

(1) Number of pages _____

(2) Date of repair _____

(3) Initials of the Referencer _____

MADRAS RECORD OFFICE.

Government of Madras.

Public works DEPARTMENT.

G.O. No. 234	Press
452-453	Mia
Dated 22-1-1868.	

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
22nd January 1868.*

No. 452. Read the following letter from the Superintending Engineer, 7th Division, to the Secretary to Government, Department Public Works, dated Coonoor, 31st December 1867, No. 158:—

I have the honor to submit, for the formal sanction of Government, plan and estimate* of the Mangamary aqueduct, sanctioned in G. O. No. 3,668, of 11th December 1863, as revised by my orders; together with copy of my remarks on the Range Officer's letter submitting them, which will sufficiently explain the alterations to be made.

- 1 Plan.
- 1 Estimate, with Comparative Statement and Specification.
- 1 Copy of remarks.
- * No. 37 of 1867-68, Rupees 16,100.

No. 152.

MEMORANDUM.

Collegal Range, letter No. 242 of 7th December 1867.

MANGAMARY AQUEDUCT.

1. A revised estimate is herewith submitted for approval, amounting to Rupees 16,100, which is an excess of Rupees 1,170 over the original estimate, accounted for generally by the addition of another span of 20 feet, ordered by the Superintending Engineer on inspection of the site.

2. Looking into the details of both estimates, it is seen that Mr. Smither makes a saving of Rupees 2,801 in the items of excavation for portions of new channel at each side of the aqueduct, which is borne out by his levels. The calculation in the original estimate is not in detail, and evidently very rough. In masonry an increase of Rupees 4,340 is shown, due partly to higher rates which, however, are quite reasonable at the present date, partly to the addition of another span noted above, and partly to the substitution of masonry for soorkee concrete over the span-drills and abutments, which is a better mode of construction. The next item of soorkee jelly accordingly shows a decrease of Rupees 1,977. An increase of Rupees 1,562 is attributable to the use of dressed granite facing to nearly double the amount, and at nearly double the rate of the original estimate, neither of which can be objected to. An increase of Rupees 362 in the item of excavating foundations is about counterbalanced by savings under the heads of plastering with soorkee and with chunam, and sundries. An allowance of Rupees 500 as compensation for land, not provided in the original estimate, is reduced to Rupees 100 by the Superintending Engineer to meet the actual cost as ascertained from the Revenue Authorities.

3. The revised estimate will accordingly be submitted to Government for sanction with the above remarks, and an intimation that the excess of Rupees 1,170 will be more than met by savings on the estimated cost of the Vanipootoor aqueduct. Of its total amount of Rupees 16,100, Rupees 9,913 are provided in the Budget of 1867-68, Item No. 178, and whatever more is wanted can be transferred from the Vanipootoor aqueduct, Item No. 179, whereof the full amount is allotted in this year; the balance is provided in the Budget of 1868-69, and will be laid out in the first quarter of that official year, within which it is a condition of the contracts that it shall be completed.

No. 453. ORDER THEREON 22nd January 1868, No. 234.

IRRIGATION, No. 24.

1. Under the explanation afforded by the Superintending Engineer of the 7th Division, His Excellency the Governor in Council sanctions the revised estimate of Rupees 16,100 submitted with

*Proceedings of the Madras Government, Public Works Department.
22nd January 1863.*

this letter for the construction of an aqueduct over the Mangamary stream in the Coimbatore District.

2. The Government note that Rupees 14,913 in the aggregate are provided for this work in the Budget Estimates of the current and ensuing official years, and that the Superintending Engineer proposes, if necessary, to provide the difference between that amount and the estimate now sanctioned from the funds assigned to the Vanipoottoor aqueduct.

(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R. E.,
Secretary to Government.

To the Superintending Engineer, 7th Division.
„ Accountant General.
„ Controller of Public Works Accounts.
„ Revenue Department.

Exd. F. R. Bantleman.

Specification

*Of the work in constructing the Mangamary Aqueduct
Amount of revised Estimate Rupees 16000 0 0*

Reasons for the necessity of the work have been previously given

The structure is to consist of (4) four spans of (20x5) twenty by five.

The foundation to the west abutment and (10) ten feet of the wing walls (the latter are to be built in steps) is to be laid in at a depth of (6) six feet. The abutment will be (52) fifty two feet from abut to abut, or (46) forty six feet on the face with half cutwaters (3) three feet long each. The breadth of foundation to abutment will be (7) seven feet, and to the wing walls (6) six feet. The foundation to the three piers will be on rock, at a depth of (6) six feet, and (46) forty six feet long on the face with cutwaters one half the breadth of the pier. The foundation to east abutment will rest on an indurated clay or conglomerate (3) three feet below the bed of the stream, and will be of the same length and breadth as the opposite abutment.

The foundation is to be of roughly squared stone in stone lime mortar and will contain (9567) nine thousand five hundred and sixty seven cubic feet.

The abutments and piers on foundation will be (7' 6") seven feet six inches to springing line, the former (6) six feet thick and (46) forty six feet long with half cutwaters (2' 6") two feet

six inches in length; the back portion of the abutment running out flush with the point of the cutwater; and the latter will be (5) five feet thick (46) forty six feet long with cutwaters one half the breadth of the pier. The west wing walls will be (26½) twenty six and a half feet long for (5) five feet in height they will then be carried up as per plan i.e. the wing wall to path way over 'Duct' (26'6") twenty six and a half feet long and (5) five feet thick. The right wall to 'Aqueduct' will be (44'6") forty four feet six inches long and (3) three feet thick. The left wing wall will be (44'6") forty four feet six inches long (5) five feet thick for (26'6") twenty six feet six inches, next the abutment and (3) three feet thick for the rest (18) eighteen feet. The faces of abutments and piers with their cutwaters and returns of wing walls will be faced with dressed granite laid in courses of alternate headers and stretchers, as per plan. The east wing walls will be (26'6") twenty six feet six inches in length each, and will be laid in an indurated clay in steps, the inner portion at (6'6") six feet six inches and the outer (4) four feet deep with an average thickness of (3'6") three feet six inches. The wing walls as above specified are to be brought up level with the extrados of the arches. The arches will be segmental and will consist of (5) five concentric rings or courses, or (1'10½") one foot ten and a half inches thick; and the spandrels and backing on abutment will be brought up flush with the extrados of the arches and square with

the back of the abutments. The parapets or side walls to the 'Aqueduct' will be (7) seven feet in height and (2) two feet thick bevelled off on each side at top. The parapets to roadway will be (4) four feet high and (1'6") one foot six inches thick, with pilasters as per plan. The inner top will be bevelled and the outer will have a black foot moulding and (1) one block and (1) one bevelled member at top. From the outside of the backing on abutments to the ends of the wing walls, and between the latter, a flooring of roughly dressed stone will be laid, and above that and over the arches, or throughout the length of the whole 'duct', a coating of brick jelly in 'soorkie' cement (3) three inches thick will be laid and well beaten down. The flooring and inside portions of the parapets are to be plastered with two coats of 'soorkie' cement well rubbed down and the lower parapet-face walls, and, intrados of the arches are to be plastered with (1) one coat in the usual manner.

The superstructure will contain (8725.6) eight thousand seven hundred and twenty five cubic feet, six inches of arch work (3440) three thousand four hundred and forty cubic feet of dressed granite (4960½) forty nine thousand six hundred and one cubic feet six inches of roughly dressed stone in stone lime mortar (1557.6) one thousand five hundred and fifty seven cubic feet six inches flooring with brick jelly in 'soorkie' cement.

(9438)

Feb 7

Land Comparative Statement of Work as Estimated for, and Executed in Constructing the Mangamary Aqueduct across the Mangamary Jungle Stream.

Item	Time	Quantity	Ratio as of Original Estimate	Per. of Amount	Quantity	Ratio as of Revised Estimate	Per. of Amount	Amount Difference	Remarks.
(6) Excavating Channel in Earthworks	by ft. 10621		1.6	996	86825	1.6	996	813 15 0	The rates entered in the original Estimate were inadequate for the description of work designed, and which by the lapse of time has been rendered much more so. No provision was made for the land required which is now, however, to be paid for.
Do. Salty or hard soil	Do. 18587		2.6	2924	1.140	4	8	285	
Brick work in Chumam	by ft. 31569		14.13	100	4677	17	100	8432 4 1	
Arch Work in Do.	Do. 6624		22.37	1472	8725.6	27	100	2355 14 2	
Flooring between wings with rough stone in Chumam	by ft. 4032		7.66	100	299				
Salty in bankment	by ft. 9594		25	2398	1557 1/2	27	100	420 8 5	
Plastering with bankment	by ft. 67-62		5	338	9438	3	100	283 2 3	
Dressed Granite casing	by ft. 1872		25	468	3440	59	100	2029 9 7	
Excavating foundation	by ft. 893 1/2		2.6	140	3336 1/2	1.6	996	312 12 9	
Do. Do. hard soil	Do.		"	"	756	4	100	189	
Contingencies (as noted stated)			"	300	2	150	100	300	
Plastering with coat Chumam	by ft. 8676		2.96	225	5975.852	2.8	100	149 6 4	
Compensation for land			"	"		"	"	500	
Sundries, and Contingencies			"	713		"	"	528 6 6	
Total				14930				14100 16000	

For Collegal Range Office
Sattinanglum 27 December 1867.

W. S. Hughes Sub Engineer
In Charge of Collegal Range

Abstract of the revised Estimate prepared for Constructing an
Aqueduct over the Mangainary jungle stream in the
limits of Chimaxodivale, Sattimunglum Taluq.

Quantity Particulars of Work Rate Per Amount Remarks

Roughly squared

9,601 1/2	Stone or brick in mortar	17 " " 100 cft	8432 41
3,440	cut Granite in	59 " " "	2,029 97
725.6	Brick in mortar on Arch	27 " " "	2355 42
438	sft Plastering with brick jelly		
	in Sock Room emb	3 " " 100 sft	283 23
975.852	Plastering, one coat	2 " " "	149 64
557 1/2	cft Flooring with brick jelly	27 " " 100 cft	420 85
336 1/2	cys Excavating foundation	" 16 cys	312 129
756	" " hard soil	" 4 " cys	189 " "
		150 " " Each	300 " "
2	Centring		
482 7/8	cys Cartwork	" 16 cys	813 15 1/2
140	cys " hard soil	" 4 " "	285 " "
	Compensation		800 " "
	Sundries		428 66

Rs 16100

Total Rs ~~16100~~

at College Range

Office
Sattimunglum December 1867

W. H. Smith Sub Engineer
In charge of Koorbollyall Range

C. M. Walker Esq
Superintd

N^o 152

Memo

Collesal Range Letter No 242 of 7th December 1887.

Mangamariy Aqueduct.

A revised Estimate ^{herewith} is submitted for approval, amounting to Rs 16,100; which is an excess of Rs 1,170 over the original Estimate; accounted for generally by the addition of another span of 20 feet, ordered by the Superintending Engineer on inspection of the site.

2. Looking into the details of both Estimates, it is seen that Mr. Smith makes a saving of Rs 2,801 in the items of Excavation for portions of new Channel at each side of the Aqueduct; which is borne out by his levels. The calculation in the original Estimate is not in detail, and evidently very rough. In masonry an increase of Rs 4,340 is shown, due partly to higher rates which however are quite reasonable at the present date, partly to the addition of another span noted above, & partly to the substitution of masonry for Soorkhee concrete over the spandrels and abutments, which is a better mode of construction. The next item of Soorkhee accordingly shows a decrease of Rs 1,977. An increase of Rs 1,562 is attributable to the use of dressed granite facing to nearly double the amount and at nearly double the rate of the original Estimate; neither of which can be objected to. An increase of Rs 362 in the item of excavating foundations is about counterbalanced by savings under the

Enclosure in a letter from the Chief Engineer
to the Secretary to Government
A.O. 47. 9. 1887. dated 31st Dec 1887.
No 158.

1/11/1888

11/11/1888

Revised Estimate for Constructing an
aqueduct over the Mangamariy
range stream.

Amount of Estimate @ Rs 16,100 -

the heads of Plastering with soorkan and with chunnam, and sundries. An allowance of Rs 500 as Compensation for land, not provided in the Original Estimate, is reduced to Rs 100. by the Superintending Engineer to meet the actual cost as ascertained from the Revenue authorities.

3. The Revised Estimate will accordingly be submitted to Government for sanction with the above remarks, and an intimation that the excess of Rs 1140 will be more than met by savings on the estimated cost of the Varipootoor Aqueduct. Of its total amount of Rs 16,100, Rs 9,913 are provided in the Budget of 1867-68 Item No 178, and whatever more is wanted can be transferred from the Varipootoor aqueduct, Item No 179, whereof the full amount is allotted in this year; the balance is provided in the Budget of 1868-69; and will be laid out in the first quarter of that official year, within which it is a condition of the contracts that it shall be completed.

(True copy)

Chunder Choudhury N.E.

Superintending Engineer 7th Div.

Copy of the Superintending Engineer's Remarks on the Range Officer's Letter submitting Plan and Estimate of the Mangamary Aqueduct as made by the Deputy Engineer's Office -

Enclosure a letter from the Deputy Engineer 7th Div., to the Secretary to Government S.O. 31st Madras, dated 31st Dec 1867. No 158.

1297/187/68

141

No 158.

Superintending Engineer's Office 7th Div.
Madras 31st December 1867.
Despatched 8th Jan 1868.

From,

Colonel G. W. Walker N.E.
Superintending Engineer 7th Div.

To,

Colonel L. A. Orr N.E.
Secretary to Government D.P.W.
Madras.

Sir,

I have the honor to submit for the formal sanction of Government Plan and Estimate of the Mangamary Aqueduct, sanctioned in G.O. No 3664 of 11th Dec 1863, as revised by my orders; together with copy of my Remarks on the Range Officer's letter submitting them, which will sufficiently explain the alterations to be made.

I have the honor to be

Sir
Your most obt Servant

Chunder Choudhury N.E.

Superintending Engineer 7th Div.

N. H. 1860 Dec 10
No. of Govt for January
A. 101

From,
The Superintending Engineer
A. P. W. Madras.

To, The Secretary to Government
A. P. W. Madras.

A. 158.

Dated 31st Dec 1867.
Recd 10 Jan 1868.

Enc: 4

Submitting for formal sanction
Plan and Estimate of the Mangamany
Aqueduct as revised by the Super-
intending Engineer; together with a copy
of his Remarks on the Range Officer's
letter submitting them.

No 284-22nd Jan 1868

A. 152

c. 152 Jan 1868 Recd 17th

PROCEEDINGS of the MADRAS GOVERNMENT.

Under date the 21st Jan 1868

Read the following

From the Superintendent of the
7th Division

(Here enter No. 158 dated 31 Dec 1867)

Under the explanation
afforded by the
Superintending Engineer
of the 7th Division. His
Excellency the Governor
in Council sanctions the
revised Estimate of Rs.
16,100 submitted with the
letter for the construction
of an Aqueduct over the
Mangamany stream
in the Coimbatore Dis-
trict.

2. The Government
note that Rs. 14,913 in
the aggregate are provided
for this work in the
Budget.

Budget Estimate of
 the Current and en-
 suing Official years,
 and that the Super-
 intending Engineer pro-
 poses, if necessary,
 to provide the difference
 between that amount
 and the Estimate now
 sanctioned from the
 funds assigned to the
 Tanisfootoor Aqueduct.

is understood that the
 27 p. amount is to be
 met from the Tanisfootoor
 Aqueduct fund and the
 balance of the fund is to
 be used for the purpose
 of the Tanisfootoor
 Aqueduct.

6 To the P. Eng. 7/81
 7 To the P. Eng. 7/81
 3 To the P. Eng. 7/81
 4 To the P. Eng. 7/81
 21- To the P. Eng. 7/81
 The P. Eng. 7/81
 Accts. Genl.
 Controller
 Rev. Secy
 Decr. 23/1/81

145
 5.15

259-259
P. W. 1868. Department.

Proc. of Govt. for January

No. 231-

PROCEEDINGS OF GOVERNMENT. of Madras

Dated 22nd January 1868

*Sanctioning the estimate
of Rs 16,100 for the construction of an
aqueduct over the Mangamary stream
in the Coimbatore Dist.*

Ap 15 28 453