
- Closing breaches below Lock No. 14.*—Measurement on 28th January 1886, payment, (Rs. 340-2-8) in final settlement, on 26th May 1886.
- Repairing breach on Sunkesala anicut.*—Measured on 28th February 1886, paid for on 28th May 1886, voucher No. 27, certificate No. 1 of May 1886.
6. The following are some of the balances which were due to contractors at end of July 1886:—

For work done previous to January 1885				RS. A. P.		
Do.	do.	to December "	...	12	12	0
Do.	do.	to February 1886	...	26	12	2
Do.	do.	to do.	...	17	6	5
Do.	do.	to March 1886	...	4	9	7
Do.	do.	to do.	...	39	13	5
Do.	do.	to do.	...	25	0	0
Do.	do.	to do.	...	9	0	0
Do.	do.	to do.	...	5	0	0
Do.	do.	to do.	...	6	0	0
Do.	do.	to do.	...	35	0	0
Do.	do.	to do.	...	5	5	0
Do.	do.	to do.	...	24	8	5
Do.	do.	to do.	...	8	5	4
Do.	do.	to do.	...	135	0	0

7. Regarding the apparent delay, on certain occasions, of payments for work done, the Executive Engineer says that it is caused by a difficulty in getting contractors to come for their money.

8. The accounts (work vouchers) of several works for April and May were traced back by the register of works through the work abstract into the initial accounts, the voucher for departmental labor being examined. The result was generally satisfactory, except as regards materials at site of works, and a few cases of delay in submission of ten-day reports and consequent erroneous work abstracts, thus—

(a) *Constructing sub-divisional officer's bungalow at Cumbum.*—The ten-day report, 21st to 31st May, was received in the Executive Engineer's office on 16th June, and had to be included in June's work abstract. On the same work ten-day reports for the whole of June reached the Executive Engineer's office together on the 19th July.

(b) Materials at site of works are not satisfactorily accounted for, and the special attention of the Executive Engineer is now promised to these materials, which are, no doubt, mostly capable of frequent verification.

(c) The materials at site of canal works at the end of July 1886 are supposed to have been worth Rs. 12,452, there being stuff at site of annual repairs, Rs. 10,197. Of this value, there is, however, no verification, and it is desirable to institute a count and valuation of all such materials, and to keep up a periodical verification of the same by sending to the individual in charge of the work a copy of part IV of the work abstract with a memorandum on same every month for verification and return to the Executive Engineer's office. Nothing of this kind has been practised, and the result is that the actual quantity and value of materials at site of works are quite hypothetical.

(d) The Central sub-divisional officer, in his reply to the Executive Engineer's remarks on his returns for April 1886, said "no proper account of materials at site were maintained in this sub-division" and it is known that a discrepancy exists there, which, however, is being inquired into by the Executive Engineer; the value of stuff stated in return of April last from other sub-divisions has not been adopted in the accounts.

(e) The materials at site of works other than canal works are supposed to be worth Rs. 7,368, but these also require verification, and it must be borne in mind that the object of all such verification is not to make sub-divisional accounts tally with those of the division, but to make both sub-divisional and divisional accounts represent the actual quantity and value of the materials at site of works.

(f) Of materials at site of repairs to boats (see paragraph 16 of report printed with G.O., No. 2849 W., of 30th November 1885) there is a balance of Rs. 363, which is, to say, that materials to that amount have been issued to the contractors which have not been accounted for or allocated to any job, though doubtless put into work. The materials at site of repairs to boats go on accumulating till such repairs are all finished, when a statement is made of the cost of each repair and the materials used are charged off.

For instance, of certain supplies obtained from Oakes and Company in May 1886 (which, being of European manufacture, should have been pre-sanctioned by Government), some costing Rs. 283-13-4 were charged to materials at site, repairs to boats, and will remain so charged till the entire repairs are finished.

(g) The materials issued from stock for the above repairs are not shown in the stock accounts as issued till the allocation of the stock to jobs is known, which is long after issue from stock, and cash outlay on such repairs which was incurred in last year was paid in July 1886, and is not supported by measurements.

(h) The Executive Engineer says that the accounts of last year as regards repairs to boats were very exceptional, the want of correct measurements and other data having been such as is not likely to occur again, but especially as most of such work is done at Kurnool, there seems no excuse for such delay in bringing stock and materials to debit of jobs, or in payment of the contractor as each job is finished, for the work measured.

(i) It is supposed that if boats coming in for repair were carefully examined, their requirements could be estimated for and materials obtained as required, the value being charged off to the boat concerned without going through the materials at site account.

(j) But at all events there can be surely no difficulty in charging off materials to jobs as issued, by credit to materials at site, through ten-day reports.

(k) And materials issued from stock must invariably be charged off at once to boat repairs.

9. Measurement books and measurement sheets have undergone very much improvement since last inspection: they are now generally cancelled on payment for the work: but alterations in measurement sheets should invariably be acknowledged (Code 392 and 1836).

10. Stock accounts are kept with great pains by Mr. Dawson, the storekeeper, who also keeps the tools and plant accounts. The stock consists of (1) the balance of the Canal Company's old stores, which have neither been sold nor used, and of (2) the stock of the division. The Company's stores are, to some extent, mingled with the divisional stock in the store magazine, but the storekeeper says he can distinguish one from the other. He adds that the account as regards quantity of the Company's stores which he possesses is unreliable, and that it is merely the quantity counted by Mr. Walch when the canal was taken over, less the quantity sold or utilised by the Executive Engineer since. It is desirable that these Company's stores should be counted on an early date, and kept quite separate and under careful custody, against the time when they are wanted, either for use or for sale.

11. The divisional stock accounts, except as referred to in paragraph 8 (g), are in fair order. There are but few transactions; the price of the timber in stock is very low; the stock balance (Rs. 1,766) is covered by sanction, Rs. 7,000; stock has been regularly verified by the Executive Engineer in person.

12. The tools and plant return for the division, when compared with the returns for sub-divisions and head-quarters, did not agree regarding certain articles.

13. The accountant does not, but should, check the stock and tools and plant returns half-yearly as well as monthly.

14. The postage stamp account is in order and frequently audited by the accountant.

15. In the register of Provincial buildings there are several of which it is stated that the value is not known. The Executive Engineer agreed that these buildings might conveniently be valued and the value entered.

16. The budget registers were found in order.

17. The accountant continues to be efficiently assisted.

ORDER—dated 21st September 1886, No. 2392 W., Public Works.

Communicated to the Superintending Engineer, III Circle, for the information and guidance of the Executive Engineer, Kurnool division.

2. The Superintending Engineer's attention is directed to the matters specially brought to notice by the Examiner, Public Works Accounts. A report on the result of the stock taking will be awaited.

3. The report may be considered satisfactory, but room for improvement still exists.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintending Engineer, III Circle.
„ Examiner, Public Works Accounts.

GENERAL.
ACCOUNT.

Gobt. of {1886} Madras.
PUBLIC WORKS.

Dated September, 21st.

Recd.

Encl.

G.O., 21st Sept. 1886, No. 2392 W.

SEPTEMBER.

Inspection Notes

Orders on the — on the Kurnool division
office, submitted by the Examiner, Public
Works Accounts.

Superintending Engineer's Office,

No. 1742

3RD CIRCLE

Camp. handil Bellary 16th Novr 1887.

FROM,

Col H. Smalley R.E.
SUPERINTENDING ENGINEER,
IIIrd CIRCLE.

TO,

THE Chief Engineer
P. V. D
Madras

SIR,

Enclosures.

1 Statement

With reference to para 2 of
G. O. No. 2392 W dated 21st September/86,
I have the honor to submit a state-
ment showing the deficiency in stock
and materials at site in the Kurnool
Division. It is to be noted that all this
deficiency relates to 5 years ago i.e. when
canal was first taken over or soon
after.

2. A general stock taking was
carried out at the end of March/87
in the Upper and Lower Sub Divisions
with the result shown in the statement

viz that perishable materials to the value of Rs 98-6-9 are found deficient in the former and that 15 bags of portland cement approximately valued at Rs 118-15-9 are deficient in the stock of the latter Sub Division. This ought to have been reported vide Chief Engineer's Memo No. 1823 of 14 May/77.

3. In the central Sub Division materials to the value of Rs 1047-5-7 should be found at site as per Divisional accounts; but only materials valued at Rs 287-13-11 could now be found. Of the difference Rs 759-7-8 materials to the value of Rs 386-1-1 appear to have been used on works but omitted to be charged thereto. Materials valued at Rs 188-10-7 accounted for by wastage and portland cement valued at Rs 184-12-0 is the only material that is found to be actually deficient and unaccounted for.

4. Executive Engineer Mr. Peters in reference to the Deputy Examiner's report on the examination of the Divisional accounts embodied in the G.O. under reply stated that the accounts of materials at site were not satisfactory as the Deputy Examiner thought. They were so before March/86, but stock of materials at site was taken at the end of March/86 and trifling differences only were found and since adjusted. It was only in the central Sub Division that serious discrepancies were noticed. Assistant Engineer Mr. Carlless who was then in charge of the Sub Division being unable to offer any explanation, the whole matter was referred for report to Mr. Bennett the previous Sub Divisional Officer.

since transferred to the Anantapore
Sub Division of the Bellary Division.

5. Mr. Dennehy's explanation
together with the Executive Engi-
neers' report thereon was received
in this office in December /86, but
Colonel Sibart R.E. considered
the explanation not altogether
satisfactory; and as Supervisor

Dennehy was then under orders
to rejoin the Kurnool Division,
he ordered that Mr. Dennehy should
on his return to the Canal go over
the accounts minutely and send
a full report accompanied by
a clear statement.

6. The deficiency of materials
in the central Sub Division shown
in the present list is the result
of this further enquiry and
examination made by Mr. Dennehy
after he rejoined the Kurnool

Division.

7. Mr. Dennehy's explanation in
main, in regard to the discrepan-
cies is that between 1883-85, all the
improvements ordered by the Chief
and Superintending Engineers on
their inspection of the Canal were
carried out while he held charge
of the central Sub Division, a
length of over 80 miles of the Canal
where the work was heaviest, that
he was without an Overseer on the
8th section between the 92nd and
146th miles, and that, it was not
possible for him to have seen
to all the accounts under the
circumstances in addition to the
fact of his having at the time,
an incompetent Sub Divisional
clerk.

8. Executive Engineer Mr. Garrett

observes that these materials were collected before he joined the Division in April /85. No proper ten day reports were kept in the central Sub Division and the materials at site accounts were consequently in the greatest confusion. A great deal of correspondence is said to have taken place on the subject before the former Accountant Gondiah Chetty was suspended in September /85, his successors who officiated as Accountants for short periods had no time to give to the question and that the accounts generally received greater attention only after the present Accountant had joined the Division.

9. All the above circumstances considered, I now request that authority may be given to the

wastage of materials and deficit as per columns 5 and 6 of the statement being adjusted as proposed in the remarks column. 10. The delay in the early disposal of this matter is due to the reinvestigation ordered as regards the deficiency in the central Sub Division and to the papers connected with the subject having been lost by the late acting Superintending Engineer from May till August /87.

I have the honor to be
Sir
Your most obed^t servant
H. M. M. Chetty
Suptg. Engineer 3^d Circle

~~The Hon. Mr. D. C. ...~~

G.O. 2392 Wd/21-9-86

P.W.C. No. 9631

From,
The Superintending Engineer,
IIIrd Circle.

To,
The Chief Engineer
P. W. D.
Madras

Dated 26th } November 1887.
Received 28 }

Enclosures. /

G.O. 3315 Wd/3rd Dec/87

No. 1742

Reporting on the
deficiency of stock
and materials at
site in the Kurnool
Division as called for
by Govt in para 2
of G. O. No. 2392 Wd dated
21st September/86.

With order

PUBLIC WORKS DEPARTMENT.

No. 1823.

MEMORANDUM.

THE accompanying report by Dr. Nicholson regarding the recovery of damaged cement is herewith circulated for the information of all Departmental Officers, with the intimation that in cases where cement is found caked or damaged, experiments must invariably be made to test whether energy can be restored in the manner here indicated before the material is as heretofore written off as valueless.

All the material in caked barrels which comes away readily with a trowel by scraping will usually be found sufficiently active without having to undergo the recalcination here described.

(By Order.)

Major, R.E.,
Ag. Dy. Chief Engineer, P. W. D.

FORT ST. GEORGE, }
14th May 1879. }

To All Officers of the P. W. D.

Spare copies.

B
Hm
G.O. 3315 Wd/3rd Dec/87
In the circum-
stances stated, the
recommendations
made by the Supty.
Engineer in the
tabular statement,
are sanctioned.

Wm
J. 30/11/87. 30.11.87

B
78
3/12/87

S.E. III circle
Exr. P.W. Accts
with statement, for
note & return to the
S.E.

Circ. 30-11-87 R 2-12-87

Memorandum on reburnt Portland Cement.

Reburnt cement may be used instead of ordinary cement; but its energy is so great that it must be diluted with the latter unless it can be used at once. The following is the rate of setting under water, and mixtures can be made according to the special purpose required:—

Reburnt cement neat	...	...	...	2 minutes.
Do. do. + 1 ordinary cement	...	...	...	5 minutes.
Do. do. + 2 do. do.	...	...	...	$\frac{1}{2}$ hour.
Do. do. + 3 do. do.	...	...	...	1 hour.
Do. do. + 5 do. do.	...	...	...	3 hours.
Ordinary cement	...	...	...	16 hours.

After 18 hours under water, when the slowest of the above compositions would be set hard, the adhesive strength was found to vary but little from 6.1 lbs. per square inch with reburnt cement neat, to 4.6 lbs. per square inch with ordinary cement.

Dilution with a moderate amount of sand (equal part) did not notably affect the setting or strength of the aboved compositions.

Portland cement damaged by being hardcaked did not give such good results when simply reburnt, as when previously mixed with water and made into bricks.

The damaged cement, ground if necessary under the wheel, should be made into paste and spread out in a layer about 2 inches thick on a stone floor. The mass should be divided into convenient sized bricks while still soft. After 24 hours the bricks may be stacked until required for burning; they may advantageously be watered for a few days after making. The bricks may be burnt at a temperature lower than is required for lime; and 6 or 8 hours burning is sufficient. When burnt they are quite friable and are ground as easily as common clay bricks; this may be done under the common stone-runner mill.* Before packing the cement should be aired in a thin layer for about 48 hours; a sample made into paste is packed into a small chatty of 2 or 3 inches diameter, which is at once immersed; the paste will set suddenly in about 2 minutes; but if the cement be not sufficiently aired, it will expand and crack the chatty after a time varying from 10 minutes to 2 hours. The aired cement should be packed in barrels until required; its energy will not diminish for a month or even much longer, but it is best to burn no more bricks than can be used within the next three months.

* The ground cement should be passed through a sieve of 36 meshes (or better 48 meshes) to the linear inch. Brass wire gauze of these numbers is made in England.

BANGALORE,
27th November 1874.

(Signed) EDWARD NICHOLSON.