

851

~~Print Works~~

28/2 / 4 552W

New pier at
Tuticorin

≡

Orders accepting
the tender of
Messrs Barrow & Co
for constructing
the ———

100
6

J.C. 28/ii

28

Government of Madras.

DISPOSAL.

1894

P. W. DEPARTMENT.

CURRENT No. 395

No. 356C dated 25th January 1894

Transferred to the
Financial Department
in continuation of
No. 916D of 25th Sept.
1893.

From Govt of India

ENCLOS.

No. 10 A-6

Dated 10-1-94

Received 19-1-94

1st J. P.
W

SUBJECT.

Requesting that steps
may be taken to
regularise the amount
remaining unsanctioned
out of the excess expenditure
over the Budget grant
for 1892-93 for
Incorporated Local
Civil works.

The Financial Dept

DESPATCHED

No. 916 D of 25-9-93

3031 C of 7-9-93

1991 W of 1-8-93

1621 W of 19-6-93

164 W of 20-1-90

No 356 C of 25th January
1894

Recd. for original or copy of the
letter from the P.W. Department No
10 H. S. of 10-1-94

It is transferred to
the file of the P.W. Department
under No 356 of 25-1-94

Dispatched 10-2-94

INDEXED

1/2

Financial Department.



PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following paper:—

Memorandum from the Public Works
Department, dated 25th September 1893, No 916 D.

Order, 10th October 1893, No 1004.

Sanctioned.

[True extract]

[Signed] J. F. Price.

Chief Secretary.

To

The Accountant General.

" Public Works Department.

Gobt. of {1894} Madras.

To

The P.W. Dept

19.6.93.16214
1.8.93.19914
7.9.93.3031C
25.9.93.9163
25.1.94.356C

Recd 22.94

Proceedings, dated 1-2-1894
No. 88

Subject.

Communicating
Copy of fo 27.10.1893
her 1893 No 1004 Incl.

C. S. 11

20-2-93.

with order

3.

No. 315 Wd/6 February 1894

Communicated to the
Examiner P.W. accounts

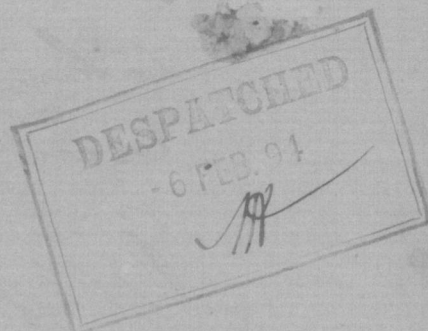
plus

2.2.94

Sr

The Ex P.W. with a copy
of Memo No 916 Dd/25 Sep. 93

N.S.



INDEXED

8/2

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following papers :—

From Lieut.-Colonel A. W. SMART, R.E., Superintending Engineer, VI Circle,
to the Chief Engineer, Public Works Department, dated Trichinopoly, 31st
January 1894, No. 930 T.N.

With reference to your No. 4019 C., dated 29th November 1893, I have the
honour to forward for your orders the only two tenders with plans, &c., I have
received in answer to my advertisement for the construction of the Tuticorin pier.
Messrs. Burn and Co.'s tender amounts to Rs. 1,00,000 (without steam cranes) and
Messrs. Massey's to Rs. 59,987 with a number of small extras which are, some of them,
included in Messrs. Burn and Co.'s tender (*vide* Messrs. Massey and Co.'s letter).
From a comparison of the plans, however, it will be seen that the superstructure
designed by Burn and Co. is somewhat stronger than that of Messrs. Massey and
Co.—

Items.	Massey and Co.	Burn and Co.
Transverse beams	8" x 6"	{ 18" x 7" 20" x 8"
Longitudinal	8" x 6"	{ 12" x 5" inside. 8" x 4" outside.
Ties	1 1/2" diameter.	4 1/2" x 1 1/2" x 1/2" channel iron.
Deck planking	2"	3"

The above gives the principal differences; weight for weight the tendered rates will
be about the same. I myself would prefer the stronger design of Messrs. Burn and
Co. and would recommend the acceptance of their tender.

Note by the Chief Engineer, Public Works Department.

The Superintending Engineer, VI Circle, submits two tenders for the construc-
tion of the proposed new pier at Tuticorin, one from Messrs. Burn and Co. and the
other from Messrs. Massey and Co.

2. It is somewhat difficult to make a detailed comparison between the two
tenders, but the Chief Engineer is of opinion that the work should be entrusted to
Messrs. Burn and Co.

3. The Superintending Engineer reports that weight for weight the tendered
rates of both firms will be the same, and that the superstructure designed by Messrs.
Burn and Co. is somewhat stronger than that designed by Messrs. Massey and Co.

it will be seen that the superstructure

4. If Messrs. Burn and Co.'s tender be accepted, the estimate will be approximately as follows:—

	RS.
Tender	1,00,000
Cost of piles purchased from the Madras Railway Company ...	10,534
Reclamation work	10,000
Total ...	1,20,534

The above is exclusive of the cost of cranes.

12th February 1894. (Signed) J. PENNYCUICK, Colonel, R.E.,
Chief Engineer, P.W.D.

ORDER—dated 28th February 1894, No. 552 W., Public Works.

His Excellency the Governor in Council agrees with the opinion of the Chief Engineer and authorises the acceptance of Messrs. Burn and Co.'s tender subject to such reductions as can be made by the Superintending Engineer, VI Circle, whose attention is drawn to Public Works Department memo. No. 529 D., dated 7th July 1893.

2. The Superintending Engineer will, with the least possible delay, submit a complete estimate for the work.

3. In paragraphs 10 and 11 of his letter No. 1134, dated 14th April 1893, the Executive Engineer, Tinnevely division, suggested that a clear agreement should be drawn up by the Government Solicitor as to the work to be done and the amount and times of payment and also that the Executive Engineer should be permitted to make an appointment with the Government Solicitor and to proceed to Madras on duty for the purpose of arranging the details of the contract with the latter officer. These proposals are sanctioned.

4. As Messrs. Burn and Co.'s tender contains a provision of Rs. 6,000 for supervision, the Public Works charges for establishment and tools and plant, ordinarily fixed at $24\frac{1}{2}$ per cent., will be reduced to 5 per cent.

(True Extract.)

Major, R.E.,
Under Secy. to Govt., P.W.D.

To the Superintending Engineer, VI Circle, with 9 enclosures,
and copy of memo. No. 529 D., dated 7th July 1893.

„ Examiner of Public Works Accounts.
„ Government Solicitor.
„ Marine Department.
„ Financial „

Exd. C. A. Munisawmy.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1894} Madras.

PUBLIC WORKS.

Dated February, 28th.

Recd.

Encl.

G.O., 28th Feb. 1894, No. 552 W.

FEBRUARY.

New Pier at Tuticorin

Orders accepting the tender of Messrs.
Burn and Co. for constructing the —.

OFFICE OF THE SUPERINTENDING ENGINEER,

6TH CIRCLE,

Trichinopoly, 31 January 1894.

FROM

Lt Col. A. W. Smart R.E.

THE SUPERINTENDING ENGINEER,

6th CIRCLE.

TO

THE CHIEF ENGINEER,

SIR,

ENCLOSURES. 8

Plan of Tuticorin
Pier of Messrs Burn
& Co

Specification of details

Cost of do - do.

Tender of Messrs Burn

& Co dated

18 January 1894

Revised Specification

Tender of Messrs

Mailey & Co dated

18 January 1894

Drawings

Specification

With reference to your No. 4019 C dated 29 November 1893, I have the honor to forward for your orders the only two tenders with plans of which I have received in answer to my advertisement, for the construction of the Tuticorin Pier. Messrs. Burn & Co's tender amounts to Rs 1,00,000 (without steam cranes) and Messrs. Massey's to Rs 59,987 with a number of small extras which are some of them included in Messrs. Burn & Co's tender (vide Messrs. Massey & Co's letter). From a comparison of the plans however it will be seen that the superstructure

designed by Burr
stronger than that of Messrs. Massey
& Co.

Items	Massey & Co.	Burr & Co.
Transverse beams 3-	8" x 6"	$\begin{cases} 18" \times 7" \\ 20" \times 8" \end{cases}$
Longitudinal-	8" x 6"	$\begin{cases} 12" \times 5" \text{ inside} \\ 8" \times 4" \text{ outside} \end{cases}$
Ties	$1\frac{1}{2}"$ diameter	$4\frac{1}{2}" \times 1\frac{1}{2}" \times \frac{1}{2}"$ channel iron
Deck planking	2"	3"

The above gives the principal dif-
ferences; weight for weight the ten-
dered rates will be about the same.

I myself would prefer the stronger
design of Messrs. Burr & Co and
would recommend the acceptance
of their tender.

I have the honor to be,
Sir,

Your most obedient Servant

Amos A. L. O. B.

Superintending Engineer

W. L. L.

P. W. CURRENT No. 85/

P. W. D. 6th CIRCLE.

FROM

THE SUPERINTENDING ENGINEER,

6th CIRCLE.

TO

THE CHIEF ENGINEER,

P. W. D.

No. 930-TN

Dated 31/

Received

January 1894.
3.2.94

Enclosures. D. 9 (2 plans)

Pier at Tuticorin -

submits for acceptance
2 tenders with plans for the
construction of the

N^o 249431-1-73 ✓
" 541-8-70 ✓
" 1092-9-4-73 ✓
" 2926-5-12-73 ✓
" 1550W-19-6-86 ✓
" 1301W-12-5-87 ✓
" 2040W-29-7-87 ✓
" 5444C-4-12-91 ✓
" 2026C-13-4-92 ✓
" 2317C-3-5-92 ✓
" 2406-7C-7-5-92 ✓
" 3671C-28-7-92 ✓
" 4101C-7-9-92 ✓
" 2621W-21-9-92 ✓
" 2622W-21-9-92 ✓
" 4375C-5-10-92 ✓
" 2795W-42-11-93 ✓
" 529D-7-7-93 ✓
" 2557W-10-10-93 ✓
" 2796W-2-11-93 ✓
" 2794W-2-11-93 ✓
" 568W-15-7-93 ✓
" 2266W-4-9-93 ✓
" 3113C-16-9-93 ✓
" 3246C-2-10-93 ✓
" 1013W-9-10-93 ✓
" 1047D-14-10-93 ✓
" 3412C-23-10-93 ✓
" 2862W-6-11-93 ✓
" 3712C-10-11-93 ✓
" 4019C-29-11-93 ✓
" 4176C-6-12-93 ✓
" 165W-18-1-94 ✓

Comparison between the two
d. the accompanying details

Current 851

Pier at Tuticorin

The Super Engineer v/s Civil sub-
mits 2 tenders one from Messrs
Bunn & Co, amounting to Rs 12,500
or Rs 100,000 without steam crane
& another from Messrs Messing &
amounting to Rs 59,987 with main
adjuncts amounting in all to
say Rs 66,000 with cranes &c. complete
for the construction of a pier at
Tuticorin & recommends the ac-
-ceptance of the tender of Messrs
Bunn & Co. owing to their design
being much stronger than the
of Messrs Messing & Co.

The above firm's tender for
constructing an iron screw pile
pier 480 feet long in 3 sections
of varying breadth as per
lithographed plan furnished
to tenders. The narrow portion
from the foreshore will be 165 feet
long & 24 feet wide, broad portion
270 feet long & 39 feet wide & the
tee head 45 feet long & 58 feet wide.
The pier will be divided longi-
-tudinally into 32 bays of 15 feet
from center to center of piles &
transversely as follows:-

Messrs Bunn & Company propose

feet center of piles, broad portion
one center bay of 13 feet & 2 side bays
of 10½ feet each & for the Tee head
one center bay of 13 feet & four
side bays, two on each side of the
center bay 10½ feet each.

Messrs. Drayton & Co. propose for
the narrow portion 2 bays of 11½ feet
center of piles, broad portion one
center bay of 13 feet & two side
bays of 11½ feet each & for the
Tee head, no particulars are
available for the plan submitted
by them, but it is presumed to be
one center bay of 13 feet & four
side bays, two on each side 11½
feet each.

The piles for this pier 127 in
all, varying in lengths of 20, 22
& 24 feet each together with
60 cast. iron screws 2 feet in
diam., as per advertisement
(purchased from the Drayton rail-
road Co.) will be supplied by
Capt. A. S. S. The tenders
are only to supply 67 cast iron
screws 3 feet in diam. together
with the iron & steel work for
the platform including braces,
beams, deck planking, hand
rails &c. & erect the same.

As the tenders, especially that
of Messrs. Drayton & Co. have tendered
in lump sums, it is very diffi-
cult to prepare a detailed com-
parison

Comparison between the two ten-
ders, the accompanying detail
& comparison statement has
been framed, as per lithograph
plan furnished to tenders
from the specification & plan
submitted by them.

The design of Messrs. Burn
provides for the following section
of beams.

Transverse steel beams, narrow part 18"x
- do - broad portion & T head - 20"x
Longitudinal iron beams outer throughout 8"x
- do - steel beams inner - 12"x

Against the following sections pro-
posed by Messrs. Drayton & Co.

Transverse steel beams throughout 8"x
Longitudinal inner steel beams
under rails - 8"x

Outer beams throughout - 8"x

The deck planking of Messrs. Burn
& Co. has been made 3" thick
against 2" of Messrs. Drayton & Co.

The number of longitudinal beams
provided in both the designs are
as follows:

	Burn	Drayton
Narrow portion.	6	against 7
Broad portion	8	- do - 9
Tee head	12	- do - 13

From the comparative state-
ment prepared it will be ob-
served that Messrs. Burn & Co.
tender amounts to Rs 85666 in-
cludes of steam cranes & the
value of 67 cast iron screws for
the piles 3½ in diam. The rate for

these screws have not been quoted
to them. assuming the weight
of each screw to be 5 cwt. & at
a cost of 10.8... per cwt. the
value of 67 screws will be Rs
3.518 or making a total of
Rs 49,534, against the lump
sum tender of Rs 1,00,000 vide
their letter dated 12th Jan. 1894
No. 142/H. The difference of Rs
50,466 is probably due to labor
charges for erecting the pier.

The rate of Rs 5 for 1 cwt. of
teakwood is very high, the
Schedule rate being only Rs 3-8-
if the schedule rate be allowed
the tender will be reduced
to Rs 5495.

Both the tenders design for a
pier to carry 2 lines of S.I.R. trucks
each of 10 tons fully loaded together
with a deck load of 1 1/2 cwt. per
sq ft. The section for beams
proposed by Messrs. Burn & Co.
appears to be unnecessarily
heavy & as their cost is al-
most double that of Messrs.
Mansingh & Co. the tender of
Messrs. Mansingh & Co. is worthy
of consideration.

Ho.
22.5.94

Comparison of tenders for the Pier at Tuticorin. Detail of quantities

Messrs. Burn & Co.

Messrs. Mansingh & Co.

Cast iron screws.

For piles 3'0" dia. ——— No. 67

Cast iron pile caps.

For piles 12 1/2 x 1 1/2 cwt. — Cwt. 190.5

Cast iron bollards.

As shown on B & Co. plan. No. cwt. cwt.
23 x 1 1/2 S. 29

Braces

In narrow portion of pier single
horizontal 22 pairs at 36 feet each = 792

In broad portion, single vertical diag.
Longitudinally 4 rows of 12 pairs
each 16 feet long or 32 feet each
pair of diagonals ——— = 2176

Transverse 14 rows of 2 pairs
at 24 ft long each ——— = 912
— 2° — 14 rows of 1 pair at 28 1/2
feet long each pair — = 541.5

In Tee head. Single vertical diag.
Longitudinally 4 rows of 1 pair
at 32 ft long each ——— = 128

— 2° — 2 rows of 1 pair of 40 ft. each: 80

— 2° — 6 rows of 2 pairs at 32 ft. do: 384.

Transverse 3 rows of 4 pairs
of 24 feet each ——— = 288

— 2° — 3 rows of 1 pair 28 1/2 each: 85.5

Total length of braces R/L

Total length of Channel iron
braces 4 1/2 x 1 1/2 x 1/2 = 5387 x 10.9 = 5874

Cast iron screws.

For piles 3'0" dia. ——— No. 67.

Cast iron pile caps.

Weight not mentioned in specification nor
details shown on plan so as to
calculate.

Cast iron bollards.

No. 23 x 1 1/2 S. ——— Cwt. 29.

Braces

In narrow portion, longitudinal braces of
11 bays of 2 pairs each 23 feet ——— = 506

In Broad portion — 2° — 14 bays of 2 pairs at
sides of 23 feet each ——— = 874

Broad portion — 2° — 14 bays of 1 pair at
center of 26 feet ——— = 494.

Tee head — 2° — 12 side bays of 1 pair
of 23 feet ——— = 276

Tee head 2° 3 center bays of 26 feet 78

Tee head — 2° — at angles 2 bays of 39 feet 78.

Transverse bays, narrow portion of
11 bays of 3 pairs of 30 feet ——— = 990

— 2° — at junction with broad portion
2 bays of 2 pairs each 30 feet ——— = 120

— 2° — Broad portion of 18 bays of 4 pairs
of 30 feet each ——— = 2160

Tee head, 1 bay of 4 pairs of 30 feet ——— = 120

— 2° — 2 bays of 6 pairs of 30 feet ——— = 360

Total length of braces

Total length of iron braces 1/2" dia.
= 6056 x 7.5 lbs = 45420 lbs
8.03

Roller steel beams

Longitudinal beams 8"x4"
 In narrow portion 2 x 182 = 364 ft
 In broad portion 4 x 258 = 1032 ..
 at Tee head 2 x 32 = 64 ..
 do 2 x 41 = 82 ..
 do 4 x 46 = 184 ..
1726

Weight: 1726 Rpts. at 22 lbs = 339 cwt.
 Longitudinal beams 12"x5"
 In narrow portion 4 x 182 = 728 ft.
 " broad 4 x 255 = 1020 ..
 " Tee head 4 x 45 = 180 ..
 Weight = 1928 Rpts. at 38 lbs = 654 cwt.

Transverse beams 18"x7"
 In narrow portion 12 x 22 = 264 ft
 Weight = 264 ft at 84 lbs = 198 cwt.

Transverse beams 20"x8"
 In broad portion 18 x 35 = 630
 at Tee head 3 x 56 = 168
798 ft

Weight: 798 at 100 lbs = 712 cwt.
 Total weight of beams = 1903 cwt.
 Deduct for iron beams 339
 Total weight of steel beams 1564

Teakwood

Deck planking narrow part 445 x 24 = 10680
 " Broad part 720 x 37 = 26640
 " Tee head 40 x 48 = 1920
 " " 80 x 58 = 4640
 Total Rpts of planking 4"x3" = 43880
 Total Cft = 43880 x 4" x 3" = 3657 Cft.

Roller steel beams

Longitudinal beams 8"x4" (outer ends)
 narrow portion 2 x 182 = 364
 Broad portion 2 x 258 = 516
 Tee head 2 x 32 = 64
944
 Weight: 944 x 18 lbs = 152 cwt.

Longitudinal beams 8"x4" (inner)
 narrow portion 1 x 182 = 182
 Broad portion 3 x 255 = 765
 Tee head 2 x 41 = 82
 " " 5 x 46 = 230
1259

Weight: 1259 x 25 lbs = 281 cwt.
 Longitudinal beams 8"x6" (under ends)
 narrow portion 4 x 182 = 728
 Broad portion 4 x 255 = 1020
 Tee head 4 x 46 = 184
1932

Weight: 1932 x 36 lbs = 621 cwt.
 Transverse beams 8"x6"
 In narrow portion 12 x 24 = 288
 " broad 18 x 37 = 666
 " Tee head 3 x 59 = 177
1131

Weight: 1131 x 36 lbs = 363 cwt.
 Total weight of beams = 1417 cwt.

Teakwood

Deck planking narrow part 445 x 24 = 10680
 " Broad part 720 x 37 = 26640
 " Tee head 40 x 48 = 1920
 " " 80 x 58 = 4640
 Total Rpts of planking 4"x3" = 43880
 Total Cft = 43880 x 4" x 3" = 2435 Cft.

brought in clamps for braces on piles

4 like this at 80 lbs = 320
 36 " at 105 lbs = 3780
 4 " at 105 lbs = 420
 42 " at 130 lbs = 5460
 Total lbs 10,400
 Cwt 93

Fish plates

For longitudinal beams 8"x4"
 one set = 2 at 4" x 18" x 3/8" } 50 lbs
 2 at 10" x 18" x 3/8" }
 For narrow portion 10.
 broad portion 36 } 54 x 50 = 24 cwt
 Tee head 8

For longitudinal beams 12"x5"
 one set = 2 at 5" x 18" x 3/8" } 75 lbs
 2 at 15" x 18" x 3/8" }
 In narrow portion 20 } 60 x 75 = 40 cwt
 broad portion & T. 40 }

Plates under longitudinal beams to hammer beams - 15" sq x 3/8" thick.
 In narrow portion 24.
 " broad portion 72 } 120
 " Tee head 24 } 130

120 plates 15" square x 3/8" = 25 cwt
 Plates under beams 12"x5".
 In narrow portion 44
 " broad portion 72
 " Tee head 12
128
 128 plates 16" sq x 3/8" = 30 cwt
 Total cwt 119

W.E. clamps for braces on piles

12 like this at 36 lbs = 432 lbs
 118 " do 43 lbs = 5074
 4 " do 43 lbs = 344
 106 " do 51 lbs = 5406
 4 " do 50 lbs = 200
 6 " do 57 lbs = 342
 Total lbs 11,838
 Cwt 106

Fish plates

For longitudinal beams 8"x4" + 8"x6"
 narrow portion 35
 broad portion 81 } 138 lbs
 Tee head 22
 one set = 2 at 15" x 5 1/2" x 1/2" = 20 lbs.
 138 x 20 lbs = 2760

For transverse beams at Tee head.
 Tee head 3 x 20 = 60
 Total lbs 2820
 Cwt 25.

Note - for plates under beams the weight one transverse beam can be taken out, owing to want of dimensions etc. which are not mentioned in specification nor detailed in plan submitted by Messrs. Messer & Co.

Hand railing

Cast iron standards no narrow portion
of the pier only 76 at $\frac{1}{2}$ cut each 38
4 lines of wrought iron tubing, top line
having $1\frac{3}{4}$ dia. & the bottom line $1\frac{1}{2}$ dia.
195 feet long = 780 Rfr.

Rails

2 lines with crossings near Tee head
= 510 or 2040 Rfr at 68 lbs per yd.
= 413 Cwt.

Moduli

4" square walking over beams 8" x 4"
to bring up to level of center beams
12" x 5" for nailing deck planking
length = 1926 x 4" x 4" = 192 Cwt.
walk across broad portion of jett &
Tee head = 700 ft x 6" x 4" = 117 Cwt.
Front fenders 12" x 12" at seven piles
 $\frac{1}{2}$ 6" x 8" x 1" x 1" = 48 Cwt. } 106 Cwt.
along pile caps in front 58 x 1 x 1 = 58 Cwt.

= Bolts & nuts & clips.

This item may be taken at ~~716~~ ^{137 Cwt.} as estimated by Messrs. Burnt & Co.
for both the tenders.

Hand railing

Standards wrought iron, only for narrow
portion as estimated by Messrs. Burnt
& Co. 76 in dia. $3' \times 1\frac{1}{2}" \times \frac{3}{4}" = 228$ Rfr
weight = $228 \times 6.26 = 1427 = 13$ Cwt.
 $\frac{3}{8}$ " short linked chain in 2 rows = 780 Rfr
weight = $780 \times 1.76 = 12$ Cwt.
76 cast iron sockets - about 4 lbs each
"Rails"

2 lines of steel bridge rails weighing
20 lbs per yd. length of rails 2040 ft
= 182 Cwt.

This will not be required if Messrs.
Messing & Co. tender be accepted
as they provide for one even height
of beams.

not specified in Messrs. Messing & Co.
tender.

110.
21.6.94.

Comparative Statement of tenders for Constructing a pier at Intraco

Particulars.	Messrs. Burnt & Co.		Messrs. Messing & Co.		Remarks.
	Quantity weight	Rate Per Amount	Quantity weight	Rate Per Amount	
Cast iron screws for piles 3" dia. 12.	67	Each	67	Each	has rate specified in both the tenders or weight of screws omitted.
Cast iron pile caps — Cwt.	190.5	10 8 " Cwt.	2000	Cwt.	weight not mentioned in Messrs. Messing & Co. tender
Cast iron bollards. — Cwt.	29	10 8 " Cwt.	305	Each Cwt.	no rate specified by Messrs. Messing & Co.
Channel iron braces 4" x 1" x 1" x 1" dia.	524	16 8 " Cwt.	8646	"	There is an error in Messrs. Burnt & Co. schedule in taking out the length of these braces this error amounts to an omission of 106 Cwt. with 1750-
Wrought iron braces 1" x 1" dia. — do.	"	"	"	"	has rate specified by Messrs. Messing & Co. the section of their steel beams was 8" x 4" & 8" x 6"
Beams iron 8" x 4" — do.	359	10 8 " Cwt.	3560	"	
Beams steel (10" x 5") (10" x 7") (10" x 8") dia.	1564	12 " Cwt.	18,768	"	
Tenderwork for deck planking. Cfr.	3657	5 " Cfr.	18,285	Sp	
Wrought iron clamps — Cwt.	93	20 " Cwt.	1860	Cwt.	
Fish plates — Cwt.	119	20 " Cwt.	2360	"	
Cast iron standards — Cwt.	38	12 " Cwt.	456	"	The weight of plates under hypothetical beams was transmitted in Messrs. Messing & Co. drawing further drawing submitted by Messrs. Messing & Co. has description of this is mentioned in his spec. "Specification also."
Wrought iron standards — Cwt.	"	"	"	"	Messrs. Messing & Co. quote a rate of 1/2 5.4.10 per foot complete for standard or cast iron sockets with plates

To go into the
 comparative merits
 of the 2 tenders
 thoroughly - and
 quickly

over
 17.294

Done
 Comparative statement
 with note on herewith
 submitted

Tho.
 in. II gr.

Current 851

Comparative statement
 of tenders for the Tubicoin
 pier:

nil.

One 12" dia.

Though it is somewhat
difficult to make
a comparison between
these 2 tenders, I
think that there can
be no doubt that
the work should be
entrusted to Messrs.

Burn & Co.

The S. E. reports that
weight for weight the
tendered sales of both
Burn & Co. & Messrs. L. &
with be the same,
and the design of
Messrs. Burn & Co. has
already been accepted.

In J. O. Marine
No 292 of 15. 8. 93
the design & estimate
(Burn & Co.) as modified
by the Chief Engineer,
and L. No 1, 52, 242

nil.

One 12" dia.

was sanctioned;
but the estimate
has not been
sanctioned within
R.D. as yet -

It was proposed
to do so in the
draft order recorded
with 2795 W of
2-10-93 and to
which Sir G. Stokes
took exception as
the question of a further
re-estimation of
fine stone was
about to be considered
a complete estimate
is being prepared.
If Messrs. Wm & Co.
tender is accepted
the estimate will
be as follows -

Tender 1,00,000
Cost of piles
purchased from
Madras R. 10,534
Re-estimation
works 10000

Total 1,20,534

This, without crane.

It must however
be noted that

Messrs. Wm & Co.
tender is not complete
of reduction by
showing the schedule
rate for each work

instead of the
very high rate
asked for viz
Rs 5 per cft.

I think that the

I don't think this can be done
The tender is not complete

nil. — One 12" dia.

tender of men.
Mem 2nd Lt. should
be accepted only in
to such deductions
as can be made
in his attention
being drawn to
memo 529 D 47-93

The Lt. instructs
to have a complete
estimate prepared
and the proposals
of Major Wadswell
in para 10 & 11 of
his letter 1134 d/14-4-93
should also be approved

Also the suggestion
in para 3 of memo
529 D should be
sustained in his P.O.
as mem. Mem 2nd Lt.
provide no good
of this under for
supervision

note with regard
to. Officer's remarks

For orders with
reference to his
descript on his
draft order.

Must have 2
Lt. tender is in such
indiscreet detail that
this very difficult
to make a comparison
between it & mem.

Mem 2nd Lt. tender -
It is however certain

I think however

that having he said
that the section of
beams provided
for are not sufficiently
strong - Roughly

The weight of beams
provided for by
Hassay Ltd. is 25%

nil.

One 12" dia.

less than his
height broadened
and the latter are not bent
by them I do. of
means of cases give strength
Course Massey I do
~~can increase their~~
~~Portions, I equally~~
~~than I do. can~~
~~reduce them -~~

It is a question of
his selection of a
Contractor - The
draft order provides
for a complete
estimate being
framed, the
acceptance of the
same & the
tender,
only with 2 reductions.

As far as I understand
his sections
proposed by
Humboldt are

X
Re channel iron braces
proposed I think them with
a steeper and more efficient
flange the sound iron
proposed I think them,
and the thickness
of the former is more too
strong, whereas the latter
provide the iron plates
etc -

firmly speaks it
very to wit that

g^o
the ^{lin} Extraction
~~the~~ and that from

— nil. —

One 12" dia^h.

between Messrs. Bunn & Co. & Messrs.

not too strong,
^{in my eyes}
and I should
say that the
sections of many
are ^{cutting} too weak

As to the relation
of the ^{sections} to the
two firms as
Contractors we have
the experience of
Messrs. Messy & Co.
at Popasore, &
that can hardly
be said to be
satisfactory. J.W.

+ I think that
Messrs. Messy & Co.
are ^{not} the ^{best} ^{for} the ^{purpose}
of ^{the} ^{contract}
and that firm

Should be asked
to send down one
of their firm to
super to the
Major Haddley
I am in some
agreement as to
details of the
pier - a
properly prepared
estimate must
be drawn up by
the Ex. Eng. and
should be both
time & money
saved if this
course is followed.

If not the remaining
course appears
to be in the

Ex. Eng. himself
to prepare a
complete estimate
in the first instance,
calculating the
stresses & the
consequent sections
required - &
getting out the
weights &c -

On this estimate
tenders might be
called for ^{and} but
it would take a
considerable time

P. V. Lincolnton

No 292 dated

15 Aug. 1893

Sanctioned the

design & estimate
(Horn 2601) amounting
to Rs 1,52,242
and it would
have been sanctioned
at once as the R.S.
had not a change
of site been suggested.

As it stands
at present the work
can now be carried
out for about 1,25,000
including reclamation
work - but excluding
cost of cranes.

0001
23.2.4

Statements showing the comparison between Messrs. Burn & Co. & Messrs.
Murray & Co. Tender for Constructing a Pier at Tuticorin.

	Messrs. Burn & Co.	Messrs. Murray & Co.	
Variation in bays.	Narrow portion ———	2 bays of $10\frac{1}{2}$ ft. centre of piles. ———	2 bays of $11\frac{1}{2}$ ft. centre of piles. ———
	Broad portion ———	1 centre bay of 13 ft + 2 side bays of $10\frac{1}{2}$ ft. each. ———	1 centre bay of 13 ft & two side bays of $11\frac{1}{2}$ ft each.
	Tee height ———	1 centre bay of 13 ft + 2 side bays on each side $10\frac{1}{2}$ feet each. ———	—— not known. ———
Longitudinal beams ———	8" x 4" outer ——— 12" x 5" inner ———	8" x 4" outer ——— 8" x 6" inner. ———	
Transverse beams, narrow part —— 2" ——— Broad & Tee part	18" x 7" ——— 20" x 8" ———	} — 8" x 6" throughout	
Fish plates ———	18" x 4" x $\frac{3}{8}$ " ——— 18" x 5" x $\frac{3}{8}$ " ———		
Cross braces ———	Chains iron $4\frac{1}{2}$ " x $1\frac{1}{2}$ " x $\frac{1}{2}$ " ———	Plan chains $1\frac{1}{4}$ " dia. tie rods Specification $1\frac{1}{2}$ " dia. — do —	
Wrought iron clamps ———	8" deep & $\frac{3}{4}$ " thick ———	—— 4" deep & 1" thick. ———	
Joining plates between longitudinal & transverse beams	15" sq under 8" x 4" ——— 16" — do — 12" x 5" ———	—— not known. ———	
Bolts ———	each $\frac{1}{4}$ cwt. ———	—— each $\frac{1}{4}$ cwt. ———	
Deck planking ———	3" thick ———	2" thick ———	
Hand railing. ———	2 rows of wrought iron rails $1\frac{3}{4}$ " upper & $1\frac{1}{2}$ " lower fastened to cast iron standards placed 5 feet apart. ———	2 rows of $\frac{3}{8}$ " thick linked chain fastened to plate iron bars $2\frac{1}{2}$ " x $\frac{3}{4}$ " ———	
Double line of metric gauge steel rails. ———	68 lbs per yard ———	30 lbs per yard. ———	
Iron table ———	—— nil. ———	One 12" dia. ———	

Amounts of Tender

- 247 9/16 of hand sails at 5-4-0 per yd.
- 23 Bollsards at 2-4-0 each
- 1 iron ladder at head of pier
- 1 iron gate
- 10 Ton Hand Crane
- 3 Ton hand crane
- 2 cranes, removing etc.

Wind. Tender complete

One 15 Ton Steam Crane	One 10 Ton Hand Crane
\$ 17,000.-	\$ 3,760.-
One 3 Ton Steam Crane	One 3 Ton Hand Crane
\$ 5,600.-	\$ 1,140.-
Removing & re erecting old cranes \$ 200.	Removing & re erecting old cranes \$ 200.
Ladders & steps \$ 150	Ladder at pier head \$ 30.
\$ 1,22,500.-	\$ 59,987
	1822
	552
	30
	150
	3,760
	1,140
	200
	67,641

Amount of Messrs. Burn & Co. Tender less Steam Cranes \$ 100,000.

6.11.94

P. W. D

Note with reference to His Excellency's remarks of 16th February 1894 on draft order on CRP 85/-

The objection raised by H.R. Messrs Massey & Co. occurred also true in reading the Chief Engineer's first and Co's tender is in it - as it is now certified that Massey & Co's design with such meagre detail not be sufficiently strong, we had better accept Burn & Co's tender. That it is very difficult

I am disappointed to find to make a comparison that it will apparently not be possible to run trucks on the pier without the use of a turn table. between it and Messrs

I also note that the new Burn and Co's tender pier will be shorter, i.e., will be less than the old. Is this all? It is. However certain

MS
27/2/94

Burn & Co's tender should be accepted

MS
27/2

That the section of beams provided for are not sufficiently strong. Roughly the weight of beams provided for by Messrs Massey and Co is 25%

less than the weight
provided by Messrs
Burn and Co, and the
latter are not by
any means of excessive
strength.

The channel iron
braces proposed by
Messrs. Burn and Co will
be stiffer and more
efficient than the
round iron proposed
by Messrs Massey & Co,
and the three inch
planking of the former
is none too strong,
whereas the latter pro-
vide two inch planking
only.

Generally speaking

it may be said that
the sections proposed
by Messrs Burn & Co
are not too strong
and in many cases
those of Messrs Massey
and Co. are certainly
too weak.

As to the relative
capabilities of the two
firms, as contractors,
there is really no com-
parison; we have the ex-
perience of Messrs Massey
and Co. at Copalpoore,
and that can hardly
be said to be satis-
factory.

W.S.
18/11/94

J

26.11/94

Note for the Hon. Mr. Bliss

The undersigned
is making further
inquiries as to the depth
in which the existing
and proposed new piers
terminate

Seen
M
7/3/94
S
5.3 W

Arrived 10/3/94
No 999 C of 5-3-94

M
P. H. P.
D.

~~Mr. Hon. Mr. H. Bliss~~

~~Mr. Hon. Mr. J. Grove~~

Tenders for the
new pier at Inticorin

Note for the Hon. Mr. Bliss

The new pier is to be
shorter than in the
original plan not
because the sea end
is to be brought into
shallower water, but
on account of the
reclamation at the
shore end.

The G.O. accepting
Messrs. Burn and Co's tender
has been sent to press.

Insisted that S
the pier was shorter
because, on account of the
reclamation, it
stands further out. But that is not
all - it stands further in - that was
what I wanted to draw attention to
1/3/94

Note by the Chief Engineer P. W. D. 20

The Superintending
Engineer vi circle submits
two tenders for the con-
struction of the proposed
new pier at Inticorin,
one from Messrs Burn & Co
and the other from Messrs
Massey & Co.

2. It is somewhat
difficult to make a detailed
comparison between the
two tenders, but the Chief
Engineer is of opinion that
the work should be
entrusted to Messrs Burn
& Co.

3. The Superintending
Engineer reports that
weight for weight, the
tendered rates of both
firms will be the same,
and that the superstructure
design by Messrs Burn & Co
is somewhat stronger
than that designed by
Messrs

Hon. 6/3 R 8/3
Hon. 28/2 R 1/3
Circ 26/2 R 27/2

Messrs Massey & Co.

4. If Messrs Burn & Co's tender be accepted, the estimate will be approximately as follows:—

Tender Rs 1,00,000
Cost of piles purchased from the Madras Ry Co. " 10,534
Reclamation work " 10,000

Total Rs 1,20,534

The above is exclusive of the cost of cranes.

old 12/2/94
12 Feb 1894
EW
14/2/94

Cu

30
READ the following

Letter from S.E. W. file (H.C. No. 930 T.W. of 31 Jan'y 94)
Note by the Chief Engineer P.W.D. of 10th February 94

His Excellency the Governor-in-Council agrees with ~~accepts~~ the opinion of the Chief Engineer, and authorises the acceptance of Messrs Burn & Co's tender, subject to such reductions as can be made by the Suptg. Engineer W. file, whose attention is drawn to P.W. Dept. Memo. No. 529 D dated 7th July 1893.

2. The Suptg. Engineer will, with the least possible delay submit a complete estimate for the work.

3. In paras 10 and 11 of

It appears to be a question of strength between the two and as the Suptg. Engineer and the Chief Engineer recommend the stronger of the two, I sign the draft - as the work sh. d. go forward. I am off to Catter. But I think we ought to get the assurance of the Chief Engineer that Messrs Massey's pier is not strong enough. Of course the stronger must prove to be better than the weaker - but I do not see anywhere that the weaker pier is not good enough for what it will have to do. I should therefore be obliged if the C.E. would address his attention to this point, & circulate the papers to my hon. colleagues.

W
16 Feb

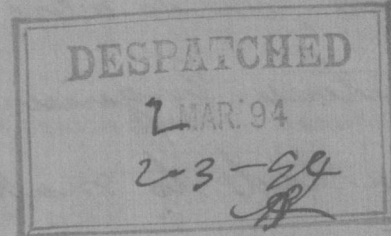
of his letter no 1134 d/14:
4. April 1893, the Ex: Engineer
7. Innerately division suggest-
ed that a clear agreement
should be drawn up by
the Govt. Solicitor as to
the work to be done and
the amount and times of
payment, and also that
the Executive Engineer should
be permitted to make an
appointment with the
Govt. Solicitor and to
proceed to Madras on
duty for the purpose of
arranging the details of
the contract with the
latter officer. These
proposals are sanctioned.

4. As Messrs Burn & Co's
tender contains a provision
of Rs 6000 for supervision,
the P.W. Charges for
Establishment and
Tools and Plant, ordi-
narily fixed at $24\frac{1}{2}$ per
cent

cent, will be reduced
to 5 per cent.

12/2/94

14/2/94



The S. E. file
with 9 Encls. and copy
of memo. no 529 d/17.7.93
" Exar: P.W. Accounts
" Govt. Solicitor
" Marine Dept.
" Financial Dept.

Cur

H.S.

Tenders for the
new pier at
Indicore

Recd
13/2/24

CHIEF SECRETARY
13 FEB. 1924
GOVERNMENT OF MADRAS

Issue
Recd
20/2/24

Mr. H. S. Clerk
for Government of Madras
Indicore

C.S. 10/2
H.S. 15/2 R 17/2