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**FIFTEENTH KERALA LEGISLATIVE ASSEMBLY**

**COMMITTEE  
ON  
PUBLIC ACCOUNTS  
(2023-2026)**

**SEVENTY THIRD REPORT**

(Presented on <sup>12<sup>th</sup></sup>..... March, 2025)



**SECRETARIAT OF THE KERALA LEGISLATURE  
THIRUVANANTHAPURAM  
2025**

FIFTEENTH KERALA LEGISLATIVE ASSEMBLY

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ON  
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(2023-2026)**

**SEVENTY THIRD 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, 2017**

**(Economic Sector)**

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# COMMITTEE ON PUBLIC ACCOUNTS (2023-2026)

## COMPOSITION

### Chairperson :

Shri. Sunny Joseph

### Members :

Shri. Manjalamkuzhi Ali

Shri. M. V. Govindan Master

DR. K. T. Jaleel

Shri. C. H. Kunhambu

Shri. Mathew T. Thomas

Shri. M. Rajagopalan

Shri. P. S. Supal

Shri. Thomas K. Thomas

Shri. K. N. Unnikrishnan

Shri. M. Vincent

### Legislature Secretariat :

DR. N. Krishna Kumar, Secretary

Shri. Selvarajan P. S., Joint Secretary

Shri. Jomy K. Joseph, Deputy Secretary

Smt. Beena O. M., Under Secretary

## INTRODUCTION

I, the Chairperson, Committee on Public Accounts, having been authorised by the Committee to present this Report, on their behalf present the 73<sup>rd</sup> 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, 2017 (Economic Sector).

The Report of the Comptroller and Auditor General of India for the year ended 31<sup>st</sup> March, 2017 (Economic Sector) was laid on the Table of the House on 30<sup>th</sup> November, 2018.

The Committee considered and finalised this Report at the meeting held on 7<sup>th</sup> February, 2025.

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

Thiruvananthapuram,  
12<sup>th</sup> March, 2025.

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

**REPORT**  
**PUBLIC WORKS DEPARTMENT**

### 3.1 Contract Management in Public Works Department

#### 3.1.1 Introduction

The Roads & Bridges (R&B) and National Highways (NH) wings of Kerala Public Works Department (Department) are responsible for the design<sup>1</sup>, construction and maintenance of all roads and bridges coming under the jurisdiction of the Department, except those coming under Kerala State Transport Project<sup>2</sup>, irrespective of the source of fund. The Principal Secretary to Government heads the Department at the Government level. He is assisted by Chief Engineers (CE) with charge over separate wings for programme delivery. The Department has control over 33,593 km of roads (including bridges) consisting of 442 km of National Highways<sup>3</sup>, 4,342 km of State Highways and 27,470 km of Major District Roads.

Expenditure on road works incurred during the last three years is shown in Table 3.1.1

**Table 3.1.1: Expenditure on road works**

(₹ in crore)

Year	Revenue expenditure		Capital expenditure	
	Budget provision	Actual expenditure	Budget provision	Actual expenditure
2014-15	2,191.07	1,760.61	1,759.35	1,477.26
2015-16	3,018.03	2,010.30	2,773.15	2,675.24
2016-17	2,234.94	1,182.63	2,216.37	2,815.79

Source: Finance Accounts and figures of Accountant General (A&E)

#### 3.1.2 Audit objectives and scope

The compliance audit covered the works awarded by the R&B and NH wings of the Department during the period 2014-15 to 2016-17, and sought to

- 1 Design of roads and minor bridges only. Major design of bridges are done by Design, Research, Investigation and Quality Control Board headed by a Chief Engineer.
- 2 Kerala State Road Transport project is a World Bank aided project under which certain State highways were upgraded or improved through separate wing under Public Works Department.
- 3 Total length of National Highways (NH) 1,781 km less length of NH (1,339 km) under the jurisdiction of National Highways Authority of India.

examine whether:

- (a) the planning and estimation of the works were comprehensive and proper;
- (b) there was transparency in tendering/awarding of the works and that the canons of financial propriety were adhered to; and
- (c) the works were executed without time and cost overrun and their quality was ensured.

Audit scrutinised the records of the Department at the Government Secretariat, offices of the CEs of R&B and NH wings, Circle offices<sup>4</sup> and 10 divisional offices<sup>5</sup> and conducted joint physical verification of sites along with the Departmental officials at selected work sites/cases. The work files were selected adopting Stratified random sampling method. Entry and exit meetings were held with Government in June 2017 and February 2018 respectively. In the exit meeting, it was requested to furnish Government replies, which are still awaited. However, views of the Government as held in the exit meeting are incorporated in this Report.

### **3.1.3 Audit findings**

#### **Planning including estimation**

##### **3.1.3.1 Arranging of works without ensuring availability of land/proper investigation**

In terms of Section 1402 of the Kerala Public Works Department Manual, Revised Edition, 2012, (Manual) and stipulations in Administrative Sanctions, bidding of works shall be resorted to only after getting possession of the required land free of hindrances. Further, every work shall be properly investigated and all relevant data collected and correlated before finalising the design and estimate for the work.

4 Circle offices are headed by Superintending Engineers (SEs) who report directly to the CEs concerned. The R&B and NH wings have three circle offices each.

5 The Executive Engineers are in charge of Divisional offices, which come under SEs. The divisions inspected were Roads Divisions Alappuzha, Ernakulam, Muvattupuzha, Palakkad, Thrissur and Thiruvananthapuram and NH Divisions at Alappuzha, Kodungallur, Muvattupuzha and Thiruvananthapuram.

**Audit observed that**

- In the selected R&B circles (North, Central and South), eight works valuing ₹59.98 crore awarded to contractors could not be completed due to faulty design and land disputes/delay in acquisition of land despite spending ₹33.34 crore on the works (Appendix III(1)). This included ₹2.85 crore on a bridge across Thodupuzha river in Idukki, which remained unused due to lack of approach road, thus, rendering the entire amount unfruitful.

CE, R&B attributed the reasons for non-completion of the projects to change in survey numbers of land proposed for acquisition, issues related to conversion of wetland, protest of public/land owners etc. The reply is not acceptable as the Department should have ensured encumbrance-free land/proper design before awarding the work.

- In the selected circles, there were two more works<sup>6</sup> valuing ₹3.61 crore, where the works awarded were not taken-up for want of encumbrance-free land and mandatory clearances from the Forest Department/Railways. In the exit meeting, the Department stated that the road work was awarded assuming that the land belonged to the Department, and in respect of the retaining wall, the work was awarded in anticipation of getting clearance from Railways. The reply is not acceptable as the Department failed to ensure the availability of land, which was a pre-requisite for awarding a work.

**[Audit paragraphs 3.1 to 3.1.3.1 contained in the Report of the C & AG of India for the year ended 31<sup>st</sup> March, 2017(Economic Sector)]**

***[Notes received from the government on the above audit paragraphs are included as Appendix-II]***

**Excerpts from the discussion of the Committee with officials concerned**

- 1) When the Committee enquired whether the construction of the bridge and

<sup>6</sup> Annual Plan 2014-15: Improvements to Cheppukulam -Moolekkadu road km 0/500 to 3/500. Road Safety NH 744 - construction of gabion wall with necessary road safety measures from km. 45/700 to km. 46/100.



approach road had been completed, the Chief Engineer (Bridges) replied that even though the work was started in Kaniyambattam GP as per land allocation, it could not be completed due to public protest.

2) The Committee opined that the audit query was about the tendering of work without the completion of the land acquisition and added that the failure to complete the land acquisition process was, in turn, due to the failure of the Revenue Department. When the Committee enquired about the present status regarding construction work, the Chief Engineer (Bridges) replied that 70% of the work had been completed and the remaining work was in progress. He added that the work was started with the assumption that the required land would be made available. He further added that the Administrative Sanction (AS) for that project had been accorded in 2010. The Committee opined that there was no deliberate delay on the part of the department and urged the department to complete the work as soon as possible.

3) The Committee further inquired about the present status of the construction of the Mattathankadavu Bridge. The Chief Engineer (Bridges), Public Works Department replied that the construction of Mattathankadavu bridge was completed on 15-12-2020 and the delay in land acquisition process was due to issues in connection with the conversion of wet lands.

4) To the Committee's query about the present status of the construction of the bridge across Kuroor thodu and approach road, the Chief Engineer (Bridges), Public Works Department replied that the work was in progress.

5) To a query of the Committee regarding the present status of the Mariyil culvert bridge project, the Chief Engineer (Bridges), Public Works Department submitted that the land acquisition process had been completed.

6) The senior Audit Officer brought to the attention of the Committee that the audit observation was about the non-completion of the eight bridges due to the non availability of land. The Committee directed that the Departments concerned should take effective steps to avoid the inordinate delay in land acquisition procedures.

#### Conclusions/Recommendations

7) The Committee observes that many of the works mentioned in Appendix III(1) have not been completed due to defective design, land disputes and delay in acquisition of land, and an amount of ₹33.34 crore from the State Exchequer has been spent unfruitfully in this regard. Therefore, the Committee directs that the Departments concerned should ensure the availability of land before finalising the design and estimate for the work. The Committee also urges the Department to take effective measures to avoid undue delay in land acquisition procedures and to complete the works without further delay. The progress made in this regard shall be furnished to the Committee within two months.

#### **3.1.3.2 Arrangement of works without ensuring fund**

In terms of Section 2003 of the Manual, works arranged should have budget provision. The Government accorded (October 2014) Administrative sanction (AS) for the work "Junction improvement and providing 1.5 metre (m) paved shoulder from Kazhakkoottam to Eanchackkal" for rupees four crore without mentioning the source of fund (Head of account). But the CE, NH issued (9 December 2014) Technical Sanction (TS) inserting a head of account. Superintending Engineer (SE), NH, South Circle (SC) tendered the work (3 December 2014) and handed over the site (16 January 2015) to the contractor who completed (February 2015) the work. Department could not pay ₹3.93 crore to the contractor for want of allocation; but it was later released based on a Court order. Audit observed that insertion of a head of account by the CE without ensuring actual availability of fund led to the litigation, which was avoidable.

[Audit paragraph 3.1.3.2 contained in the Report of the C & AG of India for the year ended 31<sup>st</sup> March, 2017(Economic Sector)]

*[ Notes received from the government on the above audit paragraph are included as Appendix-II]*

**Excerpts from the discussion of the Committee with officials concerned**

8) While considering the audit para, the Chief Engineer (NH), Public Works Department explained that Technical Sanction was given without checking the actual availability of funds and after that the payment was released as per the direction of the Court. The Department admitted their mistake and assured that special care would be taken in future to ensure the availability of funds before proposing works under different heads.

#### Conclusions/Recommendations

#### 9) No comments

#### **3.1.3.3 Arrangement of work during Defect Liability Period**

The Government ordered (August 2013) that the Defect Liability Period (DLP) of roads renewed with Bituminous Macadam (BM) and Bituminous Concrete (BC) would be for 24 months and 12 months for 20 millimetre (mm) Chipping Carpet (CC). As per section 2602.4.2 of the Manual, a road once renewed with CC is to be taken up for renewal only after three years. Audit observed that a renewal work at a cost of ₹1.84 crore was taken up during DLP (Appendix III(2)), which tantamount to extending of unintended benefit to the contractor by allowing him to escape from the liability of maintaining the road during the DLP. CE, R&B accepted the audit observation and in the exit meeting, CE, NH reiterated that arrangement of work during DLP was irregular. However, further action on the same was not intimated to Audit till date (March 2018).

[Audit paragraph 3.1.3.3 contained in the Report of the C & AG of India for the year ended 31<sup>st</sup> March, 2017(Economic Sector)]

***[Notes received from the government on the above audit paragraph are included as Appendix-II]***

**Excerpts from the discussion of the Committee with officials concerned**

10) When the Committee enquired about the details regarding the audit paragraph, the Additional Secretary, Public Works Department replied that the road work was conducted in connection with VVIP visits and after that plan work had to be executed in the same period.

### **Conclusions/Recommendations**

#### **11) No Comments**

#### **3.1.3.4 Estimates inflated due to defective calculation of unit rates for items of work**

According to Section 1601.1.2 of the Manual, proper care shall be bestowed on preparation of detailed estimate so that it reflects as faithfully as possible the cost of work as can be foreseen at that time.

Audit observed the following defects in the preparation of estimates due to errors in calculation of approved unit rates:

#### **➤ Exhibition of higher rate in the tender than the actual rate calculated**

Audit noticed that in one work<sup>7</sup>, the unit rate of an item included in the tender was higher than the rate calculated in the Rate Analysis, which enhanced the cost by ₹23.90 lakh. In the exit meeting, the SE, R&B South Circle accepted the audit observation and stated that with the introduction of PRICE software, the defects were rectified to a certain extent. The reply is not acceptable as such checks are required to be exercised meticulously in order to safeguard financial transparency, failing which, the government exchequer gets unreasonably affected and the contractor in turn gets unduly benefited.

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<sup>7</sup> Construction of Anjilimoottilkadavu Bridge at Kozhipalam across Pampa river in Pathanamthitta district.

➤ **Arithmetical error in calculating unit rates**

Arithmetical errors in the calculation of unit rate of items in two works<sup>8</sup> inflated the cost by ₹16.72 lakh. Audit noticed that CE, R&B incorrectly applied cost index in the rate analysis in one work and in the second work CE, NH reckoned provision of pontoon<sup>9</sup> for construction of superstructure of bridge twice in the rate analysis. CE, R&B replied (September 2017) that arithmetical error amounting to ₹11.27 lakh was corrected based on Audit findings. However, Audit noticed that supplemental agreement (reducing the rate) was still not executed. In respect of the other case, CE, NH did not furnish any reply.

➤ **Excess provision of cement concrete in rate analysis**

According to the Standard Data Book (SDB) of Ministry of Road Transport and Highways (MoRTH), the rate for executing unit length of cement concrete pile<sup>10</sup> for foundation is calculated by considering, among other things, the quantity of concrete required for executing one metre length of pile, hire charges of machinery, labour and materials for boring.

Audit observed the following errors in calculation of the cement concrete component for piles:

- As per MoRTH SDB unit rate of 1.2 m diameter bored cast in-situ pile is calculated initially for nine meter and one meter diameter pile is calculated for 10 m, which are converted to one meter thereafter. As per the SDB, requirement of cement concrete for 1.2 m diameter pile (for nine meter) was 10.170 cubic meter (cum), but the Department adopted 11.869 cum and in respect of one meter diameter pile (for 10 meter) Department adopted 8.243 cum instead of 7.85 cum in MoRTH

8 ₹11.27 lakh in respect of construction of Valiyazheekal bridge across Kayamkulam lake connecting Kollam and Alappuzha district and ₹5.45 lakh in respect of construction of Calicut Bypass Phase II-reach II- from ch 0/000 to 5/000 of NH 17(New NH 66) in the state of Kerala.

9 A flat-bottomed boat, which aids construction in water.

10 Pile is a type of foundation to transfer loads from a structure to a strong sub surface strata. It is generally cylindrical in shape.

SDB. The unit rate of pile foundation for three bridge works<sup>11</sup> was calculated deviating from the SDB of MoRTH, consequent upon which, excess quantity of cement concrete for providing bored cast in-situ pile was considered in the rate analysis, resulting in enhancement of the estimate cost by ₹91.30 lakh. CE, NH replied that the rate would be reduced.

- In the same three bridge works, the unit rate for bored cast in-situ pile foundation in rock was calculated as 2.5 times the rate of executing the same item in soil. This increase was due to additional time required for boring through hard rock. Audit observed that the multiplication factor of 2.5 was applied not only on boring but also on the cost of cement concrete, the quantity of which was the same for both hard rock and soil. Consequently, the estimate was overstated by ₹33.20 lakh. CE, NH replied that they adopted the procedure adopted by CE, R&B. The reply is not acceptable as the CE, R&B calculated the rate for boring in rock considering the actual volume of cement concrete in rock portion without reckoning 2.5 times the cost of boring in soil as stated by CE, NH.

➤ **Excess labour resulted in inflated rates**

Sl. No. 58 of the SDB of the Department provides for extra labour @ 0.40 woman for each additional lift of 1.5m involved, per 10 cum of construction material conveyed.

Audit observed that in three works<sup>12</sup>, the unit reckoned for extra labour was one cum, instead of 10 cum, resulting in cost escalation by ₹39.94 lakh. CE, R&B stated that Sl No.58 was meant for working with earth. Further the rate was provided considering actual site conditions and practical difficulties.

11 ₹40.65 lakh in respect of construction of Calicut Bypass Phase II-reach II- from ch 0/000 to 5/000 of NH 17(New NH 66); ₹45.01 lakh in respect of DFIP-construction of flyover at Ramanattukara junction in NH 66 (old NH 17) – Calicut Bypass in the state of Kerala and ₹5.64 lakh in respect of DFIP-construction of flyover at Thondayad junction in Calicut bypass NH 66 (old NH 17).  
12 ₹8.11 lakh in respect of NABARD RIDF XX construction of Keezhmurikadavu bridge across Muvattupuzha River, ₹16.63 lakh in respect of construction of Murikallu bridge across Muvattupuzha River and ₹15.20 lakh in respect of Budget work 2015-16 construction of Parappuram Vallamkadavu bridge across Periyar River (all in Ernakulam District).

The reply is not acceptable as SI No. 58 is applicable to all items including rubble. Further, the Department already included extra labour in the unit rate considering difficult areas. Hence, unit reckoned for extra labour violating SDB of the Department was irregular.

**[Audit paragraph 3.1.3.4 contained in the Report of the C & AG of India for the year ended 31<sup>st</sup> March, 2017(Economic Sector)]**

***[Notes received from the government on the above audit paragraph are included as Appendix-II]***

**Excerpts from the discussion of the Committee with officials concerned**

12) While considering the audit observation regarding the exhibition of higher rate in the tender than the actual rate calculated, the Committee enquired whether an amount of ₹ 23.90 lakh paid in excess had been recovered, the Senior Finance Officer (Roads & Bridges), Public Works Department informed that reply was not furnished for the said paragraph and added that a detailed reply regarding the same would be submitted before the Committee within two weeks.

13) When the Committee enquired about the details regarding the Audit query about the arithmetical error in calculating unit rates, the Chief Engineer (Bridges), Public Works Department replied that the audit observation was about the non execution of supplemental agreement. He added that the arithmetical error had been rectified and the supplementary agreement would be executed incorporating the reduction of rate on sanctioning of revised estimate.

14) To the further queries of the Committee regarding the realisation of cost towards the construction of Calicut Bypass and also about the recovery of the excess amount of ₹91.30 lakh paid to the contractors, the witness submitted that an arithmetical error had occurred in the calculation of rates regarding the work of Calicut Bypass and an amount of ₹11.27 lakh had to be recovered from the

contractor. He added that directions had been issued to the Executive Engineer to recover the excess amounts. To the further queries of the Committee, the Chief Engineer(NH), Public Works Department submitted that the excess payment was due to a calculation error and the excess amount paid would be recovered from the retention of the contractor.

15) While expressing its displeasure over the reply given by the Department, the Committee commented that the Department should be cautious in avoiding such errors before issuing technical sanction. The Committee also expressed its displeasure over the lackadaisical attitude of the officials in preparing the estimates, and conducting supervisions and commented that utmost care should be taken while preparing estimates and proper supervision must be ensured by the engineering wing during the execution of the works.

16) The Senior Audit Officer brought to the attention of the Committee that recovery had not been possible in many cases as the contractors approached the Court and obtained orders in favour of them. The Chief Engineer (NH), Public Works Department replied affirmatively when the Committee directed the Department to take proper action to recover the amount due from the contractors as soon as possible.

17) Then the Committee also enquired whether the excess amount of ₹33.20 lakh paid to the contractor had been recovered. The Chief Engineer(NH), Public Works Department replied that as per the statement submitted by the Executive Engineer, the excess amount paid to the contractor would be realised from the bills of his other ongoing projects and assured that follow up action would be taken up for realising the said amount.



18) During the discussion of the audit observation on "Excess labour resulted in inflated rates", the Committee enquired about the reason for providing the inflated rates for labour which caused cost escalation of ₹.39.94 lakh. The Senior Finance Officer (Roads & Bridges), Public Works Department replied that the audit observation was related to the construction of three bridges in Ernakulam district. The audit stated that instead of paying for extra labour at the rate of 0.40 woman for each additional lift of 1.5 m per 10 cum of construction material conveyed, it was paid for 1 cum. In the data book it was shown as 0.4 woman additional lift. It was the batta given for carrying the stones to the work site as head load and the rate 0.4 stated in the standard data book referred the lift only.

19) When the Committee enquired whether it was an avoidable expense, the Senior Finance Officer (Roads & Bridges), Public Works Department replied in the negative and added that it was necessary due to site conditions.

20) The Senior Audit Officer brought to the notice of the Committee that the cost escalation occurred as the department had provided the rate for one cum instead of 10 cum, The Senior Finance Officer (Roads & Bridges), Public Works Department answered negatively.

21) The Committee directed the Department to submit a report after re-examining the matter in detail.

#### Conclusions/Recommendations

22) The Committee directs the Department to submit a detailed report on the objections raised by Audit regarding the "Exhibition of higher rate in the tender than the actual rate calculated."

23) The Committee directs the Department to take urgent measures to recover the excess amount paid, which was highlighted in the audit paragraphs

related to "Arithmetical error in calculating unit rates" and "Excess provision of cement-concrete in rate analysis" and furnish a report thereon to the Committee urgently.

24) The Committee directs the Department to furnish the details regarding the recovery of ₹33.20 lakh paid in excess to the contractor in respect of the three bridge works.

25) The Committee shall be furnished with a detailed report regarding the action taken on the objection pointed out by Audit on "Excess labour resulted in inflated rates."

26) The Committee expresses its displeasure over the irresponsible attitude of the officials and directs that utmost care should be taken while preparing estimates and proper supervision must be ensured by the engineering wing during the execution of works.

### 3.1.3.5 Violation of specifications/data of MoRTH

➤ **Irregular inclusion of provision for cutting pile heads and conducting routine and initial pile load tests**

In terms of Section 1119 of MoRTH specification, the contract unit rate for providing cast in-situ bored piles includes the cost of labour, materials, hire charges of equipments and all other incidentals involved in conducting routine and initial pile load tests. As such, the contract unit rate of piles is inclusive of full compensation for furnishing all labour, material, tools and equipments, and incidentals for cutting off of pile heads.

It was observed that in nine works, items such as pile load tests and cutting of concrete pile heads costing ₹2.59 crore (Appendix III(3)) were included as separate items in the Contract. CE, NH replied that as there was no separate provision for pile load test and chipping off of pile top in the rate analysis, the items were separately provided. CE, R&B replied that in one work the provision of pile load test was included accidentally. In other cases, the reasons were stated to be non-provision of conducting

pile load test and chipping off of pile top in the rate analysis.

The reply is not acceptable as Section 1119 of MoRTH specification prohibits separate payment for pile load test and chipping off of pile top, which are treated as incidental items and are already included in the contract unit rates of piles. Thus, separate provision of pile load test and chipping off of pile top in addition to incidental charges in the rate analysis led to extending of undue benefit to the contractor.

➤ **Calculation of unit rate of items of work deviating from MoRTH data**

The Government ordered (April 2013) adoption of MoRTH specifications by all State Government Departments from 1 October 2013 onwards.

Audit noticed that the Department did not adopt the specifications for calculating unit rate of some items of work; instead, it used its own method, which caused inflation in unit rates as discussed below:

- As per SDB of MoRTH, 1.04 labour is required for fixing 50 road studs. Contrary to the MoRTH stipulation, the Department provided four labours per 50 road studs resulting in excess cost of ₹8.74 lakh in eight works, which commenced on or after November 2014. Audit observed that out of this, one work was under NH wing, for which they were bound to adopt MoRTH SDB but instead adopted observed data<sup>13</sup>.
- As per SDB of MoRTH, certain percentage (maximum 55 per cent) of the cost of cement concrete, being the cost of staging<sup>14</sup> and formwork<sup>15</sup>, is to be added to the cost of cement concrete, so as to arrive at the unit rate for providing the superstructure<sup>16</sup> of a bridge. Audit noticed that in seven works (Appendix III(4)), the unit rate for providing superstructure of bridge also included the cost of additional staging and use of high-cost N Truss, instead of reckoning a certain percentage of the cost of cement concrete provided for the superstructure.

<sup>13</sup> Rate analysis prepared based on field observations for items of work, which are not available in SDB.

<sup>14</sup> The function of staging is to carry loads without appreciable deformation either before or during the placing of concrete.

<sup>15</sup> Formwork shall include all temporary or permanent forms required for forming the concrete of the shape, dimensions and surface finish, as directed, together with all props, staging, centering scaffolding and temporary construction required for support. The concrete acquires exact shape of the mould in which it is placed.

<sup>16</sup> Superstructure of bridges includes deck slab of bridges, girder, cross girder, etc.

Audit observed that as per the Delhi Schedule of Rates (DSR), steel used in formwork can be reused 40 times, instead the unit rates were calculated by reckoning the re-usability of steel formwork as four to 18 times. Unit rates in these seven works ranged from ₹21,730 to ₹26,071/cum, whereas in bridge works conforming to SDB and DSR stipulations, the unit rate was less than ₹20,000/cum leading to a cost overrun of ₹10.66 crore. CE, NH and CE, R&B stated that a different method was adopted considering the actual requirement at site.

The replies are not acceptable as the rate analysis was available in MoRTH SDB for the same item of work. So the Department should have adopted the same irrespective of the site condition.

➤ **Inclusion of multiple/excess provisions for overhead charges in estimates**

In terms of the SDB of MoRTH, the unit rate of items also includes Overhead Charges (OH), which consist of provision for site accommodation, general site arrangement, mobilisation of resources, vehicle for supervision and an element of tax. In cases where MoRTH data are adopted, the OH applicable in road projects and bridges are as follows:

- the rate of OH applicable in road projects valued up to ₹50 crore is 10 per cent and for those above, it is eight per cent.
- the rate of OH admissible for bridges ranged between 20 per cent and 30 per cent.

The Government ordered (May 2010 and December 2010) that OH of five per cent would be applicable on estimates worked out on the basis of SDB of the Department to compensate the tax liability of the contractors.

Audit observed that additional provision for OH was provided in the work estimates of the following works even though OH at applicable rates was already included.

- As per SDB of MoRTH, contractor's profit (CP) is included in the estimate. But

while entrusting works to accredited agencies the estimate shall not include CP. In a work<sup>17</sup>, apart from the regular OH of 8 and 25 per cent (for both road and bridge works), additional provision of 10 per cent was included in the unit rates of items towards compensation for taxes payable by the contractor. As an element of such tax was part of OH, a separate provision for taxes amounting to ₹12.01 crore was irregular and not as per SDB of both MoRTH and the Department.

CE, NH replied that Local Self Government Department and other institutions were entrusting works directly to the conveners of beneficiary committees and similar agencies by providing for taxes and OH in the estimate without CP and the same procedure was followed in the instant work also. Reply is not acceptable as OH charges at applicable rates were already included in the rate analysis and hence, additional provision towards compensation for taxes and other OH charges is irregular. Further audit scrutiny in a Local Self Government Institution confirmed that they did not incorporate the dual application of OH charges as stated by CE, NH in his reply.

- It was also noticed that even though the items of work did not conform to the MoRTH specification, in 16 works<sup>18</sup> OH at the rate of ten/twenty per cent was provided by R&B wing of the department instead of an eligible five per cent, which increased the cost by ₹6.52 lakh. CE, R&B replied that the PRICE software through which technical sanction was issued had no provision to alter the provision of 10 per cent. However, the Department did not take action to rectify the issue.
- Audit also observed that in two works<sup>19</sup> OH of both five per cent prescribed by

17 Construction of Calicut Bypass Phase II-reach II- from ch 0/000 to 5/000 of NH 17(New NH 66) in the state of Kerala

18 Agreement No.330/EE/2015-16 Dtd. 03/03/2016, No. 28/EE/2016-17 Dtd 17/06/2016, No. 29/EE/2016-17 Dtd 17/06/2016, No. 37/EE/2016-17 Dtd 17/06/2016, No. 40/EE/2016-17 Dtd 17/06/2016, No. 46/EE/2016-17 Dtd 17/06/2016, No. 48/EE/2016-17 Dtd 17/06/2016, No. 165/EE/2016-17 Dtd 24/03/2017 (8 Nos-Ernakulam Division), No. 67/EE/2016-17 Dtd 01/07/2016, No. 107/EE/2016-17 Dtd 02/12/2016, No. 147/EE/2016-17 Dtd 13/01/2017 (3 Nos- Thrissur Division), No. EE/PL/64/2016-17 Dtd 23/09/2016, No. EE/PL /66/2016-17 Dtd 30/09/2016, No. EE/PL/147/2016-17 Dtd 21/03/2016 and No. EE/PL/27/2016-17 Dtd 01/06/2016 (4 Nos-Palakkad Division), No.44/SECCA/2016-17 Dtd 17/05/2016 (Central Circle, Aluva).

19 Improvements to Hill Highway from Koomanthodu to Aralam (22.80 km) II reach between km 64/620 to 71/690 (Vallithodu to Karikkottakkari) in Kannur district and Budget work 2011-12 – Improvements to MC road-Pathanapuram road-

the Government, and 10 per cent prescribed by MoRTH were included in the unit rate of items of work. The dual application of OH increased the estimate cost of these works by ₹27.88 lakh. CE, R & B replied that both OH were allowed on MoRTH data citing the Government directions in May 2010 and December 2010. The reply is not acceptable as the said Government directions allowed OH charge of five per cent on SDB of PWD only. Hence, dual application of OH had led to unintended benefit to the contractor.

- In a work<sup>20</sup> for providing deck slab of a bridge, apart from the 25 per cent OH already included in the unit rate, cost on sub-items for stay, food and vehicles were additionally added. Thus, inclusion of additional OH resulted in the boosting of cost by ₹16.50 lakh. CE, NH replied that special crew consisting of Engineers and technicians from United Kingdom would arrive for installation of stressing operation, the expenses of which, are to be met by the contractor. Hence the provisions of stay, food and vehicles were additionally added apart from 25 per cent OH. The reply is not acceptable as 25 per cent OH already provided would cover all such expenses, and hence, additional provision for such expenses in the rate analysis is irregular.

**[Audit paragraph 3.1.3.5 contained in the Report of the C & AG of India for the year ended 31<sup>st</sup> March, 2017(Economic Sector)]**

***[Notes received from the government on the above audit paragraph are included as Appendix-II]***

**Excerpts from the discussion of the Committee with officials concerned**

27) The Committee noticed that an extra payment was given for removing excess length of pile and for pile load test in nine works, which led to an undue benefit of ₹2.59 crore to the contractors and enquired about the reason for the same. The Additional Secretary, Public Works Department replied that pile cutting

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Sabarimala Bypass road (Mercy road- Chengamanadu road) ch 0/000 to 6/600 km.  
20 Construction of Valiyazheekal bridge across Kayamkulam lake connecting Kollam and Alappuzha districts.

and load testing were included as separate items before the updation of MoRTH data in 2013, and after that the rate of pile was calculated by including both. He admitted that it was a mistake that had occurred during the transition period and had happened in certain works of roads and NHs. The Chief Engineer (NH) clarified that no such errors had occurred in the works of NHs.

28) The Committee enquired whether the excess amount paid to the contractors in the said nine cases had been recovered. The Senior Finance Officer (Roads and Bridges), PWD replied in the negative and added that the excess amount could not be recovered as the works were tendered accordingly. When the Committee enquired whether such mistakes were still being repeated, the Additional Secretary, Public Works Department informed that necessary directions had been issued vide circular in 2018, and at present no such mistakes were detected. The Committee enquired whether the amount of ₹8.74 lakh paid in excess due to the wrong calculation of unit rate of labour as 4 against 1.04 had been recovered. The Chief Engineer (NH), Public Works Department replied that there was only one such case under the NH wing and the excess amount paid had not yet been recovered.

29) To the query of the Committee regarding the excess payment of ₹16.50 lakh due to the additional payment of OH charges in the construction of Valiyazheekkal bridge had been recovered, the Senior Finance Officer (Roads & Bridges), Public Works Department informed that Macalloy bar was imported from UK in connection with the construction of Valiyazheekkal Bridge. Even though the flight charges and other expenses were already included in the quotation, an additional amount had been paid for the same and the excess amount paid would be adjusted from the pending bill. To a further query of the Committee, the Senior Audit Officer

informed that even though the Department stated that the additional amount would be recovered, no action was taken by the department for the recovery of the excess amount till date.

30) The Committee opined that the Department should take stringent actions not only against the delinquents who were responsible for the loss incurred but also against those who failed to take adequate measures to recover the dues at the earliest. The Committee also urged the Department to furnish a detailed report after realising the amount within a period of one month.

#### Conclusions/Recommendations

31) The Committee directs the Department to furnish the details of the excess amount recovered by the Department in respect of the objection pointed out by Audit on the "calculation of unit rate of items of work deviating from MoRTH data".

32) The Committee has taken note of an excess payment of ₹16.50 lakh made as OH charges during the construction of the Valiazheekal bridge, which remains to be recovered. Therefore, the Committee urges the Department to take stringent action against those responsible for the loss incurred and also against those who failed to implement adequate measures to recover the dues without delay. The Committee also directs the Department to furnish a comprehensive report after recovering the excess amount paid to the contractor in respect of overhead charges within a period of one month.

#### **3.1.3.6 Method adopted for earthwork excavation led to undue benefit to contractors**

According to the SDB of MoRTH, the unit rate for excavation of soil including rock is worked out adopting mainly three methods viz, manual excavation, excavation using dozer and excavation using hydraulic excavator. Audit observed that unit rate for excavation using manual method was up to four times costlier than mechanical methods of excavation. As per MoRTH SDB, manual means of excavation are meant for areas



inaccessible to machines and for small jobs. Estimation using incorrect method of excavation could provide undue benefit to the contractor as observed in the following instances:

- In a work<sup>21</sup> the Department calculated the unit rate for excavation of soil using manual means. However, the specification of the item mentioned in the agreement was excavation using mechanical means. This gave an undue benefit of ₹88.61 lakh<sup>22</sup> to the contractor as he executed the work by mechanical means whereas the rates were for manual method, which were much higher. CE, R&B, the technical sanction authority, replied that since the field engineers found the usage of manual means necessary, the technical sanction authority also considered it to be genuine. However, in the agreement schedule, the specification for earthwork indicated the use of mechanical means. Reply is not acceptable as the measurement book, work bills and work slip revealed that the work was executed using mechanical means, which resulted in avoidable extra cost.
- Audit also observed that in respect of one work<sup>23</sup> where excavation of soil was to be executed by mechanical means, it was done manually, thereby inflating the cost by ₹71.60 lakh for a quantity of 78,680 cum. CE, R&B stated that based on the representation submitted to the PWD Minister, it was ordered that utmost care should be taken while using heavy machines as expensive houses with gardens were situated on either side on the entire road. Hence, the land owners agreed to give land free of cost, on the condition that only manual means are used for earth work excavation. To verify the facts, a Joint Physical Verification (JPV) was conducted with the departmental officials. It was observed that the road was widened by taking land from both sides. In most of the cases, there was no boundary wall or houses nearby and instances of excavation using mechanical means were clearly visible at many locations. Hence, the

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21 Providing traffic safety measures between Km. 67/000 to 97/070 of CVG road.

22 Quantity of earth work excavation (60278.206 cum) multiplied by the difference in rate of excavation as per manual means and rate of excavation as per hydraulic means.

23 Improvements to Hill highway from Koomanthodu to Aaralam (22.80 km) 2nd reach between 64/620 to 71/690 (Vallithodu to Karikkottukari) in Kannur district.

provision of manual means for entire length of road led to extra expenditure to government, which was avoidable.

- In one work<sup>24</sup> the original provision for earthwork excavation was using hydraulic excavator. During excavation, hard rock was stated to have been detected, which was treated as an extra item, and therefore manual excavation was provided. This inflated the cost of work by ₹60.19 lakh. CE, R&B replied that it was not possible to dismantle the hard rock with hydraulic excavator and blasting was not possible as the area was highly populated and so manual chipping was adopted. A JPV conducted at the site to verify the facts revealed that the detected material was hard laterite, which was excavated using mechanical means only and not manual means. Hence, the reply of the CE was not justifiable.

**[Audit paragraph 3.1.3.6 contained in the Report of the C & AG of India for the year ended 31<sup>st</sup> March, 2017(Economic Sector) ]**

***[Notes received from the Government on the above audit paragraph are included as Appendix-II]***

**Excerpts from the discussion of the Committee with officials concerned**

33) Regarding the Audit Paragraph, the Additional Secretary, Public Works Department informed that at the time of preparing estimates earth work excavation was calculated by manual means. The unit rate for excavation using manual means was higher than that of mechanical means. The audit objection was that even though the contractor had done the work using mechanical means, the payment was given at manual rate as per the estimate.

34) When the Committee enquired the reason for adopting manual means of estimation, the Chief Engineer (Bridges), Public Works Department submitted that at the time of preparing the estimate for the said work, it was not possible to

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24 Improvements including BM and BC to Neruvambram - Payyattuchal - Chemberi road km 0/000 to 7/850 km in Kannur district.

adopt mechanical means due to the presence of buildings and boundary walls. However, when Joint Physical Inspection was conducted later, it was found that there were no buildings and boundary walls at the road side and excavation using mechanical means could have been possible.

35) The Committee noticed that officials at various levels in the department had an approach to help the contractor and commented that action should be taken against the officer who supervised the said work. The Senior Audit Officer added to the discussion that it had been continued for years and all the earth works were done using mechanical means but the calculation of the estimates was done as per manual means. But recently PWD manual had been changed and rates were being provided as per mechanical means.

36) The Committee further enquired about the details regarding quarrying, the Senior Audit Officer informed that dismantling of the rock in Neruvambram-Chemberi was treated as an extra item and was given by manual means. There was only laterite soil and it had been excavated using mechanical means.

37) When the Committee enquired whether the amount was given as per the estimate, the Senior Finance Officer (Roads & Bridges), Public Works Department replied that the amount paid was not as per the original estimate. The last two or three works were given as extra items. The Senior Audit Officer added to the discussion that the Department was responsible for giving the work as extra item, even though it was an item not included in the tender. It was the responsibility of the Department to ensure that the rate given was reasonable while awarding new works.

38) The Additional Secretary, Public Works Department further opined that as mentioned in the estimate, the first work was done by the contractor using mechanical means, but the rate had been calculated by using manual means and

was recorded in the measurement book as such.

39) The Committee directed the Department to take departmental action in the said matter and also to take stringent action against the officers who were responsible for the inordinate delay in taking adequate and timely action against the delinquents.

40) To a further query of the Committee regarding the cases/vigilance enquiries, the Additional Secretary, Public Works Department informed the Committee that he had no information about the vigilance enquiry regarding the Koomanthode work. A vigilance enquiry was conducted regarding the construction work of crash barriers on the CVG road and it was under the consideration of the Court. He added that after examining the matter in detail an enquiry would be conducted using the internal vigilance as per the suggestions of the committee.

#### Conclusions/Recommendations

41) The Committee notes that in the three road works mentioned in the Audit para, instead of adopting mechanical means for earth excavation, manual means were adopted and the unit rate of excavation in manual method of excavation was almost 4 times costlier than the mechanical means. The Committee also learns that estimation using incorrect method of excavation led to an excess payment of ₹2.20 crore to the contractors. In light of this, the Committee directs the Department to take necessary action against the officials responsible for the lapse. Furthermore, the Committee urges the Department to take stringent action against the officials who were responsible for the inordinate delay in taking adequate and timely action against the delinquents.

42) The Committee notes with concern that numerous irregularities/deficiencies have occurred on the part of the Department during the execution of works. Therefore, the Committee directs the Department to be highly cautious during planning and execution of works in the future. The Committee also urges the

Department to stick to the guidelines while allowing ancillary works as extra items.

### Irregularities in tender process

#### 3.1.4.1 Non-compliance to MoRTH guidelines on fixing of completion period

A bidder in a tender should have sufficient bid capacity. Period of completion of the work tendered, annual turnover and work in hand are the factors affecting bid capacity. As per timelines issued (August 2013) by MoRTH, the time prescribed for completing a work under 'Improvement of Riding Quality Programme' (IRQP) is six days per kilometre subject to a maximum of six months.

Audit observed that the SE, NH South Circle, Thiruvananthapuram, tendered three works<sup>25</sup> each with a minimum length of 20 km (approximately) with a total value of ₹57.99 crore. As against MoRTH specification of four months, the time of completion (ToC) fixed for each work was less than that prescribed by MoRTH. Scrutiny of the bids by MoRTH revealed that the reduction of ToC to three months provided insufficient time to contractors, which affected their bid capacity adversely. As such, re-tender of the works was ordered by MoRTH. Due to this, taking up of the works was delayed by three to five months and cost increased by ₹10.10 crore.

CE, NH replied that the SE, NH South Circle fixed the ToC as three months in order to ensure the completion of work before the forthcoming monsoon. Audit noticed that the action of the Department violating the MoRTH guidelines led to scrapping of the tender process, and in the process of re tendering, one monsoon season elapsed, which caused further damage to the roads requiring extra work with more quantity of Bituminous Macadam, thus, resulting in cost escalation by ₹10.10 crore.

**[Audit paragraph 3.1.4.1 contained in the Report of the C & AG of India for the year ended 31<sup>st</sup> March, 2017(Economic Sector)]**

***[Notes received from the government on the above audit paragraph are included as Appendix-II]***

25 IRQP (Non plan) from ch.462/000 to 482/000 of NH 47 (New NH 66) in the State of Kerala; IRQP (Non plan) from ch 0/000 (Kollam high school junction) to 23/900 (Kadapuzha bridge) of NH 220 (New NH 183) in the state of Kerala and IRQP from ch.482/000 to 520/400 of NH 47 (New NH 66) in the State of Kerala.

**Excerpts from the discussion of Committee with the officials concerned**

43) When the Committee enquired the reason for the reduction of the time limit to complete the work of three roads from four to three months, the Chief Engineer (NH), Public Works Department replied that SE, National Highway South Circle had stipulated in the tender that the said works should be completed within three months.

44) The Committee enquired about the reason for the loss of ₹10crore, the Senior Audit Officer informed that as per the Time of Completion(TOC) prescribed by the Ministry of Road Transport and Highways(MoRTH), the time limit prescribed for the completion of the said works was four months. But in the tender condition the time limit was stipulated as three months. The request submitted by the Department for the time reduction was rejected by MoRTH. After that when the work was re-tendered monsoon season started, which caused further damage to the roads requiring extra work resulting in cost escalation.

45) To a query of the Committee, the Chief Engineer (Bridges), Public Works Department replied that three roads of approximately 7 km each was under construction and a timeline of three months was fixed for quick completion. He further added that only BC (Bituminous Concrete) overlay was done in those roads and it had a higher rate.

46) The Committee was of the opinion that no deliberate misappropriation was found during the execution of such works and commented that the Department should be more cautious and avoid such lapses in future.

**Conclusions/Recommendations**

47) The Committee observes that irregularities in the tender conditions such as the inadequate provision for time of completion of the work and certain flaws

like delay in awarding the work often lead to time and cost overrun in many works. Hence, the Committee suggests that the Department should exercise more caution while performing its duties in connection with the whole tendering process to avoid such lapses in future.

#### **3.1.4.2 Waiving of tender calls in violation of delegated powers**

In terms of Appendix 200B-2 of the Manual, the Executive Engineer (EE), SE and CE are empowered to waive tender calls of the value of up to ₹3 lakh, ₹10 lakh and ₹25 lakh respectively.

Audit observed that EE, Roads Division, Ernakulam, arranged six works, each valued at ₹25 lakh approximately, waiving tender calls, which were ratified by the SE, R&B Central Circle even though such waivers could be given only by the CE. It was further observed that all the works were awarded to a single contractor or to firms controlled by the contractor himself.

SE, R&B Central circle replied that the SE sanctioned the limited tender treating it as a normal tender. The reply is not acceptable as waiving of tender calls of works valuing ₹25 lakh was in violation of the delegated powers as per the extant manual provision.

#### **3.1.4.3 Non-finalisation of tender within firm period**

As per the Manual, the firm period of a tender is two months. Delay in finalisation of tenders before expiry of the firm period, at times, leads to backing out of the lowest bidder. Consequently, retendering or the second lowest bidder is considered.

Audit noticed that in eight instances, non-finalisation of tender process within the firm period led to arrangement of works through the second lowest bidder or retendering, which is at higher rates resulting in excess cost of ₹21.19 crore (Appendix III(5)).

In the exit meeting, the departmental officials opined that these works required pre-qualification and two months period was insufficient for completing all the formalities. Audit observed that the firm period fixed in the pre revised manual was four months but

when the period was reduced to two months, a system was not adopted to speed up the process. Further, there was undue delay in finalisation of tender and rearrangement, which led to the cost escalation.

#### **3.1.4.4 Excess liability due to rejection of single bid at estimate rate.**

According to instructions issued (August 2012) by the Government, single bids at estimate rate or below could be accepted at the first instance. SE, R&B, Central Circle, Aluva tendered (February 2014) a work<sup>26</sup> against which a single tender at 9.20 per cent below estimate amount of ₹9.57 crore was received from M/s Kerala State Construction Corporation Limited (KSCC). The SE recommended (March 2014) the bid for Government approval. The Government returned (April 2014) the proposal directing retransmission after re-tender without citing any reason. On re-tender (July 2014), again a single tender was received which was from KSCC, but the rate quoted this time was 24.50 per cent above estimate. Government accepted the tender at 23.23 per cent above estimate and the SE awarded (March 2015) the work to KSCC. The Government decision to reject the initial single bid without recording any justification to do so and subsequently awarding the work to the same firm, that too at 23.23 per cent above the estimate rate resulted in an avoidable cost escalation by ₹2.04 crore.

**[Audit paragraphs 3.1.4.2 to 3.1.4.4 contained in the Report of the C& AG of India for the year ended 31<sup>st</sup> March, 2017 (Economic Sector)]**

**[Notes received from the government on the above audit paragraphs are included as Appendix-II]**

**Excerpts from the discussion of the Committee with officials concerned**

48) To the query of the Committee regarding the above audit paragraphs the Managing Director, Kerala State Construction Corporation Limited replied that it was the reconstruction work of 16.9 km long Kodungallur-Athani Airport Road. He added that when the said work was first tendered, KSCC quoted 9.20% below the

<sup>26</sup> NABARD RIDF XIX: Improvements to Kodungallur –Athani Airport Road (KM 0/000 to 16/900) Part I in Thrissur District.



estimated amount. Since only a single tender was received, the Government had rejected it and re-tendered.

49) When the Committee enquired whether any prevailing rules stipulated the awarding of works to establishments like KSCC even if it was a single tender. The Additional Secretary, Public Works Department informed that single bids below estimated rate were acceptable at that time. But the government level tender committee had rejected it. At present single tenders are not entertained. To further queries of the Committee, the Managing Director, Kerala State Construction Corporation Limited informed that the said work was completed by KSCC and works worth about ₹80 crore were in progress under KSCC.

### Conclusions/Recommendations

#### 50) No comments

#### **Irregularities in the award/entrustment of works**

##### **3.1.5.1 Entrustment of five works valued at ₹809.93 crore to accredited agency violating Government guidelines**

The Central Vigilance Commission (CVC) reiterates (July 2007) that tendering process or public auction is a basic requirement for the award of contract by any Government agency as any other method especially award of contract on nomination basis would amount to a breach of Article 14 of the Constitution of India. Further, as per the Kerala Financial Code while giving a work on contract the general principles governing invitation to tender are to be followed.

The Government (Finance) issued (July 2014, August 2015) guidelines<sup>27</sup> for selection of accredited agencies for execution of public works and enlisted M/s Uralungal Labour Contract Cooperative Society Limited (M/s ULCCS) as one of the accredited agencies.

<sup>27</sup> Para (4) of Annexure II of GO (P) No.311/14/Fin dated 30/07/2014 & Annexure to GO(P) No. 339/2015/Fin dated 07/08/2015.

Audit noticed that in violation of the CVC guidelines and the Government's Financial Code, the Department did not exercise due diligence in selection of the accredited agency through tendering and entrusted (20 February 2016) five works amounting to ₹809.93 crore to M/s ULCCS at estimate rate. Furthermore, as per the guidelines for selection of accredited agencies, the maximum value of a single work that could be entrusted to M/s ULCCS was ₹25 crore and the maximum quantity of work in hand at a time that could be held by the society was ₹250 crore, but it was noticed that even the smallest of the works entrusted was worth ₹51.42 crore and the maximum quantity of work in hand was ₹809.93 crore, thus violating the guidelines issued by the Government.

In the exit meeting, the Special Secretary to the Government in PWD stated that the entrustment was based on a Cabinet decision in which the guidelines of the Finance Department were not considered. Audit observed that the Committee on Public Accounts disapproved<sup>28</sup> the practice of nominating an agency to entrust a work. It further reiterated that the Department should resort to more transparent tendering procedure for awarding any work. Further, the Honourable Supreme Court of India emphasized<sup>29</sup> that the award of Government contract should be through public auction/public tender. This would ensure transparency, economy and efficiency in government procurement to promote healthy competition among the tenderers, to provide for fair and equitable treatment of all tenderers and to eliminate irregularities, interference and corrupt practices by the authorities concerned. As the Department did not adhere to the guidelines issued by the CVC, Government and the Supreme Court's directions on awarding the contract, an inquiry needs to be initiated by Government to fix responsibility.

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28 Committee on Public Accounts (2014-2016) - 113<sup>th</sup> Report presented to the State Legislature on 18 February 2016.

29 Judgement arising out of SLP (civil) No. 10174 of 2006.

**[Audit paragraph 3.1.5.1 contained in the Report of the C&AG of India for the year ended 31<sup>st</sup> March, 2017 (Economic Sector)]**

***[Notes received from the government on the above audit paragraph are included as Appendix-II]***

**Excerpts from the discussion of the Committee with officials concerned**

51) The Committee enquired whether the said works had been completed, the Chief Engineer (Roads), Public Works Department apprised that the said works were under the control of five different wings. The Status of completion of works in Malappuram district was not available while the remaining four works had been completed.

52) The Secretary, Public Works Department assured that the present status of the aforesaid works would be submitted before the Committee.

#### Conclusions/Recommendations

53) The Committee directs the Department to furnish the present status of all the five works mentioned in the audit paragraph(3.1.5.1) within two months of receipt of this report.

#### **3.1.5.2 Issues relating to Security Deposits for works**

In terms of Section 2009.7 of the Manual read with the Government's (Finance) orders<sup>30</sup> (September 2015), the selected bidder shall produce a Security Deposit (SD) equal to five per cent of the contract amount for executing contracts, which is to remain valid till the expiry of DLP of the work. Prior to this, the Government in a circular (March 2003)<sup>31</sup> permitted contractors to adjust the amounts due to them on account of completed works as SD of new contracts awarded to them. The various types of irregularities noticed regarding SD are discussed below:

30 GO(P) No.104/2014/Fin dated 14/03/2014, GO(P) No. 3/15/Fin dated 05/01/2015 and GO(P) No. 429/15/Fin dated 28/09/2015

31 Circular No.4583/H3/2003 dated 07/03/2003.

➤ **Pledging part bills of incomplete works**

The Department permitted contractors to pledge part bills of two incomplete works (Appendix III(6)) as SD for seven newly awarded works, of which the bill of an incomplete work was pledged as SD of six contracts of the same contractor. In respect of one out of the two incomplete works, CE, R&B replied that as per the recommendation of the EE, Roads Division, Ernakulam, second and part bill of a work amounting to ₹2.13 crore was pledged as the amount was sufficient for the security deposit of ₹1.29 crore. Reply of the CE is not acceptable as the circular permits only pledging of pending bills of completed works. In respect of second work, no reply was furnished.

➤ **Defect liability period not covered by security deposit**

The EE, Roads Division, Thrissur, arranged (May 2016) a work<sup>32</sup> for providing retro-reflective sign boards/object hazard marker for which DLP was 36 months, i.e. up to 28 May 2019. However, Audit noticed that the SD submitted by the contractor was valid up to 03 March 2017 only. SE, R&B, Central circle replied that instruction was given to the contractor to furnish the SD for 36 months.

Audit observed that the actions of the Department provided undue benefit to the contractors and violated Government directions.

**[Audit paragraph 3.1.5.2 contained in the Report of the C & AG of India for the year ended 31<sup>st</sup> March, 2017 (Economic Sector)]**

***[Notes received from the government on the above audit paragraph are included as Appendix-II]***

**Excerpts from the discussion of the Committee with officials concerned**

54) While considering the audit para, the Committee enquired about the reason for permitting the contractor to pledge the part bills of incomplete works as security deposit against the provisions of the PWD manual. The Additional Secretary,

<sup>32</sup> Providing road safety measures to various junctions in Thrissur-Kuttipuram road.

Public Works Department replied that the amount due to the contractor on account of completed works only had been permitted to adjust as SD of new Contract awarded to him.

55) To a further query of the Committee the Chief Engineer (Roads), Public Works Department informed that in the present case, part bills of partially completed works were pledged as security deposit.

### Conclusions/Recommendations

56) No comments

#### 3.1.5.3 Non-revoking of Bank Guarantee

Tender conditions stipulate that the contractor is to remit Bank guarantee (BG) at the rate of 10 per cent of the contract amount at the time of executing the contract, so as to ensure performance of the work during the period of contract.

Audit noticed that in two instances<sup>33</sup>, the agreement authority obtained BG amounting to ₹2.16 crore at the time of executing agreements. As the contractors did not complete the works in time, the SEs concerned extended the ToC but failed to ensure renewal of the BG for the extended periods. The SEs terminated the works at the risk and cost of the contractors as they did not complete the works within the extended ToC. The balance works were rearranged at higher rates. As the BG was not renewed, the Department lost the opportunity to recover the risk and cost from the original contractors to the extent of the BG.

In respect of one work, SE, R&B, North circle stated that BG was not renewed due to oversight.

In respect of the other work CE, R&B replied that BG expired on 30 June 2013, and the Department approached the Bank for withholding BG on 9 July 2014. He further stated that the Honourable High court passed a stay order (28 May 2015) against

<sup>33</sup> NABARD RIDF XV –Development and improvements to Peruva-Piravom-Peruvannamuzhy- Valampur-Valayamchirangara – Cheenikuzhi road Km. 0/000 to 30/030 including reconstruction of Vilappil Bridge (R&B Central Circle), Improvements to carriageway of Mudappallur- Mangalam dam road by providing BM & BC to Ch. 0/000 to 9/432 in Palakkad District (R&B North Circle).

realisation of the amount from the contractor. The reply is not acceptable as the Department failed to take action to ensure the validity during the extended period of contract and to realise BG in time.

In the exit meeting, the Department stated that there was a lacuna in the system and that the finance wing of the Department was to ensure validity of the BG for the required period.

**[Audit paragraph 3.1.5.3 contained in the Report of the C & AG of India for the year ended 31<sup>st</sup> March, 2017 (Economic Sector)]**

***[Notes received from the government on the above audit paragraph are included as Appendix-II]***

**Excerpts from the discussion of the Committee with officials concerned**

57) When the Committee wanted to know the details regarding the audit objection, the Additional Secretary, Public Works Department informed the Committee that the bank guarantee submitted by the contractor was not renewed in time. Later the work was terminated at the risk and cost of the contractor. As the bank guarantee was not renewed in time, the Department lost the opportunity to recover the loss from the contractor. Later the amount was realised by adjusting from the bill of another work of the same contractor. The Chief Engineer (Roads), Public Works Department informed that recovery had been effected.

58) The Committee opined that the reply given was not satisfactory and directed the Department to furnish a detailed reply regarding the said audit para at the earliest.

### **Conclusions/Recommendations**

**59) The Committee directs to furnish a detailed report regarding the action taken by the Department in all the cases mentioned in the audit para (3.1.5.3) within a month.**

## **Irregularities/deficiencies in execution of works**

### **3.1.6.1 Preparation of defective estimates leading to revision of estimates**

The Manual stipulates that proper care shall be bestowed on the preparation of a detailed estimate so that it reflects, as faithfully as possible, the cost of work as can be foreseen at that time.

Audit noticed that, estimates of 63 works were revised post award, citing changes in the quantity/scope of work as discussed in the following paragraphs.

#### **➤ Revision of estimates compromising on traffic safety and road safety**

In terms of the Manual, drainage is the most important aspect for proper upkeep of roads, as it strengthens the pavements and increases their life by reducing the moisture present in and below the pavement. Further, all road works must be properly provided with signs to warn road users about possible hazards.

It was noticed that initially, there were provisions for road safety and traffic safety items in the original estimate of the works, but during execution, the Department reduced the provisions for crash barriers, delineators, sign boards culverts, retaining wall etc. which compromised traffic safety/road safety in the revised estimate of 10 works (Appendix III(7)).

CE, R&B attributed different reasons for different works such as lack of proper original estimation leading to exclusion of certain items on execution, executing the work within the contract amount, limiting the expenditure within sanctioned cost etc.

The reply is not acceptable as compromising traffic safety and road safety would adversely affect the road users.

#### **➤ Erroneous calculation of rate of extra item**

In one work<sup>34</sup> involving construction of cast in-situ cement concrete drains under NH, North Circle, Kozhikode, the contractor quoted the rate for cement concrete and reinforcement separately. The rate quoted for reinforcement was ₹50,000 per MT.

<sup>34</sup> CRF-15-16 Improvement to Chelarimukku – Kolacherimukku - Nayattupara road in Kannur district ch 0/000 to 18/500 km.

Later, on the plea of avoiding difficulties to public during construction and for enabling speedy completion, the Department substituted the item of cast-in-situ cement concrete drain with pre-cast drain for 629.38 cum, as an extra item. The item was approved for execution at estimate rates of ₹17,967 per cum at a total cost of ₹1.13 crore, reckoning the cost of reinforcement as ₹60,004 per MT.

In addition to the above, the Department also made provisions in excess of those specified in the MoRTH SDB for cement concrete, which consisted of cement, labour and use of machinery.

On this being pointed out (August 2017), the SE cancelled (August 2017) the supplemental agreement executed for the extra item and stated that the defects would be rectified and new supplemental agreement executed.

In the exit meeting EE, NH division, Kannur stated that the rate was reduced and that finalisation of the rate by higher authorities was under process.

➤ **Change in items of work causing additional financial burden to Government**

Audit detected instances wherein the items of work already included in the tender were altered/substituted/excluded during execution, leading to additional financial burden to the Government, as discussed below:

In terms of MoRTH data, constructing the superstructure of a bridge on the piers at site is cheaper than casting the same on land and then launching it on the piers. The agreement of a bridge work<sup>35</sup> stipulated launching of the superstructure after it was cast on land. But during execution, the work was changed to casting of superstructure on the piers at site. Audit observed that even though the change in method should have reduced the cost, the cost of work actually increased by ₹85.35 lakh. This was due to adoption of a method different from MoRTH data for arriving at the unit rate for construction of superstructure, such as incorporation of hire charges of pontoon, excess provision for incidental items, etc.

CE, R&B replied that due to the narrow width of the approach road and a lot of

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35 Construction of Nanicherikadavu Bridge across Valapatanam River.



sharp curves and bends, it was difficult to pre-cast and launch girder and slab. Also land for casting was not available. Hence, it was approved to carry out cast in-situ girder using N-truss. The data was based on observed data, which was on the lower side.

Audit observed that the following factors led to cost escalation on the extra item:

- While the Department adopted OH charges of 20 per cent prescribed in MoRTH SDB for rate analysis of the extra item, they did not adopt the MoRTH data as such to arrive at the rate.
- They did not even adopt observed data used in other bridge works. Instead, usage of N-truss was limited to four, whereas in other works, the maximum usage was up to 18 times.

Considering the Department's observed data in other bridge works, the maximum rate for construction of superstructure was ₹26,071 per cum whereas the Department considered ₹44,454 per cum for cost of the entire superstructure disregarding the already agreed lower rate of cross girder which is part of the superstructure. Hence, the reply of CE is not acceptable and the action of CE to grant a higher rate compared to other works led to avoidable cost overrun of ₹ 4.07 crore<sup>36</sup>.

➤ **Sanctioning of ancillary works as extra items**

In terms of MoRTH specification, the rate for construction of pile is inclusive of the cost for conducting pile load test. SE, R&B, Central Circle Aluva awarded a work<sup>37</sup> to a contractor for driving down test pile and conducting pile load test. Audit observed that after executing the agreement, the CE, R&B accorded separate sanction (April 2016) for conducting pile load test as an extra item costing ₹ nine lakh. The action of the CE, R&B was tantamount to extension of undue benefit to the contractor, vitiating the tender system.

SE, R & B, Central Circle stated that there was lump sum provision for conducting

<sup>36</sup> ₹44,454 per cum less ₹26,071 per cum multiplied by the quantity of 2,212 cum equals to ₹4,06,63,196.

<sup>37</sup> Construction of Perandoor - Vaduthala bridge across Perandoor Canal in Ernakulam district- Driving down test pile and conducting pile load test.

pile load tests in the technical sanction but was not included in the tender. He stated that approved schedule had provision for casting of pile alone and hence revised estimate was submitted and sanctioned.

The reply is not acceptable as the nomenclature of the work itself specifies conducting of pile load tests. Hence, its inclusion as an extra item without mentioning in the tender is an undue favour to the contractor, as he is required to do the same without extra payment.

➤ **Irregular provision of incidental items of work**

As per contract conditions, the rates quoted by the contractor shall be inclusive of incidental items of work such as shoring, formation of ring bund, bailing out of water etc. Further, the contractor shall make all arrangements for inspection of works, free of charge.

Audit observed that, while revising the estimate of two works<sup>38</sup>, the Department made separate provisions for incidental items such as cost of footbridge for supervision in one work and cost of bailing out of water and formation of ring bund in the other work at a total cost of ₹35.28 lakh, which was a violation of the contract conditions.

In respect of Ayamkadavu Bridge CE, R&B replied that as the height of the bridge from the river to the bottom of the girder was between 20 and 24 m, it was necessary to provide the supervising officers with a strong and safe foot bridge to inspect the work. The cost of the foot bridge is more than the incidental charges included in the rate of concrete. Hence, additional provision was given for supervision and inspection of piers and superstructure in the estimate. The reply is not acceptable as the contractor had to provide the facilities for supervision of site for his own technical staff at his own cost, and provision of the extra item for supervision at Departmental cost is an undue benefit to the contractor.

38 MLA – LAC- ADF – widening and improvements to Mannirampady –Thekkepuram road Ch.0/000 to 1/180 (Agreement No. 125/SESC/13-14 dated 30/10/2013) and Construction of bridge at Ayamkadavu across Vavadukkam River on Perladukkam-Ayampara-Periya road.

➤ **Excess quantity of road studs provided on a road**

As per Indian Road Congress (IRC) guidelines 35-2015, the minimum space to be provided between two road studs is six meters. Audit noticed that during execution of a work<sup>39</sup>, road studs were placed at intervals of two to three meters instead of six meters. Excess execution of studs in violation of the IRC specification resulted in extra cost of ₹43.96 lakh.

Audit noticed that there was a complaint from public regarding excess number of studs creating a dazzling effect at night which could adversely affect traffic safety.

In the exit meeting CE, NH stated that while doing the next reach of the road the IRC specification would be adopted.

**[Audit paragraph 3.1.6.1 contained in the Report of C & AG of India for the year ended 31<sup>st</sup> March, 2017 (Economic Sector)]**

***[Notes received from the government of the above audit paragraph are included as Appendix-II]***

**Excerpts from the discussion of the Committee with officials concerned**

60) The Committee enquired the reason for the revision of estimate by reducing the provision of the traffic safety and also enquired whether the erroneous calculation of the rate of extra items had been rectified. The Chief Engineer(NH), Public Works Department replied in the positive and added that the errors had been rectified by executing a new agreement with a revised rate, after cancelling the first agreement.

61) When the Committee enquired whether the original estimate was being revised after reducing traffic safety provision, the Additional Secretary, Public Works Department responded that previously works had been carried out by excluding traffic safety provision. However, a circular had recently been issued to ensure the provisions for road safety.

<sup>39</sup> Widening of 6/4 lane from Karamana ch 570/200 to Kaliyikkavila 599/000 of NH 47.

62) The Committee further enquired whether there was any difference in the amount according to the revision of estimate, the Additional Secretary, PWD replied in the negative and added that road safety items were excluded as the number of works had increased.

63) When the Committee enquired about the reason for sanctioning the rate of ₹44,454/m<sup>3</sup> for the construction of superstructure even though the department's observed data for the same in other road work was ₹26,071/m<sup>3</sup>, the Chief Engineer(Bridges), Public Works Department informed that the estimate of the Nanicheri kadavu Bridge work stipulated the launching of the super structure after it was cast on land, but during execution due to the narrow width of the approach road and insufficient space for casting yard, it was decided to cast the superstructures on the piers at site, which resulted in cost escalation.

64) The Senior Audit Officer detailed about the reason for causing additional financial burden to the Government. He explained that the maximum MoRTH rate for such works was usually ₹20000/m<sup>3</sup> and in certain bridge works, the maximum rate was sanctioned up to ₹26,071/m<sup>3</sup> whereas in the present work, the rate sanctioned was ₹44,454/m<sup>3</sup>. He added that according to CPWD data, the N-truss can be used upto 40 times and the same had been used upto 18 times for other works of the department. He further added that the non-concrete ancillary items were also quoted and those were the reasons for payment of a huge amount for this work.

65) The Senior Audit Officer informed that N-truss was made up of steel core and it was assumed that it would be destroyed after using for 4 times, even though that could be used up to 40 times. The Chief Engineer (Bridges), Public Works Department replied that since the site was located near the coastal area,

repeated usage of N-truss would reduce the load capacity.

66) The Senior Audit Officer informed that a welded structure made of iron would rust if it was near the sea and was not a valid reason for using the N-truss only 4 times. The rate determined by the Department was not acceptable as it could be used at least 20 times instead of 4.

67) The Committee opined that the Department should be more cautious in dealing with such matters.

68) The Committee noticed that even though the rate of construction of pile was inclusive of the cost for conducting pile load test, the Government had sanctioned an amount of ₹9 lakh by considering it as an extra item to the contractor for conducting pile load test. When the Committee enquired about the reason for sanctioning extra payment, the Chief Engineer (Buildings), Public Works Department, replied that the same kind of case had already been discussed.

69) The Senior Audit Officer informed that as per quotations pile boring is followed by load test. Therefore, the amount could not be granted for load test but an amount of ₹9 lakh had been paid in excess in that case. The Committee directed that guidelines should be strictly followed while allowing extra items.

70) The Committee wanted to know the reason for entrusting the construction work of Ayamkadavu bridge to a contractor without finalizing its design. The Chief Engineer (Bridges), Public Works Department replied that, as the bridge was located at the low-lying land of two hills, it was initially estimated to be built at a height of 5 meters. Later during inspection, a risk factor was identified on constructing the bridge from the bottom of the girder. So it was decided to build the bridge at a height of 24m and the design was changed accordingly, which resulted in the payment of an extra amount.

71) The Committee noticed that fixing road studs in violation of IRS guidelines caused an excess payment of ₹43.96 lakh and enquired about the reason for the violation. The Chief Engineer (NH), Public Works Department replied that during the execution of the work the road studs were placed at intervals of two to three meters eventhough it was instructed to place the studs at a distance of 6 meters. He admitted the mistake and added that in the second reach, the studs were placed at exact intervals.

### Conclusions/Recommendations

#### 72) No Comments

#### 3.1.6.2 Undue benefit extended to contractors

##### ➤ Excess provision made for pontoon which is an incidental item for bridge works

According to general practice, for construction of bored cast in-situ pile foundation of bridges, where formation of islands using earth is found to be uneconomic or technically unfeasible, pontoons can be provided. Audit observed that while the practice of allowing either island or pontoon is followed correctly in R&B Central Circle, it was not followed in R&B North Circle.

In the construction of a bridge work<sup>40</sup> under Roads Division, Kannur the original provision was to construct islands at a cost of ₹45.23 lakh and connecting service roads between islands at a cost of ₹10.47 lakh. But the Department substituted the item of service road with pontoon at a cost of ₹49.98 lakh citing that filling up of the river for forming a service road was not practicable. The Department's statement was not acceptable as usage of island made of earth, as per original provision, was economically more viable than pontoon. Hence, use of pontoon in place of connecting service road at such higher cost is not acceptable.

In the exit meeting Departmental officials from the Central region viz SE, R&B

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<sup>40</sup> Construction of Kottakeel Pattuvam Kadavu Bridge in Kannur District.

Central circle, Aluva and EE, Roads Division, Ernakulam stated that if formation of island was possible, pontoon was not necessary and vice versa. CE, NH opined that all divisions should take a uniform stand in this regard to reduce expenditure.

➤ **Insufficient provision for defect liability period in contracts**

The Government issued an order (April 2013) making the specifications of MoRTH mandatory for Roads and Bridges works in the State from October 2013. So in all roads and bridges works undertaken in the State, the DLP of the contractor is to be specified in the agreement according to MoRTH specifications. The DLP is defined by MoRTH as: “Three years as per specifications of MoRTH in respect of road works executed on NHs using Central Road Fund, if they are provided with bituminous thickness of 40 millimetres (mm) or more”.

The Security Deposit is to be retained till the date of expiry of DLP.

Audit noticed that the Department did not provide sufficient DLP in agreements executed for eight road works<sup>41</sup>. It was observed that in one of these eight works on an NH, the contractor had to execute two layers of bitumen viz, bituminous macadam and bituminous concrete, which had a minimum thickness of 80 mm as per the contract. In accordance with the extant orders of Government on adoption of specifications of MoRTH, the required DLP in this case was three years but the Department provided DLP of only one year.

CE, NH replied that in respect of the aforementioned NH work, DLP for one year was provided as mentioned in the technical note of the work and as per MoRTH circular in April 2012. In respect of the other seven works, CE, R&B accepted the observation and stated that it was a mistake while executing the agreement.

The fact, however, remains that the Government issued the order in April 2013 stating that MoRTH specifications were to be adopted henceforth, but the Department

41 IRQP 2013-14 from km. 569/000 to 593/500 of NH 47 in the State of Kerala, Agreement Nos. EE/PL/56/2015-16 dated 04/03/2016, EE/PL/55/2015-16 dated 04/03/2016, EE/PL/52/16-17 dated 16/06/2016, EE/PL/51/16-17 dated 16/06/2016, EE/PL/43/16-17 dated 14/06/2016 EE/PL/44/16-17 dated 14/06/2016 and No.EE/PL/66 /16-17 dated 30/09/2016.

did not follow the specifications and allowed the contractor to avail DLP of only one year. Audit observed that the omission resulted in undue benefit to the contractors by exempting them from the liability of maintaining the road for the required period.

➤ **Granting of exemption from payment of royalty and resultant undue benefit to contractor**

In terms of Schedule-I of the Kerala Minor Minerals Concession Rules, 2015 (KMMC Rules), royalty of ₹40 per cum is payable for quarrying ordinary earth. According to contract conditions all taxes are to be borne by the Contractor.

The Government entrusted a work<sup>42</sup> to M/s ULCCS, and exempted<sup>43</sup> (March 2016) them from paying royalty for the earth supplied by them. Audit noticed that the unit rate for filling earth was inclusive of cost of royalty at the rate of ₹45.27 per cum<sup>44</sup>. Hence, the exemption granted by the Government resulted in undue benefit of ₹1.73 crore<sup>45</sup> to the contractor.

In the exit meeting CE, NH confirmed that provision of royalty as per DSR with cost index was included in the rate analysis. Hence, the contractor got the compensation for royalty and exemption from payment of royalty to the Government, which resulted in extending double benefit to the contractor.

➤ **Removal of earth to contractor's premises without paying royalty**

In terms of rule 106 of the KMMC Rules, 2015, royalty is payable on minor minerals removed from work sites.

Audit noticed that in a road work<sup>46</sup> 44,965.67 cum of earth was removed from work site to the contractor's premises on the plea that the earth was not suitable for

42 Construction of Calicut Bypass – II Phase – II Reach- from 0/000 to 5/000 of NH 17.

43 Government issued an order dated 01/03/2016 vide. GO (MS) No. 43/2016/IND, wherein exemption of royalty was accorded to ULCCS.

44 Royalty @ ₹30 per cum plus cost index of 27 per cent on royalty amounting to ₹8.10 per cum plus overhead charges of eight per cent amounting to ₹3.05 plus tax and other overhead charges amounting to ₹4.12 totalling ₹45.27 per cum.

45 Royalty at the rate of ₹40 per cum for a quantity of 4,32,400 cum. equals to ₹1,72,96,000.

46 Widening of 6/4 lane from karamana ch 570/200 to Kaliyikkavila 599/000 of NH 47



use in the work. Audit noticed that the Department did not collect royalty amounting to ₹17.99 lakh from the contractor before it was removed. After this was pointed out, the EE replied that the amount would be deducted from the final bill of the contractor.

➤ **Benefit extended to contractor in excess of the work executed**

The specification given by the Department for installing W/Thrie -metal beam crash barriers in two works<sup>47</sup> stipulated that metal beams were to be fixed to vertical posts anchored in soil using cement concrete<sup>48</sup> at intervals of two meters, centre to centre.

The unit rate for installing the crash barriers, including cement concrete, was calculated in rate analysis for a length of 4.5 m and each unit consisted of three vertical posts. JPV revealed that vertical posts of crash barriers were being provided at two meter intervals over a continuous length, without break. Hence, while a crash barrier for a continuous length of 18 m consisted of 12 vertical posts as per the unit rate reckoned by the Department, actual requirement was only 10. The excess provision of vertical posts is illustrated in the diagrams shown below. Thus, for every 18 m length, the contractor stood to receive payment for cement concrete for 12 posts even though only 10 posts were actually anchored by him. This resulted in undue benefit of ₹92.01 lakh<sup>49</sup> to the contractor.

47 CRF work 2013-14 improvements to Danapady – Karthikapally – Muthukulam- Pullukulangara – Kayamkulam NH to NH, Providing traffic safety measures between Km. 67/000 to 97/070 of CVG road.

48 As per clause 811.3 of MoRTH specification for road and bridge works, fifth revision issued in April 2013 vertical posts can be fixed in cement concrete.

49 Requirement of cement concrete for excess number of vertical posts alone was considered.

Diagram showing excess provision of vertical posts  
Figure A: Length of 4.5 m crash barrier (as per rate analysis)

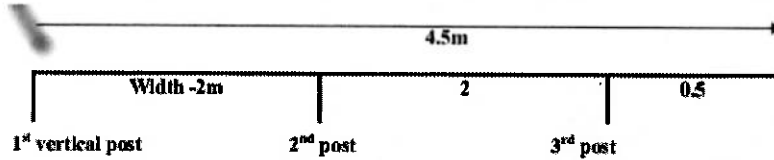


Figure B: Requirement of vertical posts for 18 m long crash barrier as per rate analysis

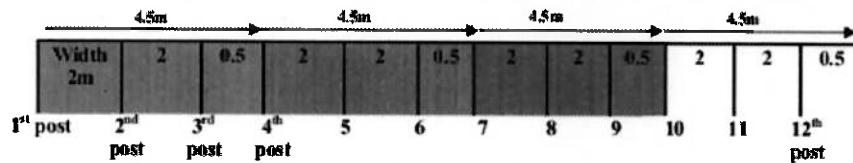
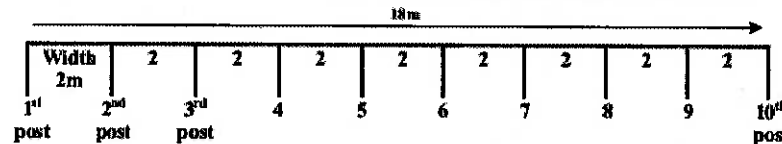


Figure C: Requirement of vertical posts for 18 m long crash barrier on actual execution



➤ **Understating of out-turn resulting in excess payment**

According to SDB of MoRTH, out-turn of boring for 1.2 m diameter pile foundation is nine metres per day and for a one metre diameter pile, the out-turn is 10 m per day.

Audit noticed that in a bridge work<sup>50</sup> in Ernakulam district, the out-turn reckoned in the estimate for providing bored cast in-situ pile for foundation was only 1.4 m per day for 1.2 m diameter pile and 2.5 m per day for one meter diameter pile. Verification of measurement books and log book of boring revealed that the progress of boring on actual execution was even higher than the MoRTH data. Since MoRTH data was not adopted, lower out-turn reckoned in rate analysis led to an avoidable excess cost of ₹1.73 crore.

CE, R&B replied that they adopted data based on the rates arrived for similar other works where the soil strata is similar. Further, MoRTH SDB was adopted after issuing technical sanction of this work. It was also stated that the boring operations were carried out continuously on a 24 hour schedule without any interruption and were not deviated from the out-turn provided in the rate analysis.

<sup>50</sup> Construction of Kannangattu – Willington Island Bridge across Kumbalam Kayal.

The reply is not acceptable as MoRTH SDB was already adopted for other items in this work also. Further, pile driving register revealed an out-turn of 39.30 m in one day in respect of one meter diameter pile instead of 7.5 m<sup>51</sup> per day. As per the measurement book, 1.2 m diameter pile having a length of 74 m was measured within eight days from the date of commencement of work whereas the out-turn adopted by the Department was 4.2 m<sup>52</sup> per day.

This revealed a much higher out-turn for boring of pile than adopted by the Department for estimation.

Thus, adoption of different method deviating from MoRTH SDB resulted in undue benefit to the contractor.

➤ **Favouritism shown by departmental officials to a contractor violating contract condition**

As per contract conditions, arrangement of extra items<sup>53</sup> in an ongoing work requires inviting of quotations from the contractor who executes the work concerned. While inviting quotations, the rates calculated by the Department for the items of work being confidential are not to be disclosed to the contractor.

The SE, NH North Circle, Kozhikode arranged a work<sup>54</sup> in February 2016. The rates quoted (26 May 2016) by the contractor<sup>55</sup> for 16 extra items in this work were found to be higher than those calculated by the Department. The SE requested (26 May 2016) the contractor for reduction of rates and he obliged (27 May 2016). The original as well as reduced rates were recorded<sup>56</sup> in the Distribution Register (Inward Register) maintained in the office of the SE. The Department subsequently detected some errors in the calculation of departmental rates for extra items, which resulted in upward revision of

51 Considering three shifts per day i.e 2.5m per shift multiplied by three shifts equals to 7.5cm per day

52 Considering three shifts per day i.e.1.4 m per shift multiplied by three shifts equals to 4.2 m per day

53 Items of work, which were not included in the original agreement.

54 Road safety estimate – Providing traffic safety measures between km 15/000 to 57/000 of Calicut – Kollagal road in NH 766 (old NH 212) in the state of Kerala (Agreement No. 22/2015- 16/SE/NH/KKD dated 29/02/2016).

55 M/s K Ravindran, Kozhikode

56 As serial numbers 922 dated 26/05/2016 and 923 dated 27/05/2016 respectively.

the rates.

Scrutiny of the relevant records by Audit revealed that the contractor submitted another set of identical quotation documents after the corrected upward calculation by the Department, which was inserted in the file record with the same inward numbers as of the previous quotation. The first negotiated quote of the contractor conformed to the pre-corrected rates of the Department while the second quote conformed to the revised rates. Accordingly, supplemental agreement was executed (September 2016) by the contractor based on the revised rates.

The additional financial commitment by reckoning the second set of documents containing the revised rates came to ₹16.05 lakh, of which ₹0.65 lakh was already paid (March 2017) to the contractor.

On this being pointed out, the SE stated that (August 2017) he directed the contractor to reduce the rates in the supplemental agreement on the basis of the audit observations, and that the contractor expressed willingness to execute extra item No.11 on the earlier offered rate (₹1,435.40 per cum) instead of the rate agreed later (₹2,747 per cum), which would result in reduction in the value of the extra items by ₹13.44 lakh and also execute a new supplemental agreement accordingly.

It is, therefore, evident that the records were manipulated by substituting the quotation originally submitted by the contractor with another set matching the upward revised rates of the Department and assigning the same inward numbers, resulting in extending undue benefit to the Contractor.

**[ Audit paragraph 3.1.6.2 contained in the Report of the C&AG of India for the year ended 31<sup>st</sup> March, 2017 (Economic Sector)]**

***[Notes received from the government on the above audit paragraph are included as Appendix-II]***

**Excerpts from the discussion of the Committee with officials concerned**

73) The Committee accepted the reply furnished by the Department in

connection with the audit observation "Excess provision made for pontoon which is an incidental item for brigde"

74) While considering the audit observation on "Insufficient provision for defect liability period in contract," the Committee enquired the reason for providing DLP of only one year, even though the Government order in 2013 specified a Defect Liability Period of 3 years. The Chief Engineer (NH), Public Works Department replied that it was done as per the technical note and it was actually due to an error occurred in the technical note issued by MoRTH.

75) While considering the audit para regarding the granting of exemption from payment of royalty and resultant undue benefit to the contractor the Committee enquired whether the contractor was granted compensation for royalty as well as exemption from the payment of royalty. The Chief Engineer (N.H.), Public Works Department answered that while calculating the rate, royalty was not included in it. He further added that the rate was calculated by adding the cost of earth including conveyance and cost index. Actually there was no provision for adding such items and it was not included under Royalty Head, he added.

76) In addition to that he informed the Committee that even though ₹30/- was recorded as Royalty of earth, they considered it as the cost of earth. Since earth has no other cost item, it was taken as a cost, not as a royalty. The Committee enquired why royalty was not deducted for the unused quantity of excavated earth. The Senior Audit Officer informed that the Government in its reply stated that the excavated earth was not taken to the contractor's premises, but the contractor agreed that he had taken it to his site. To a query of the committee regarding that, the Chief Engineer (NH), Public Works Department informed that the details would be submitted after examining it. He also added that the report submitted to him

stated that only 1663 m<sup>3</sup> of soil could be used in the work.

77) While considering the audit para, regarding the benefit extended to contractor in excess of the work executed, the Committee enquired about the reason for the payment made to the contractor without conducting the actual measurement and enquired whether any site inspections had been conducted in order to identify similar instances in other works. The Chief Engineer (NH), Public Works Department replied that the audit references was about the lapses in connection with two works of which the work of NH had been corrected. Then the Additional Secretary, Public Works Department further informed that the work of Calicut-Vythiri-Gudalur road was under vigilance investigation.

78) Regarding the understating of out-turn resulting in excess payment the Secretary, Public Works Department informed that a detailed report regarding the audit paragraph would be submitted within two weeks.

79) The Committee enquired whether the Government had conducted any inspection of files relating to works to detect the possible manipulation of records by Department officials to favour contractors. The Chief Engineer (NH), Public Works Department informed that the audit's concern was that the first quotation submitted first by the contractor had been replaced by a second one after the rates had been revised. He further added that a supplemental agreement was executed in accordance with the contractor's willingness to complete the work at rate initially quoted by him.

80) The Senior Audit Officer further pointed out that the action taken against the manipulation of records, if any, had not been informed by the Department.

81) The Committee directed the Department not to repeat such flaws in future.

### Conclusions/Recommendation

82) While considering the audit paragraph "Removal of earth to Contractor's premises without paying royalty," the Committee noticed discrepancy between the Government reply and the statement made by the officials of the Accountant General before the Committee. The Government reply stated that a quantity of 163.3 m<sup>3</sup> of earth was utilized for the work under execution and earth was not removed from the work site to the contractor's premise. But the officials from Accountant General's Office revealed that the contractor had agreed that the excavated earth was taken to his premises. Hence, the Committee directs that a detailed report should be furnished after examining all the relevant details regarding the audit para within a month.

83) The Committee directs the Department to furnish the details regarding the vigilance enquiry in respect of the work related to Calicut- Vythiri-Gudalur road.

84) The Committee directs the Department to submit a detailed report within two weeks regarding the "understating of out-turn resulting in excess payment" and to take corrective measures to prevent such errors in the future

#### 3.1.6.3 Lapses in monitoring and supervision of works

In terms of the Manual, the Assistant Engineer (AE) shall be responsible for proper execution of all works in his Section in general and for ensuring the execution of works as per approved plans, in particular.

Audit noticed that in the following instances, the field officers failed to ensure that the contractors complied with the agreed specifications/plans during execution of works:

#### ➤ **Non-use of specified material in road works**

Bituminous emulsion based construction is very efficient in avoiding the wearing of ingredients of the mix. The items of work for providing prime coat and tack coat<sup>57</sup> for

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<sup>57</sup> Prime coat and tack coat are thin bituminous liquid layer to provide bonding between existing pavement and new layer pavement.

road works stipulates use of bitumen emulsion.

It was observed that in six works<sup>58</sup> arranged by the EE, Roads Division, Palakkad, against the agreed specification of bitumen emulsion for executing prime coat and tack coat, the contractor used ordinary bitumen (VG 30). The field officers did not ensure compliance with the agreed specification, which could affect the durability of the road adversely.

In the exit meeting, the concerned EE stated that VG 30 was used in lieu of bitumen emulsion due to non-availability of the material at departmental stores.

Thus, non-usage of the approved material poses risk of damage to the life of roads.

➤ **Inferior quality of work due to non-adherence to agreed specifications**

As per the Manual, every work has to be properly supervised to ensure that it is carried out in accordance with the required specifications.



In four completed works having provision for W/Thrie- beam metal crash barriers, adequate quantity of cement concrete was not provided for fixing the vertical posts as required by the specifications as detailed in Table 3.1.2 which was confirmed after excavation around the vertical posts in the presence of Departmental officers. This indicated failure in supervision by

Departmental authorities.

Table 3.1.2 : Quantity of cement concrete not provided as per specification

Sl No.	Name of work in which JPV conducted	Size of cement concrete foundation of vertical post of W/ Thrie metal beam crash barrier (length x breadth x depth) in cm	
		Required	Observed during JPV
1	CRF 2013-14 improvements of Daanapady Karthikappally-Muthukulam-Pullukulangara-Kayamkulam (NH to NH) road.	45 x45 x 120 (with a volume of 0.243 cum)	Excavation conducted at two locations -At one location of vertical post the top layer of cement concrete foundation was of oval shape with a depth of up to 58 cm and volume of 0.148 cum and in the second post cement concrete was provided up to 60 cm with a

58 Agreement Nos.: EE/PL/29/16-17 dated 03/06/2016, EE/PL/28/16-17 dated 03/06/2016, EE/PL/15/16-17 dated 29/04/2016, EE/PL/16/16-17 dated 29/04/2016, EE/PL/52/16-17 dated 16/06/2016 and EE/PL/51/16-17 dated 16/06/2016.



			volume of 0.140 cum.
2	Providing traffic safety measures between km 67/000 to 97/070 of CVG road	60 x 60 x 120	Excavation conducted at two locations. At both the locations top dimension was the same as that of specification and at a depth of 38 cm, the perimeter was 212 cm and 211 cm instead of 240 cm.
3	CRF 2014-15 Improvements to Koothattukulam - Mulanthuruthy road (Koothattukulam-Edayar Piravam -Vettikkale Mulanthuruthy).	45 x45 x 125	Excavation conducted around three vertical posts. At one post though the top dimension was 45x 52 cement concrete was not found after a depth of 50cm. In second and third locations, though top dimension was 45x45, cement concrete was not found after a depth of 30 cm
4	Improvements to 12 roads leading to games village and karyavattam stadium	45 x45 x 120	Excavation conducted at two locations. At first location, the top dimension was of irregular shape with average dimension of 55 x 25 cm but cement concrete was not found after a depth of 43 cm. In the second location, excavation was done up to a depth of 60 cm, it was found that top perimeter was 170 cm, middle having 168 cm and bottom 135 cm.

Source: Joint Physical Verification Reports and Departmental records.

- In another work<sup>59</sup>, the samples analysed by the quality control wing of the Department on a JPV of the site showed the content of bitumen in the bituminous layers to be less than the agreed specifications.

In the exit meeting, CE, NH while agreeing to lack of supervision by the field officers stated that recovery from those responsible would be effected.

### 3.1.7 Conclusion

- Planning and estimation were done without conducting proper investigation and ensuring availability of fund and land.
- Specification of work items in the estimates were not in accordance with those prescribed in SDB/ specifications of MoRTH.
- The tendering process followed by the Department contained irregularities such as inadequate provision for time of completion of works, violation of financial powers delegated and delay in awarding of works.
- Works were awarded violating the guidelines issued by the Finance Department and also violating the Constitutional provisions.

<sup>59</sup> Improvement to Edappally-Muvattupuzha road from km-8/000 to 11/020(Kuzhivelipady to Pukkattupady)

- Preparation of defective estimates without proper analysis of the requirements led to unnecessary revision of estimates resulting in extension of undue benefit to contractors and consequent additional financial burden to the Government.

The matter was referred (January 2018) to Government and their reply is awaited (March 2018)

**[Audit paragraphs 3.1.6.3 and 3.1.7 contained in the Report of the C & AG of India for the year ended 31<sup>st</sup> March, 2017 (Economic Sector)]**

***[Notes received from the government on the above audit paragraphs are included as Appendix-II]***

**Excerpts from the discussion of the Committee with officials concerned**

85) When the Committee enquired whether the supply of bitumen emulsion for the use of road works had been ensured in the departmental stores, the Additional Secretary, Public Works Department replied that currently bitumen emulsion was not provided as a departmental material.

86) The Committee enquired the reason for not ensuring adequate supervision during the execution of works to assure the quality, the Chief Engineer(NH), PWD replied that the issues related to two works of NH had been rectified by reconcreting.

87) The Committee emphasized that proper site inspection was necessary for ensuring the quality of work and the lack of inspection would lead to many issues. The Committee opined that the Secretary, Public Works Department should pay particular attention to the matter.

#### **Conclusions/Recommendations**

**88) The Committee emphasizes that proper site inspection is necessary for ensuring the quality of work, and laxity on the matter could lead to multiple**

issues with regard to works. Therefore, the Committee urges the Public Works Department to pay particular attention to work/site supervision to ensure quality of work.

Thiruvananthapuram  
12<sup>th</sup> March, 2025.

SUNNY JOSEPH,  
Chairperson,  
Committee on Public Accounts

## APPENDIX I

Sl No.	Paragraph No	Department Concerned	Conclusion/Recommendation
(1)	(2)	(3)	(4)
1.	7	Public Works	The Committee observes that many of the works mentioned in Appendix III(1) have not been completed due to defective design, land disputes and delay in acquisition of land, and an amount of ₹33.34 crore from the State Exchequer has been spent unfruitfully in this regard. Therefore, the Committee directs that the Departments concerned should ensure the availability of land before finalising the design and estimate for the work. The Committee also urges the Department to take effective measures to avoid undue delay in land acquisition procedures and to complete the works without further delay. The progress made in this regard shall be furnished to the Committee within two months.
2.	22	Public Works	The Committee directs the Department to submit a detailed report on the objections raised by Audit regarding the "Exhibition of higher rate in the tender than the actual rate calculated."
3.	23	Public Works	The Committee directs the Department to take urgent measures to recover the excess amount

			paid, which was highlighted in the audit paragraphs related to "Arithmetical error in calculating unit rates" and "Excess provision of cement concrete in rate analysis" and furnish a report thereon to the Committee urgently.
4.	24	Public Works	The Committee directs the Department to furnish the details regarding the recovery of ₹33.20 lakh paid in excess to the contractor in respect of the three bridge works.
5.	25	Public Works	The Committee shall be furnished with a detailed report regarding the action taken on the objection pointed out by Audit on "Excess labour resulted in inflated rates."
6.	26	Public Works	The Committee expresses its displeasure over the irresponsible attitude of the officials and directs that utmost care should be taken while preparing estimates and proper supervision must be ensured by the engineering wing during the execution of works.
7.	31	Public Works	The Committee directs the Department to furnish the details of the excess amount recovered by the Department in respect of the objection pointed out by Audit on the "calculation of unit rate of items of work deviating from MoRTH data".
8.	32	Public Works	The Committee has taken note of an excess payment of ₹16.50 lakh made as OH charges

			<p>during the construction of the Valiazheekal bridge, which remains to be recovered. Therefore, the Committee urges the Department to take stringent action against those responsible for the loss incurred and also against those who failed to implement adequate measures to recover the dues without delay. The Committee also directs the Department to furnish a comprehensive report after recovering the excess amount paid to the contractor in respect of overhead charges within a period of one month.</p>
9.	41	Public Works	<p>The Committee notes that in the three road works mentioned in the Audit para, instead of adopting mechanical means for earth excavation, manual means were adopted and the unit rate of excavation in manual method of excavation was almost 4 times costlier than the mechanical means. The Committee also learns that estimation using incorrect method of excavation led to an excess payment of ₹2.20 crore to the contractors. In light of this, the Committee directs the Department to take necessary action against the officials responsible for the lapse. Furthermore, the Committee urges the Department to take stringent action against the officials who were</p>

			responsible for the inordinate delay in taking adequate and timely action against the delinquents.
10.	42	Public Works	The Committee notes with concern that numerous irregularities/deficiencies have occurred on the part of the Department during the execution of works. Therefore, the Committee directs the Department to be highly cautious during planning and execution of works in the future. The Committee also urges the Department to stick to the guidelines while allowing ancillary works as extra items.
11.	47	Public Works	The Committee observes that irregularities in the tender conditions such as the inadequate provision for time of completion of the work and certain flaws like delay in awarding the work often lead to time and cost overrun in many works. Hence, the Committee suggests that the Department should exercise more caution while performing its duties in connection with the whole tendering process to avoid such lapses in future.
12.	53	Public Works	The Committee directs the Department to furnish the present status of all the five works mentioned in the audit paragraph(3.1.5.1) within two months of receipt of this report.
13.	59	Public Works	The Committee directs to furnish a detailed report regarding the action taken by the

			Department in all the cases mentioned in the audit para (3.1.5.3) within a month.
14.	82	Public Works	While considering the audit paragraph "Removal of earth to Contractor's premises without paying royalty," the Committee noticed discrepancy between the Government reply and the statement made by the officials of the Accountant General before the Committee. The Government reply stated that a quantity of 163.3 m <sup>3</sup> of earth was utilized for the work under execution and earth was not removed from the work site to the contractor's premise. But the officials from Accountant General's Office revealed that the contractor had agreed that the excavated earth was taken to his premises. Hence, the Committee directs that a detailed report should be furnished after examining all the relevant details regarding the audit para within a month.
15.	83	Public Works	The Committee directs the Department to furnish the details regarding the vigilance enquiry in respect of the work related to Calicut- Vythiri-Gudalur road.
16.	84	Public Works	The Committee directs the Department to submit a detailed report within two weeks regarding the "understating of out-turn resulting in excess payment" and to take



			corrective measures to prevent such errors in the future
17.	88	Public Works	The Committee emphasizes that proper site inspection is necessary for ensuring the quality of work, and laxity on the matter could lead to multiple issues with regard to works. Therefore, the Committee urges the Public Works Department to pay particular attention to work/site supervision to ensure quality of work.

61      Part III (2)      3.1.15

**Statement on Remedial Measures Taken on the C & AG report on Economic  
Sector for the year ended 31st March 2017.**

Recommendation	Remedial Measures Taken
<b>PARA 3.1.3.1</b>	
<p>In the selected R&amp;B circles (North, Central and South), eight works valuing ₹59.98 crore awarded to contractors could not be completed due to faulty design and land disputes/delay in acquisition of land despite spending ₹33.34 crore on the works (Appendix 3.1.1). This included ₹2.85 crore on a bridge across Thodupuzha river in Idukki, which remained unused due to lack of approach road, thus, rendering the entire amount unfruitful.</p> <p>CE, R&amp;B attributed the reasons for non-completion of the projects to change in survey numbers of land proposed for acquisition, issues related to conversion of wetland, protest of public/land owners etc. The reply is not acceptable as the Department should have ensured encumbrance-free land/proper design before awarding the work.</p>	<p><b><u>1) Stimulus Package - Construction of Cheekkallur bridge Koodothummal - Nadavayal - Veliyambam road in Wayanad District</u></b></p> <p>The land required for the construction of the bridge and approach road was transferred by the Kaniyambetta Grama Panchayath by their administrative resolution. However, land was not transferred through land relinquishment form as per rules. During the construction of approach road, the land owners obstructed the work and filed petition in the Court and obtained stay. Hence the contract was necessitated to be terminated by constructing the bridge only. Now Court case has been finalized. The land required for the construction of approach road was demarcated by the Taluk Surveyor and boundary stone have been established. The Chief Engineer Bridges, has submitted the estimate for the balance work amounting Rs. 675 Lakh to the Government and Administrative Sanction was accorded. Technical sanction for the work was also issued for the same amount vide order No.BRDnKKD/2019-2020/BR/2020/568 dated 28.02.2020. The work can be completed without any obstructions on obtaining Administrative Sanction. In the above circumstances, the above Audit Para may please be dropped.</p> <p><b><u>2) Construction of Mattathankadavu Bridge across Konothpuzha connecting Udayamperoor and Amballoor Panchayaths in Ernakulam District</u></b></p> <p>The above work was awarded to M/s KSCC Ltd. (Kerala State Construction Corporation Ltd) vide Agreement No. 84/SECCA/2011-12 Dated 17.01.2012 with a tenure of 18 months. The work was commenced on 27.01.2012. As per agreement condition, the time of completion was expired on 26.07.2013. All the works except wearing coat were completed on June 2019 and due to delay happened in Land Acquisition process the construction of Approach Road was become stagnant.</p> <p>In connection with the above work, 5.42 cent land have to acquired from the Manakunnam and Mulanthuruthy Villages of Ernakulam District. Land acquisition process has been began from April 2012 but due to the delay happened in the conversion of land, the process of land acquisition in Manakunnam Village was completed only in August 2015.</p> <p>But the sanction for the conversion of land in Mulanthuruthy Village was not obtained till date and so the land acquisition was partially completed in</p>

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Mulanthuruthy side of Bridge. The available land details were informed to the contractor and instructed him to complete the work. So the contractor demanded 65 % rate more than the SOR for completing the balance works. He partially executed only the Retaining wall and Earth filling works adjacent to the approach road and thus traffic provided temporarily.

The Revised Estimate Submitted to Government and Revised Administrative Sanction obtained vide G.O (Rt.)No.1279/2017/PWD Dated 24.08.2017 for an amount of Rs. 61,97,33,331/. The Technical Sanction was obtained vide No.CE/R&B/EKM/3131/11 Dated 24.07.2018. Then the work was restarted and is in final stage. Hence I request to drop the audit para.

**3)Construction of bridge across Kuroorthodu and approach road**

The bridge over the Kuroorthodu and the approach road have been constructed in the Kothamangalam Kozhipilly new bypass road. Though the construction of the bridge and approach road has been completed, the bridge could not be opened due to non-completion of land acquisition for the rest of the bypass. Land acquisition and construction of the bypass road will be done from the PWD roads section. It is submitted that 90% of the works related to the land acquisition procedure for the construction of bypass is now complete.

**4)Construction of Korankadavu Bridge across Muvattupuzha river at Karukappilly in Ernakulam District**

The agreement for the above work was executed with Sri.P.P.Ajithkumar vide Agreement No. 108/SECCA/2010-11 dated 26.11.2010 and the work was commenced on 03.12.2010 with a time of completion of 24months. The work was started after obtaining advance consent from the concerned land owners. After the completing all the five piers in river portion and the well foundation for abutment at Karukappilly side, the land owners raised strong protest against the work for not paying the compensation for their land. The work became stand still in November 2012. Even though the land acquisition process was started in 2010 itself, the same could not be completed as expected in the beginning of the project due to changes in Land Acquisition Rules.

A proposal for rate revision for the balance works was submitted. In this proposal, the estimate for the balance work was submitted for approval by deducting the tender deficit of 9% from the least of Rates derived based on sanctioned data as per DSR 2016 and prevailing PWD LMR. The rate demanded by the contractor for all the items was greater than the rates prepared based on

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government criteria. In the meeting convened by the Minister of Public Works, it was decided to exempt the existing contractor from the contract without risk and cost. Revised Administrative Sanction has been accorded for the work vide G.O.(Rt) No 717/2019/PWD dated 07/06/2019 and Technical Sanction has accorded vide BRD/EKM/2019-2020/BR/2019/4004 dated 24/09/2019. The agreement will be executed after inviting tenders and construction of the bridge will be completed as soon as possible. It is, therefore, requested that references to this bridge be omitted from the audit report.

**Annexure 3.1.1**

**5) Budget work 2009-10 Construction of Mariyil culvert bridge (No. 31/SECC A/2013-14 dtd 1/6/2013)**

In the 'Mariyil' Side of Mariyil Culvert Bridge, road width is 8m (in the portion connecting Thodupuzha Puliyanmala road) and land has to be acquired for Bell Mouth portion. Land acquisition was started at the time of construction of this bridge. Sanction for acquiring land directly, had been obtained vide GO(Rt) 1619/2017/RD dtd 7/4/2017. Social impact study has been done in 14/8/2019, since the Land Acquisition as per LARR act 2013 could only be proceeded after conducting Social Impact study. As per laid down in social impact study, relaying of boundary stones were started by Roads section Thodupuzha in 2019 September Land acquisition process is in progress by Revenue Department. The approach road for Maryil culvert can be completed once the LA process by Revenue department completed. Roads Division Idukki is handling this work. The Government will not incur any financial loss when this work gets completed. Hence it is requested that audit query may kindly be dropped.

**6) Construction of Vaishambhagam bridge (No.90/SESC/2013-14 dated 07.09.2013)**

The Inland Water Authority of India had demanded that, as the bridge is part of new 6 lane waterway, The horizontal span of the navigation span of the bridge should be increased from 37 m to 47m and the vertical clearance of 7m should be provided for this span. Following this the estimate of the bridge was revised and submitted to the government for approval. The work on the bridge was temporarily stopped till the revised estimate was approved. Later on 05.12.2017 as per GO (Rt) No. 1827/2017/PWD, following the renewal of administrative sanction for 33.55Crore, the work was resumed and the work was completed on 31.05.2019.

PARA 3.1.3.4

REPLY

Arithmetical error in calculating unit rates

**22) Construction of Valiyazheekkal Bridge in Alappuzha District.**

<p>Arithmetical errors in the calculation of unit rate of items in two works inflated the cost by ₹16.72 lakh. Audit noticed that CE, R&amp;B incorrectly applied cost index in the rate analysis in one work and in the second work CE, NH reckoned provision of pontoon for construction of superstructure of bridge twice in the rate analysis. CE, R&amp;B replied (September 2017) that arithmetical error amounting to ₹11.27 lakh was corrected based on Audit findings. However, Audit noticed that supplemental agreement (reducing the rate) was still not executed. In respect of the other case, CE, NH did not furnish any reply.</p>	<p>It may be submitted that the Revised Estimate is under preparation and supplementary agreement will be executed incorporating the reduction of rate on sanctioning of Revised Estimate.</p>
<p align="center"><b>PARA 3.1.3.5</b></p>	<p align="center"><b>REPLY</b></p>
<p><b>Irregular inclusion of provision for cutting pile heads and conducting routine and initial pile load tests</b></p> <p>In terms of Section 1119 of MoRTH specification, the contract unit rate for providing cast in-situ bored piles includes the cost of labour, materials, hire charges of equipments and all other incidentals involved in conducting routine and initial pile load tests. As such, the contract unit rate of piles is inclusive of full compensation for furnishing all labour, material, tools and equipments, and incidentals for cutting off of pile heads.</p> <p>It was observed that in nine works, items such as pile load tests and cutting of concrete pile heads costing ₹2.59 crore (Appendix 3.1.3) were included as separate items in the Contract. CE, NH replied that as there was no separate provision for pile load test and chipping off of pile top in the rate analysis, the items were separately provided. CE, R&amp;B replied that in one work the provision of pile load test was included accidentally. In other cases, the reasons were stated to be non-provision of conducting pile load test and chipping off of pile top in the rate analysis.</p> <p>The reply is not acceptable as Section 1119 of MoRTH specification prohibits separate payment for pile load test and</p>	<p><b>1)NABARD RIDF XX-Construction of Perumkadavu Bridge across Chaliyar River</b></p> <p>The work 'Construction of Perumkadavu Bridge' was sanctioned vide G.O.(Rt) No. 68/2016/PWD dt: 3.02.16 for an amount of Rs. 2100 Lakhs. The agreement was executed as per agreement number SE(K)173/2016-17 dt: 3.01.2017 of the Superintending Engineer, PWD R&amp;B North Circle, Kozhikode below 17.64 % of the APAC and the site was handed over to the contractor on 8.03.2016</p> <p>The estimate for Technical Sanction for the work was prepared during January 2016. The pile load test was also included in the estimate of the work and technically sanctioned by the Chief Engineer. Based on this technical sanction, the test loading item had been entered in the agreement as item No. 10 of the work schedule for a total quantity of 1815 MT at the rate of Rs.300 per MT for total amount of Rs.544500. Out of the 1815 MT of test loading quantity, only 820 MT was executed by the contractor and payment was made accordingly to the tune of Rs. 202606. Cost of pile load test as per agreement: 820x300=Rs. 246000</p> <p>Deduct tender variation @ 17.64%: (-)43394</p> <p>The amount paid: Rs. 202606</p> <p>However, in the Inspection Report No. ES II (W)/IV/2-1/11/18-19/206 for the period from 1.01.2016 to 31.08.2018 of the Accountant General on the registers and accounts of the PWD Roads Division Manjeri, objection was raised against the payment of pile load test since it was against MORTH specifications. Consequent to this, the payment to the tune of Rs. 2,02,606- was recovered from the CC Vth and part bill of the same work and no further measurements in connection with the item was</p>

chipping off of pile top, which are treated as incidental items and are already included in the contract unit rates of piles. Thus, separate provision of pile load test and chipping off of pile top in addition to incidental charges in the rate analysis led to extending of undue benefit to the contractor.

#### Appendix 3.1.4

#### **Calculation of unit rate of items of work deviating from MoRTH data**

The Government ordered (April 2013) adoption of MoRTH specifications by all State Government Departments from 1<sup>st</sup> October 2013 onwards.

Audit noticed that the Department did not adopt the specifications for calculating unit rate of some items of work; instead it used its own method, which caused inflation in unit rates as discussed below:

As per SDB of MoRTH, 1.04 labour is required for fixing 50 road studs. Contrary to the MoRTH stipulation, the Department provided four labour per 50 road studs resulting in excess cost of ₹8.74 lakh in eight works, which commenced on or after November 2014. Audit observed that out of this, one work was under NH wing, for which they were bound to adopt MoRTH SDB but instead adopted observed data.

As per SDB of MoRTH, certain percentage (maximum 55 per cent) of the cost of cement concrete, being the cost of staging and formwork, is to be added to the cost of cement concrete, so as to arrive at the unit rate for providing the superstructure of a bridge. Audit noticed that in seven works (Appendix 3.1.4), the unit rate for providing superstructure of bridge also included the cost of additional staging and use of high-cost N Truss, instead of reckoning a certain percentage of the cost of cement concrete provided for the superstructure.

Audit observed that as per the Delhi Schedule of Rates (DSR), steel used in formwork can be reused 40 times, instead the unit rates were calculated by reckoning the re-usability of steel

made in the following bills of the work.

Later, the Chief Engineer, PWD Bridges vide circular number CE/Bridges/QL/1/2018 dt: 3.10.2018 issued directions to the effect that no enhanced rate should be sanctioned for chipping of piles and that the contractor himself has to bear the expenses regarding the same. As a result, the items of pile load test and pile chipping were omitted from all the subsequent work agreements.

In light of the above, it is apparent that the excess payment on account of pile load test has been recovered and the Government has suffered no consequent loss. Hence, the audit objection may kindly be dropped.

#### **2) Ayamkadavu bridges Audit objection**

The above work was executed in accordance with the estimate approved by the Technical Sanction Committee. There are separate provision in the estimate for removing excess length of pile and testing its strength. The work is executed as per the estimate provision. Hence the Audit remarks may be dropped in the light of the above explanation.

#### **3) Construction of Mundakkal Bridge at Kainakari across Pampa River in Alappuzha District.**

No amount has been allocated for chipping the top of the piles as per the estimate approved for the said work. However, in item number 1.05, an amount of Rs 786000 was allotted for load testing. However, the Chief Engineer Roads and Bridges has excluded the item for verification of piles in the revised estimate approved under CE / R & B / ALP / 13732/2014 on 19.11.2018.

#### **4) Keezhroorkadavu Bridge across Neyyar River**

The estimate for this work has been prepared in 2014. Provisions for chipping of top of piles or details of conducting loads tests were not mentioned in specification as per MoRTH for piling or pile cap. Therefore in the estimate prepared as per MoRTH specification, above mentioned items has been included separately. Technical sanction has been obtained for the estimate thus prepared, vide G.O.(Rt)No.1724/2014/PWD dtd 16/12/2014 and the work arranged after tendering.

As per Section 1118 of MoRTH data, it is instructed that no additional payment shall be given for chipping of pile and conducting load tests. The bidders has to quote for the piling items considering expenses for executing all necessary works as per MoRTH section 1119. But at the time of tendering for this work in 2014, the directions as per MoRTH section 1119, has not been included as a tender condition. The work has been awarded to the contractor at rate below estimate rate, hence the bidder did not quote extra rate for cutting of top of piles or conducting pile load tests. In this

formwork as four to 18 times. Unit rates in these seven works ranged from ₹21,730 to ₹26,071/cum, whereas in bridge works conforming to SDB and DSR stipulations, the unit rate was less than ₹20,000/cum leading to a cost overrun of ₹10.66 crore. CE, NH and CE, R&B stated that a different method was adopted considering the actual requirement at site.

The replies are not acceptable as the rate analysis was available in MoRTH SDB for the same item of work. So the Department should have adopted the same irrespective of the site condition.

#### **Inclusion of multiple/excess provisions for overhead charges in estimates**

In terms of the SDB of MoRTH, the unit rate of items also includes Overhead Charges (OH), which consist of provision for site accommodation, general site arrangement, mobilisation of resources, vehicle for supervision and an element of tax. In cases where MoRTH data are adopted, the OH applicable in road projects and bridges are as follows:

The rate of OH applicable in road projects valued up to ₹50 crore is 10 per cent and for those above, it is eight per cent.

The rate of OH admissible for bridges ranged between 20 per cent and 30 per cent.

The Government ordered (May 2010 and December 2010) that OH of five per cent would be applicable on estimates worked out on the basis of SDB of the Department to compensate the tax liability of the contractors.

Audit observed that additional provision for OH was provided in the work estimates of the following works even though OH at applicable rates was already included.

It was also noticed that even though the items of work did not conform to the MoRTH specification, in 16 works OH at the rate of ten/twenty per cent was provided by R&B wing of the department instead of an eligible five per cent, which increased the cost by ₹6.52

circumstance, by allowing payment to the contractor, for the items such as chipping of top of pile and conducting load tests as per agreement, payment for executed items only were allowed.

In 3/10/2018, vide circular CE/Bridges/QL/1/2018 the Chief Engineer has given instruction that no separate payment shall be allowed for chipping of top of piles and conducting load tests should be made at the expense of the contractor and same should be included in the tender document as special condition. Thereafter, in the contracts, the items such as pile load tests and chipping of piles were not included.

The audit objection may kindly be dropped considering the above explanation.

#### **5) NABARD- RIDF-XX- Construction of Keezhumury kadavu Bridge across Muvattupuzha River in Ernakulam District**

The pile chipping item was omitted when the Revised estimate for the bridge was submitted. If the item for the pile load test had not been included in the agreement schedule of the work, the tender amount for the construction of the bridge would have been more expensive and hence the outlay for the construction of the bridge would have been higher. But now the contract for this work has been fixed at 10.08% lower than the estimated rate. Therefore, the inclusion of this item does not impose any additional burden on the Government. It is, therefore, requested that references to this bridge be omitted from the audit report.

The Chief Engineer, PWD Bridges vide Circular No. CE/Bridges/QL/1/2018 dated 03.10.2018 has directed that no separate charge should be levied for pile chipping and pile load test should be done at the contractor's own cost and should be included in the tender document as a special condition. So the pile load testing and pile chipping items are excluded from subsequent contracts.

#### **6) Construction of parallel bridge to Kodimatha bridge across Kodoor river at Kodimatha in Kottayam District**

Technical Sanction for the work Construction of Parallel Bridges to Kodimatha Bridge across Kodoor river at Kodimatha has been issued on 24.1.2014 which is in the transition period from standard data of Kerala to MoRTH data. Earlier days chipping and removing top of RCC pile and pile load test were included in the estimates using standard specification. Hence these items were included in the TS estimate of the said work and in the agreement schedule as items 1.08 and 1.09. In the SBD and in agreement condition it was not mentioned that these two items are to be done by the contractor on his own expense.

lakh. CE, R&B replied that the PRICE software through which technical sanction was issued had no provision to alter the provision of 10 per cent. However, the Department did not take action to rectify the issue.

Moreover Executive Engineer, has reported that the contractors participated in the open tender, quoted the rate considering all the items in the schedule and if those two items were excluded, contractors would have quoted higher rates so that they could meet the additional expense for chipping excess length of pile and pile load test in the item for cast in situ bored pile. The selected contractor quoted the rate at 1.45% above EPAC only.

As per circular No. CE/Bridge/QL/1/2018 dated 03-10-2018 of the Chief Engineer Bridges, it is specified that the pile load test and chipping excess length, shall be done on contractors own expense and this shall be included as special condition in the tender document. Based on this circular future tendered works are excluded from these items and special condition is incorporated in all bidding document. Hence the objection in this regard may kindly be dropped.

**7) Construction of Kannangattu Willington Island Bridge across Kumbalam Kayal in Ernakulam District**

Technical Sanction was accorded for the work "Construction of Kannangattu- Willington Island Bridge across Kumbalam Kayal in Ernakulam District" by including data as per IRC specification and rate as per SOR 2012. Administrative Sanction was accorded for the above work vides G.O(Rt)No.238/12/PWD dated 16.02.2012 for an amount of Rs. 60.40Cr. Technical Sanction was accorded as per G.O.(Rt) No.214/2014/PWD dated 12.02.2014 for an amount of 64.00 Cr.

As per G.O.(Rt) No. 36/2013/PWD dated 17.04.2013 and CE/Admin/PLA/1014/05 dated 03.10.2013, MoRTH Specification is applicable for the PWD works in which Administrative Sanction is accorded after 01.10.2013.

Since Technical Sanction was accorded as per the old specification, pile head cutting works and load testing works were included in this work separately.

**8) Construction of Mundakkal Bridge at Kainakari across the Pampna River in Alappuzha District.**

The Government has not incurred any financial loss on this item as the unit rate has been included as per the Approved Estimate and the work has been awarded to the lowest bidder after conducting competitive bidding.

**9) Keezhroorkadavu Bridge across Neyyar River**

In the estimate prepared for the construction of Keezhroorkadavu bridge, for the item concreting above Ground level, for girders and slabs, provisions for N-Truss and Cribs were included in Data Analysis, suiting to site condition and for proper execution. Technical sanction has been obtained for the estimate thus prepared, vide G.O.(Rt)No.1724/2014/PWD dtd 16/12/2014. Thereafter the work has been tendered and the work was awarded at an amount less than the estimate amount.

Considering the above submitted reply, the audit queries



	<p>may kindly be dropped.</p> <p><b>10) <u>NABARD RIDF XX Construction of bridge on NedumudiKaruvatta road in Muthalapurichikkal in Alappuzha district.</u></b></p> <p>The Government has not incurred any financial loss on this item as the unit rate has been included as per the Approved Estimate and the work has been awarded to the lowest bidder after conducting competitive bidding.</p> <p><b>11) <u>Construction of Elanthukadavu Bridge across Iruvazhinjipuzha in Kozhikode District</u></b></p> <p>The work was awarded to the Contractor at the lowest rate quoted in the competitive tender and the rate was included in the sanctioned TS estimate. In this circumstance, there was no monetary loss for the Government. So please avoid the Audit reference.</p> <p><b>12) <u>Ayamkadavu bridges Audit objection</u></b></p> <p>The above work was executed in accordance with the estimate approved by the Technical Sanction Committee. There are separate provision in the estimate for removing excess length of pile and testing its strength.</p> <p>The work is executed as per the estimate provision. Hence request that the Audit remarks may please be dropped in the light of the above explanation</p> <p><b>13) <u>Budget Work 2015-16 - Construction of Parappuram - Vallamkadavu Bridge across Periyar river in Ernakulam District</u></b></p> <p>In the estimate prepared for Parappuram - Vallamkadavu Bridge across Periyar river in Ernakulam District, additional staging is required for the beam and cross beam in concrete work above ground level. As the beam is 32.12 m long, the beam cannot be constructed as per the design without additional staging. The higher rate than the MoRTH rate was due to the inclusion of the provision for the use of "N Truss" for the above works of the beam and cross beam. But this rate is not given for the construction of the slab. If the rates as per the site conditions were not given in the estimate, the tender rates would have gone up and resulted in increased construction cost. The contract for this work has been executed at lower rate than the estimated rate. It is, therefore, requested that references to this bridge be omitted from the audit report.</p>
<p><b>PARA 3.1.6.1</b></p>	<p><b>REPLY</b></p>
<p><b>Change in items of work causing additional financial burden to Government</b></p> <p>Audit detected instances wherein the items of work already included in the tender were altered/substituted/excluded</p>	<p><b>Construction of Nanichery Kadavu Bridge</b></p> <p>Sub para (2) cost escalation on extra items for Deck slab, main girder due to error in data.</p> <p>The remarks offered by audit regarding inclusion of CP, incorrect calculation of overhead charges, arithmetical error while carrying out the rate of deck slab as extra item</p>

during execution, leading to additional financial burden to the Government, as discussed below:

In terms of MoRTH data, constructing the superstructure of a bridge on the piers at site is cheaper than casting the same on land and then launching it on the piers. The agreement of a bridge work stipulated launching of the superstructure after it was cast on land. But during execution, the work was changed to casting of superstructure on the piers at site. Audit observed that even though the change in method should have reduced the cost, the cost of work actually increased by ₹85.35 lakh. This was due to adoption of a method different from MoRTH data for arriving at the unit rate for construction of superstructure, such as incorporation of hire charges of pontoon, excess provision for incidental items, etc.

CE, R&B replied that due to the narrow width of the approach road and a lot of sharp curves and bends, it was difficult to pre-cast and launch girder and slab. Also land for casting was not available. Hence, it was approved to carry out cast in-situ girder using N-truss. The data was based on observed data, which was on the lower side.

Audit observed that the following factors led to cost escalation on the extra item:

While the Department adopted OH charges of 20 per cent prescribed in MoRTH SDB for rate analysis of the extra item, they did not adopt the MoRTH data as such to arrive at the rate.

They did not even adopt observed data used in other bridge works. Instead, usage of N-truss was limited to four, whereas in other works, the maximum usage was up to 18 times.

Considering the Department's observed data in other bridge works, the maximum rate for construction of superstructure was ₹26,071 per cum whereas the Department considered ₹44,454 per cum for cost of the entire superstructure disregarding the already agreed lower rate of cross girder which

has been examined by the Chief Engineer R&B in detail and accordingly revised rate for the same incorporating the corrections pointed out by the Audit the revised rate is 44454.00/m<sup>3</sup> Supplementary Agreement was also executed for the same.

<p>is part of the superstructure. Hence, the reply of CE is not acceptable and the action of CE to grant a higher rate compared to other works led to avoidable cost overrun of ₹ 4.07 crore.</p>	
<p><b>Sanctioning of ancillary works as extra items</b></p> <p>In terms of MoRTH specification, the rate for construction of pile is inclusive of the cost for conducting pile load test. SE, R&amp;B, Central Circle Aluva awarded a work to a contractor for driving down test pile and conducting pile load test. Audit observed that after executing the agreement, the CE, R&amp;B accorded separate sanction (April 2016) for conducting pile load test as an extra item costing nine lakh. The action of the CE, R&amp;B was tantamount to extension of undue benefit to the contractor, vitiating the tender system.</p> <p>SE, R &amp; B, Central Circle stated that there was lump sum provision for conducting pile load tests in the technical sanction but was not included in the tender. He stated that approved schedule had provision for casting of pile alone and hence revised estimate was submitted and sanctioned.</p> <p>The reply is not acceptable as the nomenclature of the work itself specifies conducting of pile load tests. Hence, its inclusion as an extra item without mentioning in the tender is an undue favour to the contractor, as he is required to do the same without extra payment.</p>	<p><b><u>Perandoor —Vaduthala Bridge</u></b></p> <p>Administrative Sanction for the work was accorded as per GO(Rt) No.209/14/PWD dated 11.02.2014. Detailed estimate was submitted for the construction of test piles and conducting load test and Technical Sanction was issued as per CE/R&amp;B/EKM/1991/14 dated 07.08.2014.</p> <p>In this estimate provision for conducting pile load test was not included in the item for the construction of test piles. Hence separate item was included in the estimate for conducting static pile load test.</p> <p>The work tendered twice. But there was no response to the tender call. Hence quotation was invited. But it also went in vain. Hence the estimate was revised including Dynamic Pile load test. The provision for Dynamic Pile load test was included as lumpsum and the revised estimate was approved for Rs.55 Lakhs on 19.08.2015. Since the provision for Dynamic Pile load test was Lumpsum, it was not included in the tender; schedule and the contractor completed the construction of piles as per the schedule.</p> <p>The extra item for conducting Dynamic Load test was carried out as per the TS estimated only and the extra item necessitated, since it was not included in the tender schedule. The total amount of work done was Rs.50,85,029/ and it was within the TS amount of Rs.53 Lakhs.</p> <p>In the above circumstances, the remark made in the report that the contractor got unintended benefit by executing extra item is not true and the necessary action may please be taken to drop the remarks made in the report.</p>
<p><b>Irregular provision of incidental items of work</b></p> <p>As per contract conditions, the rates quoted by the contractor shall be inclusive of incidental items of work such as shoring, formation of ring bund, bailing out of water etc. Further, the contractor shall make all arrangements for inspection of works, free of charge.</p> <p>Audit observed that, while revising the estimate of two works, the Department made separate provisions for incidental items such as cost of footbridge for supervision in one work and cost of bailing out of water and</p>	<p><b><u>Ayamkadavu Bridge</u></b></p> <p>Ayamkadavu bridge is one of the highest bridges in Kerala. Due to its peculiar design and also due to its huge height this bridge stands out and is a unique in nature. The design of the bridge was done by Prof. Aravindan, a retired professor from IIT, Madras and he is very expert in bridge design works. He used to give extra care to all his design works, so that all the bridges are special and unique in nature. The construction work of Ayamkadavu bridge was entrusted to the second lowest bidder at the rate of the first lowest bidder, since the first lowest bidder was not ready to proceed with the work since it is very difficult to construct the bridge due to its huge height. The design of bridge had been revised by considering the instructions mentioned in the TS order. The revised design</p>

<p>formation of ring bund in the other work at a total cost of ₹35.28 lakh, which was a violation of the contract conditions.</p> <p>In respect of Ayamkadavu Bridge CE, R&amp;B replied that as the height of the bridge from the river to the bottom of the girder was between 20 and 24 m, it was necessary to provide the supervising officers with a strong and safe foot bridge to inspect the work. The cost of the foot bridge is more than the incidental charges included in the rate of concrete. Hence, additional provision was given for supervision and inspection of piers and superstructure in the estimate. The reply is not acceptable as the contractor had to provide the facilities for supervision of site for his own technical staff at his own cost, and provision of the extra item for supervision at Departmental cost is an undue benefit to the contractor.</p>	<p>drawing of the bridge had only been received after taking up the work by the contractor and as per the new design the height of the bridge had been increased upto 24m. That means the work became more difficult to execute. At this particular portion of the location, there is always a presence of strong wind due to the huge height. Also, during monsoon, when river water rises, huge wooden logs flowing along with the river water were used to make a lot of losses in the construction site. Hence special care had to be given in each and every time of construction stage. The departmental officers including female staffs had to be reached at the elevated place of construction work in order to ensure proper quality and correctness of the work. Hence the temporary foot bridge which meant for inspection purpose should be strong and firm one to withstand all the load exerted by strong wind, river water, wooden logs etc. The contractor needs additional man power and materials for the construction of this type of strong and firm foot bridge. Considering the huge height of Ayamkadavu bridge this foot bridge construction cannot be considered as an incidental item of work which may be faced in all type of construction site, and hence executed as an extra item of work. By considering the above facts necessary action may please be taken to drop the audit para.</p>
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<b>PARA 3.1.6.2</b>	<b>REPLY</b>
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<p><b>Excess provision made for pontoon which is an incidental item for bridge works</b></p> <p>According to general practice, for construction of bored cast in-situ pile foundation of bridges, where formation of islands using earth is found to be uneconomic or technically unfeasible, pontoons can be provided. Audit observed that while the practice of allowing either island or pontoon is followed correctly in R&amp;B Central Circle, it was not followed in R&amp;B North Circle.</p> <p>In the construction of a bridge work under Roads Division, Kannur the original provision was to construct islands at a cost of ₹45.23 lakh and connecting service roads between islands at a cost of ₹10.47 lakh. But the Department substituted the item of service road with pontoon at a cost of ₹49.98 lakh citing that filling up of the river for forming a service road was not practicable. The Department's statement</p>	<p><b><u>Kottakkeel Pattuvam Kadavu Bridge in Kannur District</u></b></p> <p>Regarding the AG'S audit in respect of the above work, report as follows:-</p> <ol style="list-style-type: none"> <li>1) The work was originally sanctioned and tendered for constructing an RCC T beam bridge with 8 spans of 25.32 m. each (202.50m). But the actual width of the river is 350 m with deep back waters. The balance width of the river was proposed to be filled up with earth for forming approach roads.</li> <li>2) But the local people represented by their MLA had protested in filling up the river as the same would obstruct the free flow of saline water and the ecological balance of the area would be disturbed. There are so many rare species of fishes here. The famous Ezhome "Kaippad" and the special paddy cultivated here in the saline waters are renowned. If the river is filled for approach roads, the flow of saline water would be obstructed and all these people's livelihood would be affected. Hence MLA had requested the Govt. to construct a bridge to suit the full width of the river.</li> <li>3) Based on the request of the MLA, Govt. have ordered to construct a bridge to the full width of the river. It was also ordered to adopt new technology while redesigning</li> </ol>
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was not acceptable as usage of island made of earth, as per original provision, was economically more viable than pontoon. Hence, use of pontoon in place of connecting service road at such higher cost is not acceptable.

In the exit meeting Departmental officials from the Central region viz SE, R&B Central circle, Aluva and EE, Roads Division, Ernakulam stated that if formation of island was possible, pontoon was not necessary and vice versa. CE, NH opined that all divisions should take a uniform stand in this regard to reduce expenditure.

the bridge to avoid expansion joints.

4) Accordingly, the SE, NC, Kozhikode in consultation with CE, PWD and CTE had entrusted the redesigning of the bridge to Prof. Dr. PK Aravindan, HOD, IIT Chennai. Accordingly, he had adopted new technology and designed a bridge with 10 spans of 32.50m each without expansion joints (total length 325m). The girders were also changed to pre stressed concrete instead of RCC "T" beams.

5) Based on the new design, new estimate was prepared as per directions of SE, CE and CTE. The items in the originally tendered works were not suitable for this new bridge. After detailed scrutiny in CE's office and by Finance Dept and CTE's scrutiny & site inspections, Govt. have accorded new Administrative Sanction as per GO (Rt) No.1365/2013/PWD dated 23/10/2013 for Rs 3300 lakhs.

6) Accordingly the new Bridge work was Technically sanctioned by the Chief Engineer PWD after all the rates of items were once again got scrutinised by CTE, as per T S order NO CE/BTB/KNR/6805/2009 dated 05/10/2015 for Rs 3260 lakh.

7) Before issuing new TS, the rates and provisions included in the new estimate were vetted by the CTE and the amount was reduced to 3260 lakhs against the AS amount of Rs 3300 lakh.

8) As the original AS and TS was cancelled, this has become a new bridge work based on new AS and TS. KSCC had requested 10% above estimate rate as the scope of the original work for which they had tendered was completely changed. Hence as per the request of KSCC, Govt. had examined this and allowed estimate rate for the new work. Otherwise KSCC, an enterprise fully owned by Govt.of Kerala would incur heavy loss and they would not take up the work. If the work was put to retender, the possibility of getting a lower tender was very remote. The delay in entrusting this important bridge work will entail in cost escalation due to time over run.

9) Regarding the rate for bored piles, it is to be noted that the location of the piers of the new bridge were entirely changed from pier locations of old one. The length also had been increased. The sub soil in the new location was full of pebbles and isolated boulders. Hence the out turn of boring getting at the new pier's points were as low as 2.50m per day of 8 hrs. The out turn of boring in the cancelled T S was 12.00 mts/ day of 8 hrs. This was not possible in the changed location of piers. Accountant General had compared the rate of piling of the new bridge with that of the old one AS& TS of which were already cancelled.

  
**AJITH K JOSEPH**  
Additional Secretary  
Public Works Department  
Government Secretariat  
Thiruvananthapuram

**Reply on Para 3.1.3.2. "Arrangements of Works without ensuring fund." in C & AG report for the year ended 31<sup>st</sup> March 2017**

PARA	REPLY
<p>In terms of Section 2003 of the Manual, works arranged should have budget provision. The Government accorded (October 2014) Administrative sanction (AS) for the work "Junction improvement and providing 1.5 metre (m) paved shoulder from Kazhakkootam to Eanchackkal" for rupees four crore without mentioning the source of fund (Head of account). But the CE, NH issued (9 December 2014) Technical Sanction (TS) inserting a head of account. Superintending Engineer (SE), NH, South Circle (SC) tendered the work (3 December 2014) and handed over the site (16 January 2015) to the contractor who completed (February 2015) the work. Department could not pay ₹3.93 crore to the contractor for want of allocation; but it was later released based on a Court order. Audit observed that insertion of a head of account by the CE without ensuring actual availability of fund led to the litigation, which was avoidable.</p>	<p>In the audit para, it is observed that Administrative sanction as well as Technical Sanction was issued to the project without ensuring the fund in the head of account. It is to report that special care is being taken now in proposing works under different heads after ensuring the actual availability of funds.</p>

**Reply on Para 3.1.3.4. "Estimates inflated due to defective calculation of unit rates for items of work." Second & third bullet in C&AG report for the year ended 31<sup>st</sup> March 2017**

PARA	REPLY
<p><b><u>Arithmetical error in calculating unit rates</u></b> Arithmetical errors in the calculation of unit rate of items in two works inflated the cost by ₹16.72 lakh. Audit noticed that CE, R&amp;B incorrectly applied cost index in the rate analysis in one work and in the second work CE, NH reckoned provision of pontoon for construction of superstructure of bridge twice in the rate analysis. CE, R&amp;B replied</p>	<p>Arithmetical error observed in calculation of unit rate of the item in respect of Calicut Bypass Phase — II reach — II from km 0/000 to km 5/000 in NH 17 (New NH 66) will be realized by the agreement authority from the pending bill of the other works of the same</p>

<p>(September 2017) that arithmetical error amounting to ₹11.27 lakh was corrected based on Audit findings. However, Audit noticed that supplemental agreement (reducing the rate) was still not executed. In respect of the other case, CE, NH did not furnish any reply.</p>	<p>contractor</p>
<p><b><u>Excess provision of cement concrete in rate analysis</u></b></p> <p>According to the Standard Data Book (SDB) of Ministry of Road Transport and Highways (MoRTH), the rate for executing unit length of cement concrete pile for foundation is calculated by considering, among other things, the quantity of concrete required for executing one metre length of pile, hire charges of machinery, labour and materials for boring. Audit observed the following errors in calculation of the cement concrete component for piles:</p> <p><b><u>Sub Para 1</u></b></p> <p>As per MoRTH SDB unit rate of 1.2 m diameter bored cast in-situ pile is calculated initially for nine meter and one meter diameter pile is calculated for 10m, which are converted to one meter thereafter. As per the SDB, requirement of cement concrete for 1.2 m diameter pile (for nine meter) was 10.170 cubic meter (cum), but the Department adopted 11.869 cum and in respect of one meter diameter pile (for 10 meter) Department adopted 8.243 cum instead of 7.85 cum in MoRTH SDB. The unit rate of pile foundation for three bridge works was calculated deviating from the SDB of MoRTH, consequent upon which, excess quantity of cement concrete for providing bored cast in-situ pile was considered in the rate analysis, resulting in enhancement of the estimate cost by ₹91.30 lakh. CE, NH replied that the rate</p>	<p><b><u>Sub para 1</u></b></p> <p>While arriving rates for 3 works Calicut Bypass Phase II Reach —II from ch: 0/000 to 5/000 of NH 17 (New N H 66). DFIP Construction of Flyover at Ramanattukara Jn in NH 66 (Old NH 17) in Calicut Bypass in NH 66 (Old NH 17) and DFIP Construction of Flyover at Thodayad Jn in Calicut Bypass in NH 66 (Old NH 17) requirement of quantity of cement concrete for the piles of dia. 1.00 m and 1.20 m adopted are exceeded than that given in the MoRTH data. Actually this was given in consideration of the note in the corresponding item of the data book which says that "the quantity of concrete require to be removed above the designed top level of concrete, if any, will be provided for in the rate analysis". Total of Rs.91.30 lakhs is the excess amount towards this pointed out as per audit. The excess amount paid to the contractor is to be recovered from any one of their ongoing works. In this regard the audit para may kindly be dropped.</p>

would be reduced.

Sub para 2

In the same three bridge works, the unit rate for bored cast in-situ pile foundation in rock was calculated as 2.5 times the rate of executing the same item in soil. This increase was due to additional time required for boring through hard rock. Audit observed that the multiplication factor of 2.5 was applied not only on boring but also on the cost of cement concrete, the quantity of which was the same for both hard rock and soil.

Consequently, the estimate was overstated by ₹33.20 lakh. CE, NH replied that they adopted the procedure adopted by CE, R&B. The reply is not acceptable as the CE, R&B calculated the rate for boring in rock considering the actual volume of cement concrete in rock portion without reckoning 2.5 times the cost of boring in soil as stated by CE, NH.

Sub para 2

In the above three works, there is an excess of Rs.33.20 Lakhs in respect of another erred data of cast-in-situ concrete for piles in rocky strata. The excess amount paid to the contractor is to be recovered from any one of their ongoing works. In this regard the audit para may kindly be dropped.

**Reply on Para 3.1.4.1. "Non-compliance to MoRTH guidelines on fixing of completion period." in C&AG report for the year ended 31<sup>st</sup> March 2017**

PARA	REPLY
<p>A bidder in a tender should have sufficient bid capacity. Period of completion of the work tendered, annual turnover and work in hand are the factors affecting bid capacity. As per time lines issued (August 2013) by MoRTH, the time prescribed for completing a work under 'Improvement of Riding Quality Programme' (IRQP) is six days per kilometre subject to a maximum of six months.</p> <p>Audit observed that the SE, NH South Circle, Thiruvananthapuram, tendered three works each with a minimum length of 20 km (approximately) with a total value of ₹57.99 crore. As against MoRTH specification of four months, the time of completion (ToC) fixed for each work was less than that prescribed by</p>	<p>Audit observed that SE, NH South Circle has tendered three works each with minimum 20KM to a tune of Rs. 57.99Crores. The time of completion (ToC) fixed for each work was less than the prescribed time by MoRTH. Considering the forthcoming monsoon the time of completion of the said work was fixed taken into account the forthcoming monsoon, in good faith, so as to ensure completion of works before monsoon. Considering this audit para may kindly be</p>



<p>MoRTH. Scrutiny of the bids by MoRTH revealed that the reduction of ToC to three months provided insufficient time to contractors, which affected their bid capacity adversely. As such, re-tender of the works was ordered by MoRTH. Due to this, taking up of the works was delayed by three to five months and cost increased by ₹10.10 crore.</p> <p>CE, NH replied that the SE, NH South Circle fixed the ToC as three months in order to ensure the completion of work before the forthcoming monsoon. Audit noticed that the action of the Department violating the MoRTH guidelines led to scrapping of the tender process, and in the process of retendering, one monsoon season elapsed, which caused further damage to the roads requiring extra work with more quantity of Bituminous Macadam, thus, resulting in cost escalation by ₹10.10 crore</p>	<p>dropped from the observations made in the said case.</p>
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**Reply on Para 3.1.6.2. "Undue benefits extended to contractors." Second , third, fourth & Fifth bullet in C&AG report for the year ended 31<sup>st</sup> March 2017**

PARA	REPLY
<p><b><u>Insufficient provision for defect liability period in contracts</u></b></p> <p>The Government issued an order (April 2013) making the specifications of MoRTH mandatory for Roads and Bridges works in the State from October 2013. So in all roads and bridges works undertaken in the State, the DLP of the contractor is to be specified in the agreement according to MoRTH specifications. The DLP is defined by MoRTH as : "Three years as per specifications of MoRTH in respect of road works executed on NHs using Central Road Fund, if they are provided with bituminous thickness of 40 millimetres (mm) or more".</p> <p>The Security Deposit is to be retained till the</p>	<p>As per the extant policy of MoRTH, DLP/Maintenance period of EPC projects are fixed as 5years for flexible pavements and 10years for rigid pavements. . The audit observation is strictly adhered thereafter in implementation of projects</p>

date of expiry of DLP. Audit noticed that the Department did not provide sufficient DLP in agreements executed for eight road works. It was observed that in one of these eight works on an NH, the contractor had to execute two layers of bitumen viz, bituminous macadam and bituminous concrete, which had a minimum thickness of 80 mm as per the contract. In accordance with the extant orders of Government on adoption of specifications of MoRTH, the required DLP in this case was three years but the Department provided DLP of only one year.

CE, NH replied that in respect of the aforementioned NH work, DLP for one year was provided as mentioned in the technical note of the work and as per MoRTH circular in April 2012. In respect of the other seven works, CE, R&B accepted the observation and stated that it was a mistake while executing the agreement.

The fact, however, remains that the Government issued the order in April 2013 stating that MoRTH specifications were to be adopted henceforth, but the Department did not follow the specifications and allowed the contractor to avail DLP of only one year. Audit observed that the omission resulted in undue benefit to the contractors by exempting them from the liability of maintaining the road for the required period.

**Granting of exemption from payment of royalty and resultant undue benefit to contractor**

In terms of Schedule-I of the Kerala Minor Minerals Concession Rules, 2015 (KMMC Rules), royalty of ₹40 per cum is payable for quarrying ordinary earth. According to contract conditions all taxes are to be borne by

On verification of approved rate analysis for the item, it is found that the provision for compensation of earth taken from private land is included @ Rs.350/cum. The rate of Rs.350/cum is arrived by adding the cost of earth (Rs.30-). cost index

the Contractor. The Government entrusted a work to M/s ULCCS, and exempted (March 2016) them from paying royalty for the earth supplied by them. Audit noticed that the unit rate for filling earth was inclusive of cost of royalty at the rate of ₹45.27 per cum. Hence, the exemption granted by the Government resulted in undue benefit of ₹1.73 crore to the contractor.

In the exit meeting CE, NH confirmed that provision of royalty as per DSR with cost index was included in the rate analysis. Hence, the contractor got the compensation for royalty and exemption from payment of royalty to the Government, which resulted in extending double benefit to the contractor.

at 27%(Rs.8.10)and conveyance (Rs. 312.06) and that no provision is included for royalty. The cost of earth including cost index is Rs.38.10/cum and does not include any provision for royalty. The royalty is to be paid by the owner of the property from where the earth is taken and PWD is in no way responsible for ensuring the payment of the same. Hence there is no undue benefit to the contractor. In this regard the audit para may kindly be dropped.

**Removal of earth to contractor's premises without paying royalty**

In terms of rule 106 of the KMMC Rules, 2015, royalty is payable on minor minerals removed from work sites.

Audit noticed that in a road work, 44,965.67 cum of earth was removed from work site to the contractor's premises on the plea that the earth was not suitable for use in the work. Audit noticed that the Department did not collect royalty amounting to ₹17.99 lakh from the contractor before it was removed. After this was pointed out, the EE replied that the amount would be deducted from the final bill of the contractor.

It is reported from then officers of execution that, during construction time, the excavated earth was found to be fully of dirty, filthy waste even from septic tanks which were demolished during land acquisition. The excavated earth was tested at College of Engineering, Trivandrum and found it was not suitable for any construction activities or even for filling purposes. Out of 54,172.59m<sup>3</sup> of the total excavated earth, only 1633m<sup>3</sup> of earth could be reused for embankment and thus, it was directed to measure balance quantity of 52,539m<sup>3</sup>(54,172-1633) of excavated waste earth under the item "removal of unserviceable soil" instead of providing under the item of

“earth work for roadway cutting”. Also the quantity of 1633m<sup>3</sup> of earth obtained was utilized for the work under execution and no quantity of earth was taken by the contractor. In these circumstances, no amount of royalty needs to be deducted from the contractor and no such amount is deducted from the final payment to the contractor. In this regard the request that the audit para may kindly be dropped considering the above facts.

**Benefit extended to contractor in excess of the work executed**

The specification given by the Department for installing W/Thrie – metal beam crash barriers in two works stipulated that metal beams were to be fixed to vertical posts anchored in soil using cement concrete at intervals of two meters, centre to centre.

The unit rate for installing the crash barriers, including cement concrete, was calculated in rate analysis for a length of 4.5 m and each unit consisted of three vertical posts. JPV revealed that vertical posts of crash barriers were being provided at two meter intervals over a continuous length, without break. Hence, while a crash barrier for a continuous length of 18 m consisted of 12 vertical posts as per the unit rate reckoned by the Department, actual requirement was only 10. The excess provision of vertical posts is illustrated in the diagrams shown below. Thus, for every 18 m length, the contractor stood to receive payment for cement concrete for 12 posts even though

It was reported by SE North Circle that on perusal of files instead of sending the lowest quotation, the quotation with higher rate was send to the MoRTH. Consequently the rate was sanctioned by MoRTH for the extra item No. 11 as Rs. 2747/- but as the audit identified the mistake, the MoRTH has corrected this in the Second Revised Estimate as Rs. 1435/- i.e. the lowest. Executive Engineer NH Division Kozhikode also reported that the quantity and rate for the extra item no. 11 paid in the final bill are 1536.353m<sup>3</sup> @ Rs. 1435.40/m<sup>3</sup> the amount paid extra for item in previous bill was deducted from the final bill amount. Therefore it can be inferred that there was no

only 10 posts were actually anchored by him. This resulted in undue benefit of ₹92.01 lakh to the contractor.

intention from the part of the departmental officials to favour to the contractor. I request that the audit para may please kindly be dropped as there was no loss to Government with respect to this work as per the final settlement.

  
**AJITH K JOSEPH**  
Additional Secretary  
Public Works Department  
Government Secretariat  
Thiruvananthapuram

Statement Of Remedial Measures Taken on the C & AG's Report on Economic  
Sector for the year ended 31 march 2017

Para No.	Recommendation	Remedial measures Taken
3.1.3.3	<p><b>Arrangement of work during Defect Liability period</b></p> <p>The Government ordered (August 2013) that the Defect Liability Period (DLP) of roads renewed with Bituminous Macadam (BM) and Bituminous Concrete (BC) would be for 24 months and 12 months for 20 millimeter (mm) Chipping Carpet (CC). As per section 2602.4.2 of the Manual, a road once renewed with CC is to be taken up for renewal only after three years.</p> <p>Audit observed that a renewal work at a cost of ₹1.84 crore was taken up during DLP ( <b>Appendix 3.1.2</b> ), which tantamount to extending of unintended benefit to the contractor by allowing him to escape from the liability of maintaining the</p>	<p>Administrative Sanction &amp; Technical Sanction for "Budget Work-Improvements to BM &amp; BC to U.C.College-Edayar Road had been sanctioned vide G.O.(Rt) 858/2013 /PWD dated 19.06.2013 for Rs.150 Lakhs and T. S.No.CE/ R&amp;B/EKM/8244/13, dated: 13.09.2013 respectively. Selection Notice for the work had been issued vide No.DEA-1500/2013 dated 22.02.2016. In connection with the V.V.I.P Visits on 14/12/2015 and 15/12/2015, 4 works were arranged by the Assistant Executive Engineer, PWD Road Sub Division Aluva. That works were having 3 days completion period and 24 months defect liability period and the patch work of f BC overlay only was included in the same. Due to the V.V.I.P. visits, this work was conducted with utmost urgency. It was after this the agreement vide No.216/SECCA/2015-16 dated 04/03/2016 was executed</p>

	<p>road during the DLP. CE, R&amp;B accepted the audit observation and in the exit meeting, CE, NH reiterated that arrangement of work during DLP was irregular. However, further action on the same was not intimated to Audit till date (March 2018).</p>	<p>for the Budget work and site handed over for the same.</p>
<p>3.1.5.2</p>	<p><b>Issues relating to Security</b></p> <p><b>Deposits for works</b></p> <p>In terms of Section 209.7 of the Manual read with the Government's (Finance) orders 30 (September 2015), the selected bidder shall produce a Security Deposit (SD) equal to five per cent of the contract amount for executing contracts, which is to remain valid till the expiry of DLP of the work. Prior to this, the Government issued a circular (March 2003) permitted contractors to adjust the amounts due to them on account of completed works as SD of new contracts awarded to them.</p> <p>The various types of irregularities noticed regarding SD are discussed below:</p> <ul style="list-style-type: none"> <li>• Pledging part bills of incomplete works.</li> </ul>	<p><b>Roads Division Ernakulam</b></p> <p>Based on the report of the CE, the security Deposit adjustment is allowed only on pending bills of completed works at present. When the application for SD adjustment is received in Division office of PWD, a proceedings is issued to wards this effect and entries are made in concerned M.Book and pending bill register and SD adjustment Register. For adjustment related to Sub Division Bills, copies of proceedings are issued to concerned office. Proceedings on SD adjustment received from Circle office and other division offices are similarly recorded in the agreement copy, M. Books and pending bill register of the concerned bill. When the bill is uploaded in EMLI on which SD adjustment is made, the equivalent amount is kept in deposit till defect liability period of the work in respect of which SD adjustment is made. On receipt of information towards of SD, the same is released as release of deposit</p>

The Department permitted contractors to pledge part bills of two incomplete works (Appendix 3.1.6) as SD for seven newly awarded works, of which the bill of an incomplete work was pledged as SD of six contracts of the same contractor.

In respect of one out of the two incomplete works, CE, R&B replied that as per the recommendation of the EE, Roads Division, Ernakulam, second and part bill of a work amounting to ₹.2.13 crore was pledged as the amount was sufficient for the security deposit of ₹.1.29 crore. Reply of the CE is not acceptable as the circular permits only pledging of pending bills of completed works. In respect of second work, no reply was furnished.

- Defect liability period not covered by security deposit.

The EE, Roads Division, Thrissur, arranged (May 2016) a work 32 for providing retro-reflective sign boards/object hazard marker for which DLP was 36 months, i.e. up to 28 May 2019. However, Audit noticed that the SD submitted by the contractor was valid up to 03 March 2017 only. SE, R&B, Central circle replied that instruction was given to the contractor to furnish the SD for 36 months

Audit observed that the actions of the Department provided undue benefit to the contractors and violated Government directions.

on orders of Executive Engineer.

Now SD adjustment is allowed for audited/passed bills of the works as per G.O.(Rt)No.3834/2020/Fin dated 23.06.2020 after executing an indemnity bond downloaded from EMLI software. SD for the seven works are adjusted from the pending part bills of the works in that office. As per latest Government Order only works entered in EMLI software can be adjusted as the pending bill for new works on downloading indemnity bond from EMLI. So possibility of such irregularly does not exist in future.

**Roads Division Thrissur**

The Executive Engineer, PWD Roads Division, Thrissur reported that the Security Deposit of the work "Providing road safety measures to various junctions in Thrissur-Kuttippuram road" Rs.31.000/- has been withheld from another work bill of the same contractor namely "ORR works 2014-15 road Safety works under Roads Section, Kunnankulam, Chavakkad, Wadakkanchery- Kuranchery-Kechery-Mottom Kechery- Akkikkavu-Vettikada vu-Kattakampal- Cheruvathani-Pazhanni-Kadavallu road", upto 28.05.2019 (Completion of DLP) as per Order No.A10-3319/2015 dated: 14.02.2018 of Executive Engineer, PWD Roads Division, Thrissur.



**Reply on Para 3.1.3.5. third bullet "Inclusion of multiple/excess provisions for overhead charges in estimates" in C&AG report for the year ended 31st March 2017**

PARA 3.1.3.5	REPLY
<p>In a work, apart from the regular OH of 8 and 25 per cent (for both road and bridge works), additional provision of 10 per cent was included in the unit rates of items towards compensation for taxes payable by the contractor. As an element of such tax was part of OH, a separate provision for taxes amounting to ₹12.01 crore was irregular and not as per SDB of both MoRTH and the Department.</p> <p>CE, NH replied that Local Self Government Department and other institutions were entrusting works directly to the conveners of beneficiary committees and similar agencies by providing for taxes and OH in the estimate without CP and the same procedure was followed in the instant work also. Reply is not acceptable as applicable rates OH charges were already included in the rate analysis and hence, additional provision towards compensation for taxes and other OH charges is irregular. Further audit scrutiny in a Local Self Government Institution confirmed that they did not incorporate the dual application of OH charges as stated by CE, NH in his reply.</p>	<p>No irregular provision for taxes and over head charges were given in the estimate as remarked by audit wing. Finance Department as per G.O (P) 311/14 Fin dated 30-07-2014(LR) issued guidelines for execution of public works and selection of Government accredited agencies. As per clause (7) Annexure II, it has been clarified that the respective estimates shall have adequate provisions for applicable taxes and statutory fees but shall not include contractors profit. Now as per G.O. (P)230/15 Fin dated 16-06-2015(LR) as per para 2, it has also been clarified that such accredited agencies who are executing works at estimate rates are also eligible for Contractors' Profit.</p> <p>For this particular work, Technical Sanction has been accorded by the Secretary Level committee incorporating taxes and overhead charges without giving contractors' profit and strictly adhering to the then prevailing rules. The same procedure has been followed in this work also. As such there is no irregular provision for taxes or overhead charges as pointed out. Hence the audit remarks in this issues may kindly be dropped</p>

  
**AJITH K JOSEPH**  
 Additional Secretary  
 Public Works Department  
 Government Secretariat  
 Thiruvananthapuram

Statement of Remedial Measures Taken on the Report of the Comptroller and Auditor General of India, (C&AG) (Economic Sector) - for the financial year ended in 31<sup>st</sup> March 2017

Recommendation	Remedial Measures Taken
<p><u>3.1.3.6</u> Method adopted for earthwork excavation led to undue benefit to contractors.</p> <p>According to the SDB of MoRTH, the unit rate for excavation of soil including rock is worked out adopting mainly three methods viz, manual excavation, excavation using dozer and excavation using hydraulic excavator.</p> <p>Audit observed that unit rate for excavation using manual method was up to four times costlier than mechanical methods of excavation. As per MoRTH SDB, manual means of excavation are meant for areas inaccessible to machine and for small jobs.</p> <p>Estimation using incorrect method of excavation could provide undue benefit to the contractor as observed in the following instances:</p> <ul style="list-style-type: none"> <li>In a work<sup>21</sup> the Department calculated the unit rate for excavation of soil using manual means. However, the specification of the item mentioned in the agreement was excavation using mechanical means. This gave an undue benefit of ₹88.61 lakh<sup>22</sup> to the contractor as he executed the work by mechanical means whereas the rates were for manual method, which were much higher. CE, R&amp;B, the technical sanction authority, replied that since the field engineers found the usage of manual means necessary the technical</li> </ul>	

sanction authority also considered it to be genuine. However, in the agreement schedule, the specification for earthwork indicated the use of mechanical means. Reply is not acceptable as the measurement book, work bills and work slip revealed that the work was executed using mechanical means, which resulted in avoidable extra cost.

- Audit also observed that in respect of one work<sup>23</sup> where excavation of soil was to be executed by mechanical means, it was done manually, thereby inflating the cost by ₹.71.60 lakh for a quantity of 78,680 cum. CE, R&B stated that based on the representation submitted to the PWD Minister, it was ordered that utmost care should be taken while using heavy machines as expensive houses with gardens were situated on either side on the entire road. Hence the land owners agreed to give land free of cost, on the condition that only manual means are used for earth work excavation. To verify the facts, a Joint Physical Verification (JPV) was conducted with the departmental officials. It was observed that the road was widened by taking land from both sides. In most of the cases, there was no boundary wall or houses nearby and instances of excavation using mechanical means were clearly visible at many locations. Hence, the provision of manual means for entire length of road led to extra expenditure to government, which was avoidable.
- In one work,<sup>24</sup> the original provision for earthwork excavation was using hydraulic excavator. During excavati

In the case of earth work excavation mechanical methods are generally adopted for all work, but exceptions are given in cases where manual methods are warranted due to the site conditions, encountered during the course of execution. The roads belong to MDR and State Highways. In majority of the works under PWD roads, there existed some space limitations / inadequate land for proper execution which led to the adoption of manual means. Hence the provisions of manual excavations may be admitted for specific cases.

<p>on hard rock was stated to have been detected, which was treated as an extra item, and therefore manual excavation was provided. This inflated the cost of work by ₹60.19 lakh. CE, R&amp;B replied that it was not possible to dismantle the hard rock with hydraulic excavator and blasting was not possible as the area was highly populated and so manual chipping was adopted. A JPV conducted at the site to verify the facts revealed that the detected material was hard laterite, which was excavated using mechanical means only and not manual means. Hence, the reply of the CE was not justifiable.</p>	
<p><b>3.1.4.2 Waiving of tender calls in violation of delegated powers.</b></p> <p>In terms of Appendix 200B-2 of the Manual, the Executive Engineer (EE), SE and CE are empowered to waive tender calls of the value of up to ₹3 lakh, ₹10 lakh and ₹25 lakh respectively.</p> <p>Audit observed that EE, Roads Division Ernakulam, arranged six works, each valued at ₹. 25 lakh approximately, waiving tender calls, which were ratified by the SE, R&amp;B Central Circle even though such waivers could be given only by the CE. It was further observed that all the works were awarded to a single contractor or to firms controlled by the contractor himself.</p> <p>SE, R&amp;B Central circle replied that the SE sanctioned the limited tender treating it as a normal tender. The reply is not acceptable as waiving of tender calls of works valuing ₹25 lakh was in violation of the delegated powers as per the extant manual provision.</p>	<p>The works arranged under the road division Erakulam through limited tender were arranged in a emergency situation, since the High Court had continuously remarked regarding the bad condition of the roads during that period. As Administrative Sanction were also obtained, arrangements are made through limited tender from the empannelled list of contractors intended for the same. More over the works were arranged at estimate rate / below estimate rate such that no additional loss sustained in this regard. The sole intention was to make the roads traffic worthy and also to avoid traffic accidents.</p>

**3.1.4.3 Non-finalisation of tender within firm period.**

As per the Manual, the firm period of a tender is two months. Delay in finalisation of tenders before expiry of the firm period, at times, leads to backing out of the lowest bidder. Consequently, re tendering or the second lowest bidder is considered.

Audit noticed that in eight instances, non-finalisation of tender process within the firm period led to arrangement of works through the second lowest bidder or re tendering, which is at higher rates resulting in excess cost of ₹21.19 crore. **(Appendix 3.1.5)**

In the exit meeting, the departmental officials opined that these works required pre-qualification and two months period was insufficient for completing all the formalities. Audit observed that the firm period fixed in the pre revised manual was four months but when the period was reduced to two months, a system was not adopted to speed up the process. Further, there was undue delay in finalisation of tender and rearrangement, which led to the cost escalation.

The pre - qualification tenders has been followed by the department for the works costing above 5 crore as per rules. Previously it was done manually at Chief Engineer Office and then submitted to Government for sanction by the tender committee.

This was a time consuming process required for the finalisation of technical evaluation and finalisation of tenders. As per rules financial bids can be opened only after technical evaluation which cause delays. Presently the tender committee at government level has been dispensed with and the firm period for PQ tenders has been enhanced from 2 months to 4 months.

Since e tendering and tender process including PQ evaluation through price software has already been implemented, now the days in finalization of tenders has been reduced drastically.



**AJITH K JOSEPH**  
Additional Secretary  
Public Works Department  
Government Secretariat  
Thiruvananthapuram

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**REMEDIAL MEASURES TAKEN ON SERIAL.NO.7 IN PARA.NO.3.1.4.3 IN THE  
C&AG REPORT FOR THE YEAR ENDED 31<sup>st</sup> MARCH 2017**

Sl.No.	Para.No.	Remedial Measures Taken
7	3.1.4.3	<p>The MoRTH vide order No.RW/CRF/28014/64/2009/K.L (P7) dated: 05/03/2014 issued Administrative Sanction for the work and Government as per the order No. GO(Rt)No. 761/14/PWD dated: 10/06/2014 issued Financial Sanction. Chief Engineer, National Highway issued Technical Sanction as per order No. 14/CE/NH/2014-15 dated: 4/07/2014.</p> <p>The tender was invited on 11/08/2014. The last date of tender submission was on 04/09/2014 and tender opening date was on 23/09/2014. The person who quoted least amount was instructed to extend the firm period on 05/12/2014 but he refused.</p> <p>As per the order dated: 31/12/2014 tender committee approved the tender and selection notice was issued to the contractor Shri.Muhammed Iqbal on 15/01/2015 (@ 5,38,73,843.76/-,(18.746% below estimate rate DSoR 2013)). Due to the expiry of firm period on 03/01/2015, the selected contractor refused to sign the agreement.</p> <p>Then re-tender was invited on 18/03/2015 and tender was awarded to the contractor Shri.K.Manoharan who quoted the least amount(@ 5,94,51,879.25/-, (10.33% below estimate rate)) as per GO (Rt) No. 1062/2015/PWD dated: 23/07/2015.</p>



**AJITH K JOSEPH**  
Additional Secretary  
Public Works Department  
Government Secretariat  
Thiruvananthapuram

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**Defect Rectification Report on paragraphs 3.1 (3.1.5.1 and 3.1.7) relating to the Public Works Department in the Audit Report for the financial year ended 31 March 2017**

Para No.	Irregularity	Report on Rectification of Irregularity
3.1.5.1	In violating Government directions entrusted five works worth ₹809.93 crore to accredited agencies.	<p>M/s ULCCS has been given five works worth Rs. 809.93 crore at estimate rate as per GO (Ms) No. 7/2016/PWD dated 20/02/2016.</p> <ol style="list-style-type: none"> <li>1. Construction of Valiya Azheekkal Bridge (across Kayamkulam lake connecting Kollam &amp; Alappuzha districts)</li> <li>2. Nadukani - Vazhikadavu - Nilambur - Edavanna - Manjeri - Malappuram - Vengara - Thiroorangadi - Parappanagadi Road (90 km)</li> <li>3. Ramanattukara flyover</li> <li>4. Thondayad fly over</li> <li>5. Hill highway (Cherupuzha - Payyavoor - Ulickal - Vallithodu Road) 59.415 km</li> </ol> <p>The above works were awarded to Ms/ULCCS based on Cabinet Decision</p>
3.1.7	Conclusions	<ol style="list-style-type: none"> <li>1. The term of Administrative Sanction for works under PWD was only 2 years. The works which were given Administrative Sanction will be cancelled unless the works commences in time. Any delay in executing the works causes increase in actual cost of the work. PWD officials are giving high priority for every construction/development work, in line with the expectation of the people's representatives and the public.</li> </ol>

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The construction of a bridge is a time consuming process and complex stages have to be completed. Six to eight months time is needed to conduct preliminary survey and alignment approval. Then the tender have to be invited and the land has to be acquired by setting up boundary stones. The Land Acquisition is being done in collaboration with Revenue Department. Normally 2 to 5 years is needed for completing Land Acquisition process. In the mean time design is prepared and Technical Sanction for estimate is approved construction could only be commenced for works costing more than 15 crore.

A delay of at least 5-6 years is occurred for construction, if construction starts only after land acquisition. By this time the estimate amount become increased as new DSoRs come into effect. In the contest, the work is commenced with the receipt of a no-objection from the landowners. This is done in the expectation that the land will be available in the time of construction. But sometimes the land acquisition is delayed and hence work is interrupted by the opposition of landowners by which the work become standstill.

The unavailability of land causes the contractor to withdraw from the contract without liability and the work has to be rearranged at a new rate. The fact is that the estimate rate of the project will increase if the



work is started only after the fully land acquisition.

The tendering processing has to initiated after the completion of land acquisition. However work is started on obtaining NOC from the land owner, as the work has to be started within the Administrative Sanction period, which will be 1 to 1.5 years after commencement of Land Acquisition process, with the presumption that the work can be completed with minimum expenditure as soon as possible. By this way in many works the beneficiaries got time bound services.

Delay in land acquisition, delay by other Departments such as water authority in changing utilities and cash in availability of contractor often create unforeseen obstacles in our planning.

2. Each work involves inclusion of certain special items according to geographical specification. Appropriate data may not be available in general data such as SDB/MoRTH items. In this circumstance, the data has to be framed with the required modification based on the most suitable SDB/MoRTH items. This is inevitable for the completion of work.
3. PWD is actively in the process of revising the tender procedures to diminish the delays in the implementation of tenders, delegation of financial powers and delay in awarding works. All this are being

done through PRICE software.

4. PWD implements each works in accordance with the provisions in PWD manual, constitution and guidelines issued by Finance Department. We are giving priority in working legally. There is no situation without following the existing guidelines .
5. Efforts are always taken by PWD to implement works as accurately as possible within the time limit using limited manpower and minimal infrastructure. Detailed monitoring are carried out at various levels for accuracy in estimates and bills. Quality control wing and Design wing have been strengthened to ensure better quality and technical perfection in construction activities. PRICE software has been updated by uploading asset details to increase accuracy in Estimates. Measurements are uploaded and verified online right from sites. All these are being done to avoid corruption and to ensure transparency and accuracy thereby good governance. Estimates are prepared based on the observation of field engineers, available design and field survey. Unexpectable and unavoidable changes may be required during the phase of construction. Dimensions are very likely to change during construction. Hence revision of estimates can not be completely avoided. This has to be done for the satisfactory completion of work but not for helping the contractor.

*(Handwritten Signature)*  
കെ.എ. ബി  
സെക്രട്ടറി, പബ്ലിക് വർക്ക്സ്  
പബ്ലിക് വർക്ക്സ്, മിഡിക്വട്ടർ

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**Remedial Measures Taken statement on the C & AG report on Economic Sector for the year ended 31<sup>st</sup> March 2017**

Para.No.	Recommendation	Remedial Measures Taken
<b>3.1.5.3 <u>Non Validation of Bank Guarantee</u></b>	<p>Name of Work : NABARD RIDF XV Developments and improvements to Peruva. Piravam Peruvamoozhy-Valamboor-Valayachira – Cheerakuzhi Road K.m 0/00 to 30/030 including Reconstruction of Valappil (Mulakulam) Bridge in Ernakulam District.</p>	<p>The Administrative Sanction was accorded as per (Rt).No.21/2010/PWD, Dated: 05.01.2010 and Technical Sanction was issued as per CE &amp; B/NB-XV/161/09 Dated: 29/01/2010. The Agreement was executed as per Agt No.93/SECCA/2010 Dated: 02.11.2010 with M/s. P.T.Mathai Construction Company Pvt Ltd. And the the work was started on 10.11.2010. The time of completion of the work was 21 months that is, up to 09.11.2012. The Security amount for the subject work was adjusted from the pending bill of another work of the contractor on 31.12.2010, the contractor produced a bank Guarantee issued from South Indian Bank Branch MG Road for Rs.1,56,00,000/- (Valid up to 31.12.2012) and accepting the Bank Guarantee the security attached from the pending bill was released. The work could not be completed within the agreed time of completion hence time of completion hence time of completion extended upto 02.12.2013 but Bank Guarantee was not got renewed. Later the work was terminated at the risk and cost of the contractor and it was ordered to recover Rs.22411172/- from the defaulted contractor. But he field writ petition before the Hon'ble High Court against this and obtained stay order. Balance work</p>
	<p>Tender conditions stipulate that the contractor is to remit Bank guarantee (BG) at the rate of <i>10 percent</i> of the contract amount at the time of executing the contract, so as to ensure performance of the work during the period of contract.</p>	
	<p>Audit noticed that in two instances the agreement authority obtained BG amounting to Rs.2.16 crore at the time of executing agreements. As the contractors did not complete the works in time, the SEs concerned extended the ToC but failed to ensure renewal of the BG for the extended periods. The SEs terminated the works at the risk and cost of the contractors as they did not complete the works within the extended ToC. The balance works were rearranged at higher rates. As the BG was not renewed, the Department lost the opportunity to recover the risk and cost from the original contractors to the extent of the BG.</p>	
	<p>In respect of one work SE,R&amp;B, North circle stated that BG was not renewed</p>	

due to oversight.

In respect of the other work CE, R&B replied that BG expired on 30<sup>th</sup> June 2013, and the Department approached the Bank for withholding BG on 9<sup>th</sup> July 2014. He further stated that the Honourable High Court passed a stay order (28 May 2015) against realization of the amount from the contractor. The reply is not acceptable as the Department failed to take action to ensure the validity during the extended period of contract and to realize BG in time.

In the exit meeting, the Department stated that there was a lacuna in the system and that the finance wing of the Department was to ensure validity of the BG for the required period.

was tendered. The final risk and cost liability of the contractor could be assessed only after the completion of the re tendered balance work. After the completion of the balance work the risk and cost amount was fixed as Rs.1,09,00,770/- on the basis of the final bill of the balance work. The contractor was directed on 21.01.2019 to remit the liability amount. But the Council (Advocate) for the contractor has intimated vide letter dated: 02.02.2019 that unless the order to remit the liability amount is withdrawn case will be filed against the department.

It is intimated that the Risk and Cost amount has not been recovered from the contractor yet. Action will be taken to recover the liability amount from the contractor.

  
**AJITH K JOSEPH**  
Additional Secretary  
Public Works Department  
Government Secretariat  
Thiruvananthapuram

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**Reply on Para 3.1.6.2. "Undue benefits extended to contractors."**  
**Second & Fifth bullet in C&AG report for the year ended 31st March 2017 (Second Bullet-IRQP 2013-14 from km. 569/000 to 593/500 of NH 47 in the State of Kerala .Fifth Bullet -CRF work 2013-14 improvements to Danapady - Karthikapally - Muthukulam- Pullukulangara- Kayamkulam NH to NH)**

Observation	Reply
<p><b><u>Insufficient provision for defect liability period in contracts</u></b></p>	
<p>The Government issued an order (April 2013) making the specifications of MoRTH mandatory for Roads and Bridges works in the State from October 2013. So in all roads and bridges works undertaken in the State, the DLP of the contractor is to be specified in the agreement according to MoRTH specifications. The DLP is defined by MoRTH as : "Three years as per specifications of MoRTH in respect of road works executed on NHs using Central Road Fund, if they are provided with bituminous thickness of 40 millimetres (mm) or more".</p>	
<p>The Security Deposit is to be retained till the date of expiry of DLP.</p>	<p>The MoRTH has accorded AS, FS , TS for the work" IRQP-2013-14 from KM569/000 to Km 593/500 of NH-</p>
<p>Audit noticed that the Department did not provide sufficient DLP in agreements executed for eight road works<sup>41</sup>. It was observed that in one of these eight works on an NH, the contractor had to execute two layers of bitumen viz, bituminous macadam and</p>	<p>47 " with Job No. TA-47-KL-2014-389. As per the technical note of MoRTH, the DLP is mentioned as one year from the date of completion and the same was included in the tender documents Vide Ministry's</p>

bituminous concrete, which had a minimum thickness of 80 mm as per the contract. In accordance with the extant orders of Government on adoption of specifications of MoRTH, the required DLP in this case was three years but the Department provided DLP of only one year.

CE, NH replied that in respect of the aforementioned NH work, DLP for one year was provided as mentioned in the technical note of the work and as per MoRTH circular in April 2012. In respect of the other seven works, CE, R&B accepted the observation and stated that it was a mistake while executing the agreement.

The fact, however, remains that the Government issued the order in April 2013 stating that MoRTH specifications were to be adopted henceforth, but the Department did not follow the specifications and allowed the contractor to avail DLP of only one year. Audit observed that the omission resulted in undue benefit to the contractors by exempting them from the liability of maintaining the road for the required period.

**Benefit extended to contractor in excess of the work executed**

The specification given by the Department for installing W/Thrie-metal beam crash barriers in two works stipulated that metal beams were to be fixed to vertical posts anchored in soil using cement concrete at intervals of two metets, centre to centre.

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circular No. NH-

11065/4/2012/P&M(Pt-11)

dt

12.04.2012. Further work was completed on 25.04.2015 and the DLP expired on 24.04.2016. In this stretch of road no patchwork and other maintenance works was arranged up to 24.04.2018. Hence the audit para 3.1.6.2 may be dropped.

As per the clause 811.3.1:2 of MoRTH specification, the crash barrier posts shall be spaced 2 metre center to center. The rate for the same

The unit rate for installing the crash barriers, including cement concrete, was calculated in rate analysis for a length of 4.5 m and each unit consisted of three vertical posts. JPV revealed that vertical posts of crash barriers were being provided at two meter intervals over a continuous length, without break. Hence; while a crash barrier for a continuous length of 18 m consisted of 12 vertical posts as per the unit rate reckoned by the Department, actual requirement was only 10. The excess provision of vertical posts is illustrated in the diagrams shown below. Thus, for every 18 m length, the contractor stood to receive payment for cement concrete for 12 posts even though only 10 posts were actually anchored by him. This resulted in undue benefit of ₹92.01 lakh to the contractor.

is taken from clause 8.23 of MoRTH schedule of rates. The data was taken with output 4.5 metres length of crash barrier with 3 vertical posts, but the work was done as per clause 811.3.1.2 of MoRTH specification with a spacing of 2 meters which led to the variation in number of vertical posts and hence the variation in number of concrete bedding. The error was occurred due to mismatch of approved data and approved specification which led to variation in number of posts and concrete bedding. Hence it is requested to drop the audit para.

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**Remedial Measures Taken statement on the C & AG's report**  
**on Economic Sector for the year ended 31 March 2017**  
**Public Works (PS) Department**

Para No	Recommendation	Remedial Measures Taken
3.1.6.3	<p><b>Lapses in monitoring and supervision of works.</b></p> <p>In terms of the Manual, the Assistant Engineer(AE) shall be responsible for proper execution of all works in his Section in general and for ensuring the execution of works as per approved plans, in particular.</p> <p>Audit noticed that in the following instances, the field officers failed to ensure that the contractors complied with the agreed specifications/plans during execution of works:</p> <p style="padding-left: 40px;">➤ <b>Non-use of specified material in road works</b></p> <p>Bituminous emulsion based construction is very efficient in avoiding the wearing of ingredients of the mix. The items of work for providing prime coat and tack coat for road works stipulates use of bitumen emulsion.</p> <p>It was observed that in six works arranged by the EE, Roads Division, Palakkad, against the agreed specification of bitumen emulsion for executing prime coat and tack coat, the contractor used ordinary bitumen(VG 30). The field officers did not ensure compliance with the agreed specification, which could affect the durability of the road adversely.</p> <p>In the exit meeting, the concerned EE stated that VG 30 was used in lieu of bitumen emulsion due to non-availability of the material</p>	<p style="text-align: center;">➤ <b>Non-use of specified material in road works</b></p> <p>The Chief Engineer, Roads reported that the Bitumen Emulsion was not available in the PWD stores for issuing to the contractor for executing prime coat and tack coat for road, so bitumen available in the store(V.G.30) was issued to the contractors. Bitumen(V.G.30) was used because of the urgency of the works. There were no damages caused to the said works due to the use of Bitumen V.G.30, instead of Bitumen Emulsion. So the objections raised in para 3.1.6.3 of the C&amp;AG report for the year ended March 2017 may kindly be dropped.</p>



at departmental stores.

Thus, non-usage of the approved material poses risk of damage to the life of roads.

➤ **Inferior quality of work due to non-adherence to agreed specifications**

As per the Manual, every work has to be properly supervised to ensure that it is carried out in accordance with the required specifications.

In four completed works having provision for W/Thrie-beam metal crash barriers, adequate quantity of cement concrete was not provided for fixing the vertical posts as required by the specifications as detailed in Table 3.1.2, which was confirmed after excavation around the vertical posts in the presence of Departmental officers. This indicated failure in supervision by Departmental authorities.

**Table 3.1.2: Quantity of cement concrete not provided as per specifications**

Sl No	Name of work in which JPV conducted	Size of cement concrete foundation of vertical post of W/ Thrie metal beam crash barrier (length x breadth x depth) in cm	
		Required	Observed during JPV
1	CRF 2013-14 improvements of Daanapady-Karthikappally-Muthukulam-Pullukulangara-Kayamkulam (NH to NH) road.	45 x 45 x 120 (with a volume of 0.243 cum)	Excavation conducted at two locations -At one location of vertical post the top layer of cement concrete foundation was of oval shape with a depth of up to 58 cm and volume of 0.148 cum and in the second post cement concrete was provided up to 60 cm with a volume of 0.140 cum
2	Providing traffic safety measures	60 x 60 x 120	Excavation conducted at two locations. At both the locations

➤ **Inferior quality of work due to non-adherence to agreed specifications**

Name of work :- CRF 2013-14- Improvements to Danapady-Karthikappally- Muthukulam- Pullukulangara-Kayamkulam (NH to NH) Road.

The Chief Engineer, National Highway reported that the depth and size of foundation footing of plain cement concrete of metal pole of crash barrier varies with site condition of embankment width and its slope. In the MoRTH data of specification, only 0.243 cum is mentioned with allowance of suitable size of footing to suit the site restrictions. In this case, total quantity of plain cement concrete is keeping as 0.243 Cum by changing the depth and size of concrete footing. This is a plain cement concrete having very low strength, non destructive test had to be done to assess actual quantity. Digging of embankment near the concrete footing by mechanical means damages footing and losses the volume of it. Now it is seen that all crash barriers are in good condition after more than 7 years.

Name of work :- Providing Traffic Safety Measures between Km 67/000 to 97/070 of CVG Road

The Chief Engineer, Roads reported that while passing the final bill of the above work, difference in quantities of earth work and concrete were deducted from the bill. As

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	between km 67/000 to 97/070 of CVG road		top dimension was the same as that of specification and at a depth of 38 cm, the perimeter was 212 cm and 211 cm instead of 240 cm
3	CRF 2014-15 Improvements to Koothattukulam-Mulanthuruthy road (Koothattukulam-Edayar- Piravam -Vettikkal- Mulanthuruthy).	45 x 45 x 125	Excavation conducted around three vertical posts. At one post though the top dimension was 45 x 52 cement concrete was not found after a depth of 50cm. In second and third locations, though top dimension was 45 x 45, cement concrete was not found after a depth of 30 cm.
4	Improvements to 12 roads leading to games village and karyavattam stadium	45 x 45 x 120	Excavation conducted at two locations. At first location, the top dimension was of irregular shape with average dimension of 55 x 25 cm but cement concrete was not found after a depth of 43cm. In the second location, excavation was done up to a depth of 60 cm, it was found that top perimeter was 170 cm, middle having 168cm and bottom 135 cm.

Source: Joint Physical Verification Reports and Departmental records.

In another work (Improvements to Edappally-Muvattupuzha road from km. 8/000 to 11/020 (Kuzhivelipady to Pukkattupady), the samples analysed by the quality control wing of the Department on a JPV of the site showed the content of bitumen in the bituminous layers to be less than the agreed specifications.

In the exit meeting, CE,NH while agreeing to lack of supervision by the field officers stated that recovery from those responsible would be effected.

the cases regarding the work are pending in Hon'ble High Court, Ernakulam and Vigilance Court, the final bill was not paid to the contractor. In the above circumstances no recommendations were submitted to take actions against the departmental officers for supervisory lapse.

Name of work :- CRF 2014-15 Improvements to Koothattukulam-Mulanthuruthy road (Koothattukulam-Edayar- Piravam -Vettikkal- Mulanthuruthy)

The Chief Engineer, National Highway reported the defect noted during site inspection with departmental officers and audit party on 09.10.2017 related to installation of crash barrier was rectified by the contractor of the above work.

Name of work :- Improvements to Twelve Roads leading to Games Village and Karyavattom Stadium.

The Chief Engineer, Roads reported that the subject work was completed very long ago and in the due course of time so many private parties and public agencies (KSEB, BSNL and Inland Navigation) had removed crash barrier at various locations without any intimation to PWD for the following purpose :

- 1) Inland Navigation : For moving Barges to Parvathy Puthanar (beside which crash barrier installed)
- 2) K S E B : For installing Lattice Tower along the river bunk of Parvathiputhanar.
- 3) B S N L : For laying OFC along the bunk of river.

The above agencies damaged and removed crash barrier and re installed the same without sufficient concrete. The concrete foundation (2 Nos) as pointed out by the audit

team exists along the Parvathy Puthanar River where dredging was done by Inland Navigation Department. The variation in quantities of foundation was due to above facts.

Name of work :- Improvements to Edappally - Muvattupuzha road from Km 8/000 to 11/020 (From Kuzhivelippady to Pookkattupady).

The Chief Engineer, Roads reported that the file in respect of the work was handed over to VACB, Ernakulam for the purpose of enquiry in VC1/2018 Ekm. As pr the details available in the division office, an amount of Rs.15.78/- Lakh was recovered from the first and Part bill of other work of the contractor, viz Budget work 2016-17 Resurfacing with BM & BC to Thottumugham - Thadiyittaparamba road Km 0/000 to 2/000 for the defects pointed out in the Joint Site Verification. Regarding short usage of bitumen pointed out, action will be taken to recover the payment made for the short usage of bitumen from the other bills of the contractor or by Revenue Recovery after receiving files from VACB. Considering the above facts, the objections raised in para 3.1.6.3 of the C&AG report for the year ended March 2017 may kindly be dropped.

  
**AJITH K JOSEPH**  
Additional Secretary  
Public Works Department  
Government Secretariat  
Thiruvananthapuram

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**Appendix – 3.1.1**

**Idle expenditure on incomplete works  
(Reference: Paragraph 3.1.3.1 – Page: 32)**

Sl. No.	Division	Name of work/Agreement Number and date	Agreed Probable Amount of Contract (₹ in crore)	Details of work pending completion	Expenditure so far incurred (₹ in crore)	Remarks
1	Wayanad	Stimulus package – Construction of Cheekkalloor bridge on Koodothummal-Nadavayal-Veliyambam road in Wayanad District (SE(K)164/2009-10 dated 23/02/2010).	8.83	Approach road	3.08	The land owners has filed an O.S. vide No. 185/2010 and an injunction order was issued by the Hon'ble Court.
2	Ernakulam	Construction of Mattathankadvu Bridge across Konothupuzha connecting Amballoor and Udayamperoor Panchayaths in Ernakulam District (84/SECCA/2011-12 dated.17/01/2012).	4.82	Approaches on both sides of the bridge	3.49	Due to delay in acquisition of land and the delay in arranging the balance work even after getting land acquired, the completed bridge is standing without proper approaches on both sides over the past four years.
3	Muvattupuzha	Bridge across Kuroor thodu and approach road (91/SECCA/2009-10 dated 01/01/2010).	2.92	Approaches on both sides of the bridge	0.47	Bridge work was completed. The acquisition process was not completed even after 12 years of initiating the process and the amount ₹6.98 crore incurred became unfruitful as the acquisition could not be done.
4	Muvattupuzha	Construction of Korankadavu Bridge across Muvattupuzha River at Karukappilly in Ernakulam district (100/SECCA/2010-11 dated 26/11/2010).	7.90	Piers P1 to P5 and abutment cap of A2 (Aikkaranad South side) completed. Abutments of the other side and other works are to be completed.	2.66	Initially, land owners expressed their willingness to handover the site. The same did not happen due to delay in payment of compensation.

## Appendix 3.1.1 (Cont'd....)

Sl. No.	Division	Name of work/Agreement Number and date	Agreed Probable Amount of Contract (₹ in crore)	Details of work pending completion	Expenditure so far incurred (₹ in crore)	Remarks
5	Iduki	B/W 2009-10: Construction of Mariyil Kalungu bridge across Thodupuzha river in Idukki (31/SECCA/2013-14 dated 01/06/2013)	5.18	Scrutiny of Google map and discussion with department officials revealed that bridge proper completed and work for approach road could not be commenced due to non-availability of land.	2.85	As per GO (Rt) No.1185/09/PWD dated 14/08/2009, the Government directed that work shall be tendered only if hindrance free land is available. Audit with the aid of Google Map identified the bridge to be in an idle condition after constructing the bridge proper. To an audit query, Department stated that the land acquisition for approach road was still going on.
6	Alappuzha	Construction of cartable bridge in Kakkathuruthu in Aroor LAC (97/SESC/2011-12 dated 06/03/2013)	4.48	Balance work other than four groups of piles.	1.84	Out of seven group of piles (28 Nos), as per agreement schedule, the contractor executed four groups (16 Nos), and then the work was held up due to land dispute.
7	Alappuzha	Construction of Vaisyam Bhagam Bridge (90/SESC/2013-14 dated 07/09/2013)	20.91	For want of NOC from IWAI since the bridge is across National Water Way No.3.	17.21	Clarification sought by the CE, Designs- as to whether the river is a part of the National waterway so that the deck slab can be designed accordingly- was not properly attended to before finalisation of design of the bridge.
8	Kottayam	Plan work 2011-12 Construction of Chamappana-Teakoy Estate Marmalaruvi Road- Ch.0/000 to 2/900 km (129/SESC/2012-13 dated 12/07/2012)	4.94	Bridge was completed. Road could not be completed due to dispute of the title of the Teakoy Estate through which major part of road was proposed.	1.74	Work was foreclosed.
		<b>Total</b>	<b>59.98</b>		<b>33.34</b>	

Source: Department records.

**Appendix – 3.1.2**

**List of works arranged during defect liability period**

**(Reference: Paragraph 3.1.3.3– Page: 33)**

Sl.No	Name of original works	Amount (₹)	Date of completion and DLP	Other Work arranged during DLP in the same road	
				Name of work	Amount (₹)
I	VVIP Visit- O/R 2015-16; Providing strip BC surfacing to UC college Edayar road from ch 0/000 to 0/250. Agt No.84/AEE/ALY/2015 dated 29/02/2016.	4,98,965	13/12/2015 and 12/12/2017	Improvements and BM & BC UC college – Edayar Road (Balance Portion) ch. 0/000 to 1/300 Agt.No.216/SCCCA/2015-16 dated 03/03/2016.	1,84,18,867
2	VVIP Visit- O/R 2015-16; Providing strip BC surfacing to UC college Edayar road from ch 0/600 to 0/800. Agt No.86/AEE/ALY/2015 dated 29/02/2016.	4,99,056	13/12/2015 and 12/12/2017		
3	VVIP Visit– O/R 2015-16; Providing strip BC surfacing to UC college Edayar road from ch 0/850 to 1/050. Agt No.83/AEE/ALY/2015 dated 29/02/2016.	4,99,222	13/12/2015 and 12/12/2017		
4	VVIP Visit- O/R 2015-16; Providing strip BC surfacing to UC college Edayar road from ch 1/100 to 1/300. Agt No.58/AEE/ALY/2015-16 dated 29/02/2016.	4,98,994	13/12/2015 and 12/12/2017		
	<b>Total</b>	<b>19,96,237</b>		<b>Total</b>	<b>1,84,18,867</b>

Source: Department records.

## Appendix – 3.1.3

List of works where provision for cutting off of pile head and conducting pile load test were provided separately

(Reference: Paragraph 3.1.3.5- Page: 36)

Sl No.	Name of work	Agreement No. & Date	Amount involved (₹ in lakh)
1	NABARD RIDF XX construction of Perumkadavu bridge across Chaliyar river in Malappuram District.	SE(K) 173/2016-17 Dated 31/01/2017	5.45
2	Construction of bridge at Ayamkadavu across Vavadukkam river on Perladukkam-Ayampara-Periya road	SE(K) 172/2016-17 Dated 31/12/2016	7.71
3	DFIP construction of flyover at Ramanattukara.	SE(K) 25/2015-16 Dated 04/03/2016	13.36
4	Construction of Mundakkal bridge across Pampa river at Kainakary in Alappuzha District.	155/SESC/2016-17 Dated 10/08/2015	7.86
5	Construction of bridge at Keezharoorkadavu across Neyyar river	38/SESC/2016-17 Dated 10/08/2015	2.61
6	NABARD RIDF XX construction of Keezhmurikadavu bridge across Muvattupuzha river in Ernakulam District	127/SECCA/2016-17 Dated 16/12/2016	1.83.
7	Construction of Anjilimootilkadavu bridge at Kozhipalam across Pampa river in Pathanamthitta District.	230/SESC/2016-17 Dated 17/02/2017	12.65
8	Construction of parallel bridge to Kodimatha bridge across Kodoor river at Kodimatha in Kottayam District.	104/SESC/2014-15 Dated 26/12/2014	11.04
9	Construction of Kannangattu - Willington island bridge across Kumbalamkayal in Ernakulam District	29/SECCA/2014-15 Dated 10/10/2014	196.48
<b>Total amount</b>			<b>258.99</b>

Source: Department records.

**Appendix – 3.1.4**

**List of works where unit rates higher than MoRTH rate were provided for superstructure**

(Reference: Paragraph 3.1.3.5- Page: 37)

Sl No.	Name of work	Agreement No. & Date	Rate adopted by Department per cubic meter (in ₹)	Rate as per MORTH SDB per cubic meter (in ₹)	Quantity of cement concrete superstructure (in cum)	Cost difference (₹ in crore)
1	Construction of Calicut Bypass phase II reach II from Ch.0/000 to 5/000 of NH 17 (New NH 66)	No. 08/14-15/SE/NH/KKD Dated 04/08/2014	24,468	13,363.78	5,707	6.34
2	Construction of Mundakkal Bridge across Pampa River at Kainakary in Alappuzha district	No. 155/SESC/2015-16 Dated. 30/12/2015	25,187	12,592	814	1.03
3	Construction of bridge at Keezharoorkadavu across Neyyar river	No. 38/SESC/2016-17 Dated 10/08/2015	26,071	15,010	289	0.32
4	NABARD RIDF XX construction of a bridge across leading channel at Muthalakurichickal in Nedumudi – Karuvatta road in Alappuzha district	No. 226/SESC/2016-17 Dated. 02/02/2017	24,665.52	16,983.85	479	0.37
5	Construction of Elanthakadavu Bridge across Iruvazhanjipuzha in Kozhikode district.	No. SE (K) 125/2014-15 Dated 31/03/2015	25,016	9,764	464	0.71
6	Construction of bridge at Ayamkadavu across Vavadukkam river on Perladukkam - Ayampara-Periya road.	No. SE(K) 172/2016-17 Dated 31/12/2016	22,452	15,785.86	800	0.53
7	Budget work 2015-16 construction of Parappuram-Vallamkadavu bridge across Periyar River in Ernakulam District.	No. 123/SECCA/2016-17 Dated 25/11/2016	21,730.17	10,973.28	1,260	1.36
					<b>Total</b>	<b>10.66</b>

Source: Department records.



## Appendix – 3.1.5

## Excess cost incurred due to non-finalisation of tender process within firm period

(Reference: Paragraph 3.1.4.3- Page : 41)

Sl No	Name of work	Agreement No. & Estimate PAC	First tender		Agreed PAC		Excess cost (₹ in crore)	Remarks
			Tender percentage	Quoted amount (₹ in crore)	Tender percentage	Amount (₹ in crore)		
1	Improvements to Hill highway from Karikottakari-Edoor-Aralam-Palpuza - Manathara-3 <sup>rd</sup> reach from km. 71/690 to 90/315 in Kannur District.	SE (K )286/2015-16 Dated 27/01/2016 & ₹20.54 crore.	16.62 per cent below estimate rate (ER)	17.13	23.20 per cent above ER	24.53	7.40	Re-tendered and awarded to L1 at 23.20 per cent above ER based on tossing as the quoted rate of both bidders were same.
2	Construction of approach road to Kothi-Pallikandi bridge in Kozhikode District.	SE (K) 69 / /2014-15 Dated 16/10/2014) & ₹14.24 crore	4.90 per cent below ER	13.59	18.80 per cent above ER	16.76	3.17	Awarded to L2 at his quoted rate of 18.80 per cent above ER.
3	Construction of Mundakayam Bypass.	110/SESC/2015-16 Dated 03/10/2015 & ₹12.78 crore	15.01 per cent above ER	14.64	22.50 per cent above ER	15.56	0.92	Re-tendered and awarded to L1 at 22.50 per cent above ER.
4	Improvements to Kandankali road km. 0/000 to 3/00 in Pathanamthitta District.	09/SESC/2016-17 Dated 23/05/2016) & ₹5.68 crore	8.90 per cent above ER	6.16	27.99 per cent above ER	7.18	1.02	Re-tendered and awarded to L1 at 27.99 per cent above ER.
5	Providing BM&BC work to Arunassery- Kattampakkel - Kuravilangadu road km. 2/000 to 8/800.	101/SESC/2015-16 Dated 01/10/2015 & ₹3.44 crore	6.60 per cent above ER	3.59	31.77 per cent above ER	4.17	0.58	Work was retendered on 15/07/2014 as there was no response, work was awarded through negotiated quotation.
6	Budget speech 2012-13 improvements to Vandiperiyar – Spencer Junction to Sathram road from km. 0/000 to 13/800.	30/SECCA/2014-15 Dated 10/10/2014 & ₹11.65 crore	5.30 per cent below ER	11.10	17.11 per cent above ER	13.45	2.35	Awarded to L2 at quoted rate of 17.11 per cent above ER.
7	CRF- 2014-15 improvement to Chovva Anjarakakandi Mattannur road from km. 0/00 to 23/213.	09 /2015-16/ SE/ NH /KKD Dated 22/08/2015 & ₹6.63 crore	18.74 per cent below ER	5.39	10.33 per cent below ER	5.95	0.56	Re-tendered and awarded to L1 at 10.33 per cent below ER.
8	Construction of Murikkallu bridge across Muvattupuzha river in Ernakulam District.	52/ECCA/2014-15 Dated 06/11/2015 & ₹10.68 crore	6 per cent Below ER	10.07	45 per cent above ER	15.26	5.19	The work was tendered twice. As the tender process could not be completed within the firm period, this was awarded by quotation.
<b>Total</b>							<b>21.19</b>	

Source: Department records.

Appendix – 3.1.6

**List of works for which part bills of incomplete works were pledged as security deposit  
(Reference: Paragraph 3.1.5.2 – Page: 43)**

Sl No.	Name of work and Agreement No.	Name of work and Agreement No. of bill of incomplete work pledged as SD	Amount of SD (₹)
1	Construction of Mundakkal Bridge across Pampa River at Kainakary in Alappuzha district. Agreement No. 155/SESC/2015-16 dated 30/12/2015.	Design & construction of foot bridge to Aluva sivarathri manappuram from Kottarakkadavu. Agreement No. 105/SECCA/2015-16 dated 01/10/2015.	1.29 crore
2	O/R 2015-16: Urgent BT patch repairs to UC college Edayar road Ch. 4/000 to 4/500. Agreement No. 35/AEE/ALY/2015-16 dated 25/05/2016.	Budget Work 2013-14 Improvements to Edappally – Muvattupuzha road from Kuzhivelipadi to Pookkattupadi Ch. 8/000 to 11/020 Agreement No. 109/SECCA/2015-16 dated 03/10/2015.	25,000
3	OR 2015-16: Urgent BT patch repairs to Kadungalloor- Eloorkara road ch.5/000 to 5/500. Agreement No.33/AEE/ALY/2016-17 dated 25/05/2016.	Budget Work 2013-14 Improvements to Edappally – Muvattupuzha road from Kuzhivelipadi to Pookkattupadi Ch. 8/000 to 11/020 Agreement No. 109/SECCA/2015-16 dated 03/10/2015.	25,000
4	OR 2015-16: Urgent BT patch repairs to UC College Edayar road ch.0/000 to 1/000 Agreement No.29/AEE/ALY/15-16 dated 22/05/2016.	Budget Work 2013-14 Improvements to Edappally – Muvattupuzha road from Kuzhivelipadi to Pookkattupadi Ch. 8/000 to 11/020 Agreement No. 109/SECCA/2015-16 dated 03/10/2015.	25,000
5	OR 2015-16: Urgent BT patch repairs to Kadungalloor Eloorkara road ch.5/750 to 6/126. Agreement No.27/AEE/ALY/2016-17 dated 25/05/2016.	Budget Work 2013-14 Improvements to Edappally – Muvattupuzha road from Kuzhivelipadi to Pookkattupadi Ch. 8/000 to 11/020 Agreement No. 109/SECCA/2015-16 dated 03/10/2015.	25,000
6	OR 2015-16: Urgent BT patch repairs 3rd mile AA Road to Thadikkakadavu and worst reaches. Agreement No.68/AEE/ALY/2016-17 dated 29/02/2016.	Budget Work 2013-14 Improvements to Edappally – Muvattupuzha road from Kuzhivelipadi to Pookkattupadi Ch. 8/000 to 11/020 Agreement No. 109/SECCA/2015-16 dated 03/10/2015.	25,000
7	VVIP Visit -O/R 2015-16: Providing strip BC surfacing UC College Edayar Road Ch.1/100 to 1/300 in connection with the visit of Hon'ble PM of India. Agreement No.58/AEE/ALY/2016-17 dated 29/02/2016.	Budget Work 2013-14 improvements to Edappally – Muvattupuzha road from Kuzhivelipadi to Pookkattupadi Ch. 8/000 to 11/020 Agreement No. 109/SECCA/2015-16 dated 03/10/2015.	25,000

Source: Department records.

## Appendix - 3.1.7

## List of works in which traffic/road safety provisions were reduced

(Reference: Paragraph 3.1.6.1 – Page: 45)

Sl No.	Name of work	Agreement No. & Date	Safety provisions reduced in the work
1	Strengthening the road by providing BM & BC to MES college proposed road Ch. 0/000 to 2/590, Koratty - Kannimala road 0/000 to 2/800 km and Erumely TB road 0/000 to 0/500 km.	No. 66/SESC/14-15 dated 13/11/2014	Thrie metal beam crash barrier, retaining wall and culvert.
2	S/F 2013-14 strengthening the road by providing BM&BC to Thruvalla - Kumbazha road from 16/650 to 33/000.	No. 74/SESC/2014-15 dated 17/11/2014	Culvert, thrie metal beam crash barrier and road signs.
3	Budget work 2011-12 providing BM&BC to Chendrappally - Konni road from 0/000 to 12/500 in Konni Constituency Pathanamthitta District.	No. 03/SESC/2014-15 dated 27/05/2015	Delineators and thrie metal beam crash barrier.
4	Improvements to Vettathukavala - Meenadam road Ch. 0/000 to 7/850 (1 <sup>st</sup> Phase).	No. 63/SESC/2016-17 dated 30/05/2017	Retro reflective traffic signs, road markings, Delineators and crash barrier.
5	Improvements by providing BM&BC to Thiruvathuckkal - Illickal road Ch. 0/000 to 1/770.	No.231/SESC/15-16 dated 02/03/2016	Signboards, Delineators and road studs.
6	Providing BM & BC work to Arunassery - Kattampakkal - Kuravilangad road km. 2/000 to 8/800.	No.101/SESC/15-16 dated 01/10/2015	W Metal beam crash barrier.
7	Improvements to Seethagoli - Puthige-Perla road km. 0/000 to 18/680 & Puthige - Badoor link road km. 0/000 to 3/000 in Kasargode District.	No. SE (K) 22/14-15 dated 21/05/2014	W Metal beam crash barrier and pipe culverts.
8	Improvements to Chingavanam - Kolladu - Kanjikuzhy road (BM&BC).	No. 09/SESC/2014-15 dated 31/05/2014	Retaining wall and sign board.
9	Improving riding quality of Thathamangalam - Nattukal road SH 25 and connected road in Palakkad District.	No. SE (K) 170/16-17 dated 23/12/2016	Side protection works.
10	NABARD RIDF XIX - Improvements to Tirur - Kuttillathani road Ch.3/000 to 10/550, Patternadakkavu - Ezhur road Ch. 0/000 to 8/450, Kanzipura - Patternadakkavu road Ch. 0/000 to 6/500 in Malappuram District.	No. SE (K) 107/15-16 dated 11/09/2015	Road studs and road markings.

Source: Department records.