Archives I—10,006—16-8 77.

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(2) Date of repair 1286

(3) Initials of the Referencer

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P W DEPARTMENT

No. 501 W Press.
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D.V.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

4th March 1880, No. 501 W.

Buildings and Roads.
Civil Works.

Read the following papers :—

No. 9.	From Suptg. Engr.,	First Circle,	dated	21st Feb. 1880,	No. 774 G.L.
No. 10.	,, ,,	Second ,,	,,	25th Sept. 1879,	,, 2,075.
No. 11.	,, ,,	Third ,,	,,	8th Oct. ,,	,, 5,918.
No. 12.	,, ,,	Fourth ,,	,,	2nd Sept. ,,	,, 550.
No. 13.	,, ,,	Fifth ,,	,,	16th Oct. ,,	,, 556 T.C.
No. 14.	From District Engr., Bellary,		,,	2nd July 1878,	,, 1,466.
No. 15.	Endorsement of the Military Dept.,		,,	24th Oct. ,,	,, 5,669.
No. 16.	Surgeon-General, Indian Mdel.		,,	27th Nov. ,,	,, 648.
No. 17.	,, ,,	,,	,,	17th Dec. ,,	,, 690.
No. 18.	,, ,,	,,	,,	26th March 1879,	,, 150.
No. 19.	,, ,,	,,	,,	27th ,,	,, ,, 155.
No. 20.	From Suptg. Engr., Fourth Circle,		,,	22nd ,,	,, ,, 853/291.
No. 21.	,, ,,	,,	,,	18th April ,,	,, 1,040/243.

No. 22. ORDER THEREON, 4th March 1880, No. 501 W.

THE Government are of opinion that it is not desirable to prescribe any standard plan of design for structures which are not constructed at Government cost.

2. It is noticed that the Coimbatore design is generally approved, and Municipalities and Local Fund Boards will no doubt frequently adopt it.

(True Extract.)

(Signed) R. H. SANKEY, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Military Department.
,, Financial ,,
,, Surgeon-General, Indian Medical Department.
,, Superintending Engineers.

Fwd. S. T. Asstts.
6 spare Copies.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

4th March 1880, No. 501 W.

Buildings and Roads.
Civil Works.

Read the following papers:—

No. 9.	From Suptg. Engr.,	First Circle,	dated 21st Feb. 1880,	No. 774 G.L.
No. 10.	" "	Second "	" 26th Sept. 1879,	" 2,675
No. 11.	" "	Third "	" 8th Oct. "	" 5,918
No. 12.	" "	Fourth "	" 2nd Sept. "	" 550
No. 13.	" "	Fifth "	" 16th Oct. "	" 556 T.C.
No. 14.	From District Engr., Bellary,		" 2nd July 1878,	" 1,466
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No. 17.	" "	" "	" 17th Dec. "	" 690.
No. 18.	" "	" "	" 26th March 1879,	" 150
No. 19.	" "	" "	" 27th " "	" 155
No. 20.	From Suptg. Engr.,	Fourth Circle,	" 22nd " "	" 853/204
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(True Extract.)

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

To the Military Department.
" Financial "
" Surgeon-General, Indian Medical Department.

Lieut. S. T. Austin.
Spare Copies

OFFICE OF SURGEON-GENERAL, I. M. D.,
Fort St. George, 27th Oct. 1879.

No. 492.

From

THE SURGEON-GENERAL, INDIAN MEDICAL DEPARTMENT,

Fort Saint George,

To

THE Chief Engineer and Secretary to Government

P. W. Department

SIR,

With reference to this Office
Letter No. 60 of 26th and No. 65 of 27th March
1879, I have the honor to request that you will
be good as to inform me whether the Plan and
Estimate have been laid before the Secretary
of State for the Secretary's sanction for the proposed
Pit.

I have the honor to be
Sir
Your most obedient
Humble Servant
Surgeon General, IMD

137

1

Cl. 3703-24-C.77

GOVERNMENT OF MADRAS.

MILITARY DEPARTMENT.

14th April 1880, No. 2391.

Barracks and Buildings—Commissariat.

Read the following papers :—

No. 223. *From Brigadier-General H. O'CONNELL, Quartermaster-General, to Colonel H. N. D. PRENDERGAST, V.C., C.B., R.E., Acting Secretary to Government, Military Department*; dated *Fort St. George, 2nd April* 1880, No. 2868.

With reference to para. 2 of Order of Government, No. 695, dated 30th January 1880, I have the honor, by order, to forward plan, estimate (Rs. 1,160), and specification for converting the Royal Artillery family quarters at Cannanore into a bakery. Letter, No. 200, dated 26th March 1880, from Brigadier-General Burton, Commanding Malabar and Canara, is also forwarded.

2. The estimate is an approximate one, but the whole papers are forwarded to Government in their present form for consideration and orders whether the scheme is to be proceeded with. The necessity for a bakery at Cannanore has been pointed out in the papers before Government (Proceedings of Madras Government, 30th January 1880, No. 695), but it is known that, among the recommendations of the Army Organization Commission, the removal of the British Infantry regiment from Cannanore to Wellington is included. Should this be carried out, no bakery at Cannanore would be necessary.

3. It remains, therefore, to be considered whether this scheme should be proceeded with. If so, His Excellency the Commander-in-Chief recommends that the enclosures be transferred to the Public Works Department in order that final plans and estimates may be called for.

No. 224. ORDER thereon, 14th April 1880, No. 2391.

Under the circumstances represented in the foregoing letter, no further action will be taken at present in the matter of converting the Royal Artillery family quarters at Cannanore into a bakery.

(True Extract.)

Colonel, R.E.,

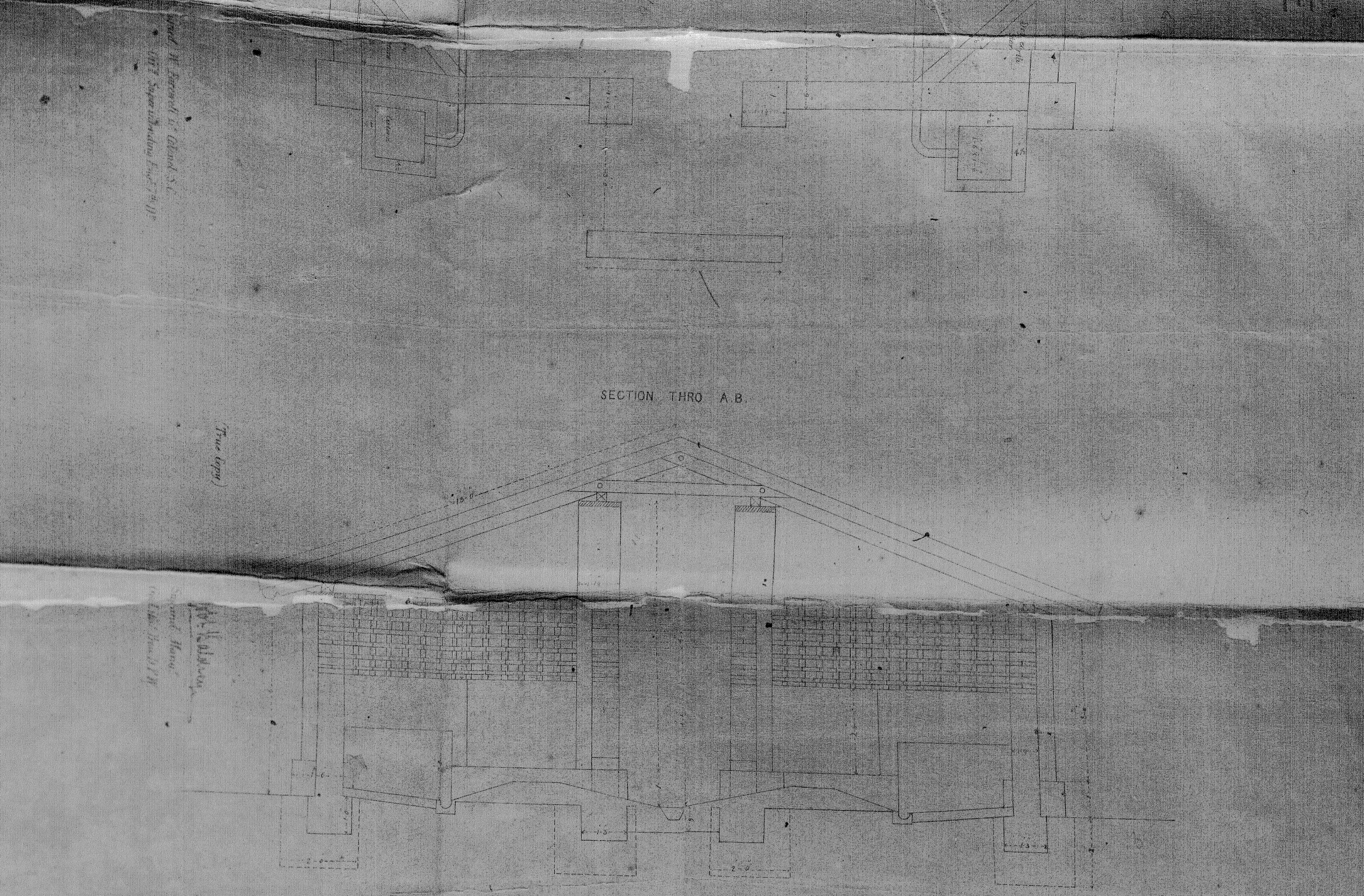
Acting Secretary to Government.

To the Public Works Department.
" Quartermaster-General, with 4 enclosures.
" Commissary-General.
" Surgeon-General, Army Medical Department.

Ext. A. Rutt.

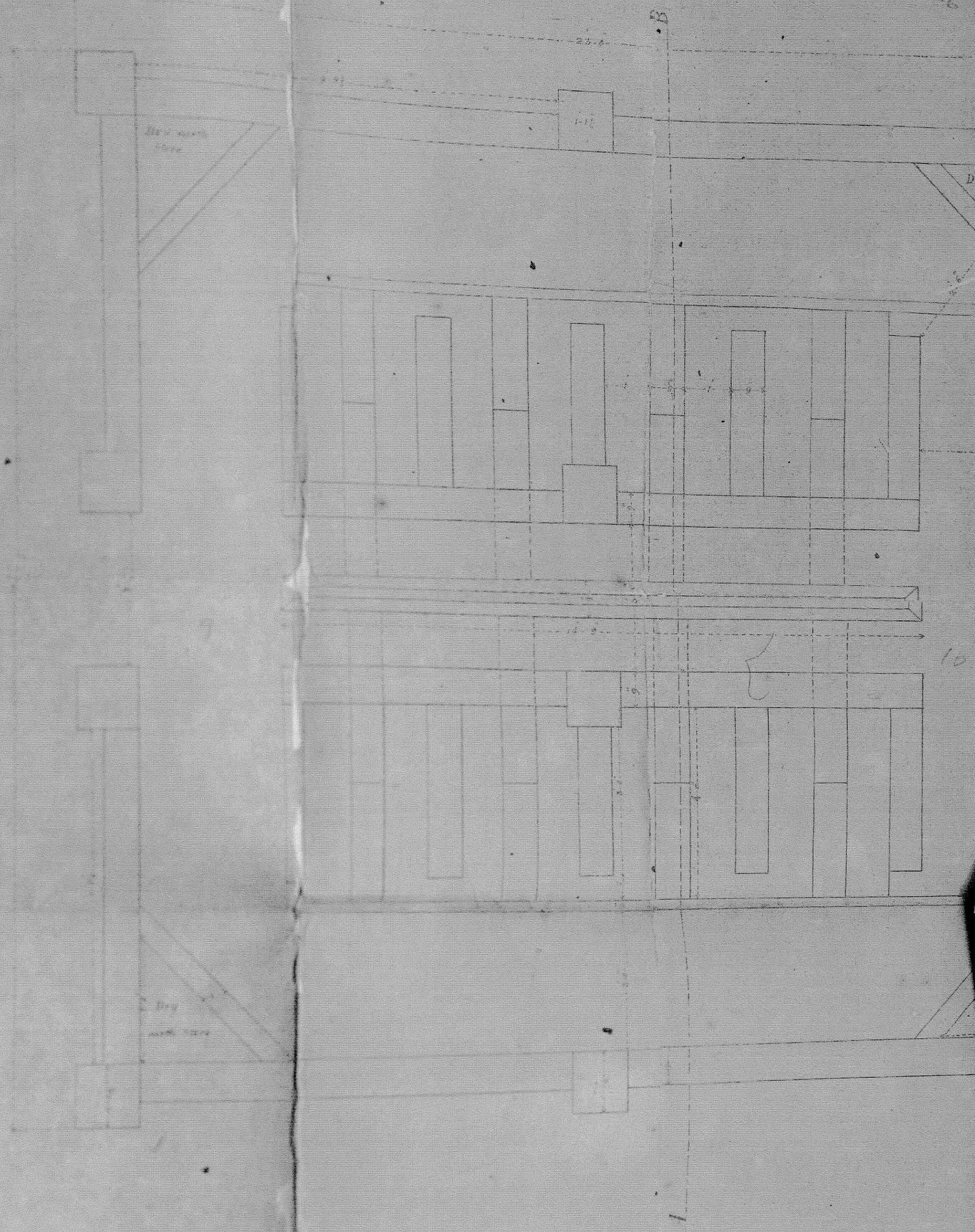
P.W.D.
108780
N.D.

SECTION THRO A.B.



REVISED PLAN OF A LATRINE

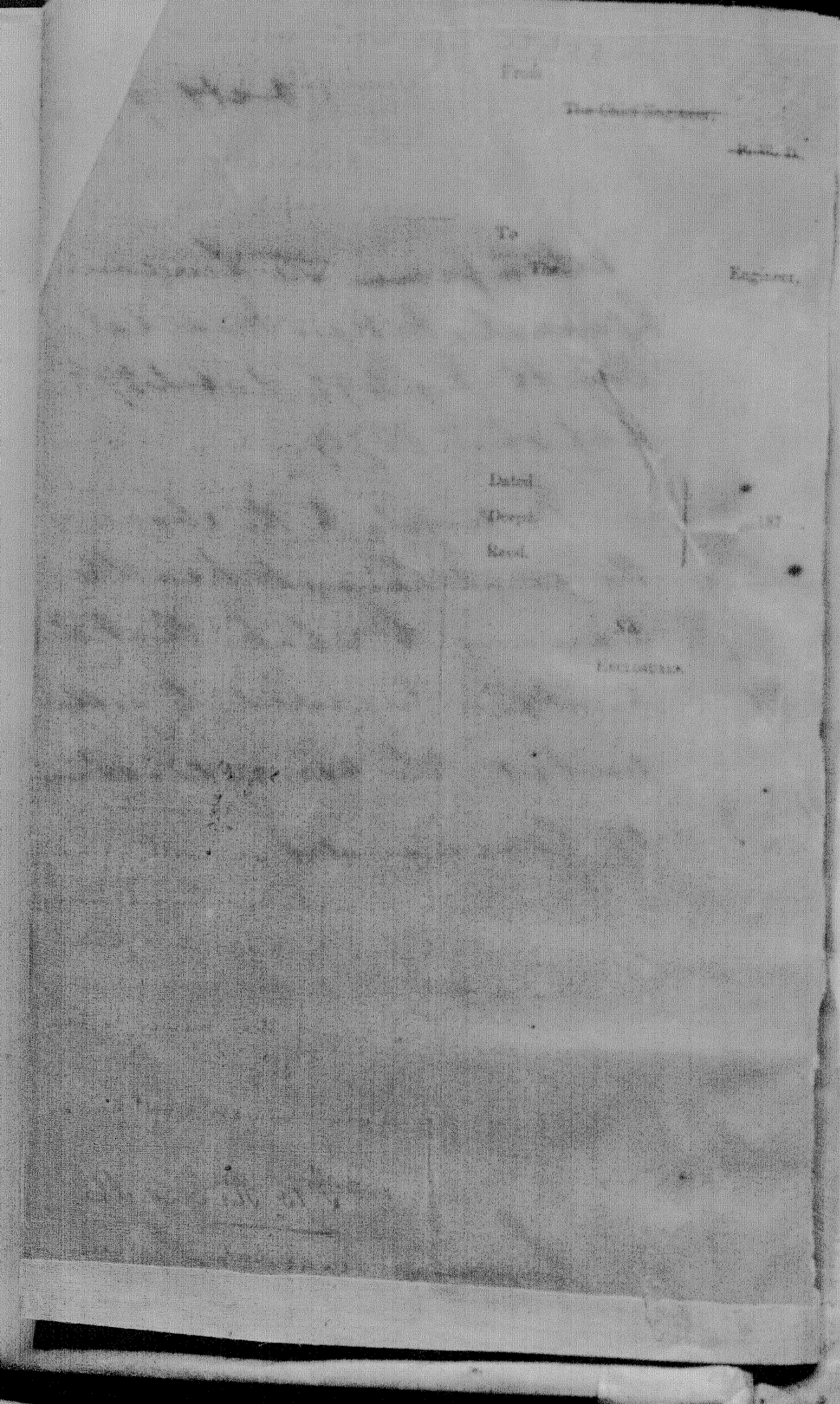
Scale 2 Feet to an inch

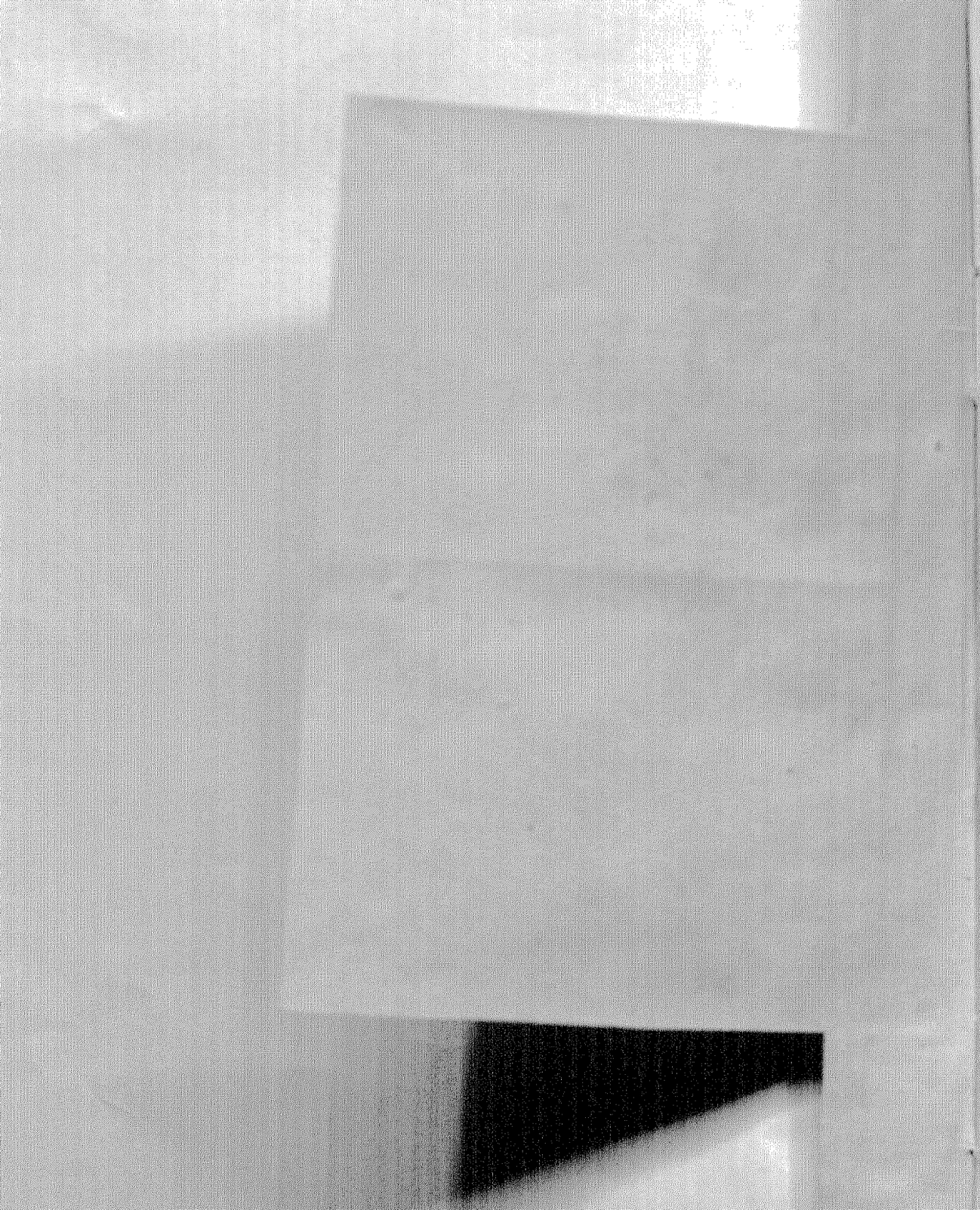


(Signed) A. Wedderburn
Collector of Coimbatore

MEMORANDUM

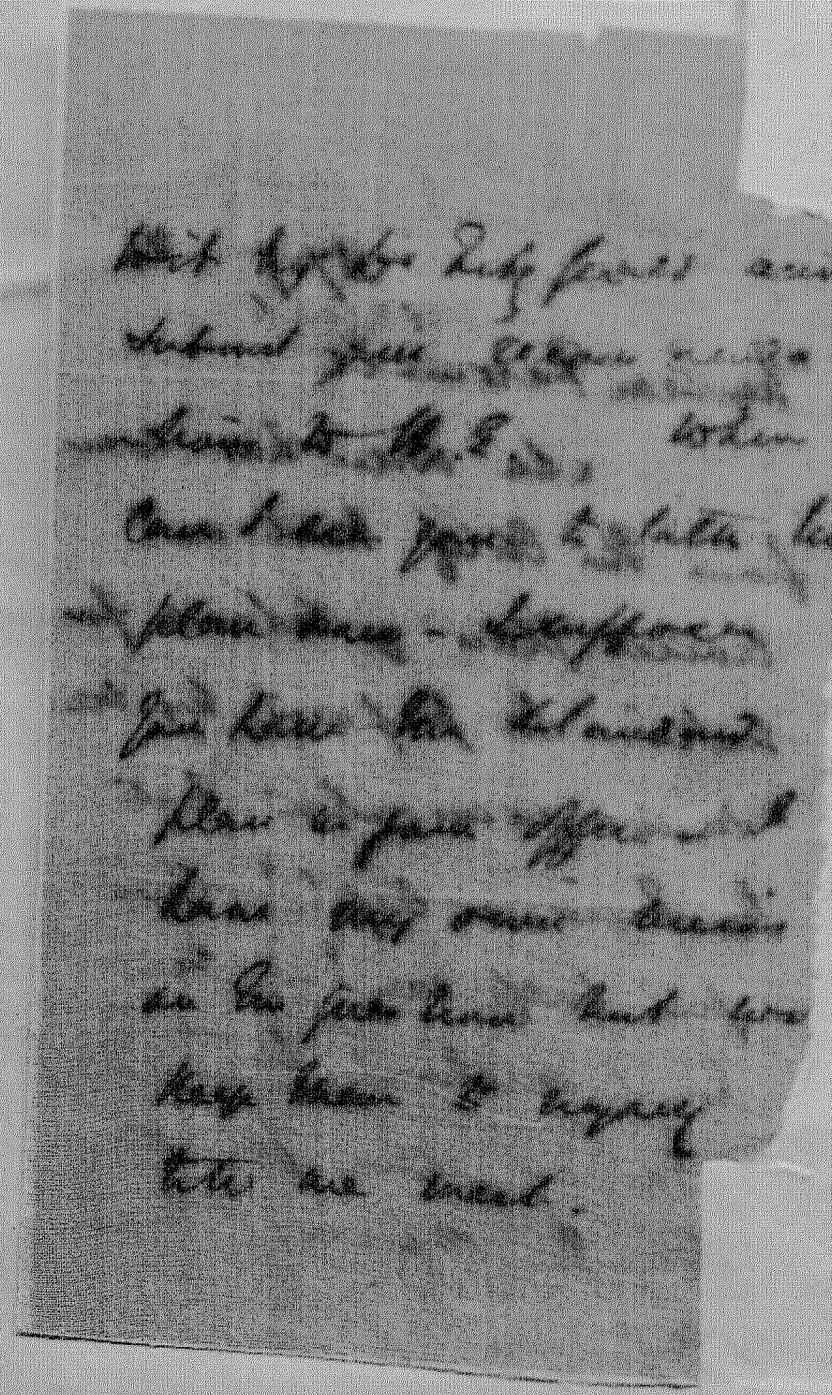
(By Order.)

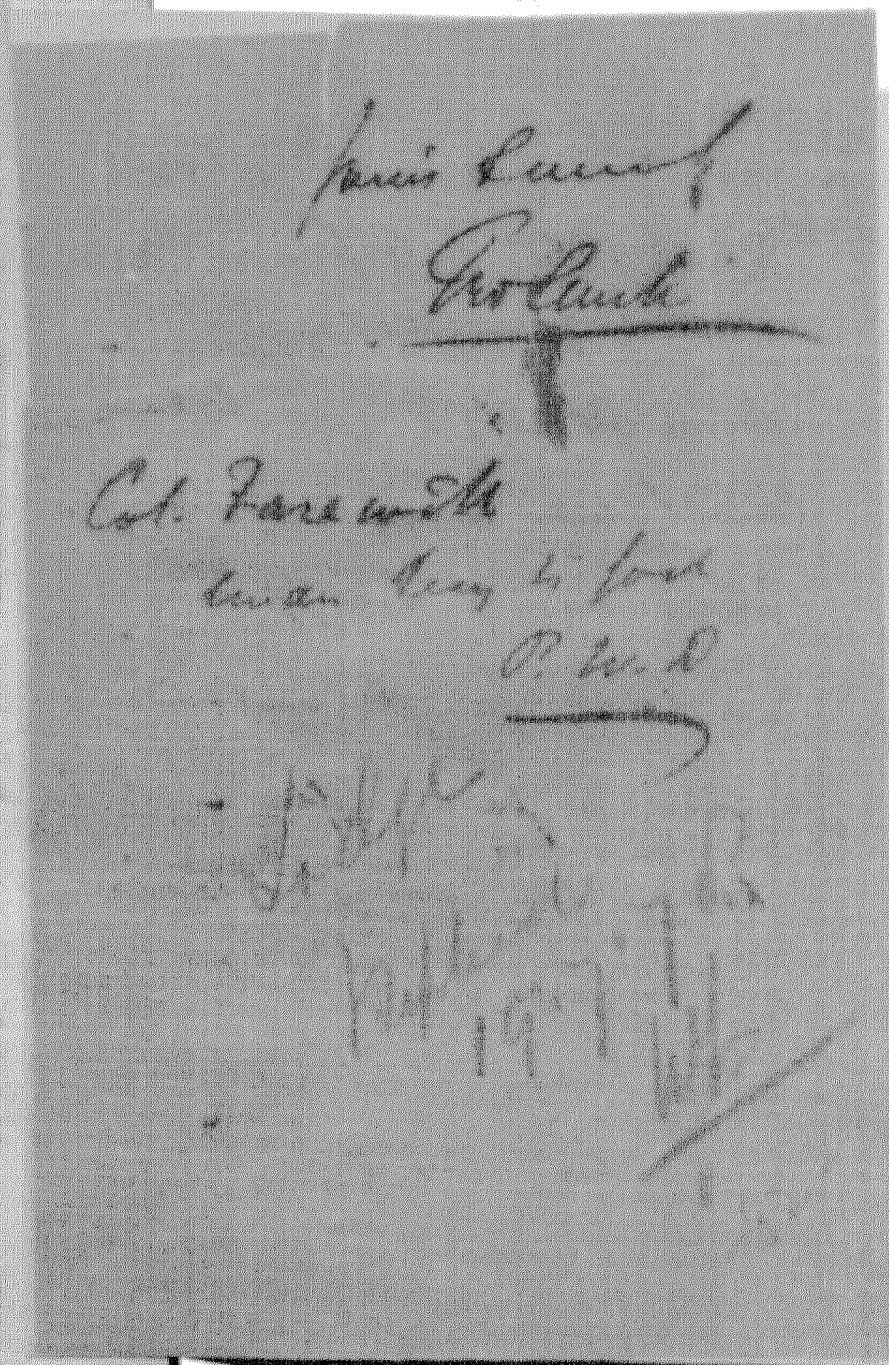




[illegible]

In Jewell Lotteries I don't know any better plan than that of the Hospital Lotteries of the 8th Ward, as altered last year. Each Company is entitled from the Map of Company by a pencil across of Chestnut below which there is an opening through which the Ticket for the Ticket accounts may be with drawn, but through which the Ticket cannot be drawn. The Ticket Holder must enter the Lottery Office. The Boys Lotteries should be managed by one or two Committees for each Ward which should be advisable to arrange that they should be able to enter and claim their Tickets Committees without having to go to the Office of Chairman who having to an actual Count of the Tickets of the Ward Ticket Holder should be entitled to a Ticket for each Ticket which he has drawn. The





D.O.

Feedom. 95

25 July 1878.

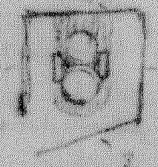
My dear Parnell. I send you by this days post a few words on the subject of Mahon Colonel post & think the tenders opened & on the 6th of the Contract papers for the post the opening of the tenders should be made by the Chairman of the Board & the Secretary from the 22 Rutland Sq and a formal Report given at my office from the tenders then opened & the Contract based by me & signed by the Chairman of the Board & the Secretary & then sent to the Treasury for their approval & sanction before the Contract is finally entered into with the successful tenderer. I think this course should be taken as it is very important that the Contractor should be kept at his proper work & under the control of the Board & the Secretary & that the Contract should be carried out in the most satisfactory manner. It will also be necessary to make arrangements for the Mahon Colonel mail to be delivered at Foxford & Ballina, & Ballina for Blacksod Bay, & Belmullet for Blacksod Bay

a place for admission, one each and the table
present purchase - of 7. the table to have steps
just large enough for the feet, each two standard pieces
fitted each end and connected them, these are to be
connected from below by a wooden batten - These
arrangement is practically the framework and seen
in detail without knowing only the cross connecting
upper - it may be dismantled thus -



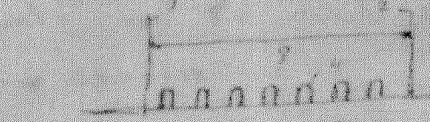
1. Chair or seating (except for small children
2. do
3. 3. Plan of foot rest
4. Very little or no room for plate glass
placed on to other top one under top

3. If, they not in two parts to be each for frame
complete in other for carriage, if in 2 pts
place, but be taken to a distance from the 2
at very slow other may cracked or broken fitted
up each end in any frame by other steps in
superimposed in the arrangement - the complete
must from be separated thus :-



1. 2. Pair handrail up about end 4'0" high standard at right angles to R.H. of the screen 3 sheet iron 5' high which runs across the table R.H. a fixed screen to cover the table - the complement a other 3' or 3'6" screen

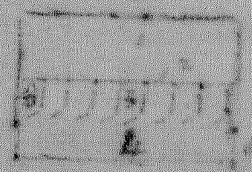
The table or seating may either be fixed or
for complement or place in a frame - the handles
may removed to be place them on the floor and then
as plan in the screen stays through to attach the body
to the complement when it is necessary to change
them if - the plan may modified by making openings in
the iron screen that removed the same form :-



1. 2. Pair handrail up
3 the iron screen
4. The openings in screen
5 The Rectangular frame



The ground plan of the Cathedral Church of St Paul



1 The Choir
2 The Cross
3 The Transept
4 The Nave
5 The Portico

which shall be as follows

The Choir and the Transept shall contain Seats for the Archbishop of Canterbury the Bishop of London the Dean and Chapter and the Archdeacons of London and Middlesex and also the Accompaniment shall be the Great Organ

The Portico and the Nave shall contain Seats for the Bishop of Rochester the Bishop of Bangor the Bishop of Peterborough the Bishop of Chester the Bishop of Oxford the Bishop of Salisbury the Bishop of Lincoln the Bishop of Gloucester the Bishop of Hereford the Bishop of Worcester the Bishop of Exeter the Bishop of Llandaff the Bishop of Bristol the Bishop of Norwich the Bishop of Ely the Bishop of Peterborough the Bishop of Chichester the Bishop of Winchester the Bishop of Durham the Bishop of Carlisle the Bishop of Lichfield the Bishop of Coventry the Bishop of Rochester the Bishop of Bangor

Thus ends the first volume of my Memoirs
I have by and by to write for another book
Many more of the events of the time and
Men.

Yours truly

Frederick Douglass

Col. Forney

Philadelphia

R 07

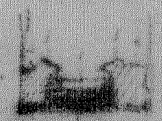
1 Aug 78
London 27 July 1878.

Dear Mr Parnell. The principal feature in the Land and Plan, which seem to be recommended are the following:-

1. The keeping back in arrear and for below what each man ought to pay during hard times and periods of depression.
2. The absence of penalties from the Treasury.
3. The open annual abandonment of fixed rents in favour of a Revenue agent.
4. The necessity which exists for the Receiver Entering the holdings and passing in front of the occupants when through clearness of a Contract and a certain [illegible]
5. [illegible] absence of a desire to come hard in favour of Confiscation.

31

These pounds are all cast on a pavement by
the carpenter on the floor below — the front
plan for Chalices or Pendings can be placed in
a trough or on a Plaster pavement blocks can be
imbedded in a layer of any Cement as the floor of
the Compartment — A section of the Compartment
through one of the Pendings may be roughly
depicted thus :—



Where
The Compartment is to
be constructed there do the
The Pendings Plaster or
Cement is a cracks & defects
are traced —

1. Pendings Cracks & Holes Repaired
2. Floor Cracks Repd.
3. Edging Joint Repd.
4. Length Lead Pipes & Pendings
Pipes being Placed in
Position

Lead Pipes & Pendings Plaster ought to Clean the Floor
Joint & the Flooring —) Near the Rear & the Compartment
a slightly elevated edge around Pendings Floor
Pendings and the Passage of the Pipes —

Cement Floor or Plaster Pendings
ment the Pipe Passing of the Pendings ought to be
Repaired for — If Pendings Cracks Holes Cracks the
Pendings

Lead Pipes for Pendings as Pendings and for Pipes for
Pendings Pendings to the Pendings Pendings for Pipes
Pendings Pendings to Pendings Pendings & the Pendings of
the Pendings and Floor Pendings Pendings to Pendings &
Pendings and to Pendings Pendings Pendings Pendings and the
Pendings Pendings Pendings Pendings Pendings Pendings Pendings
Pendings Pendings Pendings Pendings Pendings Pendings Pendings
Pendings Pendings Pendings Pendings Pendings Pendings Pendings

of properly carried out, but if neglected it
is about the worst system conceivable.
The essential features of this dirty evil system are
the excess- and evil and unspeakable suffering —
the case of illegitimate children, their mother and
children should be educated & cared for
by the Fathers and as soon abroad
as the mothers Father should undertake
should be made for Children — & the all Fathers
can't low should properly need — Hence working boys
parents taken Home learned an industry
concentration with Home from D-A-G
Theobalds who has paid much attention to this
subject and whose active practicable remedies
have met with D^r Kelly's full and hearty — Hardy
letters Home papers and Pamphlets D^r Kelly's and
all from Lewins — D^r Theobalds fine name
Keeper Hand upon many "her Albums which is
perhaps "Fathers — "Each Father should be
thoroughly ashamed known & mentioned when

* the daughter or mother
should form part of
the Family

of Hand but under cover Many freely agreed
to pass on — The unexpected proved not to be
realised for women whose Fathers ought to have
educated on the Home plan. The Home Education
should be after to the Boy both a credit & help
Parents of the Boy many months a Year Home
ought to placed over of — the Father in front of
the Father Home learned to spend — Boy ought
Home Out and Many & Afternoons provided
for — Mothers and the Home to freely used —
and at night the Father should be early Retired —
The Cart which brings the Boy Coals should be
a Platform one fitted with Two Boxes — the
Boy on each Foundation should Coupon found Each
Home for Boy Coals to Home the Home Coal Boy
Removes the Foundation and returns Each Day
Each — The arrange Coals Depots the Coal and
Firewood & Sweeping and Removal expense Boy
about Expenses — The Coal Coals System
perfectly carried out & the Real Father to receive

renewal of the Bar and expiration of the Recognizance shall be effected.

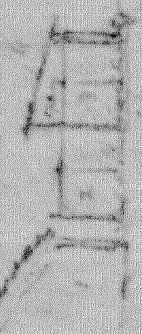
Should any further Proceedings become necessary under the Lodgers Act for Loans Below Fifty Pounds the more important Persons on the Register Loans in Each Case will be informed before Jan.

Jas. Lennard

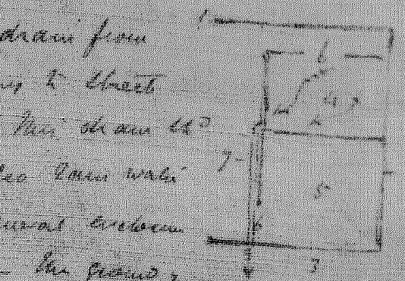
Chas. Clark

Readers. 1st Augt. 1878.

O. L. Sheel Capt.

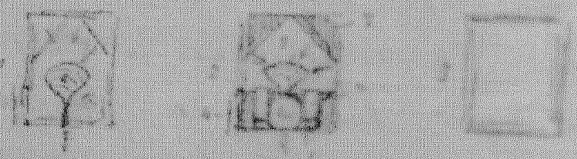


all foreigners taken & prisoners Remarks for Gen
Regimental Colours - Each Regiment to have
- In the Capture & Recapture there are
but but Colours attached - Each Regiment of
Regiments should be provided with Two Colours
one entirely for Skirmishers and four other (similar
for each) for Regimental Colours - These might have
Gun be alike Colour - Distinguishing Mark of
Regiment - Some further Regt Regt & Co -
Men carried for Men & with the Number of
which Regt Men Can more easily be Detected
Arrangement proper for Gen Gen Guard Picket
Various Regiments and to Gen Gen Guard
Camp and efficient - Regt Regt Regt for Gen
Colours Gen Colours and Quarters for Gen Gen
Sketch -



1. Gen Gen Gen Gen Gen Gen
2. Gen Gen Gen Gen
3. Gen Gen Gen Gen Gen Gen

Coloring Angles to Circular Glass



No 1. Shows the Glass of the Outside glass
towards (A) a Chase Rib for the Casement
for Lining and Split Astragal Bars
- for fixed Glass working the Lead from the
Outside and Lay Cement in a Groove
with Lay Putty outside

No 2 shows a Glass Chase to Lay Lead
Leaden Lead to which is fixed a
Leading for the Reception of the
Glass, Two Feet Lead part No 3 shows
for Any Lead, No 4 Lay Lay for Lead
to front of the Glass. Lay Glass Lay
Lead Lay Feet Wood is kept separate
from the Lead Lead and Lay Feet
is Carried and Lay Glass Lays a Lead
Glass Lead is Lay Glass outside
Face Astragal Lay Glass over Lay
Lays Lay Lays Lead Lay Astragal

Glasgow
September 5th 1870

Sir Sir

Read the Lead Lay Lay Lay Lay Lay
Lead Lay Lay Lay Lay Lay Lay Lay
Lead Lay Lay Lay Lay Lay Lay Lay
Lay Lay Lay Lay Lay Lay Lay Lay
Lay Lay Lay Lay Lay Lay Lay Lay
Lay

SURGEON-GENERAL'S OFFICE,
Indian Medical Department.
Fort St George
26th [illegible] 1876

Rev dear Reverend

Many [illegible] Mrs Peters
[illegible] remark [illegible] on the
subject of Native Converts
- If he [illegible] refers to
[illegible] I cannot help
[illegible] for [illegible] opinion
[illegible] which [illegible] Peters
[illegible] Mrs [illegible]

SURGEON-GENERAL'S OFFICE.
Indian Medical Department.

Forwarded [illegible]

12th Nov 1878.

Memorandum on the proposed plans for a Cavalry and Infantry for a Depôt Unit.

1. The single plan and sections are returned herewith, [illegible] and a final plan will be submitted at Col Parnell's early convenience. It would be well to introduce there Unit arrangements in these Cavalry plans that it could be used for Infantry Depôts & Regimental Units and have a simple system of drainage arranged there for, and there separate arrangements for Cooking &c. in the Infantry Depôt. Cavalry should be a little higher than the Infantry and each should be [illegible] that one [illegible] - the drains of the Cavalry should also not be the same

If there shall at least [illegible] the Boarders Reading
shall not [illegible] [illegible] [illegible] and shall
be well [illegible] on the [illegible] [illegible] [illegible]
be [illegible] [illegible] [illegible] [illegible]
be covered in [illegible] the floor shall be [illegible]
be the Reading shall be [illegible] [illegible]
the [illegible] and [illegible]

2. The floor of the [illegible] shall be [illegible] and
[illegible] and shall be [illegible] that it [illegible] in the
floor be [illegible] deep and be placed so as [illegible]
the [illegible] [illegible] [illegible] [illegible] [illegible]
the [illegible] into the Reading [illegible] [illegible] on the
[illegible] V shaped [illegible] [illegible] [illegible] [illegible]
[illegible] the [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

From

P. W. D. 8

No. 939 Y. of March 1879.

To The Surgeon General

Sanitary Medical Department

Fort St George January 1879.

Sir,

With reference to your annual
Memorandum Official letter, Nos 4 to
Nos 7 forwarded herewith
estimates and specifications of
incidental pattern of temporary
and permanent latrines for native troops
and request that, if approved by
you, they may be returned with
your countersignature.

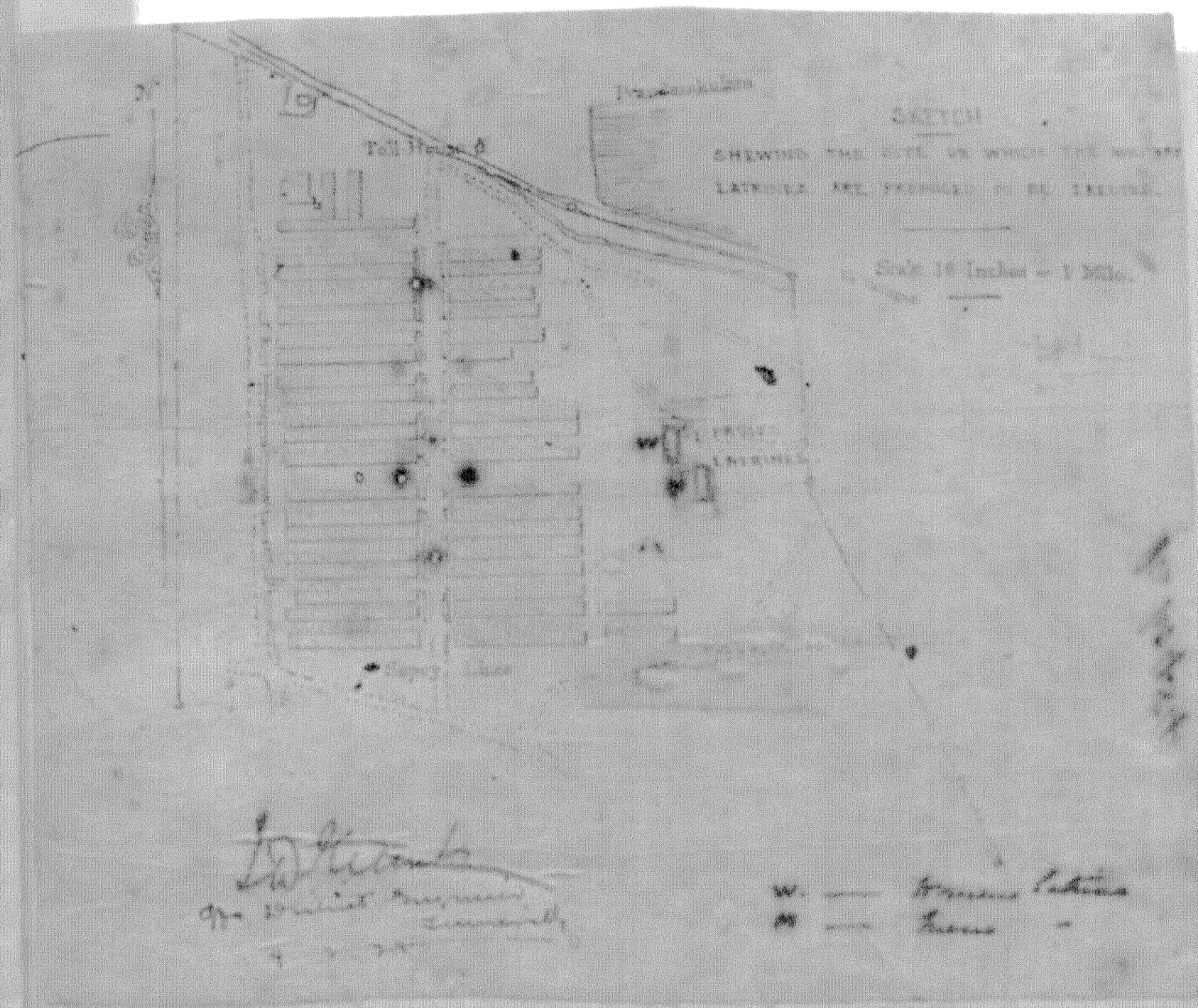
Your most obedient Servant

[illegible]

Col. R.E.

Ag. Dy. Chief Engineer

P.W.D.



Quartermaster-General's Office,
Head Quarters, Edinburgh
6th July 1878.

No. 4915
4916.

From

Brigadier-General H. O'Connell,

Quartermaster General.

To

Surgeon General A. Smith, C.B.
Chairman of Medical Department &c

Sir,

I have the honor by order of Genl Sir Garnet Wolseley to forward the accompanying Copy of Colonel Commanding Royal Engineers Letter No 1/1/1 of the 4th Inst: and Copy of Surgeon General Hogarth's letter of the 5th Inst: on the question of Hospital accommodation for Natives.

2. His Excellency the Commander in Chief considers that there is much reason in Dr Hogarth's objections to the present Scheme of plans & he would be glad if the Royal Engineers would see Dr Hogarth on the subject.

3. His Excellency would suggest that you communicate with the Royal Engineers to prepare a series of plans which might be submitted to Government for consideration of the present scheme of Hospitals.

I have the honor to be
Sir
Your obedient Servant
H. O'Connell Brigadier General
Deputy Quarter Master General

of the Deputy Surgeon General of the D
upon this point.

The Report of this Officer contains
a Plan Letter copy appears to have accompanied
Requisition objected to & a description that I
have received Medical Stores & Hospital
Equipage in the Plan and Returns of
this Army, until the receipt of the Commissary
Gl Commander in Chief Orders.

The Letter of the Deputy General
Commissary was referred to on this occasion
since it will be found annexed to your
Report Number Letter No 2 Page of the Appendix

The Requisition &c on the Commissary upon
which Plan, in all its details was
designed by the proper Staff Officer of the
Army, before the Appointment of Deputy
Surgeon General of this Division.

I observe upon this subject
that in the Letter No 2 see Page
of the Appendix
that I conceive the
case of the Receipt of the Ordinary
Stores, in the absence of any Instruction to
Regimental Surgeons are supplied in
any other Service passing from the Depot
the Returns are settled
Each to their Respective Hospitals
from the Month to
the
Gen Genl Orders

L Pickett
Asst. Genl
Commanding Dep. Quarters

Copy

Office of the Inspr. Genl. Fortifications
Fort William 7th Dec.r
Bangalore 18th June 1836

To
The Lieut. General Commanding
Presy. & Dinapore
Bangalore

Sir
I have the honor to acknowledge the receipt of letter No 1236 of the 18th Instant from the Asst. Qr. Master General forwarding a letter from the Standard Plan of Station Commt. dated the 4th Instant, and from the Deputy Commr. to the address, and bearing date 6th Instant on the subject generally of the Stations as shewn in the Plan and letter referred to, I beg leave to submit the following extract from my last Annual Report which embodies my objections to the Standard plan of Cabins for Stations as at present carried out at Bellary.

"Cabins for Natives of this Presidency at any Rate) Cannot be too simple in their arrangements. The possibility of Incendiarism during a Riot also should not be overlooked. I do not consider a Minimum of 16 feet long by 12 feet for the Cost, inclusive Chattee Earth Floor and Mud Walls between them. These are the Invariable Furniture of a Native Cabin Whatever else may be added a Range of Cooking Accommodations &c but these are Essential and Element that should not be allowed or omitted.

"(6) In the last Return of Cabins how built for Native Followers at Bellary

"Stipulations

[illegible] a person to [illegible] on the Island [illegible]
[illegible] Inhabitants [illegible] as many Rafters for the
[illegible] Roof, [illegible] will go [illegible]. The [illegible] and
Thatch-boards, instead of being [illegible] on the
[illegible] for the Thatching, ridge or water shed as it
may be called, or else the Rain will be on the Side
where it ought not to be, the Thatch is laid one
Corner fashion, while the Joists & Rafters
[illegible] it are [illegible] to Evidence that the Colonists
in favor of going through are unanimously prepared
and that Materials of Stone will abound for
Rafters.

Col. Nicholls's Suggestion in favor of the Letter
Race not [illegible] to be [illegible] Meeting of those
Objections, that would be [illegible] one Difficulty
for Other, that by no Means Certain that Lightning
[illegible] a Mischief to the Persons [illegible]
Volume so Charged, would avoid the Rafters
[illegible] he would provide, and if they did
not, a Severance indeed to the Retch
[illegible] the Castle Slope has been found most
[illegible] to [illegible] with Accomodation
Room [illegible] Summer's Season upon the
Landing Middle, and when a Tornado or Strong
Breeze, either the Dark, he will remove hastily
[illegible] about the Trotter, [illegible] with
[illegible] Compass [illegible] to the Shore
and Lastly [illegible] Jan Cruiser [illegible]
[illegible] to [illegible]. Meeting the Lines the
Objections for the Fort under Review [illegible]
[illegible] Tenable for any but Harmonious
Inmates the Colonists upon Return from
[illegible] to Windward [illegible] the Island
[illegible] on the East [illegible]

to observe the
Engineers Marches on
the Chart and Plan
that he proceeds

[illegible]

before Examined would Answer.

On the other Hand must be Chattles and a
Ship just large Enough for the Food at either
Stage of Inhabitants Cattle which may a Man Graze
Herd, of Inhabitants Cattle which may a Man Graze
and he cannot go along in other respects except
intentionally.

I Consider Common glazed Chattles the most
suitable Receptacles. They are cheaper than
Iron, cleaner than Wood, and less Durable than
Either. The last Quality, both open an Inducement
Advantage, rather than a Hindrance as it induces
them a Frame becoming Offensive by long
Continued use, and lastly they can be Thrown
on any Passage or Bazaar

I have the Honor to be &c
(Signed) P. P. Fitzgerald
Dy Surp. Genl. & Insp. D.
Dy Surp. Genl. & Insp. D.
Inspector &c &c Ditto

Lieut Colonel

Assistant Engineer

GOVERNMENT OF MADRAS.

MILITARY DEPARTMENT.

20th September 1878, No. 4899.

Barracks and Buildings.

Read the following papers :—

No. 303. *From Lieutenant-Colonel R. B. KENNEDY, District Engineer, Malabar, to the Chief Engineer, Roads and Buildings, Madras; dated Calicut, 3rd September 1878, No. 61.*

In reply to your memorandum, No. 535-T, dated 27th instant, I have the honor to state an estimate,* amounting to Rupees 3,180, drawn out on standard plan received with G.O., No. 731, dated 22nd March 1878, and a site plan, were forwarded to the Officer Commanding, Quilon, for transmission to Government through the Military Department on the 14th ultimo.

2. The Commanding Officer, Quilon, has been requested to hasten the despatch of the plans.

*Latrine for Native Infantry regiment at Quilon.

No. 4033.

Transferred to the Military Department, with the remark that Budget appropriation of Rupees 3,150 cannot be utilized on the work in question until the plan and estimate have been sanctioned.

FORT ST. GEORGE, *9th September* 1878. (Signed) E. A. FOORD, Colonel, R.E., *Secretary to Govt., P. W. D.*

No. 4665.

Referred to the Acting Commander of the Forces.

OOTACAMUND, *10th September* 1878. (Signed) J. MICHAEL, Colonel, *Secretary to Government.*

No. 304. *From Brigadier-General H. O'CONNELL, Quartermaster-General, to Colonel J. MICHAEL, C.S.I., Secretary to Government, Military Department; dated Ootacamund, 18th September 1878, No. 1130.*

In returning the correspondence referred under your No. 4665, dated 10th instant, I have the honor, by order, to state that plan and estimate for a latrine at Quilon have not yet been received in this office.

2. It is very desirable that the grant for latrines at Bangalore, Quilon and Palamcottah should be appropriated for those buildings this year, as they are much needed.

3. An estimate for latrines at Palamcottah has been received, but has not been approved, as it is on the standard plan of March 1876. Serious objections to this plan were recently raised by Dr. Fitzgerald, the Deputy Surgeon-General, Mysore Division. His report was forwarded to Surgeon-General Smith, with a request that a revised plan might be submitted for approval. This has not yet been received. As soon as it is, it will be submitted to Government.

No. 305. ORDER thereon, 20th September 1878, No. 4809.

The plans and estimates for the latrines in question should be deposited, as the grant for these works cannot be utilized before their submission.

(True Extract.)

(Signed) J. MICHAEL, Colonel,
Secretary to Government.

To the Quartermaster-General.
" Public Works Department.

Encl. A. Rate.

Inv No 3891 of 5th Feb 1878.

Communicated
to the District Engineer
Malabar.

A.C. Scallan

Assistant Commissioner

Assistant Engineer

Assistant Division

Abstract Estimate of Rs. 9,178-79

Headquarters — Imperial

Road _____ Ordinary

Bridge _____ Original work

Main Road _____ Subsidiary

Sub Road _____ Subsidiary Bridges

Section ___ Accommodation for General purposes

Work — Constructing a Latrine of the Leads for the use of the Inmates in the Lines of the 37 Regiment Queen's Own ___ Palamcottah side Deep Foundation and Superstructure upwards on the 60 M.N. pay of 22nd March 1878

Quantity	Particulars	Rate	Amount	Total
62½	Cubic Yards Masonry foundation in lime mortar			
17½	Ditto in Chunam for floor			
486	Square feet Rough work in Chunam			
113	Square Yards Coral Rubble work in the floor			
1008	Rupees with mark for the Chunam			
57	Square feet Teak wood Sunshade fixed in the Chunam work complete			
2000	Rupees for Stone masonry in ___			
116	Ditto ditto			
2672	Square Yards of Stone masonry in dressing			
10	Square yds. Grouting with cement ___			
9744	Square feet White washing inside and Colour washing outside ___			
144	Cubic Yards Earth Work in ___			
18	Rupees for three Chula ___			
2	Ditto ___			
2	Ditto ___			
1	Iron Rupees for ___			
2	Iron buckets for ___			
2	Wooden Seating Cane ___			
2	Iron Chains, including handle ___			

Brought forward ——— 10Rs 7.0

2 Iron Gratti frame 1'ft 6in x 2' etc ——— 1 x — 2 —
2 Rattu Cages with Iron 3'x2'x1' ——— 1 x — 2 —
4 Iron Rack Legs ——— — x 12 x 10 —
2 Rackets Rs ——— — x 2 x — 2 —

——— 10Rs 7.0

Bytta Establishment ——— 2.5 P
Depository Charges ——— 5P

——— Rupees ——— 13.00

Add 1/10 of the same deduction for females. ——— 1300

——— Total amount of Estimate Rs. 2600

I do hereby certify that the above Estimate provides for having this necessary & that no supplementary works will afterwards be required.

District Engineers Office
Trincomalee
20th July 1892

S.A. Kellaf
Offg. District Engineer
Jaffna

By A.C. Lands Office Kts
Trincomalee 20th July 1892
(Signed)
J. Blundell Collector
By Command

Quartermaster-General's Office
Fort St. Catherine's
the 2nd September 1878

No. 1263

From

Brigadier-General H. O'CONNELL,
Quartermaster-General,

To

Colonel J. MICHAEL, C.S.I.,
Secretary to Government,
Military Department.

Sir

In continuation of this Office letter
of the 1130 date the 18th instant, I have the honor, by order,
to state that the Surveyor General, Indian Medical
Department has reported that his notes and suggestions
on the subject of the Standard plans & Estimates
for station Troops have been forwarded to the Deputy
Chief Engineer.

2. I have therefore the honor to forward
the prepared Estimate (£13,200) with sketch of site
for 2 Lakhmies at Palamcottah and request the favor
of your transferring it to the Secretary to Government
Public Works Department, in order that he may com-
municate with the District Engineer regarding revision
of the plans and Estimate. The site fixed for the

P.T.O. Lakhmies

latrines is approved by the Commander of the Forces.

B. Grants for these latrines and for latrines at Bangalore and Quilon have been made in the Budget for 1878-79.

C. As soon as the Standard plan has been revised, the construction of other latrines which are made of will be considered of

I have the honour to be,
Sir,
Your obedient Servant
A. H. Laurence Lieutenant.

Quarter Master General.

L.C.

Rivers & Harbors Appropriation Act of 1915.

Project for Improvement of Harbor at Port Clinton, Ohio.

Estimate of Appropriation required for the fiscal year ending June 30, 1916.

Amount required for completion of contract with Cleveland Stone Company for construction of breakwater, as authorized by the River and Harbor Act approved March 3, 1913, and modified by the River and Harbor Act approved August 8, 1917 ..... $100,000

Amount required for completion of contract with Cleveland Stone Company for construction of breakwater, as authorized by the River and Harbor Act approved March 4, 1913 100,000

Amount required for completion of contract with Cleveland Stone Company for construction of breakwater, as authorized by the River and Harbor Act approved August 8, 1917 .....

PLAN of LATRINE

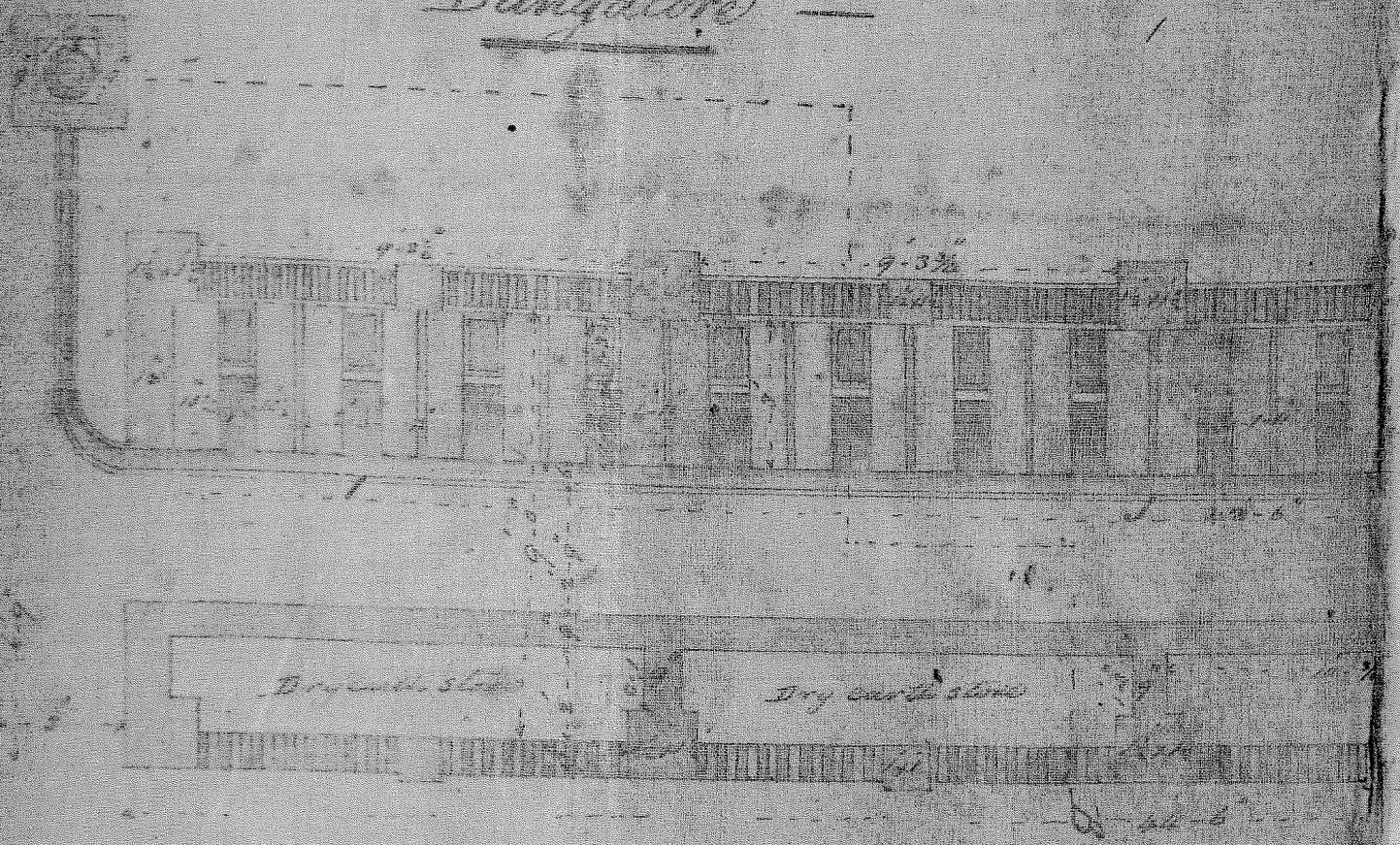
for

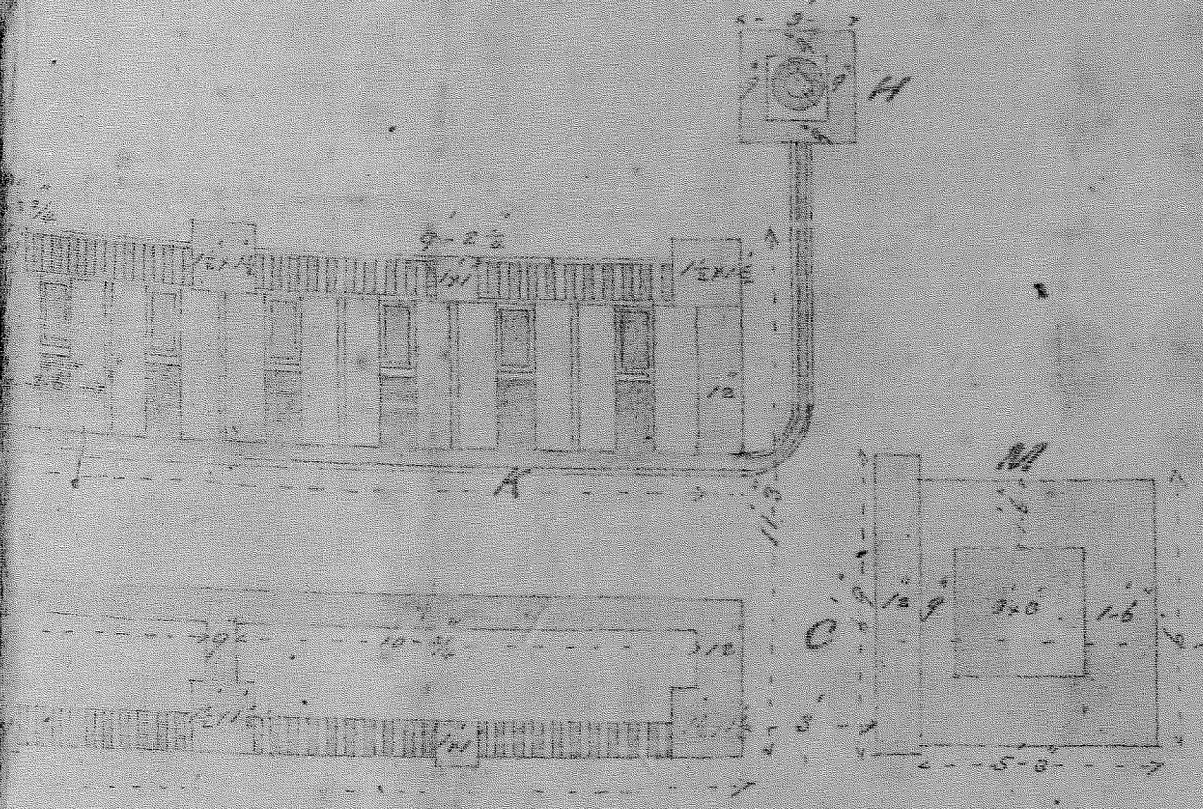
16 Males

Native Infantry Regiments

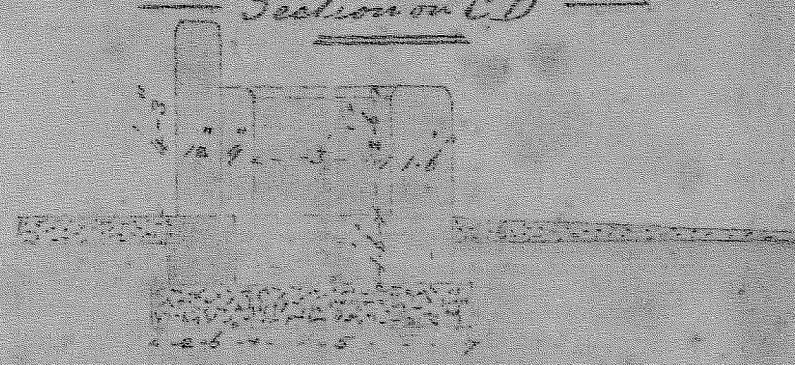
at

Bangalore





Section on CD



References

G.H. Buckets to receive rain water from Channels L.M.N

L.M Water Cisterns

Signed

Colonel R.E.

District Engineer

Signed

E.A. Foord Col R.E

Inspecting Engineer for Buildings

Office

1878



Extract from Inspection Report on the 36th Regiment N.I. by Deputy Surgeon General C.C. to Lt General dated 26th November 1878.

Para 2. Sanitary condition of the buildings in connection with Barracks, Hospitals &c.

There are four Regimental Latrines complete, three for horses and one for cattle. The place is a wooden erection of the trench closet in which a rectangular wooden trough is established for the whole length. It does not work satisfactorily. The trough is apparently never removed to be cleaned and in consequence is and always used over where in order. The closets for standing on are about three feet in length, and the arrangement standing at the rear end and using the front closet for a footpath. The solid and fluid excreta are thus mixed up together on the place intended only for the latter. The principal defect in these Latrines is the length of the closets which gives the men (and women too) a choice as to where they will stand. These should be

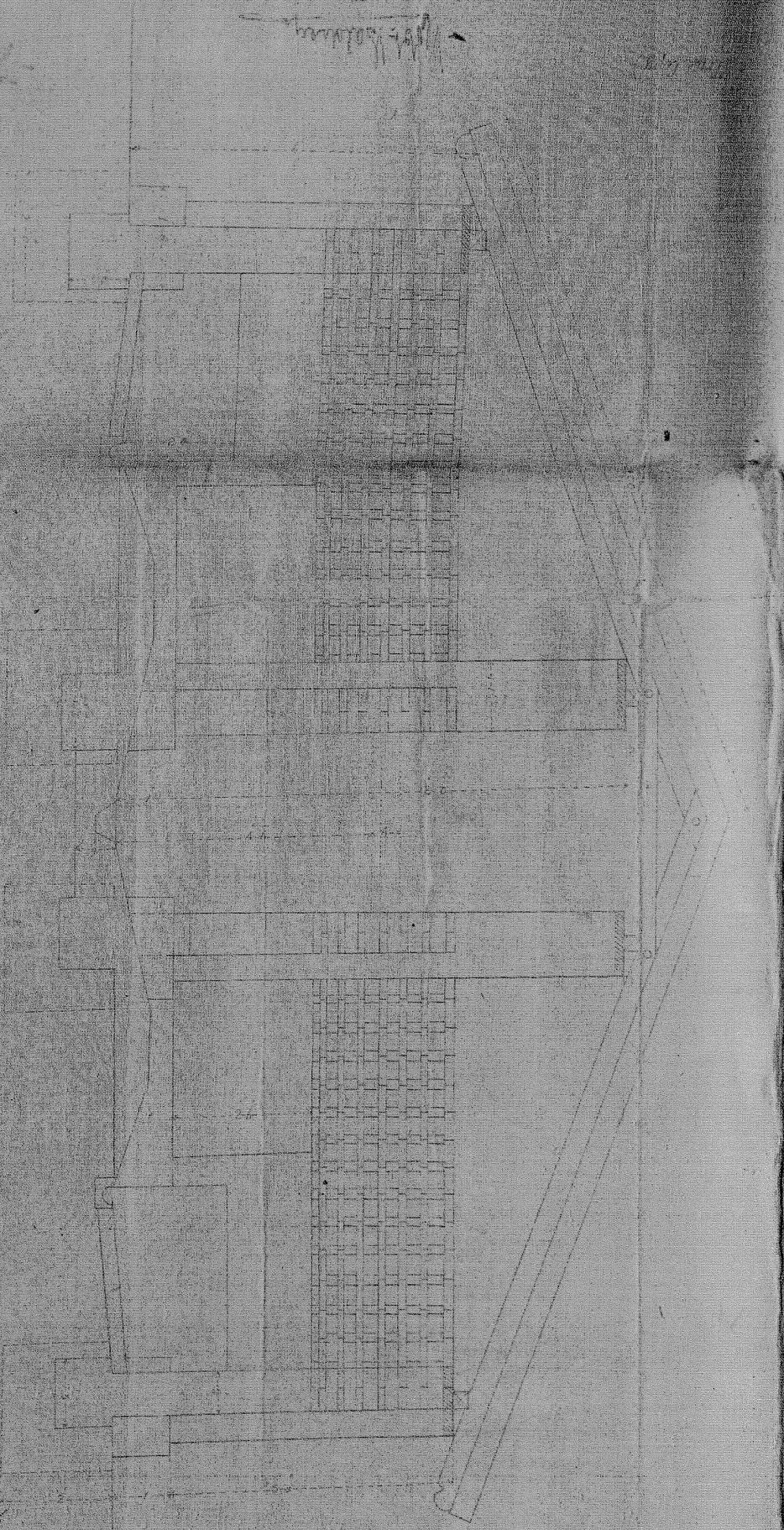
no choice in the respect. The water flows along a groove in front of the Constantia vats & carries with it the Place was selected for any one else but even then it could be carried at some distance.

No 890

Sine Actual forwarded to the Chief Engineer D.P.W as an Appendix to letter No 648 of 29th November 1878.

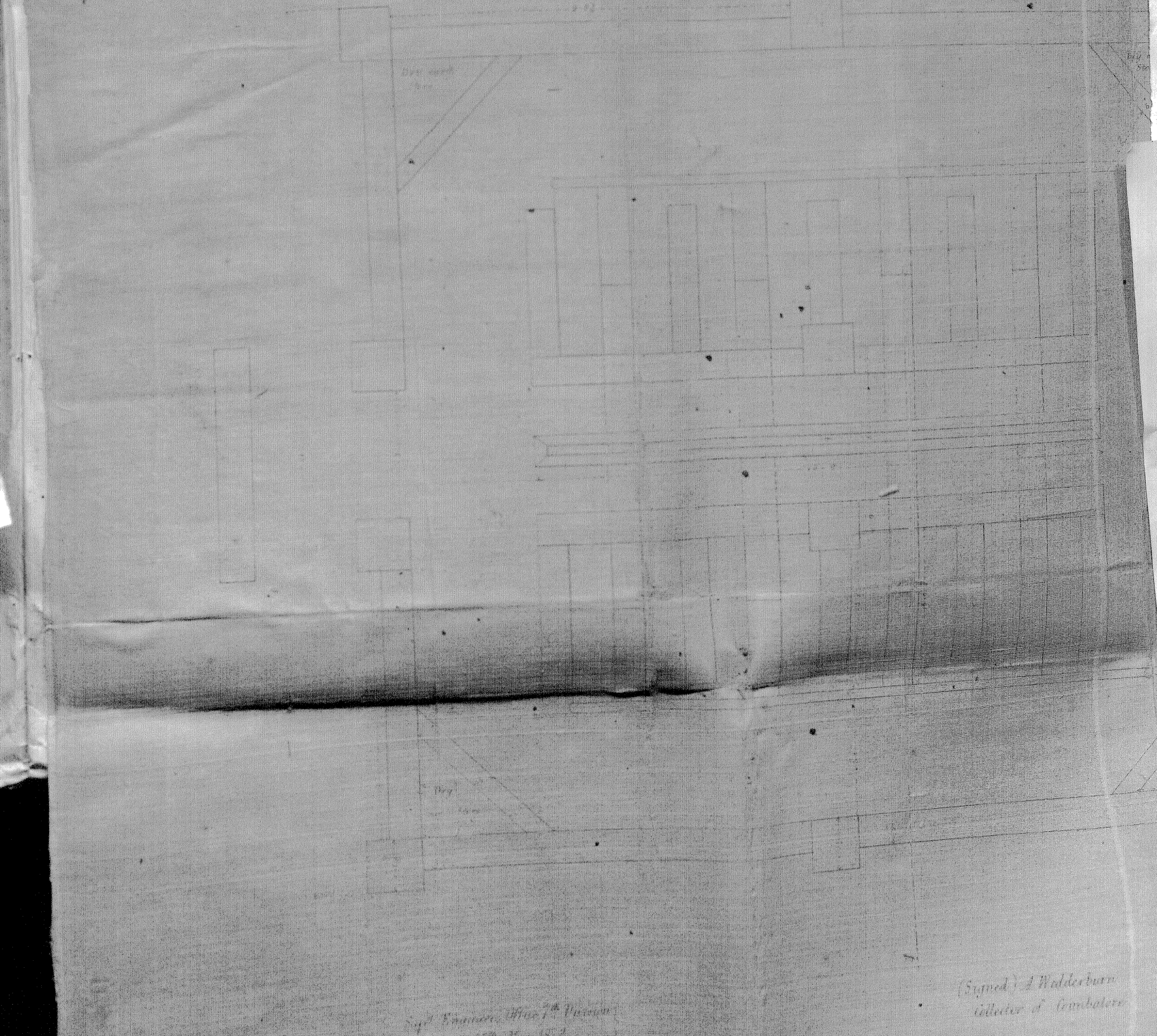
Lt Col George for Surveyor General
17 Dec 1878

17



REVISED PLAN OF A LATRINE.

Scale 2 Feet to an inch.



(Signed) J Waldeburn
Director of Surveys

Sept Engineers Office 1st January
Received 25th Dec 1812

No. 151. Read the following letter from the Superintending Engineer, 7th Division, to the Secretary to Government, Public Works Department, dated Camp at Ootacamund, 3rd July 1872, No. 68:—

With reference to your memorandum No. 36 of 6th instant, I have the honour to inform you that the correct amount of the estimate for a latrine of twelve seats, according to the plan of the Coimbatore Municipality, is Rupees 335, as mentioned in the comparative statement forwarded with my letter No. 485 of 10th February 1872, and not Rupees 300 as noted in your memorandum under reply. In the original plan submitted of the Coimbatore latrine, I find that two outer screen walls necessary for decency sake to exclude the outlets from view were omitted; including the cost of these walls the estimate for twelve seats amounts to Rs. 500, for which amount a latrine, with similar accommodation, of the revised design now submitted can be built; the revised design is only for eight seats, as it is ascertained that this number is more suitable to municipal requirements, and the estimate amounts to Rupees 400 and not 450, which amount was entered in the first estimate in consequence of an error in the rate for roofing. In the revised design the compartments are divided by a much stronger wall, being 9 inches thick in lieu of 4½ inches as shown in the original design, which, it has been found, constantly require to be repaired. Under these circumstances I trust the revised design may meet with the approval of Government.

No. 151. Order thereon, 9th August 1872, No. 1,887.

CIVIL WORKS, No. 10.

The Government have no objection to the adoption of the revised plan of latrine recommended by the Superintending Engineer of the 7th Division and approved by the Collector of Coimbatore, wherever it may be deemed more suitable than the plan authorized in G. O. No. 792 of 13th March 1872.

2. It is noted that a twelve-seated latrine on the latter plan is now estimated to cost Rupees 500, and that similar accommodation on the revised plan will cost the same sum, while an eight-seated latrine suited to municipal requirements will cost Rupees 400.

3. The original plan appears to be the more airy and better adapted for jails and large latrines; but as the revised plan, which is altogether under cover, may be useful in particular climates and localities, the Governor in Council directs that copies of it be circulated for information.

(True Extract.)

(Signed) G. W. WALKER, Colonel, R.E.,
Secretary to Government.

To the Superintending Engineer, 7th Division.
To all other Superintending Engineers.
" Chief R. B. Engineers.
To the Revenue Department,
" Judicial do.
Lieut. E. C. Stanley.

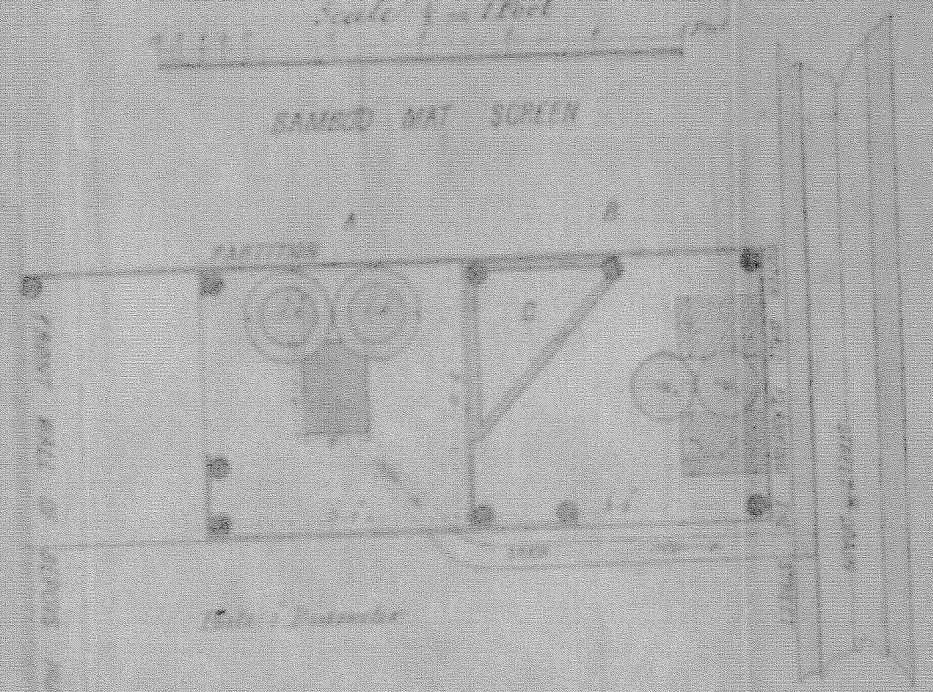
...ch Plan.

Bill of 1878 amending

PUBLIC WORKS.

Plan and Section of Lavatory and Privy for Sepoys Hut

Scale 1 inch = 1 Foot



REFERENCE

A — Lavatory
B — Latrine
C — Earth Box

Sepoys Hut

Lavatory Hut

Sepoys Hut

Lavatory Hut

Plan of a Standard Stone Screw Pier
Foundation & Screw to the Iron Columns
Necessary for the use of a Timber Superstr

Pl. 6

The Piers Standard or Foundation Screw
Cylinder Pile Columns & Screw. The Foundation
Screw to be of Cast Iron & Screw to the Columns
be Constructed of Timber Cut & Framed
Journeys & Scantle.

Pile

The Piles to be driven the Cast Iron Screw
Pile to the Standard Cylinder Foundation
well Secured. The Piles to be
of Timber Cut Square to the Screw
Cast Iron Pile.

Planking

The Cylinder will be Planked Cut & Fitted
Cylinder and Secured by Cast Iron Hoops
at Proper Distances as shewn in Section.
The Edge of the Planks to be Cut Tongued & Grooved
to fit Close & Each Plank to be Secured
the Standard

Flooring

The Floor of Platform Cylinder Secured
Round the Standard to Consist of Timber
Joists to be of Cast Iron Bearers Resting
Covered over with Planks the Planking to be Laid
to Speed & Close Jointed & will be Laid
Close on the Joist and Cut Lightly Round
with Battens Nail Down Close & Secured
the Whole Surface of the Platform to
be Securely Nailed Down on Battens. The
Edges to be Cut Off Square & Regularly Chamfered

Flooring

The Flooring of the Platform will be
filled with 6" Pounded Clay Puddle on
Pile, as shewn in Section. The Floor of
the Platform to be of Concrete well Consolidated
& Pointed with a Composition of Coal Tar
and Asphalte. The Floor will have a Slope
to the Lowest Part Leading to the Scour Holes

drain, a common wooden stool or flat stone to stand upon will be provided.

Platforms

Flat forms or foot posts of Sawn wood Say 1" x 8" x 6" in height placed 8' apart with two Chattas Pallah Bandhays, earth filled with clay Earth will be provided to Sue for Solid and the other for Pluid Specie, the Chattas will be Imbedded in clay Earth as shown in drawing.

Earth bins

A clay Earth bin Composed of Single Wood plank No 1" thick and 1'6" in height, will be provided in the Latrine as shown in drawing.

Painting with Composition

One ft all inside latrine and Lavatory, Earth bin, ye will be painted with Composition of Tar 2 Coats.

Chief Engrs Office
Madras
17th June 1879.

H.

Proposed Standard Estimate for Constructing Domestic Hut Latrine & Lavatory for the use of a Native. ——

3

Measurement No 1 B 2 Contd

Particulars.

Mud or Rammed Earth

1	1-11	1-0	0-5 — 9-7	Platform to Latrine ——
2	1-	0-8	0-4 — 5-4	Foot rests to — do ——
1	3-9	4-0	0-6 7-6 —	Flooring to — do. ——
1	2-3	2-6	0-6 3-0-3	Do to Entrance to Lavatory ——
			12-0-2	Cft of Mud or Rammed Earth ——

Brick in mortar

1	10-0	2-0	0-3 5 — —	Drain for Lavatory & Latrine ——
			5 — —	Cft of Brick in Mortar ——

Concrete

1	2-9	3-6	0-9 7-2-½	Flooring to Lavatory ——
10	1-0	1-0	1-9 17-6 —	Foundation to posts ——
			24-8-½	Cft of Concrete ——
1	6-	-	1-6 - 9 —	Cft of Jungle wood plank for earth bin ——

Bamboo framing & mats

1	20-	-	4-9 95	Superft Bamboo framing & mats ——

Asphalte painting

1	5-6	3-6	- 19-3	Floor of Lavatory & Entrance ——
1	23-6	-	1- 20-6	Bamboo mats 6ft. 1 ft all round ——
2	1	6-	- 3- 18-	Earth bin ——
			57-9	

Say — 58- - Superft of Painting the floor of Lavatory, earth bin & walling 1 ft all round a Cone Screen Enclosure & with asphalte & Tar 2 Coats ——

3" diam.	10	Bamboo posts ——
	1	Flat stone or wooden stool for Lavatory ——
	2	Gate posts ——
	2	Bandhays or Chattas including Tarring ——

Roofing

2	6- - -	2½ diam	2 Bamboo Purlins ——
1	4-9	4- -	19 Superft of Roofing with Bamboo rafters, Jungle Thatch & Cocoanut leaves ——

Abstract Estimate

Quantity	Particulars	Rate	Rs.	Amount	Total
122 3/4	Cubic feet of Undressed Rammed Earth including platforms	@ 4 -	Cft	- 11	
5	— Do — of Brick in mortar for drain	" 2 6	Cft	- 12 6	
2 3/4	— Do — of Concrete for Lavatory	" 2 8	do	3 7 8	
3/4	— Do — of Jungle wood for Caulking for Earth Work	@ 2 -	do	- 1 8	
10	Bamboo posts 3" diam	@ - 2 -	Ea	1 4	
95	Square feet Bamboo fencing 7' high complete	@ - 1 -	Sft	5 13	
58	— Do — of Painting the floor of Lavatory, Earthwork & walling 1 ft all round above ground (inside) with asphalte & tar 2 coats	@ - 8	do	2 6 8	
1	Flat stone or wooden block in Lavatory			- 4 -	
2	Water pots	@ - 1 - 8		- 2 -	
2	Bullays or Chatties including taring	" - 6	do	- 1 -	
	Excavating foundation			- 4 -	
	Superintendence & Sundries			- 4 -	16 6 9
	Roofing				
2	Bamboo purlins	@ - 2 -	do	- 4 -	
19	Square feet of Roofing with bamboo rafters, battens thatch &c complete	@ 6 -	Sqre	1 2 3	
	Superintendence & Sundries			- 3 -	1 9 8
	Total Estimate Rupees				18 - -

Chief Engr's Office
Madras
17th June 1879

93

2672
11-8-77

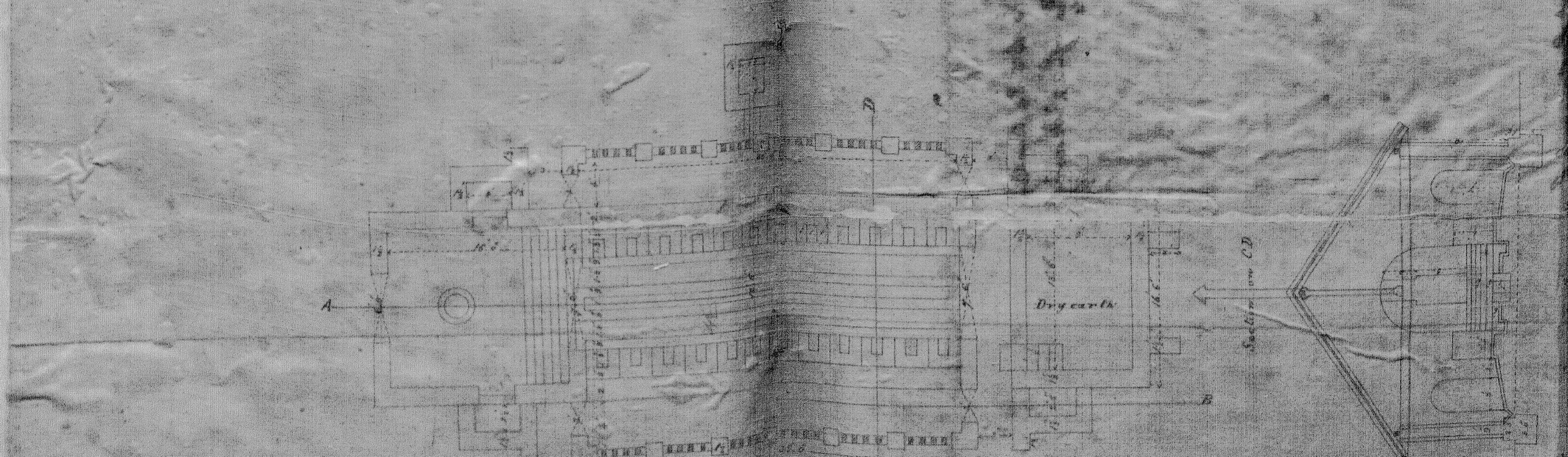
Plan of a Latrine proposed to be built

FOR THE

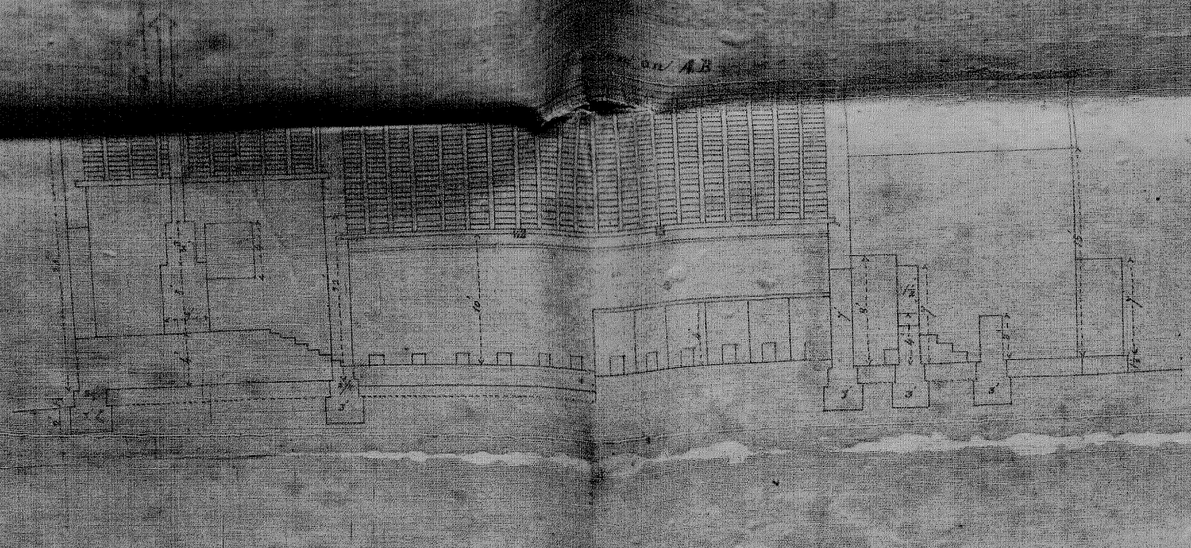
Native Regiment - Cannanore

Sect. Level of Foundation. Lateral Stone Enclosure

Amount of Estimate for two Latrines Rs 600



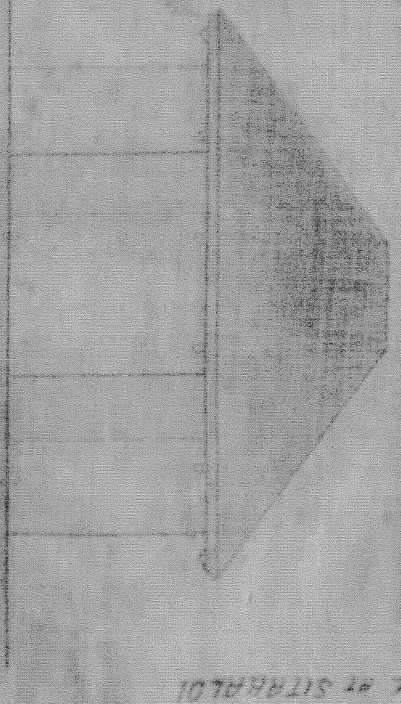
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B4



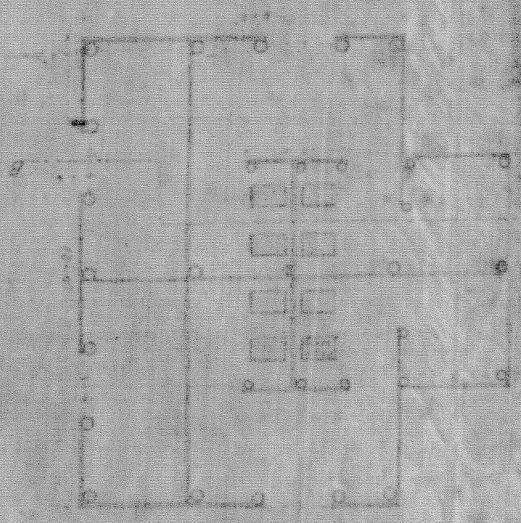
Wynaud Division Office
December 1878

Wm B. Kennedy
Lieut Colonel
Executive Engineer Wynaud Division

Plan of Factories Incognita
Latitude et Sitarealoi



Section on A B



Plan

Section

Plans of Factories Incognita
Latitude et Sitarealoi

Executive Engineer
Narcum Division

Yes: J. Lamontagne C.E.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

15th October 1878, No. 4,020 W.

General.
Account.

Read the following papers:—

No. 109-A.	From	District Engineer,	Ganjam,	dated	4th Sept.	1878, No. 51.
,, 6	,,	,,	Godavari,	,,	9th ,,	,, ,, 1,858.
,, ,,	,,	,,	Kistna,	,,	23rd Aug.	,,
,, ,,	,,	,,	Nellore,	,,	4th Sept.	,,
,, ,,	,,	,,	Chingleput,	,,	13th ,,	,, No. 131.
,, ,,	,,	,,	South Arcot,	,,	26th Aug.	,, ,, 191.
,, ,,	,,	,,	Tanjore,	,,	31st ,,	,, ,, 2,662.
,, ,,	,,	,,	Malabar,	,,	22nd ,,	,, ,, 57.
,, ,,	,,	,,	S. Canara,	,,	19th ,,	,, ,, 51.
,, ,,	,,	,,	Madura,	,,	11th Sept.	,,
,, ,,	,,	Salt Commissioner,		,,	9th ,,	,, No. 1,192.
,, ,,	,,	Director-General of Post Offices,		,,	26th Aug.	,, ,, 5,415.
,, ,,	,,	do. of Telegraphs,		,,	6th Sept.	,, ,, 3,502.
,, ,,	,,	Master Attendant, Madras,		,,	30th ,,	,, ,, 7,106.
,, ,,	,,	Military Department,		,,	21st ,,	,, ,, 4,945.
,, ,,	,,	,, Government of India,		,,	19th ,,	,, No. 668 A.C.
,, ,,	Telegram from the Govt. of India,			,,	11th Oct.	,,

BUILDINGS AND ROADS.

Schedule of the Probable Requirements of the Madras Presidency on account of Imperial Works for 1879-80.

Executive Division.	Projects. No.	Locality.	Description.	Amount of Estimate.	Completed Expenditure to end March 1879.	Estimate 1879-80.	No.	Remarks or References.
			CIVIL WORKS.	rs.	rs.	rs.		
			MILITARY.					
Bellary	1	Bellary	New gateway, guard-house, and the defences of Hugh Gallery.	..	..	4,000	1	Estimate awaited.
Do.	2	Do.	Bellary, Commissariat Department.	..	..	6,000	2	Do.
Do.	3	Do.	Bungalow for overlooking officer.	..	..	4,000	3	Do.
Trichinopoly	4	Rock fort, Trichinopoly.	Additional story to the quarters occupied by the Commissariat Department.	8,000	6,000	7,000	4	G.O., No. 1,351 W. of 4th December 1877.
Do.	5	Do.	Enclosure for gun garage with gun transporting portion standing 6 times in an angle and two flanges of the Gun Park, Rock Fort.	..	..	28,000	5	Estimate awaited.
Do.	6	Do.	Buildings for ammunition, guard, workers, magazine portion being among enclosure, 3 Store rooms angles and two flanges, all laid from Powder Factory.	..	..	10,000	6	Do.
Do.	7	Do.	Buildings for glazing, fixing appearance of powder, gunner, engineer and Powder at the Gun Powder Factory.	..	..	15,000	7	Do.
Do.	8	Do.	Buildings for sifting, packing, etc., with rooms, guard, charge room, watch, superintendent's quarters and Section, magazine, arrangement wall and well at the Gun Powder Factory.	..	..	20,000	8	Do.
Do.	9	Do.	Repairing existing portion of Infantry and gateways for residency of Master-gunner and Master-gunner at the Gun Powder Factory.	10,171	5,000	5,000	9	G.O., No. 178, of 13th June 1871. Item No. 16 of Class C works of budget of 1878-79.
Do.	10	Do.	Copper store in site of the magazine shed, Commissariat Department.	..	..	7,000	10	Estimate awaited.
Do.	11	Do.	Slaughter-house, Commissariat Department.	..	..	11,000	11	Do.
Do.	12	Do.	Quarters for station warders &c.	..	..	3,000	12	Do.
Chingleput	13	Poonamallee.	New double storied Barracks for 200 men, with out-houses.	2,00,000				
			Main gateway for do.	60,000				
			Do. for Artillery and	5,000				G.O., No. 2,316 W., of 28th May 1878. Plan No. 2,317 W. to the Government of India.
			Additions to existing buildings and boundary lines.	10,675	21,700	50,000	13	
				2,75,675				
			Deduct value of old materials.	4,675				
				2,71,000				

Schedule of the Probable Requirements of the Madras Presidency on account of Imperial Works for 1879-80—*continued*.

Executive Division.	Projects. No.	Locality.	Description.	Amount of Estimate.	Completed Expenditure to end March 1879.	Estimate 1879-80.	No.	Remarks or References.
			MILITARY—*contd.*	rs.	rs.	rs.		
Chingleput ..	14	Poonamallee.	Double storied hospital for 90 patients with out-houses.	102,000	96,000	2,000	14	G.O., No. 2,176, of 18th August 1876.
Do. ..	15	Do. ..	New cook-house fitted with a Duffs' range for the new hospital.	..	..	3,700	15	Estimate awaited.
Do. ..	16	Pallavaram..	New lines for a whole Native Regiment.	..	..	80,000	16	Do.
Do. ..	17	St. Thomas' Mount.	General improvements to Commissariat Godown.	..	..	3,000	17	Do.
Do. ..	18	Do. ..	Extreme Magazine at the Butts near the Gun and Master Batteries.	..	..	5,000	18	Do.
Salem ..	19	Ooscot ..	Alteration to forty horse stables.	..	..	6,000	19	Do.
Bangalore ..	20	Bangalore ..	Additional works in connection with Closer water-supply project.	66,223	52,800	14,000	20	Sanctioned by Government of India, Register No. 31 W of 1877-78, G.O., No. 350 W., of 16th August 1877, Item No. 15 of budget of 1878-79.
Do. ..	21	Do. ..	Quarters for Quartermaster sergeant, Royal Horse Artillery, Closer Parade.	4,253	..	4,253	21	G.O., No. 1,079, 24th June 1878, Item No. 1 of Class C works of budget of 1878-79.
Do. ..	22	Do ..	Cost of road from Trichy Church to Agram Barracks.	9,200	..	9,200	22	Sanctioned by the Government of India, Register No. 3 M/97 of 1874-75, G.O., No. 1,311, of 11th June 1874 and No. 285, of 19th March 1874. Item No. 8 of Class C works of budget of 1878-79.
Do. ..	23	Do. ..	Drainage of Native Infantry Lines.	14,400	13,400	1,000	23	G.O., No. 326, of 26th May 1875. Item No. 21 of budget of 1878-79.
Do. ..	24	Do. ..	School for Royal Horse Artillery and Royal Artillery.	11,700	..	11,700	24	G.O., No. 1,193 W., of 18th October 1877.
Do. ..	25	Do ..	Improvements to Dumbeet tank.	Approx. 30,000	10,000	10,000	25	G.O., No. 521, of 25th Feb. 1878. Detailed Estimate awaited. Item No. 17 of budget of 1878-79.
Do. ..	26	Do. ..	New wall round forage yard of the Royal Horse Artillery.	..	..	2,500	26	Estimate awaited.
Do. ..	27	Do. ..	Cart shed 30×22 at Kirkee, Commissariat Department.	..	..	4,500	27	Do.
Do. ..	28	Do. ..	Quarters for a Staff Serjeant of the Commissariat Department at or near the public cattle line, Bangalore.	..	..	4,000	28	Do.
Do. ..	29	Do. ..	Do. for School-master and School-mistress, European Infantry.	..	..	7,000	29	Do.
Do. ..	30	Do ..	New Armourers' shop, Pursuit Barracks.	..	..	5,400	30	Do.
Do. ..	31	Do. ..	Quarters for Band Master Serjeant, Cavalry.	..	..	6,000	31	Do.
Do. ..	32	Do. ..	Do. do. European Infantry.	..	..	6,000	32	Do.
Do. ..	33	Do. ..	Bellingerson, Commissariat Department.	..	..	6,000	33	Do.

SCHEDULE of the Probable Requirements of the Madras Presidency on account of Imperial Works for 1879-80—*continued*.

Executive Division.	Progress No.	Locality.	Description.	Amount of Estimate.	Expenditure up to 31st March 1879.	Estimate 1879-80.	No.	Remarks or References.
			MILITARY—*contd.*	Rs.	Rs.	Rs.		
Trichinopoly.	34	Trichinopoly.	Extending barrack accommodation for the Royal Artillery.	6,000	..	6,000	34	G.O., No. 1,071, of 24th July 1878. Item No. 2 of Class C works of budget of 1878-79.
Do. ..	35	Do. ..	Central school for the Battery and Detachment, European Infantry, for men and children of both services.	..	..	13,200	35	Estimate awaited.
Do. ..	36	Do. ..	Guard-room, lock-up, and three cells for Detachment, British Infantry, including washhouse and privy.	..	..	14,200	36	Do.
Do. ..	37	Do. ..	Plunge bath for Detachment, British Infantry.	..	..	3,000	37	Do.
Do. ..	38	Do. ..	Gymnasium for Battery of Artillery.	..	..	11,600	38	Do.
Nilgiri ..	39	Wellington.	Bath-rooms to cook-houses.	3,120	..	3,000	39	G.O., No. 1,071, of 24th June 1878, Item No. 1 of Class C works of budget of 1878-79.
Do. ..	40	Do. ..	New latrines on dry earth system.	3,700	..	3,700	40	G.O. No. 900, of 28th March 1878, M.D.
Do. ..	41	Do. ..	Timber bridge over the Waterloo stream.	12,200	10,324	10,000	41	G.O., No. 84, W., of 8th October 1877. Revised estimate under consideration.
Malabar ..	42	Cannanore ..	Painting doors and windows of barracks, canteen, quarters and cookhouses, European Infantry Regiment.	4,120	..	4,000	42	G.O., No. 2,402, of 3rd July 1878. Item No. 3 of Class C works of budget of 1878-79.
Do. ..	43	Do. ..	Two additional Staff Sergeants quarters for European Infantry Regiment.	..	..	7,000	43	Estimate awaited.
Do. ..	44	Do. ..	Latrines and dry earthwork stores for each Native Infantry Regiment.	..	..	7,000	44	Do.
Do. ..	45	Do. ..	Double shuttle alley for European Infantry Regiment.	..	..	3,000	45	Do.
Do. ..	46	Do. ..	Converting one of the Horse Artillery stables into a battery for the use of the troops	..	..	7,000	46	Do.
Do. ..	47	Do. ..	Punkahs for European Regiment.	..	..	15,000	47	Do.
						6,05,200		
	48	..	Grant for Minor Works the estimated cost of which does not exceed Rupees 2,500 each.	..	..	1,00,000	48	
	49	..	Repairs	..	..	1,50,000	49	
			Total, Military ..	..	..	2,95,000		
			ORIGINAL WORKS.					
			CIVIL BUILDINGS.					
			Postal Buildings.					
Nilgiri ..	50	Ketagiri ..	New Post Office ..	..	..	3,500	50	Estimate awaited.
..	51	Ootacamund.	Do. ..	..	..	5,000	51	Estimate in circulation.
Presidency ..	52	Madras ..	Do. ..	2,13,312	..	60,000	52	Sanctioned by Government of India, Register No. 29 B of 1877-78, G.O., No. 1,138, of 8th May 1878.
						68,500		

SCHEDULE of the Probable Requirements of the Madras Presidency on account of Imperial Works for 1879-80—*continued*.

Executive Division.	Progress No.	Locality.	Description.	Amount of Estimate.	Expenditure up to 31st March 1879.	Estimate 1879-80.	No.	Remarks or References.
				Rs.	Rs.	Rs.		
			Postal Buildings—*contd.*					
	53	..	Grant for Minor Works the estimated cost of which does not exceed Rs. 5,000 each.	..	..	2,000	53	
	54	..	Repairs	..	..	3,000	54	
			Total, Postal Buildings ..	..	..	73,500		
			Telegraph Buildings.					
Presidency ..	55	Madras ..	Telegraph Office ..	2,51,182	..	1,00,000	55	Sanctioned by Government of India, Register No. 29 B of 1877-78, G.O., No. 1,138, of 8th May 1878.
Nilgiri ..	56	Ootacamund.	Do.	..	..	10,000	56	Estimate in circulation.
			(To be combined with Post Office.)	..	..	1,10,000		
	57	..	Grant for Minor Works the estimated cost of which does not exceed Rupees 2,500 each.	..	..	10,000	57	
	58	..	Repairs	..	..	5,000	58	
			Total, Telegraph Buildings ..	..	..	1,25,000		
			Salt Works.					
Ganjam ..	59	Ganjam ..	Removing and reconstructing Police huts near Ganjam and Hocum salt-pans.	..	..	2,000	59	Estimate awaited.
Do. ..	60	Do. ..	Constructing masonry bridge in lieu of the wooden bridge between Ganjam pans and Chilka canal.	..	..	3,000	60	Do.
Kistna ..	61	Condracu ..	Police lines	4,597	2,000	2,500	61	G.O., No. 3,028 W, of 29th July 1878. Item No. 93 of budget of 1878-79.
Do. ..	62	Nizampatam.	Do.	3,562	2,000	1,562	62	G.O., No. 3,028 W, of 29th July 1878. Item No. 82 of budget of 1878-79.
Do. ..	63	Chirangan-jam.	Do.	4,682	2,000	2,680	63	G.O., No. 3,028 W, of 29th July 1878. Item No. 9 of budget of 1878-79.
Do. ..	64	Do. ..	Salt kacheri	..	..	2,000	64	Estimate awaited. Item No. 35 of budget of 1878-79.
Do. ..	65	Nizampatam.	Improvements to Salt kacheri.	..	2,000	1,000	65	Estimate awaited. Item No. 94 of budget of 1878-79.
Do. ..	66	Masulipatam and Nizampatam.	Excavating a navigable canal from Masulipatam to Salt Godown at Mungamgalli.	58,580	..	23,000	66	G.O., No. 193, dated 26th October 1874, R.D.; G.O., No. 76, dated 22nd November 1874, P.W.D.; R.O., No. 1,608, of 10th September 1874, R.D., and No. 45 of 14th January 1875, R.D.; G.O., No. 3,081, of 5th August 1877, P.W.D.

SCHEDULE of the Probable Requirements of the Madras Presidency on account of Imperial Works for 1879-80—*continued*.

Executive Division.	Province. No.	Locality.	Description.	Amount of Estimate.	Expenditure up to 31st March 1879.	Estimate 1879-80.	No.	Remarks or Reference.
				29.	30.	31.		
			Salt Works—contd.					
Nellore ..	67	Tirumalipanta	Making a road from the trunk road near Kavur to Tirumalipanta salt platform.	..	10,000	8,000	67	Estimate awaited.
Do. ..	68	Duguarajapatna	Constructing new police lines for the salt guard.	4,000	3,000	1,000	68	G.O., No. 1,436, of 3rd September 1878, Inspector General's Proceedings, No. 1,075, of 9th September 1878. Item No. 11 of budget of 1879-80.
Do. ..	69	Ekavarapuda	Making an approach to the salt godown.	..	1,000	1,000	69	Estimate awaited.
Do. ..	70	Do. ..	Making an approach from Ekavarapuda to Pedda cornadu.	..	2,000	2,000	70	Estimate awaited. Item No. 50 of budget of 1879-80.
Do. ..	71	Do. ..	Pitching with stone pillars in chunam and pattern rails to three salt godowns.	..	2,000	2,000	71	Estimate awaited. Item No. 49 of budget of 1879-80.
Do. ..	72	Kavapatchy.	Salt road from (1) north side of Great Northern Road to Kavapatchy.	..	..	6,000	72	Estimate awaited.
Chingleput ..	73	Ennore ..	Pier including groyne work.	..	..	17,000	73	Do.
Do. ..	74	Cuvelong ..	Rebuilding the four compartment godown on the mound.	..	..	2,000	74	Do.
South Arcot ..	75	..	Repairing and improving the Kandachi palmyra bridge.	..	..	2,000	75	Estimate awaited. Letter from R. O., No. 2,048 W., of 11th June 1878.
Do. ..	76	..	Road cutter to the Chingleput brine supply channel.	..	..	2,000	76	Estimate awaited.
Tanjore ..	77	Narapatsam.	Constructing police huts for one Head Constable and twenty Constables.	1,200	..	2,000	77	G.O., No. 2,031 W. of 10th July 1878.
Salaiar ..	78	Cannanore. Ettaikkal. Mahé. Badagara. Tellicherry. Cotta. Tuttacoodi. Pandalayani. Quilandy. Tanur. Parapanad. Ponnani. Pulicat. Chetpet. Cuddalore. Porto Novo. Sirkali. Tranquebar. Nagore. Karaikkal.	Constructing seven salt preventive police stations at Rupees 800 each.	..	..	5,600	78	Estimate awaited.
Do. ..	79	Mahé .. Cannanore. Tellicherry. Badagara. Quilandy. Tanur. Parapanad. Ponnani. Pulicat. Chetpet. Cuddalore. Porto Novo. Sirkali. Tranquebar. Nagore. Karaikkal.	Do. works as Rupees 800 each.	..	..	2,000	79	Do.
Madura ..	80	Virapandia Pattam Agraharam.	Masonry building for salt department officers and godown at Rupees 1,000.	1,000	1,000	1,000	80	Proceedings of the Board of Revenue, No. 4,044, of 4th October 1878. The Rs. 1,000 for 1878-79 and Rs. 1,000 for 1879-80 from No. 1 of budget of 1879-80.

SCHEDULE of the Probable Requirements of the Madras Presidency on account of Imperial Works for 1879-80—*continued*.

Executive Division.	Province. No.	Locality.	Description.	Amount of Estimate.	Expenditure up to 31st March 1879.	Estimate 1879-80.	No.	Remarks or Reference.
				29.	30.	31.		
			Salt Works—contd.					
Madura ..	82	Attangarai ..	Cutting a channel from the sea to the pans for supplying sea-water for the manufacture of salt.	..	2,000	2,000	82	Estimate awaited. Item No. 48 of budget of 1879-80.
Do. ..	83	Mercolam ..	Construction of bunds and side lines on the cross road from Mercolam station to the road between Madura and Ramnad.	3,650	2,000	1,650	83	Proceedings of the Board of Revenue, No. 3,414, of 30th April 1878, from No. 37 of budget of 1879-80.
Godavari ..	84	..	Metalling and gravelling salt roads in the Godavari District.	..	..	3,000	84	Estimate awaited.
Do. ..	85	..	Canal from the Coconada canal to the salt pans.	1,94,000	..	10,000	85	G.O., No. 2,77[illegible] 17th October 1878, and No. 300, of 22nd January 1877. G.O., No. 1,338 W., of 11th March 1878.
Tanjore ..	86	Vedaranam ..	Huts for two Head Constables and nineteen Constables.	8,919	2,762	6,000	86	G.O., No. 2,041 W., of 17th July 1878. Item No. 43 of budget of 1879-80.
Do. ..	87	Cuthussaly	Do. for one do. and 5 do.	3,340	2,190	2,000	87	G.O., No. 893 W. of 18th February 1877. Item No. 44 of budget of 1879-80.
						1,72,650	88	
Do. ..	88	..	Grant for Minor Works the estimated cost of which does not exceed Rupees 2,000 each.	..	..	10,000		
Do. ..	89	..	Repairs			10,000	89	
			Total, Salt Works ..	..	..	1,97,650		
			Miscellaneous Public Improvement.					
Kistna ..	90	Pulau Pulut, Divi	Construction of lascars ..	..	..	5,343	90	Estimate awaited. Item No. 54 of budget of 1879-80.
Tinnevelly ..	91	Muttam ..	Do. of light-house ..	..	..	5,000	91	Do. Item No. 51 of do.
						10,343		
	92	..	Grant for Minor Works the estimated cost of which does not exceed Rupees 2,000 each.	..	..	2,000	92	
	93	..	Repairs	..	..	7,000	93	
			Total, Miscellaneous Public Improvement.	..	..	24,343		

STATEMENT showing the Probable Amount that will be required in the Madras Presidency on account of Imperial Works, &c., for 1879-80 under each head of Service.

	Original Works. Major Works.	Minor Works.	Total.	Repairs.	Establishment.	Tools.	Total.
	23.	23.	24.	25.	26.	27.	28.
Military	5,00,000	1,50,000	6,50,000	2,50,000	22,000	25,000	1,17,000
Other Services.							
Postal Buildings	80,000	6,000	87,000	6,000	10,875	1,087	11,962
Telegraph do.	1,14,000	16,000	1,30,000	1,000	21,000	2,100	24,100
Salt Works	1,72,650	15,000	1,87,650	10,000	43,237	4,323	57,560
Miscellaneous Public Improvement	84,343	7,000	91,343	7,000	21,835	2,184	31,019
	9,51,993	1,96,000	11,06,993	2,74,000	2,18,272	34,594	17,93,259

No. 199-B. Camp Ranikhet, 19th October 1878, No. 4,020 W.

Ordered that the Schedule of Funds required for Imperial Works under Roads and Buildings, in 1879-80, be forwarded to the Government of India and also circulated to Superintending Engineers, who will have no time in preparing and submitting the necessary plans and estimates for all works for which estimates are awaited.

2. Unless plans and estimates are duly submitted before 15th December next, when the Preliminary Issue of the Budget will be completed for submission to the Government of India, appropriation of funds cannot be relied on.

(Here enter No. 4,021 W, dated 19th October 1878.)

(True Extract.)

Colonel, R.E.,
Secretary to Govt., P.W.D.

To Superintending Engineers.
To the Military Department.
" Revenue do.
" Financial do.
" Examiner of Public Works Accounts.

Encl. E. C. Slunker.
Spare Copies

GOVT. OF THE STRAITS SETTLEMENTS.
PUBLIC WORKS.
OCTOBER
Nos. 105 & 107.

No. B
40

Dy. Asst. Qr. Mr. Genl's Office
Cameron 17th January 1879.

Sir,

Major A. Henry Herbert
Dy. Asst. Qr. Mr. General
Malabar and Cameron

To

The Superintending Engineer
&c. &c. &c.
Penang

Sir,

I have the honor to reply to your No. 1635 of 13th January 1879 and in continuation of this Office No. B 37 of the 22nd idem, to inform you by order of the Brigadier General Commanding the Province that he has received and Examined the plans and Estimates for two Latrines for the native Regiment quartered at Cameron received from the Assistant Engineer Cameron Hill Division.

2. The Brigadier general observes that these buildings are situated

6 cost Rs 600 after a careful consi-
deration of which he is confirmed in
his opinion that the erection of such only
permanent Latrines is highly unexpedient.

3. He is further inclined to think that
Regimental could not work well if united
at all during the rainy portion of the
year.

4. He is accordingly disposed to re-
commend that temporary Latrines be
erected instead of permanent ones which
will last only 3 years, protected by
iron props, which would probably cost
about one tenth of the sum required
for pucka Latrines.

5. The advocate temporary buildings
because they are susceptible of removal
and can be shifted from time to time
to fresh ground ample space for which
exists in the station Separate Lines at
Deolali.

6. In the manner he believes that
the necessary attendance the permanent Latrines
of the Troops (which he thinks may

experience to be great) would be avoided.

7. Brigadier General Burton speaks from experience of the temporary Latrines he advocates, such Conservancy accommodation having been provided for the 8th Regiment N.I. at Seetabaldee. The buildings had thatched roofs supported upon roughly cut wooden props, the compartments and walls being formed by matting. They cost about Rs 150 each, and were as satisfactory as any Latrines can be expected to be in the lines of a Native Regiment.

8. The only alterations he recommends are iron props in lieu of wooden ones, and a light tiled roof rather than one of thatch.

I have the honor to be
Sir,
Your most obedient Servant.
(Signed) A. Kenny Herbert Major
Dy. Asst. Adjt. General

No 580.
460

True copy — Forwarded to the Chief Engineer with reference to G.O. No. 4020 dated 15th October 1878 in which the plans and Estimates for Latrines &c for one Regiment of Native Infantry were called for.

The Superintending Engineer agree with the Major General commanding Malabar and Canara and with the sanction of the Chief Engineer will procure from Sutcliffe plans of the temporary latrines erected there and forward similar designs for the ones to be erected at Cannanore.

Allan Cuffe Lt
Asst Engineer
4th Circle

Calicut
28th February 1879

P.W.D.

No 824 dt 4th March 1879.

Memorandum

From the S.E. Fourth Circle

No 580/140 dt 28 February 1879

The action taken by the S.E. "is approved - the proposed plans being submitted after approval of Divisional Committee

As it is conceivable, how the estimates already supplied can have reached the figures named, the S.E will be good as to forward to this office the plans, specifications & estimates taken exception to.

Col H.F. Sc
by C.E.

Calicut, 28th February 1879

No 580/140.

Captain A. Cuffe Asst Engineer
4th Circle

Cannanore

Executive Engineer

Cannanore

Enclosed for your information & guidance is a copy of a letter from the Superintending Engineer, Malabar & Canara Circle, No 824 dated 4th March 1879 on the subject of the plans & estimates for the temporary latrines erected at Cannanore.

The Chief Engineer wishes to know how the estimates already supplied can have reached the figures named, & the Superintending Engineer will be good as to forward to this office the plans, specifications & estimates taken exception to.

Executive Engineer
4th Circle

Public Works Department

Central Bungalow

No 660.

Office of the Executive Engineer, Nagpur Dn

Dated 31st March 1879.

To The Superintending Engineer

4th Circle.

Coimbatore

Sir,

With reference to your No 2147 of 26th Instant, I have the honor to forward herewith one of the Temporary Palmyra Pandals in the N.E. Fence at Salem. It consists entirely of rough wooden supports, with mat walls, and a light thatched roof, and its cost is Rupees 62 and not Rupees 120 as noted in your letter.

I have &c

sgd/ K. J. Johnston C.E.

Exve Engineer N. Dn

/True Copy/

Dy Ex Engr NG

Exve Engineer

N Circle

26/2/79
1/3/79

Specification to accompany Plan and Estimate for Constructing a Pattern for the support of a Station Lighting Light at Lamanon. ——

Amount of Estimate Rupees 3111 ... each.

Excavation. After the Centre lines of the walls Longitudinal & Cross have been pegged out and the boundaries of the foundation trenches marked the trenches to the full depth shown on the drawings or to such other depths as the Officer in charge of the work may direct

Patent stone. On the completion of the excavation the Centre lines will be carefully laid out and the footing Courses commenced. The footings will be only one stone & foot higher with the offset on each side according to the sections of the drawing.

Walling. The walling will consist of Cutting stone in Chunam or stone bond 18"

Arching. The Archways over openings at both ends of the Cutwater piers will be built in the usual manner. The quantity being small ~~Lumpsum~~ is not found necessary to enter this in the Estimate as a separate head.

(101)

The interior and exterior of walls will be plastered with Chunam and whitewashed.

Plastering

The rooms as noted in the Estimate to be of Asphalt 3/4" thick formed on three inches Laterite Concrete Carefully laid and hammed. The Laterite Concrete to be made as follows: in Small Laterite stones or pebbles and mix with Chunam and Sand in proportion 5 Stones 3 Sand and 2 Chunam. The material to be mixed dry at first, afterwards as much water as will just cause it to bind and the whole again thoroughly mixed and when put into the work to be well beaten with heavy beaters. The edges of any Chunam days work to be damped before next days work begins so as to have proper joinings. When the whole is thoroughly dry the Asphalt to be poured on hot very Carefully in an approved manner as noted.

Asphalting

The wall plates should run over the walls as shown in section. The lower ends of the Common Rafters will butt against the angles formed by the plate.

Wall plates.

Roofing

The roofing will consist of Rafters Rectangular edge scantle 4"x2". Rafters will be arranged 9" apart from Centre to Centre and Rest one Ridge Beam

The Rafters to be nailed Collar on each and into the Ridge Beam and nailed together when both Roofs and the whole roof will be covered over with Single pan tiles to make this building uniform with the Buildings at present.

Roofing

Short Cham as allowed in the estimate will be used for Screen walls and all the other items must be strictly carried out as in estimate.

All the rubbish to be cleared away on the completion of the work and the floors kept quite clean before handing over to the Building Depty.

Kolar - June 5.6

Commanche

December 78

In ch of Pub Dets

Approved & Offices

December 78

Lt H. Nixon Asst Col

Executive Engineer Approved

No 659 Copy Engineer Office Cork

Commander 25th October 1878.

Sir,

The Superintending Engineer

Circle

Sir,

The Chief Engineer

Fortifications

Sir,

With reference to the Memo No 658

of the 15th October 1878, I have the honor

to submit for approval accompanying Plan

and Estimate amounting to £6260

for the Construction of Staff Sergeants Quarters

for the European Regiment at Queenstown

The Plan and Estimate have been

Countersigned by the Brigadier General

Commanding Malta and Corfu.

I have the honor to be Sir

Enclosures 5.

1 Detailed Estimate

1 Abstract do

1 Specification

1 Plan

1 Side Plan

5

Your most obedient humble Servant

Lieutenant Royal Engineers

115

Imperial Budget for 1880-81

Item 12th. The sum of Rs 2000 entered in the Budget is to be reduced to the amount of the Estimate viz 6260.

I have the honor to be

Sir,

Your most obedient Servant

A Murrell

for Secy. Engineer & Surveyor

10

P. W.
7015

From

The Supt Engineer
Simla Circle.

Dated 25th October/79.
Read

No. 4020. W- 15/10/79

No 659

Staff Sergeants Quarters
for European Regiments
Cawnpore —

Enclosing Plan
& Estimate Rs. 6260
for Construction —

P. W. SECRETARIAT—1879-80.

KEEP-WITH.

Current No. 7015

Letter No. 659

Dated the 26th Oct. 1879

from the Supt. Engr. 4th Circle.

Note of Enquiry.

Re Plan & Estt. amounting
to Rs: 6260 for two Staff
Sergeants Quarters for the Europn
Regt. at Cawnpore from
the Engr. to provide for a Rainy-
ceed the additional Covered
way measuring 45 ft. in length
on South Side, as well
as the Main building
both being provided with
Cast iron gutters at its
Eaves, are not in Keeping
with the Standard Plan
of Staff Sergeants Quarters
from Regts of Europn
Infty: as approved by
the C. in C.

dated 23-3-65. And the Trees being of Jungle-wood, have greater dimensions than that of Teak as provided in the Standard. These Sheds are to have no iron work, so no provision is made in the Est.—

The Numbers of the additional Covered Way Traverses, is 40 Nos. in Excess of the actual length required.—

The Plan & Abstract Ests. are countersigned by the Military authorities.—

Work of the order could not be carried on the Disp.

Schedule for want of complete details with the exception of the above deviations the Est. is framed correct.

J. B. J.
Lt. 11.79.

No. 335 dy to Comp.

R. E. Office Madras

Memorandum

From the Supt. Engineer Fort St. George No. 609 dy 20th Nov 1879

The plans & estimate amounting to Rupees 2680 for two Staff Sergeants Quarters for the Travancore Regiment at Cannanore are returned to the Supt. Engineer with the following remarks.

It is observed that no provision is made for a Privy. The detail drawings do not show any measurements for the Cook Office, nor for the Bath Room, and being framed as well as the main building roof being framed with thatch over gutters at the eaves, also not showing with the Standard Plan of the Sergeants Quarters for a regiment of European Infantry as approved by His Excellency the Commander in Chief dated 20th December 1878. And the Trees being of Jungle wood, have greater dimensions than that of Teak as provided in the Standard. These trees are

to have no new works, as no provision is made in the Estimate.

The Increase under the additional head of Way to and Offices, is for 600 feet in excess of the actual length required.

[By Order]

[Signed] J. Sanyeniah Major R.E.

Offg. Br. Chief Engineer W.N.L.

To the Chief Engineer

Fort St. Louis

[illegible]

WYNAAD DIVISION

[illegible]

Estimate of the probable expense of Permanent for the [illegible]

Quantities

[illegible]

[illegible]

[illegible]

D. P. W.

Wynaad Division

MALABAR DISTRICT

Roads No: 6

Estimate for the year 1894-95

Transferred from Estimate for Roads

Dated.....

Received.....

P.W.D.

12/1893

No.....

Abstract Estimate for

Amount of Estimate Rs. *15 Thousand Five Hundred*

Continuing Private Road

Staff Corps Quarters to

Cemetery

MALABAR DISTRICT.

WYNAAD DIVISION.

ESTIMATE OF THE PROBABLE EXPENSE OF *Making first class Metalled Road from Staff Corps Quarters to the Cemetery at Cummanore*

| Miscellaneous. | EARTH WORKS. | | |

Carry to Abstract

2	5	7/8	8	"	68		End walls		
2	6	7/8	7	"	62		Centre walls at Entrances		
2	4	7/8	7/8	"	114		do behind		
			515 7/8				Total cft of Masonry	18	" more 4/5
					6 3/4		cfts of plastering with 2 Coats		
							Cherrauna	2 8	" Cft 16 6
20	6	6			72		Sqft of flooring with 3/4"		
							Asphalte over 3" Concrete	20	" " 14 6.5
50	10				165		Sqft of Roofing with Mango		
							Tove Tiles	10	" pr 33 "
							Ridge	3	" Cost 6 "
2							Hundred Wt superstructure Expen-		
							sating foundations	10	" Cost 10 127
							Total Estimate Rupees		180 "

Approved Dy Office
19th Dec 1879

Art. Vs. Kennedy Lieutt R.E.
Executive Engineer Ulyurred Dn

E.C. Stanton Brig Genl
Commanding Mahi Kantha.

Books Map

for a book map of the Bannock region of Idaho

Copy sent to Mr. Hall

P.W.D.
16 MAR 60
No.

WYNAAD DIVISION — MALABAR DISTRICT.

Abstract Estimate of the probable expense of Constructing Staff Sergeants Quarters &c for the European Regiment at Cannanore

Quantities	PARTICULARS OF WORK.	Rate	Amount Article	Amount Work	Amount Total
	Main Block				
1[illegible]	C.yds of excavation				2162 27 6
1152	C.ft of Laterite in Chunam	15		307 26	
811	C.ft of Arch work	24		80 41	
1975	sqrs of Flagging with Chunam	2		1 13	246 4
2075	sqrs of flooring with Cement	20		415	
19	sqrft of Cut stone for steps			76	
3320	sqrs of Roofing with Raftors battened mails and Mangalore tiles Ridge tiles and pointing				
	Ceiling Complete	20		670	
77	C.ft of Jungle wood scraught and fixt complete	1	4	96	4
4	Doors under frames	6	Each	24	
	Doors and windows &c			302	
10½	sqrs of painting	5	8	57	12
70	C.yds of filling in basement		3	12	2
	for gathers &c around the main block for pavement &c				
	Palling for verandah Roof &c			70	
	Total Rupees			4665	7 11
	Sundries and Superintendence at about 10 per Cent			464	15 11
	Total Estimate Rupees				5130
	Carried Over				5130

Brought Over ——— £460 - -

2625 C.ft of Cabarete in Chunam ——— 18 - - @ 6d £472 8 -

22 Sqrs of Flastering with Chunam ——— 2 8 - @ 3s 33 - -

8 do of Cabarete flooring ——— 12 - - @ 9d 30 - -

64 do of Mangalore tile roofing ——— 20 - - @ 6d 60 - -

1764 C.ft of Jungle wood Scant.g 1d 1 foot-sq ——— 1 4 - @ 6d 21 - 6

Chunam of Plastered Surface ——— 12 -

Doors and Windows ——— 70 - -

1½ Sqrs of Paveing ——— 2 - @ 3s 7 - -

1 Excavating foundation &c ——— 10 - -

Total £1 ——— £81 7 -

Venitrelle and Superficies Cubature &c about ——— 10 - - @ £8 6 9 6

Total Rupees ——— 765 - -

---

863 C.ft of Cabarete in Chunam ——— 18 - - @ 6d 165 6 6

12 Sqrs of Plastering with Chunam ——— 2 8 - @ 3s 30 - -

11 Sqrs of Roofing with mangalore tiles &c ——— 18 - - @ 9s 175

68 C.ft of Jungle wood ——— 1 4 - @ 6d 85 - -

Excavating foundation and Filling in ——— 5 - -

Total ——— 473 6 6

Carried Over ——— 473 6 6

Brought Over	473	55	10.0
Sundries & Superintendence 8 ½ per Cent	44	07	
Total Estimate Rupees	517		
Grand Total of Estimate Rupees	000		

Approved
Presidency Division Office,
26th September 1879
Executive Engr

Approved
Secretary

H Hunter Brig. General
Commanding Malabar Irregulars

Dist. S. Kennedy Capt
Assistant Commissary General Madras Division.

Approved
Secretary

P. P. W.

Wynaad Division

MALABAR DISTRICT.

WYNAAD DIVISION. MALABAR DISTRICT.

ESTIMATE OF THE PROBABLE EXPENSE OF Constructing Staff Sergeants quarters &c

for the European Regiment at Cannanore

Details	Name of work	Number	Measurements Length	Breadth	Depth	Deduct for openings	Cubic feet	PARTICULARS	Rate per	Amount Article.	Amount Work	Explanation of reasons for increase or decrease of estimate from last year	By whom recommended
								Foundation					
		4	22	4	9	-	2376	Longitudinal walls					
		5	6½	4	3	-	390	Main Trid wall Cross walls					
		3	5½	4	3	-	330	Verandah Cross walls					
							195	Sills					
							4881						
						m.	195	Ft. 900 of Excavation		2 6	27 - 6		
											27 - 6		

Examined Cannanore

Brought Down ——— 27 . 6

Item Labour

2 81 3 0 . 102 Front and Rear walls of main Building

2 84 2 0 . 63 End and Cross walls

2 84 2 0 . 105 Verandah walls front & rear

2 84 2 0 . 63 do End & Cross walls for Rear

1 Mess House

Recapitulation

2 0 7 2 2 . 252 Front and Rear walls of main Building

2 0 7 2 2 . 252 End & Cross walls of 6

2 0 7 2 2 . 252 Verandah walls front and Rear

2 2 2 2 2 . 333 do End and Cross

168 Walls divisions of Store & Mess House

Brought Forward

192 8 6 Total Cost of Basement

Superstructure

2 36 1 18 . 171 Front & Rear walls of main Building

3 16 1 18 . 432 End and Cross walls

3 16 1 18 . 216 Gable ends End and Cross walls

2 57 1 10 . 285 Front & Rear walls of Verandah

2 39 1 10 . 170 End walls of Verandah

8 10 1 12 . 240 Cross walls

2 9 3 16 . 22.37 Both Rooms Circular walls including Middle fourth of circle

98 8 9 Total Superstructure

Carried Over

27 . 6

Brought Over

1167					Deduct 7x6x1½x12, 7x6x7½x1½, 10x4x2½,
					2½x10½x12, 2x2½x10½x2½, 3½x2½x12, 8½x7½,
					2½x3½x14, 2x6½x1½, 2x2½x3½x5, 6x4x1½,
					Foundation work 6x7½x6½x10½x1½x2½
62284					Total Superstructure Less
					Deductions
1762					Total
1762					Total cost of Carcase in
					Pavement and Foundation
					Excavation of Superstructure and
					Lay Retaining Arches Quoins
					Jambs Reveals & Sills Lintells
					& Sub Sills Fenestrae
212					Circular Arch work
					& Lintells
2	64	-	18	2304	- Main Storeys inside
1	99	-	18	1782	- do Outside
3	17½	6		315	- Gable both sides
1	179	-	10	1790	- Verandah walls inside
8	2½	20	12	1920	- Cross walls both sides under
					Lay gables
	10½	4		42	- Lenth of Main walls above
					Ground to
	1	20	10	2000	- Verandah walls outside
				38	- South Storey Circular wall
8	9	1½		113	- Sides and Jaffits of Archways
12	20	1½		360	- do doorways
4	17	1½		114	- do do
2	10	1½		30	do and sill of window
2	20	1½		30	do Recesses
					Carried down

2198 1 1

13 Bungalows 2195 1 1

2	22 x ¾	43	Flooring Joists	
2	10 x ¾	21	do do do	
2	12 ¾	17	do do do	
6	11 x 12	99	Sides soffit & sill of Bath. Cube	
			two pairs	
			Brickwall around	
		40	Sides of Chimney pieces	
		110	Total	
		1197	Deduct for archways door	
		178	and window openings	
			area in Chimneybreasts &c	
			Nett Area with Reveals	
			Cubic Measurement	
		1020		
1		1020	Total Cyc ft of Flooring Joists	
			Carried to Abstract	3 Cyc 240 ft

Ground Flooring

2	16	¾	= 512	Hall Passage
4	16	10	= 640	Bed Rooms & Sitting Room
2	27½	12	= 660	Verandah in front
3	6 x 12		= 72	Bathroom Archways
			180	Offset for
				Chimney Breasts
2	10 x 10		= 200	
			2264	
		20	Total Cyc ft of flooring in Cement	
			laid on 4" Concrete	20 — Cyc 415 — "
1		100	Total Cyc ft of Cut stone for	
			Steps	75 — "

Roofing

		3674	Cyc of Roofing with Rafters Battens
			and Slates & all Ridge tiles, Hip tiles
			including Fixing &c Complete	20 — " 670 — "
			Carried down	3604 16 1

Brought forward

Woodwork

2	11	7	8	244	Fir Linen
2	6	3	3	41	Fir Joists
4	11	3	6	42	Municipal Rafters
1	21	6	6	96	Ridge Board
2	21	4	6	84	Fir Lath
					Nails
1	20	4	3	76	Wall plate Bearing Battens
					Nails
				1112	
					Cutting Notches Mortising &c
					and Labour in Carpenter
					Sheet metal Lineing

Doors Windows &c

19	4	3			Framed & Cross Tongued
					Cross Ledged Battened &
					and Hung Complete
					Ditto
4	3	8			Windows Glazed Cased &
2	24	2	24		Sashes and Cased with Cross
					Hung & Complete
6	4	1	14		Ventilators Casements Glazed
					including Weather Board & Fillets
					Fitting Glands for the Screws
					in Rooves
			18		Square of Painting with Two
					Coats of Carron Stone & Linseed
					Paint & Prime Coat

Carried forward

										Brought Over	4531 10 1
70										Cyps of filling in Basement	132 "
										for Gutters &c	70 "
										Total	4665 1 1
										Excavation and Superstructure	
										Carried to Abstract	4664 14 11
										Total Estimate Rise	5130 " "
										Foundations	
										Footings	
1	20½	2½				42.3				Pier Small	
1	15	2½				15.3				do	
2	5½	2½				22.6				Front Wall	
2	5½	2½				22.6				do Back Wall	
1	8½	2½	2½			43.4				Centre Wall	
2	6	3	1			36.-				Apse	
						181.10				Total Foundations	
										Basement	
1	19½	2½	2			87.9				Pier centre	
1	15	2½	2			116.3				do	
1	36½	2½	2			228.3				Front wall	
3	9½	2½	2			83.3				End wall	
1	9½	1½	2			27.9				Back Cross wall	
2	6	3	1			36.-				Apse	
						586.3				Total Basement	
										Superstructure	
2	39¾	1½	10			1126.6				Front and Rear walls	
						1712.6				Carried Out	5130 " "

							Brought down	3130 - -
2	7½	2	3½	1	=	105	Projection of floor walls inside	
2	10	1½	10	1	=	300	End walls	
1	10	3½	10	1	=	175	Centre Cross wall	
2	11½	1½	5½	1	=	69	Gable over the end walls	
1	11½	3½	2	1	=	173	do Centre Cross walls	
						1579	Total	
						111	Deduct openings, doors, windows, &c	
						307	Windows in Structure	
						2531		
							Cost of Labour in Chimneys	
							Deduct Openings in Chimneys	18 - - 052 12 -
							Flooring	
1	15	=	10	1	=	150	Floor walls inside	
1	15	=	6½	1	=	95	Face of projection above	
1	5	=	5½	1	=	28	End face of projection	
1	30	=	10	1	=	300	Front walls inside	
1	40	=	10	1	=	400	End and Cross walls inside	
1	43½	=	10	1	=	435	Outside of Bk Room all round	
			Say			140	Gables both sides	
1	96½	=	2				do do	
2	20	1½	=	1	=	60	Sides and Soffit of door	
2	15	1½	=	1	=	45	do do to Sill of Windows	
						2373	Total	
						184	Deduct 2x2x4x3, 2x2x3½x4,	
						2189		
			Say			29	Square Flooring with 2 Coats of Chimney Lintels included	2 2 - 29 - 33 - -
							Forward Brought down	5314-8-0 0150 - -

Brought forward

Chan 3 Squares of flooring with good Labour per Chamber 10 " " 5ff 30 " "

Roofing

1 36x19 = 684 Square of Roofing with Rafters Battens & Mangabar tiles including Ridge tiles 20 " " 40 16 "

Woodwork

1 80 3" 3" = 80 Qr Cabbs including Sawdust

1 36 6 x6" = 9

Ditto except Mangabar tiles 1 4 " 5ff 24 16 "

Planing of galvanized Iron Gutter 10 " "

Partitions with Deal Battens

2 4 " 8 " " Ditto Ditto & Lathing Plastering

3 Squares of Ditto 20 " " Each 60 " "

2 27 " 4 " " Ditto Ditto with Battens

Qr Complete 15 " " 30 " "

1/2 Square of Ditto with 2 Doors Locks Hinges Deal Sawdust 6 " " 5ff 7 8 "

Extra for Square of Ditto of Ditto for Barns 10 " "

5ff 7 6

Two Doors Extra for Cabbs 60 " "

Total Estimate Expenses for Cabbs 900 " "

---

3 24 24 4 " 1728 Pillars Brickwork in Cow Cabbs Barn

3 15 15 7 " 1181 Pillars ditto

2 24 24 2 " 1152 Wall between Cows & Cabbs

2 24 24 2 " 1152 Do do do

4608

Roofing

Roof Slating on Pillars 13 " " each 105 " "

Ditto of Lantern with Battens Tiles 2 " " 5ff 10 " "

Roof of Roofing with Rafters Battens

Pillars & Mangabar Tiles Complete 10 " " 18 " "

Wood work

1 80 6" 6" 7 " " Brickwork Brought forward ditto Lintels

1 40 5" 5" 5 " " Ridge Beam

4 16 9" 7" 32 " " Tie Beams

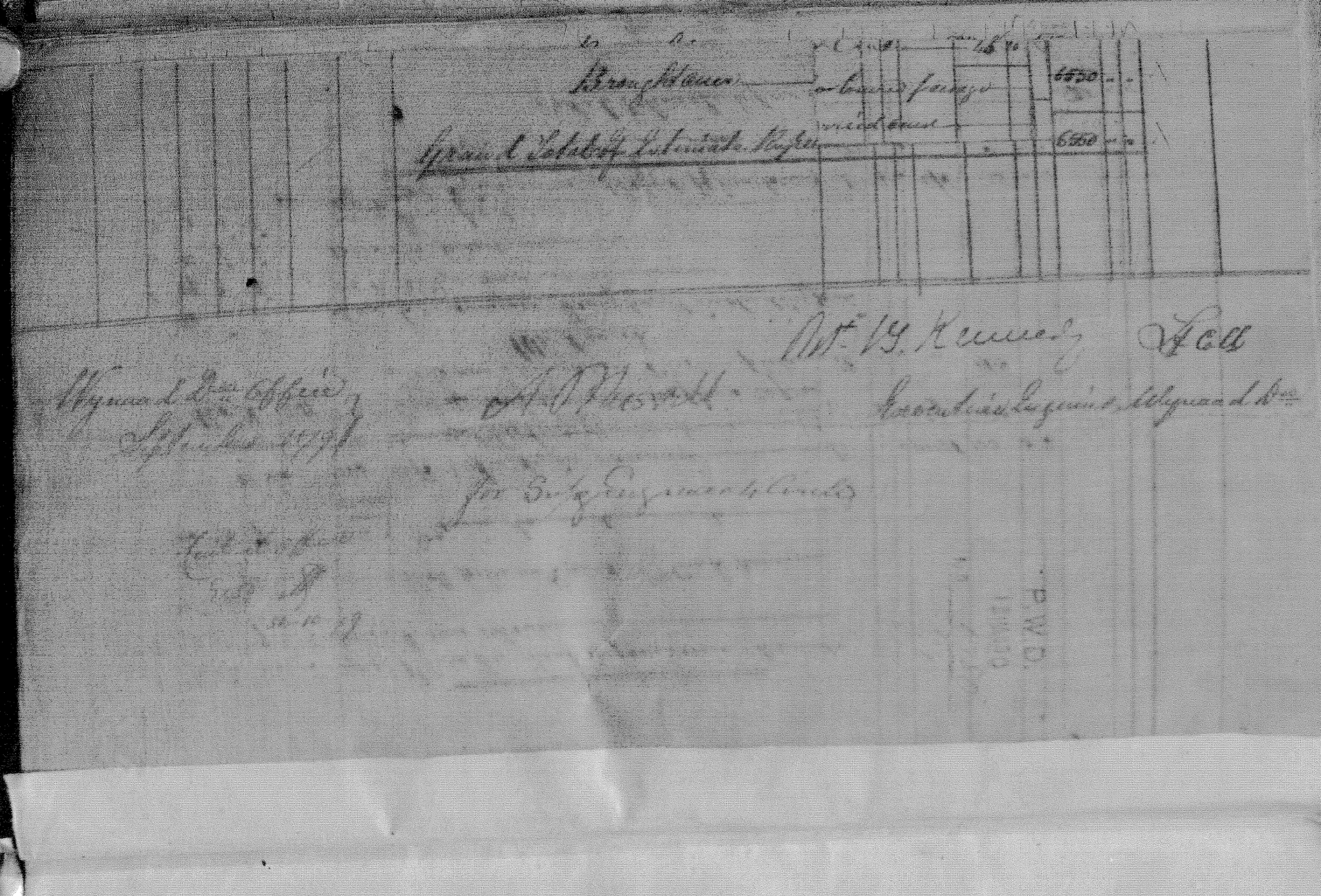
4 4 4" 6" 3 " " Purlin Posts

24 576 Roof Timber Rafters & Battens for Roofing (Barn Cowsheds) 1 " " 5ff 30 " "

Purchasing Nails & Screws Fixing ditto 5 " "

Two Doors Extra for Lantern Sheds Complete

Total Estimate Expenses



Specification to accompany Estimate for Foundations

3 Staff Sergeants Quarters for the European Infantry Regiment at Cawnpore

Amount of Estimate Rupees 6330 a/-

Sheet No 1

After the Centre Lines of the walls have been pegged out and the breadths of the foundations trenches fixed, excavate the trenches to the depths shewn on the drawings or to such other depths as the Officer in charge of the works may direct.

On the Completion of the excavation the Centre lines will be carefully laid out and the foundations commenced. The footings will be put on 1 foot 6 inch bed with 4½" offsets on either side according to the sections of the drawings.

The walling will consist of Laterite stone in steps one stone bond.

All openings will have rough Laterite stone arches

Sheet No 2

Sheet No 3

Sheet No 4

Detailed Estimate for Constructing 3 Staff Sergeants Quarters for the European Regiment at Cawnpore

Sheet No 1

No of Sheets 109

Estimate No 11

Superintendence & Contingencies 5 Per Cent.

Place of the Sphinx

The Heads of Lions and
Lions Feeding Goats to be Cast
a Lead Markered to Build Flat Arches with.

The Arch work Over Verandah Openings will
be Built in the ordinary Way

The Windows and Doors
of Rooms will be Plastered with Lime Hair
of Cocoanut Fibre and White washed

The Flooring to be
Portland Cement Laid with Concrete. The Cement
being Laid on about 6 Inches of Concrete
The Concrete to be made in the Ratio of 5 Broken
Brick 2 Sand 1 Lime that is to be Puddled
Dry at first and afterwards Just Enough
water so will make Build the whole
to be Carefully and well Rammed in
taken Dry the Cement Plaster will be
Laid on Great Care being Taken that the
Cement is Kept wet until it properly sets

The wall Plates should Run

Over the Front and Rear Verandahs and Verandahs
with the Lower ends of the Common
Rafters will Butt against the Angle formed
by these Plates

The Roofing will Consist of
Rafters 3x3 and 2 feet 6 Apart from Centre
to Centre Resting on Ridge Beam after Plans
The Battens for the main Building to be
Notched for Iron Nails over the Ridge Beam
and the Same Each Rafters and the remain
will be for Flooring and the whole Roof
Covered with Mangalore Tiles

All the Wood to be of
Teak Framed as the Standard Design
of Staff Sergents Quarters dated 23rd and
Dip and to be Petted with Three Coats
Knotting Two Coats Red Lead and Dry
Colour

The Latticed Doors and Windows
to be Glazed Inside and Outside

and to be fitted with brass hinges
hooks &c

All the doors to be
to be painted with three coats of Carriage
Imperial Drawing painted and varnished
Coach

The Sash Frames with
to be built as shown on plans Connected
by Carriage passage frames and all
the Sashes with be Strictly Carried out
paper Estimate and plans

All rubbish to be
Cleared away on the Completion of the
work and the place left quite clean
before handing over to the Building Inspector

Signed Duplicate
September 1897

Wm. H. Keevil & Sons
Executive Engineers Office

Alex Ford
Architect

D. P. W.

WYNAAD DIVISION.

Malabar District.

Ofs. & Letter No. 139 of
Superintending Engineer
S. Circle dated 25th February 1880
Copy forwarded to Conl.

Dated 25 February 1880.
Received

P.W.D.
139880
No. 102

Estimate and specification for——

Construction Staff Sergeants Quarters for the European Regiment at Cannanore

Amount of Estimate Rs. 6650-0-0

West Coast Division

No. 338

Calicut 25th February 1880

Enclosures 8
3 Plans
2 Detailed Estimates
2 Abstract do
1 Specification

To

The Superintending Engineer
1st Circle
Coimbatore

Sir,

Reference No. 472 dated 11th Nov. 1879

With reference to above, I have the honor to forward a Plan and Estimate for Constructing Privies for Staff Sergeants Quarters at Cannanore duly approved by the Brigadier General and also to return the Plan and Estimate for Constructing the Staff Sergeants Quarters received with the above.

2. The necessity for the covered Way, and the guttering not being in accordance with the Standard Plan, is that the Climate of the West coast requires such provision.

3. The actual length of the Covered Way is 45 feet and the reduced length of 108 feet of Pressmuners fairly represents the extra required for joists' end and wall.

4. The rate for wood work

Covers

139

Copies all sent round the Country.

Thane Esq.

Signed J.P.L. Morant Major RE
Ex Engineer Staff
Cape Colony

True Copy

No 129

Forwarded to the
Chief Engineer Enclosed with reference
to his Memorandum No 3289 dated
6th November 1879.

Ellis Lt Col Major RE

Asstg Engineer 4th Circle

Asstg Engr Office 4th Circle
Queenstown 10th March
1880

34

G.O. No. 4020 W. 15-12-94.
C.E. 3357 6-11-99.

P.W.D. No.
1899

From

The Superintending Engineer,
Tanjore Circle.

Dated the
Received } March 1900.

with Letter
No. 714/99
dated

Lr. No.

Office Copy transmitted

Forwarding Plans
Estimates for Construction
and Furniture for the Quarters.

135

E.C. 9.6
C.F. 4.00

P. W. SECRETARIAT—1879-80.

KEPT WITH

Current No. 1788

Letter No. 129

Dated the 10th March 1880

from the Supdg Engr 6th Circle.

Subject of Remarks

The Estimate with Plans & Specification for Constructing Staff Sergeants Quarters and out-offices for the European Regiment at Cawnpore.

Amounting to Rupees 6260 & Rs 180 for Establishment, have been checked & found Correct.

Chief Engineers Letter No 3059 dated 11th November 1879 has been referred to and Specification framed as per same additional Commandants.

The Plans & Estimates have been Countersigned by the Military Authorities.

24th March 1880

R.C.P.4.

From

The Supdg Engr 4th Circle (No. 65 of 20th Feby 80)

do do (No. 129 of 10th March 80)

To

The Secretary to Govt NWP & Oudh

Public Works Department

Sir,

I have the honor to forward for the sanction of Government the Plans & Estimates amounting to Rs 6260 for constructing Quarters and out-offices for the Staff Sergeants of the European Infantry Regt at Cawnpore, and to request that sanction may be accorded for execution when funds are available.

2. The sanction has been requested as Imperial

Ap. 1809 P.

Pay: of the Cadiz Commissariat

Warder dated the 23: April 1809

Read the following:-

From

The Lieutenants & Cadets (late 4th Battn 60th Regt.)

do ——— do ——— (late 3rd Battn 60th Regt.)

Now serving with the

2nd or 3rd Battalions of reserve

Staff Sergeants of the

Portuguese Infantry

Regiment at Cadiz

for which an estimate

amounting to £ 6 6 6

is submitted with the

above letter will be

laid in allegiance with

further orders.

Letters received

Pay: department. 28th

23-4-09 Q.M.G.

Ap. 1809 P.

Pay: of the Cadiz Commissariat

Warder dated the 23: April 1809

Read the following:-

From

The Lieutenants & Cadets (late 4th Battn 60th Regt.)

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above letter will be

laid in allegiance with

further orders.

Letters received

Pay: department. 28th

23-4-09 Q.M.G.

East

Cocoa Tope

Sepoys Lines

Hut

Proposed site of new Latrines

Hut

High Ground

W proposed site of well

Barrack

High Ground

Present Latrines

Low Ground

High Ground

North

Road to Trincomalee

Road to Batticaloa

South

Powder Magazine

PLAN OF GROUNDS IN THE CANTONMENT OVILON

shewing position of present Latrines and Proposed site of New Latrines

Scale of Feet

West

Lt. Engineer

Assistant Engineer

Lt. Col. Kennedy Asst
Dt Engineer

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

5th October 1878, No. 3,800 W.

General.
Account.

No. 70. Proceedings of the Madras Government, Public Works Department, dated 5th October 1878, No. 3,899 W.

PLANS and estimates for the undermentioned works not having yet been submitted for sanction, the budget appropriations will be credited * to the Military Reserve to be utilised either on the works concerned after sanction, or on other sanctioned works as may be ordered by Government :—

*Subject to the approval of the Government of India.

Budget Item.		Rs.
8.	Latrines for males and females in the lines of the 94th Regiment at Palamcottah	2,000
9.	Latrine with well for Native Infantry Regiment at Quilon ...	3,150
10.	Latrines for Sappers and Miners at Bangalore	5,040
17.	Improvements to Dunloor tank do.	10,000
22.	Lining with stone drains east and west of E.I. Barrack limits at Bangalore	4,000
23.	Drainage of Royal Horse Artillery Barracks at Bangalore ...	4,400
	Total ...	29,190

(True Extract.)

(Signed) E. A. FOORD, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Military Department.
" Examiner of Public Works Accounts.
" District Engineer, Tinnevelly.
" " Malabar.
" " Bangalore.

Encl. J. W. Fischer.
Spare Copies

General No. 8 of 187 .

Palghaut DIVISION. MALABAR DISTRICT

Abstract Estimate of the probable cost of Constructing 2 Vatrins of 14 beds each for use of Native Regiments at Trichoor, according to Standard Design referred to in G. O. No 731 of 22nd March 1876.

Quantities	Particulars of Work.	Rate	Amount of each Article	Amount of each Work	Explanation if necessary of work	By whom executed
54⅔	Cyds, Excavating Foundations and Filling in	at	1 6 Cyd	8 8		
17⅓	Rm, Concrete in Chunam for Floor & Foundations	at	4 - -	69 5 4		
2,234	Cnts, Brick or Laterite stone in Chunam	at	25 - - per 1,000	55 8 -		
418	Sft, Honeycomb Brickwork in Chunam	at	15 - - per 100 Sft	62 12		
1006	Do, Roofing with mails, pantiles, Chunam Cordon	at	15 - -	150 4 4		
97	Cubt, Teakwood wrought & put up for Chunam work, roofing	at	3 - - per Cft	291 - -		
2,100	Sft, Teak wood from 2"x ¾"	at	4 - - per 100 Sft	84 - -		
110	Lbs of Iron wrought	at	- 4 - per Lb	29 - -		
2,572	Sft, Terrace Roof formed of 1lb of Asphalte to 5lbs of Tar	at	3 - - per Sft	77 2 7		
123	Cyds, of Excavating well main work	at	12 - - per Cyd	9 4 -		
944	Sft, White washing inside and Color washing outside	at	4 per Sft	2 6 10		
119	Lbs, Sundries for Doors & Windows	at	10 - - -	6 4 10		
4	Each, Steel Cleats 9"x 1"	at	1 - - per Cft	18 - -		
24	Sft, Do 18"x 3"	at	1 - - -	24 - -		
21	Do, Do 9"x 3"	at	- 8 - -	10 8 -		
4	Iron Cramps bent & lead, 1½	at	3 - - each	12 - -		
2	Bucket Iron for urinary Cisterns	at	2 - - -	4 - -		
2	Trap Cocks including Handle & Zinc plastering	at	3 - - -	6 - -		
2	Iron Gutter prepared long and 3" Diameter	at	2 - - -	4 - -		
2	Tube Cowpers with Lid &c &c of 1"x 5"x 1"	at	3 - - -	6 - -		
4	Iron earth Scoops.	at	1 - - -	4 - -		
2	Baskets.	at	- 2 - -	- 4 -		
1	Broom	at	- 2 - -	- 2 -		
2	Wooden Buckets large	at	4 - - -	8 - -		
			Total Rupees	1446 9 4		
	Sundries and Superintendence	at	10 - - per 100	143 6 8		
			Total Estimate for one Vatrin Rupees	1590 - -		
			Add for another Vatrin Rupees	1590 - -		
			Total Estimate for two Vatrins Rupees	3180 - -		

Maj. & A. Gen. & Offg. Chief Engineer for 12 Cotrgts Hdqrs Madras

Maj. G. Kennet, Lieut. Colonel, District Engineer, Malabar.

Maj. & A. Gen. & Offg. Chief Engineer for 12 Cotrgts Hdqrs Madras

Maj. G. Kennet, Lieut. Colonel, District Engineer, Malabar.

Maladar District Engineer's Office, the 1st day of June 187

H.F.L. Adda Captain Commanding Sappers

Fdy. 2 & Secund 1 Do

ROADS & BUILDINGS.

From District Engineer,

Malabar.

Dated [illegible] 187[illegible]

Abstract Estimate for [illegible]

Amount of Estimate Rs. [illegible]

GOVERNMENT OF MADRAS.

MILITARY DEPARTMENT.

20th September 1878, No. 4690.

Barracks and Buildings.

Read the following papers :—

No. 303. *From Lieutenant-Colonel R. B. KENNEDY, District Engineer, Malabar, to the Chief Engineer, Roads and Buildings, Madras; dated Calicut, 3rd September 1878, No. 61.*

In reply to your memorandum, No. 535-T, dated 27th instant, I have the honor to state an estimate,* amounting to Rupees 3,180, drawn out on standard plan received with G.O., No. 731, dated 22nd March 1878, and a site plan, were forwarded to the Officer Commanding, Quilon, for transmission to Government through the Military Department on the 14th ultimo.

* Latrine for Native Infantry regiment at Quilon.

2. The Commanding Officer, Quilon, has been requested to hasten the despatch of the plans.

No. 4033.

Transferred to the Military Department, with the remark that Budget appropriation of Rupees 3,150 cannot be utilized on the work in question until the plan and estimate have been sanctioned.

FORT ST. GEORGE,
9th September 1878.

(Signed) E. A. FOORD, Colonel, R.E.,
Secretary to Govt., P. W. D.

No. 4665.

Referred to the Acting Commander of the Forces.

OOTACAMUND,
10th September 1878.

(Signed) J. MICHAEL, Colonel,
Secretary to Government.

No. 304. *From Brigadier-General H. O'CONNELL, Quartermaster-General, to Colonel J. MICHAEL, C.S.I., Secretary to Government, Military Department; dated Ootacamund, 18th September* 1878, *No.* 1130.

In returning the correspondence referred under your No. 4665, dated 10th instant, I have the honor, by order, to state that plan and estimate for a latrine at Quilon have not yet been received in this office.

2. It is very desirable that the grant for latrines at Bangalore, Quilon and Palamcottah should be appropriated for those buildings this year, as they are much needed.

3. An estimate for latrines at Palamcottah has been received, but has not been approved, as it is on the standard plan of March 1876. Serious objections to this plan were recently raised by Dr. Fitzgerald, the Deputy Surgeon-General, Mysore Division. His report was forwarded to Surgeon-General Smith, with a request that a revised plan might be submitted for approval. This has not yet been received. As soon as it is, it will be submitted to Government.

No. 805. OBIDA BARRACKS, 20th September 1878, No. 4899.

The plans and estimates for the latrines in question should be expedited, the grant for these works cannot be realized before the enlistment.

(True Extract.)

(Signed) J. MICHAEL, Colonel,
Secretary to the Government.

To the Quartermaster-General,
Public Works Department.

Encl. A. Rolls.

Proceedings of a Committee of Survey held at Quisibale on the Seventh day of August One thousand Eight hundred and eight Seventy Eight by order of Lieut. Colonel Ogoli Bentley Military Commandant of the Station, to select a piece of land for Standard Strong Regulation Size Square and report on same as Site for a Native Infantry Regimental Lines

Present

Lieut. Col. O. H. Williams 26th Regiment N.I. President

Captain H. A. Hare Adjt. 26th Regiment N.I. Member

Surgeon J. Blackhouse 26th Regiment N.I. Member

The Committee having assembled for the purpose ordered, proceeded to examine a site (shown on the accompanying plan) which is considered in all respects suitable & the Object in view.

J. Michael Lieut. Col.
26th Regt. N.I. President.

H. Hare Capt.
Adjt. 26th Regt. N.I.

J. Blackhouse Surgeon
26th Regt. N.I. Member.

J. Michael Lieut. Col.
Commanding Station.

Quartermaster-General's Office,
Ffo D. Colaba mo 23d October 1878.

No. 1457

From

Brigadier-General H. O'Connell,
Quartermaster-General.

To

Colonel J. Michael, c.b.,
Secretary to Government,
Military Department.

Sir,

With reference to Offg 2nd September 1878
No 4099 Above the name to forward Estimate Rs 3180—
for two Latrines at Dalou
1 Estimate
2. Plan of Site
3. Proceedings of Committee on Site
4. Letter from Exec Engineer
No 226 dated 21 September 1878
on the other elements as per
margin, on the subject
they may be transferred to the Public works Department
for disposal.

2 The Commander of the Forces approves of
the Site selected.

3 Funds have been provided in this year's
Budget for these Latrines.

4 The question of alteration of the Standard Plan
is under consideration, & will be laid before the Public Works
Department.

I have the honor to be,
Sir,
Your obedient Servant
H. O'Connell Brig. Genl.
Quarter Master General

From the Adjt. Genl. U.S. Army. Office

To Thos. and
acknowledge the receipt
of Copies of the Orders
for constructing the
Defences of the Ports
of the United States
Required at this
Office and mentioned.

The Officer stationed
at each Port will be
in the habit of
keeping their own
Copies and
to refer to them for
Copies of Orders
& not to send them
from the Office.

D. E. Sackett
Ex. Clerk
Adjt Genl's Office

Establishment

Subordinate Engineer's Office
No 2607 T.J. Trichinopoly 16th February 1880
Despatch 182

30

From

Lt. Col. Rundall C. Engineer
Actg. Superintdg. Engineer 5th Circle

To.

Colonel H. H. Sankey C.B. R.E.
Public Engineer Madras

Sir,

I have the honor to bring to your notice that Captain Brackenbury R.E. was requested to superintend the examination for Accountants 4th Grade held at Tanjore on the 1st December 1879.

As the Executive Engineer was not able to sit at Tanjore on the day fixed, having previously arranged to inspect certain works out of the Station he specially requested Supervisor Sevagerah Ward to conduct the examination. The Supervisor was on this occasion obliged to make his journey over 20 Miles on the 1st December 1879 by road and leave his Cart standing

here.

Sir I was allowed mileage for the journey in addition to daily allowance. The Examiner of P.W. Accounts however has only provisionally passed the daily allowance pending the sanction of Govt. such as required by para 599 of the Madras P.W. Code. Under the circumstances I request that the necessary sanction may be accorded to enable the Examiner to finally pass the allowance.

Yours obedt servt

for Asst Engr

Tech: Secretariat Register

5th Circle

25 FEB 1850
P.W.D.
SECTION

Establishment

P.W.D.
SECTION

From No.

Hee. Ag. Subg. Surgeon,
5th Circle

To Hee Chief Surgeon
Office

Rec. 26th T.J.
Made 16th February 1850
Desp. 18th

Sergeant Heard - Instructions
Required to attain Pardon
of Cook to enable the
Examiner to finally pass
the allowances claimed
for. —.

[Est. Wks Form No. 111]

GOVT. OF MADRAS. } 18 . { P. W. DEPT.

EXAMINER, P. W. ACCOUNTS.

Madras, MARCH 18

OFFICE NOTE No.

To

Keep with Genl. No.

dated 18 .

W.

IN CONTINUATION OF SPECIAL

OF P.W. (MADRAS) D.O.NO.[illegible] W.

DATED 22ND. FEBRUARY 1850. I WOULD

NOW TO BRING TO YOUR NOTICE THE OC-

CURRENCE OF, IN MY OPINION, A VERY

GRAVE IRREGULARITY.

THE EXAMINATION OF THE ACCOUNTS

ACCOUNTANTS AT TANJORE APPEARS TO

HAVE BEEN CONDUCTED BY AN UPPER

SUBORDINATE. IN ALL SUCH CASES IT

APPEARS TO BE THAT NO ONE OF LOWER

RANK THAN A MEMBER OF THE ENGINEER

ESTABLISHMENT SHOULD CONDUCT AN EX-

AMINATION, ON WHICH SO MUCH OF THE

EFFICIENCY OF THE DEPARTMENT DE-

PENDS.

IN THE PRESENT CASE, I BELIEVE,

THE CANDIDATES FAILED, BUT I BRING

THE SUBJECT FORWARD FOR THE FAVOR

OF ORDERS BEING ISSUED WHICH WILL

ENSURE THE EXAMINATIONS BEING

PROPERTY OF THE DIRECTOR PUBLIC WORKS.

THE EXECUTIVE ENGINEER

CIVIL SUBDIVN. NO. 10 CAN

FURNISH ANSWER TO ENQUIRIES

CONCERNING THIS COMMUNICATION.

Dre 4/3

GENERAL.

C. Is it any use attempting any definite ruling?

I cannot do a note as a member of the engineering establishment should conduct an examination, but if the acquaintance of the name with the performance of a subordinate of duties justifies belonging to an Assistant or Executive Engineer the conduct of examinations must take its chance with other duties - for could know any that all one does was I know cannot prevent. Such the frequent use Such that the Assistant does not have time to attend to duties -

No 5762 1878

Library
of
the Institution of Civil Engineers
Great George Street Westminster
S.W.

Ground Plan

Section on C. H.

one foot ½ space for

small earth or coarse pebble stone.

Dry Earth Shed.

Copied by A.K. Fraser 26 Rue Lafitte Paris 1871

Plan
of
Dry Earth Public Latrine for Natives.

Scale 1/2 Inch = 1 foot.

Stones to be coated with Coal tar frequently. All the space on each side of Stones to be kept filled up with sifted dry Earth to the top of the Stones, taking care to leave the entrance space open for ventilation from the Verandah. Earth to be frequently coated with Coal tar. Iron Rods to be frequently coated with Coal tar also places under the drains of each Reserved R.

Wattled walls are to be coated with Coal tar inside to the height of 2 feet. Posts supporting roof and matting to be set in concrete.

Latrine to be limed with gauze to spread by the prevailing winds.

Each Perfume to be kept free.

All the posts to be covered with Coal tar every month to prevent white ants from attacking them.

The line of the back, sides, and bottom of the Glacis in each bastion of the fortification will be laid out with the right & left of the top of the Glacis for which the counterguards are made.

Two strong stakes at the Glacis, 6 or 8 inches apart and 6 or 8 feet high of 2 feet the middle of the counterguards subsides are to be united with band iron.

Two strong stakes at the ends of the bridges, 6 or 8 inches apart, 6 or 8 feet high of 2 feet the middle of the bridges

Fort St. George

19th Augt 1879

No 2783

Memorandum

The accompanying plans of the Coimbatore Lal[ ] to forwarded to the Superintending Engineer for their opinions as to the adoption as a Standard plan.

By order

A. de J. Pemberton Major R.E.

Actg Dy Chief Engr & P.W.

To

The Superintending Engineers

PLAN ELEVATION AND SECTION

OF A

Latrine Containing 14 Seats

For the use of

Natives

Scale 3/4 Inch

Enlarged drawing of Staple and Hasp

Scale 6 Inch

Section on CB

Lieut. R.E.
Chief Engineer D.P.W.

Major R.E.
2d Deputy Chief Engineer D.P.W.

Elevation

Plan

Entrance with Gates

Boat-fly Stone

Boat-fly Stone

Boat-fly Stone

Boat-fly Stone

Hearth Stone

Hearth Stone

Hearth

Superintending Engineers Office 1st Circle
No 7746/26 Coimbatore the 21st February 1880.

From

The Acting Supdg. Engineer
First Circle

To

The Chief Engineer
Public Works Department
Madras

Sir,

1. With reference to my No 755 dated 9th Instant I have the honor to inform you that it has now been found that the plan of the Coimbatore Latrine was received with your Memo: No 2783 dated 19th August 79 but that owing to some misunderstanding it was misplaced and not brought on to the Office books.

2. The plan appears to me suitable for adoption as a standard one

and would be regarded like personal
flood which under the Riverside
or else with which asphalte will be con-
sidered as one of the

I have the honor to
Sir
Your most Obt Servant

[illegible]
Asst Engineer
1st Corps

Copied

P.W.D.
20 FEB 80
No.

From

The Superintending Engr
1st Circle

To

The Chief Engineer
Public Works Dept
Madras.

Office 21st February 80.
Camp Erode.

Sir,

I have the honor to forward plan, estimate and report of the work mentioned in the margin and to state that the work is urgently required in the interests of the public service.

C.S. No 2783-19-8-79.
" " 3286-29-10-79

P.W. 1880 Ref.

Reports from the Superintending Engineers regarding the plans of Cabins at Coimbatore.

All the Supt.g Engineers consider the plan with the exception of the Second Circle for adoption as a Standard plan. The S. Supt.g Engr. Second Circle however remarks that unless the concrete floors are thoroughly coated with asphalte they would become offensive.

Supg Engineer Office Circle
Bellary 25th September 1879

No 2685.

From

10

The Superintending Engineer
Second Circle

To The Chief Engineer
P.W. Department

Sir,

With reference to your Memo No 2783 dated 19th August 1879, I have the honor to state my opinion that the plan of Cabins at Coimbatore is suitable for adoption as a standard plan.

I have the honor to be
Sir
Your most Obt Servant
Illegible
Superintending Engineer 2nd Circle

18

C. 22.2.80.

Form No. 602

Marking Engineer

Grand Trunk

To The Chief Engineer

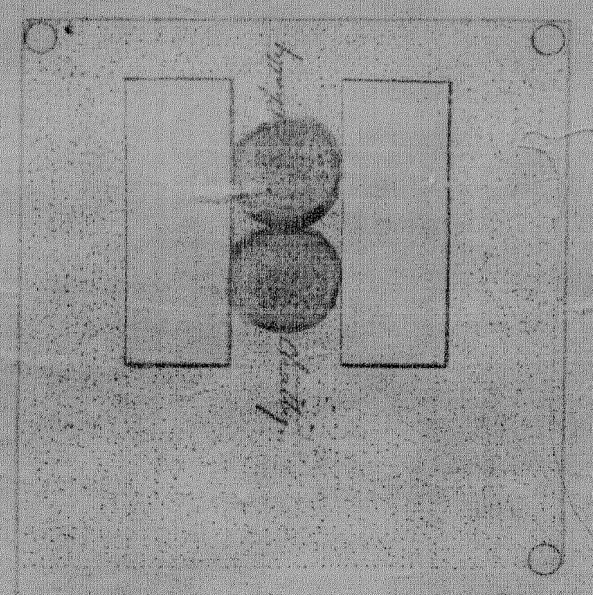
Plan of Section

Showing the Position of

Plan of Section

Showing that the Cross Sections may be

adopted as a Standard

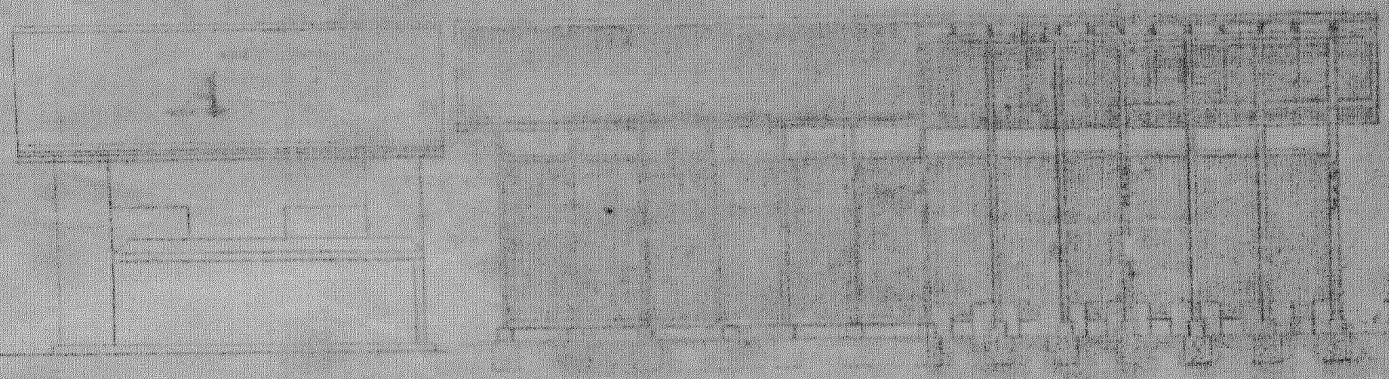


6 feet 0 to be walled with Brick in
Cheltenham to be filled with the Earth
one foot 6 inches from the top

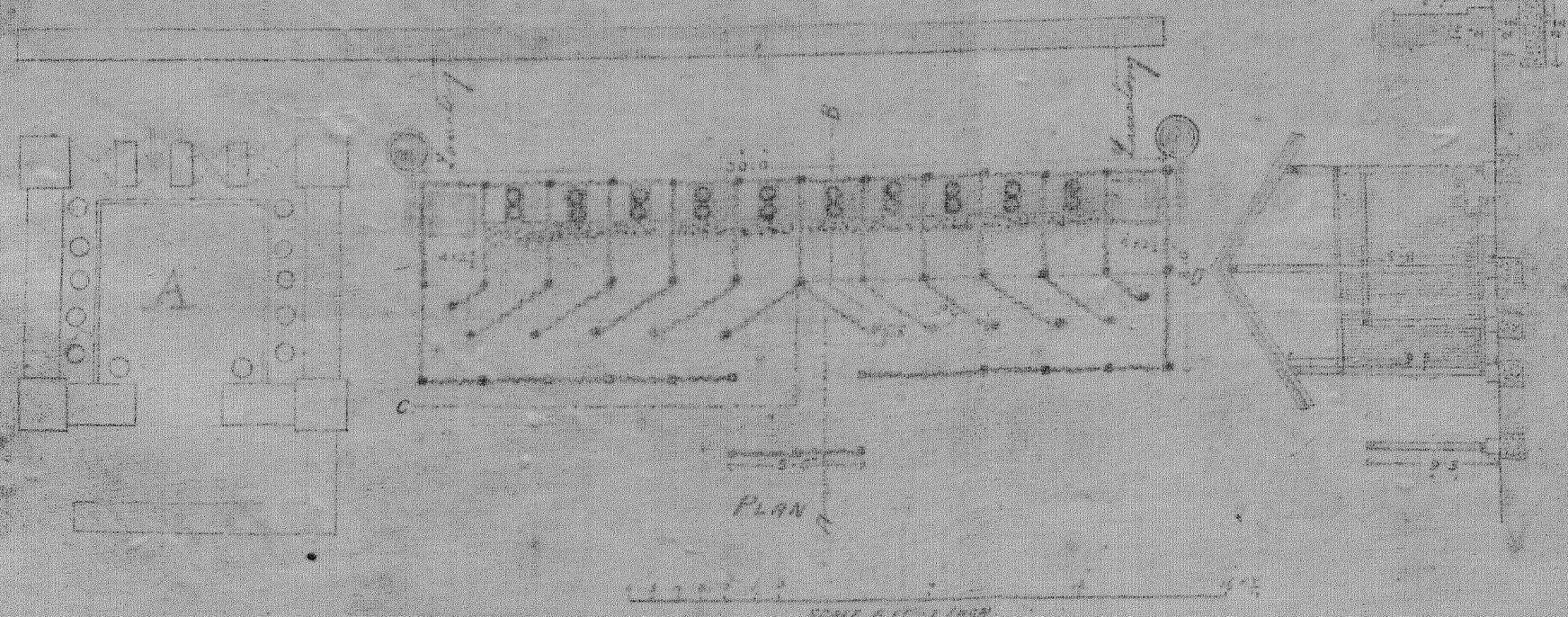
A - Old Latrine,
Near a Dry Earth Store

PLAN
OF
N.I.H. LATRINE
NAGPUR

ELEVATION AND LONGITUDINAL SECTION THROUGH C.D.



NOTE.- COST OF LATRINE Rs. 1473



Calla Fort Ks 1870 Dec
No 2958

From

Lt Colonel Carpenter

Ballou

No 5446

Dated March 1/70

Report on Rumford
Plan for Cutting for R.R.

Mem Mem. 2 Ely.
1871 ad lib

No. 1466

District Engineer's Office
Bellary 2nd July 1878.

From

The District Engineer
Bellary

To

The Chief Engineer
Public Works Deptt

Sir

With reference to your Circular No. 791 of the 13th February and my reply thereto No. 5,414 of the 4th March, I have the honor to state that the Latrines constructed for the use of the native troops at this station having been in use for some months, I asked for reports regarding them.

Surgeon Martin of the 27th M. N. I. states that the Latrines answers very well, and that he is not aware of any defects requiring to be remedied.

Surgeon Lawrence of the 21st M. N. I. states the Latrine

25

is altogether too small for the re-
-quirements of the Regiment, that
the small drains which slope back
on either side towards the central
passage do not answer and shall
have to be placed there. Therefore
-ence must arise from faulty con-
-struction which will have to be remo-
-died.

In other respects the Latrine
is reported to answer.

Please the honourable
Sir
Your most Obed. Servt
Lt. Rundall
District Engineer
Bellary

CS&C 771/1913 2-78
---- 2003 - 3 Aug/78

From

The Divisional Engineer
Bellary

To

The Chief Engineer
Mad.

Dated 2nd
Rec'd } Sept 78.
No. 1486

Latrines constructed
for the use of the
Native troops at
Bellary. — Stating
that he will have the
defects remedied re-
garding the latrines
for the 21st M. N. Infantry

Lodged 4-9-78

No. 5918.

3rd Circle, Superintending Engineer's Office,
Chepauk, 8th October 1879.

From

The SUPERINTENDING ENGINEER,
3rd Circle.

To

The Chief Engineer
Public Works Department.

Sir,

With reference to your Memoran-
=dum No. 2783, dated 19th August 1879,
I have the honor to inform you
that the Plan of Latrine there-
=with received is in my opinion
suitable, and I would recom-
=mend that it should be adopt-
=ed as a Standard Plan.

I have the honor to be
Sir
Your most obedient servt

Alexr Mc Leod Major R.E.
Offg Sup Engineer
3rd Circle.

Lodged 4-9-78

1879

From

The Supt. Engr. P. Canal

No 5918

Dated 8th } October 1879
Received }

Coimbatore Latrine

Recommends that the Plan of may be adopted as a Standard

No 550

Supt. Engineers Office 4th Circle
Coimbatore 2d. September 1879

From

The Superintending Engineer
Fourth Circle

To

The Chief Engineer
P. C. Department

Sir,

With reference to your Memorandum No 2783 dated 19th August 1879. I have the honor to inform you that the plan of the Coimbatore Latrine appears suitable for a Standard Plan.

I have the honorable
Sir,
Your most obedt. servt.

A Russell.
for Supt. Engineer
4th Circle

P.W.D.
[illegible]
From
The Supt. Engineer,
Trichinopoly.

Received 3 Oct 1911

No 550.

Conservancy Latrine:-

Reports that the Plan of the approved suitable for adoption Plan.

No 556 T.C. Supt. Engr's Office 5th Circle, Trichinopoly, 16th Oct: 1911.

Buildings & Roads.

From.

I W. Rundall Esquire
Asst Supt Engineer

To.

Colonel R. H. Lankey, R.E.
Chief Engineer P.W.D.

Enclosure.

Sir,

In reply to your letter No 2,783 of 19th August 1911 forwarding the plan of a latrine which has been built at Coimbatore and asking my opinion as to its adoption as a Standard Plan, I have the honor to inform you that a latrine of this design has been built at Trichinopoly -

2. The Vice President of the Municipality reports that the latrine appears to be well planned and is freely resorted to. The scavengers are required to keep it clean.

I have the honor to be
Sir
your most obt. servt.

I W. Rundall

Asst Supt Engineer

Buildings & Lots

Jr. Asst.
The Chief Engineer
5th Circle

Jr.
The Chief Engr.
Fort B

H.E. 55th I.C.

Quartette Cert. 27.

Secretary

Plan of the Commissioner Latrine.

Offers his opinion on the —

No 648.

Office of Surgeon General Staff
Fort St George 27th November 1878.

From
The Surgeon General
with the Medical Establishment

To
Colonel H. C. F. Farewell
Deputy Chief Engineer and
Secretary to Government PWD

Sir,

In returning the accompanying Bengali folder of Instructions for the guidance of Native Asylum Stewards in the duties noted in the margin I have the honor to state after a full consideration of the whole subject that the proposed arrangements comprised in these instructions appear to me sound & likely to answer the purpose in view.

2. The plan of the latrine for the Asylum Compound is also returned herewith.

Quarter Master General's letter No 5710 of 26th September 1878 bearing P.W.D. No 11266 & enclosures.
No 1 and 2 Specifications.
G.O. No 751 of 22nd October 1878 PWD.
and plans.
G.O. No 1090 of 20th September 1878. Medy Establishment.
Public Dept. Dspt. No 985 and 8 Enclosures.

Surgeon General's letter No 648 of 27th November 1878 with enclosures.

Offers his opinion on the proposed arrangements for the guidance of Native Asylum Stewards in the duties noted in the margin.

Thinks the latrine for the Asylum Compound is also sound & likely to answer the purpose in view.

Returns the plan of the latrine.

Encloses Bengali folder of Instructions.

Returns Quarter Master General's letter No 5710 of 26th September 1878 bearing P.W.D. No 11266 & enclosures.

Returns Specifications No 1 and 2.

Returns G.O. No 751 of 22nd October 1878 PWD. and plans.

Returns G.O. No 1090 of 20th September 1878. Medy Establishment.

Returns Public Dept. Dspt. No 985 and 8 Enclosures.

[illegible] his official letter dated and addressed by this office [illegible] Second of the 26th July 1875 and the following [illegible] that a Water Cabinet should be erected [illegible] arrangements, that these arrangements should be as far as practicable in accordance with the habits of the Natives, that they should be made as to preclude [illegible] [illegible] [illegible] the working of the pumps, and that they should be arranged so as to [illegible] [illegible] [illegible]

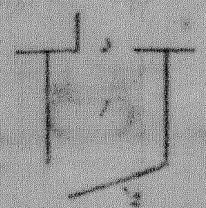
results of the classifiability and care necessary of the accessories can be easily arranged.

b. Other objections to the confinement arrangements may be briefly noted.

(a). There is one screen across the front of the compartment to exercise descency.

(b). There is no efficient efficiency in the rear wall of the confinement intended to admit of their being cleaned from the corridor passage. The door which gives from the corridor passage to the passage for the accessories. The door arrangements of these arrangements lie on the surface.

f. The proposal shows to create a front entirely out of large screens all these defects. In lieu of the proposed brick walls bounding the corridor passage and of the front partitions walls of the compartments, it is suggested that iron screens of about iron tubes four feet high be provided. That each compartment be 3'6" long by 2'wide; that the entrance to the compartment be



1. Partition with sheet iron walls and door 6' high.
2. Fixed entrance screen.
3. Sweepers entrance and door.

be screened by a sheet iron screen fixed at an angle of say 45° and that a door sufficiently large to admit the sweeper into the compartment be made on the iron screen at the rear of the compartment.

The floor of the cabinet should be raised as in the standard plan as shewn and with a gentle rise towards the front and rear so that accidentally spreading matter may not find its way out of the compartment. The dog cradle tubes should be retained as in the corrected plans.

The arrangements of the entrance of the several compartments are necessary to be considered in the Bengal plans as corrected.

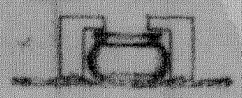
The floor of the compartment is covered with teak deep cylinder cradle the granolithic cradle being recessed, when the bedding are placed and an outside drop are finally made. Beneath side of the cradle is a footrest of stone 1 foot deep by 9 inches wide and 6 inches high.

The recessed vessel being placed between the foot rests, and the forward edge of the vessel should rise to but not above the level of the top of the foot rests. Should

it be found from practical experience
that the space between the foot rails is
too wide for the comfort of the occupants
the plan of the edge of the vessel may
either be diminished or Dr Fitzgerald
suggests the foot rails may be made to
project somewhat over the gallery. The
wounds would be covered with a
layer of dry earth and the former dressed
the fourth epoch. If by accident any
contradictory things the occurrences noticed
by the attendants, the wounded given
to the men in great abundance
will benefit and the deposition of solids
and fluids will be generally lessened
abstinence from these be every necessary
for this as on the sanctioned labour
no provision is made for ablution
being effected in the compartments.

6. These suggestions would I think
Sir John Gerald's minor and obviate the
several objections urged against the
arrangements of the sanctioned plan.
They get rid of the trouble with the
double partition of the floor avoid having
of the inconvenience of unnecessary compart-
ments of the former and of

the



the exception between the main passages and
the passages along the head of the cots
practicable and by effecting this last
requirement they render the whole
attention of the surgeons to their proper
work which has to be done. The wounds
of the cubic accounts will be effected as
a first aid dressing would suggest that
a cloth with cover be placed between
of the cots from passage communicating
by a pipe with a cowl over fixed about
nine inches outside the cabins for the
reception of the urine. Accommodation
should also be provided for a certain
of stone ware to which may be of the
kind procurable in every bazaar in
Constantinople.

16. Being anxious that Government
should be put to as little expense
as possible, I would suggest that the
standard plan of Native Cabins be
adopted and that the interior arrange-
ments of one of these structures be altered
as suggested in this communication
and that a prolonged trial be given
under the careful inspection of the Civil
Military and Medical Authorities as

to that

that the records and Reports every day
equally visited and Congratulations received
towards the further Solution of these
very important questions.

I have the honor to be
Sir
Your most obedient Servant
Ed Sabine Col
Chairman Council &c &c

No 150

Office of Surgeon General Staff
Fort St. George 26th March 1879.

From

Surgeon General George Smith M.D
Indian Medical Department

To

The Acting Chief Engineer
Southern Division Department.

Sir

With reference to your letter No 939 dated 15th March 1879, I have the honor to return with my countersignature as expressive of general approval, the plan and section of a combined bastion and privy for a Sepoys Lines.

2 I observe that the estimated cost amounts to Rs 28, a sum considerably in excess of any anticipations, and I would suggest whether it might not be possible to restrict this amount considerably by providing a flat stone of laterite clay called pire by the Sappers and Miners, in lieu of once of brick in mortar floored with concrete as provided in the estimate. If practicable the cost should not exceed

Rs 84

ten or twelve persons.

3. Should fourteen persons desire that the people should consist of the number required to constitute a legal Company during the time of the assembly the number required at three seasons to consist the Company as aforesaid are the Slaves.

4. The reference to the procedure of Stamped Cabinets and the other matters lastly will be refused to as soon as practicable.

I have the honor to be
Sir
Your most obedient servant
[illegible]
Secretary General &c &c

Specification for Constructing a Standard Design of Labour for the use of Native.

Excavation. After the Centre lines of the Walls have been pegged out and the breadth of the Foundation Lookspitted, Excavate the trenches to the full depth or depths shewn on the drawing, or to such depths as the Officer in Charge of the Works may direct.

Misc & Baling. If Slips occur during the progress of the Works clear the materials away & bale any Water lodging in the trenches.

Ramming. After the Officer in charge of the Works has seen that the trenches are the full and proper widths and depths, well ram the bottom with heavy beaters for the reception of the Concrete.

Concrete. Lay over the full breadth of the foundations about 9 inches of Concrete and well ram with heavy beaters till the layer has been Consolidated to a thickness of about 6 inches.

Brickwork in Mortar. The foundations will be built with brick in mortar, the footing Courses to pillars will be Carried up in two steps of 15 inches each and Walls between pillars of One step of 18 inches with 3 inches Offset on either side.

Basement will be of Brick in Mortar 1½ thick properly bonded & pointed throughout above the foundations, the upper Course will be splayed as shewn in the drawing.

Superstructure of Walls, will be Carried up 9ft. 3 inches, with pillars alone 7ft. 8 inches & 8ft 8 inches in height respectively 9 inches thick, to Consist of well burnt bricks laid in Mortar & properly bonded. The bricks will be well drenched with water before being used & laid in proper Courses.

Stone & Cement work. Open brick or Stone Cement work will be built one brick & inches thick above Walls between pillars as shewn in drawing, joints will be Carefully made with best Mortar and

Ex. 28-6-79. Ret 28-7-79.

£2 Daily 20-6 Contract Office

and all interstices left clear.

Pillar Caps. Pillar caps will be, where stone is cheap and easily obtained, of stone, or otherwise of timber not less than 3 inches thick Covering the whole area on the top of the pillars, — Care being taken to lay all level.

White wash. The interior and Exterior walls will be well pointed down: the walls inside will have two Coats of best lime wash; the lime will be used hot and slacked on the spot.

Color Washe. All walls outside will be Color washed by mixing Colored Earth with lime wash.

Timber. Roof timber will be of Deal for Single Wood. Collateral & Ordinary Transoms 5"x8", Rafters 2½"x4". The Transoms will be laid all level, & Central transom tied by Iron ties, with Collars, Ends &c. of the dimensions given on the drawing, and Ends well secured home.

Roofing. Rafters to be notched at ridge & nailed together, and slightly notched at bearing points on transoms and securely nailed to them, Rafters to be Binder Scantling to Centre. Then nail battens 2"x¾", 4 inches apart. Cover the roof with well burnt pan tiles clay, i.e. no Dantzic or flat tile below, laid in the usual Manner, and protect the ridge with tiles Specially made for the purpose. Protect the ridge and Eaves with Chinese bands, rough Cast on the surface and lay bands on the tiling.

Flooring. The floors of Latrine Urinoirs passages and dry Earth Cloe will be filled with Concrete 6 inches, Composed of three parts of Coarse, Gravel or Flinter, two parts roughly broken bricks. One part Sand and one part of Sand by bruised lime mixed together with sufficient water to allow of its thorough incorporation and with proper slope to drain, well rammed and finished as smooth as possible. When thoroughly dry, paint the whole with a Composition of Coal tar and Asphalte in the proportion of 1 lb Asphalte to 4 lbs of tar.

All

Stone Curbing. All entrances, Stone Curbing will be provided as shown in drawing.

Privie Seats. The Latrine contains 16 Compartments, Each 2½'x3ft be separated by partition Walls of Brick in Mortar, 3'10" high and 9 inches thick and will be provided with raised Stone platforms or Seat Seats 18 inches in length 9 inches in breadth and 10 inches in height, placed 9 inches apart and securely laid.

Two Chatties or buckets partly filled with dry Earth will be provided to Each Compartment, One for Solid and the other for fluid Excreta; the Chatties will be Embedded in dry Earth, as shown in drawing.

Vents. Vents or Openings 9"x 11"x 2.10" in height, on the lower Surface of the rear Wall, will be provided with Cheek-iron Vent, as shown in Drawing.

Iron Doors. Cheek iron Screen Doors in front of Seats 2½ ft x 3ft in height will be provided, as shown in drawing. The Doors will be supported by 2 Iron Cleat hinges, the upper to be reversed. The hinges will be bedded with lead in Stone 9"x 6"x 6" and fixed in the Walls, and will be supplied with bolts as shown in drawing.

Painting with Composition. The Iron work all Walls, inside all Compartments, Platforms, Risers, Iron Doors &c to be painted with Asphalte and tar Mixture, with 2 Coats.

Earth bins. Four Earth bins of brick in Mortar, Containing 25 Cubic ft are placed so as to be Accessible to the Urinoirs from their passages and to persons using the Latrine, Each bin will be provided with an Earth Scoop.

Water Cisterns. Two Cisterns Each to hold 32 Gallons of Water to be built of best brick in Mortar in the Foundations and of the dimensions shown in the plan, with Stone Coping properly laid and Cramped at the Angles with Iron

Cramps

Ramps leading in, the side pieces to be built at least 6 inches into the Terrace Walls, the Cistern to be plastered with best Surkhi Cement well polished and kept well wetted protected from the sun till finally set.

The spaces between the Terrace and Terrace Walls of the building to be filled Gravelling.
Away for Easy drainage, gravelled and pounded.

All Arches where stone is obtainable Arches.
to be made by insertion of a flat stone over openings in place of Lintels.

Chief Engineer's Office
Madras. 3
17th June 1879. 3

Chief Engineer's Office
Madras. 3
17th June 1879. 3

Estimate 178.

By Chief Engineer
P.W. Dept

Standard (Abstract) Estimate for Constructing a Latrine of 14 Seats with Shelters for the use of Natives.

Quantities	Particulars.	Rate.	Per.	Amount.	Total.
42¼	Cyo Excavating foundations & filling in	" 2 -	Cyo	5 46	
445	Cft Concrete in Chunam	" 23	Cft	62 93	
2070	do Brick in do	" 26	do	323 7 -	
417	Sqft Honey Comb brickwork	" 3 -	Sqft	78 3 -	
52	Cft Cut Stone in Chunam	1 - -	Cft	52 - -	
104	do Scantlings among 4 Cft per Log	3 1 -	do	318 8 -	
9¼	Square Roofing with pan tiles Chunam Cornices &c	7 - -	Sqn	64 12 -	
22¾	do Flooring Composed of 1 lb Asphalt & 4 lbs Tar	1 12 -	do	39 13 -	
12	Sqds do Gravelling 3" thick	" 6	Sqd	4 8 -	
340	Sqrs Inside Plaster 2 Coats	" 3 - -	Sqr	" 145	
16	do White & Color Washing	" 38	do	3 108	
112	lbs Wrought Iron	" 2 - 16		114 - -	
14	Iron Doors Complete in front	6 10 -	Each	92 12 -	
14	Iron Lock Doors in rear	1 12 -	do	24 8 -	
28	Shutters including Fixing	" - 6	do	" 14 -	
4	Iron Earth Scoops	1 ½ -	do	4 - -	
4	Iron Ramps Set in Lead for Cistern	1 - -	do	4 - -	1093 11 10
	Sundries & Contingencies at 6 per Cent				56 4 2
	Total Estimate Rs.				1150 - -

Chief Engineer's Office
Madras. 3
17th June 1879. 3

Estimate 178.

By Chief Engineer
P.W. Dept

No 156.

Office of Surgeon General U.S.
Washington 31st March 1870

Sir

Surgeon General G. Smith M.D.
Medical Purveyor.

Sir

I have the honor to transmit herewith
a Medical Requisition for
Public Stock Supplies.

I

I have carefully examined the Stores
and Materials for Medicines in the
Depot at Louisville Ky. since the 1st
March 1869. I have carefully examined the Stores
and Materials for Medicines offered
for the use of Station Hospitals
Camps and Field Hospitals and that
I am able to state that the Surgeon
Medical Purveyor with another Station
the Surgeon Medical Purveyor and the
Public Stock Supplies.

Over

I believe that the Stores of the
Station Field Hospitals are sufficiently
and properly for the Service

Observations sur le Colonel Lawrence
sur l'état indigent avec l'accident arrivé depuis
à Pondichery avec proposition de
le donner avec la croix de Chevalier de St
Louis pour le mettre en état de
subsister honorablement en France
Il devient très nécessaire d'avoir
quelques égards pour cet homme dont
on doit tirer de grands services.

Extrait des Lettres de Mrs
de
Pondichery Conseil Supérieur
Chirurgien Major & Aide

76

1

Sir, I have to acknowledge the receipt of your letter of the 22nd ultimo, forwarding a letter from the Colonial Engineer, Mr Middleton, and a Standard plan of a latrine for Native Lascars.

I have submitted the plan to the Surgeon General, who has returned it with the following remarks:

"The Standard plan of latrine for Natives was laid down in G. O. P.W.D. 22nd March 1878 No 731.

A latrine on this plan was built at Bangalore - Dr Fitzgerald, the Dy Surgeon General, objected to it as unsuitable - Dr Fitzgerald said if one wanting in simplicity should be considered the main thing & then pointed out that the platforms on which the men were to place their feet were too long allowing of a great choice of position and in consequence great uncertainty as to where deposits fell - he advocated that the platforms should be not longer than 2 inches apart so that but one position would be possible -

The Surgeon General, Indian Medical Department was requested to communicate with the Department of Public Works on the subject and the revised plan is, it is concluded, the result.

The revised plan does not seem quite to meet Dr Fitzgerald's views - The platforms for the feet are 1½ feet long and the two platforms for each seat descend by an unsatisfactory arrangement of central steps - passages and to avoid the cost of the building and the odds of dampness [illegible]

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Letter from the Surgeon General relative to Dept. of 1st Inst. & 25th Sept. enclosing

FOR ORDERS.

From
The Surfg Engineer 2 Circle
To The Chief Engineer
SW Railway

No 859
1901

Dated 23rd March 1901

Enclosure No

Letter forwarding Payment
Drawings
Forwards Plan and
Estimate with Specification
for _____ together with
Plan of Retaining Wall
in red Sandstone

No 1041
1901

From
The Superintending Engineer
Poona Circle

To
The Chief Engineer
S.W. Railway

Dated 27th March 1901

Enclosure

Subject
Plans for Retaining Wall

Sir
In reply to your memo No 859 dated 23rd inst I am directed to forward herewith the plan of the Retaining Wall proposed to be built at Kirkee under the Bridge No 208 and to request you will be good enough to inform me whether you approve of the same.

I have the honour to be
Sir
Your most obedient
Servant
Illegible
for Superintending Engineer

1114

That the Com
mittee do pro
ceed to
appoint a
Surveyor Electrician
Local Fund Boun
dary and Land
Inspector to hold
office.

Ald
27/2/80.

Ald.
27/2

Ald Cox

LISBON Aqueduct
PUBLIC WORKS.