

Public Works (1897) Department.

✓ G.O., No. ²² 2394 W

DATED 23rd August 1897

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[Despatch Abstract.]

Indent, Ordered that an — for a Stoner's sluice and other stones immediately required for the Headworks of the Periyar Project be forwarded to the same Govt for early compliance.

Forwarding with remarks and for favour of very early compliance an — ~~order~~ for a Stoner's sluice and other stones immediately required for the head works of the Periyar Project.

P.W. 23.
1897-98-1898

Indexed.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

FORWARDING, with remarks, and for favour of very early compliance, an indent for a Stoney's sluice and other stores emergently required for the headworks of the Periyár project.

No. ²²/_{2394 W.}, 30TH AUGUST 1897.

PUBLIC WORKS DEPARTMENT.

LETTER—to

THE RIGHT HONOURABLE THE SECRETARY OF STATE FOR INDIA.

MY LORD,

We have the honour to forward, for favour of very early compliance, an indent in duplicate for a Stoney's sluice and other stores emergently required for the headworks of the Periyár project.

2. A copy of our Proceedings, No. 658 I., dated 16th July 1897, containing a detailed specification of the sluice, together with three plans, is also transmitted herewith. A certificate showing that the necessary provision of funds has been made to meet the cost of the indent, is endorsed on the original indent.

3. The shutter, which is of a patented design, can be manufactured only by Messrs. Ransomes & Rapier, Waterside Iron-works, Ipswich. We request that your Lordship will be good enough to permit the makers in England to correspond direct with the Chief Engineer for Irrigation at Madras on the subject of the details of the design, as this course will save much delay. It is important that the iron work should be at Periyár before the end of February next, as otherwise the works will be without an efficient regulator for another year.

We have the honour to be,

My Lord,

Your Lordship's most obedient, humble servants,

OOTACAMUND,
30th August 1897.

Exd. T. K. Narayana Aiyangar.

GENERAL.
ACCOUNT.

Government { 1897 } of Madras.
PUBLIC WORKS.

Recd.

Regd.

} 1897.

Enclosures

Spare copies

G.O., No. 2394 W., 30th August 1897.

AUGUST.

Indent

Ordered that an — for a Stoney's sluice and other stores emergently required for the headworks of the Periyár project, be forwarded to the Home Government for early compliance.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Account.

READ—the following papers :—

Copy of a letter from H. A. MOSS, Esq., General Superintendent, Public Works Stores, to the Superintending Engineer, V Circle, dated 29th July 1897, No. 117 S.

With reference to your Nos. 199 & 202 P.W.S., dated 17th and 18th July 1897, respectively, I have the honour to forward herewith a special indent No. 9 in triplicate with revised plan and specification for "Stoney's sluice" required from England for the Periyar headsluice. The remaining plans and estimate are also returned herewith.

2. Copies of the plans and estimate have been made for this office.

No. 293 W.

Forwarded to the Chief Engineer, Public Works Department, with the plans and estimates for disposal, with reference to G.O., No. 658 I., dated 16th July 1897, through the Examiner, Public Works Accounts.

(Signed) C. C. RAWSON, Lieut.-Col., R.E.,
Superintending Engineer, V Circle.
30th July 1897.

From the Examiner of Public Works Accounts, dated 15th August 1897, No. 2576 D./B.

ORDER—No. 2394 W., dated 30th August 1897.

The indent will be forwarded to the Home Government for early compliance, the instruction in paragraph 4 of G.O., No. 658 I., dated 16th July 1897, being attended to.

[Here enter No. ²²/_{2394 W.}, dated 30th August 1897.]

(True Extract.)

Under Secretary to Government.

To the Chief Engineer for Irrigation.
" Superintending Engineer, V Circle.
" VI
" Examiner, Public Works Accounts.

Exd. T. K. Narayana Aiyangar.

Papers to be read in proceedings :—

Again G.O., dated

189 , No.

Again G.O., dated

189 , No.

Current No.

of 189 , dated 30th July 1897, from Suptg. Engr. V Circle

" " 8198

" 1897, " 16th August 1897 " Exar. P.W. Accts.

" "

" 189 , " " "

ORDER.

No. 2394 W., 30. 8. 97

The indent will be forwarded -

to the Home Government for early --
compliance, the instruction in para
4 of G.O. No. 658 I dated 16th July -
1897 being attended to.

Chief Engr. for Irrigation.

Suptg. Engr. V Circle.

-Do- VI ,

Exar. P.W. Accounts.

(H.P. No. ²²/₂₃₉₄ W, d/ 30. 8. 97 1897).
To

The Rt. Honourable

The Secretary of State
for India.

My Lord,

We have the honour to forward
for favour of very early compliance
an indent in duplicate for a Stoney's
sluice and other stores emergently
required for the head works of the
Periyar Project.

2. A copy of our Proceedings No.

658 I

H. 23/8/97 R 2394 H. 25/8/97 R 2394

658 I dated 16th July 1897, containing a detailed specification of the sluice, together with three plans, ~~are~~ also transmitted herewith. A certificate showing that the necessary provision of funds has been made to meet the cost of the indent, is endorsed on the original indent.

3. We request that Your Lordship will be good enough to permit the makers in England to correspond direct with the Chief Engineer for Irrigation at Madras on the subject of the details of the design, as this course will save much delay. It is important that the iron work should be at Periyar before the end of February next, as otherwise the ^{works} will be without an efficient regulator for another year.

We have etc.,

Cs

20/8/97

WH

20.8.97

W. I do not know the procedure at the India Office - It might save delay and mistakes, if it be added that the shutter is of a patented design and can only be manufactured by Messrs. Ransomes & Rapier.

WJ

WJ

The shutter, which is of a patented design, can be manufactured only by Messrs Ransomes & Rapier, Waterside, Iron-works, Ipswich.

Not recd 1/9/97

recd 8/9/97

Public Works (1897) Department.

CURRENT No. 8198

2394

Order

From

The Examiner of P. W. accounts.

No. 2576 ²/₁₃

In Draft

Dated 16.8.97

Received 17.8.97

Enclosures 7 (3 ¹/₂ *draws*)

Spare copies.

SUBJECT.

Stoney Sluice required for the Periyar Head Sluice: Certifying as to the provision of funds to meet the cost of the indent for—

BACK PAPERS.

FURTHER PAPERS.

No.	Date.
3469C	10-8-97
6582	16-7-97

No.	Date.

Secretary of State. The Store Department at the India Office constitutes an agency, which is maintained for the express purpose of purchasing in England on account of the Government of India, and, save in the cases mentioned below, stores of European manufacture must not be procured in India, or obtained direct from Europe independently of the India

2. The special cases in which, with the previous sanction of the Government of India or of the Local Government, as the case may be, licences for the export of Indian manufactures may be obtained in India, are:—

When for any special reason it may be more economical to do so ;

When stores indented for from England have not arrived, and inconvenience to the public service is anticipated from the delay in the supply ;

When the stores are perishable.

Indents for public works stores, other than railway stores, so long as they are within the grant assigned for the purpose, should be sent direct by Secretaries in the Public Works Department of the several Local Governments and Administrations to the India Office; three copies of printed and of manuscript indents should be sent, and a copy be submitted to the Government of India.

Note.—Copies of indents chargeable to Provincial and Local Funds are not required to be sent to Government of India.

This form of indent should invariably be adhered to, other modes of notation being entirely discarded, and requisitions in the body of letters, many be overlooked or misunderstood, being specially avoided.

The columns (which sufficiently explain their own meaning) must be set out without alteration, and others are not to be substituted, any remarks may be considered necessary being confined to the column for that purpose, which should contain every explanation that may guide in the supply of the articles required.

Where an established proportion for general stores has not yet been should consist of three years' ordinary expenditure: the quantities in the date of requisition being added to the quantities due upon former the difference between the aggregate of these two columns and the and proportion is the proper quantity to be asked for. This procedure attended to, will always keep up an ample supply for general service; over, in exceptional circumstances, it is found desirable to exceed the ed proportion, the reason for so doing must be inserted in the of remarks. The calculation of the established proportion on the three years' ordinary expenditure is not applicable in the case of

The columns printed in red ink are to be left blank for completion and.

In the column of remarks, the port to which stores are to be consigned should be stated, and also the names of the last two or three vessels whose movements have been included in the quantity in store as shown in column

Each indent must be accompanied by a certificate of the necessity of the stores indented for, and that they cannot be advantageously procured from the Government stores or from surplus stores of other departments, railways or other public administrations.

In the case of stores for imperial purposes (including all state rail-roads) the sanction of the Government of India must be obtained in a year not yet begun, the sanction of the Government of India must be obtained before the Examiner can give his sanction to the proposed allotment; but for stores for provincial services (except provincial state railways) the sanction of the Local Government or Administration will suffice.

When it is expected that the outlay will be provided partly in one
partly in another, the following addition should be made to the
er's certificate—"and that the balance of the estimated outlay in
s, or £ (—) will be provided by the Government of India in the
s of the year 189 -9 . " *Vide* Government of India letter No.

In preparing indents attention should be paid to the rules on the sub-
pendix O. (P. W. Code, vol. I.)

Annual indent on England for Stores.

No. 9 1897-98.

2394 w

Maorai, for the service of the Indian Government.

I hereby certify that the stores enumerated in this indent are absolutely required for the service of the Public Works Department for a period of *They cannot be procured of local manufacturers* months, and I further certify that I have, by a personal inspection of works and stores, satisfied myself that *or from surplus stores of other Divisions Railways & Administration* they comprise the least possible quantity necessary for the above period.

Dated this *Thirtieth* day of *July* 1897, at *Madras*

Williamson Smith
Deputy Engineer

H. H. H. H.
General Superintendent
P. W. D.

NOTE—1. In cases in which a personal inspection of books and stores cannot be made, the portion of the certificate relating thereto should be scored through.

2. The Indent should be paged, and the signature attached to the last line of the Indent.

3. The quantities entered in the indent should invariably be given in English weights and measures.

I certify that funds to meet the outlay which it is estimated will be incurred in England in connection with this indent during the year 1897-98. (a) *have been provided for in the estimates of the Public Works Department to the extent of Rs 9/4.*

(Signed) E. A. Dennis

Examiner of P. W. Accounts,
Madras Province

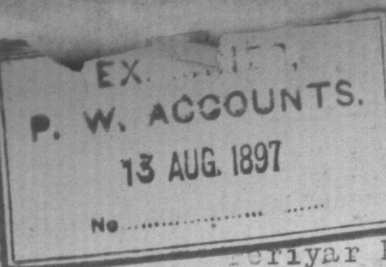
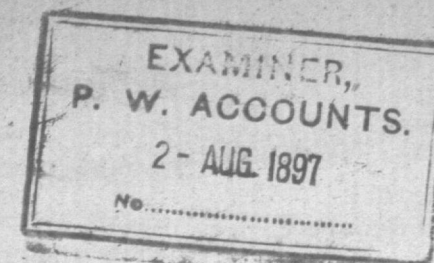
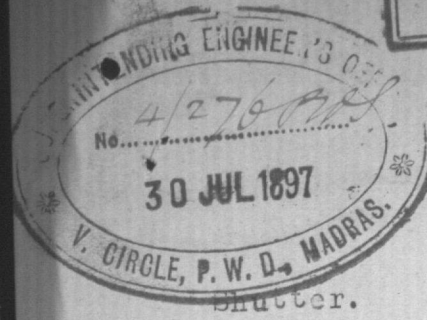
No. 2576 *D/S* dated the 15 August 1897.

* Signature.

† Rank.

(a).—Here insert either "have been provided for in the estimates of the Public Works Department to the extent of £

" will be provided by the Government of India in the estimates of that year, vide Government of India No. dated



Periyar Head Sluice.

Specification.

Shutter.

The Mechanism consist of the following parts:-
Beginning on the upstream side; there is built into a grove provided in the Masonry, a cast iron frame work or Orifice, consisting of a sill girder, a lintel girder and two jamb pieces. These castings are all bolted together at Machined faces, so that true and rigid work is secured, the inside edges are also planed, where bottom and sides and top of the gate come in contact with them, thus securing a close and satisfactory fit.

The side castings extend sideways into the wall and are securely built into place; to them are ^{united} by means of short lengths of steel joists, the roller path castings. The joists are 3-8" long and placed about every 2 ft, so that the whole forms one rigid structure. The roller path casting has a projecting edge or ridge down its whole length. On this rests the actual roller path. This is of cast iron, and truly machined on its face and also in the groove, which fits on the ridge.

The width of the roller face is 14", this being necessary owing to the great pressure to which the Sluice may be subjected.

The roller path is free to "rock" slightly on the ridge so as to ensure the pressure of the rollers coming equally on the whole width of the roller path.

The Main roller path casting, which is built into the wall, carries a strong steel shield plate to protect the rollers and path against the rush of water when the gate is lifted. This shield plate is easily removable for purposes of inspection.

The

The gate is directly supported against the water-pressure by 20 pairs of cast iron rollers. The skin of the gate is of exceptional strength, being $\frac{3}{4}$ " thick steel plate.

The clear opening of the gate is 12'-9" high X 9'-6" wide, equal to 118 $\frac{1}{2}$ sq ft, against 96 sq ft, given by you as the average sectional area of the tunnel.

The form of the gate is narrower and higher than that of the Tunnel, but this proportion of height to width is much more economical for heavy pressure sluices, as the greater height gives more length of roller path, and the width of the rollers &c., can then be proportionately reduced.

The skin of the gate is supported by 14 steel joists 12" X 6", which transmit the load to end castings which rest on the rollers.

The gate is operated by a screw lifting gear, and is also balanced to the extent of $\frac{2}{3}$ its total weight.

The balance weight consists of a steel tank filled with stone and carried by two steel wire ropes, with a factor of safety of 10.

The lifting screw is of steel and 3 $\frac{1}{2}$ " outside diameter, with a double thread, the whole 14 feet being turned in one length.

On the head of the screw is keyed a Massive Bevel wheel, which is worked by the winch, the ratio of gearing being 27 turns of the handle to one turn of the screw. This will give great ease of working and security against possible breakdown.

The screw is carried throughout in brass bearings, and works in a brass nut of ample length and provided with an oil chamber.

The nut is bolted to the head of the cast iron, which transmits the motion to the gate. The gearing is therefore capable of either lifting or pushing.

The ram is turned true and passes through a brass bearing at the lower end of the shield tube, so that the screw is protected from weather and dust.

Masonry.

The sluice chamber is formed by the existing Masonry at the back and on the other three sides by new Masonry. The internal dimensions of the chamber are 15'-6" deep and 15'-0" wide. On the upstream side a strong screen is provided to prevent drifting trees &c., being carried into the tunnel. At the junction of the side walls into the chamber grooves are provided for a temporary door or horizontal baulk's. The sides of the Culvert converge at an angle of 1 in 3 for the double purpose of getting the best efficiency from the Sluice and directing the stream so that it may not strike the roller but first touch the shield plates. The thickness of the front and side walls is made sufficient to ensure their safety should the lake fill ^{before} the Masonry has had time to set fully. The rock floor under the shutter will be truly dressed to the required level. Elsewhere it may be left rough. The sloping rock on which a portion of the Masonry is to be built, will be leak-carefully cut in broad steps so that there may be no breakage or slipping under the gate pressure to which the walls will be subjected. All dressed stones will have beds and joints dressed truly at right angles to face for whole depth. Rubble will be roughly hammer-dressed to suit work. All Masonry will be built in Portland cement-mortar up to level + 127.00, the mortar being composed of one part cement to three ~~parts~~ sand, and care being taken not to use more water than required, above level + 127.00, work will be built in mortar composed of one part lime, one and half sand and one surki. All face work will be pointed with mortar composed of one part cement and one and half sand. The walls of screen will be built in Surki mortar.

Platform.

The platform will be carried on the walls and on a steel beam across the chamber. A portion of the flooring as shown in the drawing, will consist of steel foot plates, the edge

EXAMINER,
P. W. ACCOUNTS.
2 - AUG. 1897

edge of which will rest in a 1 1/2" X 1/2" rebate cut in the coping stones

The remainder of the flooring will be of 2" plank on wooden joists. A man hole will be left in a convenient place, and a fixed iron ladder provided for descending to the ledge at level + 127.00 a portable ladder will be used if it be necessary to descend to the floor.

General. All required materials should be ready at site by end of February, and the channel should be bunded as soon as the level and flow of water permit, and work put in hand without delay. It will have to be remembered that there have been freshes in the Periyar even in March and it is of the ^{ut}most importance to push on the work as rapidly as possible. As soon as it is brought up to level of the top of the arch, baulks should be put in the temporary groove, as water cannot be allowed through the vent, until the shutter is fixed.

12/1/97.
Sgt. F. J. Wilson
for Chief Engr. for Surgn.

(True copy)
S. J. M. S.
Ag. Head clerk
P.W. Secretariat

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Copy of a letter from H. A. Moss Squire, Gen. Superintendent, P.W. Stores, to the Superintending Engineer 5 Circle, No. 117 S. Dated 29 July 1897.

EXAMINER,
P. W. ACCOUNTS.
13 AUG. 1897

With reference to your nos. 199 and 202 P.W.S. dated 17th and 18 July 1897 respectively I have the honour to forward herewith a specification no. 9 in triplicate with revised plan and specification for "Stoney's sluice" required for the Periyar Head sluice. The remaining plans and estimate are also returned herein. 2. Copies of the plans and estimate have been made for this office.

- Encls 3
1. Duplicate in triplicate with revised plan & specifications attached.
2. Plans with estimate attached.

10.2937.
Forwarded to the Chief Engineer P.W. Department with the plans and estimates for disposal, with reference to G.O. No. 658 S. Dated 16 July 1897 - through the Examiner P.W. Accounts. & read 658 S.

30th July/97
At Coll Rb
Suptg. Engineer 5 Circle.

30.7.97

nt.

EXAMINER,
P. W. ACCOUNTS
25 AUG. 1897
No.

With reference to your No. 100 and
No. 101 dated 17th and 18th July 1897
I have the honor to forward herewith a plan
which is a plan of the proposed
specification for "Storage" required for
the purpose of the design. The plan
and plans and estimates are also returned
to the office of the plans and estimates have been
made for this office

Forwarded to the Chief Engineer
Department with the plans and estimates for
disposal with reference to No. 100 & 101
16 July 1897 through the Engineer Department

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