

**FIFTEENTH KERALA LEGISLATIVE ASSEMBLY**

**COMMITTEE  
ON  
PUBLIC ACCOUNTS  
(2021-2023)**

**FOURTH REPORT**

**on**

**Paragraphs relating to Public Works Department contained in the Report of  
the Comptroller and Auditor General of India for the year ended  
31<sup>st</sup> March 2015 (Economic Sector).**

## CONTENTS

	<i>Page</i>
Composition of the Committee	.. v
Introduction	.. vii
Report	.. 1
Appendices :	
I. Summary of main Conclusions/Recommendations	.. 31
II. Notes furnished by Government	.. 33
III. Appendices from AG's Report	.. 121

## COMMITTEE ON PUBLIC ACCOUNTS (2021-2023)

### *Chairman :*

Shri Sunny Joseph.

### *Members :*

Shri Manjalamkuzhi Ali

DR. K. T. Jaleel

Shri C. H. Kunhambu

Shri. Mathew T. Thomas

Shri M. Rajagopalan

Shri A. N. Shamseer

Shri P. S. Supal

Shri Thomas K. Thomas

Shri K. N. Unnikrishnan

Shri M. Vincent.

### *Legislature Secretariat :*

Shri S. V. Unnikrishnan Nair, Secretary

Shri B. Reji, Joint Secretary

Shri R. Venugopal, Deputy Secretary

Smt. Shamy J., Under Secretary.

## INTRODUCTION

I, the Chairman, Committee on Public Accounts, having been authorised by the Committee to present this Report, on their behalf present the Fourth Report on paragraphs relating to Public Works Department contained in the Report of the Comptroller and Auditor General of India for the year ended 31<sup>st</sup> March 2015 (Economic Sector).

The Report of the Comptroller and Auditor General of India for the year ended 31<sup>st</sup> March 2015 (Economic Sector) was laid on the Table of the House on 28<sup>th</sup> June 2016.

The Committee considered and finalised this Report at the meeting held on 11<sup>th</sup> March, 2022.

The Committee place on records their appreciation of the assistance rendered to them by the Accountant General in the examination of the Audit Report.

Thiruvananthapuram,  
16th March, 2022.

SUNNY JOSEPH,  
*Chairman,*  
*Committee on Public Accounts.*



## REPORT

### PUBLIC WORKS DEPARTMENT

*[Audit paragraph 5.5 contained in the report of the Comptroller and Auditor General of India (Economic Sector) for the year ended 31st March 2015.]*

#### **Inadmissible payment to contractor on balance items of bridgework**

Irregular revision of rate of items mentioned in the agreement schedule by treating them as extra items and non-availing of agreed tender rebate while making payments thereon to the contractor resulted in undue benefit of ₹1.09 crore to the contractor.

As per clause 23 (e) of Notice Inviting Tenders (NIT), extra items of work are those which are not expressly or impliedly described in the schedule, plans or specification. Those items of work which though highly necessary for the proper execution of the work and its completion, if not provided for in the original contract, can be treated as 'extras'.

Further, as per Clause 3 (b) of NIT, the overall percentage rate accepted and specified in the agreement shall not be varied on any account whatsoever.

The Superintending Engineer, PWD, Roads and Bridges, North Circle, Kozhikode (SE) had awarded<sup>1</sup> (April 2009) the work "construction of bridge at Varamkadavu in Chelora Grama Panchayat in Kannur district (balance work)" to a contractor<sup>2</sup> at 21.80 per cent below estimated amount of ₹2.64 crore.

The items of work included in the original agreement schedule for formation of approach roads to the bridge structure which was completed in March 2005 consisted of earthwork for forming high embankment for approach roads, and ground improvement works using non-woven geo-textiles, woven geo-textiles and Pre-fabricated Vertical Drain (PVD).

During execution of the work, these items were treated as extra items and their rates enhanced, by executing (November 2009/March 2010) Supplementary

---

1 SE (K) 5/2009-2010 dated 17 April 2009

2 Sri TA Abdulrahiman, Kasargod

agreements by the SE with the contractor. The contractor had agreed to execute these extra items at 21.80 per cent below estimate rate. The work was completed in May 2011. The contractor was paid an amount of ₹ 3.81 crore in five part bills as of December 2015.

Audit scrutiny revealed that:

- The above items of work were expressly mentioned in the Agreement executed by the contractor for the balance work. So, as per clause 23 (e) of NIT, they could not be treated as extra items. However, in violation of this provision, SE had treated them as extra items and revised (November 2009/March 2010) their rates.

- The Executive Engineer, PWD Roads Division, Kannur, (EE) did not apply tender rebate from the payments made to the contractor on the extra items, even though it was agreed in the supplementary agreements executed. This was in violation of the rules on application of overall tender percentage contained in the NIT.

The above violations resulted in inadmissible payment of ₹1.09 crore to the contractor, which amounted to undue benefit extended to him, as shown in the table below:

Description of item in Agreement	Up to date quantity executed	Agreed rate after applying tender rebate	Revised rate used for payment without tender rebate	Undue benefit to the contractor (in ₹)
(1)	(2)	(3)	(4)	[2 x (4-3)]
Earth work filling with all classes of soil suitable for forming high embankment...	54174.38 m <sup>3</sup>	₹ 1516/10m <sup>3</sup> (1939, less 21.80 %)	2,424/10m <sup>3</sup>	49,19,033.70
Providing and laying non-woven geo-textile fabric...	6332.08 m <sup>2</sup>	₹ 55.91/m <sup>2</sup> (71.5, less 21.80%)	88/m <sup>2</sup>	2,03,196.45

(1)	(2)	(3)	(4)	[2 x (4-3)]
Providing and laying woven geo-textile fabric...	4380.78 m <sup>2</sup>	₹ 59.82/m <sup>2</sup> (76.5, less 21.80%)	89.78/m <sup>2</sup>	1,31,248.17
Providing and laying non-woven geotextile fabric under water...	800 m <sup>2</sup>	₹ 55.91/m <sup>2</sup> (71.5, less 21.80%)	88/m <sup>2</sup>	25,672.00
Providing and installing flexible pre-fabricated vertical drain...	130392.10 m	₹ 66.47/m (85, less 21.80%)	109.92/m	56,65,536.75
<b>Total undue benefit to the contractor</b>				<b>1,09,44,687.07</b>

When the matter was pointed out (June 2013), Government replied (October 2014) as under:—

- revision of rates in earthwork was in lieu of wastage of earth during execution. Further, the estimate rate for earth work was adopted without applying tender rebate, as it was an extra item, and;

- the ground improvement materials viz., geo-textiles and PVD, were brought from abroad and that an approximate rate taken from earlier executed work was adopted in the estimate. But, when order was placed for these materials at the time of execution, their rates had increased. Further, these were not items included in the Schedule of Rates, but were market rate components for which tender variation was not applied.

- The reply of Government was not tenable due to the following reasons:

- Earthwork for formation of approach roads was an item expressly provided in the original agreement schedule. Hence, revision of its rate by treating it as an extra item was a violation of the condition of NIT. Moreover, the contractor had clearly agreed in the supplementary agreement that the tender rebate of 21.80 per cent was applicable for this extra item.

- Similarly, the items for ground improvement work were also expressly provided for in the schedule of the balance work. So, the contractor had quoted his rates accordingly with tender rebate. Hence, classifying them as extra items of work and enhancing their rates was a clear violation of the NIT provision.

- Further, as per NIT, it was the duty of the contractor to ensure availability of materials before quoting his rates. Hence, the contractor was not eligible for rate revision on account of non-availability of materials and variation in market rates. In this case also, the department failed to avail the benefit of tender rebate agreed by the contractor.

Thus, the action of the Department in enhancing the rates of items expressly mentioned in the agreement schedule by treating them as extra items in violation of the NIT provisions and non-availing of agreed tender rebate on those items resulted in extending an undue benefit of ₹1.09 crore to the contractor.

*[Note submitted by the Government on the above audit paragraph is included as Appendix II.]*

*Excerpts from Committee's discussion with department officials.*

1) Regarding the audit objection on inadmissible payment of ₹1.09 crore to the contractor by treating the items mentioned in the agreement schedule for the construction of Varamkadavu bridge as extra items and non availing of agreed tender rebate, the Committee enquired why the soil investigation had not been conducted and how the TS had been issued without considering the conditions of soil and the length of approach road. The Chief Engineer (NH), PWD answered that the original administrative sanction was issued on the total amount based on a rough cost estimate for the work without any detailed investigation. He added that the technical sanction was issued based on a detailed estimate but the length of approach road was not considered.

2) The Committee noticed that a higher cost had been incurred as the approach road was built at marshy areas. To a query regarding the action of the department in granting administrative sanction to the second work, the Chief Engineer (N.H.) PWD, replied that the work of bridge proper was done by KSCC in 2005 but the work for raising up the approach road was terminated due to the sinkage of soil. Later agreement was executed by arranging the work of the approach road as balance work excluding the bridge proper.

3) He added that provision for the approach road was incorporated in the original work estimate. But minimum abutment height was specified in it. In technical sanction, a higher amount than that in the administrative sanction was provided for the work of bridge. But minimum provision for the approach road was given in the T.S. as the details of the work were not prepared. At the time of building the approach road the sinkage of soil was happened and KSCC demanded additional amount for the same and hence they were terminated from the work. The Committee expressed its displeasure over the attitude of the officials for not citing these matters in the RMT and for not submitting the concerned file at the time of audit.

4) The official from the office of Accountant General informed that audit observation was only on the balance work that was done without proper estimation and proper investigation. The Committee expressed its dissatisfaction over the termination of KSCC from the original work at risk and cost.

5) The Committee pointed out that the TS was issued without considering even the soil condition and the length of approach road, and the work which were expressly mentioned in the agreement schedule were treated as an extra item of work. Besides, non-availing of agreed tender rebate while making payments thereon to the contractor resulted in undue benefit to the contractor. The Committee directed the Department that a detailed report should be submitted within one month regarding the urgent situation behind issuing of TS, without considering the soil condition and in violation of NTT rules. The Joint Secretary, PWD assured to do so.

6) When enquired about the already worked out rate in the detailed estimate and the revised rate, the Chief Engineer, replied that the second work had done after 5 years from the original tendering and later when the balance work was tendered there was a provision for using modern technologies like Prefabricated Vertical Drains with Geo textiles for soil treatment. He added that when the earth filling was done for the completion of embankment construction, unaccounted sinkage of soil had occurred and subsequently an expert opinion from a Chennai based Geo-tech agency had been sought. The Chief Engineer also stated that since the material for PVD was imported from Malaysia, the rates were varied in

tune with the exchange rates. The contractor approached the Government to get it done at market rate. Subsequently the work was treated as extra items and revised their rates and the same was approved by the government.

7) The Committee directed the department to submit a detailed report on the matters deliberated above and the Joint Secretary, PWD agreed that it would be furnished within one month.

*[The additional information submitted by the Government on the above audit paragraph was considered by the Committee at its meetings held on 14-1-2020 and 22-1-2020]*

Excerpts from Committee's discussion with department officials.

8) Regarding the construction of Varamkadavu bridge, the Committee enquired about the sanctioning of T. S. before completing soil investigation and revision of rates by considering earth works as additional work which was a clear violation of terms and conditions. The Secretary, PWD replied that rates were increased because new technology was used for the construction of vertical drains and fender piles.

9) The Chief Engineer (Bridges) explained the construction work of the Varamkadavu bridge. The work consisting of 476 m length bridge proper and approach road was under taken by Kerala State Construction Corporation Ltd. The Construction of bridge structure was based on sub soil investigation done at abutment and pier points. Though the approach road was passing through water logged, marshy areas no sub soil investigation was done. The administrative sanction for the construction of bridge was obtained on the basis of rough cost estimate without any detailed sub soil investigation in respect of approach road. As the proposed site was found unable to bear extra weight, KSCCL not only comply the direction put forth for soil investigation but also requested to increase the estimate rate as well. When detailed investigation was conducted, there was a change in design parameters and in addition to this, pre-fabricated drains, woven and Nonwoven Geo Textile materials etc. had to be provided, thereby increasing the estimate rate.

10) The committee enquired whether there was any provision in PWD norms to tender a work based on rough estimate. The Chief Engineer informed the Committee that earlier, work was tendered with a rough estimate and the detailed design was submitted later. He further informed that this particular issue was in 2005 and now work cannot be tendered using rough estimate.

11) The Committee wanted to know how the detailed project report and detailed estimate was prepared. The Chief Engineer informed that it was prepared after conducting investigation and in this case investigation was done for Bridge proper and immediate approach construction.

12) When Committee enquired whether soil testing and detailed investigation was done as per PWD norms in this case, the Secretary, PWD replied that technical sanction was given only after all these procedure, and in this case detailed investigation was done for bridge proper and immediate approach road. The question of the Committee to clarify whether soil investigation was conducted as a part of investigation, the witness Executive Engineer (Bridges), Public Works Department answered that detailed investigation was done for the place allotted for bridge proper but soil testing was not done for approach road construction.

13) The Committee acknowledged the fact that sometimes administrative sanction was provided considering rough estimate, and it was not unusual that as amount may increase when soil testing is done due to presence of rocks or water logged area. The Committee also opined that estimate could be revised in cases where the land could not be acquired within the agreement period due to some unexpected works. But the Committee strongly commended that sanctioning TS according to a rough estimate cannot be justified and criticized the department for not following proper tender procedure.

14) The Committee wanted to know whether separate estimate was prepared for bridge proper and approach road for which Executive Engineer (Bridges) replied that both could be completed within a single estimate. He further informed the Committee that changes in foundation and pillar of bridge may affect the estimate amount and the rate difference is usually rectified through revised estimate.

15) The Committee pointed out that the mentioned work was carried out violating PWD norms, without proper investigation or detailed estimate.

16) When enquired about the bill payment details, the Executive Engineer apprised the Committee that final bill had not been produced and that payment for the remaining amount is pending. The Committee then asked about the reason for not producing the final bill, the amount remaining to be settled; the total estimated amount and the difference in amount when the estimate was revised. The Executive Engineer informed that the total estimate was 21.15 crore which included 18 crore for bridge proper and 3.15 crore for approach road which later increased to 22.50 crore. To the question of the Committee when the construction of bridge was completed, the witness Executive Engineer (Bridges) replied that the work was completed in 2010 and that the bill was submitted in the same year itself.

17) The Committee expressed its displeasure to know that some files related to the above case seems missing as all files were not handed over to PWD from KSCCL. The Secretary, Public Works Department informed the Committee about the fact that the construction of Varamkadavu bridge was taken up by Kerala State Construction Company Limited and that they had not completely claimed their amount. He added that the work had been completed within 7 months as per the order of Hon'ble Highcourt and Chief Engineer had approved the design and there was no objection regarding the procedure of the work.

18) The Secretary, Public work department informed the Committee that the discrepancy came up as they used the latest technology available at that time for the construction, which accordingly increased the total estimate cost. The Committee enquired whether new technology was applied after the work was awarded and the agreement was signed.

19) The Chief Engineer (Bridges) Public Works Department informed the Committee that the total cost increased when land spanning has to be conducted due to deficiency of soil as well as when construction work had to be done through wet land. He added that similar instance could be identified in KIIFB project, Konnayil Kadavu where the construction work was dropped due to miscalculation in selection of appropriate site for construction.



20) Expressing dissatisfaction in the reply furnished by the department, the Committee criticised the department in according administrative sanction for construction of Varamkadavu Bridge and approach road without proper soil investigation and in allowing inadmissible payment to contractor by treating the earth works as extra item. The Committee directed the department to avoid such delinquencies and to take strict measures not to repeat such instances in future.

### **Conclusions/Recommendations**

21) The Committee criticised the department in according administrative sanction for construction of Varamkadavu Bridge and approach road without proper soil investigation and in allowing inadmissible payment to the contractor by treating the earth works as extra item. The Committee directs the department to avoid such delinquencies and to take strict measures not to repeat such instances in future.

*[Audit Paragraph 5.6 contained in the report of the Comptroller and Auditor General of India (Economic Sector) for the year ended 31st March 2015.]*

### **Disallowance of re-imbusement claim by MoRTH**

Execution of original works without prior approval of MoRTH by treating them as ordinary repair works resulted in rejection of reimbursement claim of ₹68.10 crore besides foregoing agency charges of ₹6.13 crore.

The Ministry of Road Transport and Highways (MoRTH) is primarily responsible for development and maintenance of National Highways (NHs). The activities are monitored by the Regional Office of MoRTH in each State. The actual work of construction of NH is entrusted to State Government on agency basis under the provisions of Article 258 of the Constitution of India for which nine per cent agency charges are claimed by State Government from MoRTH. The role of State Government is confined mainly to maintain, upgrade and improve the riding quality of existing NHs and carry out ordinary annual repairs.

Up to 31<sup>st</sup> March, 2003, the State Government was to initially incur expenditure on construction and maintenance of NHs and then get it reimbursed

from MoRTH. With effect from 1st April 2003, the system was changed to Direct Payment Procedure (DPP) by MoRTH for all NH works under the major head 5054 and Special repair and periodical renewal / Improvement of Riding Quality works under major head 3054. The transactions under DPP, therefore, do not involve the State Government budgetary system. For Ordinary Repairs (ORs) and Flood Damage Repairs (FDRs), the previous system was continuing. As such, the NH works undertaken as ORs and FDRs do not require prior sanction by MoRTH before execution.

Scrutiny of records (between December 2011 and October 2015) in five offices<sup>3</sup> of NH wing of Public Works Department (PWD) revealed that 17 works were executed during the period 2011-12 and 2014-15 treating them as ORs, based on the sanctions of State Government only and claimed reimbursement from MoRTH (between January 2012 and June 2014) projecting them as ORs. The MoRTH disallowed (between March 2012 and September 2014) the claim for reimbursement stating that the works executed were not ORs but Original Works requiring prior sanction of MoRTH before execution. The claims thus disallowed amounted to ₹68.10 crore which the State Government had to bear from its own budgetary resources. Besides, the State also could not claim agency charges amounting to ₹6.13 crore.

Thus, the department failed to adhere to the guidelines of MoRTH while making claim for reimbursement of expenditure incurred on the maintenance of NHs and consequently burdening the State exchequer to the extent of ₹74.23 crore.

Government replied that the department had arranged the works due to poor condition of NHs in the State and inadequacy of funds/sanction from Government of India. It was also stated that the works undertaken were ORs not requiring prior sanction from MoRTH. The reply is not tenable as the works executed were not Ordinary Repair works but were Original Works as remarked by MoRTH while scrutinising the claim for reimbursement. Further, these Original Works required prior sanction from MoRTH.

---

3 NH Division Kannur, Kodungallur, Kozhikode, Moovattupuzha and NH North Circle Kozhikode.

*[Note submitted by the Government on the above audit paragraph is included as Appendix II.]*

*Excerpts from Committee's discussion with department officials*

22) The Chief Engineer (N.H) informed that during the period 2011-12 and 2014-15, there had been public protest over deplorable conditions of NH in the state, and the work were arranged on the basis of two G.Os charging to state exchequer and later of claim of ₹68.10 crore was submitted to MoRTH for reimbursement. But the claim was rejected by MoRTH stating that the works executed were not ordinary repairs but original works requiring prior sanction of MoRTH before execution. Later the amount was written back as per C&AG's direction. Then the AG directed for the additional authorisation in the head of account '3054' when the chances of re-imbursement became rare. Then the government additionally authorised ₹20 crore during 2013, and the remaining ₹40 Crore during the last year. For a query of the Committee on the amount of Central government allocation for NH maintenance, the witness replied that Central Government allotted ₹12 crore for ordinary repair and ₹77 crore for major repair. He added that the department had arranged works due to poor condition of NHs and inadequacy of funds recieved from Government of India and the works undertaken were ORs not requiring prior sanction from MoRTH. The Committee remarked that a procedural lapse was vivid in the whole process. When a meeeting was convened by the Principal Secretary, PWD no representative of NHAI was invited. The issue could have been avoided had proper communications with the central government authorities were carried out.

**Conclusion/Recommendation**

23) No Comments.

*[Audit Paragraph 5.7 contained in the report of the Comptroller and Auditor General of India (Economic Sector) for the year ended 31st March 2015.]*

**Awarding work without tender and providing undue benefit to a contractor**

The execution of work without tender process and unwarranted revision of agreed rates by PWD extended undue benefit of ₹ 92.32 lakh to the contractor.

As per Para 2003 of Kerala Public Works Department Manual, works shall normally be awarded through open tenders after getting administrative and technical sanction and ensuring provisions of funds in the Budget.

Secretary to Government, PWD sanctioned (December 2012) re-construction of the partially collapsed Menonpara bridge across Korayar river in Nattukal-Velanthalavalam State Highway in Roads Division, Palakkad through M/s. Kerala State Construction Corporation Limited (KSCC) without inviting tender at an estimated cost of ₹ 10.15 crore to avoid delay in tendering process. The Superintending Engineer (Roads and Bridges), North circle, Kozhikode(SE), awarded (January 2013) the work to KSCC at a cost of ₹9.31 crore. The site was handed over (January 2013) to the contractor for completion of work in 18 months. PWD revised (March 2013) the sanction to ₹18.30 crore after including road improvement work of nine kms in place of three kms originally estimated. The work was completed in May 2014. The contractor was paid ₹17.49 crore up to June 2015.

One of the items of work included in the agreement schedule for the construction of bridge was " Boring through all classes of soil for cast in situ bored piles with concrete mix M25, 1.20 metre internal diameter anchoring of pile in rock for a minimum depth of 50 centimetres etc". The work involved construction of 28 piles, 12 piles for piers each having an average depth of nine metre and 16 piles for abutment each having an average depth of 10 metre. The total length of piles was estimated to be 270 m and the agreed rate was ₹16,344 per metre. However, during actual execution, Chief Engineer, PWD Roads and Bridges (CE) revised (May 2013) the rate of the above item from ₹16,344 to ₹34,017 per metre citing reasons such as increase in average depth of piles from 9 to 19 m due to non- availability of hard rock at the estimated depth, error in calculation of hire charges for piling plant and use of M Sand<sup>4</sup> due to scarcity of

---

<sup>4</sup> Mineral sand - This is at times used as an alternate for river sand.

river sand. CE sanctioned (May 2013) the rate of above item as 'extra item' and SE executed (June 2014) a Supplementary Agreement for a total length of 549.85 m. An amount of ₹1.87 crore was paid (July 2014) to the contractor for the 'extra item'.

Audit scrutiny (February 2014) revealed the following:

- The bridge had collapsed in August 2010 and the Government decided to take up re-construction work only after a lapse of two-and-a-half years of collapse. Awarding of work to KSCC only without inviting open tenders after two-and-a-half years was lacking not only in justification but it was also against manual provisions which advocate transparency in selection of bidders through open competition.

- Items of work which do not form part of the original Agreement Schedule are treated as "Extra items". In this case, the item " boring cast in situ piles" , was already existing in the Agreement Schedule. As such, it cannot be subsequently treated as an " extra item".

- The contractor is expected, before quoting his rates, to inspect the site of the proposed work and assess the availability of specified materials. He is also expected to get himself acquainted with the sanctioned estimate, approved plans and drawings. Once his rates have been accepted and agreement finalized and signed, he is bound by the same and cannot claim its revision on grounds of errors in sanctioned estimates, un-availability or scarce availability of the specified materials etc.

- In the name of approving an " extra item" , the Department has resorted to revision of rates and specifications, after the award of work, on grounds of "scarce availability of river-sand", "error in calculation of hire charges of piling plant" and made an extra payment of ₹97.17 lakh to KSCC. The action of the department was wrong as the ground cited for their action were not valid.

Thus, undue revision of rate resulted in extra payment of ₹97.17<sup>5</sup> lakh to the contractor.

Government replied (October 2015) that the work was entrusted to KSCC to avoid delay as the tendering procedure would have taken long time. Further, the rates for piling were revised as the depth of piling work had to be increased from 270 m to 549 m during execution. Besides, due to non-availability of good quality of river sand, the M sand was substituted and that there was some mistake in preparation of data.

The reply of the Government was not acceptable because the period of two-and-a-half years between the date of collapse of bridge and award of work for re-construction was reasonably adequate for completing all open tender formalities including invitation of competitive tenders so that the work could be awarded without compromising transparency instead of giving to KSCC only. Further, the revision of rates for piling was also not acceptable as the rate agreed by the contractor for piling was per metre and not for casting entire pile for a specific length. Besides, rate once concluded in the agreement signed by both the parties, was not required to be revised.

Thus, unwarranted revision of rate resulted in extension of undue benefit of ₹92.32<sup>6</sup> lakh to the sub-contractor of KSCC.

*[Note submitted by the Government on the above audit paragraph is included as Appendix II.]*

*Excerpts from Committee's discussion with department officials*

24) Regarding the audit objection, the CE (NH) apprised that the work entrusted to the KSCC was as per government order. Though the old Menonpara bridge was collapsed on 2010, the government accorded AS in 2012 for the re-construction work without tender. During the actual execution, the Chief Engineer, revised the rate of the item due to error in calculation of hire charges. The Committee noted that once the rates had been accepted and the agreement was finalised and signed, the revision of rates on grounds of errors in sanctioned estimates should not be permitted. It opined that the enhancement of rates from ₹ 16344/m to ₹ 34017/m had no basis and the original rate should have been applied for the increased length of piles. The awarding of work to KSCC without

---

<sup>6</sup> ₹ 97.17 lakh less ₹ 4.85 lakh being five per cent margin of KSCC.

inviting open tender against manual provision had no justification. The Committee viewed it as a fraudulent act and directed the department to look into the matter seriously and take disciplinary action against the officials responsible for it.

### **Conclusion/Recommendation**

25) The Committee understands that the old Menonpara bridge collapsed in 2010, and the Government accorded AS in 2012 for the re-construction work without inviting open tenders. During the actual execution, the Chief Engineer revised the rate of the extra item due to error in calculation of hire charges for piling plant. The Committee noted that once the rates had been accepted and the agreement was finalised and signed, the revision of rates on the grounds of errors in sanctioned estimates could not be permitted. The Committee opines that the revisions of agreed rates had no basis and the original rates should have been applied for the increased length of piles and the awarding of work to KSCC without inviting open tender against PWD manual provisions had no justification. The Committee observes it as a fraudulent act and directs the department to look into the matter seriously and take disciplinary action against the officials responsible for it.

*[Audit paragraph 5.8 contained in the report of the Comptroller and Auditor General of India (Economic Sector) for the year ended 31st March 2015.]*

### **Wasteful expenditure on construction of fender piles in a bridge work**

Department constructed "fender piles" for protecting a bridge from the impact of collision with barges even though bridge did not have scope for navigation of heavy vessels resulting in wasteful expenditure of ₹3.12 crore.

The Public Works Department (PWD) awarded the work of the construction of 'Thadikkakadavu Bridge' across Pariyar river by Roads division, Ernakulam for ₹27.51 crore. The site was handed over (June 2012) to the contractor for completion of work in 18 months (December 2013). The work remained incomplete (July 2015) and the contractor had been paid ₹15.71 crore (July 2015).

The bridge was designed to rest on a foundation of bored cast-in-situ piles, for which 2,650 metres of piles at a unit rate of ₹27,056 per metre were planned. During execution, the length of piles was increased to 3220 metres of which 729.79 metres were provided as 'fender piles' in a separate pile group, upstream and downstream of the bridge. The department stated that the fender piles were required to protect the bridge from the impact of collision from heavily loaded cargo boats moving from Nedumbassery airport to Kochi city. The cost of construction of fender piles was ₹3.12 crore<sup>1</sup>.

Audit observed that though the original design of the bridge was approved (March 2012) by the Design Research and Investigation Quality Control wing (DRIQ), under the control of Chief Engineer (Designs) as stipulated in the PWD manual, the design of fender piles was approved (November 2012) by the CE himself, which means that the DRIQ was not involved in the change of design of fender piles.

It was further noticed that there was no specific request from various stakeholders / departments (KSINC, SWTD, IND etc.) regarding provision for fender piles. Moreover, the route identified for connecting Nedumbassery airport with Kochi city passes through the southern arm of river Periyar, whereas the bridge was constructed on the northern arm as shown in the sketch attached.

Further, there was no infrastructure for anchoring of cargo boats anywhere near the Nedumbassery airport. Therefore, the construction of fender piles by adducing to safety concerns from barges/cargo boats was not tenable.

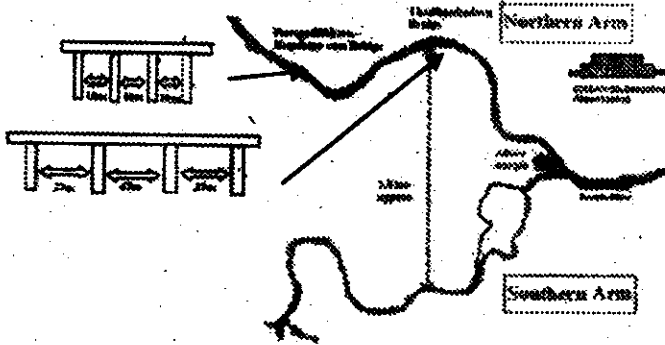
---

<sup>1</sup> Fender piles are provided in ports and harbours to absorb the impact of berthing vessels and to avoid damage both to the vessels and the structure which are made of shock absorbing materials.

<sup>8</sup> Floating platform for working ₹ 25.61 lakh (+) anticorrosive treatment to reinforcement ₹ 4.51 lakh (+) boring and concreting ₹ 197.45 lakh (+) providing casing pipe ₹75.90 lakh (+) providing reinforcement to concrete ₹ 43.24 lakh = ₹ 346.71 lakh less tender rebate ₹ 34.95 lakh = ₹ 311.76 lakh say ₹ 3.12 crore.



### Sketch of Location of Thadikkakadavu Bridge



Audit also observed that the fender piles were made of concrete with no impact absorbing quality to provide protection either to the bridge structure or to the vessels in the event of a collision. Further, the top level<sup>9</sup> of fender piles constructed was much below the Maximum Flood Level (MFL)<sup>10</sup> of the river. The fender piles would not be visible during flood, making it likely to cause damage to the piers of the bridge as well as the barges. Thus, the purpose of protecting the piers with the help of fenders was doubtful.

On being asked, the Secretary, PWD replied (October 2015) that on account of concerns of polluting the drinking water projects at Chowara and Aluva, Cochin International Airport Limited (CIAL) shelved a proposal to develop the Southern branch of Periyar river as a waterway connecting CIAL to Kochi Seaport for cargo movement. An alternative proposal of developing the Northern branch was under consideration of CIAL, and hence, the fender piles were constructed in anticipation of movement of heavy cargo vessels through the same.

The reply was not tenable in view of the confirmation provided by Irrigation Department that there were no plans of developing the Northern branch of Periyar River over which the Thadikkakadavu bridge is constructed, as a waterway connecting CIAL with the Kochi Seaport. Irrigation Department further confirmed that there were bottlenecks for large scale cargo movement from CIAL to Kochi city/seaport through the Northern branch, like insufficient vertical clearance of existing cross structures, insufficient width and depth in a five km stretch between CIAL and Chengal thodu.

9 49.8000 metres

10 51.825 metres

Thus, the decision to change the designs for providing fender piles was taken without assessing actual requirement and approval of the DRIQ Board which led to wasteful expenditure of ₹3.12 crore on construction of fender piles.

*[Note submitted by the Government on the above audit paragraph is included as Appendix II.]*

*Excerpts from Committee's discussion with department officials.*

26) Regarding the audit paragraph, Executive Engineer, PWD informed that, it was decided to construct fender piles for protecting the pier of the Thadikkakadavu bridge came up during the execution of work in view of an alarming incident of vessel hit to Venduruthy Bridge. The Committee questioned the purpose behind the construction of fender piles when the same would not be visible above the water level during floods.

27) The witness continued that the fender piles were constructed to protect the bridge, not the barge, and the possibility of occurring flood was rare. The Executive Engineer (Design & Bridges) added that the irrigation department confirmed that there was no navigable water ways connecting Nedumbassery Airport to Periyar River, and thus the audit objection occurred, but they had constructed a locking system in Purappillykavu bridge in the northern arm of Periyar for navigation purpose. The Committee noted that the irrigation department gave an impression through the construction of Purappillykavu bridge that the northern arm was also navigable and the fender piles constructed at Thadikkakadavu Bridge was necessary. The Committee had requested Accountant General to verify the issue with the irrigation department and to furnish a reply in this regard.

**[The additional information from the government on the above audit paragraph was considered in the meeting of the Committee held on 14-1-2020 and 22-1-2020. The Committee also considered verification report submitted by Accountant General upon the request of the Committee.]**

*Excerpts from Committee's discussion with department officials*

28) The chairman explained the background for the discussion. Audit para 5.8 is regarding the loss sustained to the tune of ₹ 3.12 crores by unnecessary construction of fender piles for Thadikkakadavu Bridge. In earlier discussion PWD Officials had drawn attention of the Committee to the fact that similar fender piles were constructed for Purampallykavu Bridge too. As per request of the Committee, Accountant General conducted a joint verification with Irrigation Department team and submitted a verification report before the Committee. In the report it is stated that Purappillykavu Bridge is actually a regulator-cum-bridge with navigation lock and dimension of navigation lock indicates that any bridges with a span of more than 10 meter either upstream or downstream would no way facilitate navigation due to bottleneck at Purappillykavu RCB. The report clearly states that since Purappillykavu RCB is suitable for movement of small vessels only, need of fender piles at Thadikkakadavu Bridge was unwarranted.

29) Regarding the construction of bridge over water ways, the Secretary apprised that new guidelines had been issued for fixing minimum height for bridges included in State Water ways system and hence cost will increase for land acquisition and construction. The Committee pointed out that these guidelines was also compulsory for National Water Ways.

30) The Committee understands that regarding the construction of Thadikkadavu bridge, audit observation points out the extra expenditure of ₹3.12 Crore for construction of safe guard pillars, which was not included in estimate. The Chief Engineer (Bridges), PWD replied that the work was done as piling was about to be completed. The Committee pointed out that such a construction was done in a place which was not at all navigable and was clearly an unwarranted work.

31) The Committee considered the verification report submitted by Accountant General on Committee's request. In the report Accountant General strongly refuted the Department's stand, that fender piles were constructed at Thadikkakadavu bridge across Periyar for protecting the bridge from collusion by barges, by clearly showing specific evidence that the particular stretch of waterway is not suitable for navigation because of the bottleneck upstream at Purappillykavu RCB which makes passage of heavy or medium size vessels

impossible. Also the portion of river is not included in national water ways and no plans are there for developing the stretch for navigation. The Committee, analysing Accountant General's report, observed that it was clearly an unnecessary work to construct fender piles at Thadikkakadavu Bridge which resulted in the loss of ₹3.12 crore to exchequer. The Committee suspects collusion between contractor and department officials in undertaking and completing such an unnecessary work. The Committee decided to drop the audit para with a stern warning to the Department to make sure that such flaws are not repeated in future, which if repeated, will force the Committee to make strong recommendations.

### **Conclusion/Recommendation**

32) The Committee observes that it was clearly a wasteful expenditure to construct fender piles at Thadikkakadavu Bridge which resulted in the loss of ₹3.12 crore to the exchequer. The Committee suspects collusion between contractor and department officials in undertaking and completing such an unnecessary work. The Committee decided to warn the Department and to make sure that such flaws are not repeated in future, which if repeated, will force the Committee to make strong recommendations.

*[Audit paragraph 5.9 contained in the report of the Comptroller and Auditor General of India (Economic Sector) for the year ended 31st March 2015.]*

### **Avoidable payment on sinking of wells for foundation of four bridges**

Separate payment amounting to ₹2.28 crore was made to the contractors by PWD outside the agreed rate for removing obstacles encountered during sinking of wells for foundation of four bridges.

The special conditions of contract stipulate that the rate quoted shall be inclusive of all the operations contemplated in the specification and tender schedule which covers the incidental work necessary for such operations. The conditions further stated that all items should be carried as per the relevant specification in the Madras Detailed Standard Specification (MDSS) which specifies that when the well has reached the required level care should be taken to see that it is seated properly.

Superintending Engineer, Roads and Bridges, North Circle, Kozhikode (SE), had awarded<sup>11</sup> (March 2011 to July 2012) four bridge works under PWD Roads Division, Manjeri at an estimated cost of ₹24.65 crore in Malappuram district. As per the agreement schedule, one of the items of work was sinking of reinforced cement concrete circular well in all classes of soil other than rock. The sinking process includes scooping of earth to line, level and plumb from inside and below steining with dredgers and other appliances including removal of obstacles. The EE made extra payments of ₹2.28 crore to the contractors of four bridge works towards charges for cutting and breaking down boulders having the size of more than 40 dm<sup>3</sup> during sinking of wells and for seating of wells as shown below:

**Table 5.1: Details of works showing extra payments made**

Sl. No.	Name of work	Particulars of estimated cost and extra payments for well sinking			
		Item(as per agreement)	Estimated cost (₹ in lakh)	Extra payment on (₹ in lakh)	Percentage of extra payment on estimated cost
(1)	(2)	(3)	(4)	(5)	$[(5)/(4)] \times 100$
1.	Construction of Mythrakadavu bridge Construction	5	6.36	96.12	1,511.32
2.	Construction of Valippadam-Alungalkadavu bridge	6, 7	15.15	63.49	419.08
3.	Construction of Thayyilakkadavu bridge	6, 7	11.57	30.00	259.29
4.	Construction of Umminikadavu bridge	6, 7	15.01	38.51	256.56
<b>Total</b>			<b>48.09</b>	<b>228.12</b>	<b>474.36</b>

*Source: Agreements and vouchers*

<sup>11</sup> Shri.V.P.Mohammed Ayub, Branhikode, Edavana, Malappuram, M/s Ernad Engineering Enterprises Ltd., Kodur P.O, Malappuram, M/s Thrimathy Contracting, CPC Centre, Hospital Road, Nilambur.

As can be seen from the above table, the percentage of extra payment comes to nearly four times the estimated cost of the agreed item of well sinking and this payment was made without following the usual tender procedure.

In this connection Audit observed the following:

All works except the extra items were put to tender on 'percentage rate basis' in which the 'quoted rate' was inclusive of all operations contemplated in the specifications and tender schedules including incidentals. The workable rate quoted by the bidder was inclusive of charges for removing boulders irrespective of their size. Therefore, the payment for cutting and breaking down boulders of more than 40 dm<sup>3</sup> size during sinking of abutments and pier wells and for seating of wells on base, over and above the estimated cost was contrary to the provisions contained in the agreement.

Secretary, PWD stated (October 2015) that the approved design of bridges insisted seating of well foundation upon a levelled hard rock stratum and well kerbs were to be anchored to a minimum 60 cm depth into hard rock and that in order to seat the well foundations, the top layers of rock formations were to be cut and removed as mentioned in design and that the rates for the above rock cutting works were not included in the agreed specifications. Further, the reply stated that the general note in Standard Data Book permitted the payment for cutting down boulders of size above 40 dm<sup>3</sup> and wooden logs of size above 100 dm<sup>3</sup> if encountered during well sinking.

The reply of the Government was not tenable as the quoted rate was inclusive of all operations contemplated in the specifications and tender schedules including incidentals. The specification in the tender schedule and agreement schedule for the item of well sinking included 'removal of obstacles'. As notes in the Standard Data Book were not made part of the agreements, extra payment for cutting down boulders of size above 40 dm<sup>3</sup> was not permissible. Thus, due to its failure to adhere to the specifications in the tender schedules, the Department had extended undue benefit of ₹2.28 crore to the contractors.

*[Note submitted by the Government on the above audit paragraph is included as Appendix II.]*

*Excerpts from Committee's discussion with department officials.*

33) The Committee noted that the special conditions of contract stipulated that the rate quoted was inclusive of all the operations contemplated in specification and tender schedules including incidentals. The Executive Engineer (Design & Bridges) informed that the approved design of bridges insisted seating of well foundation upon a levelled hard rock stratum and well kerbs were to be anchored to a minimum 60 cm depth into hard rocks and that in order to seat the well foundations, the top layers of rock formations were to be cut and removed as mentioned in design and that the rates for the rock cutting works were not included in the agreed specifications. The Committee remarked that the specification in the tender schedule and agreement schedule for the item of well sinking included 'removal of obstacles'. As notes in the standard Data Book were not made part of the agreements, extra payment for cutting down boulders of size above 40dm<sup>3</sup> was not permissible. The Committee remarked that the agreement executed for a work should be comprehensive enough to include all the incidental items that were essential for proper execution of the work.

#### **Conclusion/Recommendation**

34) The Committee opines that the special conditions of contract stipulate that the rate quoted shall be inclusive of all the operations contemplated in the specification and tender schedule which covers the incidental work also. The Committee directs the department to ensure that the agreement to be executed for a work should be comprehensive enough to include all the incidental items that are essential for the proper execution of work.

*[Audit Paragraph 5.10 contained in the report of the Comptroller and Auditor General of India (Economic Sector) for the year ended 31st March 2015.]*

**Extra expenditure due to non-finalisation of tender within the firm period**

**Lapse of the department in adhering to PWD Manual instructions and Government orders regarding finalisation of tender within firm period resulted in avoidable financial implication of ₹1.56 crore.**

According to the provisions of Kerala PWD Manual, consideration of tenders and the decision thereon should be completed well before the date of expiry of the firm period noted in the tender so that the selection notice is sent on or before the expiry of the firm period<sup>12</sup>. In case, selection notice is not issued before the expiry of the firm period, the bidder's offer would stand nullified automatically. In order to avoid such delays, Government had issued (May 2007) instructions prescribing time frame for completion of processing of tenders at various stages. Accordingly, the department shall place the tender before the Government within six weeks from the date of opening of tender followed by its submission before the Government Tender Committee (GTC) within seven days. After approval of proposal by GTC, order shall be issued within one week. The GOK, Finance Department had issued orders (January 2010) that in cases where tender amount is in excess of 10 per cent of Local Market Rate<sup>13</sup> (LMR), justification should be submitted along with the tenders.

The Secretary (PWD) issued (December 2011) Administrative Sanction (AS) to the work 'Improvements to Kodumba-Padalikkadu Canal bund road from km 0/000 to 8/200' in Palakkad district at a cost of ₹ 5.10 crore. Based on Technical Sanction (TS) given by CE, the Superintending Engineer, PWD, Roads and Bridges, North Circle, Kozhikode (SE) invited (January 2012) pre-qualification-cum-tenders (PQ) for works from eligible contractors, fixing date of opening as 6 March 2012. The firm period of tender was 120 days i.e. up to 3 July 2012. Of the two bids received, one was pre-qualified (2 April 2012) by the Chief Engineers' Committee. The SE opened (10 April 2012) the financial bid of the pre-qualified contractor<sup>14</sup> whose quoted rate was 14.89 per cent above the estimate rate. After processing the tender, the department accepted (April 2013) the tender

---

12 The firm period of a tender is the period from the date of opening of the tender to the date upto which the offer given in the tender is binding on the bidder. The firm period is fixed as the maximum time required within which a decision can be taken on the tender and order of acceptance issued in writing to the bidder, which shall be prescribed in the NIT.

13 The Local Market Rate for materials and labour shall be fixed by the EE twice every year for preparing LMR justification for the purpose of estimates for tender approval.

14 M/s PK Construction Company, Muvattupuzha.



rate quoted by the contractor after delay of eight months. In the meantime, the firm period had expired due to which the contractor was not willing (May 2013) to take up the work.

After failing to award the work due to the contractor's unwillingness, the department re-tendered (July 2013) the work which evoked no response. However, citing urgency of the work, the department invited (November 2013) negotiated quotations from 'A' class registered contractors for the work at the same estimate rates in terms of instructions contained in PWD manual. The only quotation received from a contractor<sup>15</sup> was at 48.50 per cent above the estimate rate which was accepted (May 2014) by the Department at 45.43 per cent above the estimate rate as recommended by the Committee of Secretaries. The work was awarded (May 2014) to the contractor for ₹7.24 crore. The work which was scheduled for completion by May 2015 had been extended up to February 2016. An amount of ₹5.05 crore had been paid for the work done till September 2015.

Audit scrutiny relating to the first tender revealed that though the tenders were opened on 6 March 2012, the SE had furnished LMR justification only on 3 December 2012, after a delay of eight months as against six weeks as per guidelines. The delay in furnishing the LMR by SE resulted in delayed approval of tender by PWD and GTC. The LMR justification (December 2012) was 43.65 per cent above estimate rate. Audit observed that had the tender been accepted within the firm period, the work would have been executed by the first contractor at a cost of ₹5.68 crore as against agreed value of ₹7.24 crore.

On this being pointed out, the SE stated (August 2014) that the delay in forwarding tenders to PWD was due to the delayed response of the first contractor to negotiations. The reply was not tenable due to the reason that had the SE prepared LMR justification soon after the opening of financial bid, it would have been evident that the tender excess of 14.89 per cent above the Estimated Probable Amount of Contract offered by the first contractor was far below the LMR (December 2012) of 43.65 per cent.

---

15 M/s P.G Constructions, Pullani, Oarambil, Thrithala, Mezhathur P.O, Palakkad.

Thus, the non-approval of the first tender by the department within the firm period due to non-preparation of LMR in time and delay in submission of tender documents adhering to the time schedules as per guidelines resulted in avoidable financial implication of ₹1.56<sup>16</sup> crore which call for fixing of responsibility of the officials at fault for the inordinate delay in finalising the tender and initiate appropriate action against them.

*[Note furnished by the Government on the above audit paragraph is included as Appendix II.]*

Excerpts from committee's discussion with department officials.

35) Regarding the audit paragraph, the executive Engineer (Design & Bridges) PWD admitted that the first tender work was not finalised within the firm period due to the delay occurred in the preparation and submission of LMR Comparison Statement. He added that PWD had modernised the system of LMR justification estimate through 'PRICE Software' and the delay would be eliminated in future by the implementation of the new system. But the Committee was not satisfied with the explanation given by the department on the particular case and decided to recommend that disciplinary action should be taken against the officers responsible for the delay and resulted in loss to public exchequer and to report it to the Committee within one month.

### **Conclusion/Recommendation**

36) The Committee observes that the first tender work was not finalised within the firm period due to delay occurred in the preparation and submission of LMR comparison statement resulted in huge lose to the exchequer to the tune of ₹1.56 crore. Hence the Committee opines that it could not be condoned and recommends that disciplinary action should be taken against the officers responsible for the delay.

*[Audit Paragraph 5.11 contained in the report of the Comptroller and Auditor General of India (Economic Sector) for the year ended 31st March 2015.]*

---

<sup>16</sup> ₹7.24 crore - ₹5.68 crore = ₹1.56 crore

### **Double payment to the contractor for same work through Hand Receipts**

**Failure to exercise required verification by PWD resulted in double payment for executing an item of work in the construction of Mythrakadavu bridge across river Chaliyar in Malappuram District.**

Article 40 (b) of the Kerala Financial Code provides that every Government servant who incurs or authorises the incurring of any expenditure from public funds should see that the expenditure should not be prima facie more than the occasion demands. He is expected to exercise the same diligence and care in respect of all expenditure from public money under his control as a person of ordinary prudence would exercise in respect of the expenditure of his own money.

Superintending Engineer, Roads & Bridges, North Circle, Calicut, (SE) had executed an agreement (March 2011) with Shri V.P.Mohammad Ayub, contractor, Eranhikode, Edavana, Malappuram District, for the construction of Mythrakadavu bridge across river Chaliyar in Malappuram District. The work was executed by the Executive Engineer, Roads Division, Manjeri (EE).

Audit of vouchers (July 2015) of Public Works Department transactions (PWD) in the office of the EE revealed that the EE had made (July 2015) a payment of ₹14.93 lakh through a Hand Receipt (HR) prepared by the Assistant Engineer, Bridges Section, Manjeri (AE) and verified by the Assistant Executive Engineer, Bridges Sub Division, Manjeri (AEE) for an item of work "cutting and breaking into small pieces of boulders size during sinking of wells and seating of well-pier-2". The payment recorded at page 35 of Measurement Book No.7732, was made through the Bill Discounting System (BDS) and adjusted in the Monthly Account of July 2015 through a Transfer Entry (July 2015). The EE made (July 2015) payment based on the sanction accorded in respect of an item of work in the Daily Labour Report by the Chief Engineer, Roads & Bridges (CE), Thiruvananthapuram.

As the sanction was more than two years old, a further scrutiny in Audit revealed that a total amount of ₹55.12 lakh (including the amount of ₹14.93 lakh related to the work) was paid during July 2015 for executing the item and that the

amount of ₹14.93 lakh had already been paid earlier during May 2013 (CBV 150Dn of May 2013) based on the same sanction for executing the same item. Both the payments, i.e. May 2013 and July 2015 were made through HR prepared by the then AE and verified by the then AEE and recorded on Page 6 of Measurement Book No.9360.

Further Audit investigation revealed that only one Daily Labour Report (DLR) was sanctioned in the Divisional records to support the payment of ₹14.93 lakh (May 2013). No DLR was available to support the second payment of July 2015 which confirmed that payment of ₹14.93 lakh made to the contractor during July 2015 through the BDS was double payment. On this being pointed out by Audit (December 2015), the EE admitted the double payment and got the amount remitted from the contractor in December 2015.

Audit of Internal Control Mechanism of the office of the EE, further revealed that the office was neither maintaining nor monitoring the requisite Control Registers as stipulated in Kerala Public Works Account Code Para No.10.5 (Works Abstract), Para Nos.10.6 and 5.3.3 (Works Register), Para No.10.7 (Contractors' Ledger) and Para No.22.2.7 (Miscellaneous Sanction Register). The AE was, thus, not exercising any preliminary checks on the contractors' claims. Thus, disregard for the mandatory checks of consulting previous records by the EE led to double payment of ₹14.93 lakh for the same work.

Further, the double payment of July 2015 was made through the newly introduced Bill Discounting System (BDS). The Finance Department (FD) transfers the details of only those Bills into the BDS database which are processed and recommended by the CE in 'EMLI' software and for which the FD had agreed to issue a Letter of Credit (LoC). The fact that the LoC for the payment of ₹14.93 lakh was issued by the FD in July 2015 and that the payment of July 2015 occurred through BDS, confirmed that the claim of the contractor was processed and recommended throughout the entire chain of authorities from the AE level to the CE level and that none of the authorities could detect the double payment being attempted. This revealed as under.

- a weak Internal Control Mechanism in the Roads and Bridges wing of the PWD;

- recovery of double payment in this case was at the instance of Audit but no action has been taken against the officials responsible for this. Besides, the present system gives scope for such double payments escaping detection in future; and

- The software EMLI was not able to detect the fact that a Letter of Credit had already been generated against the same sanction at an earlier date.

In this respect, Audit recommends as under:

1. The commission of double payment coupled with the weakness of the Internal Control Mechanism of the Department requires thorough investigation, preferably by Vigilance authorities to pre-empt any intentional negligence/fraud;

2. The software 'EMLI' may be modified so that only one Letter of Credit is generated against a sanction and any further attempt to generate Letter of Credit on the same sanction would be rejected by the system automatically; and

3. The payment of huge amounts through HRs (KPW Form 24), instead of the Forms KPW 22 (for making first and final payment to contractor) or KPW 23 (for making running payments), may be discouraged as the HRs lack the basic control measures and accountability provisions as compared to Forms KPW 22 or 23 which help to pre-empt irregular payments.

During Exit Conference, the Chief Engineer stated that this was the first instance and no other case of double payment was currently known to the Department. As regards enquiry about such instances taken place in other Divisions also, the Secretary to Government stated that assurance could be furnished only after an investigation in the matter. Thus, thorough investigation is required in the matter to guard against the recurrence of such serious lapses in future.

*[Note furnished by the Government on the above audit paragraph is included as Appendix II.]*

Excerpts from committee's discussion with department officials.

37) Regarding the audit objection, the Executive Engineer (Design & Bridges) PWD informed that when the duplication in payment was detected, immediately the department issued an order to recover the excess amount paid and the contractor remitted the excess payment on the same day. Hence no financial loss was sustained by Government and departmental action was taken against the officials responsible for this.

38) With regard to the program of rectification of the software EMLI the Joint Secretary PWD, informed that they had discussed the matter with finance department and NIC.

39) The Committee observed that double payment and weak internal control mechanism existed in the Roads and Bridges wing of the PWD and needed a thorough investigation. The Committee directed the inspection wing of the Finance Department to conduct an enquiry for such instances that might have taken place in other PWD divisions. The Committee also directed the Public Works department to look into the matter seriously and the recurrences of such serious lapses should be avoided in future.

### **Conclusion/Recommendation**

40) The Committee observes that double payment and weak internal control mechanism exists in Roads and Bridges wing of the Public Works Department that needs to be investigated thoroughly. The Committee directs the inspection wing of the Finance department to conduct an enquiry for such double payment that might have taken place in other PWD divisions. The Committee also directs the Public Works department to look into the matter seriously and the recurrences of such serious lapses should be avoided in future.

Thiruvananthapuram,  
16th March, 2022.

**SUNNY JOSEPH,**  
*Chairman,*  
*Committee on Public Accounts.*

## APPENDIX I

## SUMMARY OF MAIN CONCLUSION/RECOMMENDATION

Sl. No.	Para No.	Department concerned	Conclusion/ Recommendation
1	21	Public works	The Committee criticised the department in according administrative sanction for construction of Varamkadavu Bridge and approach road without proper soil investigation and in allowing inadmissible payment to the contractor by treating the earth works as extra item. The Committee directs the department to avoid such delinquencies and to take strict measures not to repeat such instances in future.
2	25	Public works	The Committee understands that the old Menonpara bridge collapsed in 2010, and the Government accorded AS in 2012 for the reconstruction work without inviting open tenders. During the actual execution, the Chief Engineer revised the rate of the extra item due to error in calculation of hire charges for piling plant. The Committee noted that once the rates had been accepted and the agreement was finalised and signed, the revision of rates on the grounds of errors in sanctioned estimates could not be permitted. The Committee opines that the revisions of agreed rates had no basis and the original rates should have been applied for the increased length of piles and the awarding of work to KSCC without inviting open tender against PWD manual provisions had no justification. The Committee observes it as a fraudulent act and directs the department to look into the matter seriously and take disciplinary action against the officials responsible for it.

3	32	Public works	The Committee observes that it was clearly a wasteful expenditure to construct fender piles at Thadikkakadavu Bridge which resulted in the loss of ₹3.12 crore to the exchequer. The Committee suspects collusion between contractor and department officials in undertaking and completing such an unnecessary work. The Committee decided to warn the Department and to make sure that such flaws are not repeated in future, which if repeated, will force the Committee to make strong recommendations.
4	34	Public works	The Committee opines that the special conditions of contract stipulate that the rate quoted shall be inclusive of all the operations contemplated in the specification and tender schedule which covers the incidental work also. The Committee directs the department to ensure that the agreement to be executed for a work should be comprehensive enough to include all the incidental items that are essential for the proper execution of work.
5	36	Public works	The Committee observes that the first tender work was not finalised within the firm period due to delay occurred in the preparation and submission of LMR comparison statement resulted in huge loss to the exchequer to the tune of ₹1.56 Crore. Hence the Committee opines that it could not be condoned and recommends that disciplinary action should be taken against the officers responsible for the delay.
6	40	Public works	The Committee observes that double payment and weak internal control mechanism exists in Roads and Bridges wing of the Public Works Department that needs to be investigated thoroughly. The Committee directs the inspection wing of the Finance department to conduct an enquiry for such double payment that might have taken place in other PWD divisions. The Committee also directs the Public Works department to look into the matter seriously and the recurrences of such serious lapses should be avoided in future.



APPENDIX II

Notes Furnished By Government

**RMT ON RECOMMENDATION ON PARA 5.6 -Report of PAC (2014-16)  
for the year ended March 2015 (Economic Sector)- REGARDING**

PARA	REPORT	RMT
5.6 Report of PAC (2014-16) for year ended March 2015 Economic Sector)	<p>MORTH is responsible primarily for development and maintenance of National Highways (NHs). The activities are monitored by the Regional Office MoRTH in each State. The actual work of construction of NH is entrusted to State Government on agency basis under the provisions of Article 258 of the Constitution of India for which nine percent agency charges are claimed by State Government from MoRTH. The role of State Government is confined mainly to maintain, upgrade and improve the riding quality of existing NHs and carry out ordinary annual repairs.</p> <p>Up to 31st March 2003, the State Government was to initially incur expenditure on construction and maintenance of NHs and then get it reimbursed from MoRTH. With effect From 1 April 2003, the system was changed to Direct Payment Procedure (DPP) by MoRTH for all NH works under the major head 5054 and Special repair and periodical renewal / improvement of Riding Quality works under major head 3054. The transactions under DPP, therefore, do not involve the State Government budgetary sanction. For Ordinary Repairs (ORs) and Flood Damage Repairs (FDRs), the previous system was continuing. As such, the NH works undertaken as Ors and FDRs do not require prior sanction by MoRTH before execution.</p> <p>Scrutiny of records (between December 2011 and October 2015) in, five offices of NH wing of Pubic Works Department(PWD) revealed that 17</p>	<p>The para relates to disputed misrepresentation of works as ordinary repairs and subsequent non reimbursement of amounts involved by MoRTH.</p> <p>First four works in Sl.NO.5,6,7,8,9,10 and 11 were arranged on the basis of GO(Rt) No.1540/2011/PWD dated 09.11.2011 charging to state exchequer. The works noted in Sl.No 15 was also arranged following the issue of GO(Rt)1139/2013/PWD dated 23.08.2013.</p> <p>The works no.10,12,13, 14,16 and 17 were arranged by Departmental officers due to grave circumstances similar to calming situations which gave rise to Government order cited above.</p> <p>During the period 2011-12 and 2014-2015 there had been public protest over deplorable conditions of NH in the State. The protests were mostly justifiable. Execution of work through established procedure in NH to restore the roads in a meaningful way seemed almost unfeasible.</p>

works(appendix 5.1) were executed during the period 2011 -12 and 2014-15 treating them as ORs, based on the sanctions of State Government only and claimed reimbursement from MoRTH (between January 2012 and June 2014) projecting them as ORs. The M o R T H disallowed (between March 2012 and Sep 2014) the claim for reimbursement stating that the works executed were not ORs but Original Works requiring prior sanction of MoRTH before execution. The claims thus disallowed amounted to 68.10 crore which the State Government had to bear from its own budgetary resources. Besides, the State also could not claim agency charges amounting to 6.13 crore.

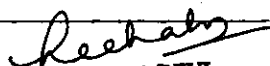
Thus, the department failed to adhere to the guidelines of MoRTH while making claim for reimbursement of expenditure incurred on the maintenance of NHs and consequently burdening the State exchequer to the extent of 74.23 crore

Government replied that the department had arranged the works due to poor condition of NHs in the State and inadequacy of fund / sanction from Government of India it was also stated that the works undertaken were ORs not requiring prior sanction from MoRTH. The reply is not tenable as the works executed were not Ordinary Repair works but were Original Works as remarked by MoRTH while scrutinizing the claim for reimbursement. Further, these Original Works required prior sanction from MoRTH

A high level meeting convened by Principal Secretary PWD on 29.10.2011 and 09.11.2011 to sort out the issue at hand. Decision emerged was to arrange unavoidable works as state works and later submit them to MoRTH to see if reimbursement could be obtained.

The MoRTH returned the claim without reimbursement. The State was not sure about getting the money back. At the outset the State was prepared to bear the cost if MoRTH reimbursement had not materialized. The intention was to make NH traffic worthy. The thinking was "if MoRTH reimburses, well and good" otherwise the state will bear the cost'.

The disallowed amount is not so in normal sense. It is only an expectation coming to get the shape of reality. Hence it is requested to drop the para.

  
**R. SREEKALA DEVI**  
 Special Secretary to Govt.  
 Public Works Department  
 Govt. Secretariat, Tirupur.  
 Ph: 2327115, 2318465

**PUBLIC WORKS (PS) DEPARTMENT**  
**REMEDIAL MEASURES TAKEN STATEMENT ON THE REPORT OF THE COMPTROLLER AND AUDITOR**  
**GENERAL OF INDIA FOR THE YEAR ENDED 31<sup>st</sup> MARCH 2015 (ECONOMIC SECTOR)**

Para No	Recommendation	Remedial Measures Taken
5.10	<p><b>Extra expenditure due to non-finalisation of tender within the firm period.</b></p> <p>Lapse of the department in adhering to PWD Manual instructions and Government orders regarding finalisation of tender within firm period resulted in avoidable financial implication of ₹1.56 crore.</p> <p>According to the provisions of Kerala PWD Manual, consideration of tenders and the decision thereon should be completed well before the date of expiry of the firm period noted in the tender so that the selection notice is sent on or before the expiry of the firm period. In case, selection notice is not issued before the expiry of the firm period, the bidder's offer would stand nullified automatically. In order to avoid such delays, Government had issued (May 2007) instructions prescribing time frame for completion of processing of tenders at various stages. Accordingly, the department shall place the tender before the Government within six weeks from the date of opening of tender followed by its submission before the Government Tender Committee (GTC) within seven days. After approval of proposal by GTC, order shall be issued within one week. The GOK, Finance Department had issued orders (January 2010) that in cases where tender amount is in excess of 10 per cent of Local Market Rate (LMR), justification should be submitted along with the tenders.</p> <p>The Secretary (PWD) issued (December 2011)</p>	<p>Pre-qualification tender for the work "NABARD RIDF XVII - Improvements to Kodumba - Padalikkad Canal Bund Road Km 0/000 to 8/200" in Palakkad District was invited by the Superintending Engineer, PWD North Circle, Kozhikode on 06.03.2012. Financial bid of the pre-qualified bidder was opened on 10/04/2012 and the rate quoted by the bidder M/s. P K Construction Company was 14.89% above estimate rate. With the intention to reduce the quoted rate further on negotiation, efforts were made to get it reduced vide Superintending Engineer's office communication to the bidder on 13/04/2012 and 04/05/2012. But the bidder responded to that only on 17/05/2012 and reported that they were not willing to reduce the rate further. The tender documents were submitted by the Chief Engineer (Roads &amp; Bridges) to Government on 26.06.2012. The delay in submitting the tender for acceptance was due to the efforts taken to negotiate with the bidder to get reduced the quoted rate. Government directed the Chief Engineer (Roads &amp; Bridges) to submit the LMR comparison statement for the work vide letter dated 31.07.2012 and the Chief Engineer (Roads &amp; Bridges) submitted the same to Government on 18.12.2012.</p> <p>As per G.O (Rt) No. 519/2013/PWD dated 08.04.2013, the tender in favour of M/s. P.K. Construction Company</p>

<p>Administrative Sanction (AS) to the work 'Improvements to Kodumba - Padalikkadu Canal bund road from km 0/000 to 8/200' in Palakkad District at a cost of ₹5.10 crore. Based on Technical Sanction (TS) given by CE, the Superintending Engineer, PWD, Roads and Bridges, North Circle, Kozhikode (SE) invited (January 2012) pre-qualification-cum-tenders (PQ) for works from eligible contractors, fixing date of opening as 6 March, 2012. The firm period of tender was 120 days i.e. up to 3 July 2012. Of the two bids received, one was pre-qualified (2 April 2012) by the Chief Engineers' Committee. The SE opened (10 April 2012) the financial bid of the pre-qualified contractor whose quoted rate was 14.89 per cent above the estimate rate. After processing the tender, the department accepted (April 2013) the tender rate quoted by the contractor after delay of eight months. In the meantime, the firm period had expired due to which the contractor was not willing (May 2013) to take up the work.</p> <p>After failing to award the work due to the contractor's unwillingness, the department re-tendered (July 2013) the work which evoked no response. However, citing urgency of the work, the department invited (November 2013) negotiated quotations from 'A' class registered contractors for the work at the same estimate rates in terms of instructions contained in PWD manual. The only quotation received from a contractor was at 48.50 per cent above the estimate rate which was accepted (May 2014) by the Department at 45.43 per cent above the estimate rate as recommended by the Committee of Secretaries. The work was awarded (May 2014) to the contractor for ₹7.24 crore. The work which was scheduled for completion by May 2015 had been extended up to February 2016. An amount of ₹5.05</p>	<p>was accepted at 14.89% above estimate rate (Revised SOR 2010). But the firm period of the work was expired and the contractor was not willing to extend the firm period and to take up the work. The work was re-tendered by the Superintending Engineer but there was no response from contractors. Meantime schedule of rates was revised twice i.e., SOR 2012 and DSR 2013. Considering the delay on revising the estimate based on prevailing SOR and poor response from bidders, negotiated quotations were invited and the quotation received from M/s. P.G Construction, Mezathur, Thrithala, Palakkad was accepted by Government @ 45.43% above estimate rate vide G.O (Rt) No. 370/2014/PWD dated 04.03.2014.</p> <p>Audit observes that though the tenders were opened on 06.03.2012, the Superintending Engineer furnished LMR justification only on 03.12.2012, after a delay of eight months as against six weeks as per guidelines. The delay in furnishing the LMR by Superintending Engineer resulted in delayed approval of tender by the Government. The LMR justification (December 2012) was 43.65 per cent above estimate rate. If the tender had been accepted within the firm period, the work would have been executed by the first contractor at a cost of ₹ 5.68 crore as against agreed value of ₹7.24 crore.</p> <p>The first tender for the work in favour of M/s. P.K. Construction Company @ 14.89% above estimate rate was not finalized within the firm period due to the delay occurred in the preparation and submission of LMR comparison statement by the Superintending Engineer as observed by the audit. But it may be noted that the LMR</p>
--	--

crore had been paid for the work done till September 2015.

Audit scrutiny relating to the first tender revealed that though the tenders were opened on 6 March 2012, the SE had furnished LMR justification only on 3 December 2012, after a delay of eight months as against six weeks as per guidelines. The delay in furnishing the LMR by SE resulted in delayed approval of tender by PWD and GTC. The LMR justification (December 2012) was 43.65 per cent above estimate rate. Audit observed that had the tender been accepted within the firm period, the work would have been executed by the first contractor at a cost of ₹5.68 crore as against agreed value of ₹7.24 crore.

On this being pointed out, the SE stated (August 2014) that the delay in forwarding tenders to PWD was due to the delayed response of the first contractor to negotiations. The reply was not tenable due to the reason that had the SE prepared LMR justification soon after the opening of financial bid, it would have been evident that the tender excess of 14.89 percent above the Estimated Probable Amount of Contract offered by the first contractor was far below the LMR (December 2012) of 43.65 per cent. Thus, the non-approval of the first tender by the department within the firm period due to non-preparation of LMR in time and delay in submission of tender documents adhering to the time schedules as per guidelines resulted in avoidable financial implication of ₹1.56 crore which call for fixing of responsibility of the officials at fault for the inordinate delay in finalising the tender and initiate appropriate action against them.

comparison statement was prepared manually by the Assistant Engineer at the section office level, then it is scrutinized by the Assistant Executive Engineer at Sub Division level, Executive Engineer at Division level, Superintending Engineer at Circle Level and then by the Chief Engineer before submitting it to Government. For speedy preparation of LMR justification estimate, PWD started publication of those rates in the website from 01.07.2014. The above work was tendered and LMR preparation was done prior to this period. Considering time delay caused due to routine works of field staff and to avoid recurrence of such incidents in future, PWD has now modernized the system of LMR justification estimate through "PRICE" Software". The time delay associated with the preparation of LMR comparison statement could be eliminated by the implementation of the new system.

*heehahs*  
RECEIVED  
2014

**GOVERNMENT OF KERALA  
PUBLIC WORKS (D) DEPARTMENT**

**Remedial Measures Taken Statement on Para no. 5.5.5.7.5.8.5.9 & 5.11  
in the Report of the Comptroller and Auditor General of India on economic Sector for the year  
ended in March 2015**

Para No.	Recommendation	Action Taken by the Government
5.5	<p><b>Inadmissible payment to contractor on balance items of bridge works.</b></p> <p>Irregular revision of rate of items mentioned in the agreement scheduled by treating them as extra items and non - availing of agreed tender rebate while making payments thereon to the contractor resulted in undue benefit of Rs. 1.09 Crore to the contractor.</p> <p>As per clause 23 (c) of Notice Inviting Tenders (NIT) extra items of work are those which are not expressly or impliedly described in the schedule, plans or specification. Those items of work which though highly necessary for the proper execution of the work and its completion, if not provided for in the original contract, can be treated as 'extras'.</p> <p>Further, as per Clause 3(b) of NIT, the overall percentage rate accepted and specified in the agreement shall not be varied on any account whatsoever.</p> <p>The Superintending Engineer, PWD, Roads and Bridges, North Circle, Kozhikode (SE) had awarded (April 2009) the work "construction of bridge at Varamkadavu in Chelora Grama Panchayat in Kannur district (balance work)" to a contractor at 21.80 percent below estimated amount of Rs.2.64 Crore.</p>	<p>The original estimate of work of Varamkadavu bridge consists of bridge proper which includes the construction of bridge structure such as foundation, sub structure and superstructure based on the detailed design after conducting sub soil investigation only at abutment and pier points. No sub soil investigation was conducted along approach connections which is passing through waterlogged, marshy areas and also through places submerging during tidal effects. The original Administrative Sanction was issued based on a rough cost estimate for the work without any detailed sub soil investigations done at site. So the Administrative Sanction amount was not sufficient to cover all the provisions for the construction of bridge proper, whose estimate was as per design prepared after obtaining the Administrative Sanction. The balance amount left from the Administrative Sanction amount was given for the construction of approach roads. So only minimum provision of earth filling for forming approach roads based on tape measurements were given in the original estimate. The first estimate submitted was for the construction of the bridge and its approaches that got TS only for Rs.225.50 Lakh, which was not sufficient for the complete raising of the approach road after provisions for the bridge proper was given. Hence the earth quantity was reduced by reducing the height of the formation. The quantity in the estimate was arrived to 14380 m3. Later when the revised estimate was submitted, the</p>

The items of work included in the original agreement schedule for formation of approach roads to the bridge structure which was completed in March 2005 consisted of earthwork for forming high embankment for approach roads and ground improvement works using non-woven geo - textiles, woven geo - textiles and Pre -fabricated Vertical Drain (PVD).

During execution of the work, these items were treated as extra items and their rates enhanced, by executing (November 2009/March 2010) Supplementary agreements by the SE with the contractor. The contractor had agreed to execute these extra items at 21.80 per cents below estimate rate. The work was completed in May 2011. The contractor was paid an amount of Rs.3.81 Crore in five part bills as of December 2015.

Audit scrutiny revealed that:

\* The above items of work were expressly mentioned in the Agreement executed by the contractor for the balance work. So as per clause 23 (c) of NIT they could not be treated as extra items. However, in violation of this provision, SE had treated them as extra items and revised (November 2009/March 2010) their rates.

\*\* The Executive Engineer, PWD Roads division, Kannur (EE) did not apply tender rebate from the payments made to the contractor on the extra items, even though it was agreed in the supplementary agreements executed. This was in violation of the rules on application of overall tender percentage contained in the NIT.

The above violations resulted in inadmissible payment of Rs.1.09Crore to the contractor, which amounted to undue benefit extended to him, as shown in the table below.

provision for the improvement of the approach road was increased by giving proper provisions like increasing the height of the embankment over the MFL and also by providing more width to the embankment to enable smooth and safe flow of traffic over the embankment. Thus the quantity of the earth was increased to 21254 m3. Further during the progress of the work, it was decided to extend the approach road on Varam side to a further 500m. This has led to an increase in quantity of 12600m3. Viz:  $1 \times 500 \times (13+8)/2 \times 2.4 = 12600m^3$ . This was added up to the earlier submitted quantity of 21254 m3 and the final quantity in that estimate was arrived to be 33854 m3 that was rounded to 34000 in the estimate. When the K.S.C.C. failed to form approach road without doing any ground improvement works at the site, the opinion of Geo-tech expert was sought. He studied the sub soil conditions at site which consists of deep layer of soft, highly compressible clay with high water content and proposed ground improvement works using prefabricated vertical drains (PVD) with Geo textiles in order to accelerate the primary settlement due to consolidation process, dissipating pore water pressure from clayey strata and thereby attaining rapid strength increase in the sub soil. The initial levels were taken before commencing the ground improvement works. The settlement of the clayey sub soil underneath the ground level will start only after preloading over the embankment portion and the settlements were measured using settlement gauges fixed at interval installed at the ground level. The design of the ground improvement is based on achieving 90% consolidation in the time prescribed and the final settlement is measured using settlement gauges. So the final quantity of earth filling could be known only after completion of the settlement after a time interval and completion of the final embankment construction. This could not be assessed by while estimation. The

Description of item in Agreement	Up to date quantity executed	Agreed rate after applying tender rebate	Revised rate used for payment without tender rebate	Undue benefit to the contractor (in Rs.)
Earth work filling with all classes of soil suitable for forming high embankment	54174.38 m <sup>2</sup>	1516/10 m <sup>2</sup> (1939, less 21.80%)	2,424/10 m <sup>2</sup>	49,19,033.70
Providing and laying non-woven geo-textile fabric	6332.08 m <sup>2</sup>	55.91/ m <sup>2</sup> (71.5, less 21.80%)	88/ m <sup>2</sup>	2,03,196.45
Providing and laying non-woven geo-textile fabric	4380.78 m <sup>2</sup>	59.82/ m <sup>2</sup> (76.5, less 21.80%)	89.78/ m <sup>2</sup>	1,31,248.17
Providing and laying non-woven geo-textile fabric under water	800 m <sup>2</sup>	55.91/ m <sup>2</sup> (71.5, less 21.80%)	88/ m <sup>2</sup>	25672
Providing and installing flexible pre fabricated vertical drain	130392.10 m <sup>2</sup>	66.47/ m (85, less 21.80%)	109.92/ m <sup>2</sup>	56,65,536.75
Total undue benefit to the contractor				1,09,44,687.07

behaviour of the clayey strata is highly complex in nature and depends on the properties of the clayey soil which varies from point to point. So study of the extract quantity of the settlement and behaviour of the clay underneath the formation and its design will take more time and involves serious task for conducting detailed study of the various properties of the clayey strata on the entire formation areas.

Later during execution when the case of heaving of soil occurred it was decided to opt for PVD installation on the approaches. This required compaction of the earth fill to accelerate the primary settlement by dissipating pore water pressure from clayey strata through the PVD. This led to unaccounted sinkage of the earth that was filled for embankment formation. This could not be accounted through level calculation, as the sinkage was happening exorbitantly to drain out the water from the clay beneath. So in order to account for this, some sinkage quantities were included in the estimate. Due to this natural phenomena the contractor was not willing to continue with the work unless his desired compensation was given.

The approach road alignment is through marshy waterlogged portions having tidal effects. So while progress in the earth filling, there was loss of earth dumped filling, due to initial mixing with loose marshy top clay layer and losses due to tidal effect and this quantity was calculated as 25%. The loss of dumped earth on sides could not be stopped as it was not possible to do side protection works at the toe of embankments before attaining the final settlement. This 25% loss in quantity was approved by Chief Engineer.

when the matter was pointed out (June 2013) Government replied (October 2014) as under:

The Government sanctioned 25% increase in rate for earth filling after Chief Engineer recommended the



\*revision of rates in earth work was in lieu of wastage of earth during execution. Further, the estimate rate for earth work was adopted without applying tender rebate, as it was an extra item and.

\*\*the ground improvement materials viz. geo-textiles and PVD were brought from abroad and that an approximate rate taken from earlier executed work was adopted in the estimate. But, when order was placed for these materials at the time of execution, their rates had increased. Further, these were not items included in the Schedule of rates, but were market rate components for which tender variation was not applied.

The reply of Government was not tenable due to the following reasons:-

\* Earthwork for formation of approach roads was an item expressly provided in the original agreement schedule. Hence, revision of its rate by treating it as an extra item was a violation of the condition of NIT. Moreover, the contractor had clearly agreed in the supplementary agreement that the tender rebate of 21.80-per cent was applicable for this extra item.

\*\*Similarly, the items for ground improvement work were also expressly provided for in the schedule of the balance work. So, the contractor had quoted his rates accordingly with tender rebate. Hence, classifying them as extra items of work and enhancing their rates was a clear violation of the NIT provision.

Further, as per NIT, it was the duty of the contractor to ensure availability of materials before quoting his rates. Hence, the contractor was not eligible for rate revision on account of non-availability of

revised rate in lieu of wastage of earth during execution. The 25% excess rate was allowed as per order No. CE/R&B/KNR/ 16956/2002 dated, 22.10.2009 and in this order it was sanctioned as extra item. As per order No. CE/R&B/KNR/ 16956/2002 dated, 09.10.2009 of Chief Engineer (copy enclosed) it was ordered to give estimate rate for all extra items. Hence the original rate of Rs. 1939/ 10m<sup>3</sup> was revised to Rs. 2424/ 10m<sup>3</sup> and this was in order. Meanwhile the excess rate increase by 25% of its application without applying tender rebate was as per the order of Government approved after recommendation of Chief Engineer.

The reasons that attributed for the enhancement of the quantities of earth filling is different in each situation starting from the original estimate preparation till the end of final formation of embankment. There is no loss to Government due to this, as correct stable and more advanced technology which was also a new technology in the stage PVD was adopted in the construction. An alternative to this method is by increasing the length of bridge spanning over the entire water logged marshy portions which will be more expensive than the ground improvement works. At the time of execution the availability of good earth become a serious issue due to high public protest against cutting hill slopes garden lands etc. Hence it became a difficult task for the contractor to obtain good quality and the source mentioned, in the sanctioned estimate has to be changed and additional conveyance even from remote places were sought for.

Hence the earth filling was approved by Chief Engineer as extra items. The earlier proposal that was put forward by the soil investigation team in their report was for driving the PVD at a spacing of 1.3m length wise and

materials and variation in market rates. In this case also, the department failed to avail the benefit of tender rebate agreed by the contractor. Thus, the action of the Department in enhancing the rates of items expressly mentioned in the agreement schedule by treating them as extra items in violation of the NIT provisions and non-availability of agreed tender rebate on those items resulted in extending an undue benefit of Rs.1.09 Crore to the contractor.

1.12 in breadth wise. But even after the installation of the same, slight sinkage was found in the embankment. Hence the site was inspected by the Superintending Engineer and he proposed to provide with closer intervals of PVD of the range of 60 to 70cm. It was also verified by him that the actual depth of the PVD driven was in the range of 14m than the earlier estimated length of 10m. This has been clearly stated in the SE's certificate and the CE's order. These variations during the execution have led to the abnormal deviation from the estimate quantity. Moreover the rates of the PVD and Geotextiles were got approved by the Chief Engineer as per order No.CE/R&B/KNR/16956/02 dated 18/03/2010(copy enclosed). In the order it was clearly stated that these may be treated as extra items. Moreover as per an earlier order of the same number and dated 09/10/2009, it was stated that the extra items can be given market rate without applying the tender below, which was as per the tender conditions. PVD technology had just arrived in India during those times and there were not many agencies that dealt with this. The materials for the same were to be imported from foreign countries. Hence the rates for the same depended on the daily variations of the dollar rate of rupee rate. Hence when the quotation was called for the PVD, only one agency had quoted with an acceptable rate. Hence the rate of this item could only be taken as market rate, for which the item was made, as extra item, since the market rate varied exorbitantly. The quotation rate was approved as said earlier, by the Chief Engineer.

The close watching of the site execution of PVD driving has also resulted in informing in the higher authority of the insufficient spacing and thus changing the pacing for better result. Considering, all the above reasons, the audit objection may please be dropped.

**Regarding the work without tender and providing undue benefit to contractor.**

The execution of work without tender process and unwarranted revision of agreed rates by PWD extended undue benefit of Rs.92.32 lakh to the contractor.

As per para 2003 of Kerala Public Works Department Manual, works shall normally be awarded through open tenders after getting administrative and technical sanction and ensuring provisions of funds in the Budget.

Secretary to Government, PWD sanctioned (December 2012) reconstruction of the partially collapsed Menonpara bridge across Korayar river in Nattukal-Velanthavalam State Highway in Roads Division, Palakkad through M/s. Kerala State Construction Corporation Limited (KSCC) without inviting tender at an estimated cost of Rs.10.15 crore to avoid delay in tendering process.

The Superintending Engineer (Roads and Bridges), North Circle, Kozhikode (SE) awarded (January 2013) the work to KSCC at a cost of Rs.9.31 Crore. The site was handed over (January 2013) to the contractor for completion of work in 18 months. PWD revised (March 2013) the sanction to Rs.18.30 Crore after including road improvement work of nine kms in place of three kms originally estimated. The work was completed in May 2014. The contractor was paid Rs.17.49 crore up to June 2015.

One of the items of work included in the agreement schedule for the construction of bridge was 'Boring through all classes of soil for cast in situ bored piles with concrete mix M25, 1.20 metre internal diameter, anchoring of pile in rock for a minimum depth of 50 centimeters etc. The work involved construction of 28 piles, 12 piles for piers each having an average depth of

The old Menonpara bridge was collapsed on 26.08.2010. At this juncture the public made hue and cry to reconstruct the bridge and facilitate smooth traffic. The matter was taken up with the Government by the people's representatives and the CE. But considering the urgency in restoring the traffic, Government accorded Administrative Sanction for the construction of diversion road through the river bed. Then the reconstruction of the collapsed bridge was thought of by the Government. Considering the demand of the public and urgency pointed out by the people's representatives, it was decided to entrust the work to the KSCC which is a Government owned PSU under PWD, without tender. No other bad intentions behind this act of the Government and it was done in good faith.

As per estimate the depth of pile to be driven is only 9.00m to 10m. But as per the site condition the hard rock strata had been found only at the depth of 19.00m below the bed level. Hence fresh bore hole details have been taken as directed by the higher authority. The abutment and pier positions fixed now is not at the place where bore hole details had been taken at investigation time. Proposal was for four 20M spans during investigation. But as per estimate it is only three 25.32m spans. Hence the positions of substructure got changed. The additional depth of piles may lead to additional financial commitment also. Revised Estimate amounting to Rs.1830 Lakhs was sanctioned by Government vide G.O(Rt)No.386/2013/PWD dated. 19-3-2013.

Due to scarcity of good river sand M.Sand is used for pile concreting otherwise work will be delayed and will have to be stopped. Also, due to oversight rate provided in the approved data of boring (Item No.4) Higher charges of piling rig and bentonite pump with accessories are wrongly entered as 275 per hour

nine metre and 16 piles for abutment each having an average depth of 10 metre. The total length of piles was estimated to be 270 in and the agreed rate was Rs.16,344 per metre. However, during actual execution, Chief Engineer PWD Roads and Bridges (CE) revised (May 2013) the rate of the above item from Rs.16,344 to Rs.34,017 per metre citing reasons such as increase in average depth of piles from nine to 19 in due to non-availability of hard rock at the estimated depth, error in calculation of hire charges for piling plant and use of M. Sand due to scarcity of river sand. CE sanctioned (May 2013) the rate of above item as 'extra item' and SE executed (June 2014) a Supplementary Agreement for a total length of 549.85 m. An amount of Rs.1.87 Crore was paid (July 2014) to the contractor for the 'extra item'.

instead of 5126 per hour in the SOR 2012 (MORTH). As the above work was awarded not on the basis of competitive tender and there is no contractor's profit allowed to the contractor, the data for the above item was submitted to the Chief Engineer and the rate is got approved.

The above facts may kindly be got convinced and the objection raised may kindly be dropped.

Audit scrutiny (February 2014) revealed the following:

\*The bridge had collapsed in August 2010 and the Government decided to take up re-construction work only after a lapse, of two-and-a-half years of collapse. Awarding of work to KSCC only without inviting open tenders after two and-a-half years was lacking not only in justification but it was also against manual provisions which advocate transparency in selection of bidders through open competition.

\* Items of work which do not form part of the original Agreement Schedule are treated as Extra items". In this case, the item "boring cast in situ piles", was already existing in the Agreement Schedule. As such, it cannot be subsequently treated as an "extra item".

\* The contractor is expected, before quoting his rates, to inspect the site of the proposed work and assess the availability of specified materials. He is also expected to get himself acquainted with the sanctioned estimate approved plans and drawings. Once his rates have been

accepted and agreement finalized and signed, he is bound by the same and cannot claim its revision on grounds of errors in sanctioned estimates, un-availability or scarce availability of the specified materials etc.

\* In the name of approving an 'extra item', the Department has resorted to revision of rates and specifications, after the award of work, on grounds of 'scarce availability of riversand', "error in calculation of hire charges of piling plant" and made an extra payment of Rs.97.17 lakh to KSCC. The action of the department was wrong as the ground cited for their action were not valid.

Thus, undue revision of reate resulted in extra payment of Rs.97.17lakh to the contractor

Government replied (October 2015) that the work was entrusted to KSCC to avoid delay as the tendering procedure would have taken long time Further, the rates for piling were revised as the depth of piling work had to be increased from 270 m to 549 m during execution. Besides due to non availability of good quality of river sand, the M sand was substituted and that there was some mistake in preparation of data.

The reply of the Government was not acceptable because the period of two and a half years between the date of collapse of bridge and award of work for reconstruction was reasonably Adequate for completing all open tender formalities including invitation of competitive tenders so that the work could be awarded without compromising transparency instead of giving to KSCC only. Further, the revision of rates for piling was also not acceptable as the rate agreed by the contractor for piling was per metre and not for casting entire pile for a

specific length. Besides, rate once concluded in the agreement signed by both the parties, was not required to be revised.

Thus, unwarranted revision of rate resulted in extension of undue benefit of Rs.92.32 lakh to the sub contractor of KSCC.

#### **Wasteful Expenditure on construction of tender piles from bridgework**

Department constructed tender piles for protecting a bridge from the impact collision with bargers even though bridge did not have scope for navigation of heavy vessels resulting in wasteful expenditure of Rs.3.12 Crore.

The Public Works Department (PWD) awarded the work of the construction of 'Thadikkakadavu Bridge' across Periyar river by Roads division, Emakulam for Rs.27.51 crore. The site was handed over (June 2012) to the contractor for completion of work in 18 months (December 2013). The work remained incomplete (July 2015) and the contractor had been paid Rs.15.71 crore (July 2015).

The bridge was designed to rest on a foundation of bored cast-insitu piles, for which 2,650 metres of piles at a unit rate of Rs.27,056 per metre were planned. During execution, the length of piles was increased to 3,220 metres of which 729.79 metres were provided as tender piles in a separate pile group, upstream and downstream of the bridge. The department stated that the fender piles were required to protect the bridge from the impact of collision from heavily loaded cargo boats moving from Nedumbassery airport to Kochi city. The cost of construction of tender piles was Rs.3.12 crore

In the original design for the construction of Thadikkaddavu Bridge, there was no provision for Fender Piles. It is reported by the then officers that the proposal for providing Fender Piles for protecting the pier of the bridge came up during the execution of work in view of the alarming incidents of vessel hits to Venduruthy Bridge Kochi in the past. The most convenient pier protection system used all over the world is the Fender Piles. With the increasing volume of water transport, it was a common practice to protect the bridges from vessel impact with pier protection system. Hence a proposal for providing Fender Piles was included and the estimate for the work had been revised. It is also seen from report that the work for the bridge was nearing completion during that time. The design for the entire bridge had been completed by DRIQ and it is seen reported that considering the volume of work of design of other bridges pending in DRIQ, and as piling work for the bridge was nearing completion, it was necessary to submit the proposal for Fender Piles urgently so that it could be constructed immediately after the piling of the bridge, if the proposal is approved. It is also seen reported that since Fender Piles are not an integrated part of the bridge structure and as it is constructed 15m away from the pile cap of the bridge structure, the design of the Fender Piles was made by a reputed structural consultant. The drawing is approved by the Technical Sanction Authority for the work and the proposal is seen included in the revised estimate for

the work. In view of the above facts, the audit objection may please be dropped.

Audit observed that though the original design of the bridge was approved (March 2012) by the Design Research and Investigation Quality Control Wing (DRIQ), under the control of Chief Engineer. (Designs) as stipulated in the PWD manual, the design of fender piles was approved (November 2012) by the CE himself, which means that the DRIQ was not involved in the change of design of fender piles.

It was further noticed that there was no specific request from various stakeholders/departments (KSINC, SWTD, IND etc.) regarding provision for fender piles. Moreover, the route identified for connecting Nedumbassery airport with Kochi city passes through the southern arm of river Periyar, whereas the bridge was constructed on the northern arm as shown in the sketch attached.

Further, there was no infrastructure for anchoring of cargo boats anywhere near the Nedumbassery airport. Therefore, the construction of fender piles by adducing to safety concerns from barges/cargo boats was not tenable.

Audit also observed that the fender piles were made of concrete with no impact absorbing quality to provide protection either to the bridge structure or to the vessels in the event of a collision. Further, the top level of fender piles constructed was much below the Maximum Flood Level (MFL) of the river. The fender piles would not be visible during flood, making it likely to cause damage to the piers of the bridge as well as the barges. Thus, the purpose of protecting the piers with the help of fenders was doubtful.

On being asked, the Secretary, PWD replied (October 2015) that on account of concerns of polluting the drinking water projects at Chowara and Aluva, Cochin

International Airport Limited (CIAL) shelved a proposal to develop the Southern branch of Periyar river as a waterway connecting CIAL to Kochi Seaport for cargo movement. An alternative proposal of developing the northern branch was under consideration of CIAL, and hence, the fender piles were constructed in anticipation of movement of heavy cargo vessels through the same.

The reply was not tenable in view of the confirmation provided by Irrigation Department that there were no plans of developing the Northern branch of Periyar River over which the Thadikkakadavu bridge is constructed as a waterway connecting CIAL with the Kochi Seaport. Irrigation Department further confirmed that there were bottlenecks for large scale cargo movement from CIAL to Kochi city/seaport through the Northern branch, like insufficient vertical clearance of existing cross structures, insufficient width and depth in a five km stretch between CIAL and Chengalthode.

Thus, the decision to change the designs for providing fender piles was taken without assessing actual requirement and approval of the DRIQ Board which led to wasteful expenditure of Rs. 3.12 crore on construction of fender piles.

**Avoidable payment of sinking of wells for foundation of four bridges.**

Separate payment amounting to Rs 2.28 Crore was made to the contractors by PWD outside the agreed rate for removing obstacles encountered during sinking of wells for foundation of four bridges.

The special conditions of contract stipulate that the rate, levels and plumb by scooping out from inside and quoted shall be inclusive of all the operations below the staining including use of dredgers or any contemplated in the specification and tender schedule, other appliance hire and labour for knetledge, jetting,

The detailed estimate of all bridge works under audit enquiry were prepared adopting PWD standard data and specification item No.701 to 706 of chapter XV In the PWD data book were approved for well sinking of abutment and piers of the bridges. The specification of these items is given here under.

Sinking well in all soils other than rock to lines and levels ad plumb by scooping out from inside and below the staining including use of dredgers or any other appliance hire and labour for knetledge, jetting,



which covers the incidental work necessary for such operations. The conditions further stated that all items should be carried as per the relevant specification in the Madras Detailed Standard Specification (MDSS) which specifies that when the well has reached the required level care should be taken to see that it is seated properly.

Superintendent Engineer, Roads and Bridges, North Circle, Kozhikode (SE), had awarded - (March 2011 to July 2012) four bridge works under PWD Roads Division, Manjeri at an estimated cost of Rs.24.65 crore in Malappuram district. As per the agreement schedule one of the items of work was sinking of reinforced cement concrete circular well in all classes of soil other than rock. The sinking process includes scooping of earth to line, level and plumb from inside and below steining with dredgers and other appliances including removal of obstacles. The EE made extra payments of Rs.2.28 crore to the contractors of four bridge works towards charges for cutting and breaking down boulders having the size of more than 40 dm<sup>3</sup> during sinking of wells and for seating of wells as shown below:

dewatering blasting, vibrating or any other method including removal of obstacles and dumping the spoils within a distance of 150m. The size of obstacles, which were to be removed together with well sinking operation has not been mentioned in the specification. But in the general note 5 given in the chapter XV of standard data book, the size of the obstacles are clearly mentioned that the unit rate for item 701 to 706 includes provision for removal of all obstacles except the following.

1. Boulders more than 40dm<sup>3</sup> and logs of wood of more than 100dm<sup>3</sup> in size which come under the cutting edge and inside the well and which have to be cut down or broken into small pieces for removal.
2. In the case of obstacles mentioned under note (1) extra shall be paid only for cutting down or breaking the obstacles into small pieces.

It is very clear from the specification and general note given in the standard data book that the rate for cutting down obstacles of size above 40dm<sup>3</sup>, wooden logs, of size above 100dm<sup>3</sup> and sinking well in rocks have not been included in item No.701 to 706 of well sinking. And sinking wells through rock if any encountered during well sinking operation simultaneously together with well sinking operation, otherwise the contractor cannot continue well sinking operation and complete the work within time as this item of work is beyond scope of approved specification and terms of agreement provisions. This general note 5 in Chapter XV of standard data book was included in the agreement schedule from long back ago and all contractors are well aware about this item and they had considered this during the time of tender quoting. Copies of the agreement schedule of bridges constructed during the period of 2013 is enclosed.

Details of works showing extra payments made

Sl No	Name of work (item as per agreement)	Particulars of estimated cost and extra payments for well sinking		
		Estimate d cost (Rs. in lakh)	Extra payment (Rs.in lakh)	Percentage of extra payment on estimated cost)
1	Constructi on of Mythiakad avu bridge	5	6.36	96.12
				1511.32
	Constructi on of Vallipada m Alungalka dav bridge	6.7	15.15	63.49
				419.08
	constructi on of Thayytlaka dav bridge	6.7	11.57	30
				259.29

The quantity of nature of work to be done of such items cannot be assessed while preparing either the estimate or agreement schedule since these items are invisible. Lump-sum provision are included in the sanctioned estimate and these items are executed on actual DLR basis by the department as and when encountered during well sinking. Approved detailed estimate and other design details etc are verified by the contractors and they are well known about these items of removal of obstacles other than included in well sinking items and considering this while quoting rate for the tender. No contractor's profit or tender variations are allowed for executing these items of work. Hence the contractor has no monetary benefit of implementing these items and has not deviated/violated the agreed specifications.

Approved design of bridges insists seating of well foundation upon a levelled hard rock strata and well kerbs are to be anchored to a minimum 60 cm depth into hard rock. Undulated, soft and unweathered top layers of rock formations found in river beds are to be cut and removed to seat the well foundations as insisted in design. It is very clear from the agreed specification of well sinking items that the rate for cutting and removing rock has not been included in these items and these quite essential and inevitable items are to be carried out by the department separately on actual DLR basis simultaneously together with well sinking operation. Though the presence of obstacle can be noticed on core boring during sub soil investigation, exact Number, size, quantity and nature of work to be carried out for cutting and breaking down into pieces of these invisible obstacles can not be assessed for including the sanctioned estimate. Hence these items are being executed on actual DLR basis as and when encountered during well sinking. The work actually

4	constructi on Umminki davu bridge	6.7	15.01	38.51	256.56
	Total		46.09	128.12	474.36

As can be seen from the above table, the percentage of extra payment comes to nearly four times the estimated cost of the agreed item of well sinking and this payment was made without following the usual tender procedure.

In this connection, Audit observed the following:

All works except the extra items were put to tender on 'percentage one basis' in which the quoted rate was inclusive of all operations contemplated in the specification and tender schedules including incidentals. The workable rate quoted by the bidder was inclusive of charges for removing boulders irrespective of their size. Therefore, the payment for cutting and breaking down boulders of more than 40 cm size during sinking of abutments and pier wells and for sealing of wells on base, over and above the estimated cost was contrary to the provisions contained in the agreement.

Secretary, PWD stated (October 2015) that the approved design of bridges insisted seating of well foundation upon a leveled hard rock stratum and well kerbs were to be anchored to a minimum 60 cm depth into hard rock and that in order to seat the well foundations, the top layers of rock formations were to be cut and removed as mentioned in design and that the rates for the above rock cutting works were not included in the agreed specification. Further, the reply stated that the general note in Standard Data Book

done are often exceeded from nominal lump sum provision as there are limitations to include lump sum provision in sanctioned estimate. After preparing the DLR, it is submitted to higher authorities for according sanction. Revised estimate incorporating all the deviated items are prepared and got approved and regularized from the competent authorities before final payment.

After adopting the MORTH data in Kerala PWD, this DLR item is changed to rate for sinking in soft rock and rate for sinking in hard rock as per MORTH specification.

In view of the above facts the audit objection may please be dropped.

permitted the payment for cutting down boulders of size above 40cm<sup>3</sup> and wooden logs of size above 100 cm<sup>3</sup> encountered during well sinking.

The reply of the Government was not tenable as the quoted rate was inclusive of all operations contemplated in the specifications and tender schedules including incidentals. The specification in the tender schedule and agreement schedule for the item of well sinking included removal of obstacles. As notes in the Standard Data book were not made part of the agreements, extra payment for cutting down boulders of size above 40 cm<sup>3</sup> was not permissible. Thus, due to its failure to adhere to the specifications in the tender schedules, the Department had extended undue benefit of Rs.2.28 crore to the contractors.

511

**Double payment to the contractor for same work through Hand Receipts.**

Failure to exercise required verification by PWD resulted the double payment for executing an item of work in the construction of Mythrakkadavu bridge across river Chaliyar in Malappuram district.

Article 40 (b) of the Kerala Financial Code provides that every Government servant who incurs or authorizes the incurring of any expenditure from public funds should see that the expenditure should not be prima facie more than the occasion demands. He is expected to exercise the same diligence and care in respect of all expenditure from public moneys under his control as if person of ordinary prudence would exercise in respect of the expenditure of his own money

The payment of actual on bridge works was resorted on the basis of provision in the Data Book. The DLR prepared by the Assistant Engineer was submitted to the Chief Engineer through proper channel and on the basis of the proceedings issued by the Chief Engineer, an HR would be prepared and recorded in the M Book. This HR is presented at the Division office for payment. Since the item is not included in the Agreement Schedule (copy enclosed), CC Bill forms cannot be used for this purpose and HR payment is resorted to. The genuineness of the claim can be ensured only by the Assistant Engineer in such HR claims.

On 31.03.2014 2 Nos. of HR for the actual DLRs for cutting and breaking down boulders and wooden logs more than 40 dm<sup>3</sup> in size for an amount of

Superintending Engineer, Roads & Bridges, North Circle, Calicut (SE) had executed an agreement (March 2011) with Shri. V.P. Mohammed Ayub, contractor, Erakikode, Edavana, Malappuram District, for the construction of Mythrakadavu bridge across river Chaliyar in Malappuram District. The work was executed by the Executive Engineer, Roads Division, Manjeri (EE).

Audit of vouchers (July 2015) of Public Works Department transactions (PWD) in the office of the EE revealed that the EE had made (July 2015) a payment of Rs.14.93 lakh through a Hand Receipt (HR) prepared by the Assistant Engineer, Bridges Section, Manjeri (AEE) and verified by the Assistant Executive Engineer, Bridges Sub Division, Manjeri (AEE) for an item of work "cutting and breaking into small pieces of boulders size during sinking of wells and seating of well pier-2". The payment recorded at page 35 of Measurement Book No.7732, was made through the Bill Discounting System (BDS) and adjusted in the Monthly Account of July 2015 through a Transfer Entry (July 2015). The EE made (July 2015) payment based on the sanction accorded in respect of an item of work in the Daily Labour Report by the Chief Engineer, Roads & Bridges (CE), Thiruvananthapuram.

As the sanction was more than two years old, a further scrutiny in Audit revealed that a total amount of Rs.55.12 lakh (including the amount of Rs.14.93 lakh related to the work) was paid during July 2015 for executing the item and that the amount of Rs.14.93 lakh had already been paid earlier during May 2013 (CBV 150 of May 2013) based on the same sanction for executing the same item. Both the payments, i.e. May 2013 and July 2015 were made through HR prepared by the then AE and verified by the then AEE and recorded on Page 6 of Measurement Book No.9360.

Rs.14,92,714/- and Rs. 40,19,740/- were submitted by the PWD Bridges Sub division, Manjeri to the Executive Engineer, Manjeri as per No. D2-328/2002 dated 31.03.2014. These HRs were supported by 2 sanction letters of the Chief Engineer (No. CE/R&B/MNJ/9986/09 dated 30.01.2013 for Rs.14,92,714.50/-) and No.CE/R&B/MNJ/9986/2009 dated 22.03.2014 for Rs. 40,19,740/-). The bill received from the Sub division is registered as Bill No. 917 dated 31.03.2014. There are eight constituency areas coming under Bridges Section, Manjeri. The staff under Manjeri Bridges Section is very limited with 2 Overseers and Assistant Engineer. Also the number of works are very high during that period (7 ongoing works) and the whole works are scattered through out the nook and corner of Malappuram district. Hence supervising and monitoring under this Section and traveling from one site to another will require a lot of time. So as a result the time available for the preparation of bills and the scrutiny of the same was done in an urgent manner which lead to the duplication of the payments, which was later corrected.

As the Bill is prepared by a responsible Assistant Engineer who Supervised the work the genuineness was not suspected. More over no evidence of previous payment is seen in the audit file. The detailed scrutiny of HR payment would be conducted at the time of final payment in work slip. Hence the amount of Rs.55,12,454/- was passed under good faith from the Division office in June 2014. It is true, that the work register was not and action in the Division for a long period. But a new Register was opened in 2014-15 taken to the inspection furnish the details of previous payments on all ongoing works. After the inspection of Accountant General the work Register is maintained properly. The miscellaneous sanction register is also maintained.

Further Audit investigation revealed that only one Daily Labour Report (DLR) was sanctioned in the Divisional records to support the payment of Rs.14.93 lakh (May 2013). No DLR was available to support the second payment of July 2015 which confirmed that payment of Rs.14.93 lakh made to the contractor during July 2015 through the BDS was double payment. On this being pointed out by Audit (December 2015), the EE admitted the double payment and got the amount remitted from the contractor in December 2015.

Audit of Internal Control Mechanism of the office of the EE, further revealed that the office was neither maintaining nor monitoring the requisite Control Registers as stipulated in Kerala Public Works Account Code Para No.10.5 (Works Abstract), para Nos. 10.6 and 5.3.3 (Works register), Para No.10.7 (Contractors' Ledger) and Para No.22.2.7 (Miscellaneous Sanction Register). The AE was, thus, not exercising any preliminary checks on the contractors claims. Thus, disregard for the mandatory checks of consulting previous records by the EE led to double payment of Rs.14.93 lakh for the same work.

Further, the double payment of July 2015 was made through the newly introduced Bill Discounting System (BDS). The Finance Department (FD) transfers the details of only those Bills into the BDS database which are processed and recommended by the CE in EMLI software and for which the FD had agreed to issue a letter of Credit (LoC). The fact that the LoC for the payment of Rs.14.93 lakh was issued by the FD in July 2015 and that the payment of July 2015 occurred through BDS, confirmed that the claim of the contractor was processed and recommended throughout the entire chain of authorities from the AE level to the CE level and that none of the authorities could detect the double payment being attempted. This revealed as under:

During the special inspection conducted by the Accountant General in December 2015, the duplication in payment was detected. Immediately the Division issued order to recover the excess amount paid as per Order No.E4/A3/3255/2011 dated 31.12.2015 and the contractor remitted the excess payment of Rs.14,92,714, on the same day. Hence no financial loss is sustained by Government at present. At that time the Contractor had completed 85% of work and an approximate amount of One Crore was to be billed. The completion and final payment was still pending at that time. Now the final bill amount of Rs.1.84 Crore is still pending for payment.

Normally all major bridge Works require revised estimate. At the time of preparation of Revised Estimate the actual paid through HR would also be included and the duplicate payment would be surely detected. The detailed Scrutiny on all payments would be conducted at the time of final payment. Hence the discrepancy will surely be detected at the time of final payment. Now, the registers are maintained properly and will be more vigilant in auditing work bills.

With regard to this suggestion to modify the software EMLI, the FD has been requested to do the same in accordance with the recommendation of the C&AG. In view of the above facts, the audit objection may be dropped.

\* weak Internal Control Mechanism in the Roads and Bridges wing of the PWD;

\*recovery of double payment in this case was at the instance of Audit but no action has been taken against the officials responsible for this. Besides, the present system gives scope for such double payments escaping detection in future; and

\*the software EMLI was not able to detect the fact that a Letter of Credit had already been generated against the same sanction at an earlier date.

In this respect, Audit recommends as under:

1. The commission of double payment coupled with the weakness of the Internal Control Mechanism, of the Department requires thorough investigation, preferably by Vigilance authorities to pre-empt any intentional negligence/fraud

2. The software 'EMLI' may be modified so that only one Letter of credit is generated against a sanction and any further attempt to generate Letter of Credit on the same sanction would be rejected by the system automatically;

3. The payment of huge amounts through HRS (KPW Form 24), instead of the Forms KPW 22 (for making first and final payment to contractor) or KPW 23 (for making running payments), may be discouraged as the HRS lack the basic control measure; and accountability provisions as compared to Forms KPW 22 or 23 which help to pre-empt irregular payments.

During Exit Conference, the Chief Engineer stated that

this was the first instance and no other Case or double payment was currently known to the Department. As regards enquiry about such instances taken place in other Divisions also, the Secretary to Government stated that assurance could be furnished only after an investigation in the matter. Thus, thorough investigation is required in the matter to guard against the recurrence of such serious lapses - in future.



**R. SREEKALA DEVI**  
Special Secretary to Govt.  
Public Works Department  
Govt. Secretariat, Tvm.  
Ph: 2327175, 2518465



Copy to the Executive Engineer, Roads Division, Kannur

For CHIEF ENGINEER

Yours faithfully,

Under the circumstances explained by you vide your letter cited, the proposal is approved (About 25% of earth as mentioned as extra items). Necessary data incorporating the item may be submitted immediately.

Ref: That office letter No. DC/2526/98 dated 13.09.2009

Sd/- NABARD RIDE XII - Construction of Bridge at Varamankadu in  
Chelara Grama Panchayat in Kannur district.

Sir,

The Superintending Engineer,  
R&B North Circle,  
Kozhikode.

To

The Chief Engineer

From

Office of the Chief Engineer,  
PWD Roads & Bridges  
Thiruvananthapuram  
Dated 21.10.2009.

No. CE/R&amp;B/K/NK/1636/2009

Attachment No. 1- Related to Para No. 5.5

1400534/2017/OS-PWD

Attachment No. 2 - Related to Para No. 55

2017/OS-PWD

No. CE/R&B/KNR/16956/2002

Office of the Chief Engineer,  
PWD Roads & Bridges & IT,  
Thuvannanthapuram,  
Dated 09/10-2009.

The Chief Engineer

The Superintending Engineer,  
Roads & Bridges North Circle,  
Kozhikode.

Sir,

Sub:- NABARD RIDF XIII - Construction of a bridge at  
Varamkadavu in Chetora Grama Panchayat in Kannur District  
(Balance work) -

Ref:-1. Lt. No. DC2-2526/98 dated 22-09-2009 of SE, R&B North Circle,  
Kozhikode.

Under the circumstances explained by you vide your letter cited since there is  
change of specification the item of work "Installing PWD" can be treated as extra items  
(as per agreement conditions). The rate of Rs 85/M of as per agreement schedule can be  
allowed in this case. Regarding the application of tender variation, it is presumed that in  
the tender schedule the rate of 85/M is based on market rate. Hence in this case for the  
extra item it can be given market rate subject to a maximum of 85/M without applying  
tender variation. This is as per agreement condition.

Yours faithfully,

For Chief Engineer

Copy to the Executive Engineer, PWD Roads Division, Kannur.

Attachment No. 3 - Related to Para No. 5.5

140054/2017/OS-PWD

No. CE/R&amp;B/KNR/16956/02

Office of the Chief Engineer,  
PWD Roads & Bridges  
Thiruvananthapuram  
Dated : 18.03.2010.

From

The Chief Engineer

To

The Superintending Engineer,  
R & B North Circle,  
Kozhikode.

Subj: PWD - NABARD RUPF XII - Construction of Bridge at Varamkadavu  
- Chelara Panchayat at Kannur District (Balance work).

Ref: Letter No. DC 14/2526/09 dated 15.03.2010 of Supdtg. Engineer,  
R & B North Circle, Kozhikode.

Under the circumstances explained by you vide letter cited, the following extra items and rates are approved. You are requested to limit the total expenditure with the A.S. amount

Extra items

1. Providing and laying non woven  
Geo Textile fabrics : 88/m<sup>2</sup>  
(Rupees Eighty eight only)

2. Providing and laying non woven  
Geo Textile under water : 88/m<sup>2</sup>  
(Rupees Eighty eight only)

3. Providing and laying woven  
Geo Textile fabrics (Polyester or  
Propylene materials of minimum  
3 m width excess directed by the  
deptt. officers at site.

4. Providing and installing of flexible  
pre fabricated vertical drain etc as  
directed by the deptt. officers at site.  
: 109.92/m  
(Rs. One hundred nine and  
Ninety two paise only)

Yours faithfully,

for CHIEF ENGINEER

P3

Estimate Name: M/s Erenad Engineering Enterprises, Kedar PO, Malappuram

Less (-)

7.00%

SCHEDULE OF WORKS

SCHEDULE OF WORKS						
Sl. No.	Description of work	No. or Qty.	Unit	Estimated Rate		AMOUNT Rs P
				Figure	Words	
Appendix A: Bridge Proper						
1	Forming island of size 16.5 m x 10.5 m outer side for an average height of 3 m with 75cm above water level by driving down teak wood posts class III of girth 41 to 52cm to an average depth of 2m below bed level at 50cm c/c for posts and 2m c/c for struts and tying with teak wood posts 50cm c/c to vertical posts already driven down and screening with double bamboo split with necessary bamboo resper provided at required intervals and filling inside with earth including all cost, conveyance hire and labour charges and all other incidental expenses etc complete including maintaining the the island till the completion of work and demolition and clearing the same after completion of work as per standard specifications and as directed by the departmental officers	3	Nos	480014.00	Rupees Four Lakh Sixty Thousand & Fourteen Only	1380042.00
2	Earth work excavation in all classes of soil except hard and medium rock, which require blasting for and depositing with all leads and lifts for abutments and using the spoil for filling and forming of road wherever necessary including breaking clods, watering, ramming all labour charges, incidental expenses etc complete as per standard specification and as directed by the departmental officers					
	2a) Initial depth 1.50m	540	M3	94.00	Rupees Ninety Four Only	50796
	2 b) First depth 1.50m	462	M3	106.70	Rupees One Hundred & Six - Paise Seventy Only	49265
	2c) Second depth 1.50m	286	M3	119.40	Rupees One Hundred & Nineteen - Paise Forty Only	3416
3	Supplying and fixing MS angles of size 150 x 150 x 12 mm for cutting edge of wall curb including cost and conveyance of materials cutting bending for required shade welded and bonded to concrete using 12mm dowel bars welding, drilling and fixing charges, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers.	32	Qr	7182.00	Rupees Seven Thousand One Hundred & Eighty Two Only	230820

Signature of Tenderer with seal

**Attachment to Para No.5.9 & 5.11 (page 44-89 of the attachment related to Para No.5.9 and page 64-77 related to para 5.11)**

Name of work: NABARD RIDF XVII- Construction of Thayyilakkshmi Bridge across Kadalundi river in Malappuram District				Sl. No. of Bill	
14/03/2017	1. M25 design mix for moulding well curb using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	108.25	M3	8850.00	Rupees Eight Thousand Eight Hundred & Fifty Only 8850.00
5	VRCC M 20 design mix for moulding well staining using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as per the direction of departmental officers	574.48	M3	7950.00	Rupees Seven Thousand Nine Hundred & Fifty Only 7950.00
6	Shoring of RCC circular well 6.5 m outer dia 6.5m inner dia (M25 mix) for foundation of abutments in all classes of soil other than rock to line and levels and plumb by scooping out earth from inside and below staining with dredgers or any other appliances including hire charges, labour charges, dewatering, casting, vibrating, removal of obstacles, dumping the spoil at suitable places with all leads and lifts, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers				
	Gajlota depth 3 m	8	M	24872.00	Rupees Twenty Four Thousand Eight Hundred & Seventy Two Only 24872.00
	6a) First depth 3.00m to 4.50m	3	M	26175.00	Rupees Twenty Eight Thousand One Hundred & Seventy Five Only 26175.00
	6c) Second depth 4.50m to 6.0m	3	M	31478.00	Rupees Thirty One Thousand Four Hundred & Seventy Eight Only 31478.00
	6d) Third depth 6.0 m to 7.50m	3	M	34781.00	Rupees Thirty Four Thousand Seven Hundred & Eighty One Only 34781.00
	6e) Fourth depth 7.50m to 9.0m	3	M	38084.00	Rupees Thirty Eight Thousand & Eighty Four Only 38084.00
	6f) Fifth depth 9.0m to 10.50m	2.3	M	41367.00	Rupees Forty One Thousand Three Hundred & Eighty Seven Only 41367.00
	6g) Sixth depth 10.5m to 12.0m	0.4	M	44550.00	Rupees Forty Four Thousand Six Hundred & Fifty Only 44550.00

Signature of Tenderer with seal

Name of work: NABARD RIDF XV- Construction of Thayilakkadav Bridge across Kadalundi river in Malappuram District						
1400004/2017	1. Providing R.C.C. circular well 6.6 m outer dia 4.8m inner dia (M25 mix) for foundation of abutments in strata of soil other than rock to line and levels and plumb by scooping out earth from inside and below sinking with dredgers or any other appliances including hire charges, labour charges, dewatering, casting, vibrating, removal of obstacles, dumping the spoil at suitable places with all leads and lifts, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers					
	7a) Initial depth 3 m	9	M	21673.00	Rupees Twenty One Thousand Six Hundred & Seventy Three Only	199067.00 ✓
	7b) First depth 3.00m to 4.50m	4.5	M	24708.00	Rupees Twenty Four Thousand Seven Hundred & Eight Only	111186.00 ✓
	7c) Second depth 4.50m to 6.0m	1.9	M	27743.00	Rupees Twenty Seven Thousand Seven Hundred & Forty Three Only	52711.70 ✓
	7d) Third depth 6.0 m to 7.50m	4.5	M	30778.00	Rupees Thirty Thousand Seven Hundred & Seventy Eight Only	138501.00 ✓
8	Providing MS dowel bars with 25 mm M.S rods 2.60 m long plugging 1.0m in the hard rock and 1.50 m in to concrete @ 1 m c/c after drilling 50 mm dia holes in granite rock including cost and conveyance of all materials, all labour charges including cutting the rods in to required length and fixing the rod in to position, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers	223	Non	907.00	Rupees Nine Hundred & Seven Only	202281.00 ✓
9	C.C. M15 Grade mix for bottom plugging of well using 20mm hard granite broken stone including cost and conveyance of all materials, labour for pumping concrete, hire of mixer and vibrator and finishing the surface to required levels with all charges etc, complete as per Std. Specification and as directed by the departmental officers	348	M3	6500.00	Rupees Six Thousand Five Hundred Only	2262000.00 ✓
10	Chipping and removing extra projection of well sinking without damaging the remaining portion including all labour charges, hire charges, incidental expenses etc complete as per Std. Specification and as directed by the departmental officers	35	M3	5000.00	Rupees Five Thousand Nine Hundred Only	206500.00 ✓
11	Filling inside the wells with clean dry river sand including all leads and lifts, cost and conveyance of sand, consolidating and finishing the top to the required levels, all labour charges, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers	867	M3	1264.00	Rupees One Thousand Two Hundred & Sixty Four Only	1096888.00 ✓

14005322017000-7000  
 PART A-111 CONSTRUCTION OF THEYILAKKADAV BRIDGE ACROSS KALAIKUNDI RIVER IN THALAPPARAI DISTRICT

12	C.C. M16 Grade including 20mm hard granite broken stones Grade mix for top pitching of wall including cost and conveyance of all materials, labour for dumping concrete, hire of mixer and vibrator and finishing the surface to required levels with all charges etc. complete as per Std. Specification and the direction of the department officers.	37	M3	6280.00	Rupees Six Thousand Two Hundred & Fifty Only	231255
13	WCC M 30 design mix for moulding wall cap using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	438	M3	7150.00	Rupees Seven Thousand One Hundred & Fifty Only	207450
14	WCC M 30 design mix for moulding abutment and solid wing wall using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	377	M3	7300.00	Rupees Seven Thousand Three Hundred Only	2752000
15	WCC M 30 design mix for moulding pier and pier cap using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	225	M3	7600.00	Rupees Seven Thousand Six Hundred Only	1710000
16	WCC M 28 design mix for moulding abutment cap using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	8	M3	7900.00	Rupees Seven Thousand Nine Hundred Only	63200
17	WCC M 28 design mix for moulding dit wall using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	22	M3	9480.00	Rupees Nine Thousand Four Hundred Only	208900

1400/2019-2020

NDP XVI- Construction of Theyyarakudam Bridge across Kothakudam river in Malappuram District

18	VRCC M-35 design mix for moulding pedestal using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	3	M3	8560.00	Rupees Eight Thousand Five Hundred & Fifty Only	28860.00
19	VRCC M 20 design mix for moulding T beam, deck slab, kerb etc using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	468	M3	21300.00	Rupees Twenty One Thousand Three Hundred Only	9968400.00
20	VRCC M 20 design mix for moulding handrail using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	20.001	M3	12400.00	Rupees Twelve Thousand Four Hundred Only	248012.40
21	VRCC M 20 design mix for moulding footpath using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	27.888	M3	7450.00	Rupees Seven Thousand Four Hundred & Fifty Only	207765.80
22	Supplying and fixing drainage spouts with 63 mm dia PVC pipe 60 cm long with GI gratings of 150x150 mm size for deck slab including cost and conveyance of all materials, all labour charges, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers	96	Noe	92.50	Rupees Ninety Two - Paise Fifty Only	8880.00
23	Providing reinforcement for RCC work using TMT steel, fusion bonded and epoxy coated bar, tied and placed in position including cost and conveyance of all materials, all labour charges, incidental expenses, complete as per standard specifications and as directed by the departmental officers	1788	Qn	6655.00	Rupees Six Thousand Eight Hundred & Fifty Five Only	12105830.00

Signature of Tenderer with seal



၈၂

Signature of Lender with seal

14. ~~Work on Road~~ RDP XVI- Construction of Thapliakadev bridge across Kadakundi river in Malappuram District

28	Providing and erecting retro-reflectised direction and place identification sign with size more than 0.9 Sqm as per IRC: 67-2001 made of high intensity prismatic lens reflective sheeting with 7 years guarantee mounted over hard and corrosion resistant aluminium alloy sheet, 2mm thick conforming to IS: 738 and clause 1:2:5 of approved specification supported by frames made of mild steel angle iron of designed size and supported on two posts of mild steel angle iron 75mm x 75mm x 6mm, firmly fixed to the ground by means of foundation with M15 grade cement concrete 45cm X 45cm X 90cm, 80cm below ground level as per approved drawing etc. complete including cost and conveyance of all materials, all labour charges, hire charges, incidental expenses etc complete as directed by the departmental officers.	6	M2	9263.00	Rupees Nine Thousand Two Hundred & Sixty Three Only	55578.00
29	Painting with synthetic enamel paint of suitable colour with approved quality two coats including cost and conveyance of all materials, all labour charges, incidental expenses etc complete as per standard specifications and as directed by the departmental officers	500	M2	86.80	Rupees Eighty Six - Paise Sixty Only	43300.00
30	Belling out water in trenches using 8 HP pump including cost and conveyance of fuel, oil all labour charges, hire charges, incidental expenses etc complete as per standard specifications and as directed by the departmental officers	10000	HP hr	30.60	Rupees Thirty - Paise Fifty Only	306000.00
<b>Total for Appendix A= 4337449.18</b>						
<b>Appendix B= Through road</b>						
1	Earth work filling with contractor's own earth cut and conveyed from sources of availability and forming embankment with all leads and lifts by spreading in horizontal layers of uniform thickness over the full width, drying or wetting as the case may be, so as to get uniform CMC compacting the filled earth using power roller in layers not exceeding 25cm (loose thickness) satisfying compaction tests, including winning slopes to lines and levels including cost of oil, fuel etc, hire charges of roller including cost and conveyance of all materials, all labour charges, incidental expenses etc complete as per standard specifications and as directed by the departmental officers	5000	M3	312.80	Rupees Three Hundred & Twelve - Paise Eighty Only	1584000.00
2	Collection and supply of quarry muck including stacking on the road sides in standard heaps for measurement for filling the low lying portions of the road and compacting with power roller including cost and conveyance, all labour charges, incidental expenses etc complete as per standard specification and as directed by the departmental officers	778	M3	643.30	Rupees Six Hundred & Forty Three - Paise Thirty Only	500487.40

# 14-00000

67

**Signature of Tenderer with seal**

140522Z110600Z

NOTE: RECORDED RDBF XV8- Construction of Thang Khatkhatay Bridge across Madakund river in Namphungam District

98

Signature of Tenderer with seal

## 14. Work No. 17/2019-2020 R/O F. XVII - Construction of Thangalappadav Bridge across Kadalundi river in Malappuram District

	Collection and supply of 8 mm size hard granite broken stone and stacking on the sides of road in standard heaps for pre-measurement including cost, conveyance, all labour charges, incidental expenses etc complete as directed by the departmental officers.	15	M3	1333.00	Rupees One Thousand Three Hundred & Thirty Three Only	1333.00
15	Providing 20mm pre mixed chipping carpet over W.B.M surface with departmental broken stone after thoroughly cleaning the base with wire brushes, brass brooms and applying a priming coat of 7.50Kg of bitumen/10 m <sup>2</sup> and spreading the primer (formed of 0.27m <sup>3</sup> of 12mm metal and 12.90kg of bitumen/ 10m <sup>2</sup> ) rolling to a dense surface then spreading the seal coat (comprising of a hot premix of 0.09m <sup>3</sup> of 8mm departmental metal and 8.64 kg of bitumen / 10 m <sup>2</sup> ) again rolling including cost and conveyance of bitumen, oil, fuel etc, all labour charges, hire charges of brass brooms, camber board, roller and other machineries, watching, lighting, incidental expenses etc, complete (total usage of bitumen 29.10 Kg/10 m <sup>2</sup> .) as per IRC specification and as directed by the departmental officers.	1575	M2	162.00	Rupees One Hundred & Sixty Two Only	255.00
16	Providing precast guard stones of 20x30x60 cm made of CC-M 20 using 20mm hard granite broken stone with 4nos HYSD bars 10mm dia and 6mm stirrups @18cm c/c for reinforcement and fixing in line and levels 60 cm below the ground level with CC 1:4:8 (45cm x 45cm x 60cm) including cost and conveyance of all materials, all labour charges, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers.	114	Nos	1043.00	Rupees One Thousand & Forty Three Only	1043.00
17	Providing road markings with hot applied thermo plastic compound 2.50 mm thick including reflectorising glass beads @250 grams per square metre area at the centre line and pedestrian crossings of road (thickness of 2.50mm is exclusive of surface applied glass beads) and finishing the surface level and uniform free from streaks and holes including cost and conveyance of all materials all labour charges, incidental expenses etc complete as per standard MORTH specifications and as directed by the departmental officers.	64	M2	364.00	Rupees Three Hundred & Eighty Four Only	24576.00
<b>Total for Appendix B- 11342881</b>						
<b>Appendix C-Construction of subverts</b>						
1	Earth work excavation in all classes of soil except hard and medium rock, which require blasting for foundation of culvert and depositing on bank with all lead and lifts and using the spoil for filling and forming of road wherever necessary, including breaking clods, watering, ramming and sectioning of spoil bank including all conveyance charges, labour charges, incidental expenses etc complete as per standard specifications and as directed by the departmental officers.	108	M3	94.00	Rupees Ninety Four Only	10152.00

Signature of Tenderer with seal

**Attachment to Para No 5.9 & 5.11 (para 44-49 of the attachment related to Para No 5.9 and para 64-77 related to para 5.11)**

**Name of work: Road and RCC Work Construction of Theryabekhar Bridge across Kadahundi river in Madakasira District**

**84438**

**140032/2019**

2	Cement concrete 1:4:6 (One cement, Four sand and Eight Metal) using 40mm hard granite broken stones, mixing, laying properly and compacting for foundation of culvert including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers	48	M3	4213.00	Rupees Four Thousand Two Hundred & Thirteen Only	193798.00
3	Cement Concrete 1:3:6 (One Cement, Three Sand and Six Metal) using 60 % of 40mm and 40% 20mm hard granite broken stone, mixing, laying properly and compacting for footing and abutment of culvert including cost and conveyance of all materials, all labour charges, form work charges, watering, curing, incidental expenses etc complete as per standard specifications and as directed by the departmental officers	118	M3	5191.00	Rupees Five Thousand One Hundred & Ninety One Only	612538.00
4	Reinforced cement concrete 1:1 1/2:3 (One cement, One and half sand and Three Metal) using 20mm hard granite broken stones, mixing, laying properly and compacting for culvert including cost and conveyance of all materials, all labour charges, formwork charges, watering, curing, incidental expenses etc, complete but excluding the cost of reinforcement, as per standard specifications and as directed by the departmental officers	42	M3	8860.00	Rupees Six Thousand Six Hundred & Fifty Only	278300.00
5	Providing reinforcement for RCC work using TMT steel, fusion bonded and epoxy coated band, tied and placed in position including cost and conveyance of all materials, all labour charges, incidental expenses, complete as per standard specifications and as directed by the departmental officers	64	Q8	8865.00	Rupees Six Thousand Eight Hundred & Fifty Five Only	370170.00
<b>Total for Appendix C= 140032</b>						
<b>Appendix D-River Side Protection Works</b>						
1	Earth work excavation in all classes of soil except hard and medium rock, which require blasting for foundation of retaining wall and depositing on bank with all load and lifts and using the spoil for filling and forming of road wherever necessary including breaking clods, watering, ramming and sectioning of spoil bank including all conveyance charges, labour charges, incidental expenses etc complete as per standard specifications and as directed by the departmental officers	1800	M3	94.00	Rupees Ninety Four Only	150400.00
2	Cement concrete 1:4:6 (One cement, Four sand and Eight Metal) using 40mm hard granite broken stones, mixing, laying properly and compacting for foundation of retaining wall including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers	141	M3	4213.00	Rupees Four Thousand Two Hundred & Thirteen Only	594033.00

Signature of Tenderer with seal

17/10/60] 1131- AVE- Construction of Theyyalkodev Bridge across Kadalundi river in Malappuram District

71

Net PAC	Rs	63748704
Deduct land percentage		
7.50% below est rate	Rs	6038148
	Rs	56712556
Add dept materials and hire of T&P	Rs	298842
AGREED PAC	Rs	56912398

**Signature of Tenderer with seal**

1400534/2017/06 PWD-

50/128

~~MEMORANDUM~~ XV- Construction of Mavayalakkadavu Bridge across Kadalandi river in Malappuram District

M/S. ~~Small Engineering Enterprises~~ P.O. Kozur, Malappuram District

(a) ~~estimate rate~~

(b) 7.50 % below ..... % below estimate rate.

(c) ..... % above estimate rate.

less cost of Departmental materials and all hire charges for departmental tools and plant specified to be supplied and recovered at the rates given in the conditions enclosed

1/ we also agree that the tenderer's deduction may be applied on the amount calculated after deducting the cost of all Departmental materials and all hire charges for departmental tools and plant from the total amount of the work worked out at the rate given in the schedule attached to the tender.

- NOTE:
1. To be out which is not applicable.
  2. The rate may be quoted in words and figures.

No. of Correction

No. of Overwriting

SD/-

Contractor

SD/-

Forwarded/ by Order

SUPERINTENDING ENGINEER,  
P.W.D.(ROADS & BRIDGES),  
NORTH CIRCLE, Kozhikode-1

Personal Assistant



## Attachment to Para No.5.9 &amp; 5.11 (page 44-89 of the attachment related to Para No.5.9 and page 64-77 related to para 5.11)

1400534/2017/OS-PWD

Page 1

57/128

**SCHEDULE**  
**Name of Work: Construction of Vallupattam-Alungalkadavu Bridge across Kathulundi river in Malappuram District**

	Probable Quantity	Description of Work	Rate in		Unit	Amount (Rupees)
			Figures (Rupees)	Words		
1	3 Nos	Forming Island of size 14.5 m x 10.3m outer side for an average height of 2 m with 30cm above water level by driving down teak wood posts to an average depth of 2m below bed level at 1m c/c for posts and 2m c/c for struts and tying with teak wood posts 50cm c/c to vertical posts already driven down and covering with double bamboo mat with necessary bamboo craper provided at required intervals and filling inside with earth including all cost, conveyance hire and labour charges and all other incidental expenses etc complete including maintaining the the island till the completion of work and demolition and clearing the same after completion of work as per standard specifications and as directed by the departmental officers	517498.00	Rs Five Lakhs Seventeen Thousand Four Hundred and Ninety Eight only	Each	1652498
2		Spill work excavation in all classes of soil except hard and medium rock, which require blasting for and depositing with pit levels and lifts for abutments and using the spoil for filling and forming of road wherever necessary including breaking clods, watering, returning all labour charges, incidental expenses etc complete as per standard specification and as directed by the departmental officers				
2a	540 Cubic metre	Initial depth 1.50m	1083.00	Rs Thousand Six Hundred and Ninety Three only	Ten Cubic metre	57402
2b	482 Cubic metre	First depth 1.50m	1180.00	Rs Thousand One Hundred and Ninety only	Ten Cubic metre	54978
2c	338 Cubic metre	Second depth 1.50m	1317.00	Rs Thousand Three Hundred and Seventy Seven only	Ten Cubic metre	44516
3	32 Quintals	Supplying and fixing MS angles of size 150 x 150 x 12 mm for cutting edge of well curb including cost and conveyance of materials cutting bending for required shade welded and bonded to concrete using 12mm dowel bars welding, drilling and fixing charges, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers.	8582.00	Rs Six Thousand Five Hundred and Eighty Two only	One Quintal	209984
4	107000 Cubic deci metre	VRCC M 25 design mix for moulding well curb using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc, complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers.	82.00	Rs Eighty Two only	Ten Cubic deci metre	877400

Contractor

Superintending Engineer

1400534/2017/OS-PWD

Page 2

of Work- Construction of Valluapadam-Alungalkadavu Bridge across Kadalundi river in Malappuram District

	Probable Quantity	Description of Work		Rate in	Unit in Words	Amount (Rupees)
5	796000 Cubic decil metre	VRCC M 20 design mix for moulding well staining using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as per the direction of departmental officers.	79.50	Rs Seventy Nine and paise Fifty only	Ten Cubic decil m³	6326200
6		Sinking of RCC circular well 8.5 m outer dia 6.5m inner dia (M25 mix) for foundation of abutments in all classes of soil other than rock to lines and levels and plumb by scooping-out earth from inside and below staining with dredgers or any other appliances including hire charges, labour charges, dewatering, casting, vibrating, removal of obstacles, dumping the spoil at suitable places with all loads and lifts, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers.				
6a	6 metre	Initial depth 3 m	24701.00	Rs Twenty Four Thousand Seven Hundred and One only	One metre	148206
6b	3 metre	Second depth 3.00m to 4.50m	28904.00	Rs Twenty Eight Thousand Four only	One metre	84012
6c	3 metre	Third depth 4.50m to 6.0m	31306.00	Rs Thirty One Thousand Three Hundred and Six only	One metre	93918
6d	3 metre	Fourth depth 6.0 m to 7.50m	34609.00	Rs Thirty Four Thousand Six Hundred and Nine only	One metre	103827
6e	2.6 metre	Fifth depth 7.50m to 9.0m	37912.00	Rs Thirty Seven Thousand Nine Hundred and Twelve only	One metre	98571
6f	1.5 metre	Sixth depth 9.0m to 10.50m	41215.00	Rs Forty One Thousand Hundred and Fifteen only	One metre	61823
6g	1.5 metre	Seventh depth 10.5m to 12.00m	44518.00	Rs Forty Four Thousand Five Hundred and Eighteen only	One metre	66777

Contractor

Superintending Engineer

1400534/2017/IOB-PWD

Page 8

Name of Work: Construction of Vallapadam-Akungaladevu Bridge across Kadahadi river in Nellore District

	Probable Quantity	Description of Work	Rate in	Unit	Amount
				Wards	(Rupees)
6b	0.9 metre	Eight depth 12.00m to 13.50m	47821.00	Rs Forty Seven Thousand Eight Hundred and Twenty One only	One metre 43009
7		Setting of RCC circular wall 6.5 m outer dia 4.9m inner dia (M25 mix) for foundation of pile in all classes of soil other than rock to line and levels and plumb by scooping out earth from inside and below staking with dredgers or any other appliances including tire charges, labour charges, dewatering, casing, vibrating, removal of obstacles, dumping the spoil at suitable places with all lands and fills, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers			
7a	0 metre	Initial depth 3 m	21670.00	Rs Twenty One Thousand Seven Hundred and Ninety only	One metre 88890 198111
7b	4.5 metre	Second depth 3.00m to 4.50m	24714.00	Rs Twenty Four Thousand Seven Hundred and Fourteen only	One metre 111213
7c	4.5 metre	Third depth 4.50m to 6.0m	27748.00	Rs Twenty Seven Thousand Seven Hundred and Forty Eight only	One metre 124871
7d	4.5 metre	Fourth depth 6.0 m to 7.50m	30784.00	Rs Thirty Thousand Seven Hundred and Eighty Four only	One metre 139926
7e	4.5 metre	Fifth depth 7.50m to 9.0m	33818.00	Rs Thirty Three Thousand Eight Hundred and Eighteen only	One metre 152186
7f	2.20 metre	Sixth depth 9.0m to 10.50m	36858.00	Rs Thirty Six Thousand Eight Hundred and Fifty Eight only	One metre 81061

75

Contractor

Superintending Engineer  
P.O.

1400534/2017/OB-PWD

Page 4

Name of Work- Construction of Vallupedam-Alungalkadevu Bridges across Kadehundi river in Maheswaram District

	Probable Quantity	Description of Work		Rate in	Unit	Amount (Rupees)
7g	0.30 metre	Seventh depth 10.6m to 12.00m	36890.00	Rs Thirty Nine Thousand Eight and Ninety only	One metre	11967
8	223 Nos	Providing MS dowel bars with 26 mm M.S rods 2.60 m long plugging 1.0m in the hard rock and 1.50 m in to concrete @ 1 m c/c after drilling 50 mm dia holes in granite rock including cost and conveyance of all materials, all labour charges including cutting the rods to required length and fixing the rod in to position, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers.	737.00	Rs Seven Hundred and Thirty Seven only	Each	164351
9	350000 Cubic deci metre	C.C. M15 Grade mix for bottom plugging of well using 20mm hard granite broken stone including cost and conveyance of all materials, labour for dumping concrete, hire of mixer and vibrator and finishing the surface to required levels with all charges etc. complete as per Std. Specification and as directed by the departmental officers.	66.00	Rs Sixty Six only	Ten Cubic deci metre	2310000
10	28000 Cubic deci metre	Chipping and removing extra projection of well sinking without damaging the remaining portion including all labour charges, hire charges, incidental expenses etc. complete as per Std. Specification and as directed by the departmental officers.	38.00	Rs Thirty Eight only	Ten Cubic deci metre	106400
11	1209 Cubic metre	Filling inside the wells with clean dry river sand including all leads and lifts, cost and conveyance of sand, consolidating and finishing the top to the required levels, all labour charges, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers.	1217.00	Rs Thousand One Hundred Seventeen only	One Cubic metre	1544373
12	37000 Cubic deci metre	C.C 1:2:4 (One Cement, Two sand, Four metal) using 20mm hard granite broken stones Grade mix for top plugging of well including cost and conveyance of all materials, labour for dumping concrete, hire of mixer and vibrator and finishing the surface to required levels with all charges etc. complete as per Std. Specification and the direction of the dept. officers.	62.50	Rs Sixty Two and paise Fifty only	Ten Cubic deci metre	231250
13	460000 Cubic deci metre	VROCC M 30 design mix for moulding well cap using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers.	71.00	Rs Seventy One only	Ten Cubic deci metre	3260000
14	377000 Cubic deci metre	VROCC M 20 design mix for moulding abutment and solid wing wall using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers.	66.00	Rs Sixty Eight only	Ten Cubic deci metre	2483600

76

Contractor

Superintending Engineer  
P.S.

1400634/2017/OS-PWD

Page 5

Name of Work: Construction of Vallampadam-Alungalkadtyr Bridge across Kadalundi river in Malappuram District

	Probable Quantity	Description of Work	Rate in	Unit Words	Amount (Rupees)
15	203000 Cubic deci metre	VRCC M 30 design mix for moulding pier and hammer head using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	87.50	Rs Eighty Seven and paise Fifty only	Ten Cubic deci metre 1778250
16	6000 Cubic deci metre	VRCC M 25 design mix for moulding abutment cap using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	79.00	Rs Seventy Nine only	Ten Cubic deci metre 63200
17	22000 Cubic deci metre	VRCC M 25 design mix for moulding dirt wall using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	94.00	Rs Ninety Four only	Ten Cubic deci metre 206800
18	6000 Cubic deci metre	VRCC M 30 design mix for moulding pedestals using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	77.00	Rs Seventy Seven only	Ten Cubic deci metre 46200
19	488000 Cubic deci metre	VRCC M 25 design mix for moulding deck slab, girders and kerb using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	223.00	Rs Two Hundred and Three only	Ten Cubic deci metre 1084640
20	20000 Cubic deci metre	VRCC M 20 design mix for moulding pandralls using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	152.00	Rs One Hundred and Fifty Two only	Ten Cubic deci metre 304000
21	28000 Cubic deci metre	VRCC M 20 design mix for moulding footpath using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	86.00	Rs Eighty only	Ten Cubic deci metre 224000
22	98 Nos.	Supplying and fixing drainage spouts with 63 mm dia PVC pipe 60 cm long with GI gratings of 150x150 mm size for deck slab including cost and conveyance of all materials, all labour charges, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers	57.00	Rs Fifty Seven only	Each 5616

Contractor

Superintending Engineer  
P.W.D.

14/06/2017/OS-PWD

62/128

Page 8

Name of Work: Construction of Valluvarpalam-Alangaladevara Bridge across Kadakudi river in Melappuram District

	Probable Quantity	Description of Work	Rate in	Unit Words	Amount (Rupees)
23	1883 Quintal	Providing reinforcement for RCC work using TMT steel, lap joint bonded and epoxy coated, bend, lap and placed in position including cost and conveyance of all materials, all labour charges, incidental expenses, complete as per standard specifications and as directed by the departmental officers.	8888.00	Rs Six Thousand Eight Hundred and Fifty Five only	One Quintal 12978616
24	88 metre	Providing expansion joint between spans with Aluminium sheet 16 gauge 7.50 cms long and 55 cms wide (weight of sheet 7.50x0.5x3.40 kg/m <sup>2</sup> ) packing in position, cutting the same in position with slot and 100mm at 30cm centre to centre and filling the joints with mixture of bitumen, sand and saw dust including cost and conveyance of all materials, all labour charges, incidental expenses etc complete as per standard specifications and as directed by the departmental officers.	183.00	Rs Thousand One Hundred and Ninety Three only	One metre 66806
25	570 Square metre	Providing and laying 80mm average thick bituminous concrete wearing coat over the carriageway with heavy seal coat using 24mm broken stone 0.36 m <sup>3</sup> , 18mm broken stone 0.245 m <sup>3</sup> , 6mm broken stone .09 m <sup>3</sup> premixed with hot bitumen (400g/m <sup>2</sup> ) 71.88kg/m <sup>2</sup> including a tack coat of 2.50kg /10m <sup>2</sup> , rolling to a dense surface including cost and conveyance of all materials, all labour charges, hire charges of roller, mixer, wheel barrows, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers.	46200	Rs Thousand Four Hundred and Seventy One only	Ten Square metre 312957
26	640 Square metre	Painting with synthetic enamel paint of suitable colour with approved quality two coats including cost and conveyance of all materials, all labour charges, incidental expenses etc complete as per standard specifications and as directed by the departmental officers.	9000	Rs Nine Hundred only	Ten Square metre 57800
27	10000 HP/hr	Bailing out water in trenches using 5 HP pump including cost and conveyance of fuel, oil all labour charges, hire charges, incidental expenses etc complete as per standard specifications and as directed by the departmental officers.	300	Rs Thirty One only	One HP/hr 310000
		<b>TOTAL PAC</b>			Rs 47612273
		<b>DEDUCTION FOR DEPTL MATERIALS &amp; HIRE CHARGES OF T&amp;P</b>			Rs 8
		<b>NET PAC</b>			Rs 47612273

Deduct 8.3 % below estimate rate

Agred PAC

Rs 45000023

Contractor

Supervising Engineer

26

78

1400534/2043/25-10-2014 Construction of Valluvelam Aluppal Naduvu Bridge across Kalluvu river in  
Malappuram District

M/s. **Sumed Engineering Enterprises, PWD Contractors, Kozhikode, P.O., Malappuram District**  
"I/We agree to undertake to execute the work at ("

(a) ~~estimate rate~~

(b) 5.30% (Five point Three zero PERCENTAGE below) % below estimate rate.

(c) \_\_\_\_\_ % above estimate rate.

less cost of Departmental materials and all hire charges for departmental tools and plant specified to be supplied and recovered at the rates given in the conditions enclosed"

I/we also agree that the tender discount/retention may be applied on the amount calculated after deducting the cost of all Departmental materials and all hire charges for departmental tools and plant from the total amount of the work worked out at the rate given in the schedule attached to the tender.

- NOTE:
1. \*Strike out which is not applicable.
  2. The rate may be quoted in words and figures.

No. of Correction

No. of Overwriting

23/-

Contractor

24/-

Forwards/ by order

*[Signature]*  
District Assistant

SUPERINTENDING ENGINEER,  
P.W.D.(ROADS & BRIDGES)  
NORTH CIRCLE Calicut-1

1400534/017/OS-PWD

Page 1  
SCHEDULE

64/1

Name of Work - Stimulus Package - Construction of Mythrakudavu bridge across Chathir river in Melappuram District

Name of work:- <b>Common Package- Construction of Myrakkadavu bridge across Chaiyar river in Melappuram District</b>						
Item No	Probable Quantity	Description of Work	Rate in		Unit	Amount
			Figures (Rupees)	Words	Words	(Rupees)
<b>APPENDIX A - BRIDGE PROPER</b>						
1	6 Nos	Forming island of size 18.50x 10.50 m outer side for an average height of 6'm with 30cm above water level by driving down teak wood poles 150 mm dia at 50 cm c/c horizontally to the vertical posts provided at 80cm c/c and provide teak wood struts 150mm c/c at 180cm c/c all round and screening with double bamboo mat with necessary bamboo rasper provided at required intervals and filling inside with earth including all cost, conveyance hire and labour charges and all other incidental expenses etc. complete including maintaining the the island till the completion of work and demolition and clearing the same after completion of work as per standard specifications and as directed by the departmental officers	319150.00	Rs Three Lakhs Nineteen Thousand Hundred Fifty only	One and Each	1914800
2	34 Quintals	Supplying and fixing MS angles of size 160 x 150 x 12 mm for cutting edge of well curb including cost and conveyance of materials cutting bending for required shade welded and bonded to concrete using 12mm doveel bars welding, drilling and fixing charges, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers.	5511.00	Rs Thousand Five Hundred Eleven only	Five and One Quintal	187374
3	97000 Cubic Deci Metres	VRCC M 25 design mix for moulding well curb using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing , laying in position and compacting including cost and conveyance of all materials,all labour charges, wetting, curing, formwork charges, incidental expenses etc. complete per standard specifications and as per the direction of departmental officers but excluding the cost of reinforcement	55.50	Rs Fifty Five and paise Fifty only	Ten Cubic Deci Metres	538350
4	496000 Cubic Deci Metres	VRCC M 20 design mix for moulding well slothing using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials,all labour charges, wetting, curing, formwork charges, incidental expenses etc. complete per standard specifications and as per the direction of departmental officers but excluding the cost of reinforcement	53.50	Rs Fifty Three and paise Fifty only	Ten Cubic Deci Metres	2653800
5		Sinking of RCC circular well 6.50 m outer dia 4.90m inner dia (M25 mix) in all classes of soil other than rock to lines and levels and plumb by scooping out earth from inside and below slothing with dredgers or any other appliances including hire charges, labour charges, dewatering, casting, vibrating, removal of obstacles, dumping the spoil at suitable places with all leads and lifts, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers.				
a)	16 Metres	a) Initial depth 3 m	13382.00	Rs Thirteen Thousand Three Hundred and Fifty Two only	One Metre	241055

80



No.	Particulars	Description of Work	Quantity	Unit	Rate in Words (Rupees)	Rate in Figures (Rupees)
1	1 Metres	b) 2nd depth 3.0m to 4.5m	18182.00	Rs. Thousand and One	18182.00	18182.00
2	9 Metres	c) 3rd depth 4.5m to 6.0m	10801.00	Rs. Thousand Nine Hundred and One	10801.00	10801.00
3	4.5 Metres	d) 4th depth 6.0 m to 7.50m	18640.00	Rs. Thousand Six Hundred and Forty Only	18640.00	18640.00
4	1 Metres	e) 5th depth 7.50m to 8.0m	20380.00	Rs. Twenty Thousand Three Hundred and Eighty Only	20380.00	20380.00
5	150 Nos	Providing MS dowel bars with 25 mm dia rods 3.50 m long plugging 1.0m in the hard rock and 1.50 m in to concrete @ 1 m c/c other details 50 mm dia holes in granite rock including cost and conveyance of materials, all labour charges including cutting the rods in to required length and tying the rods in to position, incidental expenses etc., complete as per standard specifications and as directed by the department officers	484.00	Rs. Four Hundred and Eighty Four Only	484.00	484.00
6	30800 Cubic	C.C. 150 Grade mix for bottom plugging of well using 20mm hard granite broken stone including cost and conveyance of all materials, labour for dumping concrete, hire of mixer and vibrator and finishing the surface to required levels with all charges etc., complete as per Std. Specification and the director's departmental officers	50.50	Rs. Fifty and Cuts and Rates Fifty Only	50.50	50.50
7	48000 Cubic	Chipping and removing excess length of RCC wall retaining without damaging the remaining portion up to the point where clear and fine concrete is visible and upto cut off level of the pile including all labour charges, all the charges for equipments required, incidental expenses etc complete as per standard specifications and as per the direction of departmental officers	34.50	Rs. Thirty Four Cuts and Rates Fifty Only	34.50	34.50
8	581 Cubic	Grading beds and walls with clean dry river sand including all loads and lifts, cost and conveyance of sand, consolidating and finishing the top to the required levels, all labour charges, incidental expenses etc., complete as per standard specifications and as directed by the department officers	482.00	Rs. Four Hundred Cuts and Rates Two Only	482.00	482.00

**NOTE -** Construction of the Interstate bridge across Choptank River in Maryland District

No.	Quantity	Description of Work	Unit	Rate for	Amount
40	57 Cubic Meters	C.C. 1:2:4 (One Cement, Two Sand, Four Gravel) using 40mm hard granite broken stones Grade mix for 100mm bed, reinforcement and the projection of the top of the pier.	Rs. Four Thousand and Cents	229140	
41	766 Cubic Meters	Earth work excavation in all classes of soil except hard and medium rock, which require blasting for foundation of abutments and deepening of approach roads, including the cost of all materials, labor for dumping concrete, the cost of water and timber and finishing the surface to required levels with all charges etc. complete as per specification and the projection of the top of the pier.	Rs. One Thousand and Cents	80308	
42	180 Meters	Providing bored cast in situ RCC piles of size 1000 mm dia. for foundation of abutments in HCC MSE design mix using 40mm hard granite broken stone as coarse aggregate and clear river sand as fine aggregate, all about charges, the charges for 50 HP engine and 30HP vertical pump, repair pile, timber, tripod and accessories including hire and running charges of piling rig, bentonite slurry including repair and renewal charges, other incidental expenses for mobilization of special equipments and transferring and retaining the above from one location to another etc. with all specification as per the direction of departmental officers but excluding cost of reinforcement.	Rs. One Thousand and Eighty Three Meters	1854800	
43	300 Meters	Providing bored cast in situ RCC piles of size 1000 mm dia. for foundation of abutments in HCC MSE design mix using 40mm hard granite broken stone as coarse aggregate and clear river sand as fine aggregate, all about charges, the charges for 50 HP engine and 30HP vertical pump, repair pile, timber, tripod and accessories including hire and running charges of piling rig, bentonite slurry including repair and renewal charges, other incidental expenses for mobilization of special equipments and transferring and retaining the above from one location to another etc. complete as per standard specification and as per the direction of departmental officers but excluding cost of reinforcement.	Rs. One Thousand and Eighty Three Meters	1854800	
44	14 Meters	Bored cast in situ reinforced piles of size 1000 mm dia. MSE mix, as per drawing and technical specification of MCOET including filling Cement Concrete M30 using 20 mm broken stone including cost of all materials required for the work including all about charges and hire charges for which 50 HP vertical pump hire and running charges of piling rig, bentonite slurry including repair and renewal charges, other incidental expenses for mobilization of special equipments and transferring and retaining the above from one location to another etc. with all specification as per the direction of the departmental officers using OPC 43 or PPC cement in the rock portion for foundation of abutments (rock penetration of 80 cm depth in each bore hole)	Rs. Ten Thousand and Cents	108800	

1400534/2017/02-PWD

07/128

Work - Shilpa Panchang - Construction of Narmada Bridge across Chitravathi river in Maharashtra (India)

Item No.	Quantity	Description of Work	Unit	Estimate
15	7800 Cubic	Chipping and removing excess length of RCC pile 15 without damaging the remaining portion up to the point where clear and true concrete is visible and upto out of level of the pile including all labour charges, all the charges for equipment required, incidental expenses etc. complete as per standard specifications and as per the direction of departmental officers	Cu Yards	27082
16	300 Tons	1 set loading on hard soil for a total load of 140 MT for abutments and 180 MT for piers by means of hydraulic jack of 500 MT capacity placed over the base plate properly seated over the piles by placing a thick 100 mm plate in between jack and pile and placing 2 nos of 100 girders of suitable height and section 250x250 mm on the bar and over which second tier of girders of suitable height and section 150x200 mm at 60 cm apart and welded providing platform with 100 mm girders over the second tier of girders and loading over this by stacking sand bags evenly to the required weight including cost of materials and conveyance of all materials like sand and bags, hire and conveyance of loading platform and equipment such as hydraulic jack, 100 mm plate, pressure pump, etc. as per the specifications in relevant to codes and as directed by the departmental officers.	Tons	642900
17	17 Cubic	Concrete concrete: 1:2:4 (cement:sand:gravel) concrete for the base of the cap and well cap up to a thickness of 100mm including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers	Cu Yards	43880
18	53000 Cubic	WFOC M 25 design mix for moulding pile cap and well cap using 20mm hard grade broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting, including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete as per standard specifications and as per the direction of	Cu Yards	2201700
19	107000 Cubic	WFOC M 20 design mix for moulding abutment and pier using 20mm hard grade broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting, including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete as per standard specifications and as per the direction of departmental officers but excluding the cost of reinforcement	Cu Yards	524300

Contractor

Superintending Engineer

Name of Work, Statement Package, Construction of Amphibious Landing across Chittaur tree in Maharashtra District				Page 5	
No.	Quantity	Description of Work	Figure (Rupees)	Rate in Rupees	Unit (Rupees)
20	470000 Cubic Dec Metres	WCC M 30 design mix for moulding plant 5 per top using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. completes per standard specifications and as per the direction of departmental officers but excluding the cost of reinforcement.	61.50	Rs 600 One and paise Fifty only	Ten Cubic Dec Metres
21	9000 Cubic Dec Metres	WCC M 30 design mix for moulding abutment cap using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. completes per standard specifications and as per the direction of departmental officers but excluding the cost of reinforcement.	61.00	Rs Fifty One only	Ten Cubic Dec Metres
22	17000 Cubic Dec Metres	WCC M 30 design mix for moulding abutment cap using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. completes per standard specifications and as per the direction of departmental officers but excluding the cost of reinforcement.	64.50	Rs Fifty Four and paise Fifty only	Ten Cubic Dec Metres
23	5700 Cubic Dec Metres	WCC M 30 design mix for moulding abutment cap using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. completes per standard specifications and as per the direction of departmental officers but excluding the cost of reinforcement.	66.00	Rs Fifty Six only	Ten Cubic Dec Metres
24	42 Nos	Supplying and laying electronic bearing of size 600 mm x 350 mm x 98 mm compressed in three layers of medium thicknesses each 3mm thick and two layers of electronic cover at top and bottom and from both between metal plates and with three thick electronic cover at top and bottom and from both electronic cover around including cost and conveyance of all materials, all labour charges, watering, curing, incidental expenses etc. completes, as per standard specifications and as directed by the departmental officers.	6000.00	Rs Eight Thousand and Five Hundred only	Each
25	616000 Cubic Dec Metres	WCC M 25 design mix for moulding T beam deck slab, laid out using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. completes per standard specifications and as per the direction of departmental officers but including the cost of reinforcement.	161.00	Rs One Hundred and Paise One only	Ten Cubic Dec Metres

Name of Work: Statute Package: Construction of hydroelectricity bridge across Chavara river in Malappuram District

No.	Quantity	Description of Work	Unit (Rupees)	Rate in Rupees	Unit Measurement (Rupees)
26	20000 Cubic Dead Metres	MCC M 20 design mix for moulding hand rail slab and posts using 20mm hand grade graded Indian sand as coarse aggregate and river sand as the aggregate, mixing, laying in position and compacting including cost and consequence of all materials, all labour charges, watering, curing, formwork, charges, incidental expenses etc. complete as per standard specifications and as per the decision of departmental officers. (Rs 225000) by the order of the departmental officers.	Ten Cubic Dead Metres	Rs One Hundred and Twenty only	312000
27	36000 Cubic Dead Metres	Reinforced concrete columns 12x24 cm square, two sand and four hand using 20mm hand grade broken stones, mixing, laying properly and compacting for foot path slab including cost and consequence of all materials, all labour charges, formwork, charges, watering, curing, incidental expenses etc. including the cost of reinforcement, complete as per standard specifications and as directed by the departmental officers.	Ten Cubic Dead Metres	Rs Fifty Two only	187200
28	168 Nos	Supplying and fixing bridge spans with 63 mm dia PCC pipe 80 cm long with G2 gratings of 150x150 mm size for deck slab including cost and consequence of all materials, all labour charges, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers.	Rs Ninety Nine only	Each	16532
29	3001 Cubic	Providing reinforcement for RCC work using TMT steel hand rail and placed in position including cost and consequence of all materials, all labour charges, incidental expenses, complete as per standard specifications and as directed by the departmental officers.	Rs Four Thousand Five Hundred and Seventy One only	One Cubic	13664701
30	166 Cubic	Providing reinforcement for RCC work using TMT steel for pile works with lap welding, spot welding, bent, lapped and placed in position including cost and consequence of all materials, all labour charges, incidental expenses, complete as per standard specifications and as directed by the departmental officers.	Rs Four Thousand Five Hundred and Fifty One only	One Cubic	891625
31	60 Metres	Providing expansion joint between spans with Aluminium sheet 10mm gauge 7.50 cm long and 66 cm wide/weight of sheet 7.50kg/m <sup>2</sup> , 40 hypitch/pitch in position, cutting the same in position with cut and 10 degree as 30mm centre to centre and filling the joints with rollers of bitumen, sand and saw dust including cost and consequence of all materials, all labour charges, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers.	Rs One Thousand and Seventy One only	One Metre	86319
32	4110 Square Metres	Providing and applying primer coat with bitumen emulsion on prepared surface of granular base including clearing of road surface and stripping primer at the rate of 0.40 kg/sqm using mechanical means including cost and consequence of all materials, all labour charges, live charges, incidental expenses etc. complete as per MOWTH specification No 502 and as per the direction of departmental officers.	Rs Eleven and paise Eighty only	One Square Metre	89046

1400534/2017/O8-PWD

70/128

Page 7

Name of Work- Stimulus Package- Construction of Nithaladadeva bridge across Chayyar river in Mettuparam District						
Item No	Probable Quantity	Description of Work	Rate in Figures (Rupees)	Unit Words	Amount (Rupees)	
33	822 Cubic Metres	Construction of granular sub-base by providing close graded Material, mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density,including cost and conveyance of all materials, all labour charges, hire charges, incidental expenses etc, complete as per clause 401 of standard MORTH specifications and as directed by the departmental officers	880.00	Rs Nine Hundred and Sixty only	One Cubic Metre	789120
34	1026 Cubic Metres	Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including pre-mixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver in sub- base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density,including cost and conveyance of all materials, all labour charges, hire charges, incidental expenses etc, complete as per clause 406 of standard MORTH specifications and as directed by the departmental officers	1112.00	Rs Thousand Hundred Twelve only	One One and One Cubic Metre	1143136
35	5282 Square Metres	Providing and applying tack coat with bitumen emulsion using emulsion pressure distributor at the rate of 0.20 kg per square the prepared bituminous/granular surface cleaned with mechanical broom, including cost and conveyance of all materials, all labour charges, hire charges, incidental expenses etc complete as per MORTH specification No 503 and as per the direction of departmental officers	8.25	Rs Six and paise twenty Five only	One Square Metre	33013
36	265 Cubic Metres	Providing and laying bituminous macadam with 100-120 TPH hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading premixed with bituminous binder, transported to site, laid over a previously prepared surface with paver finisher to the required grade, level and alignment and rolled as per clauses 501.6 and 501.7 to achieve the desired compaction including cost and conveyance of all materials, all labour charges, hire charges, incidental expenses etc complete as per MORTH specification No 504 and as per the direction of departmental officers	4171.00	Rs Thousand Hundred Seventy One only	One One and One Cubic Metre	1105318
37	133 Cubic Metres	Providing and laying bituminous concrete with 100-120 TPH batch type hot mix plant producing an average output of 75 tonnes per hour using crushed aggregates of specified grading, premixed with bituminous binder @ 5.4 to 5.8 per cent of mix and filler, transporting the hot mix to work site, laying with a hydrostatic paver finisher with sensor control to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction including cost and conveyance of all materials, all labour charges, hire charges, incidental expenses etc complete as per MORTH specification No 506 and as per the direction of departmental officers	5558.00	Rs Thousand Hundred Fifty Eight only	One One and One Cubic Metre	738214

86

Name of work: Stimulus Paving- Construction of Mythrakottu Bridge across Chuday river in Malappuram District

Item No	Probable Quantity	Description of Work	Rate in		Unit	Amount (Rupees)
			Figures (Rupees)	Words		
38	4 Nos	Providing and fixing of retro- reflectorised cautionary, mandatory and informative sign (90 cm equilateral triangle) as per IRC 37 made of wide angle micro prismatic lens reflective sheeting conforming to type IX table 3, of ASTM D 4955-01 fixed over aluminium sheeting, 1.5 mm thick conforming to IS 739 clause 1.2.5 supported on a mild steel angle iron post 75 mm x 75 mm x 6 mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 45 cm x 45 cm x 80 cm, 80 cm below ground level as per approved drawing including cost and conveyance of all materials all labour charges, incidental expenses etc complete as per standard MORTH specifications and as directed by the departmental officers.(retro reflectorised traffic signs 30° 90° corner rectangular hazard warning)	2547.00	Rs Two Thousand Five Hundred and Forty Seven only	Each	10188
39	4 Nos	Providing and fixing of retro- reflectorised cautionary, mandatory and informative sign (90 cm equilateral triangle) as per IRC 37 made of wide angle micro prismatic lens reflective sheeting conforming to type IX table 3, of ASTM D 4955-01 fixed over aluminium sheeting, 1.5 mm thick conforming to IS 739 clause 1.2.5 supported on a mild steel angle iron post 75 mm x 75 mm x 6 mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 45 cm x 45 cm x 80 cm, 80 cm below ground level as per approved drawing including cost and conveyance of all materials all labour charges, incidental expenses etc complete as per standard MORTH specifications and as directed by the departmental officers.(retro reflectorised traffic signs 60° 90° cm rectangular for single chevron)	3795.00	Rs Three Thousand Seven Hundred and Ninety Five only	Each	15180
40	6 Square Metres	Providing and erecting direction and place identification retro-reflectorised sign with size more than 0.9 Sqm as per IRC-37 made of wide angle micro prismatic lens reflective sheeting conforming to type IX table 3, of ASTM D 4955-01 fixed over aluminium sheeting, 2 mm thick conforming to IS 739 clause 1.2.5 with area not exceeding 0.9 sqm supported on a mild steel angle iron post 75 x 75 x 6 mm firmly fixed to the ground by means of properly designed foundation with M15 grade cement concrete 45 x 45 x 80 cm, 80 cm below ground level as per approved drawing including cost and conveyance of all materials all labour charges, incidental expenses etc complete as per standard MORTH specifications and as directed by the departmental officers.	8943.00	Rs Eight Thousand Eight Hundred and Forty Three only	One Square Metre	53658
41	2450 Nos	Welding V cut joints for the MS rods after cleaning the V cut ends including cost of electrodes, electricity charges, etc for welding plant, all labour charges, incidental expenses etc complete as per standard specifications and as per the direction of departmental officers.	102.00	Rs One Hundred and Fifty Two only	Each	249900
42	186 Cubic Metres	Filling with clean dry river sand between wings and abutments including all leads and lifts, cost and conveyance of sand, consolidating and finishing the top to the required levels, all labour charges, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers	391.00	Rs Three Hundred and Eighty One only	One Cubic Metre	70886

## Name of Work- Stimulus Package- Construction of Mythekkadavu bridge across Challyar river in Malappuram District

Item No	Probable Quantity	Description of Work	Rate in		Unit	Amount (Rupees)
			Figures (Rupees)	Words		
43	686 Square Metres	Finishing hand rail and posts with ready mixed plastic emulsion paint over a priming coat after cleaning the surface including cost and conveyance of all materials, all labour charges, incidental expenses etc complete as per standard specifications and as directed by the departmental officers	629.00	Rs Six Hundred and Twenty Nine only	Ten Square Metres	43149
44	294 Square Metres	Painting with synthetic enamel paint of suitable colour with approved quality two coats including cost and conveyance of all materials, all labour charges, incidental expenses etc complete as per standard specifications and as directed by the departmental officers	610.00	Rs Six Hundred and Ten only	Ten Square Metres	17934
45	10000 HP/Hr	Bailing out water in trenches using 6 HP pump including cost and conveyance of fuel, oil, all labour charges, hire charges, incidental expenses etc complete as per standard specifications and as directed by the departmental officers	21.00	Rs Twenty One only	One HP/Hr	210000
TOTAL FOR APPENDIX A						
APPENDIX B - APPROACH ROAD						62185086
1	15130 Cubic Metres	Earth work filling with contractor's own earth cut and conveyed from sources of availability and forming embankment with all leads and lifts by spreading in horizontal layers of uniform thickness over the full width, drying or watering as the case may be, scarifying to get uniform OMC compacting the filled earth using power roller in layers not exceeding 25 cm (loose thickness) satisfying compaction tests, including trimming slopes to line and levels including cost of oil, fuel etc, hire charges of roller including cost and conveyance of all materials, all labour charges, incidental expenses etc complete as per standard specifications and as directed by the departmental officers	2013.00	Rs Thousand Thirteen only	Two and Ten Cubic Metres	3045699
2	1140 Cubic Metres	Collection and supply of quarry muck containing aggregates of size 40% of 60mm metal, 25% of 38mm metal, 10 % of 12mm metal and 25% quarry dust, for raising the low lying portions of the road and deep berms spreading, watering, ramming compacting with power roller etc including cost and conveyance of all materials, all labour charges, hire charges, incidental expenses etc complete as per standard specifications and as directed by the departmental officers	692.00	Rs Six Hundred and Ninety Two only	One Cubic Metre	788880
3	2130 Cubic Metres	Earth work excavation in all classes of soil except hard and medium rock, which require blasting for foundation of retaining walls and deepening with all leads and lifts and using the spot for filling and forming of road wherever necessary including breaking clods, watering, ramming all labour charges, incidental expenses etc complete as per standard specification and as per the direction of departmental officers	1155.00	Rs Thousand Hundred and Fifty Five only	One Cubic Metre	246015
4	675 Cubic Metres	Cement concrete 1:4:8 (One cement, Four sand and Eight Metal) using 40mm hard granite broken stones, mixing, laying properly and compacting for foundation of quadrant wall including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers	2570.00	Rs Thousand Hundred Seventy only	Two Five and One Cubic Metre	1734750



## Name of Work: Standard Package- Construction of Hyderabad's bridge across Chelvar river in Malappuram District

Sl. No	Probable Quantity	Description of Work	Rate in		Unit	Amount (Rupees)
			Figures (Rupees)	Words		
5	3036 Cubic Metres	Cement Concrete 1:3:6 (One Cement, Three Sand and Six Metal) using 80 % of 40mm and 40% 20mm hard granite broken stone, mixing, laying properly and compacting for quadrant wall including cost and conveyance of all materials, all labour charges, form work charges, watering, curing, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers	3283.00	Rs Three Thousand Two Hundred and Ninety Three only	One Cubic Metre	9964255
6	80 Cubic Metres	Random rubble masonry in cement mortar 1:6 (One cement, Six sand) using hard blasted quarry rubble for foundation and super structure of retaining walls including cost and conveyance of all materials, all labour charges, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers	1545.00	Rs Three Thousand Four Hundred and Forty Six only	One Cubic Metre	123680
7	10000 Cubic Decil Metres	Plain cement concrete 1:2:4 (One cement, Two sand and Four Metal) using 20mm hard granite broken stone, mixing, laying properly and compacting for top belt of toe wall including cost and conveyance of all materials, all labour charges, formwork charges, watering, curing, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers	40.00	Rs Forty only	Ten Cubic Decil Metres	40000
8	333 Nos	Providing guard stones of 200x20x120 cm made of CC 1:11/23 reinforced with 4 nos HYSD bars and 6mm dia stirrups at 150mm c/c and fixing in line and levels 60 cm below the ground level with CC 1:3:6 (450m x 450m x 800m) including cost and conveyance of all materials, all labour charges, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers	1794.00	Rs One Thousand Seven Hundred and Ninety Four only	Each	597402
9	160 Nos	Applying and fixing high intensity diamond refractory tiles of size IRC specification 20cm x 10cm for nearest available size fixed on glass tiles of approved quality fixing to guard stone parapet and median using 1:3 - 12mm thick including costs and conveyance of all materials, all labour charges, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers	99.00	Rs Ninety Nine only	Each	14850
10	167.80 Square Metres	Providing road markings with hot applied thermo plastic compound 2.50 mm thick including refractorising glass beads 620 grams per square metre area at the centre line and pedestrian crossings of road. (Thickness of 2.50mm is exclusive of surface applied glass beads) and finishing the surface level and uniform line from obstacles and holes including cost and conveyance of all materials all labour charges, incidental expenses etc complete as per standard MORTH specifications and as directed by the departmental officers	401.00	Rs Four Hundred and One only	One Square Metre	73186
11	16 Cubic Metres	Rough stone dry packing using hard blasted quarry rubble for berm portion of approach road near bridge including cost and conveyance of all materials, all labour charges, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers	795.00	Rs Seven Hundred and Ninety Five only	One Cubic Metre	14310

**Name of Work- Stimulus Package- Construction of Mythakadavu bridge across Chaliyar river in Malappuram District**

Item No	Probable Quantity	Description of Work	Figures (Rupees)	Rate in Words	Unit in Words	Amount (Rupees)
12	2180 Square Metres	Plastering with cement mortar 1:4 (One Cement and Four sand) 12 mm thick one coat finished hard and trowelled smooth for the drain including cost and conveyance of all materials, all labour charges, watering, curing, incidental expenses etc, complete as per the standard specifications and as directed by the departmental officers.	998.00	Rs Nine Hundred and Ninety Eight only	Ten Square Metres	216588
TOTAL FOR APPENDIX B						16690457
APPENDIX C - CONSTRUCTION OF CULVERTS						
1	290 Cubic Metres	Earth work excavation in all classes of soil except hard and medium rock, which require blasting for foundation of culvert and depositing with all back and fill and using the spoil for filling and forming of road whenever necessary including breaking clods, watering, retaining all labour charges, incidental expenses etc complete as per standard specification and as per the direction of departmental officers	618.00	Rs Six Hundred and Ninety only	Ten Cubic Metres	17951
2	111 Cubic Metres	Cement concrete 1:4:3 (One cement, Four sand and Eight Metal) using 40mm hard granite broken stones, mixing, laying properly and compacting for foundation of culvert including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers	2570.00	Rs Thousand Two Hundred and Seventy only	One Cubic Metre	286270
3	316 Cubic Metres	C.C 1:3:6 (One Cement, Three Sand and Six Metal) using 60 % of 40mm and 40% 20mm hard granite broken stone, mixing, laying properly and compacting for culvert including cost and conveyance of all materials, all labour charges, form work charges, watering, curing, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers	3463.00	Rs Thousand Three Hundred and Sixty Three only	One Cubic Metre	1090845
4	42000 Cubic Dec Metres	VRCC M 20 design mix for culvert using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete as per standard specifications and as per the direction of departmental officers but excluding the cost of reinforcement	51.50	Rs Fifty One and paise Fifty only	Ten Cubic Dec Metres	216300
5	105 Quintals	Providing reinforcement for RCC work using TMT steel band, laid and placed in position including cost and conveyance of all materials, all labour charges, incidental expenses, complete as per standard specifications and as directed by the departmental officers	4571.00	Rs Thousand Four Hundred and Seventy One only	One Quintal	478865
6	18 Cubic Metres	Rough stone dry packing using hard blasted quarry rubble for bed of culvert including cost and conveyance of all materials, all labour charges, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers	786.00	Rs Seven Hundred and Ninety Five only	One Cubic Metre	14310

Superintending Engineer

**Names of Work- Estimate Package- Construction of Myrathakudave bridge across Chelivar river in Malappuram District**

Item No	Estimate Quantity	Description of Work	Rate in	Unit	Amount (Rupees)
			Figures (Rupees)	Words	
7	2 Cubic Metres	Random rubble masonry in cement mortar 1:2 (One cement, Six sand) using hard blasted quarry rubble for cartain wall including cost and conveyance of all materials, all labour charges, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers	1546.00	Rs Thousand One Hundred Forty Six and	One Cubic Metre
		<b>TOTAL FOR APPENDIX C</b>			<b>2167723</b>
		<b>APPENDIX D-RIVER TRAINING WORKS</b>			
		<b>A-River bed</b>			
1	1908 Cubic Metres	Rough stone dry packing using hard blasted quarry rubble for bed of river near bridge including cost and conveyance of all materials, all labour charges, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers	795.00	Rs Hundred Seven and Ninety Five only	One Cubic Metre
		<b>TOTAL FOR APPENDIX D(a)</b>			<b>1516880</b>
		<b>B-Side protection works</b>			
1	3200 Cubic Metres	Earth work excavation in all classes of soil except hard and medium rock, which requires blasting for foundation of side protection wall and depositing with all loads and lifts, and using the spoil for filling and forming of road wherever necessary including trucking loads, watering, ramming all labour charges, incidental expenses etc complete as per standard specification and as per the direction of departmental officers	619.00	Rs Six Hundred and Ninety only	Ten Cubic Metres
2	1280 Metres	Supplying and stacking coconut piles of size 250 to 300mm diameter on the site including cost and conveyance, all labour charges, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers	90.00	Rs Ninety only	One Metre
3	1280 Metres	Driving down coconut piles 200 mm to 300 mm diameter to approved lines and levels through various strata after pointing the bottom and up to 6 m depth below the ground level including all labour charges and hire charges for using staging platform and all other appliances necessary for pile driving, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers	245.00	Rs Two Hundred and Forty Five only	One Metre
4	281 Cubic Metres	Filling with clean dry river sand over the piles including all loads and lifts, cost and conveyance of sand, consolidating and finishing the top to the required levels, all labour charges, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers	370.00	Rs Hundred Three and Seventy only	One Cubic Metre
5	186 Cubic Metres	Reinforced cement concrete 1:2:4 (One cement, Two sand and Four Metel) using 20mm hard granite broken stones, mixing, laying properly and concreting for foundation including cost and conveyance of all materials, all labour charges, formwork charges, watering, curing, incidental expenses etc, excluding the cost of reinforcement, complete as per standard specifications and as directed by the departmental officers	3865.00	Rs Thousand Three Hundred and Fifty Five only	One Cubic Metre

Name of Work: Stimulus Package- Construction of Myrathkadeve bridge across Chaliyar river in Malappuram District

Item No	Probable Quantity	Description of Work	Figures (Rupees)	Rate in Words	Unit in Words	Amount (Rupees)
6	2160 Cubic Metres	C.C 1:3:5 (One Cement, Three Sand and Six Metal) using 60 % of 40mm and 40% 20mm hard granite broken stone, mixing, laying properly and compacting for super structure of retaining wall including cost and conveyance of all materials, all labour charges, form work charges, watering, curing, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers	2834.00	Rs. Thousand Hundred Thirty Four only	Two Nine and One Cubic Metres	6337440
7	526 Quintals	Providing reinforcement for RCC work using TMT steel band, tied and placed in position including cost and conveyance of all materials, all labour charges, incidental expenses, complete as per standard specifications and as directed by the departmental officers	4571.00	Rs. Thousand Hundred Seventy One only	Four Five and One Quintal	2404348
8	800 Metres	Supplying and fixing weep holes in the CC retaining wall with 63 mm dia PVC pipe (dia 10mm) including cost and conveyance of all materials, all labour charges, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers	63.00	Rs. Sixty Three only	Each	37800
9	30000 HP/Hr	Bailing out water in trenches using 5 HP pump including cost and conveyance of fuel, oil all labour charges, hire charges, incidental expenses etc complete as per standard specifications and as directed by the departmental officers	21.00	Rs. Twenty One only	One Hp/hr	630000
TOTAL FOR APPENDIX D(B)						10767416
TOTAL PAC (A+B+C+D)						Rs. 63437662
DEDUCTION FOR DEPTL MATERIALS & HIRE CHARGES OF T&P						Rs. 1127348
NET PAC						Rs. 62310313

DEDUCTION FOR DEPARTMENTAL MATERIALS AND HIRE CHARGES OF T&P

- 15.67 MT Blumens NRMS @ Rs 28773.00/ MT
  - 3.52 MT Blumens Emulsion @ Rs 24800.00/ MT
  - 19.20 MT Blumens 80/100 @ Rs 26200.00/ MT
  - 41 Days Road Roller @ Rs 2080/Day
- Total Amount

-Rs 450873.00 Add tender excec= 17% above Estimate  
 -Rs 87824.00 Rate  
 -Rs 604182.00 Add cost of Departmental materials  
 -Rs 84400.00 and hire charges of T&P  
 -Rs 1127348.00

Agreed PAC

Rs. 1,39,96,153-X

1,27,349-00

Rs. 9,74,53,815-0

Contractor

Received by order

Personal Assistant

Recommending Engineer

Name of work:-

~~Minimise Paving~~ Construction of Mythradadeva bridge across Chaliyar river in  
Malappuram District

~~M/s. V.L. Subramanian & Co.,~~ Contractor, P.O. Muthukode, Mavayana, Malappuram District

(a) ~~Contract rate~~

(b) ..... % below estimate rate.

(c) ..... % above estimate rate.

less cost of Departmental materials and all hire charges for departmental tools and plant specified to be supplied and returned at the rates given in the conditions enclosed"

I/we also agree that the tender discount/allowance may be applied on the amount calculated after deducting the cost of all Departmental materials and all hire charges for departmental tools and plant from the total amount of the work worked out at the rate given in the schedule attached to the tender.

- NOTE:
1. "Strike out which is not applicable.
  2. The rate may be quoted in words and figures.

No. of Condition

No. of Overriding

88/-

Contractor

Forwarded/ by order

2017

21-2

Received by

88/-

SUPERINTENDING ENGINEER,  
P.W.D. ROADS & BRIDGES,  
NORTH CIRCLE, Min-1

**Attachment to Para No 5.9 & 5.11 (page 44-49 of the attachment related to Para No 5.9 and page 64-77 related to para 5.11)**

10/03/2017/08-PWD

Construction of Umminkkadavuv Bridge across Kadakuni river in Melappuram District

Name of work: Construction of Umminkkadavuv Bridge across Kadakuni river in Melappuram District

SCHEDULE OF WORKS						
Sl. No.	Description of work	No. or Qty.	Unit	Estimated Rate		AMOUNT Rs. P
				Price	Words	
Appendix A: Bridge Proper						
1	Forming island of size 16.5 m x 0.8m outer side for an average height of 2 m with 75cm above water level by driving down teak wood posts class III of girth 41 to 52cm to an average depth of 2m below bed level at 80cm o/c for posts and 2m o/c for struts and tying with teak wood posts 50cm o/c to vertical posts already driven down and screening with double bamboo mat with necessary bamboo reaper provided at required intervals and filling inside with earth including all cost, conveyance hire and labour charges and all other incidental expenses etc complete including maintaining the island till the completion of work and demolition and clearing the same after completion of work as per standard specifications and as directed by the departmental officers	3	Nos	445710.00	Rupees Four Lakh Forty Six Thousand Seven Hundred & Ten Only	1340130.00
2	Earth work excavation in all classes of soil except hard and medium rock, which require blasting for and depositing with all loads and lifts for abutments and using the spoil for filling and forming of road wherever necessary including breaking clods, watering, returning all labour charges, incidental expenses etc complete as per standard specification and as directed by the departmental officers					
	2a) Initial depth 1.50m	540	M3	108.30	Rupees One Hundred & Six - Paise Thirty Only	57402.00
	2 b) First depth 1.50m	452	M3	119.00	Rupees One Hundred & Nineteen Only	54878.00
	2c) Second depth 1.50m	338	M3	131.70	Rupees One Hundred & Thirty One - Paise Seventy Only	44514.80

Contractor

Superintending Engineer

10534/2017/08-PWD

## Construction of Umminkkadavur Bridge across Kadakudi river in Melappuram District

3	Supplying and fixing MS angles of size 180 x 180 x 12 mm for casting edge-of-well curb including cost and conveyance of materials cutting bending for required shade welded and bonded to concrete using 12mm dowel bars welding, drilling and fixing charges, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers.	32	ON	6662.00	Rupees Six Thousand Five Hundred & Sixty Two Only	209904.00
4	M25 design mix for moulding well curb using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	107	M3	8350.00	Rupees Eight Thousand Three Hundred & Fifty Only	893450.00
5	M20 design mix for moulding well slab using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as per the direction of departmental officers	706	M3	8100.00	Rupees Eight Thousand One Hundred Only	5447600.00
6	Sinking of RCC circular well 8.5 m outer dia 6.5m inner dia (M25 mix) for foundation of abutments in all classes of soil other than rock to line and levels and plumb by scooping out earth from inside and below slaking with dredgers or any other appliances including hire charges, labour charges, dewatering, casting, vibrating, removal of obstacles, dumping the spoil at suitable places with all loads and lifts, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers					
	8a) Initial depth 3 m	6	M	24701.00	Rupees Twenty Four Thousand Seven Hundred & One Only	148208.00
	8b) First depth 3.00m to 4.50m	3	M	28004.00	Rupees Twenty Eight Thousand & Four Only	84012.00
	8c) Second depth 4.50m to 6.0m	3	M	31308.00	Rupees Thirty One Thousand Three Hundred & Eight Only	93818.00

95

Contractor

Superintending Engineer

10/04/2017/08-PWD

Construction of Umminikadavur Bridge across Kadakudi river in Melappuram District

88/128

	6d) Third depth 6.0 m to 7.50m	3	M	34808.00	Rupees Thirty Four Thousand Six Hundred & Nine Only	103827.00
	6e) Fourth depth 7.50m to 8.0m	2.8	M	37912.00	Rupees Thirty Seven Thousand Nine Hundred & Twelve Only	99571.20
	6f) Fifth depth 8.0m to 10.50m	1.5	M	41215.00	Rupees Forty One Thousand Hundred & Fifteen Only	61822.50
	6g) Sixth depth 10.5m to 12.0m	1.5	M	44518.00	Rupees Forty Four Thousand Five Hundred & Eighteen Only	95777.00
	6h) Seventh depth 12m to 13.5m	0.8	M	47821.00	Rupees Forty Seven Thousand Hundred & Twenty One Only	20682.60
7	Sinking of RCC abutment wall 6.5 m outer dia 4.0m inner dia (M20 mix) for foundation of piers in all classes of soil other than rock to line and levels and plumb by scooping out earth from inside and below staining with dredgers or any other appliances including hire charges, labour charges, dewatering, casing, vibrating, removal of obstacles, dumping the spoil at suitable places with all leads and lifts, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers					
	7a) Initial depth 3 m	9	M	21679.00	Rupees Twenty One Thousand Six Hundred & Seventy Nine Only	199111.00
	7b) First depth 3.00m to 4.50m	4.5	M	24714.00	Rupees Twenty Four Thousand Seven Hundred & Fourteen Only	111213.00
	7c) Second depth 4.50m to 6.0m	4.5	M	27748.00	Rupees Twenty Seven Thousand Seven Hundred & Forty Nine Only	124570.50

Contractor

Page 3

Superintending Engineer

96



## Construction of Umminbidadevur Bridge across Kadalundi river in Malappuram District

18/06/2017/08-PWD

	7d) Third depth 6.0 m to 7.50m	4.5	M	30784.00	Rupees Thirty Thousand Hundred & Eighty Four Only	130628.00
	7e) Fourth depth 7.50m to 9.0m	4.5	M	33819.00	Rupees Thirty Three Thousand Hundred & Nineteen Only	182185.90
	7f) Fifth depth 9.0m to 10.50m	2.2	M	36856.00	Rupees Thirty Six Thousand Hundred & Fifty Five Only	81081.00
	7g) Sixth depth 10.5m to 12.0m	0.3	M	38990.00	Rupees Thirty Nine Thousand Hundred & Ninety Only	11987.00
8	Providing MS dowel bars with 25 mm M.S rods 2.50 m long plugging 1.0m in the hard rock and 1.50 m in to concrete @ 1 m c/c after drilling 50 mm dia holes in granite rock including cost and conveyance of all materials, all labour charges including cutting the rods in to required length and fixing the rod in to position, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers	223	Nos	737.00	Rupees Seven Hundred & Thirty Seven Only	164351.00
9	C.C. M15 Grade mix for bottom plugging of well using 20mm hard granite broken stone including cost and conveyance of all materials, labour for dumping concrete, hire of mixer and vibrator and finishing the surface to required levels with all charges etc, complete as per Std. Specification and as directed by the departmental officers	350	M3	6800.00	Rupees Six Thousand Six Hundred Only	2310000.00
10	Chipping and removing extra projection of well slating without damaging the remaining portion including all labour charges, hire charges, incidental expenses etc complete as per Std. Specification and as directed by the departmental officers	28	M3	3800.00	Rupees Three Thousand Eight Hundred Only	108400.00
11	Filling inside the wells with clean dry river sand including all loads and lifts, cost and conveyance of sand, consolidating and finishing the top to the required levels, all labour charges, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers	1260	M3	1333.00	Rupees One Thousand Three Hundred & Thirty Three Only	1681577.00

0894/2017/08-PWD

Construction of Unwinikadavur Bridge across Kadakundi river in Malappuram District

12	S.C. M14 Grade mix using 20mm hard granite broken stones Grade mix for top plugging of wall including cost and conveyance of all materials, labour for dumping concrete, hire of mixer and vibrator and finishing the surface to required levels with all charges etc. complete as per Std. Specification and the direction of the Dept. officers.	37	M3	6400.00	Rupees Six Thousand Four Hundred Only	236800.00
13	VRCC M 30 design mix for moulding wall cap using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	480	M3	7280.00	Rupees Seven Thousand Two Hundred & Fifty Only	3336000.00
14	VRCC M 20 design mix for moulding abutment and solid wing wall using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	377	M3	8860.00	Rupees Six Thousand Nine Hundred & Fifty Only	2820150.00
15	VRCC M 30 design mix for moulding pier and pier cap using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	203	M3	10100.00	Rupees Ten Thousand One Hundred Only	2050300.00
16	VRCC M 25 design mix for moulding abutment cap using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	8	M3	8100.00	Rupees Thousand Eight Hundred Only	64800.00

1009/2017/OS-PWD

Bridges across Kadakudi river in Maleppuram District

17	VRCC M 25 design mix for moulding dirt wall using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	22	M3	8550.00	Rupees Thousand Hundred & Fifty Only	Nine Five	210100.00
18	VRCC M 30 design mix for moulding pedestal using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	8	M3	7900.00	Rupees Thousand Hundred Only	Seven Nine	47400.00
19	Supplying and fixing elastomeric bearing of size 500mm x 350mm x 50mm compressed in three layers of mixture laminations each 3mm thick and two layers of elastomeric pads 12mm thick in between metal plates and with 3mm thick outer elastomeric cover at top and bottom and 6mm thick elastomeric cover around including cost and conveyance of all materials, all labour charges, hire charges, incidental expenses etc. complete. as per standard specifications and as directed by the departmental officers	24	Nos	15000.00	Rupees Thousand Only	Fifteen	360000.00
20	VRCC M 25 design mix for moulding T beam, deck slab, kerb etc using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	364	M3	22800.00	Rupees Thousand Hundred Only	Twenty Two Eight	8298200.00
21	VRCC M 20 design mix for moulding handrail using 20mm hard granite graded broken stone as coarse aggregate and river sand as fine aggregate, mixing, laying in position and compacting including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc. complete but excluding the cost of reinforcement as per standard specifications and as directed by the departmental officers	20	M3	12000.00	Rupees Thousand Only	Twelve	240000.00

99

22	Supplying and fixing drainage slopes with 83 mm dia PVC pipe 80 cm long with gal gratings of 150x150 mm size for deck slab including cost and conveyance of all materials, all labour charges, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers	48	Nos	57.00	Rupees Fifty Seven Only	000000
23	Providing reinforcement for RCC work using TMT steel, fusion bonded and epoxy coated bend, tied and placed in position including cost and conveyance of all materials, all labour charges, incidental expenses, complete as per standard specifications and as directed by the departmental officers	1554	Qty	6855.00	Rupees Six Thousand Eight Hundred & Fifty Five Only	000000
24	Welding V cut joints for the MS rods after cleaning the V cut ends including cost of electrode, current charges, hire for welding plant etc. complete as per standard specifications and as per the direction of departmental officers	192	Nos	252.00	Rupees Two Hundred & Fifty Two Only	000000
25	Providing expansion joint between spans with Aluminium sheet 16 gauge 7.50 cm long and 65 cm wide (weight of sheet 7.50x0.5x3.40 kg/m <sup>2</sup> ) packing in position, cutting the same in position with slot and 10x6mm at 30cm centre to centre and filling the joints with mixture of bitumen, sand and saw dust including cost and conveyance of all materials, all labour charges, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers	42	M	1193.00	Rupees One Thousand One Hundred & Three Only	000000
26	Providing and laying 60mm average thick bituminous concrete wearing coat over the carriageway with heavy seal coat using 24mm broken stone 0.35 m <sup>3</sup> , 18mm broken stone 0.245 m <sup>3</sup> , 6mm broken stone .09 m <sup>3</sup> premixed with hot bitumen (48Kg/m <sup>3</sup> ) 71.86Kg/m <sup>2</sup> including a tack coat of 2.95Kg /10m <sup>2</sup> , rolling to a dense surface including cost and conveyance of all materials, all labour charges, hire charges of roller, mixer, wheel barrows, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers	670	M <sup>2</sup>	474.50	Rupees Four Hundred & Seventy Four Paise Ninety Only	000000
27	Painting with synthetic enamel paint of suitable colour with approved quality two coats including cost and conveyance of all materials, all labour charges, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers	640	M <sup>2</sup>	90.00	Rupees Ninety Only	000000
28	Bailing out water in trenches using 5 HP pump including cost and conveyance of fuel, oil all labour charges, hire charges, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers	10000	HP hr	31.00	Rupees Thirty One Only	000000

114

MAHABULI RIVER IN MALAPPURAM DISTRICT

29	Rough stone dry packing using hard blasted quarry rubble for base portion of approach road near bridge including all labour charges, incidental expenses etc., complete as per standard specifications and as directed by the departmental officers Total for Appendix A = 4572077.88	1320	M3	1479.00	Rupees Thousand Hundred & Nine Only	One Four 195226.00
Appendix B - Approach road						
1	Earth work filling with contractor's own earth cut and conveyed from sources of availability and forming embankment with all leads and lifts by spreading in horizontal layers of uniform thickness over the full width, drying or watering as the case may be, scarifying to get uniform OMC including trimming slopes to lines and levels including cost and conveyance of all materials, all labour charges, incidental expenses etc complete as per standard specifications and as directed by the departmental officers	1110	M3	303.00	Rupees Hundred & Three Only	336330.00
2	Compacting the filled earth with power roller in layers not exceeding 25 cm (loose thickness) satisfying compaction tests, including trimming slopes to lines and levels including cost of oil, fuel etc, hire charges of roller, all labour charges, incidental expenses etc complete as per standard specifications and as directed by the departmental officers	550	M3	9.50	Rupees Nine - Paise Eighty Only	5380.00
3	Collection and supply of quarry muck including stacking on the road sides in standard heaps for measurement for filling the low lying portions of the road and compacting with power roller including cost and conveyance, all labour charges, incidental expenses etc complete as per standard specification and as directed by the departmental officers	269	M3	67.00	Rupees Eight Hundred & Seventy One Only	18023.00
3	Earth work excavation in all classes of soil except hard and medium rock, which require blasting for foundation of retaining wall and depositing on bank with all lead and lifts and using the spoil for filling and forming of road wherever necessary including breaking clods, watering, ramming and seasoning of spoil bank including all conveyance charges, labour charges, incidental expenses etc complete as per standard specifications and as directed by the departmental officers	513	M3	106.00	Rupees One Hundred & Six - Paise Only	54378.00
4	Cement concrete 1:4:8 (One cement, Four sand and Eight Metal) using 40mm hard granite broken stones, mixing, laying properly and compacting for foundation of retaining wall including cost and conveyance of all materials, all labour charges, watering, curing, formwork charges, incidental expenses etc, complete as per standard specifications and as directed by the departmental officers	200	M3	4379.00	Rupees Thousand Hundred & Nine Only	875800.00

14/03/2017/OS-PWD

86/128

## Construction of Uppukudatuvu Bridge across Kudakana River in Malappuram District

5	Cement Concrete 1:3:6 (One Cement, Three Sand and Six Metal) using 60 % of 40mm and 40% 20mm hard granite broken stone, mixing, laying properly and compacting for aqueduct wall including cost and conveyance of all materials, all labour charges, form work charges, watering, curing, incidental expenses etc complete as per standard specifications and as directed by the departmental officers	754	M3	8228.00	Rupees Thousand Hundred Eight Only	Five Two Twenty	3941912.00
6	Collection and supply of 60 mm hard granite graded metal in the ratio of 7:3 of 60mm and 36 mm metal by volume respectively and stacking on the sides of road in standard heaps for pre-measurement including cost, conveyance, all labour charges, incidental expenses etc complete as directed by the departmental officers	78	M3	1087.00	Rupees Thousand Seven Only	One & Sixty	83226.00
7	Collection and supply of 36 mm hard granite broken stone and stacking on the sides of road in standard heaps for pre-measurement including cost, conveyance, all labour charges, incidental expenses etc complete as directed by the departmental officers	75	M3	1180.00	Rupees Thousand Hundred & Sixty Only	One One	87000.00
8	Supplying and stacking good gravelly red earth for binding and stacking on the sides of road in standard heaps for pre-measurement including cost, conveyance, all labour charges, incidental expenses etc complete as directed by the departmental officers	27	M3	374.00	Rupees Hundred & Seventy Four Only	Three	10098.00
9	Metalling the roadway 100 mm thickness compacted to 75 mm using broken stone (graded granite stone in the ratio 7:3 of 60 mm and 36 mm sizes respectively) 1m3 per 10m2 and departmental binding material at 0.20m3 per 10 m2, bed rolling, spreading broken stones to template, rolling dry to compaction from sides to centre until the movement of broken stone ceases, watering profusely and re rolling until the fines cream up and fill the voids of the stone, then spreading the gravelly earth and sweeping in to the joints, watering and re rolling until the gravelly earth has worked in to all crevices and a thin coat of slurry remains, then take off the roller and allow the surface to set to harden for 24 hours and re rolling next day until any deformity is rectified including fencing, lighting, watching, hire charges, cost and conveyance of all materials, all labour charges, incidental expenses etc complete and maintaining the surface free from ruts for 15 days after completion as per standard specification and as directed by the departmental officers (for sub base)	772	M2	62.80	Rupees Sixty Two Paise Ninety Only	Two	48558.80

Construction of Umminkkadavur Bridge across Kadalundi river in Malappuram District

063/2017/08-FWD

10	<p>Finishing the roadway-100 mm thick bedded compacted to 75 mm using broken stone 36 mm size, 1m<sup>3</sup> per 10m<sup>2</sup> and departmental binding material at 0.15m<sup>3</sup> per 10 m<sup>2</sup>, bed rolling, spreading broken stones to template, rolling dry to compaction from sides to centre until the surface is even and the voids of the stones are filled and re rolling until the surface is even and fill the voids of the stones, then spreading the gravelly earth and sweeping in to the joints, watering and re rolling until the gravelly earth has worked in to all crevices and a thin coat of slurry remains, then take off the roller and allow the surface to set to harden for 24 hours and re rolling next day until any deformity is rectified including lighting, watching, hire charges, cost and conveyance of all materials, all labour charges, incidental expenses etc complete and maintaining the surface free from ruts for 15 days after completion for sub base as per standard specification and as directed by the departmental officers (for base course)</p>	750	M2	62.00	Rupees Sixty Two - Paise Ninety Only	47175.00
11	<p>Collection and supply of 12 mm size hard granite broken stone and stacking on the sides of road in standard heaps for pre-measurement including cost, conveyance, all labour charges, incidental expenses etc complete as directed by the departmental officers</p>	21	M3	1740.00	Rupees One Thousand Seven Hundred & Forty Only	36540.00
12	<p>Collection and supply of 8 mm size hard granite broken stone and stacking on the sides of road in standard heaps for pre-measurement including cost, conveyance, all labour charges, incidental expenses etc complete as directed by the departmental officers</p>	7	M3	1448.00	Rupees One Thousand Four Hundred & Forty Nine Only	10143.00
13	<p>Providing 40mm pre mixed chipping carpet over W.B.M surface with departmental broken stone after thoroughly cleaning the base with wire brushes, brass brooms and applying a priming coat of 7.50Kg of bitumen/10 m<sup>2</sup> and spreading the preformed of 0.27m<sup>3</sup> of 12mm metal and 12.96kg of bitumen/ 10m<sup>2</sup> rolling to a dense surface then spreading the seal coat (comprising of a hot premix of 0.09m<sup>3</sup> of 8mm departmental metal and 8.64 kg of bitumen / 10 m<sup>2</sup>) again rolling including cost and conveyance of bitumen, oil, fuel etc, all labour charges, hire charges of brass brooms, camber board, roller and other machineries, watching, lighting, incidental expenses etc, complete (total usage of bitumen 29.10 Kg/10 m<sup>2</sup>) as per IRC specification and as directed by the departmental officers</p>	750	M2	161.90	Rupees One Hundred & Sixty One - Paise Ninety Only	121425.00

Attachment to Para No.5.9 & 5.11 (page 44-89 of the attachment related to Para No.5.9 and page 64-77 related to para 5.11)

Construction of Umminkkadavur Bridge across Kadakundi river in Malappuram District

88/128

10534/2017/OB-PWD

14	Excavating present guard-stone of 20x20x80 cm made of CC M20 using 20mm hard granite broken stone with 4nos HYSD bars 10mm dia and 6mm stirrups @15cm c/c for reinforcement and fixing in line and levels 60 cm below the ground level with CC 1:4:8 (45cm x 45cm x 60cm) including cost and conveyance of all materials, all labour charges, incidental expenses etc. complete as per standard specifications and as directed by the departmental officers	20	Noe	1806.00	Rupees Thousand Hundred & Nine Only	One Eight	36180.00
	Total for Appendix B= 6828606.7						
	<b>TOTAL PAC (APPX A+B+C)</b>						<b>81616495.80</b>
	Deduct Cost of Department Materials and Hire Charges for Department						
	Machineries						83766.00
	Net PAC						81617728.80
	Tender variation @ Estimate rate)						Nil
	Add Cost of Department Materials and Hire Charges for Department						83766.00
	Machineries						
	AGREED PAC						81626104.80
	<b>DETAILS OF DEDUCTION FOR DEPARTMENTAL MATERIALS AND HIRE CHARGES OF TAP</b>						
	2.183M <sup>3</sup> Blumex VG 10 @ Rs 37073/ MT =Rs 80630.00						
	5 Days Roller @ Rs 2382/ Day =Rs 11900.00						
	1 Days Roller & Sprayer @ Rs 35.66/ Day =Rs 36.00						
	3 Days Wheel Barrow @ Rs 3.45/ Day =Rs 10.00						
	1-Days HM plant @ Rs 830/ Day =Rs 830.00						
	Total Amount =Rs 93766.00						

104



05/2017/OS-PWD

Name of work:-

Construction of Uminikadavu Bridge across Kad-lundi river in Malapurm district.

M/s. Thirumathi Contracting Company, V.P.Co. Centro, Hospital Road, Nilambur.

We agree to undertake to execute the work at (\*)

(a) estimate rate

(b)

% below estimate rate

(c)

% above estimate rate

less cost of Departmental materials and all hire charges for departmental tools and plant specified to be supplied and recovered at the rates given in the conditions enclosed

I/we also agree that the tender discount may be applied on the amount calculated after deducting the cost of all Departmental materials and all hire charges for departmental tools and plant from the total amount of the work worked out at the rate given in the schedule attached to the tender.

NOTE:

1. \*Strike out which is not applicable.
2. The rate may be quoted in words and figures.

No. of Correction

No. of Overwriting

94/-

Contractor.

Forwarded/By Order

Personal Assistant

94/-

SUPERINTENDING ENGINEER,  
P.W.D.(ROADS & BRIDGES)  
NORTH CIRCLE Calicut-1

Additional details to PAC regarding Para 5.5 of  
Audit Report of the year 2015-16 of PWD

Draft para 5.5 is regarding the inadmissible payment to Contractor on balance item of Bridge work- "Construction of Varamkadavu Bridge and Approach Road in Chelora Panchayath" in Kannur District.

The Original work "Construction of Bridge at Varamkadavu in Chelora Panchayath in Kannur District was awarded for execution to M/S Kerala State Construction Corporation Limited vide agreement No SE(K)-33/2002-03 dated 21.2.03 and site hand over on 04/04/2002. The work consists of construction of Bridge proper and approach Road totaling 476 meters. Contractor of this works M/S Kerala State Construction Corporation Ltd completed the work of Bridge Proper in March 2005 and could not done forming the approach Road due to the reason of sub soil failure.

As already mentioned above, the original estimate of work Varamkadavu Bridge consists of bridge proper which included the construction of bridge structure such as foundation, sub structure and superstructure based on the detailed design prepared as per the result of sub soil investigation done only at abutment and pier points. No sub soil investigation was conducted along approach connections which are passing through waterlogged, marshy areas and also through areas submerging under water during tidal actions. The original Administrative Sanction was accorded based on a rough cost estimate for the work without any detailed sub soil investigations done at site in respect of the approach road. So the Administrative Sanction amount received was not sufficient to cover all the provision for the construction of bridge proper, whose estimate was as per design prepared after obtaining the

Administrative Sanction. The balance amount left from the Administrative Sanction amount only was available for the construction of approach roads. So only minimum provision of earth filling for forming approach roads based on tape measurements were given in the original work entrusted to M/S Kerala State Construction Corporation Ltd.

When M/S Kerala State Construction Corporation Ltd. Failed to form approach road owing to sub soil failure. The opinion of Geo Technical expert was sought. He studied the sub soil conditions at site which consists of deep layer of soft, highly compressible clay with high water content and proposed ground improvement works using Pre fabricated Vertical Drains (PVD) with woven and nonwoven Geo Textiles in order to accelerate the primary settlement due to consolidation process dissipating pore water pressure from clayey strata and thereby attaining rapid increase in the strength of sub soil.

The Revised estimate in incorporating those items necessary for ground improvement which are included as per the suggestion made by Geo Technical Experts and based on SOR 1999 was sanctioned by Government on June 2008. But Kerala State Construction Corporation Ltd did not resume the work as they demanded enhancement of Agreed Rate. Meanwhile one Mr. D.V.Muhammed Ashik from the locality approached the Hon'ble High Court of Kerala praying for directing PWD to complete the work in all respect and the Hon'ble High Court of Kerala in the order in WP@No.8266 of 2008 directed PWD to complete the work within 9 months and later extended the date to 10.2.2010. Hence, after several communication between PWD and Kerala State Construction Corporation Ltd, and also based on the decision taken during the meeting by the Hon'ble Minister for Public Works Department on 29/11/2008 and taking into account the order in the judgment by the Hon'ble High Court of

Kerala, the contract agreement with M/S Kerala State Construction Corporation Ltd was terminated at the Risk and cost of contractor by the Superintending Engineer vide Order No. DCE -2524/98 dated 30.10.2008.

a) **Audit Note:-Unjustified revision of Quantity of earthy work and rates:-**

After terminating the contract, with M/S Kerala State Construction Corporation Ltd., the balance estimate according to the sanctioned revised estimate was prepared for the construction of approach roads. By the time of preparing balance Estimate, ie, some changes took place along the surroundings of the river portions. These marshy portions, along which the approach road is to be formed, got changes due to continuous submergence under water and due to tidal effects. In the balance estimate for construction of approach roads also no detailed level calculation was done towards arriving Earth work quantity due to peculiar site condition and only lumpsom provision towards embankment settlement given as it was not possible to know the exact final settlement of embankment prior to the completion of ground improvement works. A Provision of  $34000\text{m}^3$  earth filling was proposed in the balance estimate. This quantity increased to  $38141\text{m}^3$  when initial levels were taken at close intervals on awarding the work. One of the reasons for this was due to changes in the topography of the marshy and tidal affected areas where embankment was to be formed since the termination of the original contract with M/s. Kerala State Construction Corporation Ltd. Another reason was that the LS provision given to account for settlement after ground improvement. Also the bottom width of formation at high embankments were increased from that in the original proposal so that the area subject to submergence will increase and that will reduce the

over burden pressure at the ground level. These were the reasons for the increase in the quantity to  $54141\text{m}^3$ . Further it was decided to construct/improve the approach road at Varam side for an additional length of 50 meters, so as to complete the work properly, this necessitated additional earth work and thus, the final quantity of earth filling was increased to  $54174.38\text{m}^3$ . The initial levels were taken before commencing the ground improvement works. The settlement of the clayey sub soil underneath the ground level will start only after preloading over the embankment portion and the settlements were measure using settlement gauges fixed at interval installed at the ground level. The design of the ground improvement is based on achieving 90% consolidation in the time prescribed and the final settlement is measure using settlement gauges. So the final quantity of earth filling could be known only after completion of the settlement after a time interval and completion of the final embankment construction. The behavior of the clayey strata is highly complex in nature and deepens on the properties of the clayey soil which varies from point to point. So study of the exact quantity of the settlement and behavior of the clay soil underneath the formation and its design will take more time and involves tedious task for conducting detailed study of the various properties of the clayey strata on the entire formation areas.

The approach road alignment is through marshy, water logged portions subjected to tidal actions. So while progressing the earth filling, there were heavy loss of earth dumped on the approach alignment due to initial mixing with loose and soft marshy top soil & losses due to tidal effect and due to initial settlement. The loss of dumped earth along the sides could not be arrested as it was not possible to do side protection works at the toe of embankments.



before attaining the primary settlement. This is being the situation at site; the contractor claimed a wastage of 50 % total earth work quantity. But the department considering all the facts limited the percentage of wastage to 25 % of the total filling quantity with the approval of Chief Engineer. Further, since embankment formation for approach road is done along submerged and loose and marshy soil subject to tidal action, it was not possible to qualify and measure the earth lost. It was finally decided to allow 25% increase on the agreed date revising the agreed rate to Rs.2424/10m<sup>3</sup> and approved vide order No. CE/R&B/KNR/16956/2002 dated 09/10/2009 as extra items. It was also ordered to give estimate rate for all the sanctioned extra items and this was subsequently upheld vide Govt. letter No. 25592/D1/09/PWD dated 18/2/2010.

The reason that attributed for the enhancement of the quantities of earth filling is different in each situations starting from the original estimate preparation till the end of final formation of embankment. There is no loss to Government due to this, as correct stable and more advanced technology which was also a new technology in PWD had been adopted in the construction. An alternative to this method is by increasing the length of bridge spanning over the entire water logged marshy portions which will be more expensive than the ground improvements works. Hence considering all the above, Chief Engineer has revised the rate for earth work filling.

**b) Unjustified change of design quantity rates for ground improvement works.**

In the estimate of balance work, the quantity of installation of PVD was 47500 m where as the executed quantity was 130392.10m. The Geo-

technical expert after studying the behavior of the deep clayey strata underneath proposed to provide Pre-fabricated Vertical drains along with Geo textiles. A deep study of the complete area of the embankment portions on each side of bridge proper could not be done due to lack of facilities then. There were no research or lab facilities for designing this new advanced technology in the construction field at that time. Sub soil exploration at some points along the embankment portions only were not sufficient as they give only an approximate idea of the application of new technology.

Due to very loose and deep soft clay, with high water content, the average residual settlement in this portion is very high. In order to accelerate the primary settlement due to consolidation by dissipating the pore water pressure, the pre fabricated vertical drain (PVD) was adopted. The use of PVD's for ground improvements is a modern technique well accepted internationally and adopted recently in the Country. At the time of execution research studies were still going on towards the application and hence in the balance estimate preparations the provisions given for PVD were not exactly the quantity as required at the site conditions. It needs more study about the soil conditions considering all parameters at the site. The PVD's were installed together with pre loading by surcharge embankments creating drainage paths which are inserted in to soft clayey sub soil. Thus the pore water squeezed out during the consolidation of the clay due to hydraulic gradients created by preloading can flow faster in the horizontal directions towards the PVD's and then it flows along the PVD's vertically upwards. It consequently accelerates the consolidation process and allows the clay to gain rapid strength. PVD is installed by using an installation rig by penetrating the mandrel which penetrates vertically in to compressible soils to the desired depth. After completion of

the PV Drain, the geotechnical instrument consisting the settlement gauges and piezo meters were installed. Settlement gauges used for measurement of settlement of the ground and piezo meters are used for the measurement of changes in pore pressure. By closely watching the settlement and its speed, modifications in the spacing of PVD were done. If the settlement rate is fast and if development of cracks noticed on top of embankments PVD's at closer intervals are provided. Similar situations arised during the execution of embankment close to abutment portions in Varamkadavu site where a sign of failure of the embankment noticed with cracks spread widely on top extending downwards. Hence after consultation with Geo-Technical expert installation of PVD at closer intervals were provided. This was considering the height of embankments and increased water content in embankment portions close to abutments. Also the depth of installation of PVD was increased depending upon the depth of soft clayey strata till a refusal strata (stiff soil) was reached. Hence the quantity of PVD provided originally in the estimate based on a rough design had to be modified as per the changes noticed in the behavior of the embankment during construction carefully noting the surface condition on top of formation, noting the readings in settlement gauges and piezo meters. So the quantity of items of ground improvements increased for the proper completion of embankment.

The construction of pre fabricated vertical drains needs, sophisticated machineries such as installation rig consisting a mandrel for driving the PVD , anchor plate, PVDs, geo textiles imported and also instruments such as the settlement gauges, piezo meters etc. All the items used in the constructions are highly sophisticated and not included in the PWD schedule of rates. Hence the items of PVD and geo textiles were treated as extra items and no tender variation was applied.



The rates towards the ground improvements works in the sanctioned estimate and agreement schedule was based on market rates. The entire item related to ground improvement works using PVD etc were executed by contractor collaborating with firm experienced in this filed having foreign technical expertise. Payments towards all items were done by this as per then prevailing market rates. Moreover, since there is change in specification of PVD from the original agreement specification, and change in the data rate which was purely based on market rate. Competent authority revised the items and approved revised rate and increase in quantity. Then supplementary agreement executed with the Contractor to this sanctioned extra item with revised quantity and revised rate which was based on market rate. This was also subsequently approved by Govt. vide letter No. 25592/D1/09/PWD dated 18/2/2010 and allowed sanctioned rate (Estimate Rate). Hence no Tender variations affected.

All decision right according to the circumstances were taken whenever warranted by all the concerned officers in charge of this work towards proper completion of the work and also to adhere to the direction of the Hon'ble High Court of Kerala. The work completed, formally inaugurated and open to public traffic in appropriate manner.

In view of the above facts the audit objection may be dropped.

  
**R. SREEKALA DEVI**  
 Special Secretary to Govt.  
 Public Works Department  
 Govt. Secretariat, Thiruvananthapuram  
 Ph. 2327175, 2518465

VERIFICATION REPORT

**Sub:** Committee on Public Accounts 2016-19 meeting on 30.05.2018

**Ref:** Para 5.8 of Audit Report on Economic Sector for the year ended March 2015- Report No. 4 of the year 2016

Audit has observed that Public Works Department had constructed fender piles along with construction of Thadikkakkadavu Bridge across Periyar River. The fender piles constructed at a cost of Rs. 3.12 crore were meant for protecting the Bridge against the impact of collision by barges. The requirement for fender piles was not there since that particular stretch of waterway was considered not suitable for navigation. The Irrigation Department also did not have any plans for developing the stretch for navigable purposes. The Irrigation Department has also confirmed there was no navigable water way connecting the Nedumbassery Airport to Periyar River. The said Thadikkakkadavu Bridge was constructed in the northern arm of Periyar River by including fender piles to facilitate navigable purpose. The Irrigation Department has stated that the southern arm of Periyar is the shortest and economically feasible route for cargo movement from Nedumbassery Airport to Kochi Seaport. However, even this route was having bottlenecks due to insufficient clearance and requirement of widening of about 5 Kms length between Nedumbassery Airport and Chenkalthodu.

During Course of discussion of this observation, an official from the PWD had informed that Irrigation Department had constructed a locking system in Purapillykavu Bridge in the northern arm for navigation purpose. This gave an impression that the northern arm is also navigable and the fender piles constructed at Thadikkakkadavu Bridge is necessary and probably constructed with foresight. The Committee had requested Accountant General to verify this issue and give a report.

Accordingly, an audit team was deputed to verify the facts, it was found that the Purapillykavu Bridge was actually a regulator-Cum-bridge (RCB) with a navigation lock. The dimensions of navigation lock were 35-metres-long shutter to shutter and inner width of 10 metres suitable for vessels having lesser dimensions and up to 1.20-metres draft. This indicates that vessels which are having a length of less

than 33 metres width less than 9 metres and require draft of less than 1.20 metres alone only can pass through the Purapillykavu RCB. This also indicates that any bridges with a span of more than 10 metres either downstream or upstream would in no way facilitate navigation due to the bottleneck at Purapillykavu RCB. Incidentally during physical verification of the Purapillykavu RCB, the audit party witnessed the operation of RCB for allowing passage for a small boat pulling a barge of size of 12-metres length and 6.5-metres width used for conveying construction activities (photos enclosed). The entire operation took more than half an hour for completion. The operation of the navigation lock is rare and done at the request of parties who are in need of such service. It was also seen that the depth level of RCB was restricted to plus 6.6-metres similar to that of the Manjali Bridge constructed by PWD 1.5 Km downstream of RCB. This part of river was not included in the National Waterways as decided in the meeting dated 11<sup>th</sup> June 2013 in the chamber of Minister of Water Resources (copy of minutes enclosed). Thus, it is apparent the horizontal as well as vertical clearance of Purapillykavu RCB was not suitable for passage of heavy or medium size vessels. Consequent to this verification, it is reaffirmed that construction of fender piles at a cost of Rs. 3.12 Crore at Thadikkakkadavu Bridge was unwarranted since the stretch was not suitable for navigation purpose in view of the bottlenecks. It is also apparent that the decision to construct the fender piles was a decision taken by the concerned Chief Engineer (Roads & Bridges) without the concurrence of Design, Research and Investigation, Quality Control wing (DRIQ) which had originally approved the design of Thadikkakkadavu Bridge.

Thus it is apparent the Purapillykavu RCB is suitable for movement of smaller vessels only. Hence the need for fender piles at Thadikkakkadavu Bridge which is having a span of more than three times that of Purapillykavu RCB was unwarranted resulting in wasteful expenditure of Rs. 3.12 Crore.

*Trigga*  
 Audit Officer / Rep (Civil/RCB)



भारतीय लेखा तथा लेखापरीक्षा विभाग  
INDIAN AUDIT AND ACCOUNTS DEPARTMENT  
प्रधान महालेखाकार (लेखापरीक्षा) का कार्यालय, केरल  
OFFICE OF THE PRINCIPAL ACCOUNTANT GENERAL  
(ECONOMICS REVENUE SECTOR AUDIT),  
KERALA BRANCH, THIRUVANANTHAPURAM - 680002

No. ESII/DP/Cell (Works)/1B 2834/2015-16/ 38

Date: 6.11.2015

To

Shri Harinarayanan NS,  
Chief Engineer (Irrigation & Administration),  
Irrigation Department, Government of Kerala,  
Thiruvananthapuram

Sir,

Sub: Details of Periyar river-structures built across the river and route followed.

It has been reported by Public Works Department that there is a water transport route through the northern branch of Periyar, from Neduvanner via Purapillykavu and Kadmakkudy, and the said route was being actively considered for connecting Kochi port with Nedumbassery airport. In this connection, the following information relating to Periyar river may please be furnished:

1. The river Periyar splits into two branches, viz., Managalapuzha and Varappuzha, near Aluva manappuram. Please confirm whether structures like bridge at Thadikkakadavu and Regulator-cum-bridge at Purapillykavu, currently under construction, are located on the "Managalapuzha branch" in the "northern arm" of Periyar.
2. Whether there is any navigable waterway connecting the Nedumbassery airport to Periyar river. If yes, details of the same may be furnished. If not, please name the location nearest to the airport through which Periyar passes.
3. Whether there is any proposal to develop the "northern arm" of Periyar as a waterway connecting Nedumbassery airport to Kochi city/seaport for cargo transportation? If yes, please furnish the details.

4. Whether there are any drinking water projects in Periyar between the portion of river that passes nearest to the Nedumbassery airport and the point where the northern arm of the river connects with the Chalakkudy river
5. Which of the routes, i.e northern or southern arm of Periyar, is economically feasible for transporting cargo from Nedumbassery airport to Kochi city/seaport?
6. Details regarding the type of cargo vessels/boats/barges that can navigate through the 10 metres wide lock forming part of the Regulator-cum-bridge at Purapillykavu may be furnished. Expected volume of cargo movement through the lock may be stated.
7. Whether there are any bottlenecks for large-scale cargo movement from Nedumbassery airport through the northern arm of Periyar to Kochi city/airport?

The information cited may please be furnished by 12.11.2015.

Yours faithfully,

6/11/2015  
(N. Subramanian)

Deputy Accountant General (ES II)



“രേഖാഭാഗം - മാതൃഭാഗം”

No. F4/36713/15.

Office of the Chief Engineer,  
Irrigation & Administration,  
Thiruvananthapuram,  
Dated: // 11.2015.

**From**

The Chief Engineer.

**To**

**Sri. N. Subramanian,**  
Deputy Accountant General (ES II),  
O/o the Accountant General,  
Thrissur.

**Sir,**

**Sub:-** Details of Periyar River structures built across the river  
and route followed - Report submitting of - reg.


**Ref:-** Letter No. ESII/DP Cell (Works)/1 B 2834/2015-16/38  
dated 06.11.2015 of the Deputy AG (ES II).

Your kind attention is invited to the reference cited and I m  
submit herewith the report as follows.

1. Yes, the structures like bridges at Thadikkadavu and RCB at Purapp  
kavu currently under construction are located on the 'Mangalappuz  
branch' in the northern arm of Periyar.
2. There is no navigable waterway connecting the Nedumbassery Airport  
Periyar River. Chenkalthodu near Kanjoor is the nearest location to  
airport through which Periyar passes.
3. Presently there is no proposal has been taken upto develop the "north  
arm" of Periyar as a waterway connecting Nedumbasserry airport to K  
City/Seaport for cargo transportation, from this office.

4. Yes, Chowara Drinking Water Scheme (KWA) near Aluva is the existing nearest to the Nedumbassery Airport. More details may be obtained from Kerala Water Authority, Aluva.
5. Southern arm of Periyar is the shortest and economically feasible for importing cargo from Nedumbassery Airport to Kochi City seaport.
6. Can not specify the types of vessels that can pass through the lock of Purappillykavu Regulator Cum Bridge. But vessels having 29 mtr long and 9 mtr wide with 1.20 mtr draft can pass through the lock.
7. Yes. There are bottle necks due to insufficient clearance under the existing bridge across Periyar. Also approximately 5 km length between Nedumbassery Airport and Chengal Thodu require widening and deepening.

Yours faithfully,

  
N.S. Harinarayanan  
Chief Engineer (I&A).

BS/11.11.

Report on the joint inspection of site of Regulator cum Bridge at Purappillikkavu across P river in Ernakulam district, conducted by PW Party-V, along with Sri.KK Syamkumar, As. Executive Engineer, Irrigation Investigation Sub-division Aluva on 05-06-2018.


The Audit team along with the departmental engineers reached the site at 11.00 am. The RCB was constructed with 21 spans including the navigation lock. The civil and mechanical works were seen completed and electrical work not carried out.


The AEE informed that the electrification work was arranged, agreement executed and work started. The operation of shutters was presently being carried out according to necessity by hiring generators on hourly basis through tender.


The AEE informed that the navigation lock was constructed with dimensions 35.00m long (shutter to shutter) and inner width of 10m and those vessels having lesser dimensions with 1.20m draft alone could be passed through the Lock.

It was also seen that the deck level of the RCB was restricted to +6.65m, similar to that of the Manjali bridge (constructed by PWD) 1.5 km downstream of the RCB since this part of the river was not included in National waterways, as decided in the meeting dated 11-06-13 in chamber of Minister of Water Resources. Hence the horizontal as well as the vertical clearance of the Lock was not suitable for passage of heavy or medium sized cargo vessels.

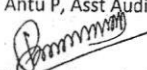
Shutters of navigation lock are being lifted occasionally based on the request by the parties. But, by chance, the Party could witness the operation of the navigation lock for allowing passage for small boat pulling a barge of size 12m x 6.5m (approximately) and photos were taken.

  
K K Syamkumar,  
Assistant Executive Engineer

  
Bismi Shama U S  
Assistant Engineer

  
M P Hamsa, Senior Audit Officer

  
Joy Antu P, Asst Audit Officer

  
C S Precy, Asst. Audit Officer





# APPENDIX III

## Appendix From Audit Report

Appendices

Statement showing the works executed during the period 2011-15 treating as ordinary repairs  
(Reference: paragraph 5.6; Page 78)

Sl. No.	Name of work	Division	Total claim disallowed (₹ in lakhs)
1.	Renewal/IRQP from km 231/300 to km 263/444 of NH-17	Kozhikode	1251.14
2.	Resurfacing NH-212 km 66/00 to km 76/00	Kozhikode	656.18
3.	Periodical renewal (PR) of NH-17 providing 50mm BM and 25mm BC km 194/610 to km 206/500	Kozhikode	1,042.86
4.	Repairs to Railway overbridge at Vengal, Vengalam and Chengathukavu on NH-17	Kozhikode	179.82
5.	PR 2010-11, providing BM and BC in km 29/000 to km 41/000 of NH-17	Kannur	664.56
6.	Resurfacing of NH-17 from km 58/000 to km 63/000	Kannur	464.05
7.	Improvements to Kondotty town km 27/500 to km 29/150 of NH-213	Malappuram	330.90
8.	Widening of NH-213 between Angadipuram and Perinthalmanna	Malappuram	336.46
9.	Monsoon work NH-49 Madurai-Kochi road 40mm BC between km 279/000 to km 286/610	Muvattupuzha	349.99
10.	NH-17 2013-14 providing 1.20 x 1.50 span slab culvert and drainage facilities (km 331/500 to km 331/750)	Malappuram	19.93
11.	NH-212 - resurfacing work between km 97/600 to km 117/600 in Wayanad district	Kozhikode	580.53
12.	NH-213 for 2013-14 extension of culvert drain (km 41/040 and km 40/700) and (km 42/800 and km 43/200)	Malappuram	4.62
13.	NH-213 for 2013-14 extension of culvert drain at km 79/200 (left side)	Malappuram	4.98
14.	NH-213 for 2013-14 extension of culvert at km 46/800	Malappuram	4.95
15.	NH-47 Resurfacing work from Vadakkancherry to Vaniyampara (km 240/000 to km 249/000 and Vazhukumpara to Munnuthy)	Kodungalur	1,526.00
16.	Repairs to damaged drain in providing cover slabs between km 70/800 to km 70/900 (right side)	Malappuram	2.99
17.	Repairs to damaged drain in providing cover slabs between km 70/900 to km 71/000 (right side)	Malappuram	3.00
Total			7,422.96