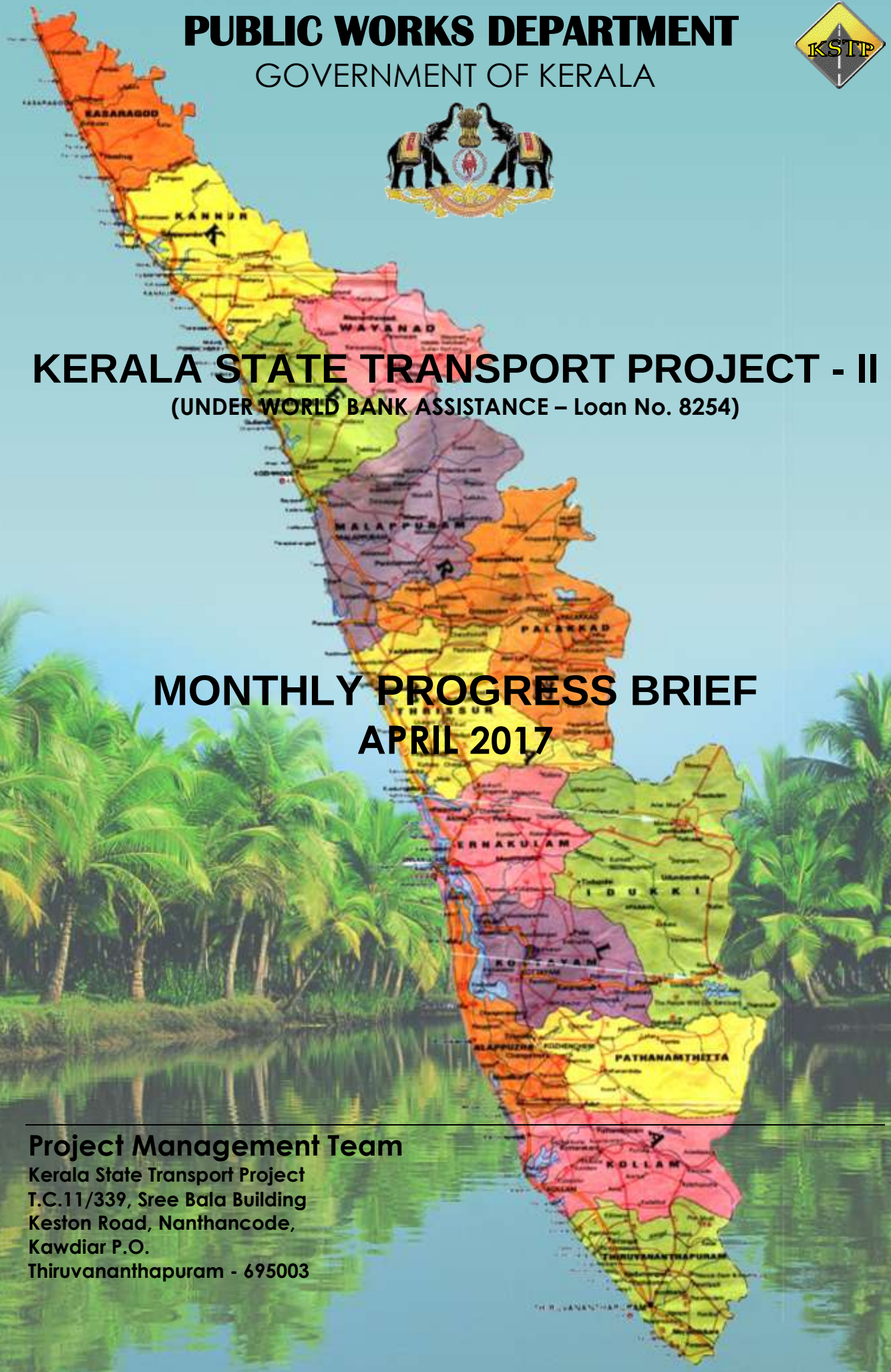
PUBLIC WORKS DEPARTMENT

GOVERNMENT OF KERALA



KERALA STATE TRANSPORT PROJECT - II

(UNDER WORLD BANK ASSISTANCE – Loan No. 8254)

MONTHLY PROGRESS BRIEF

APRIL 2017

Project Management Team

Kerala State Transport Project
T.C.11/339, Sree Bala Building
Keston Road, Nanthancode,
Kawdiar P.O.
Thiruvananthapuram - 695003

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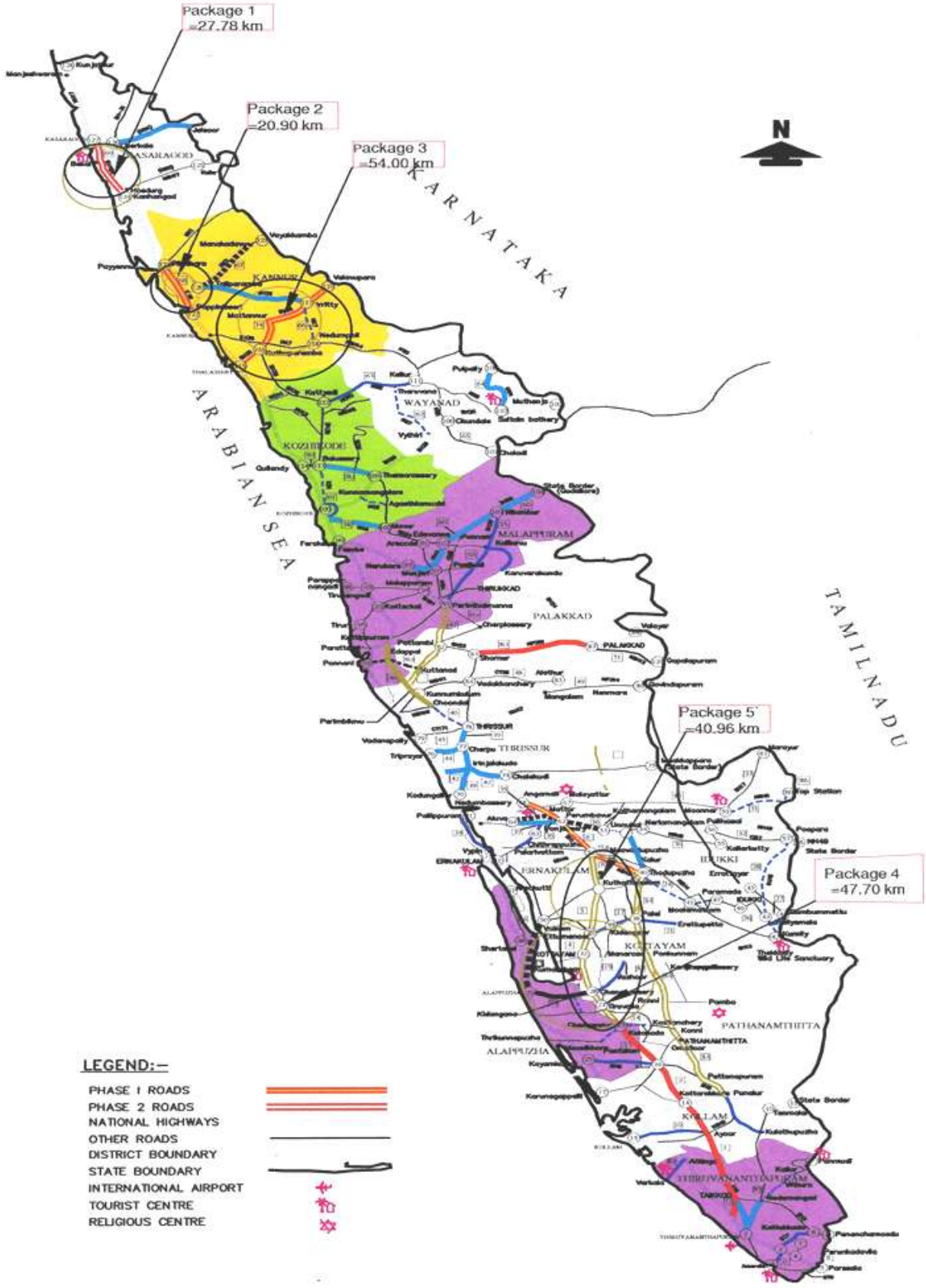
PROJECT LOCATION MAP



Introduction

Government of Kerala has decided to take up Phase-II upgradation component of KSTP as a standalone project, the KSTP-II. The project envisages the upgradation of 363 km of SH and MDR, Road Safety Management and Institutional Strengthening of PWD. The total Project cost is 445 million USD out of which 216 million USD is loan assistance from World Bank. The project loan agreement was signed on June 19, 2013 at the DEA Office, New Delhi. The loan effectiveness date is September 6, 2013. The project implementation period is five years, up to 31 December 2018 and the expected loan closing date is April 30, 2019.

1.1 Project Development Objectives

The Project Development objective is to improve condition, traffic flow and road safety with a focus on vulnerable road user on Kerala State Core road networks comprising of 363 Km of state highways. The main beneficiaries of the Project will be the users living along the Project corridors mainly the travelling public, agricultural and industrial producers, consumers and local community. The main benefit is in the form of reduced transport bottlenecks, lower passenger freight transport costs, reduced travel time and improved road safety in terms of reducing severe crashes and injury. The roads identified for improvement passes through about 87 villages covering eight districts.

1.2 Outline Project Data:

The upgrading works for six roads are included in the KSTP-II. The major items of works included are improvement to gradient, widening and strengthening the roads including minor realignments wherever essential, reconstruction of narrow bridges and culverts and improvements to drainage system. A Bypass also is proposed at Thiruvalla. The carriageway proposed are generally 2 lane with 1.50 mt. slow lanes on either side with hard shoulders and drains for a total width of 12 meters. The ROW is generally 15 Meters. The specification for civil works are as per MORTH & IRC standards.

The land acquisition for the project roads are almost completed except in the Perimbilavu- Pattambi- Perinthalmanna Road.

1.2.0.1 Kasargod Kanhangad Road – SH 57

Length - 27.76 km.Covers Kasargod, Pallikkara, manikoth and Kanhad areas and Tourist destinations at Bakel Fort and Ezhimala come under this stretch.

1.2.0.2 Pilathara Pappinissery Road

Length - 20.90 km. Covers Pilathara, Cheruthayam, Kunnupuram and Pappinissery.

1.2.0.3 **Thalassery - Valavupara Road – SH 30**

Length 53.12 km. It is a part of SH 30, Thalasserry – Coorg Road and passes through Koothuparambu, Mattannor, and Irutty.

1.2.0.4 **Chengannur - Ettumanoor – Muvattupuzha – SH1**

Chengannur Ettumanoor Muvattupuzha stretch of SH-1, MC (Main Central) Road, one of the most important and oldest roads in Kerala, passing through Thiruvalla, Changanasserry, Kottayam, Ettumannor, Kuravilangad, Kuttathukulam.
Total length covered is 88 kms.
Road portion from Thiruvananthapuram (Venjaramoodu) to Chengannur was taken up under Phase I. Bypass at Thiruvalla also forms part of this stretch. The road passes through the plantation areas and provides access to the tourist centres Kumarakom and Thekkady.13 bridges will be constructed in this stretch.
The improvement for this road portion is proposed in three construction packages, Chengannor- Ettumannor(41 km), Ettumanoor-Muvattupuzha (47km) and Thiruvalla Bypass (2.4km). Reconstruction of three Major Bridges and Nine Minor Bridges are included in this stretch.

1.2.0.5 **Punaloor - Ponkunnam – Thodupuzha – SH 8**

Punaloor - Ponkunnam and Ponkunnam - Thodupuzha stretches of SH 8 are the two stretches. Total road length is 132 kms.

Major areas covered are Punaloor, Pathanapuram, Manimala, Pala and Thodupuzha. Five Bridges will be constructed in this stretch. The road passes through Kollam-Pathanamthitta, Kottayam and Idukki districts. The portion from Ponkunnam – Thodupuzha is proposed under conventional item rate contract and work in progress. The portion from Punalur-Ponkunnam is proposed under PPP (modified annuity) arrangement. The bidding documents are prepared through the Transaction Advisor and pre-qualification of bidders completed. RFP is being forwarded to the pre-qualified bidders.

1.2.0.6 **Perumbilavu - Pattambi – Perinthalmanna – SH 39**

Perumbilavu- Pattambi-Perinthalmanna Road Link of SH 39 is included in the package (Starts at Kuttinad Jn). The growth centre connected is Pattambi town Length: 41 kms. The road passes through Thrissur, Palakkad and Malappuram Districts.

The details of approval are as under:

Project appraisal	-	April 2013
Loan agreement signed	-	19 June 2013
Loan Effectiveness date	-	Sept 6, 2013
Project cost approved by World Bank	-	US$445 ml
World Bank (IBRD) Loan Assistance	-	US$216 ml
Project implementation period	-	30th Oct 2013 to Dec 31, 2018
Expected closing date (Loan)	-	April 30, 2019

Fiscal Year	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Allocation						
Annual	22	43	45	54	32	20
Cumulative	22	65	110	164	196	216

1.2.0.7 **The Finance plus agenda of KSTP – II**

1. Upgrading Punalur – Ponkunnam Road under PPP (Annuity)
2. Development of Model Safe Corridor Kazhakuttam – Adoor Section (80 km)
3. Development of Oxbow land (left out lands)

1.3 **Overall Implementation:**

Project Staffing: KSTP is managed by a Project Director, in the Rank of a senior level Chief Engineer assisted by one Chief Engineer, a Superintending Engineer and other engineers and officers. The Technical Wing headed by the Chief Engineer is responsible for activities related to engineering, environment, social and contract management. Further, the legal contract management cell is headed by a legal professional. KSTP has qualified and experienced Social and Environmental Experts and a Project Management Advisor. The Finance Wing headed by a Finance Controller (deputed from the Secretariat) has a qualified Finance Manager with support staff. On the field, the KSTP has Two Superintending Engineers, Five Divisions located at Kottarakkara, Muvattupuzha, Kuttippuram, Kannur, Ponkunnam each headed by an Executive Engineer to monitor project progress.

Project co-ordination: Govt. of Kerala has established two committees to monitor, coordinate, and expedite project activities. The *Project Steering Committee* chaired by the Chief Secretary, has its main functions to review and approval of recommendations regarding acceptance of tenders and taking the final decisions on all matters concerning procurement and monitoring of project activities. The members of the committee are Additional Chief Secretary (Finance), Secretaries to Government, PWD, Law Department,

Revenue, Chief Engineer, R&B, Project Director, KSTP, Chief Engineer (Projects) KSTP. There is an Evaluation Committee headed by the PWD Secretary and comprising the Project Director, KSTP and Chief Engineer (Projects), to make recommendations on any issues on procurement as may require approval of the Steering Committee.

1.4 Project Components

1.4.0.1 Road Upgrading Works:

This component will include upgrading 363 kms of strategically important State Highways to complete network connectivity in the state with the objective of reducing travel time between key socio-economic centers.

1.4.0.2 Road Safety Management:

This component will support the strengthening of the road safety management systems in Kerala with the objective of arresting the increase of crash fatalities in the state. This component will finance various initiatives building on the work already undertaken during the first project including a *safe corridor demonstration project, implementation of local level programs utilizing the challenge fund and advisory support for road safety activities.* The road section improved under KSTP-I from Kazhakuttom - Venjaramoodu-Adoor is proposed to be developed as Safe Corridor Demonstration Project (80 km)

1.4.0.3 Institutional Strengthening

The objective of this component is to improve the sustainability of Kerala's state road network with respect to its functional adequacy, financial viability and capacity of key state road sector institutions to deliver road infrastructure and services that are responsive to road user needs. The major initiatives include Modernization of Road Sector. The development and Management of a Strategic Road Network is proposed under the Road Sector Modernization Program.

2.1 Project Description

2.1.0.1 Road Upgradation Under Item Rate Contract

This component will include upgrading of 240 km of State Highways through FIDIC based input contracts and conventional item rate contracts as noted below.

1.	Pilathara - Pappinissery Road	–	20.90 km
2.	Kasaragod – Kanhangad Road	–	27.76 km
3.	Thalassery – Valavupara Road (Rearranged in two contracts)	–	53.10 km

4. Ponkunnam – Thodupuzha Road – 50.30 km
5. Chenganur – Ettumanoor Road – 41.00 km
6. Ettumanoor – Muvattupuzha Road – 47.00 km
7. Perimbilavu – Pattambi- Perinthalmanna Road - 41.00 km

2.1.0.2 **Road upgradation under PPP (Modified Annuity) mode**

Punalur - Ponkunnam stretch (82 km) of Punalur – Thodupuzha Road

2.2 **Sub Component A1 (US$322 mn)**

Consists of the following civil contracts:

Sl. No.	*CONTRACT PACKAGE*	*NAME OF WORK*	*LENGTH (KM)*
1.	KSTP-II/UG-1	Kasargod – Kanhangad	27.78
2.	KSTP-II/UG-2	Pilathara – Pappinisery	20.90
3.	KSTP-II/UG-3A	Thalassery – Kalarode	28.80
4.	KSTP-II/UG-3B	Kalarode - Valavupara	25.20
5.	KSTP-II/UG-4	Chengannoor - Ettumannoor	45.40
6.	KSTP-II/UG-4A	Thiruvalla Bypass along Chengannoor - Ettumannoor	2.3
7.	KSTP-II/UG-5	Ettumannoor- Muvattupuzha	40.96
8.	KSTP-II/UG-6	Ponkunnam - Thodupuzha	50
9.	KSTP-II/UG-7	Perumbilavu – Perinthalmanna (with limited scope as overlay in existing surface)	41

2.3 **Supervision Consultancy**

Under this component, 2 supervision consultancies CSC1 and CSC 2, Independent engineering services, and Transaction Advisory Service for PPP are included. Contract Agreement for Consultancy for CSC 1 for 190 Km of upgradation road has been executed with M/s Egis International in JV with Egis India Consulting Engineers Pvt. Ltd on 28.02.2013 and mobilized and in place. Egis has established rented office for Team Leader at Thiruvananthapuram near to Client's Office and started functioning from April 2013. Also RE offices at Kanhangad in Kasargod District for Package - 1, Pazhyangadi in Kannur District for package – II and at Uliyil near Mattannur in Kannur District for package – III, Pallam in Kottayam for Package IV, for Package V at Koothattukulam.

M/s MSV International USA is the selected consultant for Construction Supervision for the Ponkunnam – Thodupuzha stretch (50 km) CSC-2. They have established their Resident

Engineer cum Team Leader's office at Ponkunnam. The length of road covered is 50 km and the assignment commenced on 15 May 2014.

2.4 Sub Component A2 (US$ 91 mn)

DPR for this sub component (Punalur – Ponkunnam – 82 Km under PPP). M/s L&T Ramboll, Chennai in association with M/s Fortress has been selected for the Transaction Advisory Services and activities in progress. The Investor Meet was held on March 2015 at Kochi. In the first bidding there was only qualified bidder and hence re-bid has been invited after obtaining No objection from Bank. In the re-bid eight offers have been received and are evaluated and submitted to Bank for no objection. The Bank's subsequent query on this was also answered and no objection is awaited.

2.5 Component B – Road Safety Management (US$ 22 mn)

The baseline survey for the proposed safe demonstration corridor has been completed by 'NATPAC' and report shared with Bank. M/s VicRoads, Australia has been selected as consultant for Road Safety Capacity Building and program management and activities in progress. The design activities on the Safe Corridor Demonstration Project (SCDP) are completed and works awarded and started.

2.6 Component C – Institutional Strengthening (US$ 10 mn)

2.6.0.1 Consultancy Services

Procurement for the following Consultancy services was initiated. Some are completed and others are at different stages of progress

1. Consultancy for Road User Perception Survey has been completed for 363 Km of Project Roads through M/s Sherwood Consultants and report shared with Bank.
2. Consultancy for Prioritization and DPR Preparation for 1000 Km of Improvement of State roads was entrusted with M/s Egis India Consulting Engineers Pvt. Ltd and final report submitted. DPR for 439 km roads has been completed. The preliminary project report for 1106 km was submitted to Government for posing for External Financial Assistance.
3. Consultancy for Strategic Option Study (SOS) for 8570 Km newly declared MDR was completed by M/s CDM Smith Associates Pvt. Ltd. Study report has been handed over to PWD, R&B and further action to improve these roads will be taken by them using their own funds.
4. Consultancy service for Developing Multi Model Integrated Transport Hub at 3 cities, Trivandrum, Kozhikode and Kochi was completed and report forwarded to

Government. This report was also shared with NATPAC for consideration while preparing Comprehensive City Development Projects.

5. The SRNP has been changed to Coastal Highway Development Project, ToR for Techno-economic study is completed.
6. Discussions on entrusting to an agency is in progress
7. It is proposed to award the assignment for developing Public Information System to C-DAC and C-DAC has submitted the Terms of Reference in time with approved ToR by the World Bank.

8. The Project Management Software has been installed and training given to CSC and KSTP Engineers. The PMS is operationalized.

9. The assignment for "Community Participatory Road Safety and Asset Management was initially held up due to court order. The Bank has issued no objection for rebidding. The court has passed verdict and Steering Committee decided to re-bid for the assignment. The ToR was modified and approved by the Bank. The re-bidding was initiated. In response to this eight applications received and under evaluation.

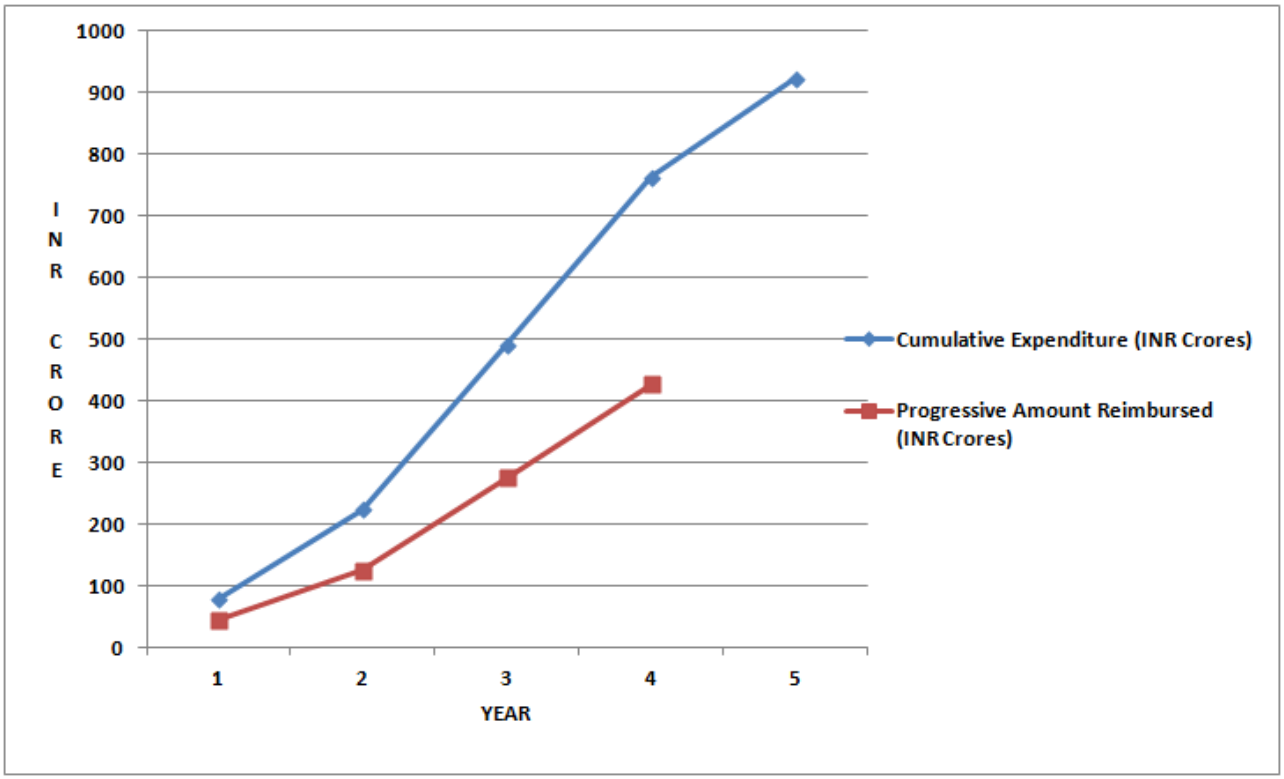
2.7 **Project Cost and Disbursement**

Sl. No	Claim	Date	EXPENDITURE	AMOUNT CLAIMED	DISBURSED
			in Lakh	in Lakh	USD in millions
			TOTAL		
	Front end fee				0.54
1	Retroactive	15.06.12 to 15.06.13	1,863.95	1,043.00	1.69
2	1st Quarter				
3	2nd Quarter	01.07.13 to 30.9.13	1,355.79	764.00	1.23
4	3rd quarter	01.10.13 to 31.12.13	1,906.01	1,071.00	1.71
5	4th quarter	01.01.14 to 20.03.14	2,696.00	1,510.00	2.5
		21.03.14 to 31.03.14	53.79	30.00	0.05
6	1st Quarter	01.04.14 to 18.06.14	1,826.41	1,023.00	1.7
		19.06.14 to 30.06.14	14.69	8.23	0.02
7	2nd Quarter	01.07.14 to 30.09.14	1,405.61	787.00	1.27
8	3rd quarter	01.10.14 to 31.12.14	3,790.21	2,124.00	3.44
9	4rth quarter	01.01.15 to 28.02.15	3,706.35	2,076.00	3.32
10	4rth quarter	01.03.15 to 31.03.15	3,704.89	2,076.00	3.32
11	1st Quarter	01.04.15 to 16.06.15	3,534.14	1,991.00	3.14
12		17.06.15 to 30.06.15	154.40	86.00	0.14
13	2nd Quarter	01.07.15 to 30.09.15	3,527.06	1,977.00	3.04
14	3rd quarter	01.10.15 to 31.12.15	10,338.17	5,790.00	8.51

15	4rth quarter	01.01.16 to 13.03.16	6,413.18	3,592.00	5.38
16		14.03.16 to 31.03.16	2,861.91	1,603.00	2.41
17	1st Quarter	01.04.16 to 10.06.16	2,037.40	1,141.00	1.69
18		11.06.16 to 22.06.16	2,957.89	1,656.00	2.45
19	2nd Quarter	23.06.16 to 31.08.16	4,786.10	2,680.00	4.01
20		01.09.16 to 30.09.16	3,981.82	2,230.00	3.26
21	3rd quarter	01.10.16 to 31.12.16	4,079.22	2,284.00	3.39
22	4rth quarter	01.01.17 to 31.03.17	9,237.79	5,173.00	8.04
			76,232.78	42,715.23	65.71

Progressive Expenditure and amount Reimbursed – Status as on Jan – Mar 2017

Year	Cumulative Expenditure (INR Crores)	Progressive Amount Reimbursed (INR Crores)
2013-14	78.75	44.42
2014-15	223.24	125.40
2015-16	491.53	275.51
2016-17	762.33	426.83
2017-18	923	
2018-19	-	

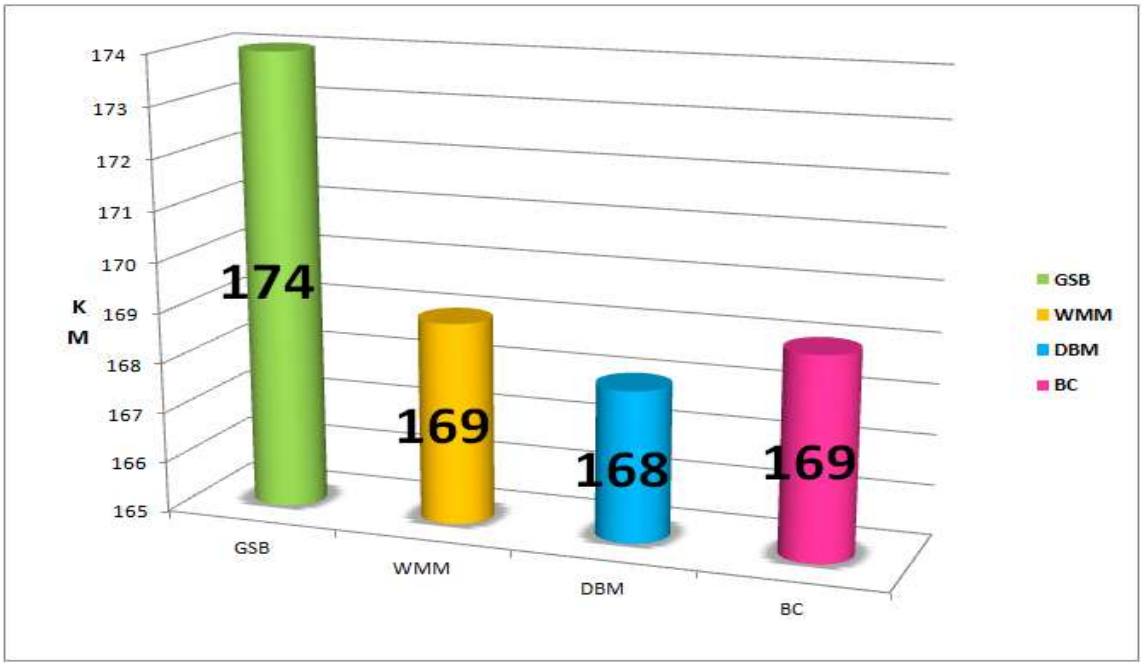


Estimated Actual loan allocation and disbursement received (Bank's Financial Year (January to December) (US$ million)

Fiscal Year	FY 2014 (Jan-Dec)	FY 2015 (Jan-Dec)	FY 2016 (Jan-Dec)	FY 2017 (Jan-Dec)	FY 2018 (Jan-Dec)	FY 2019 (Jan-Dec)
Allocation						
Annual	22	43	45	54	32	20
Cumulative	22	65	110	164	196	216
Disbursement						
Received so far	14.15	21.46	22.49	*7.60		
Cumulative	14.15	35.61	58.11	**65.71		

* Disbursement up to Mar 2017
** Cumulative up to Mar 2017

Physical Progress of Finished Pavement Works (KM)



3.0 Executive Summary

3.1 Upgradation Works

The work for Packages 1, 2, 4, 4A, 5 and 6 are in progress. The work in Package 3 was terminated due to poor performance of the contractor, and are arranged as 3A and 3B. The work for Package 8 is under PPP (Hybrid Annuity) and bidding is in progress. The PQ bids are been evaluated. The work for Package 8 is not taken up as upgradation, due to non availability of land. This is being taken up as Heavy Maintenance within the available land.

The following are the 9 upgradation Contract packages:

Sl. No.	*CONTRACT PACKAGE*	*NAME OF WORK*	*CONTRACTOR*
1.	KSTP-II/UG-1	Kasargod – Kanhangad	M/s RDS Projects, Kochi
2.	KSTP-II/UG-2	Pilathara – Pappinisery	M/s RDS Projects, Kochi
3.	KSTP-II/UG-3A	Thalassery – Kalarode	M/s Dinesh Chandra R. Agrwal
4.	KSTP-II/UG-3B	Kalarode – Valavupara	M/s EKK Infrastructure Pvt. Ltd.,
4.	KSTP-II/UG-4	Chengannoor - Ettumannoor	M/s Delma - Sreedhanya JV
6.	KSTP-II/UG-4A	Thiruvalla Bypass along (Chengannoor – Ettumannoor)	M/s EKK & Co, Kochi.
5.	KSTP-II/UG-5	Ettumannoor- Muvattupuzha	M/s NAPC Ltd, Chennai
7.	KSTP-II/UG-6	Ponkunnam - Thodupuzha	M/s GHV – EKK JV
8.	KSTP-II/UG-7	Perumbilavu – Perinthalmanna (EPC)	LA initiated
9	KSTP-II/UG-8	Punalur – Ponkunnam (PPP)	Bidding to identify concessionaire in progress

The works are being executed under FIDIC (5th edition) Conditions of Contract. The work involves improvement of State Highways including geometrical improvements and realignments to standard 2 lane of 7 m carriageway and 1.5 m paved shoulders. The Construction Works include:

- Widening the existing pavement where it is less than design width;
- Scarification, clearance, earthworks,
- Granular sub-base, wet mix macadam base course, bituminous mix surfacing,
- Construction of overlays to the existing pavement, inclusive of regarding to a designed vertical profile;
- Geometrical realignments at specific locations;
- Construction of paved shoulders;
- Construction and maintenance of diversion roads
- Construction of lined and unlined longitudinal drains, covered drains and footpaths in urban areas;
- New culverts, new bridges and rehabilitation of existing bridges/culverts and protective works
- Provision of road signs and markings;
- Provision of traffic safety features - road furniture and other road safety appurtenances,
- Routine maintenance and maintenance during Defects Rectification Period.
- Environmental protection measures and Social enhancement works/ landscaping works etc.

3.2 **Summary of Progress (works)**

The following tables present the summary of progress in each contract package during the month under report April 2017.

Contract Packages	Contract value (Rs. Crores)	Achieved cumulative percentage up to Dec 2016			Balance period (month)
		Financial		Physical	
		Gross	Actual Paid		
KSTP/PMT/UG-1	1,33,05	74.00	63.56	73.28	1
KSTP/PMT/UG-II	118.20	70.00	58.47	70.00	1
KSTP/PMT/UG-1II-A	156.59%	07.50	6.94	07.50	14
KSTP/PMT/UG-1II-B	209.58	13.00	20.28	13.00	14
KSTP/PMT/UG-IV	293.58	65.83	58.39	70.00	
KSTP/PMT/UG-IVA	31.80	63.00	53.84	64.29	-
KSTP/PMT/UG-V	171.49	62.97	54.82	68.50	-
KSTP/PMT/UG-VI	227.13	100	95.61	99.20	1
KSTP/PMT/UG-VIII (done as overlay)	08.00	100	100	100	-

3.2.0.1 **Details of Supervision Consultancy Assignments:**

Name of consultant	Contract signed	Contract Period	Commencement Date	Contract Amount (Rs.)	Work Package
CSC-1 – M/s Egis International in JV with M/s Egis India Pvt. Ltd.	28.02.2013	42 months	04.04.2013	18,36,04,600	I, II, III, IV, IVA & V (190 km)
CSC-2 – M/s MSV International USA	14.05.2014	30 months	14.05.2014	4,41,88200	VI (50 km)

3.3 **General Issues:**

The progress is not as per originally anticipated programme. The major factors that hindered the progress of works at initial stage were:

1. Delay in obtaining statutory clearances for erection of plants and crushers from the State Pollution Control Board, Mining and Geology Department and local bodies.
2. Unprecedented unseasonal rains affected adversely works in all the contract Packages in the initial stges
3. Resistance in identifying, erecting and operating crushers and quarry from the local people.
4. Poor cash flow problems with the contractors at the initial stages
5. Shortage of machinery, labour force in most of the contracts.

6. Frequent changes made in key personnel in some of the contracts by the contractor
7. Migrant labours working in all packages and labourers not available during festival season for long duration.
8. Lack of planning and managerial issues in contracts I, II & V
9. Work Contract-III terminated. Balance works procured under two contract (3A & 3B)
10. Delay in getting Environmental Clearance from Government Agency for excavation and conveyance of earth from borrow area.

All these issues are now sorted out and the works are in progress now. The contractors were instructed to speed up the works to show better results. Contract Package-III was terminated due to poor performance of the contractor and rearranged as IIIA and IIIB and work in progress.

THE FOLLOWING SECTIONS DESCRIBE CIVIL WORKS CONTRACT PACKAGES IN DETAIL:

4.1 Current Status of Works

4.2 Contract Package I

Upgradation of Road from Kasargod to Kanhangad of SH 57

Scope of Works

Viaduct	–	1
Major Bridge	–	2
Minor Bridge	_	2
Widening Bridge	–	2
New culverts	_	16
Widening Slab culverts	–	16
Reconstruction	_	9
Foot path	_	6.7 Km
Drain	–	22.20 Km
Solar Lights		

4.3 Contract Details

Letter of Acceptance Date	::	06.03.2013
Agreement Date	::	01.04.2013
Name of Contractor	::	M/s RDS Projects Ltd, Kochi
Contract Price	::	Rs.133,05,79,485/-
Notice to Commence	::	24.04.2013
Total Length	::	27.78 Km
Contract Period	::	24 months
Completion Date	::	23-04-2015 extended to 31.03.2017 (extended)
Defect Liability Period	::	365 days
1st Milestone	::	Km. 0+000 – Km. 10+000
2nd Milestone	::	Km. 0+000 – Km. 20+000
3rd Milestone		Km. 0+000 – Km. 27+780

4.4 Progress of Works for this month

4.4.0.1 Progress up to month ending April 2017

Sl No.	Item	Monthly Progress	Cumulative Progress		Balance Work
1	Excavation	Progress in Km 22+000 to Km 24+00 & Km. 25+455 to Km 26+460	Completed in Km 0+000 to 23+000 & Km 25+455 to Km. 27+675		
2	GSB	0.320 Km	26.407Km(FW)	0	1.373Km
3	WMM	0	26.087Km(FW)	0	1.693Km
4	DBM	0.748 Km	25.646Km(FW)	0.200 Km (HW)	2.034Km
5	BC	1.251 km	23.265(FW)	0.155km (HW)	4.438km
	Structures				
6	Viaduct at 3+392	Application of Elastomeric membrane for exposed concrete is Completed	Completed and opened to traffic		
7	Chithari Bridge @ 18+400	Application of Elastometric membrane for exposed concrete is Completed	Completed and opened to traffic. Existing bridge overlay Completed		
8	Culverts	0	35		3Nos deleted non availability of outfall
9	Drain - Casting	130 m	16629m		5371m
10	Drain - Placing	163 m	14504m		7496m

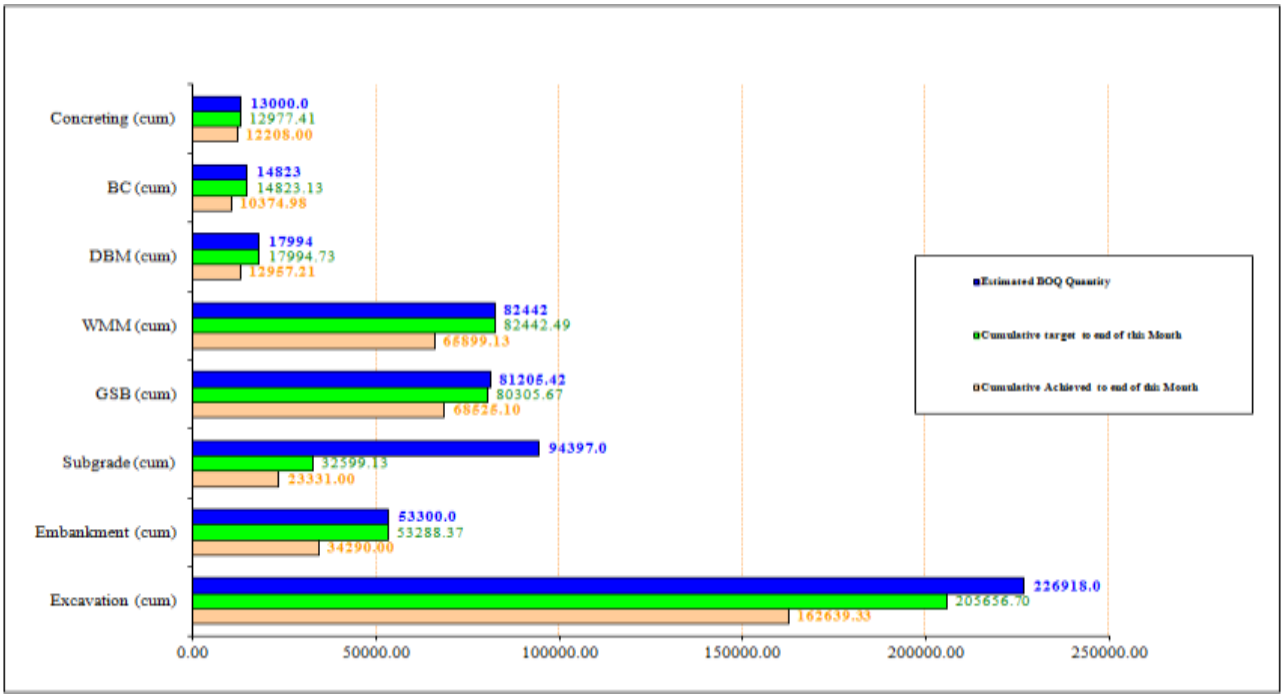
4.5 Schedule of Culverts and Drainage works

Nature of work	Total number	No. dwgs approved	Number completed	Number in progress	Number remaining	Total Number	No. dwgs approved	Number completed	Number in progress	Number remaining	Total number	No. dwgs approved	Number completed	Number in progress	Number remaining
Culverts	**Milestone - I (1 to 2.8Km and 3.80 to 12.0Km)**					**Milestone - II (12 to 22Km.)**					**Milestone - III (0 to 1.0Km, 2.80 to 3.80Km and 22 to 27.78Km.)**				
Widening Slab/Box Culverts	9	9	9	-	-	-	-	-	-	-	1	1	1	-	-
Reconstruction Slab/Box	7	7	7	-	-	7	7	7	-	-	2	2	2	-	-
New Box Culvert/Pipe culvert	6	6	6	-	-	2	2	2	-		1	1	1	-	-
Total culverts	**22**	**22**	**22**	**-**	**-**	**9**	**9**	**9**	**-**	**-**	**4**	**4**	**4**	**-**	**-**
Bridges/ROB Retained**	2	-	-	-	-	2	-	-	-	-	-	-	-	-	-
Bridges Widening * **	2	2	2	-	-	-	-	-	-	-	-	-	-	-	-
New Bridges/Viaduct*	-	-	-	-	-	1	1	1	-	-	1	1	1	-	-
											Note: 3Nos of culverts Deleted				

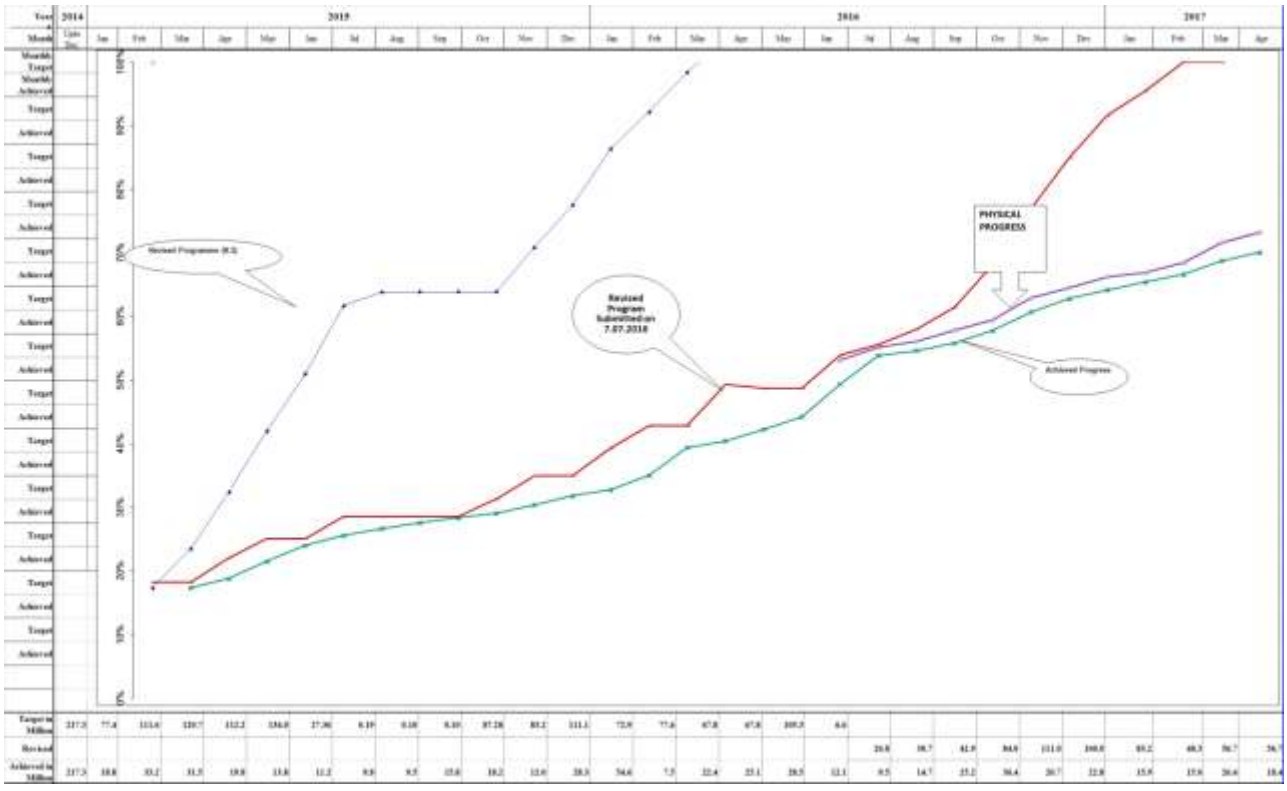
4.6 Progress Considering the Contract price up to this month ending Apr 2017

Up to previous month		This month		Cumulative to end of this month		Physical Progress
Target	Achieved	Target	Achieved	Target	Achieved (gross)	
100%	68.76%		1.34%	100%	70.10%	73.28%

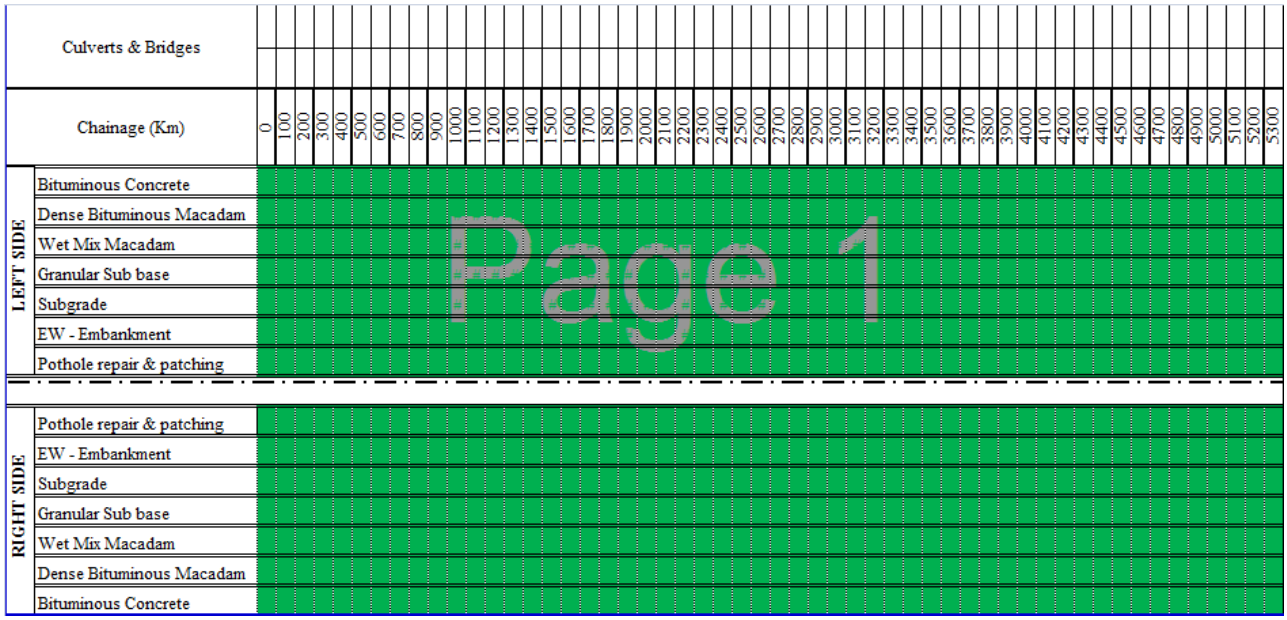
4.7 Physical progress Bar Chart

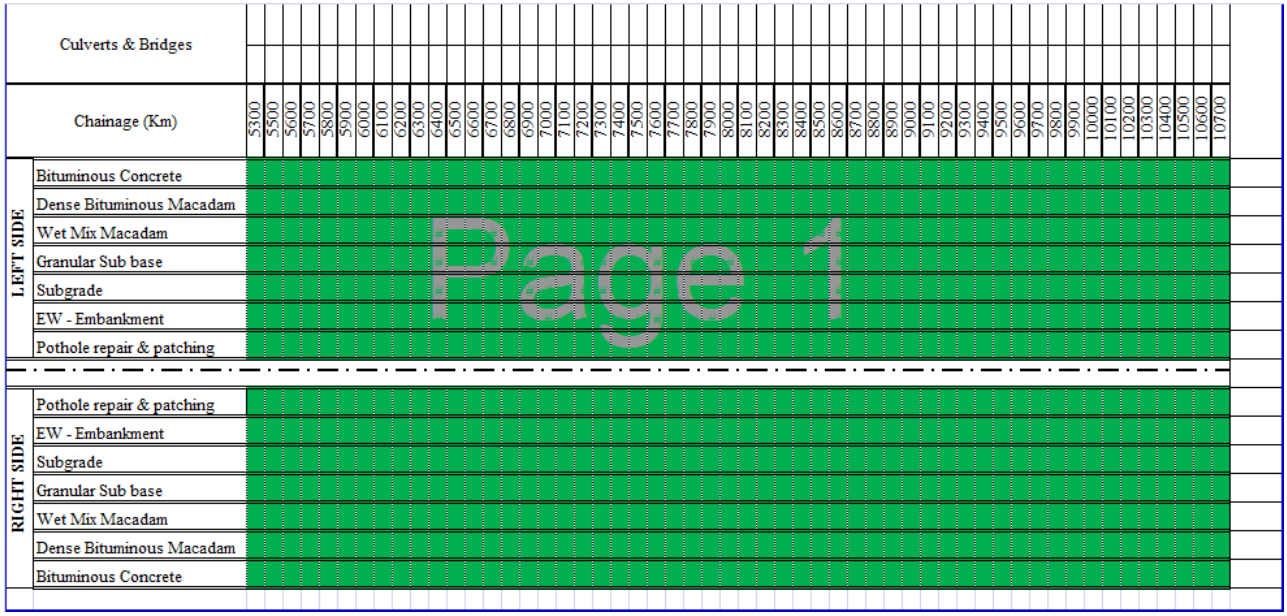


4.8 S-Curve



4.9 **Strip map**


Culverts & Bridges
Chainage (Km)
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
1400
1500
1600
1700
1800
1900
2000
2100
2200
2300
2400
2500
2600
2700
2800
2900
3000
3100
3200
3300
3400
3500
3600
3700
3800
3900
4000
4100
4200
4300
4400
4500
4600
4700
4800
4900
5000
5100
5200
5300
LEFT SIDE
Bituminous Concrete
Dense Bituminous Macadam
Wet Mix Macadam
Granular Sub base
Subgrade
EW - Embankment
Pothole repair & patching
RIGHT SIDE
Pothole repair & patching
EW - Embankment
Subgrade
Granular Sub base
Wet Mix Macadam
Dense Bituminous Macadam
Bituminous Concrete
Page 1


Culverts & Bridges
Chainage (Km)
5300
5500
5600
5700
5800
5900
6000
6100
6200
6300
6400
6500
6600
6700
6800
6900
7000
7100
7200
7300
7400
7500
7600
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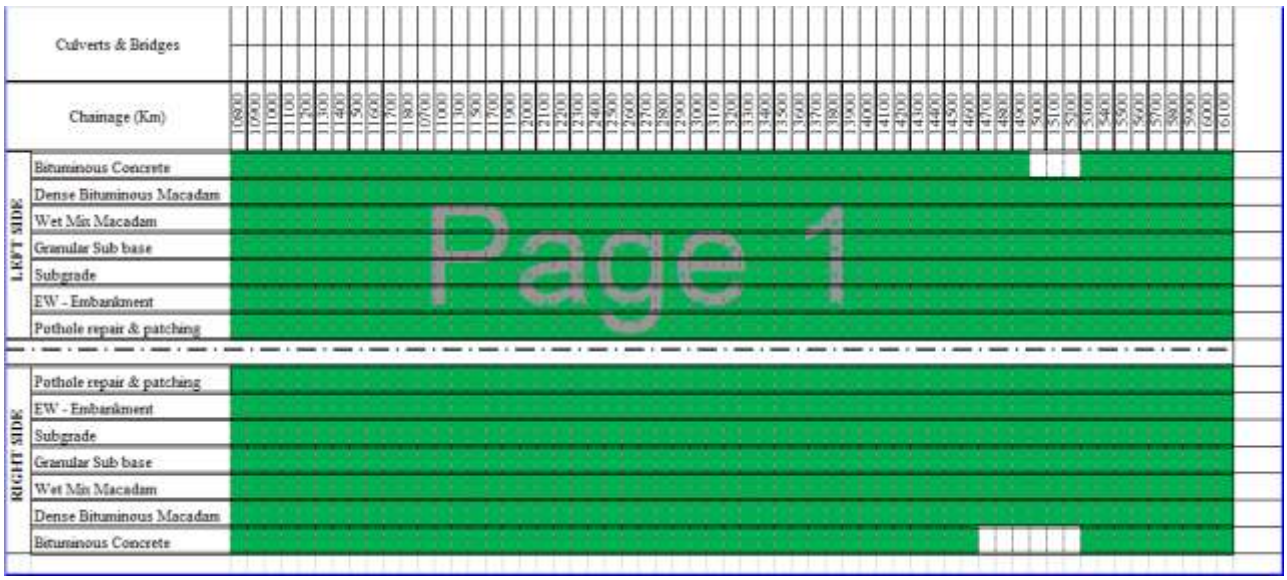
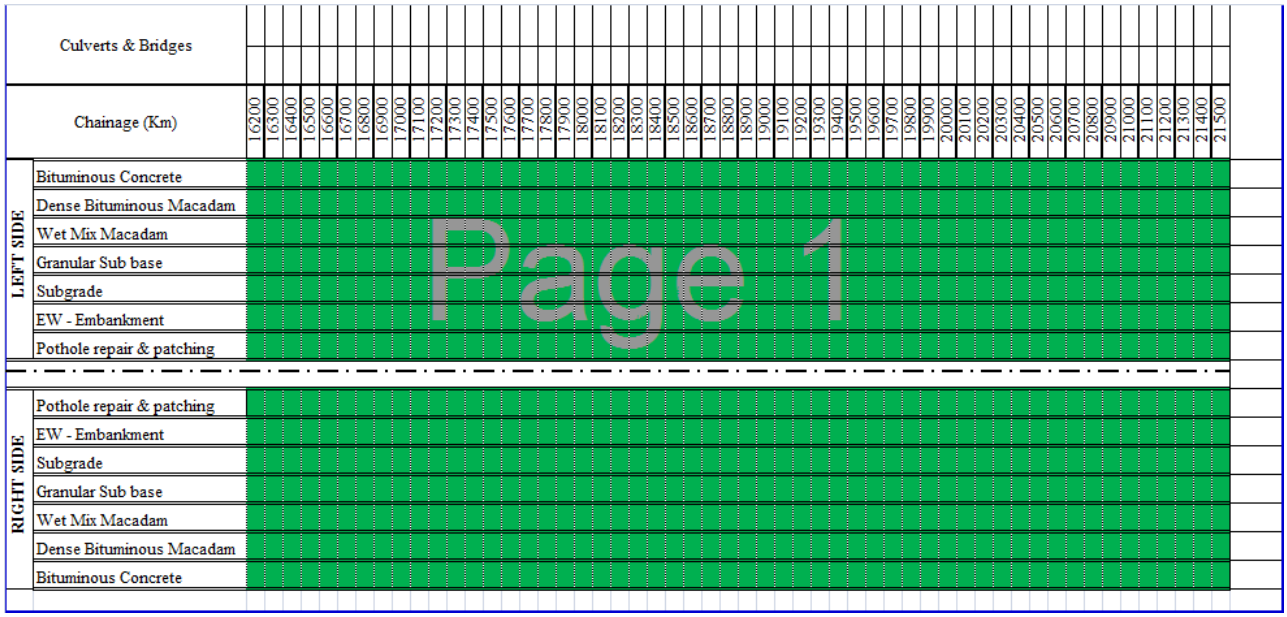
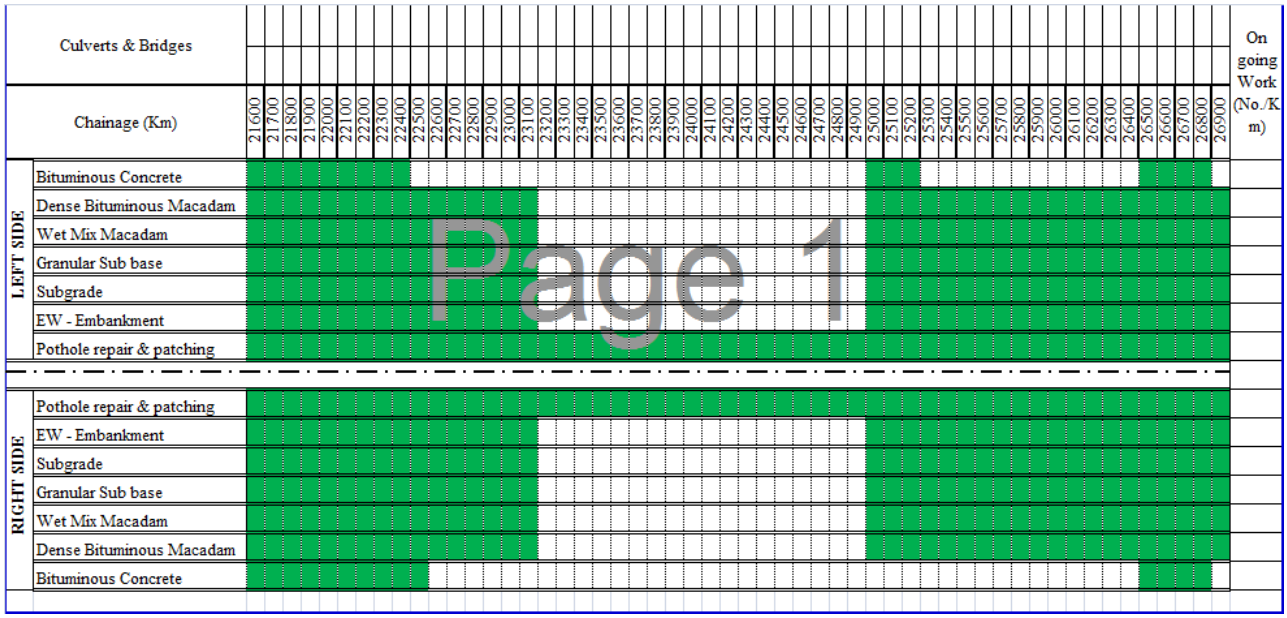
9300
9400
9500
9600
9700
9800
9900
10000
10100
10200
10300
10400
10500
10600
10700
LEFT SIDE
Bituminous Concrete
Dense Bituminous Macadam
Wet Mix Macadam
Granular Sub base
Subgrade
EW - Embankment
Pothole repair & patching
RIGHT SIDE
Pothole repair & patching
EW - Embankment
Subgrade
Granular Sub base
Wet Mix Macadam
Dense Bituminous Macadam
Bituminous Concrete
Page 1


Culverts & Bridges
Chainage (Km)
LEFT SIDE
Bituminous Concrete
Dense Bituminous Macadam
Wet Mix Macadam
Granular Sub base
Subgrade
EW - Embankment
Pothole repair & patching
RIGHT SIDE
Pothole repair & patching
EW - Embankment
Subgrade
Granular Sub base
Wet Mix Macadam
Dense Bituminous Macadam
Bituminous Concrete
Page 1


Culverts & Bridges
Chainage (Km)
16200 16300 16400 16500 16600 16700 16800 16900 17000 17100 17200 17300 17400 17500 17600 17700 17800 17900 18000 18100 18200 18300 18400 18500 18600 18700 18800 18900 19000 19100 19200 19300 19400 19500 19600 19700 19800 19900 20000 20100 20200 20300 20400 20500 20600 20700 20800 20900 21000 21100 21200 21300 21400 21500
LEFT SIDE
Bituminous Concrete
Dense Bituminous Macadam
Wet Mix Macadam
Granular Sub base
Subgrade
EW - Embankment
Pothole repair & patching
RIGHT SIDE
Pothole repair & patching
EW - Embankment
Subgrade
Granular Sub base
Wet Mix Macadam
Dense Bituminous Macadam
Bituminous Concrete
Page 1


Culverts & Bridges
Chainage (Km)
On going Work (No./Km)
21600 21700 21800 21900 22000 22100 22200 22300 22400 22500 22600 22700 22800 22900 23000 23100 23200 23300 23400 23500 23600 23700 23800 23900 24000 24100 24200 24300 24400 24500 24600 24700 24800 24900 25000 25100 25200 25300 25400 25500 25600 25700 25800 25900 26000 26100 26200 26300 26400 26500 26600 26700 26800 26900
LEFT SIDE
Bituminous Concrete
Dense Bituminous Macadam
Wet Mix Macadam
Granular Sub base
Subgrade
EW - Embankment
Pothole repair & patching
RIGHT SIDE
Pothole repair & patching
EW - Embankment
Subgrade
Granular Sub base
Wet Mix Macadam
Dense Bituminous Macadam
Bituminous Concrete
Page 1


Culverts & Bridges
Chainage (Km)
27000 27100 27200 27300 27400 27500 27600 27700 27780
LEFT SIDE
Bituminous Concrete
Dense Bituminous Macadam
Wet Mix Macadam
Granular Sub base
Subgrade
EW - Embankment
Pothole repair & patching
RIGHT SIDE
Pothole repair & patching
EW - Embankment
Subgrade
Granular Sub base
Wet Mix Macadam
Dense Bituminous Macadam
Bituminous Concrete
Page 1

4.10 Potential Issues

The very poor cash flow of Contractor has seriously hampered the progress of works. No improvement is observed in the progress of activities during the month also despite the assurance given by the Contractor to Employer and CSC.
Lack of resources at site which reflected frequent change in planning of works at site,

4.11 Payments to the Contractor

Mobilization advance, Equipment advance and Interim payment Certificate for works up to (IPC-20) was paid to the Contractor amounting to Rs. 84.56 crores. Timely payments are released to the contractor. The Steering Committee held on 28.06.2014 lowered the threshold limit of minimum IPC amount for Rs. 1.5 crores from Rs. 3.00 crores to facilitate the cash flow of contractor. There is no pending payment to contractor.

4.12 Implementation of EMP

4.12.0.1 Environment Management at work sites

Contractor was supposed to complete the work on 31st march 2017, but not completed. As on today 26 km DBM and 25 km BC completed. The total value of work done so far is 90 crs. The final contract price anticipated is 125 crores. About 35 crores value of work is remaining. The supervision consultant's period is also expire on end April. Employer has not conveyed any decision on continuance of consultancy service. The supervision staffs are continuing.

Construction of parking at all major towns was explored and contractor was asked to submit a proposal for parking at all major junctions and existing parking shall also be integrated. This is pending. The balance quantity of drain to be constructed is around 5KM.Some of the culvert requires additional length of drains outside of ROW to connect to the existing water body, this work is in progress.

The safety arrangements at Kanhangad town are not provided as per the requirements. The existing well at Km23+300 requires relocation but no land is available for relocation. As this is a public wall consultation with municipality is required. Some of the trees in the town have to be protected with walls and to be kept in island. The lost access to the Homoeopathy hospital at Kanhangad town has to be reinstated this was not done.

The safety of construction site is a primary concern and requires further improvement. Pavement markings, fixing of sign boards, safety barriers installation bus bay construction, parking area developments are not yet completed.

The tree planting works are in a slow pace more number of trees has to be planted. The contractor agreed to make arrangements with forest departments to supply seedlings for plantation which may commence June2017 during monsoon. The junction improvement works at Kasergod town partially completed and works of bus bay completed.

The Environmental expert visited at site on 29th April and observation has been sent the contractor to take action.

Three accidents reported during March two numbers pedestrian hit (fatal), and another head on collision. It may be noted that the pedestrian hit is mainly due to the lack of foot path. This is a serious issue to be addressed.

The enhancement works in front of the Thrikanad temple is pending. Tree planting construction of bus bay footpath is to be completed at this location.

Contractor has to obtain consents (extension of validity from PCB).Copy of the same not provided.
One accident reported on chandragiri bridge in which one person died. The Chandragiri bridge is an old bridge we done only overlay, but there is no safety barrier .due to the overlay works the top level of foot path and that of road are at same level. The foot path has to be raised along with the hand rails. This was reported to the employer and no action taken so far.

4.12.0.1 **Traffic Management and Road Safety Measure**

The Contractor has not provided the required safety precautions such as flags, safety signboards, traffic cones, blinkers and safety tapes at the work site as per requirement. Since the construction works are very slow it also affected the traffic management measures. Resident engineer has issued warning to improve the safety at sites and if not comply strict action as per clause 14.6 is required.

4.13 Quality Control Tests – Material for structure

Tests Performed	Standard used	Standard limits	Test Frequency	Total tests up to Previous Month			Tests during this Month			Total tes
				Tested	Passed	Failed	Tested	Passed	Failed	Tested
STONE	**MOST 1004**									
Water Absorption	IS:1124	Max 2%	lot	1	1					1
CEMENT	**MOST 1006**		lot							
Fineness	IS:269-1976		" "	124	124		2	2		126
Standard Consistency	" "		" "	124	118	6	2	2		126
Soundness	" "		" "	5	5					5
Compressive Strength	" "		" "	5	5					5
3 day strength test	" "	27 Mpa		123	123		2	2		125
7 day strength test	" "	37 Mpa		126	126		2	2		128
28 day strength test	" "	53 Mpa		125	125		1	1		126
Initial Setting time	IS:4031(Part 1)	< 30 min		124	124		2	2		126
Final Setting time	IS:4031(Part 5)	> 600 min	" "	124	124		2	2		126
COARSE/FINE Aggregates	**MOST 1007/1008**									
Gradation	IS:2386(Part 1)		lot	2499	2499		33	33		2532
Flakiness Index	" "	Min 35%	" "	1256	1256		33	33		1289
Deletrious Mat./Organic Imp.	" (Part 2)		" "							
Water Absorption/Spec.Grav.	" (Part 3)	Max 2%	" "	4	4					4
Bulk Density	" "		" "							
Impact or crushing Aggr.Value	" (Part 4)	Max 30%	" "	900	900		24	24		924
Los Angeles Abrasion Value	" "		" "							
Soundness	" (Part 5)		" "							
Alkali Aggregate Reactivity	" (Part 7)		" "							
Surface Moisture Content	" (Part 3)		" "	206	206		24	24		230
Fineness Modulus of FA				743	743		24	24		767

STEEL	**MOST 1009**									
Verification of conformity(Yield stress,U.T.S, % Elg,Unit Wt.Dia. Test. Etc	IS:432/1030/1785/1786		lot	2	2					2
	2004/2062									
WATER	**MOST 1010**									
Verification of conformity	IS:3025		lot	1	1					1
CONCRETE ADMIXTURE	**MOST 1012**									
Verification of conformity	IS:1199/6925/9103		lot	2	2					2
MIXING CONCRETE (Trial	**MOST 1700**									
3 Test Cubes/Slump test	IS:516/1199		MOST:1700-8							
Grade15: 7 Days	" "		" "	19	19					19
28 Days	" "			23	23					23
Grade 20: 7 Days	" "		" "	31	31					31
28 Days	" "			21	21					21
Grade 25:(RCC) 7 Days	" "		" "	24	24					24
28 Days	" "		" "	21	21					21
Grade 25:(Drain) 7 Days	" "		" "							
28 Days	" "		" "	3	3					3
Grade 30:(RCC) 7 Days	" "		" "	21	21					21
28 Days	" "		" "	24	24					24
Grade 35:(RCC) 7 Days	" "		" "	36	36					36
28 Days	" "		" "	42	42					42
Grade 40:(RCC) 7 Days	" "		" "	6	6					6
28 Days	" "		" "	12	12					12

CONCRETE CUBE STRENGTH	**MOST 1700/900**											
M-15 : 7 Days		10.5 N/mm2	set	255	255		14	14		269	269	
28 Days		15 N/mm2	' "	376	365	11	23	23		399	388	11
M-20: 7Days		14 N/mm2	' "	176	174	2	5	5		181	179	2
28 Days		20 N/mm2	' "	210	209	1	11	11		221	220	1
M-25 : 7 Days		17.5 N/mm2	set	480	478	2	7	7		487	485	2
28 Days		25 N/mm2	' "	871	864	7	6	6		877	870	7
M-25(Drain): 7 Days		17.5 N/mm2	' "	706	705	1	25	25		731	730	1
28 Days		25 N/mm2	' "	1080	1073	7	57	57		1137	1130	7
M-30: 7 Days		24.5 N/mm2	' "	2	2					2	2	
28 Days		35 N/mm2	' "	4	4					4	4	
M-35: (Pile) 7Days		24.5 N/mm2	' "	70	70					70	70	
28 Days		35 N/mm2	' "	143	143					143	143	
M-35: (Pile Cap) 7 Days		24.5 N/mm2	' "	17	17					17	17	
28 Days		35 N/mm2	' "	53	53					53	53	
M-35: (RCC) 7 Days		24.5 N/mm2	' "	86	86					86	86	
28 Days		35 N/mm2	' "	280	274	6				280	274	6
M-40: 7 Days			' "	17	15	2				17	15	2
28 Days			' "	26	18	8				26	18	8
STONE MASONRY	**MOST 1400**											
3Test Mortar Cubes	IS:2250		MOST :1407									
HUME PIPE	**MOST 2902**											
Three-edge Bearing/	IS:458/3597		20/900mm									
Hydrostatic Test												
Absorption/Straightness tests												

4.13 **Compliance Report on observations of World Bank Mission**

Summary of Discussions

S No	Issues	Activities	Time	Action	Action taken
1	Shifting of utilities	Electrical lines Water Pipes Trees have been removed	23km completed. Balance to be completed by December 2016 To be completed by November 2016 end	Contractor/ TL Facilitation by PD Contractor	40 A poles required of which 30 concrete poles are available at site, balance to be procured by the contractor. Material available in the site. Work Completed
2	Land acquisition	No major issue However, near one location, where existing wall has collapsed. Reconstruction and putting a new one may require additional land. Bushes need to be removed to assess the road land width		Urgent decision by the PD to reconstruct suitable breast wall	Breast wall repair work in progress

Crucial decisions

S No					
1	Requirement of breast walls around km 0+250 to km 0+450	The open cut/ gully cutting has rendered the cut slope unstable. Construction of breast walls up to about 5m height may be required. Rest of the height to be given proper slope.	The requirement needs to be studied and decided	TL / PD	Work started as per lt no .ET/1A/PJ/2008 dt 24-11-2016.
2	Interlocking precast CC blocks	There is proposal to lay CC blocks in service lane area along the main road.	Service road will be bituminous surface as per contract provisions	TL / PD	Works already commenced along service roads.
3	Work Programme	The present work Programme needs to be revisited immediately and revised, covering resource planning and associated construction methodology	One week by intensive discussions rather than through correspondence	Contractor/ TL/ PD	Programme has been submitted , approved and being monitored.

Details Supervision and Quality issues in each work package

Sl No.	Observations	Action Taken
1.	At viaduct at Chainage 3+390 km:	
a	Concrete barriers on edges of pier cap beams to prevent deck spans from dislodging during earthquake are still to be constructed which was first pointed out during mission in November 2014. DPR Consultants as well as PMC omitted this important provision. This needs to be addressed immediately	Decision pending in KSTP regarding variation approval
b	Road signs and markings for safe driving on the viaduct should be provided to avoid accidents.	This has been done.
c	Expansion joints are not finished properly on the deck top surface as a result of which driving is not smooth over deck at joint locations.	Being rectified.
2.	**General issues**	
a	Unless suitably planned, closely monitored and implemented religiously, the completion of balance work appears to be a tall task. Target to complete the road work by January 2017 and including drain by March 2017 is what the contractor has stated.	Works almost completed by 31st March 2017 except Kangahad Town which would be completed by June 2017.
b	For split levels of existing and new bridges at Chithari, construction of proper approach road and safety measures have to be put in place.	Complied and work in progress and would be completed within a few days.

Environmental Safeguards

1.	Environmental& Safety Officer is not available to ensure implementation of EMP at the plant, camp and road construction works sites. The contractor needs to appoint experienced Environment and Safety Officer.	Environmental cum Safety Officer appointed by the contractor.
2	Construction Works Sites Safety: At road construction works sites, construction activities are under progress. At such locations, road works sites safety is lacking seriously and creating unsafe conditions for pedestrians and vehicles. The contractor needs to provide necessary construction safety measures like cones and delineators with retro reflective tapes, flags, signages, etc for safety of pedestrians and vehicles.	Completed and being monitored by site staff.
3.	At the starting of the project road (Km 0.00) at Kasargod in front of petrol pump, road side drain has not been connected with existing drain at the T-junction. Therefore, this opening due to incomplete work is creating unsafe condition for pedestrians and vehicles.	Work completed.
4.	At Km 0.020, there is bus and auto stand adjacent to petrol pump. In front of bus and auto stands, drain has been left open in about 15 m length, which is creating unsafe conditions and falling danger. Local people reported that some time women, children and old age people fall in the newly constructed open drain. It needs immediate attention for necessary action for improvement.	Works rectified.
5.	In hill/earth cutting portion near Km 0.250 (left hand side), old retaining wall was collapsed and debris/stones blocks are lying on the road, blocking newly constructed carriageway. It is creating safety hazards for vehicles plying on the road. Same needs attention for necessary action.	Removed and cleared at site.
6	At many places, road construction has been completed but shoulders yet to be constructed in most of the length. Therefore, gap up to 0.20 m is observed along the road between carriageway and shoulder, creating road safety hazards for vehicles, especially two wheelers. Shoulders works need to be completed properly along the road.	Shoulder works 90% completed.
7	Metal beam crash barriers have been provided at places but inclined end sections at end and start of crash barrier have not provided. Further, retro reflective tapes have not been provided on the lags of metal beam crash barriers. Incomplete metal beam crash barriers are creating road safety hazards especially during night time. It needs attention for improvement.	Complied and completed.
8	At the newly constructed viaduct, out fall of road side drains of sufficient size needs to be provided. The contractor has provided under size of drain, which over flows during rains and rain water enters into the two houses located in front of drain. CSC needs to evaluate design/capacity of drain and needs to ensure construction of proper drain outfall by the contractor at this location.	Complied

9.	Construction debris is still lying below the viaduct. It needs attention for collection and proper disposal.	This is being done.
10	At viaduct and Chittari Bridge (Km 18.400), kerb walls (dividers) have been provided to segregate pedestrian foot path. Both ends of kerb walls have been provided in such a way that fast moving vehicles can collide with kerb walls during night time. Therefore, it is very dangerous and may cause serious accident if fast moving vehicle is hitting kerb wall. CSC needs to explore remedial measures to make it safe for traffic.	Work is being carried out.
11	About 19 km road construction has been completed. However, road safety signages and marking, cat eyes, zebra crossing, etc. are still pending and need urgent attention for completion for road safety.	Road safety work in progress
12	It was reported by local people that at places out falls of road side drains have not connected with culverts. CSC's environmental expert needs to inspect road side drains to ensure proper outfalls.	This has been verified and work in progress
13	During mission local people made complaint that many solar lights installed along the project road are not working.	Rectified.

ROAD SAFETY

1	Kasaragod Jn. (0 km) requires immediate junction improvement.	Completed partially
2	Eyanathuljn. (6+450 km?) Near Higher Secondary School Kalanad. It's a 'T' Junction that requires measures to control the speed of the traffic.	Road Safety audit done and safety measures implemented.
3	Bus-bay near the Hydro's Juma Masjid near to Eyanathuljn.	Bus bay work in progress.
4	Kalanad – Chattanchaliljn. (7+350 km?). Bus-bay and relocation of Auto Stand	Work in progress.
5	Uncovered drainages in Kanhangadu town was the major concern of the Municipal Chairman	Drains are covered.
6	Additional number of solar lights required	Double arm Solar light will be provided along Kanghangad Town area.

4.14 **Photograph**

CONCRETE SURFACE GRINDING AT KM 6+520 (LHS)

EDGE MARKING IN PROGRESS AT KM 15+350 (LHS)

WMM TOP AT KM 25+450 TO 25+600 (LHS)

PRIME COAT AT KM 26+300 TO 26+500 (LHS)

15.1 **Contract Package - 2**

Upgradation of Road from Pilathara to Pappinissery of SH 67

Scope of Works

New ROB	–	2
Repair of Bridge	–	2
New Box culverts	_	9
Widening Slab culverts	–	20
Reconstruction	_	8
Drain	–	26.04 Km
Foot path	_	12.6 Km
Solar Lights	-	

15.2 **Contract Details**

Letter of Acceptance Date	::	05.03.2013
Agreement Date	::	01.04.2013
Name of Contractor	::	M/s RDS Projects Ltd, Kochi
Contract Price	::	Rs.118,29,77,833/-
Notice to Commence	::	23.04.2013
Total Length	::	20.90 Km
Contract Period	::	24 months
Completion Date	::	22nd April 2015 extended to 31.03.2017
Defect Liability Period	::	365 days
1st Milestone	::	Km. 0+000 – Km. 08+000
2nd Milestone	::	Km. 0+000 – Km. 14+000
3rd Milestone	::	Km. 0+000 – Km. 20+900 revised to March 31, 2017

15.3 **Progress of Works**

15.3.0.1 **Structure – Overall Progress**

	Structures		
1	Ramapuram Bridge @ km 4+260	Nil work during this Month	Super structure work except crash barrier and other finishing work completed. Retaining wall excavation work in progress.
2	Thavam ROB @7+420	Girder & Deck slab for P8- P9, completed. PSC girder 2 Nos cast. Shuttering and staging work for P4-P5 and P6-P7 is in progress. Box cell 40 mtr length PCC completed out of 160mtr length on A2 side approach.	Piling and Pile cap and substructure work completed. Out of total 10 spans, Girder and deck slab for 4 Nos completed. Out of total 12 nos of PSC girders, 2 Nos casting done Box cell work in progress on A2 side approach. Railway span: Girder erected and slab soffit shuttering in progress for deck slab.
3	Pappinissery ROB @19+950	Crash barrier works above retaining wall completed during this month. BC wearing course done.	Work completed except miscellaneous works such as painting, road marking etc.
4	Tree plantation	Tree plantation work in progress	Tree plantation completed from km 0+000 to 2+000 and from km 3+000 to 4+000. Partially completed between km 4+000 to km 5+000
5	Solar Street Lighting	33 Nos. fixing done.	117 Nos completed
6	Culverts	Culverts at 18+483 work completed. Culvert at km 19+865 (cross drain) work in progress. Culvert at km 19+553 work in progress	Out of total 38 Nos, 25 Nos completed except apron and protection works. Culvert 7 Nos deleted. Culvert at km 19+865 and km 20+220 converted to Drain. Culvert at km 19+553 work in progress and cross drain at km 19+865 work in progress. Culvert at km 4+162 (at Ramapuram bridge approach), and 20+700 are yet to be started.
7	Drain - Casting		19400 m
8	Drain - Placing	200 m	14250 m

Drain cover slab 268 Nos. casting completed during this Month April 2017

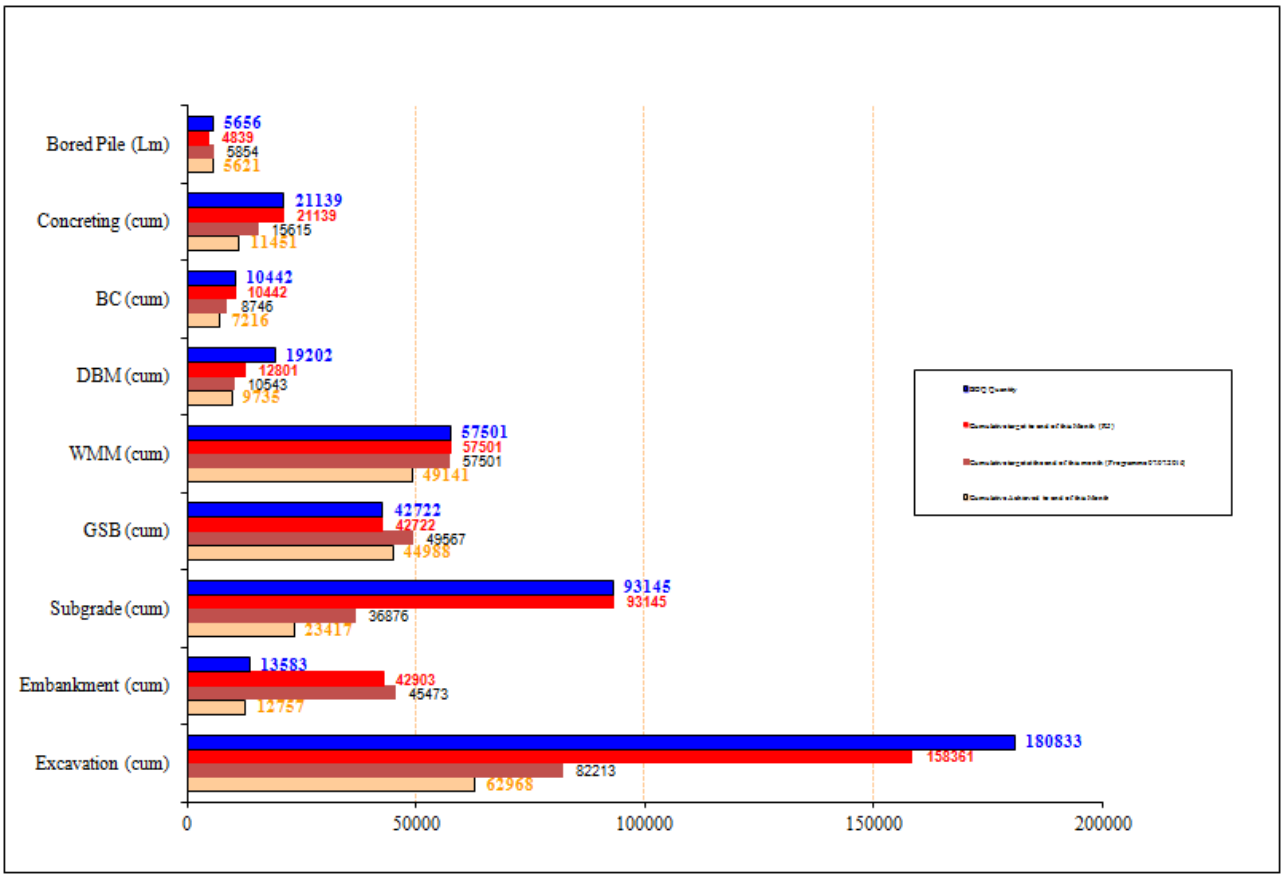
For previous Month		**This month**		**Cumulative to end of this month**		**Physical**
Target	Achieved	Target	Achieved	Target	Achieved (gross)	
100%	65.80%		2.13%	100%	67.93%	69.9

15.4 **Work progress considering the contract price up to April 2017**

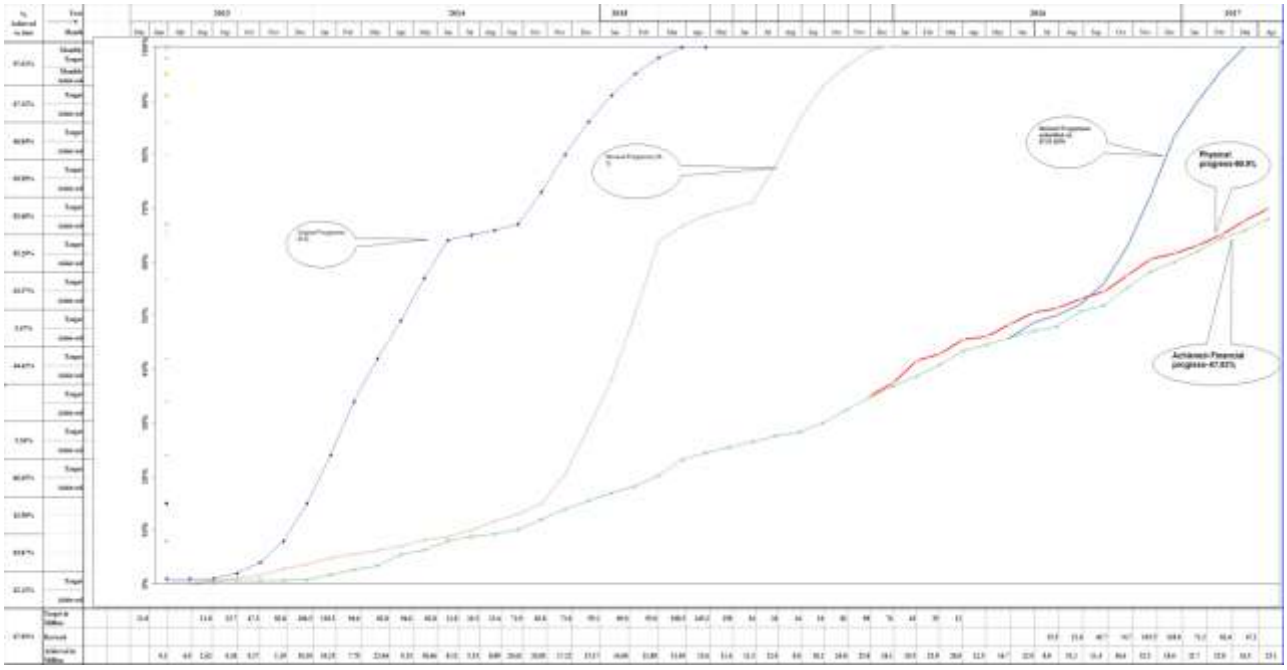
A summary of progress for major items is as follows:

Sl No.	Item	Monthly Progress	Cumulative Progress		Balance Work
1	Excavation / Embankment/ Subgrade	Completed between km 19+330 to 20+000 and in progress between km 20+270 to 20+500.	Completed till km 20+500 except Ramapuram bridge (4+250) approaches, Thavam ROB (7+420) approaches.		From Km 20+500 to 20+900 yet to start.
2	GSB	0.730 km	17.790 km (FW)	0.610 km (HW)	2.605 km
3	WMM	0.825 km	17.490 km (FW)	1.140 km (HW)	2.840 km
4	DBM	1.305 km	17.480 km (FW)	1.040 km (HW)	2.900 km
5	BC	0.675 km	16.170 km (FW)	0.610 km (HW)	4.425 km

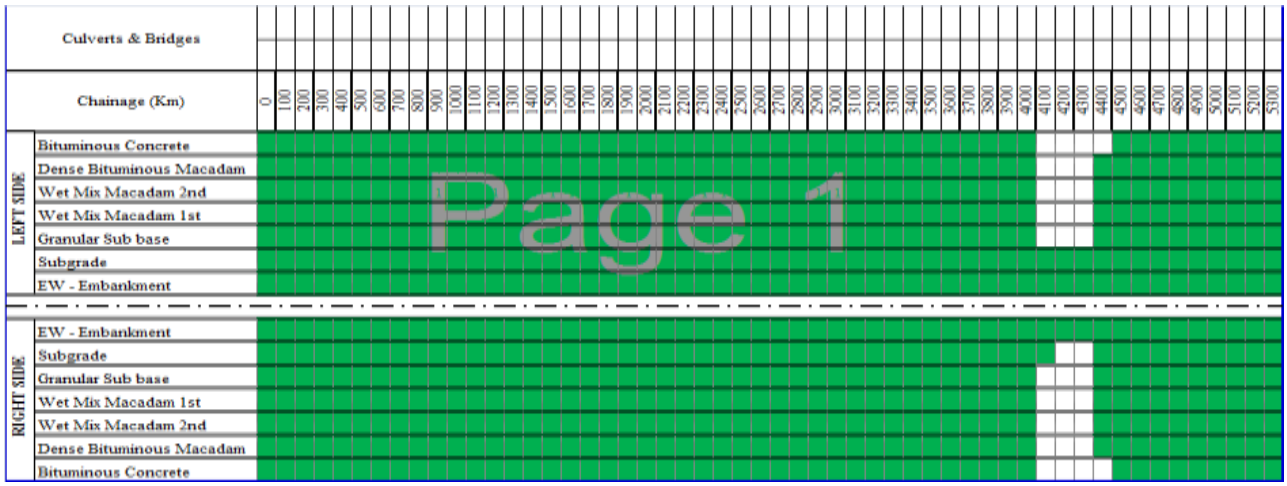
15.5 **Physical Progress**

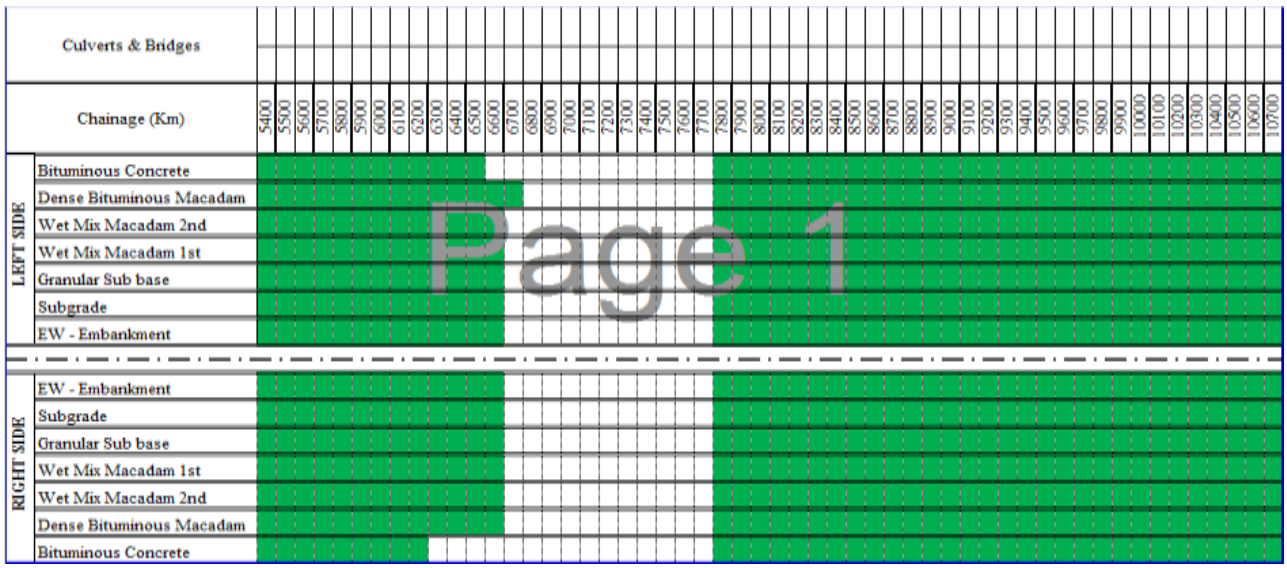


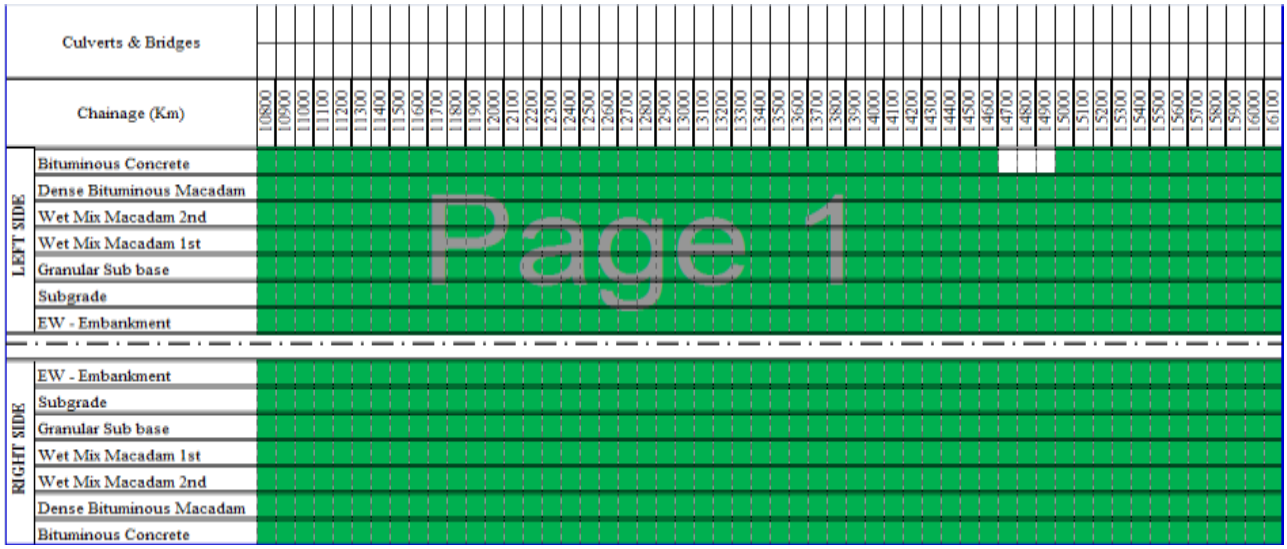
15.6 **S-Curve**

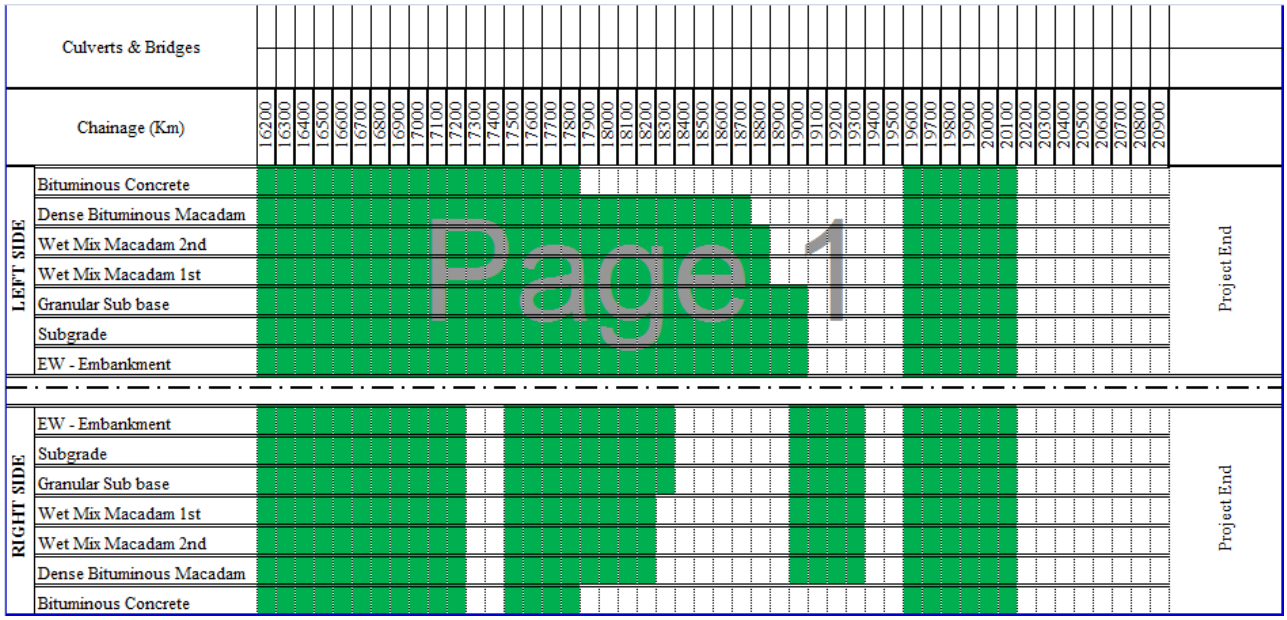


15.7 **Strip Chart**









15.8 **Schedule of culverts of drainage**

Nature of work	Original number	No. dwgs approved	Number completed	Number in progress	Number remaining	Original number	No. dwgs approved	Number completed	Number in progress	Number remaining	Original number	No. dwgs approved	Number completed	Number in progress	Number remaining
Culverts	**Milestone - I(0-8km)**					**Milestone - II(8-14km)**					**Milestone - III(14-20.9km)**				
Widening Slab Culverts	4	4	4	-	-	5	5	5	-	-	3	2	1	1	1
Slab Culvert retained	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reconstruction	12	12	11		1	-	-	-	-	-	5	2	1	-	4
New Box Culvert	1	1	1	-	-	2	2	1			6	1	1	1	4
Total culverts	**17**	**17**	**16**		**1**	**7**	**7**	**6**	-	-	**14**	**5**	**3**	**2**	**9**
Bridges Retained*	2	-	-	-	-	-	-	-	-	-	1	-	-	-	1
New Bridges/ROB**	1	-	-	-	1	-	-	-	-	-	1	-	-	-	1

15.9 **Utilities**

Utilities such as Electrical line, water lines, telephone cables and associated accessories were remaining to be relocated/ removed / shifted. Entire trees in Milestone –I & II were cut and removed from site.

Total number of Electric poles and transformers to be shifted from the project corridor is 1188 Nos. and 33 Nos. respectively. 1172 of Electric poles and 30 Nos. of Transformers have been relocated till date in between Km.0+00 to Km.20+000. Stringing of wire has been completed for 19.85 kilometre length between Km.0+000 to Km.20+900. Water pipe line shifting works are in progress between km 19+400 and km 20+900.

Total number of telephone poles to be relocated along the project corridor is 451Nos. However the work has not been affected so far since the shifting is being done along with road work.

15.10**Payments to the Contractor**

Mobilization advance and Equipment advance and IPC's was paid to the Contractor amounting to Rs. 69.16 crore The Steering Committee held on 28.06.2014 lowered the threshold limit of minimum IPC amount for Rs. 1.5 crores from Rs. 3.00 crores to facilitate the cash flow of contractor. There is no pending payment to the contractor.

15.11 **Implementation of EMP**

15.11.0.1 **Environment Management at Work Sites**

The junction improvement works at Pilathara and additional widening of NH has been completed. In Pappinissery junction, mangrove and trees at this location are affecting the construction and hence to be removed. Contractor has prepared a plan showing the affected trees and mangroves and these are marked at site and permission has to be obtained from the forest departments. This matter was already addressed to the employer for obtaining the required permissions. Follow up action from employer side is required to get timely permission from forest department. A reminder has also been sent to the employer.

The service road under the ROB is to be constructed and the land available shall be developed as parking areas. The main gate of the school at A2 approach of ROB is to be relocated this work is not started. The environmental engineer visited the site on 1st March February 2017 observation shared for attention.

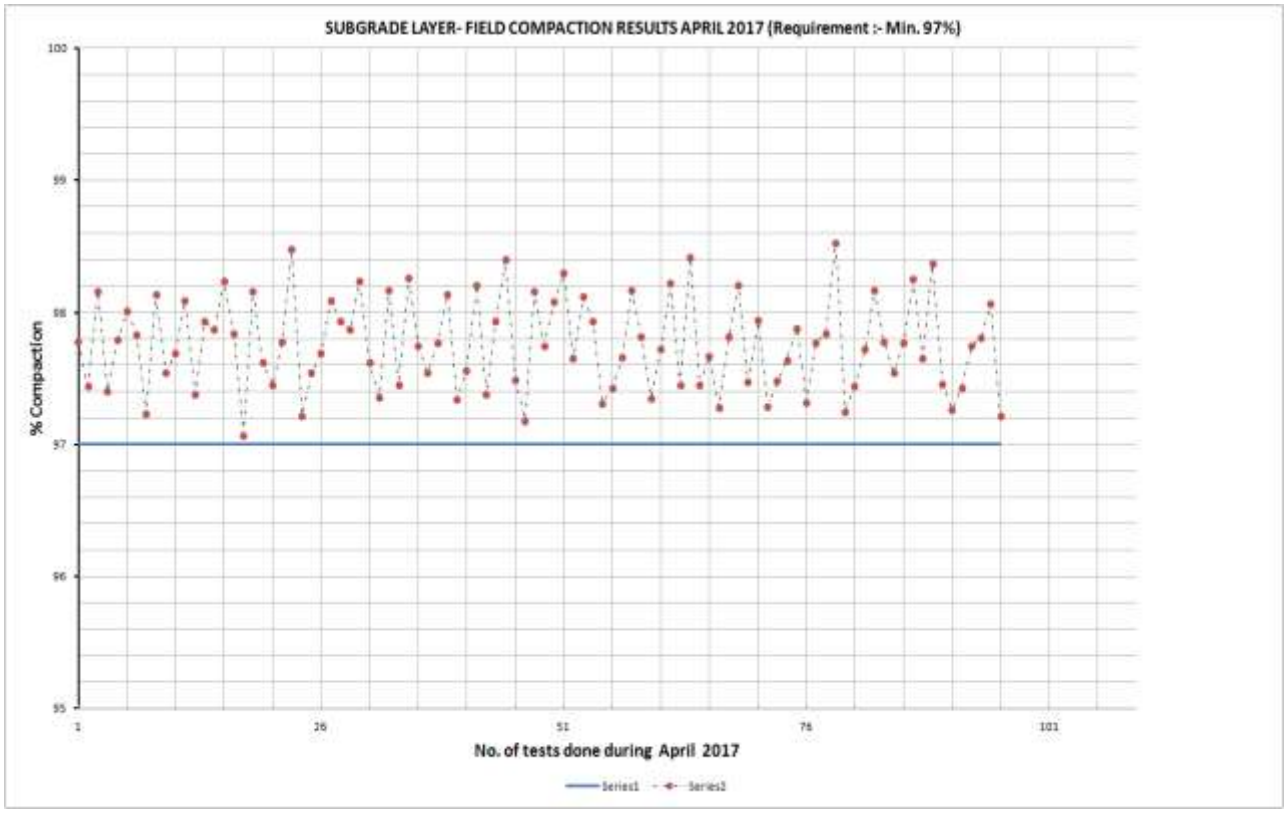
The pavement markings, safety barrier fixing, fixing signage and pedestrian marking are still to complete. Some accident reported during the month in which two people died

and three injured. The pedestrian safeties at all town area are serious issue to be addressed .The only solution is to construct pedestrian foot path at any cost. It is noticed that we are compromising on pedestrian safety and same time allowing space for parking vehicle at these junctions.

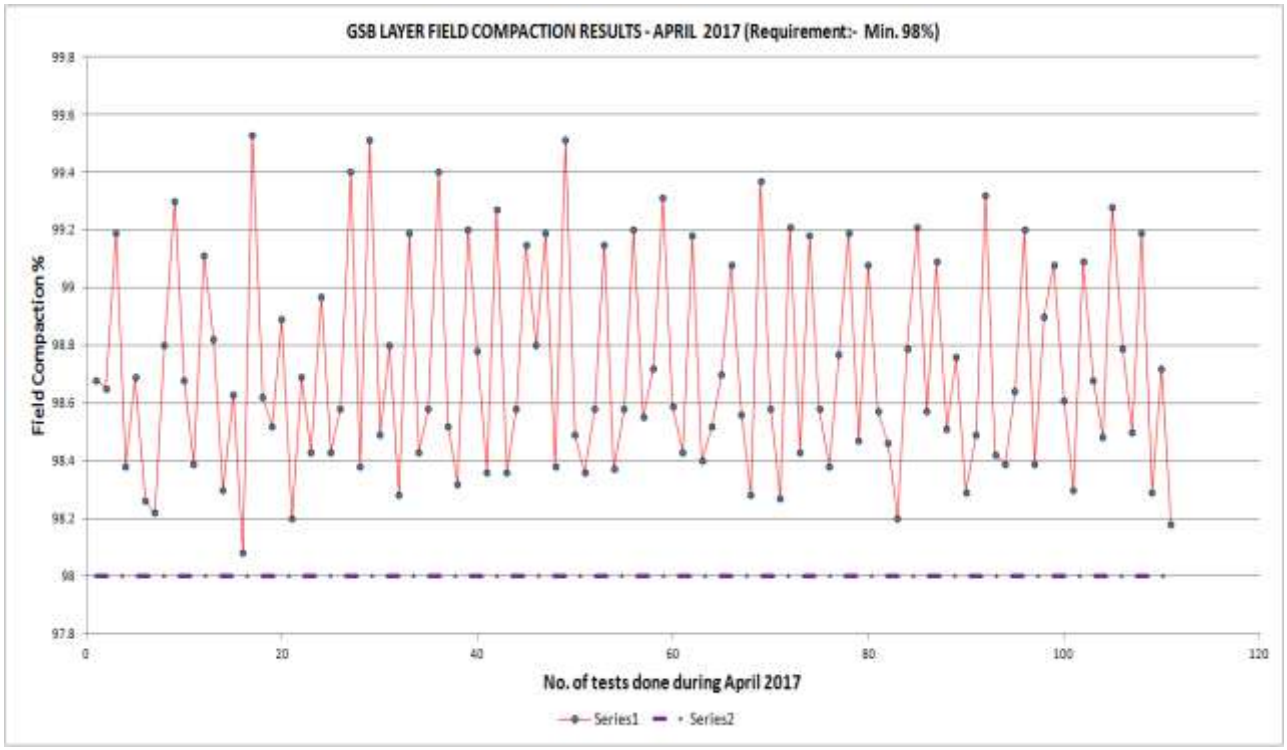
15.11.0.2 **Traffic Management and Road Safety Measures**

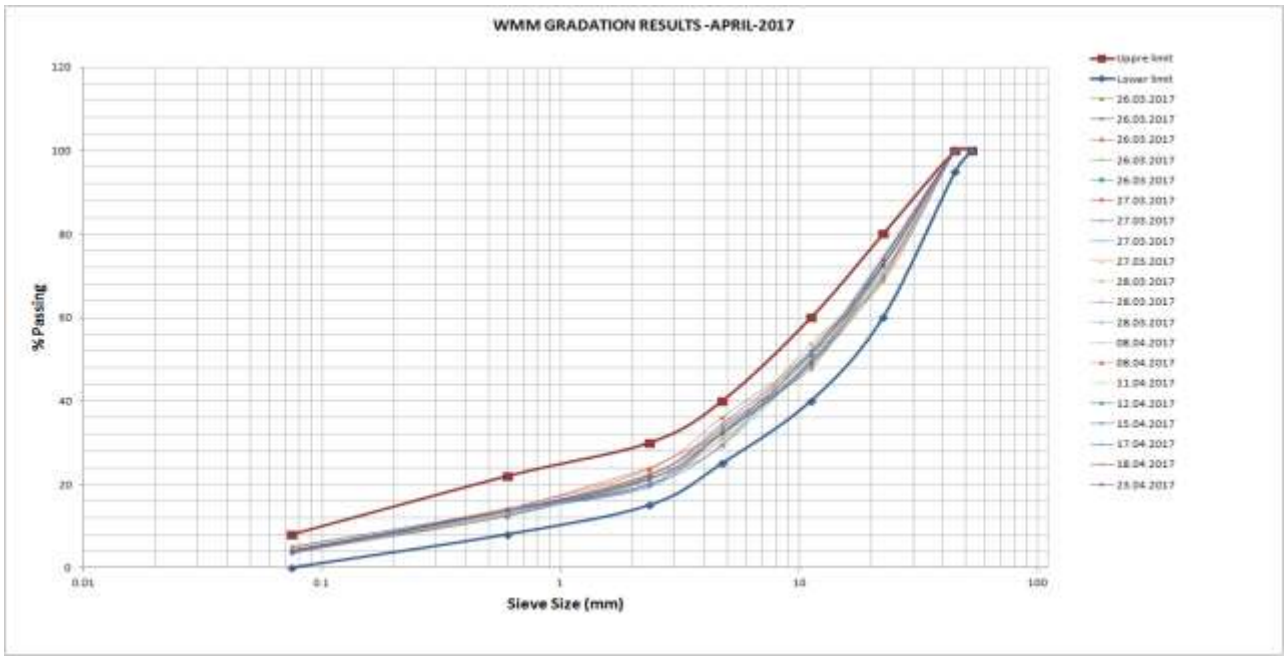
It is regretted to note that no safety arrangements at work zone in the approaches of Pappinissery ROB. The contractor is required to provide safety precautions such as barricading, flags, safety signboards and traffic cones at all work zones to ensure safety for all road users. Personal safety equipment such as jackets, safety shoes, face shields and hand gloves are to be provided to all workers as necessary. Instructions were given to provide adequate safety sign boards and fencing all along the active work site. The safety at Thavom ROB is to be improved. Toilet facilities not provided to the workers at site at Thavom. The environmental expert visited the site on 29th April 2017 and observation forwarded to contractors for further action.

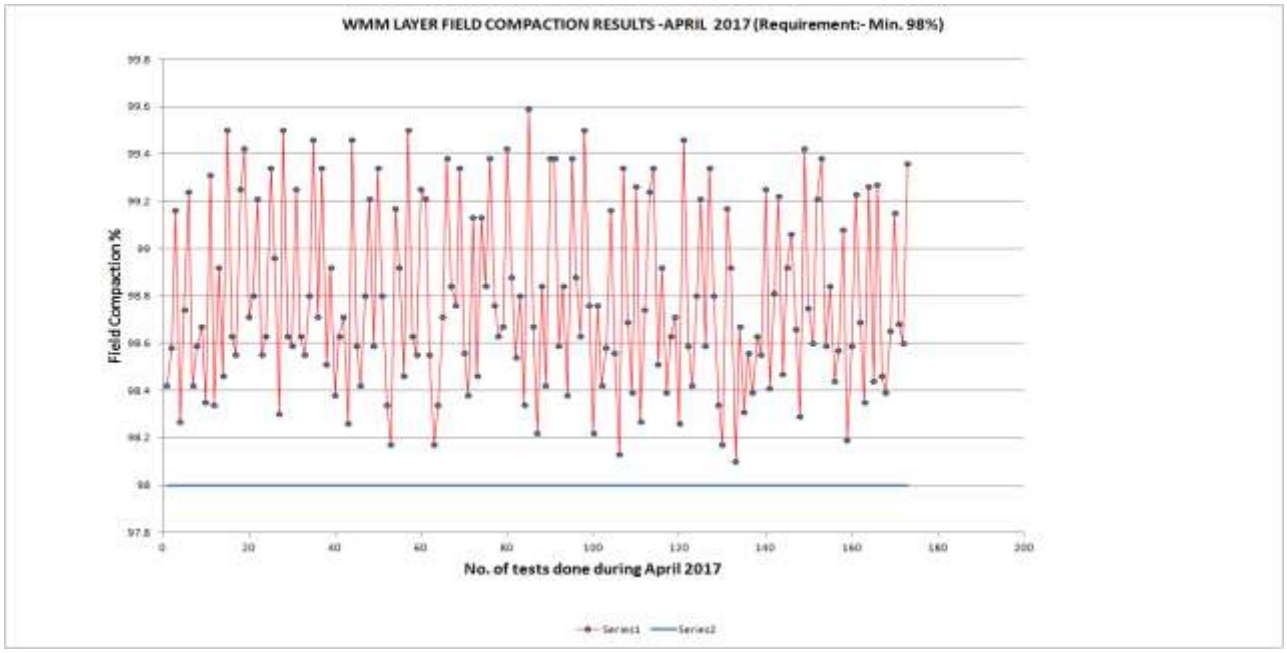
15.12 **Graphical Representation of Quality Control Tests**

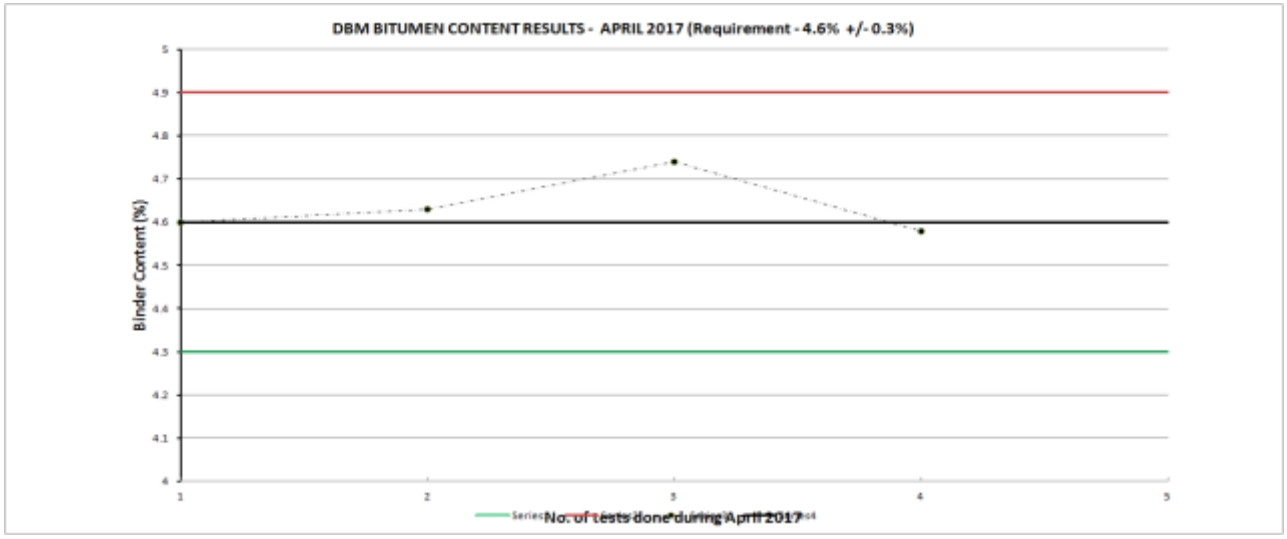


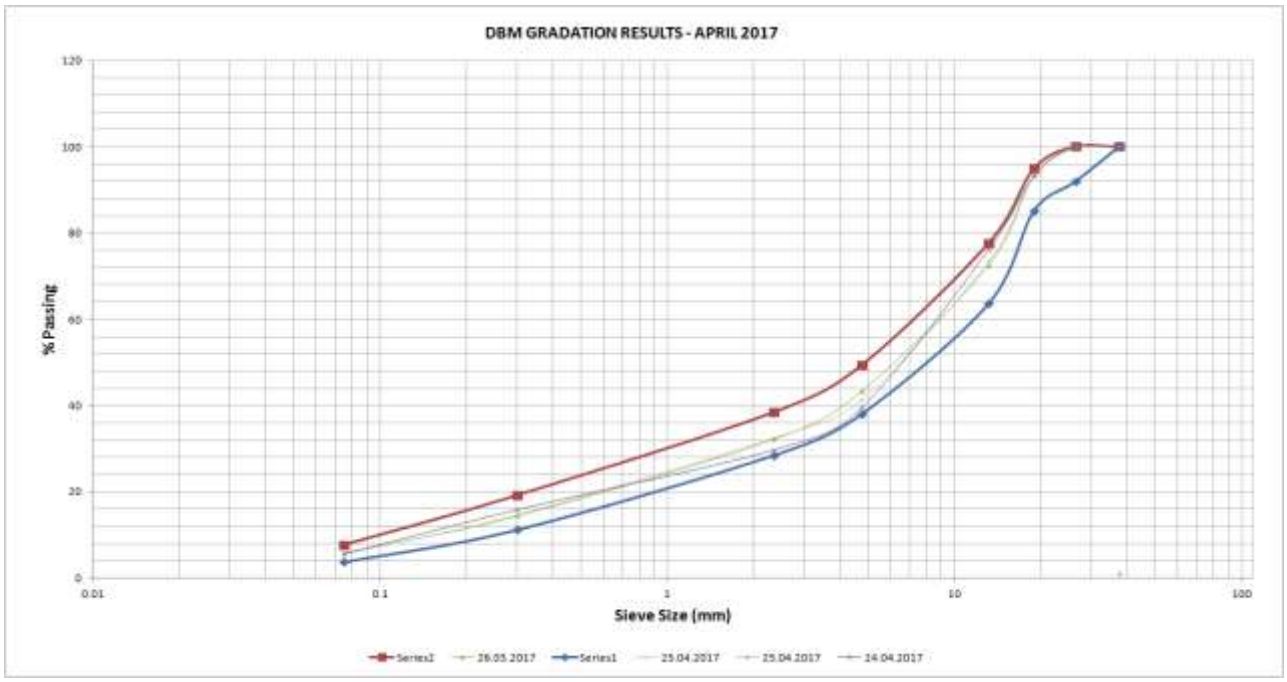

GSB GRADATION RESULTS - APRIL -2017
% Passing
Sieve Size (mm)


GSB LAYER FIELD COMPACTION RESULTS - APRIL 2017 (Requirement:- Min. 98%)
Field Compaction %
No. of tests done during April 2017
Series1
Series2

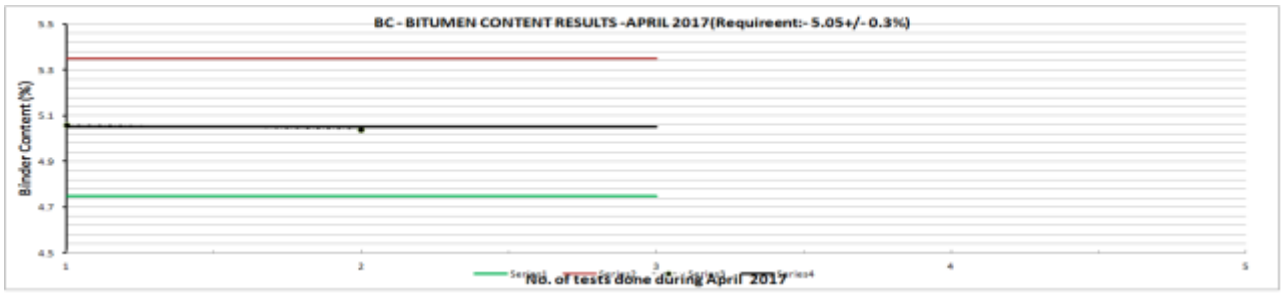

WMM GRADATION RESULTS -APRIL-2017
% Passing
Sieve Size (mm)

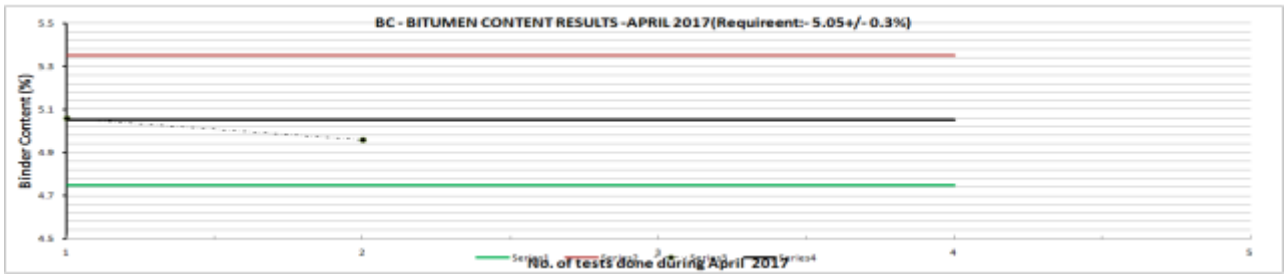

WMM LAYER FIELD COMPACTION RESULTS -APRIL 2017 (Requirement:- Min. 98%)
Field Compaction %
No. of tests done during April 2017
Series1
Series2

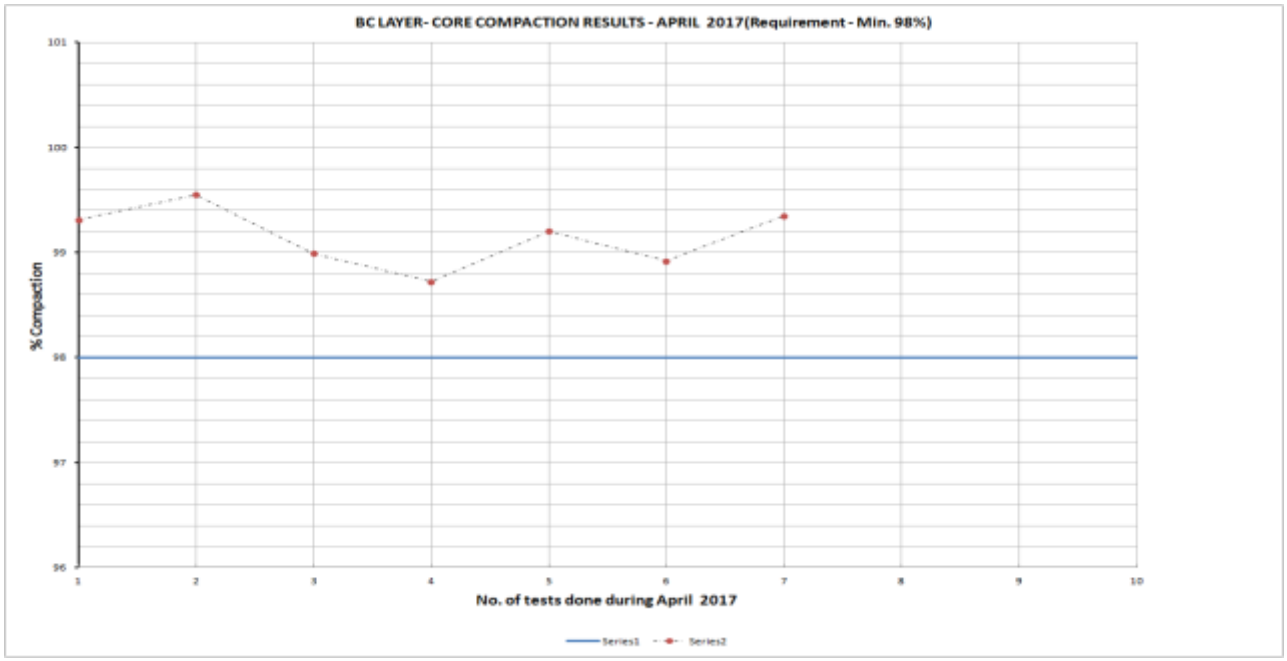

DBM BITUMEN CONTENT RESULTS - APRIL 2017 (Requirement - 4.6% +/- 0.3%)
Binder Content (%)
No. of tests done during April 2017


DBM GRADATION RESULTS - APRIL 2017
% Passing
Sieve Size (mm)
Series2
26.05.2017
Series1
25.04.2017
25.04.2017
24.04.2017


DBM LAYER- CORE COMPACTION RESULTS - APRIL 2017 (Requirement - Min. 98%)
% Compaction
No. of tests done during April 2017
Series1
Series2


BC - BITUMEN CONTENT RESULTS -APRIL 2017(Requireent:- 5.05+/- 0.3%)
Binder Content (%)
No. of tests done during April 2017


BC - BITUMEN CONTENT RESULTS -APRIL 2017(Requireent:- 5.05+/- 0.3%)
Binder Content (%)
No. of tests done during April 2017


BC LAYER- CORE COMPACTION RESULTS - APRIL 2017(Requirement - Min. 98%)
% Compaction
No. of tests done during April 2017
Series1
Series2

15.13 **Quality Control Tests**

15.13.0.1 **Materials for Structures**

Tests Performed	Standard used	Test Frequency	Total tests up to previous month			Tests during current month			Total tests up to end of this month		
			Tested	Passed	Failed	Tested	Passed	Failed	Tested	Passed	Failed
STONE	MOST 1004										
Water Absorption	IS:1124	lot	1	1	0	0	0	0	1	1	0
CEMENT (Bag)	MOST 1006										
Fineness	IS:269-1976	" "	9	9	0	0	0	0	9	9	0
Standard Consistency	" "	" "	9	9	0	0	0	0	9	9	0
Soundness	" "	" "	9	9	0	0	0	0	9	9	0
Compressive Strength	" "	" "									
3 day strength test	" "		4	4	0	0	0	0	4	4	0
7 day strength test	" "		2	2	0	0	0	0	2	2	0
28 day strength test	" "		2	2	0	0	0	0	2	2	0
Quality Of Cement			2	2	0	0	0	0	2	2	0
Initial Setting time	IS:4031(Part 1)		10	10	0	0	0	0	10	10	0
Final Setting time	IS:4031(Part 5)	" "	10	10	0	0	0	0	10	10	0
CEMENT (Bulk)	MOST 1006	lot									
Fineness	IS:269-1976	" "	154	154	0	1	1	0	155	155	0
Standard Consistency	" "	" "	154	154	0	1	1	0	155	155	0
Soundness	" "	" "	160	160	0	1	1	0	161	161	0
Compressive Strength											
3 day strength test	" "	" "	149	149	0	1	1	0	150	150	0
7 day strength test	" "	" "	148	148	0	1	1	0	149	149	0
28 day strength test	" "	" "	139	139	0	2	2	0	141	141	0
Initial Setting time	IS:4031(Part 1)	" "	154	154	0	1	1	0	155	155	0
Final Setting time	IS:4031(Part 5)	" "	154	154	0	1	1	0	155	155	0
COARSE/FINE Aggregates	MOST 1007/1008										
Gradation	IS:2386(Part 1)	lot	1510	1510	0	32	32	0	1542	1542	0
Flakiness/Elongation Index	" "	" "	1500	1500	0	32	32	0	1532	1532	0
Deletrious Mat./Organic Imp.	" (Part 2)	" "	0	0	0	0	0	0	0	0	0
Water Absorption/Spec.Grav.	" (Part 3)	" "	0	0	0	0	0	0	0	0	0
Bulk Density	" "	" "	0	0	0	0	0	0	0	0	0
Impact or crushing Aggr.Value	" (Part 4)	" "	0	0	0	0	0	0	0	0	0
Los Angeles Abrasion Value	" "	" "	0	0	0	0	0	0	0	0	0
Soundness	" (Part 5)	" "	0	0	0	0	0	0	0	0	0
Alkali Aggregate Reactivity	" (Part 7)	" "	0	0	0	0	0	0	0	0	0
Surface Moisture Content	" (Part 3)	" "	488	488	0	0	0	0	488	488	0
Fineness Modulus of FA			970	970	0	23	23	0	993	993	0
STEEL	MOST 1009										
Verification of conformity(Yield stress,U.T.S, % Elg,Unit Wt.Dia. Test. Etc	432/1030/1785/1	lot	106	106	0	0	0	0	106	106	0
	2004/2062										
WATER	MOST 1010										
Verification of conformity	IS:3025	lot	2	2	0	0	0	0	2	2	0
CONCRETE ADMIXTURE	MOST 1012										
Verification of conformity	S:1199/6925/910	lot	3	3	0	0	0	0	3	3	0
MIXING CONCRETE	MOST 1700										
3 Test Cubes/Slump test	IS:516/1199	MOST:1700-8	5760	5760	0	110	110	0	5870	5870	0
Compressive Strength	IS:516/1200										
Grade15: Pcc 7 Days	" "	" "	170	170	0	0	0	0	170	170	0
28 Days	" "	" "	177	177	0	5	5	0	182	182	0
Grade 20: 7 Days	" "	" "	102	102	0	0	0	0	102	102	0
28 Days	" "	" "	115	115	0	0	0	0	115	115	0
Grade 25: Rcc 7 Days	" "	" "	570	570	0	17	17	0	587	587	0
28 Days	" "	" "	633	633	0	13	13	0	646	646	0
Grade 25 (drain): 7 Days	" "	" "	1025	1025	0	13	13	0	1038	1038	0
28 Days	" "	" "	1394	1394	0	9	9	0	1403	1403	0
Grade 35: Pile 7 Days	" "	" "	215	215	0	0	0	0	215	215	0
28 Days	" "	" "	682	674	8	0	0	0	682	674	8
Grade 30: Rcc 7 Days	" "	" "	2	2	0	0	0	0	2	2	0
28 Days	" "	" "	0	0	0	2	2	0	2	2	0
Grade 35: RCC 7 Days	" "	" "	250	250	0	3	3	0	253	253	0
28 Days	" "	" "	646	634	12	27	27	0	673	661	12
Grade 40: RCC 7 Days	" "	" "	48	48	0	4	4	0	52	52	0
28 Days	" "	" "	68	68	0	7	7	0	75	75	0
Grade 45: RCC 7 Days	" "	" "	0	0	0	1	1	0	1	1	0
28 Days	" "	" "	0	0	0	0	0	0	0	0	0
STONE MASONRY	MOST 1400										
3Test Mortar Cubes	IS:2250	MOST :1407	0	0	0	0	0	0	0	0	0
HUME PIPE	MOST 2902										
Three-edge Bearing/	IS:458/3597	20/900mm	0	0	0	0	0	0	0	0	0
Hydrostatic Test			0	0	0	0	0	0	0	0	0
Absorption/Straightness tests			0	0	0	0	0	0	0	0	0

15.13.0.2 **Materials for Pavement**

Common Tests Performed	Indian / Foreign Standard	Test Frequency 1 test per	Total tests up to previous			Tests during current month			Total tests up to month		
			Tested	Passed	Failed	Tested	Passed	Failed	Tested	Passed	Failed
EARTHWORK(OGL)	**MOST 305/903.2**	OGL									
Gradation/Sand content	IS2720(Part 4)	1 test/200mtr	498	498	0	1	1	0	499	499	0
Atterberg Limits	" (Part5)	1 test/200mtr	498	498	0	1	1	0	499	499	0
Proctor	" (Part 8)	1 test/200mtr	498	498	0	1	1	0	499	499	0
CBR	" (Part 16)	As reqd	242	242	0	0	0	0	242	242	0
Free Swell Index	" (Part 40)	1 test/200mtr	498	498	0	1	1	0	499	499	0
EARTHWORK	**MOST 305/903.2**	Emb./Subgrade									
Gradation/Sand content	IS2720(Part 4)	1500 cum	221	219	2	1	1	0	222	220	2
Atterberg Limits	" (Part5)	" "	221	219	2	1	1	0	222	220	2
Proctor	" (Part 8)	" "	219	219	0	1	1	0	220	220	0
CBR	" (Part 16)	3000 cum	161	161	0	1	1	0	162	162	0
Free Swell Index	" (Part 40)	" "	207	205	2	1	1	0	208	206	2
Field Density/Compaction	" (Part 28)	500/1000 sqm	1271	1255	16	17	17	0	1288	1272	16
SUBBASE (GSB) granular material	**MOST 401/900.3.1**										
Gradation	IS2720(Part 4)	200 cum	397	395	2	13	11	2	410	406	4
Atterberg Limits	" (Part5)	" "	391	391	0	11	11	0	402	402	0
Proctor			10	10	0	0	0	0	10	10	0
Moisture content		250 cum	293	293	0	10	10	0	303	303	0
Deleterious content			2	2	0	0	0	0	2	2	0
10% fine value			4	4	0	0	0	0	4	4	0
Water Absorption			4	4	0	0	0	0	4	4	0
Field Density/Compaction	" (Part 28)		594	580	14	19	19	0	613	599	14
CBR if grading (II or III)			27	27	0	2	2	0	29	29	0
BASE (WMM)	**MOST 406/900.3.4**										
Gradation	IS 2386 (Part 4)	100 cum	716	716	0	21	21	0	737	737	0
Flakiness/Elongation Value	" (Part1)	200 cum	513	513	0	14	14	0	527	527	0
Atterberg Limits	" (Part4)	100 cum	702	702	0	21	21	0	723	723	0
Lose Angels Aration Value	" (Part1)	500 cum	510	510	0	11	11	0	521	521	0
Impact Value		200 cum	542	542	0	14	14	0	556	556	0
Proctor			4	4	0	0	0	0	4	4	0
Water Absorption			2	2	0	0	0	0	2	2	0
Field Density/Compaction	" (Part 28)	500 sqm	1079	1058	21	29	29	0	1108	1087	21
PRIME/TACK COAT	**MOST 502/503/900.3.4**										
Rate of Spread	IS:217/8887	500 sqm	856	856	0	43	43	0	899	899	0
Quality of Binder			2	2	0	0	0	0	2	2	0
BITUMINOUS MACADAM (BM)											
Aggregate Gradation (Individual+ Mix)			0	0	0	0	0	0	0	0	0
LAAV			0	0	0	0	0	0	0	0	0
Flakiness/ Elongation Value			0	0	0	0	0	0	0	0	0
Quality of Binder			0	0	0	0	0	0	0	0	0
Binder Content (ASTM - 2172-95)			0	0	0	0	0	0	0	0	0
Coating and Stripping			0	0	0	0	0	0	0	0	0
Soundness			0	0	0	0	0	0	0	0	0
Water Absorption			0	0	0	0	0	0	0	0	0
Field Density/Compaction			0	0	0	0	0	0	0	0	0
DENSE BITUMINOUS MACADAM	**MOST 504/900.4.4**										
Aggregate Gradation (Combined Mix)	" (Part 1)		408	408	0	5	5	0	413	413	0
Aggregate Impact Value (AIV)/ LAAV	IS:2386(Part 4)	50 cum	286	286	0	6	6	0	292	292	0
Flakiness/Elongation Value	" (Part 1)	" "	284	284	0	6	6	0	290	290	0
Quality of Binder	IS-73		274	274	0	10	10	0	284	284	0
Coating and Stripping	IS 6241		1	1	0	0	0	0	1	1	0
Binder Content (ASTM - 2172-95)			228	228	0	4	4	0	232	232	0
Marshal Test	ASTM D1559-62T		434	434	0	5	5	0	439	439	0
Specific Gravity /Water Absoeption	IS 2386(Part-3)		3	3	0	0	0	0	3	3	0
Soundness	IS 2386(Part-5)	2 per day	2	2	0	0	0	0	2	2	0
Bulk Density	IS:2386(Part 3)	" "	0	0	0	0	0	0	0	0	0
Field Density/Compaction	ASTM D 2041-95		706	697	9	11	11	0	717	708	9

Sand Equivalant/Value for FA			2	2	0	0	0	0	2	2	0
Plasticity Index			2	2	0	0	0	0	2	2	0
BITUMINOUS CONCRETE	**MOST 504/900.4.6**										
Aggregate Gradation (Combined)			265	264	1	2	2	0	267	266	1
Aggregate Impact Value/ LAAV	IS:2386(Part 4)	50 cum	233	233	0	3	3	0	236	236	0
Flakiness/Elongation Value	" (Part 1)	" "	241	241	0	3	3	0	244	244	0
Marshall Stability	ASTMD 1559	2 per day	316	316	0	4	4	0	320	320	0
Coating and Stripping			2	2	0	0	0	0	2	2	0
Specific Gravity /Water Absorption			2	2	0	0	0	0	2	2	0
Stone polishing Value			1	1	0	0	0	0	1	1	0
Soundness			1	1	0	0	0	0	1	1	0
Sand Equivalent Test			2	2	0	0	0	0	2	2	0
Binder Content	IS:2386(Part 4)	" "	162	162	0	2	2	0	164	164	0
Field Density/Compaction	Core Samples	250 sqm	570	559	11	7	7	0	577	566	11
Plasticity Index			0	0	0	0	0	0	0	0	0

15.14 **Compliance Report on observations of World Bank Mission**

Details Supervision and Quality issues in each work package

S No	Issue	Activity	Time period	Decision/ action by	Action taken
1	Bridge at km 4+220	Superstructure work started. Methodology for completion schedule to be worked out	Work to be completed by March 2017. Work schedule by November 2017	TL/PD	Bridge deck slab completed. Approaches are been re-designed due to weak sub-strata.
2	ROB at km 7+420	Substructure pile driving completed except A1 side, where 6 piles remain.	Work to be completed by March 2017. Work schedule with suitable resource planning by November 10, 2016	TL/PD	Completion will be delayed due to additional spans would be completed by July 2017.
3	ROB at km 19+750	Land acquisition near A1 A2 spans for providing service lane Work of retaining walls, held up	Issue remains undecided Land acquisition to be concluded immediately	TL/PD	Land acquisition completed and ROB will be completed and open to traffic with in 10days.
4	Rate of earth work for soil to be brought from package - I area	The issue is with the steering committee, who has further referred the matter to the CTE (Chief Tech Examiner)	Decision is to be expedited	PD	Action being taken

Quality issues:

Sl No	Observations	Action taken
1.	**Bridge at Chainage 4+220 km**	
a	Pile load test results shall be submitted giving complete details of pile as installed with borelogs, concrete grade and quantity used against theoretical quantity, load-settlement curve, record of settlement against load for various increments and during unloading complete as per guidelines in relevant codes for bored piling and load tests.	Static load test conducted.
b	Load test on pile has been done by Dynamic method which does not comply with requirements of IS 2911-Part 4 forming the basis of contract.	Static load test being conducted.
c	No ladder has been provided for safe access to top of deck slab for inspection.	This has been complied and work completed.
d	There is no Bridge Engineer on behalf of consultant at Package II. Immediate action should be taken to find a replacement of the Engineer who left sometime back	Bridge Engineer Mr Thanigavel was mobilized on 16.11.2016
2	ROB at Chainage 7+420 km	
a	For Prestressed Concrete girders in this project, skilled workers with past experience in similar works should be engaged in fixing sheathing, anchorages and stressing work.	Will be done
b	PTFE bearings shown in working drawings should not be replaced by elastomeric bearings due to absence of skilled personnel at site with experience in fixing of PTFE bearings. Rather for such fixing job trained person (s) should be mobilised.	Elastometric bearing has been proposed and approved.
c	For bored piling work of 1200 mm dia, higher capacity pump (minimum 40 HP) should be used for flushing of boreholes.	Work completed.
3	ROB at Chainage 19+758km	
a	Crash barrier has been made ready for casting for certain length without any chipping of old concrete surface. This practice is not acceptable.	Completed
b	Weep hole pipes have been left in concrete retaining walls without maintaining proper alignment, spacing and level. Work should be executed as per drawings.	Complied
c	On either side of expansion joint deck, concrete has been laid without a vertical stopper. All loose and uncompacted concrete shall be cut and removed and the reinforcements cleaned of rust and mortar before casting second stage concrete as per contract specifications with fixing of expansion joint.	Complied
4	Quality Control Laboratory	
a	No test for chloride and sulphate content in soil and ground water has been conducted in confirmatory boreholes.	Test have been conducted
b	Chloride and sulphate content in concrete on the basis of chloride and sulphate content in all ingredients in concrete have not been determined so far.	Complied
c	Supplier of reinforcement bars shall be asked to send Manufacturer's Test Certificate (MTC) signed by QC-in-charge or Scientist or Head of QC laboratory with name and designation and not by Authorised Representative as is being followed now.	This has been done
5	General	

a	The work Programme for both packages I & II were finalized in the beginning of July 2016. There have been slippages in achievements in both the cases during rainy season. This calls for immediate review and revised work Programme to be prepared based on thorough resource planning.	Revised programme has been resubmitted and monitored.
b	There is a lack of concerted efforts to ensure that the side drains are capable of draining surface water efficiently. Cross slope of shoulders have to be proper.	The work has been completed.
c	The instances, which lead to the dismantling of work already done and redoing the same to satisfy objection raised by local people, warrant timely intervention by the TL/PD for avoidable delays.	Being done on regular basis.
d	At Pazhayangadi junction – whereas the DBM has been done in the center area, BC has been laid in the carriageway portion alone. To complete the BC also in the entire area, machinery will have to be remobilized for a small activity. This is a poor reflection on work planning of the contractor and lack of requisite watch by TL & PD staff.	Work completed since.

Environmental Safeguards

1	Construction Works Sites Safety: At road construction works sites, construction activities are under progress. At such locations, road works sites safety is lacking seriously and creating unsafe condition for pedestrian and vehicles. The contractor needs to provide necessary construction safety measures like cones and delineators with retro reflective tapes, flags, sinages, etc for safety of pedestrians and vehicles.	This has been carried out and monitored.
2	Many places along the project road, shoulders works are pending. However, road construction has been completed. Therefore, gap between carriageway and shoulder level creating unsafe conditions for traffic plying on the road, especially for two wheelers.	Shoulder works almost completed
3	Many places stone pitching protection works provided on the culverts, have damaged due to earth settlement during rains. It needs attention for repair and improvement.	Repair works in progress.
4	Along the project road, small saplings of slow growing plants have been planted. Therefore, survival and growth of saplings is an issue. The contractor needs to consult with Forest Department or Horticulturist for selection of sapling of fast growing shed trees of minimum 1 m height to ensure it survival and growth.	Forest Department will be consulted to get bigger saplings.
5	During mission local people made complaint that many solar lights installed along the project road are not working.	This has been attended.
6	Metal Beam Crash Barriers have been provided at places but inclined end sections at end and starting have not provided. Further, retro reflective tapes have not provided on the lags of metal beam crash barriers. Incomplete metal beam crash barriers are creating safety hazards especially during night time. It needs attention for improvement.	Completed as per requirements.

7	At Tawam ROB, construction works safety is missing and creating unsafe conditions. Safety measures like delineators with retro reflective tapes, flags, sinages etc need to be provided to ensure safety of the traffic.	Directions already issued to improve safety.
8	At left hand side of starting of Pappinesserry ROB, there will be access problem for 5 to 6 house in the length of about 20 m, once approaches of Pappinesserry ROB are constructed. Cars or ambulance cannot approach to these houses after construction of approaches of ROB. At this point, land acquisition issue is involved. Local people, whose houses are affected, informed that construction of approach of ROB will not be allowed until proper access to these 5-6 houses is not provided for movement of car/ambulance to these houses.	Access problem resolved and work completed.

ROAD SAFETY

1	Pilathara jn. (0 km?). The traffic channelization is observed as dangerous. There should be adequate caution and calming measures to control the speed of the vehicles plying on the NH	Work is in progress.

15.15 **Photographs**

HYPER PLAST POLY MEMBRANE FIXING OVER PAPPINISSERY ROB (KM 19+950)

BOX CELL PCC WORK IN PROGRESS ON A2 APPROACH OF THAVAM ROB (KM 7+420)

BC LAYING IN PROGRESS OVER PAPPINISSERY ROB (KM 19+950)

P8-P9 DECK SLAB CONCRETE WORK IN PROGRESS OF THAVAM ROB (KM 7+420)

16.1 **Contract Package III-A**

Upgradation of Road from Thalassery to Kalarode of SH 30

16.2 **Contract Details**

The Contract for the Upgradation of Road from Thalassery to Kalaroad has been awarded to M/s Dinesh Chandra R AgrawalInfracon (P) Ltd.The date of commencement of the Project is 27th June 2016 and completion date is 26th June 2018.

The permanent base camp office work in Progress at Valliyavellicham, which is 6km away from km 16+000 (Kuthuparamba) of the project road.

Contractor submitted the work programme with all required supporting resources details on 27th Sep-16 and the same was approved on 21st Oct-16.

Name of Contractor	::	M/s Dinesh Chandra R. Agrwal
Contract Amount	::	Rs. 156,33,51,422
Date of Agreement	::	20.05.2016
Length	::	28.80 km
Time of Completion	::	24 months
Milestone – I	::	10 km continuous stretch of road from km 1.200 to km 1.200 completion up to BC level 15 month from date of commencement
Milestone – II	::	28.80 km continuous stretch of road from km 1.200 to km 30.00 completion in all respect in 24 month from commencement date

16.3 **Construction Activities**

16.3.0.1 **Utilities**

Joint inspection conducted along with KSTP, KSEB, Kerala Water Authority, BSNL and other private cable operators and list finalized. Utility shifting is going on in the 1st milestone. No issues due to Utilities in 1st Mile Stone.

16.4 **Work Progress**

16.4.0.1 **Structure work**

Bridge at km.2+910 (Eranholi):-Pedestal concreting of Abutment A2 and pier completed. Work started for the concreting pile cap of abutment A1. But work stopped as per the instruction from KSTP. Stressing and grouting work completed for 3no.s of Girders. Design checking of the existing structure to accommodate a free board of 5m from HFL is completed. Proof checking is done.

Bridge at km.19+758 (Merumbai):- Concreting for Abutment cap at A1 side completed. P2-Pier cap concreting completed. Girder and slab concreting work done for A2-P2 span. Girder Concreting work completed for A1-P1 span. Slab reinforcement fixing is in progress.

Bridge at km.21+162:- Subsoil investigation work completed. Change in the Design of the bridge foundation submitted by the contractor and is given for proof checking.

Bridge at km.29+570:- Abutment A2 2nd lift completed at 29+570 Bridge. Platform preparation for staging work for casting girder and slab is in progress.

Box culverts 16 Nos completed and 4nos work in progress.

Slab culverts 11 Nos completed and 4nos work in progress.

Pipe culverts 1 nos completed and 1nos work in progress.

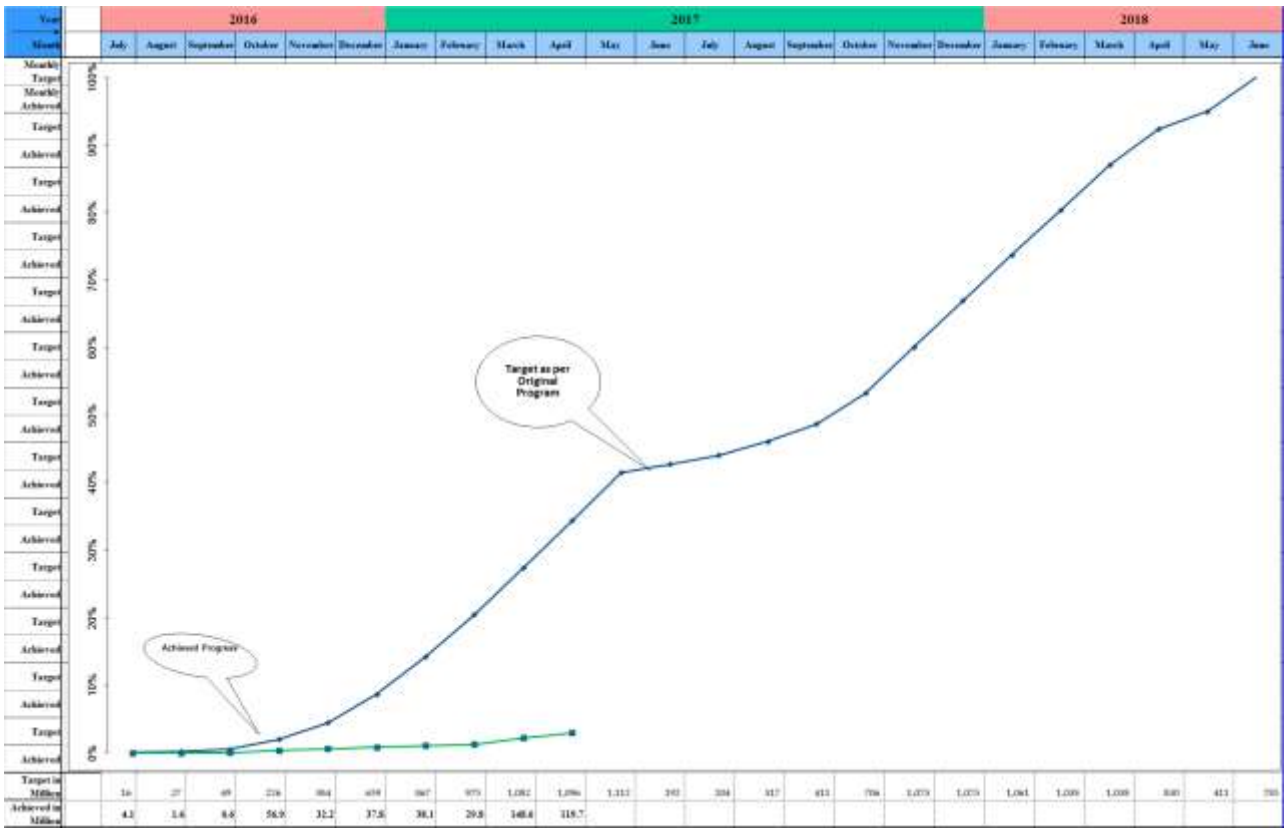
16.5 **Financial Progress**

Up to end of previous month		**This month**		**Cumulative Financial to end of this month**		**Cumulative Physical**
Target	Achieved	Target	Achieved	Target	Achieved (gross)	Achieved
27.41%	2.36%	7.614%	0.765%	34.425%	3.00%	7.50%

16.6 **Schedule of culvert drainage**

Nature of work	Total number	Number completed	Number in progress	Number remaining	Total Number	Number completed	Number in progress	Number remaining
Culverts	**Milestone - I (1+200 to 11+200Km)**				**Milestone - II (11+200 to 30+000 Km.)**			
Slab Culvert	12	10	2	-	15	1	2	12
Box Culverts	15	13	1	1	23	1	5	17
Pipe culvert	3	1	1	1	3			3
Total culverts	**30**	**24**	**4**	**2**	**41**	**2**	**7**	**32**
Major Bridges	1	-	1	-	1	-	1	-
Minor Bridges	-	-	-	-	2	-	1	1

16.7 **S-Curve**



16.8 **Payments to the Contractor**

The contractor has been paid Rs. 10.85 crores (mobilization advance)

16.9 **Implementation of EMP**

16.9.0.1 **General**

Mobilization completed. Batching plant, WMM plant, HM plant commissioned. The basic amenities for staff and labours at base camp have been provided. Contractor has obtained the required consents from PCB and local panchayat. Contractor also informed that aggregate required for the project is proposed to be purchased from local crusher. Contractor submitted EHS plan for the project work and the same was approved.. A safety officer and a assistant safety person are appointed. Contractor has to appoint an environmental engineer urgently.

Contractor has completed all culverts in 1st milestone and bridge deck slab at Neruvambai in progress. Contractor also started road cutting on a trial basis and GSB and WMM layers has been laid but the top layers are not laid. Housekeeping works inside the base camp improved. Onsite training was also done to the safety officers and engineers present. A site visit was conducted by the environmental expert on 28th April 2017 and report was also forwarded to the contractor for taking further action.

Fire extinguishers and first aid box has been provided in all vulnerable locations but the same thing is required in kitchen and accommodations. Additional numbers are required in accommodations. Lighting is to be provided inside the camp.
Dust nuisance noticed in the camp site .Sprinkling of water regularly to be done to supress the dust. The scarified materials have to be used to form the internal roads and proper identification boards are to be placed. Contractor has promised to erect a biogas plant for treating kitchen waste

Contractor has to arrange a base line air and water quality monitoring through an accredited agency.

Contractor submitted work zone traffic management plan for milestone 1. Improvement in management of traffic at road cutting location is required.

Compliance with Statutory Requirements

Unit	Status of Compliance	Remarks
Crusher	No crusher proposed. Materials purchased from existing crusher. Consent copy to Operate from Kerala State Pollution Control Board to be obtained. Building permit obtained from Grama Panchayat.	Copy of the consent submitted. Issue date 28/3/2017 , valid till 23/1/2018
Hot Mix Plant	Hot Mix Plant is planned at vellivelicham near Kuthuparamba for which Consent to Establish	Commissioned. cosent from PCB valid till

	and Consent to Operate from Kerala State Pollution Control Board is to be obtained.	23/1/2018
WMM Plant & Batching Plant	Consent to Establish and Consent to Operate from Kerala State Pollution Control Board is to be obtained.	Commissioned consent valid till 23/1/2018.
Batching plant	Commissioned. Applied for combined consents for establishment and operation.	Commissioned. Consent valid till 23/1/2017

16.10 **Quality Control Tests**

16.10.0.1 **Materials for Structures**

Tests Performed	Standard used	Standard limits	Test Frequency	Total tests up to Previous Month			Tests during this Month			Total tests up to end of this Month		
				Tested	Passed	Failed	Tested	Passed	Failed	Tested	Passed	Failed
STONE	**MOST 1004**											
Water Absorption	IS:1124	Max 2%	lot									
CEMENT	**MOST 1006**		lot									
Fineness	IS:269-1976		" "	11	11		5	5		16	16	
Standard Consistency	" "		" "	11	11		5	5		16	16	
Soundness	" "		" "									
Compressive Strength	" "		" "									
3 day strength test	" "	27 Mpa		11	11		5	5		16	16	
7 day strength test	" "	37 Mpa		11	11		5	5		16	16	
28 day strength test	" "	53 Mpa		9	9		4	4		13	13	
Initial Setting time	IS:4031(Part 1)	< 30 min		11	11		5	5		16	16	
Final Setting time	IS:4031(Part 5)	> 600 min	" "	11	11		5	5		16	16	
COARSE/FINE Aggregates	**MOST 1007/1008**											
Gradation	IS:2386(Part 1)		lot	139	139		42	42		181	181	
Flakiness Index	" "	Min 35%	" "	12	12		2	2		14	14	
Deletrious Mat./Organic Imp.	" (Part 2)		" "									
Water Absorption/Spec.Grav.	" (Part 3)	Max 2%	" "									
Bulk Density	" "		" "									
Impact or crushing Aggr.Value	" (Part 4)	Max 30%	" "	12	12		2	2		14	14	
Los Angeles Abrasion Value	" "		" "									
Soundness	" (Part 5)		" "									########
Alkali Aggregate Reactivity	" (Part 7)		" "									
Surface Moisture Content	" (Part 3)		" "									
Fineness Modulus of FA				122	122		42	42		164	164	

STEEL	**MOST 1009**											
Verification of conformity(Yield stress,U.T.S, % Elg,Unit Wt.Dia. Test. Etc	IS:432/1030/1785/1786 2004/2062		lot				16	16		16	16	
WATER	**MOST 1010**											
Verification of conformity	IS:3025		lot									
CONCRETE ADMIXTURE	**MOST 1012**											
Verification of conformity	IS:1199/6925/9103		lot									
MIXING CONCRETE (Trial	**MOST 1700**											
3 Test Cubes/Slump test	IS:516/1199		MOST:1700-8									
Grade15: 7 Days	" "		" "	6	6					6	6	
28 Days	" "			6	6					6	6	
Grade 20: 7 Days	" "		" "	3	3					3	3	
28 Days	" "			3	3					3	3	
Grade 25:(RCC) 7 Days	" "		" "	6	6					6	6	
28 Days	" "		" "	6	6		3	3		9	9	
Grade 20:(Drain) 7 Days	" "		" "	6	6					6	6	
28 Days	" "		" "	6	6					6	6	
Grade 30:(RCC) 7 Days	" "		" "	3	3					3	3	
28 Days	" "		" "	3	3					3	3	
Grade 35:(RCC) 7 Days	" "		" "	6	6					6	6	
28 Days	" "		" "	6	6					6	6	
Grade 35:(PILE) 7 Days	" "		" "	3	3					3	3	
28 Days	" "		" "	3	3					3	3	
Grade 40:(RCC) 7 Days	" "		" "	3	3					3	3	
28 Days	" "		" "	3	3					3	3	
Grade 45:(RCC) 7 Days	" "		" "									
28 Days	" "		" "	3	3					3	3	

CONCRETE CUBE STRENGTH	**MOST 1700/900**											
M-15 : 7 Days		10.5 N/mm2	set	19	19		4	4		23	23	
28 Days		15 N/mm2	' "	20	20		5	5		25	25	
M-20: 7Days		14 N/mm2	' "	32	32		8	8		40	40	
28 Days		20 N/mm2	' "	31	31		14	14		45	45	
M-25 : 7 Days		17.5 N/mm2	set	59	59		13	13		72	72	
28 Days		25 N/mm2	' "	61	61		15	15		76	76	
M-20(Drain): 7 Days		17.5 N/mm2	' "	19	19		20	20		39	39	
28 Days		25 N/mm2	' "				50	50		50	50	
M-30: 7 Days		24.5 N/mm2	' "	2	2					2	2	
28 Days		35 N/mm2	' "	4	4					4	4	
M-35: (Pile) 7Days		24.5 N/mm2	' "									
28 Days		35 N/mm2	' "									
M-35: (Pile Cap) 7 Days		24.5 N/mm2	' "									
28 Days		35 N/mm2	' "									
M-35: (RCC) 7 Days		24.5 N/mm2	' "	10	10		8	8		18	18	
28 Days		35 N/mm2	' "	10	10		19	19		29	29	
M-40: 7 Days			' "	1	1					1	1	
28 Days			' "	1	1					1	1	
STONE MASONRY	**MOST 1400**											
3Test Mortar Cubes	IS:2250		MOST :1407									
HUME PIPE	**MOST 2902**											
Three-edge Bearing/	IS:458/3597		20/900mm	1	1					1	1	
Hydrostatic Test				1	1					1	1	
Absorption/Straightness tests				1	1					1	1	

16.10.0.2 **Materials for Pavements**

Common Tests Performed	Indian / Foreign Standard	Standard limits	Test Frequency I test per	Total tests up to end of Previous Month			Tests during this Mouth			Total tests up to end of this Mouth		
				Tested	Passed	Failed	Tested	Passed	Failed	Tested	Passed	Failed
EARTHWORK	**MOST 305/903.2**		Emb /Subgrade									
Gradation/Sand content	IS2720(Part 4)		1500 cum	67	67		5	5		72	72	
Atterberg Limits	" (Part5)	LL = max 70% & PI = max 45%	" "	67	67		8	5	3	75	72	3
Proctor	" (Part 8)		" "	67	67		5	5		72	72	
CBR	" (Part 16)	Min 8%	3000 cum	50	50					50	50	
Free Swell Index	" (Part 40)	Max 40%	" "	67	67		8	5	3	75	72	3
Field Density/Compaction	" (Part 28)	95% and 97%	500/1000 sqm	36	35	1	163	163		199	198	1
SUBBASE (GSB) granular material	**MOST 401/900.3.1**											
Gradation	IS2720(Part 4)		200 cum	14	14		13	13		27	27	
Atterberg Limits	" (Part5)	LL = max 25% & PI = max 6%	" "	14	14		13	13		27	27	
Proctor				14	14					14	14	
Deleterious content												
10% fine value		Min 50 KN		1	1					1	1	
Water Absorption		Max 2%		1	1					1	1	
Field Density/Compaction	" (Part 28)	98%	500 sqm	24	24		56	56		80	80	
CBR if grading (II or III)		Min 30%		1	1					1	1	
Site moisture				7	7					7	7	
BASE (WMM)	**MOST 406/900.3.4**											
Gradation	IS 2386 (Part 4)		200 cum	14	14		6	6		20	20	
Flakiness/Elongation Value	" (Part1)	Max 30%	" "	14	14		6	6		20	20	
Aggregate Impact Value / LAAV	" (Part4)	Max 30%	" "	14	14		6	6		20	20	
Atterberg Limits	" (Part4)	LL = max 25% & PI = max 6%	100 cum	14	14		6	6		20	20	
Lose Angels Aration Value	" (Part1)	Max 35%	" "	3	3		6	6		9	9	
Proctor				2	2					2	2	
Water Absorption		Max 2%		4	4					4	4	
Field Density/Compaction	" (Part 28)	98%	500 sqm	17	17		22	22		39	39	
Site moisture				4	4					4	4	
CBR				1	1					1	1	
PRIME/TACK COAT	**MOST 502/503/900.3.4**											
Rate of Spread	IS:217/8887	Prime - 7 kg / 10 Sqm Tack coat - 2.5 kg / 10 sqm	500 sqm									
Quality of Binder												
DENSE BITUMINOUS	**MOST 504/900.4.4**											
Aggregate Gradation (Individual+ Mix)	" (Part 1)											
Aggregate Impact Value (AIV)/ LAAV	IS:2386(Part 4)	Max 27%	50 cum									
Flakiness/Elongation Value	" (Part 1)	Max 30%	" "									
Quality of Binder	IS-73											
Coating and Stripping	IS 6241											
Binder Content (ASTM - 2172-95)		Min 4.5%										
Marshal Test	ASTM D1559-62T	Min 9 KN	Set									
Specific Gravity /Water Absorption	IS 2386(Part-3)	Max 2%										
Soundness	IS 2386(Part-5)		2 per day									
Bulk Density	IS:2386(Part 3)		" "									
Field Density/Compaction (core density)	ASTM D 2041-95	98%										
Sand Equivalant/Value for FA												
Plasticity Index												
BITUMINOUS CONCRETE	**MOST 504/900.4.6**											
Aggregate Gradation (Individual+ Mix)												
Aggregate Impact Value/ LAAV	IS:2386(Part 4)	Max 24%	50 cum									
Flakiness/Elongation Value	" (Part 1)	Max 30%	" "									
Marshall Stability	ASTMD 1559	Min 9 KN	2 per day									
Quality of Binder												
Coating and Stripping												
Specific Gravity /Water Absorption		Max 2%										
Stone polishing Value		Min 55										
Soundness												
Sand Equivalent Test												
Binder Content	IS:2386(Part 4)	Min 5	" "									
Field Density/Compaction	Core Samples	98%	250 sqm									
Plasticity Index												

16.11 **Compliance report on observations of World Bank Mission**

Bridges to be constructed

S No	LOCATION	CHAINAGE (km)	Length (m)	Spans (No./m)
1	ERANHOLI	2+910	64	2/32 each
2	MERUVAMBAI	19+758	64.80	3/21.6 each
3	KERETTA	21+162	21.60 (skew)	1/21.60
4	KALARODE	29+570	21 (skew)	1/21

Summary of Discussions

S No	Issue	Activity	Action By	Action taken
1	Bridge at ERANHOLI	Bridge deck has to be raised by 7m to accommodate directive that the waterway has been declared national waterway Implications are that sizeable quantum of Sub-structure work already done may be rendered infructuous, when design is revisited. Land acquisition may also be required for high embankment of approaches, besides their additional lengths. Also if revised design of the substructure is to be adopted, dismantling the existing work may be extremely difficult. Time involved will also be a big factor. Variety of problems related to environment and social impact may also arise.	TL/PD to discuss all the pros and cons and the problems that the raising of deck may pose. The PD shall present case to steering committee with full details design options, cost variations, dismantling of work already done and involvement of land acquisition etc	Redesigning of the bridge is in progress
2	Mobilization	Camp set-up, but requires a number of corrective measures to address social impact. Work on road component to start by November 15, 2016 Lab has been established partially. To be established fully by November 7, 2016	TL/ PD to ensure action as per time schedule	Being monitored Lab completed and functioning road works started on completion of HMT plant
3	Shifting of Utilities	Most of electrical lines in the MS 1 have since been shifted. Whatever remains, the contractor does not feel them to be a hindrance The contractor also does not foresee any problem in respect of shifting of other	TL/PD to facilitate prompt solving of problems, if any, that may arise.	Being monitored regularly by site personnel

		utilities such as water pipes and removal of trees.		
4	Work program	It has been finalized	TL/PD to keep a constant watch over the methodology behind the approved work Programme, besides re-examining the resource planning.	Being monitored regularly.

Details Supervision and Quality issues in each work package

Sl No.	Observations	Action Taken
1	**Site Works**	
a	One No PSC girder out of 7 Nos left over by the previous contractor had prominent horizontal cold joint above bottom flange which need to be investigated by Ultrasonic Pulse Velocity test at joint location at 1 m centres horizontally and at 2 m centres vertically along length of girder to ascertain homogeneity and soundness of concrete through an accredited agency.	Retesting yet to be done. Bridge been re-designed.
b	In case of doubt load testing of the girder should be done under advice of a specialist before use of the particular girder in bridge structure.	The bridge construction work on hold and will be attended shortly.
c	Launching scheme for precast girders should be asked from the contractor and the same should be checked by PMC in advance.	The bridge construction work on hold and will be monitored when work restarts.
d	Supplier of reinforcement bars shall be asked to send Manufacturer's Test Certificate (MTC) signed by QC-in-charge or Scientist or Head of QC laboratory with name and designation and not by Authorised Representative as is being followed now	Complied
2	**Quality Control Laboratory**	
a	Samples of reinforcement bars (3 Nos) projecting from top of pier concrete which have been coated with epoxy paint at site to prevent further corrosion should be sent to an approved laboratory for test to check tensile strength and also if p.c loss of bond due to epoxy application is within limit as per stipulations of relevant code.	Complied
b	In concrete batching plant 18 cum capacity installed at site load cell for 12 mm size stone chips should be re-calibrated as error p.c is higher than permissible limit.	Complied

c	pH value of water tested is marginally higher than permissible limit. Re-test of water sample should be done in December, 2016 again to check if value has increased or further decreased for the worse. If less than 6.0, the source of water should be changed after satisfactory test of water sample from new source.	Re test done

Environmental Safeguards

1	CSC' Environmental Expert needs to visit site of base camp/plant for verification and approval as per siting criteria as given in the EMP.	Visited project site and base camp and approval issued.
2	The contractor has not deployed Environment & Safety Officer but base camp and plants are being installed. This is crucial stage for implementation of EMP. Hence, contractor needs to deploy experienced Environment & Safety Officer to ensure proper implementation of EMP.	Safety officer mobilised.
3	At base camp, hot mix plant, WMM plant, etc are being installed. However, basic amenities and EMP implementation at this stage, like toilets for males and females, bathrooms for workers, ventilation in laboratory & office through turbine type ventilators, canteen/rest rooms for having food by workers, solid waste management, air pollution control from DG sets by providing vertical stacks as per CPCB guidelines, proper earthing with three phase electrical equipment, peripheral fencing, display of emergency phone numbers and emergency response plan, placement of fire extinguishers at strategic locations, display of relevant safety signages, display of layout on the gate, separate entry and exist for trucks & heavy machines, etc are lacking and need to be provided by the contractor immediately.	All amenities have been provided. Ventilators provided for office /Lab.Earthing done, fire extinguishers and First aid box placed. Access road inside will be maintained.
4	Works site safety at culverts construction sites needs to be enhanced by providing cones and delineators, flags, signages with retro reflective tapes, etc.	Direction issued to improve safety.

ROAD SAFETY

1	As per the DPR, there's no junction improvement plan for the ROB Jn. at the beginning point of the project road. The vehicles going to railway station from the project road and the oncoming traffic from ROB needs to be scientifically designed.	Junction being designed by the safety expert.

16.12 **Photographs**

WMM LAYING WORK IN PROGRESS AT KM.4+640 TO 4+800 LHS

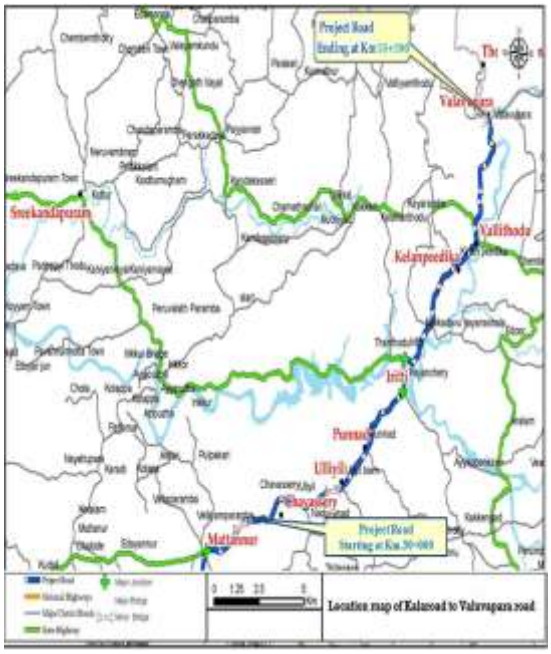
DISMANTLING WORK IN PROGRESS AT KM.16+362

EXCAVATION UPTO SUBGRADE WORK IN PROGRESS AT KM.4+700

HM PLANT ERECTION COMPLETED AT BASE CAMP

16.13 **KSTP/PMT/UG – III-B**

(Kalaroad – Valavupara) 25.20 km



1.	Contract value in crores	-	Rs. 209.69 crores
2.	Name of Contractor	-	M/s GHV-EKK (JV)
3.	Date of Agreement	-	27.09.2016
4.	Letter to Commence	-	
5.	Time of Completion	-	24 months
6.	Length	-	24 km
7.	Milestone – I	-	
8.	Milestone – II	-	
9.	Milestone – III	-	

16.14 **Executive Summary**

The contract of Package IIIB (Kalaroad – Valavupara) has been awarded toM/s GHV-EKK (JV) on 29th April 2016. Notice to Proceed has been issued to the contractor vide letter No. ET/1A/PJ/1842dt 16th August 2016 and thereby instructed to commence the work with effect from 18th August 2016. Date of commencement was revised to 26th September 2016 for completion of work by 25th September 2018, based on the date of release of mobilization advance vide letter No. ET/1A/PJ/2163 dt 17thFebruary 2017. Contractor submitted the revised work programme on 23rd September-16 and approved vide Team Leader letter No.ET/1A/PJ/1980 dated 5th November 2016.

16.15 Pre-Construction Activities

16.15.0.1 Utilities

Joint inspection conducted along with utility consultant, KSEB and Kerala Water Authority and list finalized.

STATUS OF SETTING OUT INCLUDING CENTRE LINE AND OGL SURVEY

Survey work completed for the entire length of the project and cross sections are prepared and submitted from Ch 30+000 to 45+000 as per the DPR Drawing.

Traverse for entire Stretch is completed and data submitted.

TBM Fixing Completed for entire stretch and submitted.

Centre line Coordinates Marking Completed.

OGL recording completed and submitted.

STATUS OF ELECTRICAL UTILITY SHIFTING

Materials Procurement 90% Completed.

Poles and OH Line Shifting MS -1, 68% Completed. Balance work is in Progress.

MS-II work in progress.

STATUS OF WATER UTILITY SHIFTING

Procurement of UPVC pipes Completed. Variations Quantity yet to be procured.

Procurement of DI pipes Completed. Variations Quantity yet to be procured.

Water Utility Shifting work is in progress at Ch 30+000 to 42+000, and 55% completed.

SUB SOIL INVESTIGATION

Soil investigation is completed at Major Bridge Ch 42+198. Final Test Reports are submitted.

Soil investigation Completed for Major Bridge Ch 53+865. Final Test Reports are submitted.

OGL Sampling and testing completed for the entire stretch.

16.16 **Moblization of Resources**

16.16.0.1 **Plant and Machinery**

Contractor has erected two concrete Batching plants at Base camp and calibration done. The plant is in operation.

Base Camp site office construction completed and Laboratory Construction work completed at Kallyad on Poovam- Kallyad Road, 10 km away from Iritty bridge (Km 42+195).

Hot Mix Plant and WMM Plant erected and production started.

16.17 **Work Progress**

38+000 to 38+460 Sub grade Work in Progress. Earth cutting work 30+000 to 35+500 and Ch 35+580 to 38+970, 43+000 to 48+000 hill cutting work is in progress.

Road cutting and subgrade preparation work is in progress at Ch :30+000 to 41+500 B/S

GSB 35+580 to 37+950 completed,40+150 to 41+300,31+000 to 32+800 work in progress

WMM 36+160 to 37+950 B/S laying in progress

DBM Trial laying done at site for service Road at 38+100,

Pre-casting of Drain work is in progress, 12850 Rmt casting completed and stocked at site.

Drain fixing at site work is in progress Ch: 30+000 to 41+500

Retailing wall work in progress at Ch 38+000 to 38+190 LHS side,39+500 LHS work in Progress

RCC & PCC Retaining wall identification and location finalization work in Progress

16.18 **Structure work**

Major Bridge Ch 42+198: Abutment A1 Side construction of Abutment wall final Lift completed.

Abutment A2 pile cap Completed and abutment wall 4th lift work in progress.

Coffer dam Filling Completed at Pier P1 and in progress at P2 Location test pile boring and P1 Pile boring works are in progress.

Minor Bridge Ch: 35+405 : Girder and deck slab concrete completed.

Culverts

25 Box Culverts works completed and 7 no's are in Progress.

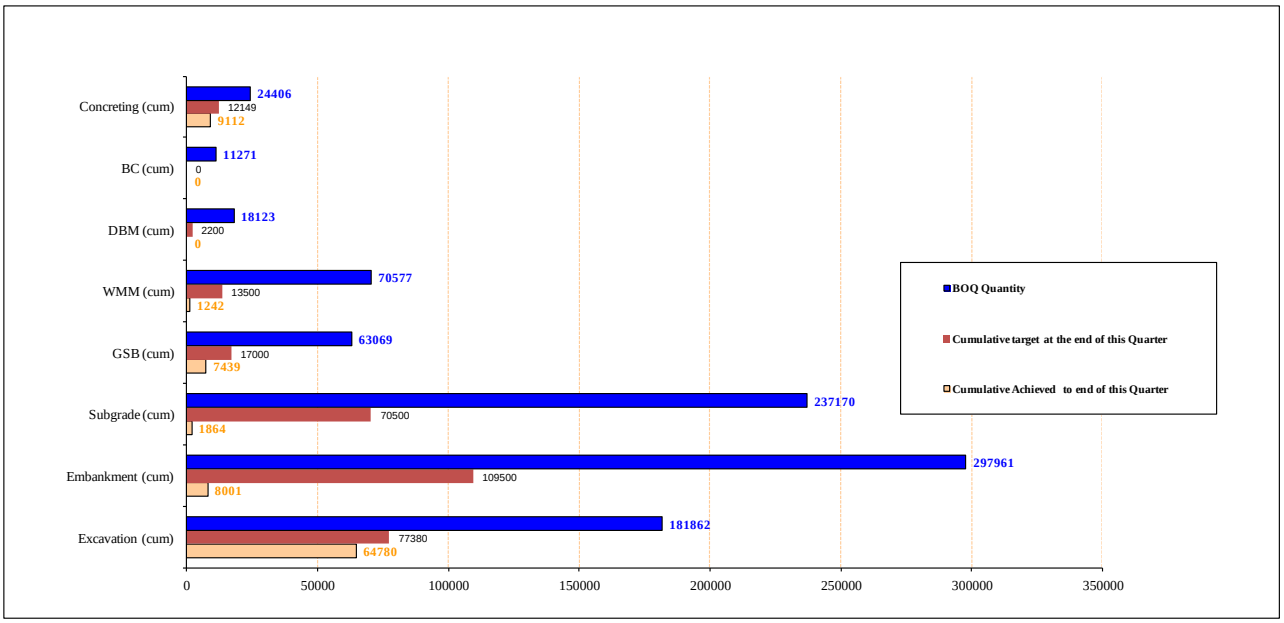
6 Slab Culverts work completed and 1no is in Progress.

6 Pipe Culverts work completed and 3no'sare is in progress.

16.19 Financial Progress

Up to end of previous Mont		This Month		Cumulative to end of this Month		Physical Progress
Target	Achieved	Target	Achieved	Target	Achieved (gross)	Achieved
22.17%	9.833%	5.749%	2.605%	27.919%	12.438%	13%

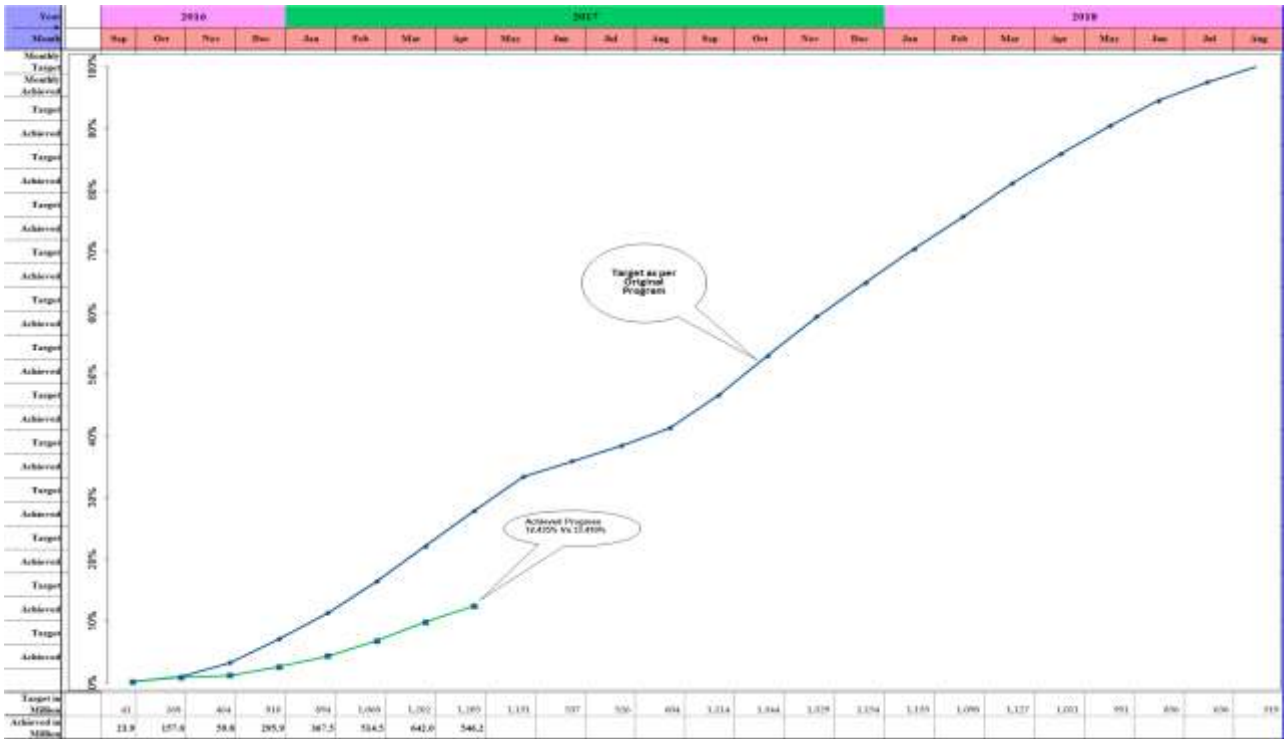
16.20 Physical Progress



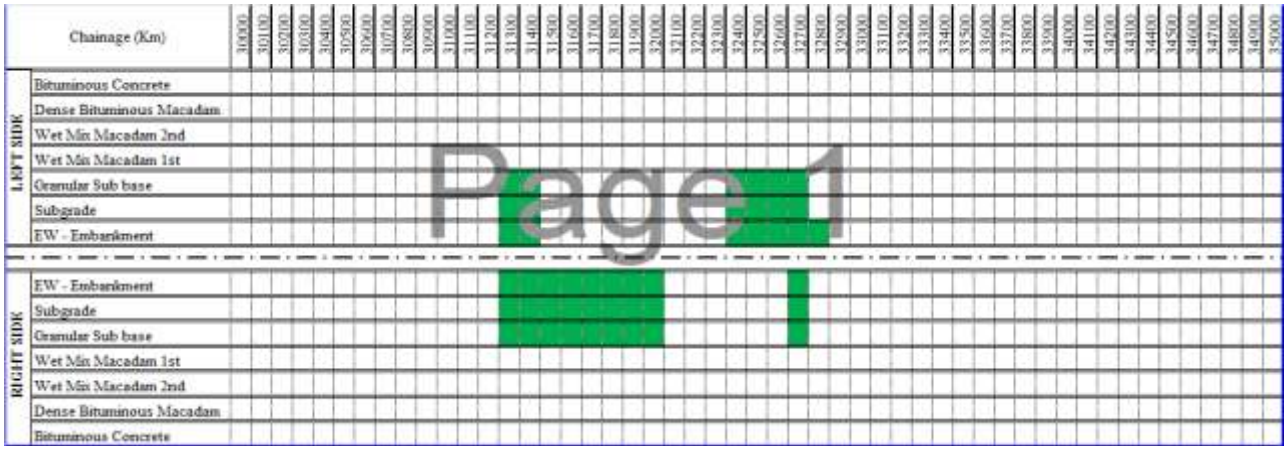
16.21 Schedule of Culverts and Drainage Works

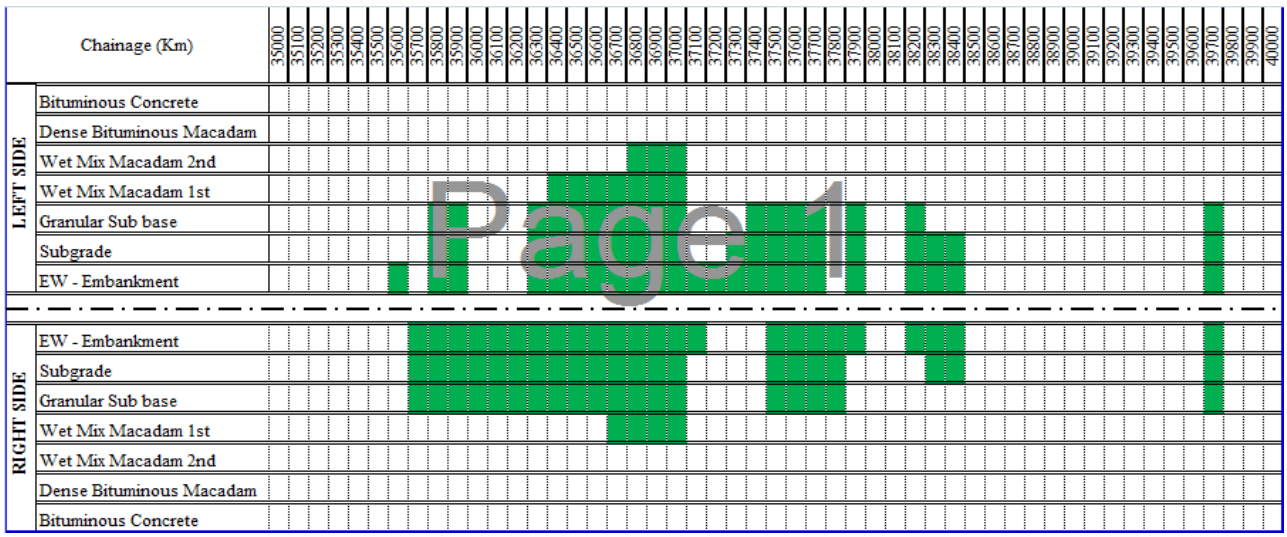
Nature of work	Original number	Number completed	Number in progress	Number remaining	Original number	Number completed	Number in progress	Number remaining	Remarks
Culverts	**Milestone - I (30+000 to 40+000 -10km**				**lestone - II (40+000 to 55+200- 15.2k**				
Slab Culverts	4	4	-	-	1	1	-	-	
Box Culvert	21	19	2	-	38	6	5	27	
Pipe Culvert	9	6	3	-	15	-	1	14	
Major Bridges	-	-	-	-	2	-	2	-	
Minor Bridges	1	-	1	-	-	-	-	-	
Total Structures	**35**	**29**	**6**	-	**56**	**7**	**8**	**41**	

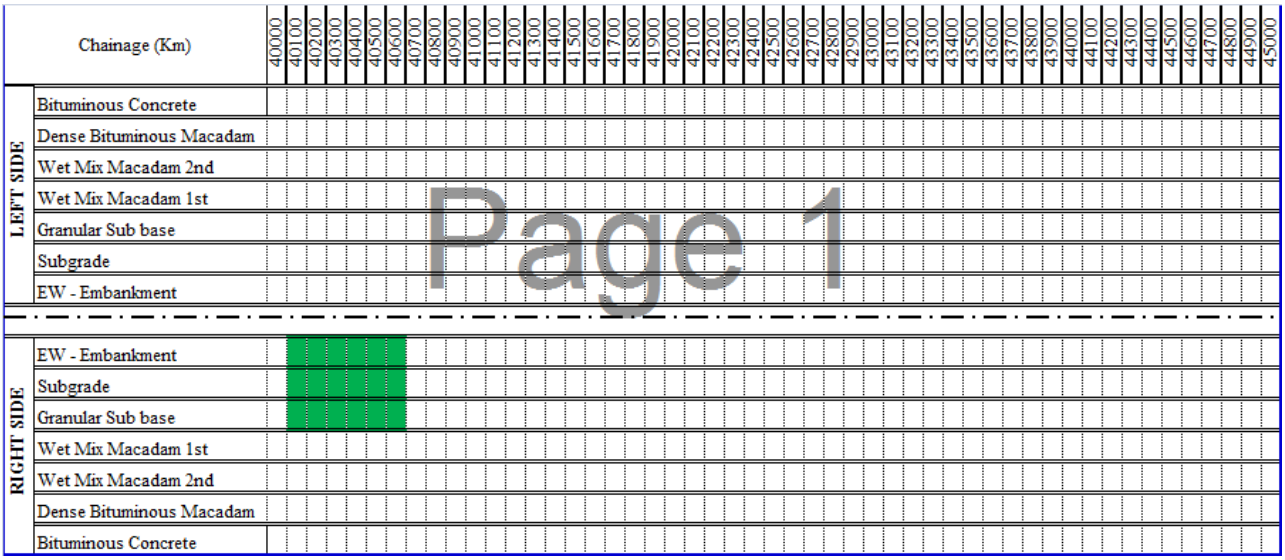
16.22 **S-Curve**



16.23 **Strip map**







16.24 **Payments to the Contractor**

The contractor has been paid Rs. 42.52 crores

16.25 **Implementation of EMP**

Mobilization has been completed and all plants erected and trial run completed. Housekeeping, waste disposal are satisfactory but some improvement required in waste collection and disposal. The consent application submitted and clearance from PCB obtained for HM plant. NOC is expected for other plants shortly.

Dust suppression measures are required in side base camp. The workshop area is to be completed immediately with waste oil collection pits and separate service area for vehicles.

Compliance with Statutory Requirements

Unit	Status of Compliance	Remarks
Crusher	No crusher proposed. Materials purchased from existing crusher. Consent copy to Operate from Kerala State Pollution Control Board to be obtained.	Copy of consents submitted.
Hot Mix Plant	Hot Mix Plant is planned at Padiyoor near Iritty for which Consent to Establish and Consent to Operate from Kerala State Pollution Control Board is to be obtained.	Mobilised, ready for operation. consent from PCB obtained.
WMM Plant & Batching Plant	Consent to Establish and Consent to Operate from Kerala State Pollution Control Board is to be obtained.	Mobilised errection progress.
Batching plants At base camp and at chevayur(2 nos.)	Commissioned. Applied for combined consents for establishment and operation. Commissioned.	Applied for consents.

.

Contractor has erected a bio gas plant for treating kitchen waste and the gas from the plant is used for cooking. A RO plant has been installed to meet the drinking water requirements of the people inside the base camp. The contractor has also installed an activated carbon and filter unit to treat the waste water from bash rooms and kitchen for reuse. This will be reused for dust suppression and gardening purpose. The effort taken by the contractor is to be appreciated and can be a model for other contractors.

Leveling and filling the yard around the kitchen labour camp toilet blocks are partially done..
The base camp at Chavessery in which the contractor installed batching plant, WMM plant, and casting yard are also in operation. Contractor has using a mobile crusher for making GSB, the PCB clearance for the plant has also to obtain.

The panchayat road to the base camp is in a bad shape; this may be repaired and to be maintained by the contractor.

The work of the Iritty Bridge is in progress. The abutment works are in progress. Contractor has constructed an earthen cofferdam for the construction of the pier.

Toilet facility is not provided to the workers at the bridge site. A temporary site office is to be constructed at the site and space for rest and dining this is a pending issue.

Contractor has been kept registers for accident reports and complaints from public. Direction has been issued to collect report on accidents from police stations on a weekly basis and report to the consultant monthly.
Training has to be provided to all workers, staff and operators as per the EHS plan by the safety officer, this is pending.

Work zone traffic management shall be as per the approved EHS plan and sign boards as per the required numbers shall be provided. Direction issued to submit site specific plan for traffic management. Contractor has opened long stretches and completed GSB layer. Top layer have to be laid urgently. The safety arrangements at work zone at Km 38 require further improvements.
Five accidents reported in the current month and 3 are fatal.

16.26 **Material Tests Structure & Pavements**

S. No.	Name of test	Testing method	Frequency of test	Specification requirement	Number of tests conducted												Remarks
					Up to Previous Month				This month				Cumulative				
					Tested	Pass	Fail	Retest	Tested	Pass	Fail	Retest	Tested	Pass	Fail	Retest	
1) OGL																	
1	Attebreg's Limit	IS: 2720, Part 5	1 test/1500 m²	LL=35% max, PI=25 max.	109	109	0	0	0	0	0	0	109	109	0	0	
2	Sieve Analysis	IS: 2720, Part 4	1 test/1500 m²	75 mm maximum size	102	102	0	0	0	0	0	0	102	102	0	0	
3	Proctor Test	IS: 2720, Part 8	1 test/1500 m²	Min.15.2 kN/m² for soils upto 3m Min.16.0 kN/m² for soils above 3m ht.	80 71	80 71	0 0	0 0	0 0	0 0	0 0	0 0	80 71	80 71	0 0	0 0	
4	Moisture Content	IS: 2720, Part 2	1 test/250 m²	(+) 1 % (-) 2 % of OMC	120	120	0	0	0	0	0	0	120	120	0	0	
5	Free Swelling Index	IS: 2720, Part 40	As required	40% max.	164	164	0	0	0	0	0	0	164	164	0	0	
6	Lab CBR	IS: 2720, Part 16	1 test/3000 m²	10% minimum	234	234	0	0	0	0	0	0	234	234	0	0	
7	Field Density	IS: 2720, Part 28	1 test / 1000 m²	Min. 95%	120	116	4	4	12	12	0	0	132	128	4	4	
2) NEW ALIGNMENT CUTTING MATERIALS																	
1	Attebreg's Limit	IS: 2720, Part 5	1 test/1500 m²	LL=35% max, PI=25 max.	8	8	0	0	0	0	0	0	8	8	0	0	
2	Sieve Analysis	IS: 2720, Part 4	1 test/1500 m²	75 mm maximum size	8	8	0	0	0	0	0	0	8	8	0	0	
3	Proctor Test	IS: 2720, Part 8	1 test/1500 m²	17.5 kN/m² min.	8	8	0	0	0	0	0	0	8	8	0	0	
4	Deleterious Content: Sulphate	IS: 2720, Part 27	As required	0.5 % max	1	1	0	0	0	0	0	0	1	1	0	0	
5	Free Swelling Index	IS: 2720, Part 40	As required	40% max.	8	8	0	0	0	0	0	0	8	8	0	0	
6	Lab CBR	IS: 2720, Part 16	1 test/3000 m²	10% minimum	9	9	0	0	0	0	0	0	9	9	0	0	
3) SOIL/EMBANKMENT MATERIALS																	
1	Attebreg's Limit	IS: 2720, Part 5	1 test/1500 m²	LL=35% max, PI=25 max.	11	11	0	0	1	1	0	0	12	12	0	0	
2	Sieve Analysis	IS: 2720, Part 4	1 test/1500 m²	75 mm maximum size	11	11	0	0	1	1	0	0	12	12	0	0	
3	Proctor Test	IS: 2720, Part 8	1 test/1500 m²	Min.15.2 kN/m² for soils upto 3m Min.16.0 kN/m² for soils above 3m ht.	0 11	0 11	0 0	0 0	1 1	1 1	0 0	0 0	1 12	1 12	0 0	0 0	
4	Moisture Content	IS: 2720, Part 2	1 test/250 m²	(+) 1 % (-) 2 % of OMC	388	388	0	0	18	18	0	0	406	406	0	0	
5	Deleterious Content: Sulphate	IS: 2720, Part 27	As required	0.5 % max	0	0	0	0	0	0	0	0	0	0	0	0	
6	Free Swelling Index	IS: 2720, Part 40	As required	40% max.	11	11	0	0	1	1	0	0	12	12	0	0	
7	Field Density	IS: 2720, Part 28	1 test/1000 m²	Min. 95%	388	332	44	38	18	18	0	0	406	370	44	38	
4) SUB-GRADE MATERIALS																	
1	Attebreg's Limit	IS: 2720, Part 5	1 test/1500 m²	LL=35% max, PI=25 max.	3	3	0	0	2	2	0	0	5	5	0	0	
2	Sieve Analysis	IS: 2720, Part 4	1 test/1500 m²	75 mm maximum size	3	3	0	0	2	2	0	0	5	5	0	0	
3	Proctor Test	IS: 2720, Part 8	1 test/1500 m²	17.5 kN/m² min	3	3	0	0	2	2	0	0	5	5	0	0	
4	Moisture Content	IS: 2720, Part 2	1 test/250 m²	(+) 1 % (-) 2 % of OMC	323	323	0	0	431	431	0	0	754	754	0	0	
5	Deleterious Content: Sulphate	IS: 2720, Part 27	As required	0.5 % max	0	0	0	0	0	0	0	0	0	0	0	0	
6	Free Swelling Index	IS: 2720, Part 40	As required	50% max.	3	3	0	0	2	2	0	0	5	5	0	0	
7	Lab CBR	IS: 2720, Part 16	1 test/3000 m²	10% minimum	3	3	0	0	2	2	0	0	5	5	0	0	
8	Surface Tolerance Level	MORTH 902.3	As required	(-) 25 mm & (+) 20 mm	0	0	0	0	0	0	0	0	0	0	0	0	
9	Field Density	IS: 2720, Part 28	1 test/500 m²	Min. 97%	323	287	28	28	431	423	8	0	754	720	34	28	
5) GSB MATERIALS																	
1	Attebreg's Limit	IS: 2720, Part 5	1 test/200 m²	LL=25% max; PI=6 max.	29	29	0	0	34	34	0	0	63	63	0	0	
2	Sieve Analysis	IS: 2386, Part 1	1 test/200 m²	Morth a) 75, b) 53, c) 26.5 max	83	83	0	0	34	34	0	0	87	87	0	0	
3	Proctor Test	IS: 2720, Part 8	As required		9	9	0	0	0	0	0	0	9	9	0	0	
4	Deleterious Content	IS: 2386, Part 2	As required	No deleterious constituent.	0	0	0	0	0	0	0	0	0	0	0	0	
5	Moisture Content	IS: 2720, Part 2	1 test/250 m²	(+) 1 % (-) 2 % of OMC	123	123	0	0	238	238	0	0	361	361	0	0	
6	Lab CBR	IS: 2720, Part 16	1 test/2000 m²	30 % minimum	7	7	0	0	0	0	0	0	7	7	0	0	
7	10 % Fines Value	BS: 812, Part 111	As required	50 kN min (soaked condition)	7	7	0	0	0	0	0	0	7	7	0	0	
8	Water Absorption	IS: 2386, Part 3	As required	2 % max. > 2% do Soundness	7	7	0	0	0	0	0	0	7	7	0	0	
9	Field Density	IS: 2720, Part 28	1 test/500 m²	Min. 98%	123	119	4	4	240	236	4	4	363	357	8	4	
10	Surface Tolerance Level	MORTH 902.3		(+) 10 mm & (-) 20 mm	0	0	0	0	0	0	0	0	0	0	0	0	
11	Acceptance Criteria	MORTH Section 902.2.2	As required	Spec'd D +[1.65-1.65 /√n of	13	13	0	0	24	24	0	0	37	37	0	0	
6) WMM MATERIALS																	
1	Sieve Analysis	IS: 2386, Part 1	1 test/100 m²	MORTH a) 75 b) 53 c) 26.5 max	25	23	0	0	22	22	0	0	45	45	0	0	
2	Attebreg's Limit	IS: 2720, Part 5	1 test/100 m²	PI=6 max.	7	7	0	0	22	22	0	0	29	29	0	0	
3	Proctor Test	IS: 2720, Part 8	As required		1	1	0	0	0	0	0	0	1	1	0	0	
4	Deleterious Content	IS: 2386, Part 2	As required	No deleterious constituent.	0	0	0	0	0	0	0	0	0	0	0	0	
5	Aggregate Impact Value	IS: 2386, Part 4	1 test/100 m²	30% maximum	4	4	0	0	0	0	0	0	4	4	0	0	
6	Los Angeles Abrasion	IS: 2386, Part 4	1 test/500 m²	35 % maximum	4	4	0	0	14	14	0	0	18	18	0	0	
7	Comb. Flakiness Elongation	IS: 2386, Part 1	1 test/200 m²	30% maximum	4	4	0	0	16	16	0	0	20	20	0	0	
8	Water Absorption	IS: 2386, Part3	As required	2 % max > 2% do Soundness	1	1	0	0	0	0	0	0	1	1	0	0	
8	Field Density (Shoulder)	IS: 2720, Part 28	1 test/500 m²	98%	0	0	0	0	0	0	0	0	0	0	0	0	
10	Field Density	IS: 2720, Part 28	1 test/500 m²	98%	30	29	1	1	103	103	0	0	133	132	1	1	
11	Surface Tolerance Level	MORTH 902.3	As required	(+) 10 mm & (-) 20 mm	0	0	0	0	0	0	0	0	0	0	0	0	

12	Surface Irregularities	MORTH 902.4	As required	8 mm maximum	0	0	0	0	0	0	0	0	0	0	0	0		
13	Acceptance Criteria	MORTH Section 902.3.2	As required	Spec'd D+(1.65-1.65√n of	3	3	0	0	9	9	0	0	12	12	0	0		
7) BITUMINOUS EMULSIFIED PRIME COAT MATERIALS																		
1	Viscosity by Fazal Viscometer	IS: 3117	1 test/lot	20 to 100 seconds	0	0	0	0	1	1	0	0	1	1	0	0		
2	Rate of Application	MORTH 502	1 test/500sqm	6 to 8 kgs/ 10 sq.m.	0	0	0	0	8	8	0	0	8	8	0	0		
3	Temperature Application	MORTH 503.3.3	1 test/operation	20°C to 60°C	0	0	0	0	1	1	0	0	1	1	0	0		
8) BITUMINOUS EMULSIFIED TACK COAT MATERIALS FOR DBM																		
1	Viscosity by Fazal Viscometer	IS: 3117	1 test/lot	20 to 100 seconds	0	0	0	0	1	1	0	0	1	1	0	0		
2	Rate of Application	MORTH 503	1 test/500sqm	2.5 to 3.5kgs/ 10 sq.m.	0	0	0	0	3	3	0	0	3	3	0	0		
3	Temperature Application	MORTH 503.3.3	1 test/operation	20°C to 60°C	0	0	0	0	1	1	0	0	1	1	0	0		
9) BITUMINOUS EMULSIFIED TACK COAT MATERIALS FOR BC																		
1	Viscosity by Fazal Viscometer	IS: 3117	1 tests/lot	20 to 100 seconds	0	0	0	0	0	0	0	0	0	0	0	0		
2	Rate of Application	MORTH 503	1 test/500sqm	2 to 2.5 kgs/ 10 sq.m.	0	0	0	0	0	0	0	0	0	0	0	0		
3	Temperature Application	MORTH 503.3.3	1 test/operation	20°C to 60°C	0	0	0	0	0	0	0	0	0	0	0	0		
10) BITUMEN MATERIALS FOR BM, DBM AND BC																		
1	Penetration Grade at 25°C	IS: 1203	1 test/lot	Min.45mm	1	1	0	0	1	1	0	0	2	2	0	0		
2	Softening Point	IS: 1205	1 test/lot	Min.47 degs	1	1	0	0	1	1	0	0	2	2	0	0		
3	Ductility at 27°C	IS: 1208	1 test/lot	Min.40cm	1	1	0	0	1	1	0	0	2	2	0	0		
4	Viscosity	IS: 1206	1 test/lot	2400-3600 poises	0	0	0	0	1	1	0	0	1	1	0	0		
5	Specific gravity	IS: 1201	1 test/lot		1	1	0	0	0	0	0	0	1	1	0	0		
6	Elastic recovery	IS 15462	1 test/lot	Min.40%	0	0	0	0	0	0	0	0	0	0	0	0		
11) DENSE BITUMINOUS MACADAM MATERIALS - GRADE II																		
1	Sieve Analysis	IS: 2386, Part 1	For each 400 tonnes/2 tests per	MORTH Table 500-18	27	27	0	0	2	2	0	0	28	28	0	0		
2	Extraction Test of Bitumen	ASTM D-2172		± 0.30% by weight of total mix	0	0	0	0	2	2	0	0	2	2	0	0		
3	Sieve Analysis after Extraction	IS: 2386, Part 1		MORTH Table 500-18	0	0	0	0	2	2	0	0	2	2	0	0		
4	Aggregate Impact Value	IS: 2386, Part 4	1 test per 50 m³	25 % maximum	3	3	0	0	1	1	0	0	4	4	0	0		
5	Comb. Flakiness & Elongation	IS: 2386, Part 1	1 test per 50 m³	30 % maximum	1	1	0	0	1	1	0	0	2	2	0	0		
6	Los Angeles Abrasion	IS: 2386, Part 4	1 test per 50 m³	30 % maximum	1	1	0	0	0	0	0	0	1	1	0	0		
7	Water Absorption	IS: 2386, Part 3	As required	2% maximum. If >2% carry out	5	5	0	0	0	0	0	0	5	5	0	0		
8	Marshall Stability			Min.9 KN	0	0	0	0	9	9	0	0	9	9	0	0		
9	Marshall Flow		Set of 3 Marshall	3mm-6mm	0	0	0	0	9	9	0	0	9	9	0	0		
10	% Voids in Mineral Aggregates	ASTM D-1559	moulds/400 tonn & min. of 2 tests/day/ plant	Min 12.5%	0	0	0	0	9	9	0	0	9	9	0	0		
11	% Voids in Mineral Aggregates Filled by			65% to 75%	0	0	0	0	9	9	0	0	9	9	0	0		
12	% Voids in the Min			3% to 6%	0	0	0	0	9	9	0	0	9	9	0	0		
13	Coating & Stripping of Bitumen in Aggregate	IS:6241	95% min retained coating	1 set of 3 specimens for	0	0	0	0	1	1	0	0	1	1	0	0		
14	Drilled Core Density	IRC : 111	1 test/250 m²	98% min of Lab. Density	0	0	0	0	10	10	0	0	10	10	0	0		
15	Laboratory Density	ASTM D-1559	Set of 3 Marshall moulds/400 tonn	As per Job Mix Formula	0	0	0	0	2	2	0	0	2	2	0	0		
16	Soundness - Sodium Sulphate	IS: 2386, Part 5	As required	Max. 12%	0	0	0	0	1	1	0	0	1	1	0	0		
	Magnesium Sulphate			Max. 18%	0	0	0	0	1	1	0	0	1	1	0	0		
17	Sand Equivalent Value	IS: 2720, Part 37	As required	Min. 50%	0	0	0	0	1	1	0	0	1	1	0	0		
18	Surface Tolerance Level	MORTH Section 902.3	As required	o/bum	0	0	0	0	0	0	0	0	0	0	0	0		
19	Surface Irregularities	MORTH 902.4	As required	8mm maximum	0	0	0	0	0	0	0	0	0	0	0	0		
20	Bump Integrator			2000 mm/Km	0	0	0	0	0	0	0	0	0	0	0	0		
12) BITUMINOUS CONCRETE - GRADE II																		
1	Sieve Analysis	IS: 2386, Part 1	For each 400 tonnes/2 tests per	MORTH Table 500-18	0	0	0	0	0	0	0	0	0	0	0	0		
2	Extraction Test of Bitumen	ASTM D-2172		± 0.30% by weight of total mix	0	0	0	0	0	0	0	0	0	0	0	0		
3	Sieve Analysis after Extraction	IS: 2386, Part 1		MORTH Table 500-18	0	0	0	0	0	0	0	0	0	0	0	0		
4	Aggregate Impact Value	IS: 2386, Part 4	1 test per 50 m³	25 % maximum	0	0	0	0	0	0	0	0	0	0	0	0		
5	Comb. Flakiness & Elongation	IS: 2386, Part 1	1 test per 50 m³	30 % maximum	0	0	0	0	0	0	0	0	0	0	0	0		
6	Los Angeles Abrasion	IS: 2386, Part 4	1 test per 50 m³	30 % maximum	0	0	0	0	0	0	0	0	0	0	0	0		
7	Water Absorption	IS: 2386, Part 3	As required	2% maximum. If >2% carry out	0	0	0	0	0	0	0	0	0	0	0	0		
8	Marshall Stability			Min 900 Kg	0	0	0	0	0	0	0	0	0	0	0	0		
9	Marshall Flow		Set of 3 Marshall	2 mm to 4 mm	0	0	0	0	0	0	0	0	0	0	0	0		
10	% Voids in Mineral Aggregates	ASTM D-1559	moulds/400 tonn & min. of 2 tests/day/ plant	Min 14%	0	0	0	0	0	0	0	0	0	0	0	0		
11	% Voids in Mineral Aggregates Filled by			65% to 75%	0	0	0	0	0	0	0	0	0	0	0	0		
12	% Voids in the Min			3% to 6%	0	0	0	0	0	0	0	0	0	0	0	0		
13	Polished Stone Value	BS 812	As required	Min.55	0	0	0	0	0	0	0	0	0	0	0	0		
14	Coating & Stripping of Bitumen in Aggregate	IS:6241	95% min retained coating	1 set of 3 specimens for	0	0	0	0	0	0	0	0	0	0	0	0		
15	Drilled Core Density	IRC-111	1 test/250 m²	98% min of Lab. Density	0	0	0	0	0	0	0	0	0	0	0	0		
16	Laboratory Density	ASTM D-1559	Set of 3 Marshall moulds/400 tonn	As per Job Mix Formula	0	0	0	0	0	0	0	0	0	0	0	0		
17	Surface Tolerance Level	MORTH Section 902.3		o/bum	0	0	0	0	0	0	0	0	0	0	0	0		
18	Surface Irregularities	MORTH 902.4	As required	8mm maximum	0	0	0	0	0	0	0	0	0	0	0	0		

19	Bump Integrator	MORTH Section	As required	2000 mm/Km	0	0	0	0	0	0	0	0	0	0	0	0	
20	Acceptance Criteria	MORTH Section 902.2.2	As required	Spec'd D+[1.65-(1.65/ (Nos. of	0	0	0	0	0	0	0	0	0	0	0	0	
13) CEMENT																	
1	Total Loss on Ignition	IS:12269-1987	1 test per lot and or as directed by the Engineer	Not more than 5.0%	1	1	0	0	0	0	0	0	1	1	0	0	
2	Insoluble Residue	IS: 12269-1987		Not more than 5.0%	1	1	0	0	0	0	0	0	1	1	0	0	
3	Sulphur Content	IS: 12269-1987		Not more than 2.5%, for	3	3	0	0	0	0	0	0	3	3	0	0	
4	Fineness	IS:4031 –PART-5		Not more than 10%	24	24	0	0	3	3	0	0	27	27	0	0	
5	Consistency	IS:4031 –PART-5		5 to 7	25	25	0	0	3	3	0	0	28	28	0	0	
6	Lime Saturation Factor	IS: 12269-1987		Between 0.66 and 1.02	2	2	0	0	0	0	0	0	2	2	0	0	
7	Specific Surface	IS: 12269-1987		Not less than 225 m²/kg	0	0	0	0	0	0	0	0	0	0	0	0	
8	Time of Setting	IS:4031 –PART-5		30 minutes min(initial)	28	28	0	0	3	3	0	0	31	31	0	0	
	Time of Setting	IS:4031 –PART-5		600 minutes max (final)	28	28	0	0	3	3	0	0	31	31	0	0	
9	Soundness - Le Chatelier	IS:4031 –PART-5		Not more than 10mm	1	1	0	0	0	0	0	0	1	1	0	0	
	Soundness - Autoclave	IS:4031 –PART-5		Not more than 0.8%	1	1	0	0	0	0	0	0	1	1	0	0	
10	Compressive Strength - 3 days	IS:4031, Part 6		27 MPa min after 72 hrs	60	[illegible]	0	[illegible]	12	12	0	0	72	72	0	0	
	Compressive Strength - 7 days	IS:4031, Part 6		37 Mpa min after 168 hrs	63	[illegible]	0	[illegible]	9	9	0	0	72	72	0	0	
	Compressive Strength - 28 days	IS:4031, Part 6		53 Mpa min after 672 hrs	57	[illegible]	[illegible]	[illegible]	15	[illegible]	0	0	72	72	0	0	
14) STEEL REINFORCING BARS (Fe 500)																	
1	8 mm Ø	IS: 228	1 test per lot and or as directed by the Engineer	0.367 to 0.423 kgs/m	10	10	0	0	2	2	0	0	12	12	0	0	
2	10 mm Ø	IS: 228		0.574 to 0.660 kgs/m	19	19	0	0	3	3	0	0	22	22	0	0	
3	12 mm Ø	IS: 228		0.844 to0.932 kgs/m	11	11	0	0	2	2	0	0	13	13	0	0	
4	16 mm Ø	IS: 228		1.501 to 1.659 kgs/m	13	13	0	0	3	3	0	0	16	16	0	0	
5	20 mm Ø	IS: 228		2.396 to 2.544 kgs/m	6	6	0	0	1	1	0	0	7	7	0	0	
6	25 mm Ø	IS: 228		3.735 to 3.966 kgs/m	3	3	0	0	1	1	0	0	4	4	0	0	
7	32 mm Ø	IS: 228		6.121 to 6.499 kgs/m	4	4	0	0	2	2	0	0	6	6	0	0	
8	Carbon	IS: 228		0.30% maximum	10	10	0	0	14	14	0	0	24	24	0	0	
9	Sulphur	IS: 228		0.06% maximum	10	10	0	0	14	14	0	0	24	24	0	0	
10	Phosporous	IS: 228		0.06% maximum	10	10	0	0	14	14	0	0	24	24	0	0	
11	Sulphur and Phosporous	IS: 228		0.11% maximum	0	0	0	0	0	0	0	0	0	0	0	0	
12	Strengthening Elements	IS: 228		0.30% maximum	0	0	0	0	0	0	0	0	0	0	0	0	
				mm²/mm for Ø≤10mm-0.12Ø	1	1	0	0	0	0	0	0	1	1	0	0	
13	Mean area of ribs	IS: 1786		mm²/mm for10<Ø≤16mm-	1	1	0	0	0	0	0	0	1	1	0	0	
				mm²/mm for Ø>16mm-0.17Ø	0	0	0	0	0	0	0	0	0	0	0	0	
14	Cross-sectional Area	IS: 1786		See Table 1 of IS: 1786	0	0	0	0	0	0	0	0	0	0	0	0	
15	Nominal Mass	IS: 1786		See Table 1 of IS: 1786	10	10	0	0	14	14	0	0	24	24	0	0	
16	0.2% Proof Stress (yield)	IS: 1608; IS: 226		500 N/mm² minimum	18	18	0	0	14	14	0	0	32	32	0	0	
17	Elongation	IS: 1608; IS: 226		14.5 % minimum	18	18	0	0	14	14	0	0	32	32	0	0	
18	Tensile Strength	IS: 1608; IS: 226		10% more of Yield, but not less than	18	18	0	0	14	14	0	0	32	32	0	0	
19	Modulus of Elasticity			200 GPa minimum	0	0	0	0	0	0	0	0	0	0	0	0	
20	Bend Test	IS: 1599		No transverse crack	18	18	0	0	14	14	0	0	32	32	0	0	
21	Re-bend Test	IS: 1786		No fracture in the bent portion	18	18	0	0	14	14	0	0	32	32	0	0	

15) WATER FOR EMBANKMENT, SUB-GRADE, GSB, WMM AND CONCRETE MIXES																	
1	pH Value	IS: 456-2000	1 test per source and or as directed by the Engineer	6 minimum	3	3	0	0	0	0	0	0	3	3	0	0	
2	ml of 0.02N NaOH consumed to neutralize	IS: 456-2000		Shall not be more than 5 ml	3	3	0	0	0	0	0	0	3	3	0	0	
3	ml of 0.02N H_2SO_4 consumed to neutralize	IS: 456-2000		Shall not be more than 25 ml	3	3	0	0	0	0	0	0	3	3	0	0	
4	Suspended Matter	IS: 3025		2000 maximum	3	3	0	0	0	0	0	0	3	3	0	0	
5	Chlorides (Cl)	IS: 3025		500 maximum	3	3	0	0	0	0	0	0	3	3	0	0	
6	Sulphates (SO_4)	IS: 3025		300 maximum	3	3	0	0	0	0	0	0	3	3	0	0	
7	Inorganic Matter (TDS)	IS: 3025		3000 maximum	3	3	0	0	0	0	0	0	3	3	0	0	
8	Total Organic Matter	IS: 3025		200 max (as total volatile solid)	3	3	0	0	0	0	0	0	3	3	0	0	
16) CONCRETE WORKS																	
1	Sieve Analysis of CA	IS: 2386, Part I	1 test/Day	IS: 4926	382	382	0	0	54	54	0	0	436	436	0	0	
2	Sieve Analysis of FA	IS: 2386, Part I	1 test/ day	IS: 383	142	142	0	0	27	27	0	0	169	169	0	0	
3	Flakiness Index	IS: 2386, Part 1	1 test/ day	35 % maximum	136	136	0	0	27	27	0	0	163	163	0	0	
4	Aggregate Impact Value	IS: 2386, Part 4	1 test/ day	45% maximum	136	136	0	0	27	27	0	0	163	163	0	0	
17) COMPRESSIVE STRENGTH TEST - LAB TRIAL MIX																	
1	M-15 (7 days)	IS: 516	-	Month Clause 1700	9	9	0	0	0	0	0	0	9	9	0	0	
	M-15 (28 days)	IS: 516	-	Month Clause 1700	0	0	0	0	0	0	0	0	0	0	0	0	
2	M-20 PCC (7 days)	IS: 516	-	Month Clause 1700	12	12	0	0	0	0	0	0	12	12	0	0	
	M-20 PCC (28 days)	IS: 516	-	Month Clause 1700	24	24	0	0	0	0	0	0	24	24	0	0	
3	M-20 RCC (7 days)	IS: 516	-	Month Clause 1700	27	27	0	0	0	0	0	0	27	27	0	0	
	M-20 RCC (28 days)	IS: 516	-	Month Clause 1700	27	27	0	0	0	0	0	0	27	27	0	0	
3	M-20 Drain (7 days)	IS: 516	-	Month Clause 1700	6	6	0	0	0	0	0	0	6	6	0	0	
	M-20 Drain (28 days)	IS: 516	-	Month Clause 1700	33	33	0	0	0	0	0	0	33	33	0	0	
4	M-25 (7 days)	IS: 516	-	Month Clause 1700	12	12	0	0	0	0	0	0	12	12	0	0	
	M-25 (28 days)	IS: 516	-	Month Clause 1700	27	27	0	0	0	0	0	0	27	27	0	0	
4	M-25 Pump(7 days)	IS: 516	-	Month Clause 1700	9	9	0	0	0	0	0	0	9	9	0	0	
	M-25 Pump (28 days)	IS: 516	-	Month Clause 1700	9	9	0	0	0	0	0	0	9	9	0	0	
5	M-30 (7 days)	IS: 516	-	Month Clause 1700	9	9	0	0	0	0	0	0	9	9	0	0	
	M-30 (28 days)	IS: 516	-	Month Clause 1700	20	20	0	0	0	0	0	0	20	20	0	0	
6	M-40 (7 days)	IS: 516	-	Month Clause 1700	0	0	0	0	0	0	0	0	0	0	0	0	
	M-40 (28 days)	IS: 516	-	Month Clause 1700	0	0	0	0	0	0	0	0	0	0	0	0	
7	M-35 RCC (7 days)	IS: 516	-	Month Clause 1700	12	12	0	0	0	0	0	0	12	12	0	0	
	M-35 RCC (28 days)	IS: 516	-	Month Clause 1700	37	37	0	0	0	0	0	0	37	37	0	0	
8	M-35 (Pile) (7 days)	IS: 516	-	Month Clause 1700	21	21	0	0	0	0	0	0	21	21	0	0	
	M-35 (Pile) (28 days)	IS: 516	-	Month Clause 1700	33	33	0	0	0	0	0	0	33	33	0	0	
18) COMPRESSIVE STRENGTH TEST - SITE																	
1	M-20 RCC (7 days)	IS: 516	-	Month Clause 1700	33	33	0	0	51	51	0	0	33	33	0	0	
	M-20 RCC (28 days)	IS: 516	-	Month Clause 1700	3	3	0	0	48	48	0	0	3	3	0	0	
2	M-20 PCC (7 days)	IS: 516	-	Month Clause 1700	558	558	0	0	174	174	0	0	732	732	0	0	
	M-20 PCC (28 days)	IS: 516	-	Month Clause 1700	723	723	0	0	318	318	0	0	1041	1041	0	0	
3	M-20 Drain (7 days)	IS: 516	-	Month Clause 1700	778	778	0	0	138	138	0	0	916	916	0	0	
	M-20 Drain (28 days)	IS: 516	-	Month Clause 1700	1458	1458	0	0	313	313	0	0	1771	1771	0	0	
4	M-25 (7 days)	IS: 516	-	Month Clause 1700	532	532	0	0	69	69	0	0	601	601	0	0	
	M-25 (28 days)	IS: 516	-	Month Clause 1700	684	684	0	0	156	156	0	0	840	840	0	0	
5	M-30 (7 days)	IS: 516	-	Month Clause 1700	66	66	0	0	6	6	0	0	72	72	0	0	
	M-30 (28 days)	IS: 516	-	Month Clause 1700	138	138	0	0	42	42	0	0	180	180	0	0	
6	M-35 (7 days)	IS: 516	-	Month Clause 1700	40	40	0	0	9	9	0	0	49	49	0	0	
	M-35 (28 days)	IS: 516	-	Month Clause 1700	129	129	0	0	24	24	0	0	153	153	0	0	
7	M-35 (Pile) (7 days)	IS: 516	-	Month Clause 1700	30	30	0	0	0	0	0	0	30	30	0	0	
	M-35 (Pile) (28 days)	IS: 516	-	Month Clause 1700	82	82	0	0	0	0	0	0	82	82	0	0	

16.27 Compliance report on observaitons of World Bank Mission

Bridges to be constructed

S No	LOCATION	CHAINAGE (km)	LENGTH (m)	SPAN (No./m)
1	ULIYIL	35+450	21.00 (skew)	1/21.00
2	IRITTY	42+195	144	3/48 (each)
3	KOOTTUPUZHA	52+865	90 (skew)	5/18 (each)

Crucial Actions

S No	Issues	Activities	Action by	Action taken
1	ULUYIL Bridge	There is a difference of 1.53 m in the deck levels of proposed bridge vis-à-vis the one which is existing. Deck level to be raised.	TL to examine the design implications and convey decision / Good-For-Construction (GFC)drawings immediately.	Good For Construction drawings issued.
2	IRITTY Bridge	Time is a challenging constraint in its execution as water levels rise when gates are closed, downstream side of the bridge. Nearly 10 months of total time is available for construction (5 months in a year). Bridge is located across the reservoir. Pile driving in A1 abutment done. Under A2 abutment, 4 of 12 piles have been driven. Confirmatory bore holes are in progress. Changes in foundation design anticipated.	TL to conclude changes in the foundation design immediately and supply GFC drawings to the contractor.	Confirmatory boring completed. Design for pile foundation is approved for pier P1 and pier P2 redesigning in progress.
3	Approach of IRITTY bridge towards A2 abutment	For proper geometrics of the approach, issue of acquiring land has to be examined and decision taken urgently.	TL/ PD	No further land acquisition required. To follow DPR proposal.
4	KOOTTUPUZHA Bridge	Layout of the bridge has been marked by the contractor at the site. Geological investigations are to be carried out.	TL to examine and conclude the layout and convey decision for further action to be taken by the contractor.	Layout of bridge has been finalized.
5	Shifting of utilities	Electrical lines For MS 1, payment for material has been made by the contractor, but consignment awaited Tree Removal Process for 177 trees in MS 1 completed. But auctioning to be done. Total number of trees involved in the road is 1131	complied complied	
6	Excise exemption	The process involved in allowing exemption needs to be fast-tracked to avoid wastage of time in procurement.	PD to keep a watch and expedite the process	This has been expedited.
7	Work	Work Programme prepared and	TL to expedite	Resubmitted

	Programme	submitted by the contractor. It is stated to have been discussed also.	and conclude approval urgently, with due diligence w.r.t resource planning and methodology.	and approved.

Sl No	Observation	Action taken
1	Site Works	
a	In confirmatory boreholes under execution at Iritti bridge test for chloride and sulphate content in soil and ground water shall be conducted to check if these are within limits.	Complied
b	Use of precast segments for drain sections is allowed for better quality control. However in case cross-section is changed from approved drawings then revised design would need approval of Consultants with revision in cost, if any.	This has been completed.
c	Alternative design on pile foundation proposed by the contractor in place of open foundation in tender scheme for piers P1 and P2 in Iritti bridge has to be vetted by a reputable foundation specialist.	P1 approved and P2 being redesigned.
d	Prestressing work at bridge site should be executed only through a specialist agency with past experience in similar works.	Complied
2	Quality Control Laboratory	
e	Low relaxation test for HT strands to be used in the project shall be conducted for loss at 100 hrs and 1000 hrs.	Complied
f	Supplier of reinforcement bars shall be asked to send Manufacturer's Test Certificate (MTC) signed by QC-in-charge or Scientist or Head of QC laboratory with name and designation and not by Authorised Representative as is being followed now.	Complied

Environmental Safeguards

1	CSC' Environmental Expert needs to visit site of base camp/plant for verification and approval as per siting criteria as given in the EMP	Visited site and approval for camp issued.

ROAD SAFETY

1	The junction near to Iritty bridge (at the joining of Thalipparamba road), needs to be re-designed	Will be done as per DPR

16.28 **Photographs**

ABUTMENT A2 PILE CAP OF MAJOR BRIDGE AT KM 42+195

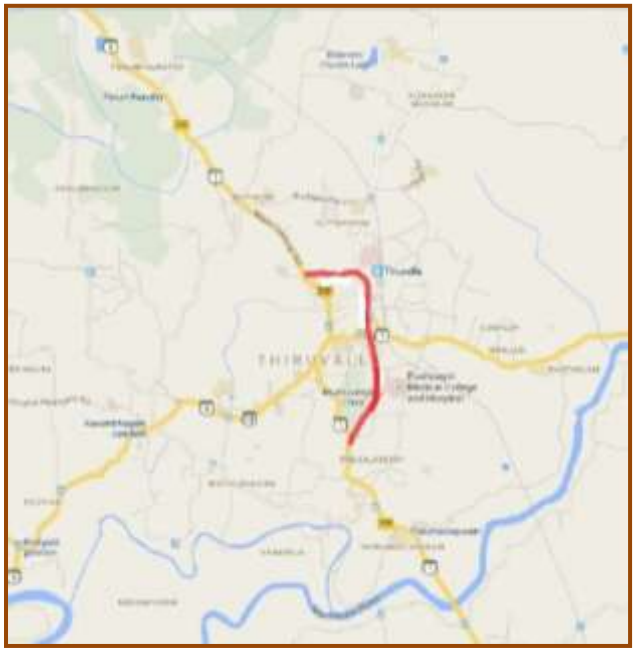
PRE CAST DRAIN CONCRETE AT CASTING YARD

GABION WALL WORK IN PROGRESS

WMM WORK IN PROGRESS

17.1 **Contract Package IVA**

Construction of **Thiruvalla Bypass** along Chengannoor - Ettumannoor Road (SH-I) from chainage 7+390 to 9+400



Scope of Works

Major Bridges	- Nil
Minor Bridge	- 1 no.
Flyovers	- 1 no.
Culverts	- 8 nos.
Pipe Culverts	- 2 nos.
Solar lights	- 1380 nos.

17.2 **Contract Details**

Letter of Acceptance Date	::	29.10.2013
Agreement Date	::	29.11.2013
Name of Contractor	::	M/s EKK & Co, Kochi
Contract Price	::	Rs. 31,80,45,071/-
Notice to Commence	::	19.12.2013
Total Length	::	2.3 Km
Contract Period	::	24 months
Completion Date	::	06 August 2014 revised to September 6, 2016
Defect Liability Period	::	365 days

17.3 **Work Progress**

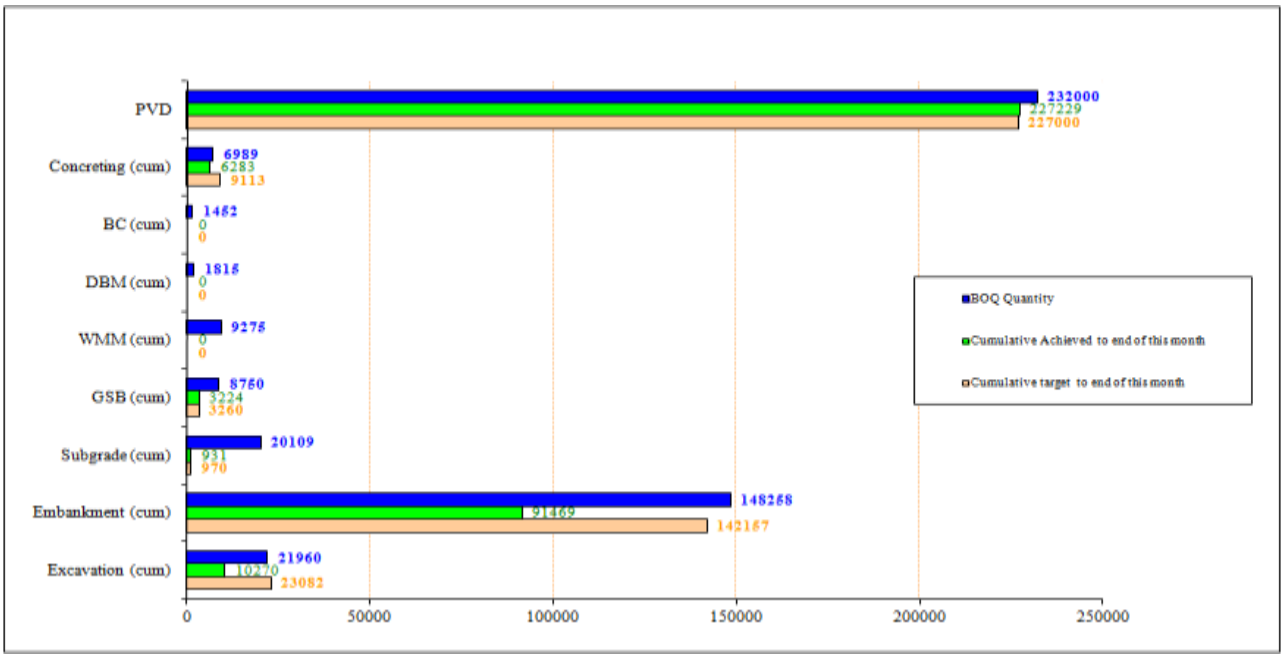
17.3.0.1 **Summary of the progress of the month ending April 2017**

Sl No.	Item	Monthly Progress	Cumulative Progress
1	PVD		PVD from 0+080 km to 0+370km, 0+410km to 0+880km completed and earthwork in progress. PVD installation commenced in February 2015 and completed in May 2015
2	Flyover @ km 1+350	Expansion joint fixed	Substructure completed • Deck slab & Crash barrier of A1-P1,P1-P2 , P3-P4 &P4-A2 span completed. • Retaining wall and side dirt wall at A2 side of flyover completed. Concreting of A2 retaining wall of flyover 6 lifts completed. Expansion joint fixed.
3	Minor Bridge @ km0+380	Hand rail for crash barrier completed.	• All 24 no's of pile completed. • A1 pilecap cast. • Abutments A1 & A2 completed. Work on superstructure in progress. Bund preparation at Minor bridge completed. Minor bridge A2 pilecap excavation & PCC completed. 4 girders completed. Deck slab completed Hand rail for crash barrier completed.
4	RE Wall	Erection of RE wall panels in progress.	• Casting of precast panel units completed. • Casting of Precast friction slab is in progress. • Ground improvement at RE wall location completed. RE wall levelling pad PCC completed. Embankment construction at RE wall portion (15th layer) in progress. Erection of RE wall panels in progress. Paraweb layed after filling of 5th layer of embankment at RE wall portion.
5	Retaining wall		• RHS & LHS side of Pathanamthitta road completed. • RHS & LHS side of Thiruvalla road is in progress. • At 0+885 km is completed. • The retaining wall at LHS of 1+120 Jn. (0+003-0+036.5km) LHS completed
6	Drainage		• At RHS of Ch: 0+920-1+057 km completed.• At LHS & RHS of 0+980 culvert completed• At LHS of Ch: 1+060 – 1+107 km completed.• At LHS of Ch: 1+121 – 1+150 km completed.

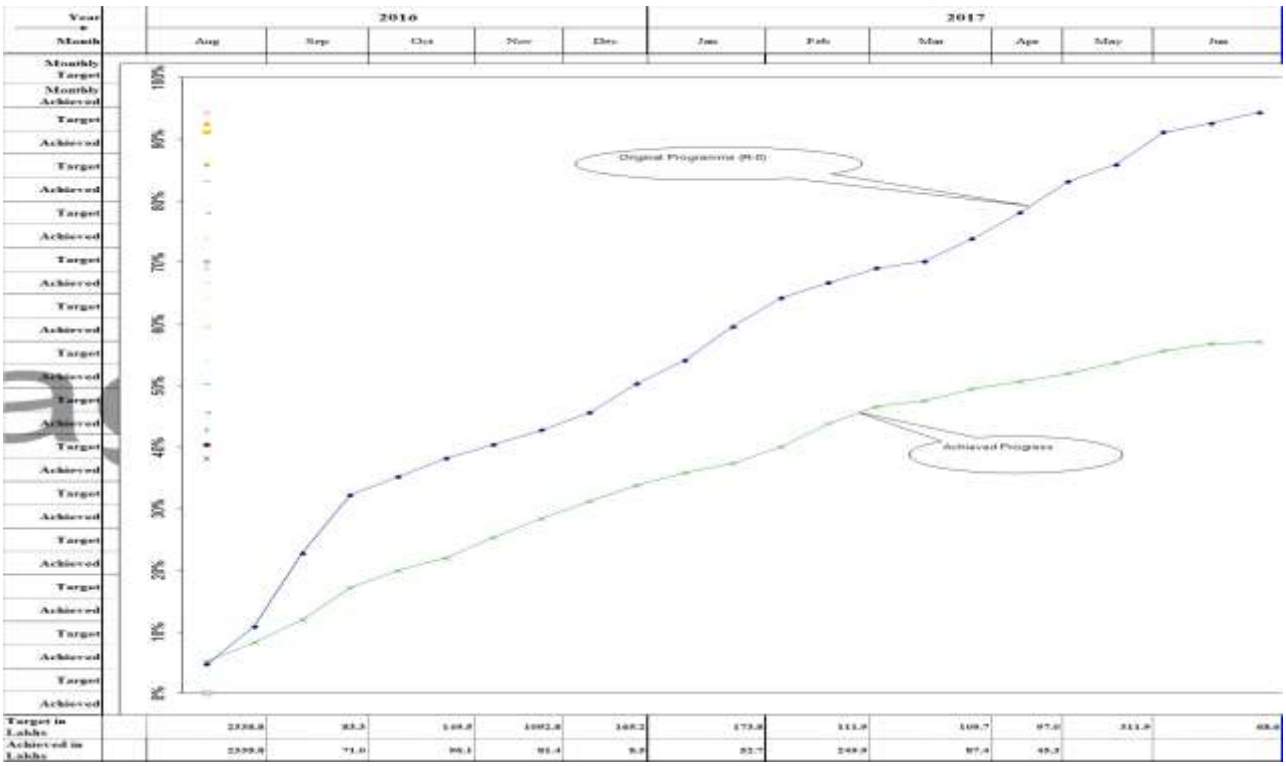
Progress up to month ending April 2017 is as follows:

Up to previous month		This month		Cumulative to end of this month		Cumulative Physical
Target	Achieved	Target	Achieved	Target	Achieved (gross)	Achieved
88.40%	62.44%	2.03%	0.95%	90.40%	63.39%	64.29

17.4 **Physical Progress**



17.5 **S-Curve**



17.6 **Schedule of culverts and drainage works**

Nature of work	Original number	No. dwgs approved	Number completed	Number in progress	Number remaining	Remarks
Culverts						
Pipe culvert	4	4	2		2	
New Box Culvert	8	4	4		4	
Total culverts	12	8	6		6	
Fly over and Minor bridge	2	2	1	1		Almost completed

17.7 **Potential Issues**

The following issues are very critical which may have adverse impact on the timely completion of the Project.

Finalisation of Extension of Time

Finalisation of Variations

Design of Viaduct

Handover of Encumbered land at Km 1+450 to 1+750

17.8 **Payment**

Upto IPC-13 has been paid to the contractor Rs. 17.12 crore

17.9 **Implementation of EMP**

17.9.0.1 **Environment Management at Work Sites**

No activities at site. Contractor submitted request for termination of the contract due to non-decision of the balance works and pending payments. The construction of minor bridge proper completed and approach road remaining. The RE wall work is in a slow pace. No activities on the date of inspection. Environmental expert visited site on 19thst April 2017 and observation forwarded to the contractor.

Contractor was asked to submit the action taken report on the site visit observation of the environmental expert.

17.9.0.2 **Environment Management at Project Ancillary Facilities**

The contractor has establishing a base camps at the locations detailed in Table below.

Details of Construction Camps

Camp identity	Location	Village
Camp 1 Batching Pant ,precast yard ,Labour camp, store, laboratory	About 50 cents of land owned by Thiruvalla Municipality, and it is beside the project site.	Thiruvalla Town.
Debris Disposal site	Thiruvalla municipal area approved by municipality.	Thuruvalla
Labour Camp	Thiruvalla Town rented building.	At Thiruvalla Town.

Environment management facilities adopted at these ancillary facilities are detailed in Environment Management Facilities at Ancillary facilities

Sl. No.	Details of Camp/ Plant	Environment Management Facilities Provided
1	Construction Camp	Provided sanitation facilities, drinking water supply, and solid waste collection facilities. Internal roads developed partially by utilizing the construction debris. Generators are provided, vertical stack of adequate height provided , but no enclosure for DG set used by the sub-contractor. The site drainage is to be improved by construction of collection tanks. Fencing only partially done, complete fencing around the camp is required.

17.10 **Quality Control Tests**

17.10.0.1 **Materials for Structures**

Tests Performed	Standard used	Test Frequency	Total tests up to previous month			Tests during current month			Total tests up to end of this month			Quantity of work done up to the end of the month	Test to be done up to the end of the month	Remarks
			Tested	Passed	Failed	Tested	Passed	Failed	Tested	Passed	Failed			
STONE	MORTH 1004													
Water Absorption	IS:1124	lot												
CEMENT (Bag)	MORTH 1006													
Fineness	IS:269-1976	" "	36	36					36	36				
Standard Consistency	" "	" "	29	29					29	29				
Soundness	" "	" "												
Compressive Strength	" "	" "												
3 day strength test	" "		23	23					23	23				
7 day strength test	" "		899	899	1	6	6		905	905	1			
28 day strength test	" "		1432	1432		15	15		1447	1447				
Initial Setting time	IS:4031(Part 1)		38	38					38	38				
Final Setting time	IS:4031(Part 5)	" "	38	38					38	38				
CEMENT (Bulk)	MORTH 1006	lot												
Fineness	IS:269-1976	" "												
Standard Consistency	" "	" "												
Soundness	" "	" "												
Compressive Strength														
3 day strength test	" "													
7 day strength test	" "													
28 day strength test	" "													
Initial Setting time	IS:4031(Part 1)													
Final Setting time	IS:4031(Part 5)													

COARSE/FINE Aggregates	**MORTH 1007/1008**													
Gradation	IS:2386(Part 1)		275	275		6	6		281	281				
Flakiness/Elongation Index	" "	" "	217	217		6	6		223	223				
Deletrious Mat./Organic Imp.	" (Part 2)	" "												
Water Absorption/Spec.Grav.	" (Part 3)	" "	9	9					9	9				
Bulk Density	" "	" "												
Impact or crushing Aggr.Value	" (Part 4)	" "	153	153		6	6		159	159				
Los Angeles Abrasion Value	" "	" "												
Soundness	" (Part 5)	" "												
Alkali Aggregate Reactivity	" (Part 7)	" "												
Surface Moisture Content	" (Part 3)	" "	119	119					119	119				
Fineness Modulus of FA			23	23					23	23				
Petrography		" "	2	2					2	2				
STEEL	**MORTH 1009**													
Verification of conformity(Yield stress,U.T.S, % Elg,Unit Wt.Dia. Test. Etc	IS:432/1030/1785/ 1786	lot	8	3					8	3				
	2004/2062													
WATER	**MORTH 1010**													
Verification of conformity	IS:3025	lot	2	2					2	2				
CONCRETE ADMIXTURE	**MORTH 1012**													
Verification of conformity	IS:1199/6925/9103	lot	1	1					1	1				
MIXING CONCRETE	**MORTH 1700**													
3 Test Cubes/Slump test	IS:516/1199	MOST:1700-8	274	266	8				274	266	8			
Compressive Strength	IS:516/1200													
Grade15: 7 Days(Nos.)	" "	" "	58	58					58	58				
28 Days(Nos.)	" "		100	100					100	100				
Grade 20: PCC 7 Days(Nos.)	" "	" "	12	12					12	12				
28 Days(Nos.)	" "		24	24					24	24				
Grade 20: RCC 7 Days(Nos.)			57	57					57	57				
28 Days(Nos.)			41	41					41	41				
Grade 25: 7 Days(Nos.)	" "	" "	78	78					78	78				
28 Days(Nos.)	" "		130	130					130	130				
Grade 30: 7 Days(Nos.)	" "	" "	18	18					18	18				
28 Days(Nos.)	" "	" "	36	24	12				36	24	12			
Grade 35: 7 Days(Nos.)	" "	" "	143	143					143	143				
28 Days(Nos.)	" "	" "	346	319	27				346	319	27			
Grade 40: 7 Days(Nos.)	" "	" "	18	18					18	18				
28 Days(Nos.)	" "	" "	12		12				12		12			
Grade 45: 7 Days(Nos.)			18	18					18	18				
28 Days(Nos.)			48	42	6				48	42	6			
STONE MASONRY	**MORTH 1400**													
3Test Mortar Cubes	IS:2250	MOST :1407												
HUME PIPE	**MORTH 2902**													
Three-edge Bearing/	IS:458/3597	20/900mm												
Hydrostatic Test														
Absorption/Straightness tests														

17.10.0.2 **Materials for Pavement**

Common Tests Performed	Indian / Foreign Standard	Test Frequency I test per	Total tests up to previous month			Tests during current month			Total tests up to month		
			Tested	Passed	Failed	Tested	Passed	Failed	Tested	Passed	Failed
EARTHWORK(BORROW AREA)	**MORTH 305/903.2**	OGL									
Gradation/Sand content	IS2720(Part 4)	1 test/200mtr	26	26					26	26	
Atterberg Limits	" (Part5)	1 test/200mtr	26	26					26	26	
Proctor	" (Part 8)	1 test/200mtr	26	26					26	26	
CBR	" (Part 16)	As reqd	6	6					6	6	
Free Swell Index	" (Part 40)	1 test/200mtr	26	26					26	26	
Dynamic Cone Penetration (DCP) test		1 test/10mtr	15	15					15	15	
EARTHWORK (OGL)	**MORTH 305/903.2**	Emb /Subgrade									
Gradation/Sand content	IS2720(Part 4)	1500 cum	5	5					5	5	
Atterberg Limits	" (Part5)	" "	12	12					12	12	
Proctor	" (Part 8)	" "	9	9					9	9	
CBR	" (Part 16)	3000 cum	7	7					7	7	
Free Swell Index	" (Part 40)	" "	5	5					5	5	
Field Density/Compaction	" (Part 28)	500/1000 sqm	174	174		11	11		185	185	
SUBBASE (GSB) granular material	**MORTH 401/900.3.1**										
Gradation	IS2720(Part 4)	200 cum									
Atterberg Limits	" (Part5)	" "									
Proctor											
Deleterious content											
10% fine value											
Water Absorption											
Field Density/Compaction	" (Part 28)	500 sqm									
CBR if grading (II or III)											
BASE (WMM)	**MORTH 406/900.3.4**										
Gradation	IS 2386 (Part 4)	200 cum									
Flakiness/Elongation Value	" (Part1)	" "									
Atterberg Limits	" (Part4)	100 cum									
Lose Angels Aration Value	" (Part1)	" "									
Proctor											
Water Absorption											
Field Density/Compaction	" (Part 28)	500 sqm									
PRIME/TACK COAT	**MORTH 502/503/900.3.4**										
Rate of Spread	IS:217/8887	500 sqm									
Quality of Binder											
BITUMINOUS MACADAM (BM)											
Aggregate Gradation (Individual+ Mix)											
LAAV											
Flakiness/ Elongation Value											
Quality of Binder											
Binder Content (ASTM - 2172-95)											
Coating and Stripping											
Soundness											
Water Absorption											
Field Density/Compaction											
DENSE BITUMINOUS	**MORTH 504/900.4.4**										
Aggregate Gradation (Individual+ Mix)	" (Part 1)										
Aggregate Impact Value (AIV)/ LAAV	IS:2386(Part 4)	50 cum									
Flakiness/Elongation Value	" (Part 1)	" "									
Quality of Binder	IS-73										
Coating and Stripping	IS 6241										
Binder Content (ASTM - 2172-95)											
Marshal Test	ASTM D1559-62T										
Specific Gravity /Water Absorption	IS 2386(Part-3)										
Soundness	IS 2386(Part-5)	2 per day									
Bulk Density	IS:2386(Part 3)	" "									
Field Density/Compaction	ASTM D 2041-95										
Sand Equivalant/Value for FA											
Plasticity Index											
BITUMINOUS CONCRETE	**MORTH 504/900.4.6**										
Aggregate Gradation (Individual+ Mix)											
Aggregate Impact Value/ LAAV	IS:2386(Part 4)	50 cum									
Flakiness/Elongation Value	" (Part 1)	" "									
Marshall Stability	ASTMD 1559	2 per day									
Quality of Binder											
Coating and Stripping											
Specific Gravity /Water Absorption											
Stone poloshing Value											
Soundness											
Sand Equivalent Test											
Binder Content	IS:2386(Part 4)	" "									
Field Density/Compaction	Core Samples	250 sqm									
Plasticity Index											
SURFACING (MSS)	**MORTH 504/900.4.3**										
Aggregate Impact Value	IS:2386(Part 4)	50 cum									
Flakiness/Elongation Value	" (Part 1)	" "									
Aggregate Gradation	IS:2720(Part 4)	25 cum									
Binder Content	IS:2720(Part 4)	2 per day									

17.11 **Compliance report on observations of World Bank Mission**

Discussion of issues affecting progress and causing huge variation

S No	Item/ Component	Attributed to
	Land acquisition and related court matters	Processing for land acquisition cases and stay orders by court caused considerable delay. This continues to be a serious hindrance
	Constructing a minor bridge in place of a box-culvert	This substitution has caused additional cost and time period
	Increase in length of the piles	Affected both cost and time
	Constructing viaduct instead of doing earthwork	Due to poor soil conditions, construction of protection walls for earthwork was not possible and provision of viaduct became an obvious option
	Cost of transportation of soil from Package IV	Affected the project cost
	Improving bearing strength of soil under strip footings by GSB material	Affected both cost and time
	Increase in the PVD quantity	Affected both cost and time

Sl No.	Site works - Observations	Action taken
a	In concrete crash barrier on deck slab holes left due to use of PVC sleeves for fixing of formwork would have to be properly sealed.	Complied
b	Sample prestressing records for the main girders used in decks were checked in which locking pressure mentioned as about 75 p.c of jack pressure could not be reconciled. The same should be referred to Design Engineer of EGIS.	Complied
c	At location of minor bridge with one span of 18m due to existence of very soft top soil and heaving noticed it was suggested that sub-soil investigating agency be consulted for value of coefficient of compressibility of top layers of soil and recommendation for depth of cocoanut piles proposed and extent of length along embankment on either side up to which such piles should be installed to limit settlement.	Complied

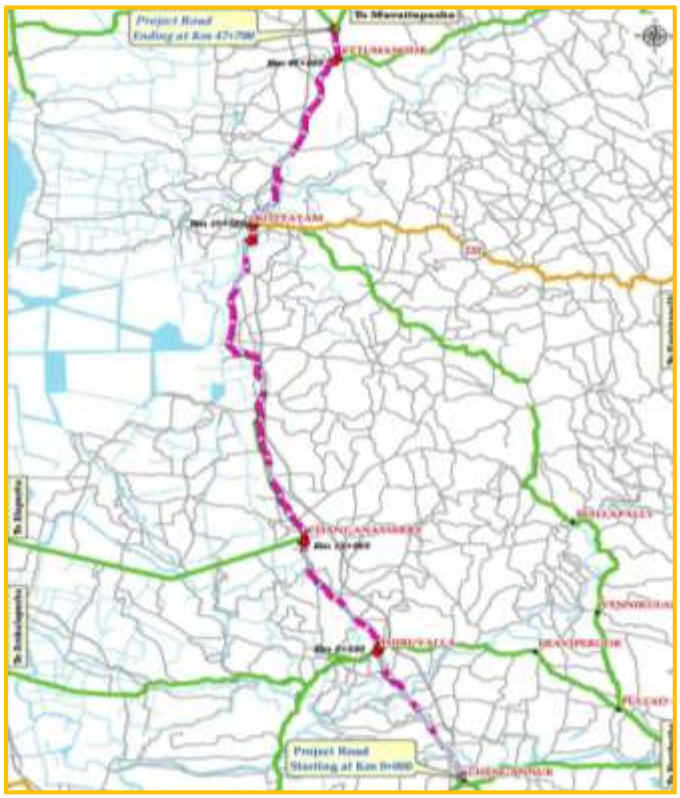
17.12 Photographs

PROVIDING HAND RAIL FOR MINOR BRIDGE CRASH BARRIER (CH: 0+380 KM)

EMBANKMENT CONSTRUCTION AT PATHANAMTHITTA JN. (CH: 1+120 KM)

18.1 **Contract Package IV**

Upgradation of Road from Chengannoor to Ettumannoor of SH-1



Scope of Works (45.40 Km):

Construction of Major Bridges	–	3
Construction of Minor Bridge	–	5
New Box culverts	-	9
Widening Slab culverts	–	8
Reconstruction of Culverts	-	59

18.2 **Contract details:**

Letter of Acceptance	::	21.08.2014
Agreement date	::	15.09.2014
Name of contractor	::	M/s Delma-Sreedhanya JV
Contract amount	::	Rs. 293,58,17987
Notice to commence	::	November 25, 2014
Total length	::	45-80
Contract period	::	36 months
Completion date	::	24.11.2017
Defect liability period	::	365 days
I milestone	::	10 km upto BC level 18 months from commencement date
II milestone	::	25 km upto BC level 25 months from commencement date
III milestone	::	47.80 km upto BC level 36 months from commencement date

18.3 **Pre-Construction Activities:**

18.3.1 Utilities

Utilities such as water lines, telephone cables and associated accessories, electrical lines and associated accessories and trees are being removed / shifted.

Removal of stumps of trees cut by agencies engaged by KSTP is also the responsibility of the Contractor.

Relocation of Electrical lines and Waterlines are included in the Contract.

3279 lm of 700mm, 5246 lm of 200mm & 12453 lm of 300mm DI pipe and 500mm 42543m laid. 58062 lm of 160mm PVC pipe laid. Work in progress.

Electrical Utility shifted for approximately 40.62 km. Work in progress.

18.3.1.1 **Progress of work so far**

Sl No.	Item	Monthly Progress	Cumulative Progress	Balance Work
1	GSB	0.34 km	38.84 Km	2.16 km
2	WMM	0.26 km	38.76 km	2.24 km
3	DBM	0.74 km	38.77 km	2.23 km
4	BC	2.75 km	32.10 km	12.90 km

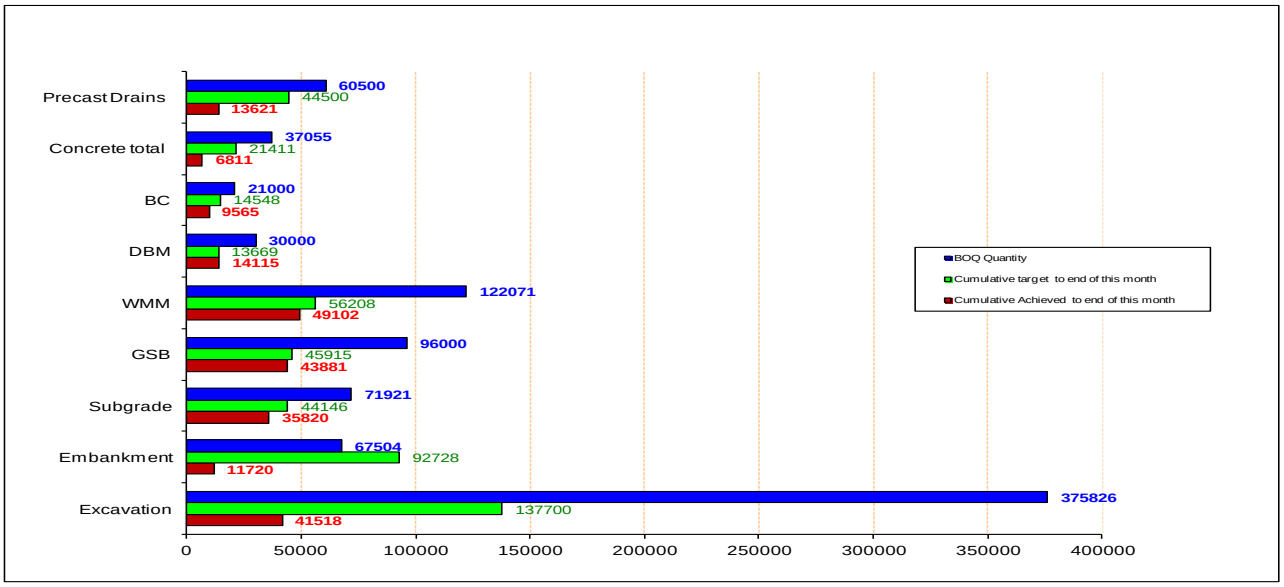
Sl No.	Item	Monthly Progress	Cumulative Progress
	Structures		
5	Bridge @ km 0+740 (Puthanveetilpadi)		New Bridge completed and commissioned
6	Bridge @ km 1+558 (Kallissery)	P2A2 deck slab completed.	• Confirmatory Boring completed for Abutment & pier locations. • Out of 40 nos, 40 Nos of piling completed. • A1 & A2 abutment wall & bracket wall completed • Lateral load test (A2-P7) & Vertical load test (A2-P11) completed. • Routine load test on P2 to be done before approving contractor's design of pile cap. • A1P1 & P1-P2 (1st, 2nd, 3rd & 4th) Girder casting & Stressing Completed. Cross girder & deck slab completed. • P2A2 (1st, 2nd, 3rd & 4th) girder casting , stressing completed and deck slab completed.
7	Minor Bridge @ km 2+500 (Parayalkuzhi)		A1 & A2 RHS upto deck slab & Return wall completed. • A1 & A2 LHS upto deck slab & Return wall completed.

			A1 & A2 & crash barrier completed
8	Bridge @ km 4+008 (Varattar)		Deck slab of all spans Completed crash barrier of all spans Completed. Expansion joint completed
9	Bridge @ km 5+213 (Thondra)	P2 pier cap completed. P4-A2 Deck slab completed.	• Confirmatory Boring done. • Out of 37 nos, 37 nos of piling completed. (Extra 1 pile done at P2 location.) A2 abutment wall & Bed block completed. Vertical load test done @ A1-P3 A1& A2 pile cap completed P1 & P3 Pier concrete work completed P2 pile cap completed P2 pier cap completed. P4-A2 Deck slab completed.
10	Bridge @ km 11+235 (Pannikuzhi)		New Bridge completed and commissioned
11	Bridge @ km 24+965 (Puthanpalam)	Widening	RHS Side slab and crash barrier completed. Hand railing completed.
12	Bridge @ km 39+709 (Neelimangalam)		New Bridge completed Load Test to be carried out due to crack developed in the deck slab. Load Test programmed to be carried out from 08th May 2017onwards.
13	Retaining Wall	125 Lm completed.	10469 Lm completed.
14	Culverts	culverts work in progress	64
15	Drain -	1020 m	41378 m

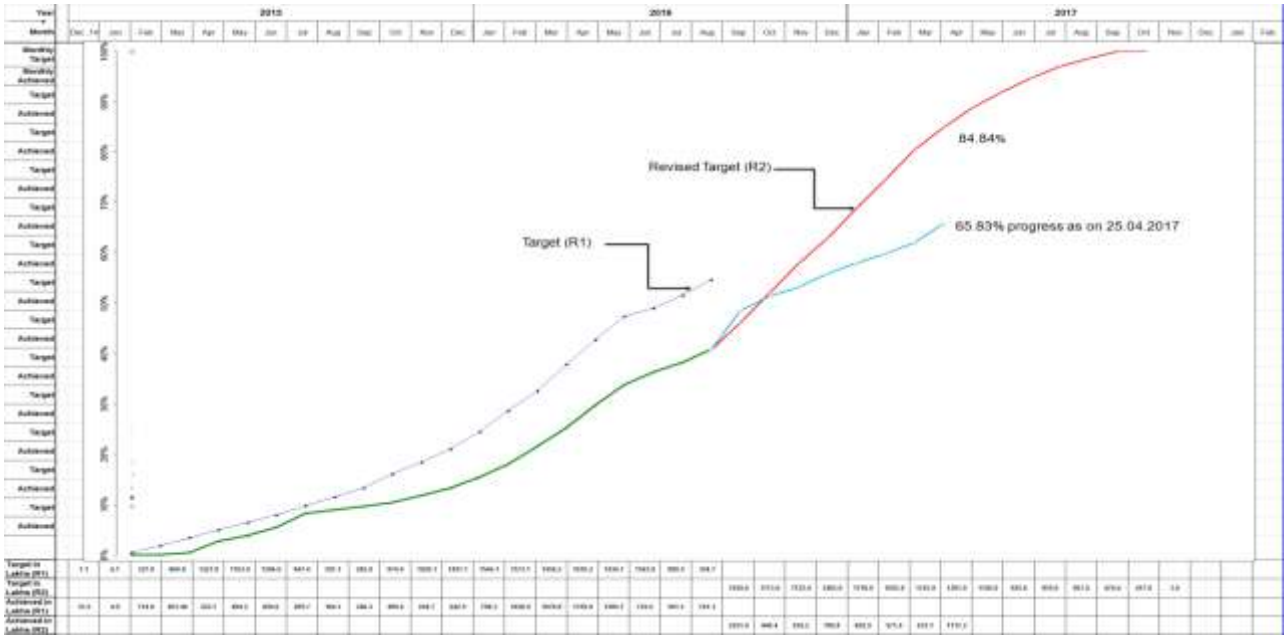
Progress up to month ending April 2017 is as follows:

For previous month		**This month**		**Cumulative to end of this month**		**Cumulative Physical**
Target	Achieved	Target	Achieved	Target	Achieved (gross)	Achieved
80.44%	61.74%	4.40%	3.81%	84.84%	65.83%	70.03%

18.4 **Physical Progress**



18.5 **S-Curve**



18.6 **Schedule of culverts and drainage works**

Nature of work	Total number	No. dwgs approved	Number completed	Number in progress	Number remaining
Culverts					
Pipe culvert	1	1	1		
New Box Culvert	67	57	54		13
Total culverts	68	58	55		13
Major Bridge	2	2	1	1	
Minor Bridge	4	4	3	1	
Widening Bridge	3	3	1	2	

18.7 **Payments**

The contractor has been paid Rs. 111.61 crores

18.8 **Implementation of EMP**

18.8.1.1 **Environment Management at Project Ancillary Facilities**

Sl. No.	Details of Camp/ Plant	Environment Management Facilities Provided
1	Construction camp	Provided with sanitation facilities, drinking water supply and solid waste collection to be improved. Waste disposal system improved. Internal roads are developed partially by utilising the construction debris obtained during the tarred surface cutting, banana plants were planted in the free space drainage in the camp to be improved. Generators are provided with vertical stack of adequate height. The solid waste disposal facility like compost pit provided. Housekeeping improved.
2	Labour Camps	Water supply and toilet facilities provided. Regular cleaning is to be done. Toilets with septic tanks and soak pit provided Dust bins provided for collection of solid wastes only at HM plant site For disposal of solid wastes compost pits to be provided LPG connections are provided for cooking. Housekeeping improved. kitchen waste to be treated by installing bio gas plant. The access to the labour camp to be clearly marked with sign boards First Aid and Fire extinguisher provided. General housekeeping improved
3	Quarry, Crusher,	NO Quarry or Borrow operating .materials procured from other crushers.
4	Borrow area	Identified at kaviyoor village , 6km from project road Obtained permission to take 1340 cum earth. Additional borrow areas to be identified.
5	Debris Disposal sites	Identified, Abandoned quarry is proposed as disposal area. presently dumping at camp sites Existing Puramboke land is being used for storage.
6	Water Sources	Bore well

Contractor has completed 39 km DBM and 36km BC. The road marking is done for 20 km. Constructions of bus shelters, parking area development are not started. Pedestrian crossing in front of schools are to be marked and sign boards to be placed as the road works are completed.

The environmental expert visited project on 19th April 2017 and observation communicated to the contractor for follow up action.

Tree planting works, land scape, cultural property rehabilitation works are to be started. The waste materials dumped at site has to be disposed at designated places in Changanassery Muncipality.

Contractor has to submit a base camp closure management plan for the closed WMM

plant at Vembally.

Housekeeping of Batching plant, HM plant are to be improved. Kallessery Bridge is to be relocated since it is a long pending issue.

18.9 **Quality cantrol tests**

18.9.1.1 **Materials for structures**

Tests Performed	Standard used	Test Frequency	Total tests up to previous month in numbers			Tests during current month in numbers			Total tests up to end of this month in numbers		
			Tested	Passed	Failed	Tested	Passed	Failed	Tested	Passed	Failed
STONE	**MORTH 1004**										
Water Absorption	IS 1124	lot	22	22					22	22	
CEMENT (Bag)	**MORTH 1006**										
Fineness	IS 269-1976	" "	1	1					1	1	
Standard Consistency	" "	" "	1	1					1	1	
Soundness	" "	" "	1	1					1	1	
Compressive Strength	" "	" "									
3 day strength test	" "		3	3					3	3	
7 day strength test	" "		3	3					3	3	
28 day strength test	" "										
Initial Setting time	IS:4031(Part 1)		1	1					1	1	
Final Setting time	IS:4031(Part 5)	" "	1	1					1	1	
CEMENT (Bulk)	**MORTH 1006**	lot									
Fineness	IS 269-1976	" "	53	53		2	2		55	55	
Standard Consistency	" "	" "	53	53		2	2		55	55	
Soundness	" "	" "	3	3					3	3	
Compressive Strength											
3 day strength test	" "		174	174		6	6		180	180	
7 day strength test	" "		165	165		6	6		171	171	
28 day strength test	" "		135	135		9	9		144	144	
Initial Setting time	IS:4031(Part 1)		53	53		2	2		55	55	
Final Setting time	IS:4031(Part 5)		53	53		2	2		55	55	
COARSE/FINE Aggregates	**MORTH 1007/1008**										
Gradation	IS 2386(Part 1)		504	504		10	10		514	514	
Flakiness/Elongation Index	" "	" "	211	211		10	10		221	221	
Deletrious Mat./Organic Imp	" (Part 2)	" "	2	2					2	2	
Water Absorption/Spec Grav	" (Part 3)	" "	15	15					15	15	
Bulk Density	" "	" "									
Impact or crushing Aggr Value	" (Part 4)	" "	198	198		10	10		208	208	
Los Angeles Abrasion Value	" "	" "	7	7					7	7	
Soundness	" (Part 5)	" "	2	2					2	2	
Alkali Aggregate Reactivity	" (Part 7)	" "	2	2					2	2	
Surface Moisture Content	" (Part 3)	" "	620	620		28	28		648	648	
Fineness Modulus of FA			367	367		10	10		377	377	
Petrography		" "	2	2					2	2	
STEEL	**MORTH 1009**										
Verification of conformity(Yield stress,U T S, % Elg,Unit Wt Dia. Test Etc	IS 432/1030/1785/1786 2004/2062	lot	125	125					125	125	
WATER	**MORTH 1010**										
Verification of conformity	IS 3025	lot	2	2					2	2	
CONCRETE ADMIXTURE	**MORTH 1012**										
Verification of conformity	IS 1199/6925/9103	lot	3	3					3	3	
MIXING CONCRETE	**MORTH 1700**										
Test Cubes/Slump test	IS 516/1199	MOST 1700-8	5560	5560		214	214		5774	5774	
Compressive Strength	IS 516/1200										
Grade15: 7 Days(Nos.)	" "	" "	1371	1371		9	9		1380	1380	
28 Days(Nos.)	" "		1446	1446		12	12		1458	1458	
Grade 20: PCC 7 Days(Nos.)	" "	" "	790	790		15	15		805	805	
28 Days(Nos.)	" "		1095	1095		21	21		1116	1116	
Grade 20: RCC 7 Days(Nos.)			2918	2918		138	138		3056	3056	
28 Days(Nos.)			3983	3983		147	147		4130	4130	
Grade 25: 7 Days(Nos.)	" "	" "	1074	1074		36	36		1110	1110	
28 Days(Nos.)	" "		1929	1929		57	57		1986	1986	
Grade 30: 7 Days(Nos.)	" "	" "	237	237		21	21		258	258	
28 Days(Nos.)	" "	" "	642	642		42	42		684	684	
Grade 35: 7 Days(Nos.)	" "	" "	465	465		9	9		474	474	
28 Days(Nos.)	" "	" "	755	755		48	48		803	803	
Grade 40: 7 Days(Nos.)	" "	" "	114	114		24	24		138	138	
28 Days(Nos.)	" "	" "	214	205	9	3	3		217	208	9
Grade 45: 7 Days(Nos.)			129	129		3	3		132	132	
28 Days(Nos.)			273	273		57	57		330	330	
STONE MASONRY	**MORTH 1400**										
3Test Mortar Cubes	IS 2250	MOST 1407	2940	2940		48	48		2988	2988	
HUME PIPE	**MORTH 2902**										
Three-edge Bearing/	IS 458/3597	20/900mm									
Hydrostatic Test											
Absorption/Straightness tests											

18.9.1.2 **Materials for Pavements**

Common Tests Performed	Indian / Foreign Standard	Test Frequency 1 test per	Total tests up to previous month in numbers			Tests during current month in numbers			Total tests up to month in numbers		
			Tested	Passed	Failed	Tested	Passed	Failed	Tested	Passed	Failed
EARTHWORK(BORROW AREA)	**MORTH 305/903.2**	OGL									
Gradation/Sand content	IS2720(Part 4)	1 test/200mtr	7	7					7	7	
Atterberg Limits	" (Part5)	1 test/200mtr	7	7					7	7	
Proctor	" (Part 8)	1 test/200mtr	7	7					7	7	
CBR	" (Part 16)	As reqd	7	7					7	7	
Free Swell Index	" (Part 40)	1 test/200mtr	7	7					7	7	
EARTHWORK (OGL)/SHOULDER	**MORTH 305/903.2**	Emb./Subgrade									
Gradation/Sand content	IS2720(Part 4)	1500 cum	298	298					298	298	
Atterberg Limits	" (Part5)	" "	308	308					308	308	
Proctor	" (Part 8)	" "	308	308					308	308	
CBR	" (Part 16)	3000 cum	142	142					142	142	
Free Swell Index	" (Part 40)	" "	324	324					324	324	
EARTHWORK EXCAVATED SOIL	" (Part 28)	500/1000 sqm									
Gradation/Sand content	" (Part5)	" "	55	55					55	55	
Atterberg Limits	" (Part 8)	" "	55	55					55	55	
Proctor	" (Part 16)	3000 cum	55	55					55	55	
CBR	" (Part 40)	" "	30	30					30	30	
Free Swell Index	" (Part 40)	" "	72	72					72	72	
Embackment/backfilling of Structures											
Field Density/Compaction	IS 2720 (part28)	1000sqm	2593	2593		78	78		2671	2671	
Sub grade / Shoulder filling											
Field Density/Compaction	IS 2720 (part28)	500sqm	5526	5494	104	162	156	6	5687	5650	110
SUBBASE (GSB) granular material	**MORTH 401/900.3.1**										
Gradation	IS2720(Part 4)	200 cum	790	790		23	23		813	813	
Atterberg Limits	" (Part5)	" "	790	790		23	23		813	813	
Proctor			4	4					4	4	
Deleterious content			2	2					2	2	
10% fine value			3	3					3	3	
Water Absorption			3	3					3	3	
Field Density/Compaction	" (Part 28)	500 sqm	4717	4446	39	144	138	6	4861	4579	45
CBR if grading (I or II)			7	7					7	7	
BASE (WMM)	**MORTH 406/900.3.4**										
Gradation	IS 2386 (Part 4)	200 cum	1186	1186		34	34		1220	1220	
Flakiness/Elongation Value	" (Part1)	" "	972	972		34	34		1006	1006	
Atterberg Limits	" (Par4)	100 cum	473	473		34	34		507	507	
Lose Angels Aration Value	" (Part1)	" "	1171	1171		34	34		1205	1205	
Proctor			2	2					2	2	
Water Absorption			1	1					1	1	
Field Density/Compaction	" (Part 28)	500 sqm	6371	6336	39	210	204	6	6581	6540	45
PRIME/TACK COAT	**MORTH 502/503/900.3.4**										
Rate of Spread Prime Coat			1457	1457		54	54		1511	1511	
Quality of Binder Prime Coat			1	1					1	1	
Rate of Spread Tack Coat	IS:217/8887	500 sqm	2090	2090		102	102		2192	2192	
Quality of Binder			3	3					3	3	
BITUMINOUS MACADAM (BM)											
Aggregate Gradation (Individual+ Mix)											
LAAV											
Flakiness/ Elongation Value											
Quality of Binder											
Binder Content (ASTM - 2172-95)											
Coating and Stripping											
Soundness											
Water Absorption											
Field Density/Compaction											
DENSE BITUMINOUS MACADAM	**MORTH 504/900.4.4**										
Aggregate Gradation (Individual+ Mix)	" (Part 1)		532	532		30	30		562	562	
Aggregate Impact Value (AIV)/ LAAV	IS:2386(Part 4)	50 cum	560	560		28	28		588	588	
Flakiness/Elongation Value	" (Part 1)	" "	554	554		28	28		582	582	
Quality of Binder	IS-73		208	208		20	20		228	228	
Coating and Stripping	IS 6241		2	2					2	2	
Binder Content (ASTM - 2172-95)			377	377		20	20		397	397	
Marshal Test	ASTM D1559-62T		1331	1331		57	57		1388	1388	
Specific Gravity /Water Absorption	IS 2386(Part-3)		6	6					6	6	
Soundness	IS 2386(Part-5)	2 per day	2	2					2	2	
Bulk Density	IS:2386(Part 3)	" "	2	2					2	2	
Field Density/Compaction	ASTM D 2041-95		1478	1478		67	67		1545	1545	
Sand Equivalant/Value for FA			2	2					2	2	
Plasticity Index											
BITUMINOUS CONCRETE	**MORTH 504/900.4.6**										
Aggregate Gradation (Individual+ Mix)			304	304		30	30		334	334	
Aggregate Impact Value/ LAAV	IS:2386(Part 4)	50 cum	354	354		23	23		377	377	
Flakiness/Elongation Value	" (Part 1)	" "	354	354		23	23		377	377	
Marshall Stability	ASTMD 1559	2 per day	678	678		57	57		735	735	
Quality of Binder			140	140		20	20		160	160	
Coating and Stripping			1	1					1	1	
Specific Gravity /Water Absorption			4	4					4	4	
Stone polishing Value			1	1					1	1	
Soundness			1	1					1	1	
Sand Equivalent Test			1	1					1	1	
Binder Content	IS:2386(Part 4)	" "	225	225		20	20		245	245	
Field Density/Compaction	Core Samples	250 sqm	1152	1152		107	107		1259	1259	
Plasticity Index											
SURFACING (MSS)	**MORTH 504/900.4.3**										
Aggregate Impact Value	IS:2386(Part 4)	50 cum									
Flakiness/Elongation Value	" (Part 1)	" "									
Aggregate Gradation	IS:2720(Part 4)	25 cum									
Binder Content	IS:2720(Part 4)	2 per day									

18.10 Compliance report on observations of World Bank Mission

Summary of discussions

Sl. No	Issues	Scope	Time required	Action by	Action taken
	Land acquisition	In 28th km some land requires clearance by the postal department	Uncertain as of now	PD to pursue the matter	
	Shifting of Utilities	Water lines - fairly large outstanding work BSNL Telecom lines	To be attended to as the work progresses	Contractor to expedite execution	Work in progress.

Factors contributing towards delay and variations

S No	Item/ Component	Issue	For consideration	Action/ Decision by	Action taken
	Bridge	Bridge at km 39+709 had quality deficiency. Deck slab has developed cracks. Investigation done earlier suggest excess water /cement ratio and improper use of vibrators has caused of segregation of mix. Transportation engineering department of Bangalore University conducted investigations for consideration	The recommendation of the organization which has carried out investigations are not convincing in view of its observations. The Team Leader has to get fresh investigation done.	PD / TL to fast track fresh investigation through a reputed and competent organization	Load test being finalized from SV Consultants and will be carried out after concurrence from World Bank.
2.	Pedestrian walk	The side drains are to be covered with slabs for making pedestrian walks as decided by the Govt.	Preparing and finalizing variation orders	Supervision Consultant / PD for prompt decision and action	This will be complied
3.	Earth Filling	In the absence of availability of soil from nearby, it is being brought from Package V	Rate of transportation of soil to be finalized early	PD to pursue the matter with Steering Committee	

Quality issues

Sl No.	Observations	Action taken
1	Site Works	
a	Kalissery bridge Ch 1+558km - Alternative design of unconventional nature with no bearing and expansion joint submitted by the contractor on the basis of which work has been progressed a lot has to be proof checked by an expert if proof checking cannot be done by EGIS office as was pointed out during May, 2016 mission.	Proof checking was done by Prof. Devadas Menon from IIT Chennai and has approved the same.

b	Varattar bridge Ch 4+010km - Base concrete of Approach retaining wall has been cast without any stopper at the end of day's work which practice is not acceptable.	Work has been rectified.
c	Thondara bridge Ch 5+220km	
i)	Test pile reinforcements have been cut upto lean concrete level under pile cap. This shall be dismantled upto a depth equal to bond length of pile reinforcement, lap provided in reinforcement by welding of bars and then pile re-built to underside of pile cap.	Complied
ii)	One lift of a pier has been cast with top surface left smooth. Such surface shall be thoroughly chipped off and cleaned before fixing formwork and rings.	Complied
d	Neelimangalam bridge Ch 39+710km - Out of 3 spans in this bridge, in the central span large No of deep and wide cracks were noticed in large areas of deck slab during inspection in May,'16. Some investigations were carried out at Bangalore University but these are not comprehensive and the results were inconclusive. Details of investigations needed to be carried out have been explained to RE of PMC for the project, which should be carried out through expert as early as possible so that on the basis of recommendations remedial measures may be taken to allow passage of traffic on this bridge.	Load test being finalized from SV Consultants and will be carried out after concurrence from World Bank.
2	Quality Control Laboratory	
a	For different grades of concrete coefficient of variation should be checked to ensure that these are within specified limits.	Complied
b	Chloride and sulphate content for e ach grade of concrete used at site shall be calculated on the basis of chloride and sulphate content in each ingredient material used in concrete and checked if these are within specified limits in relevant IRC code.	Complied

ROAD SAFETY

1	All major junctions should be audited by the road safety auditor	Road safety audit conducted and monitored.
2	Footpath should be provided in all town areas	Will be constructed as per BOQ

18.11 **Photographs**

DBM WORK IN PROGRESS AT CH. 16+350 TO 16+550 (LHS)

EXISTING ROAD DISMANTLING AT CH. 16+600 TO 16+800 (RHS)

WMM COMPLETED AT CH. 16+480 TO 16+600 (LHS)

DRAIN PLACING COMPLETED FROM CH. 06+300 TO 06+800 (RHS)

19.1 **Contract Package V**

Upgradation of Road from Ettumannoor to Muvattupuzha of SH 1

Scope of Works (40.96 Km):

Construction of Major Bridges	–	0
Construction of Minor Bridge	–	4
New Box culverts	-	3
Widening Slab culverts	–	14
Reconstruction of Culverts	-	75
Foot path, Solar Lights		

19.2 **Contract details:**

Letter of Acceptance Date	::	29.11.2013
Agreement Date	::	30.12.2013
Name of Contractor	::	M/s NAPC Ltd.,
Contract Price	::	Rs. 171.49
Notice to Commence	::	04.02.2014
Total Length	::	40.60 km
Contract Period	::	30 months
Completion Date	::	03.08.2016 (original)
Defect Liability Period	::	365 days
1st Milestone	::	10 km – BC level 02.05.2015
2nd Milestone	::	30 km – 05.10.2016
3rd Milestone	::	40.960 km whole works by 23.03.2017 (extended)

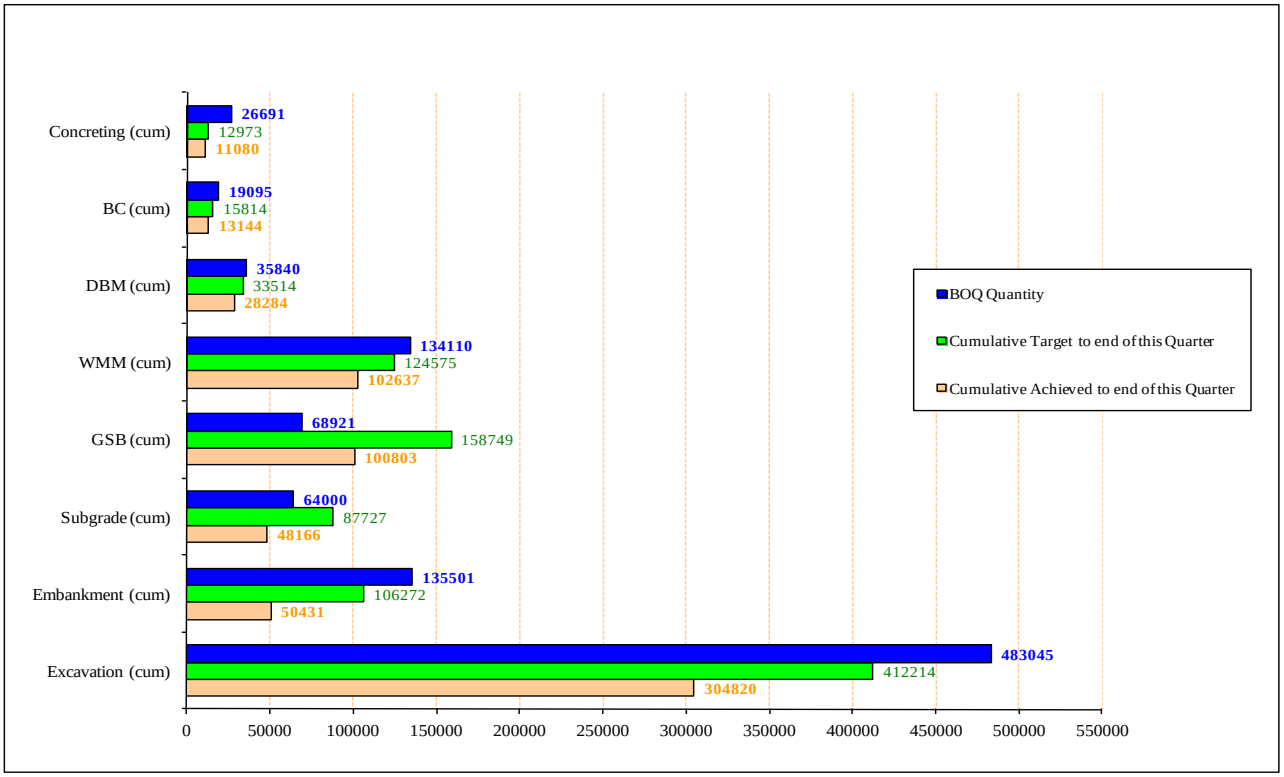
19.3 **Work Progress**

19.3.0.1 **Progress Achieved**

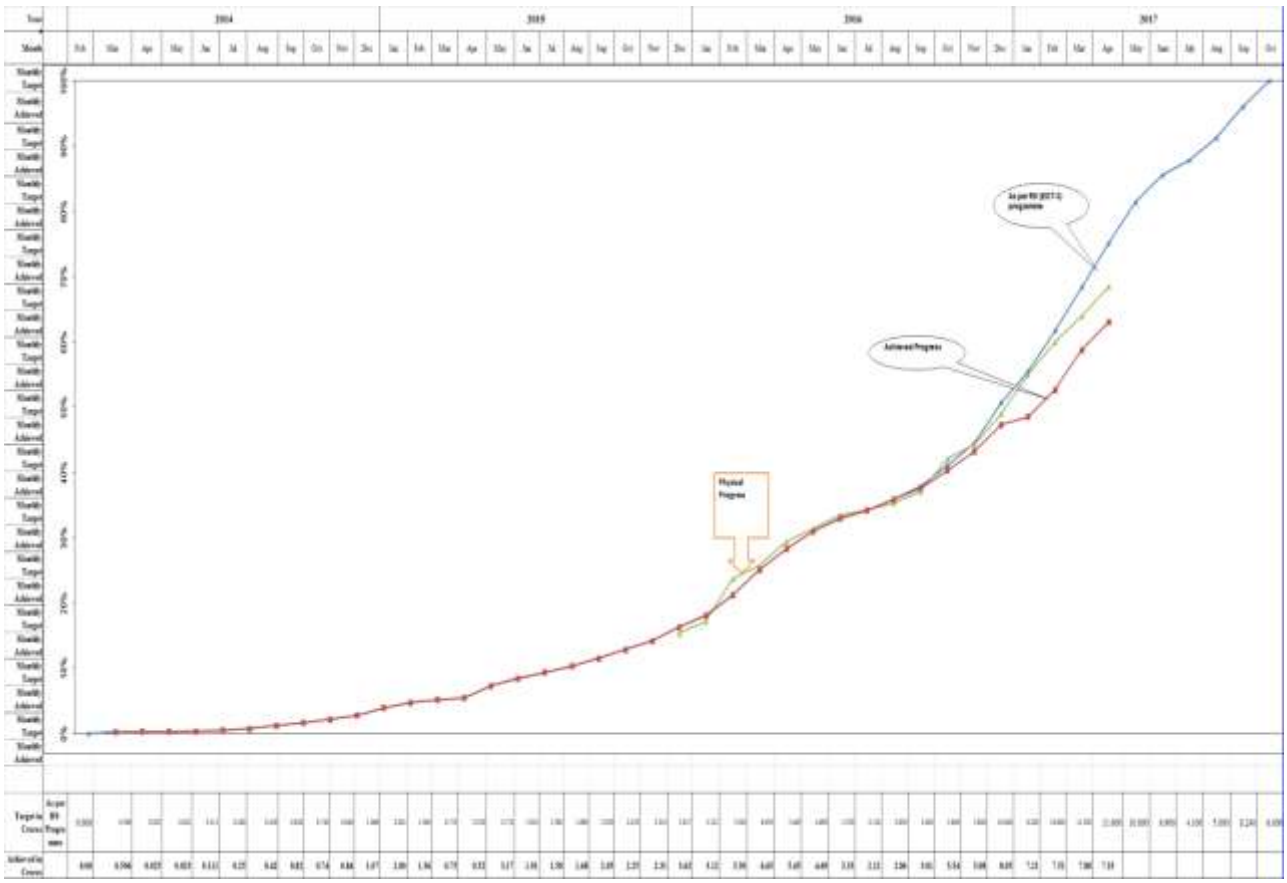
Sl No.	Item	April 17 Progress	Cumulative Progress	Balance Work
2	GSB	3.100km	36.830km	4.13km
3	WMM	3.090km	35.910km	5.050km
4	DBM	3.200km	35.220km	5.740km
5	BC	2.135km	29.800km	11.160km
Structures				
6	Bridge @ km 3+877		Widening work completed.	Aprons, reconstruction of old handrails and repair of existing bridge
7	Bridge @ km 12+524		Widening work completed.	Aprons, reconstruction of old handrails and repair of existing bridge
8	Bridge @ km 22+187		Reconstruction of bridge completed	U/S and DS aprons, and other finishing works
9	Bridge @ km 24+506		Widening completed on both sides.	Aprons, and repair of existing bridge
10	Bridge @ km 28+361		Reconstruction of bridge completed	U/S and DS aprons, and other finishing works
12	Culverts	15 are in progress	93 completed	
13	Drain	2402	41242 m	

Up to previous month		This month		Cumulative up to end of this month	
Target	Achieved	Target	Achieved	Target	Achieved (gross)
64.26%	58.77%	10.03%	4.20%	74.29%	62.97%

19.4 **Bar chart**



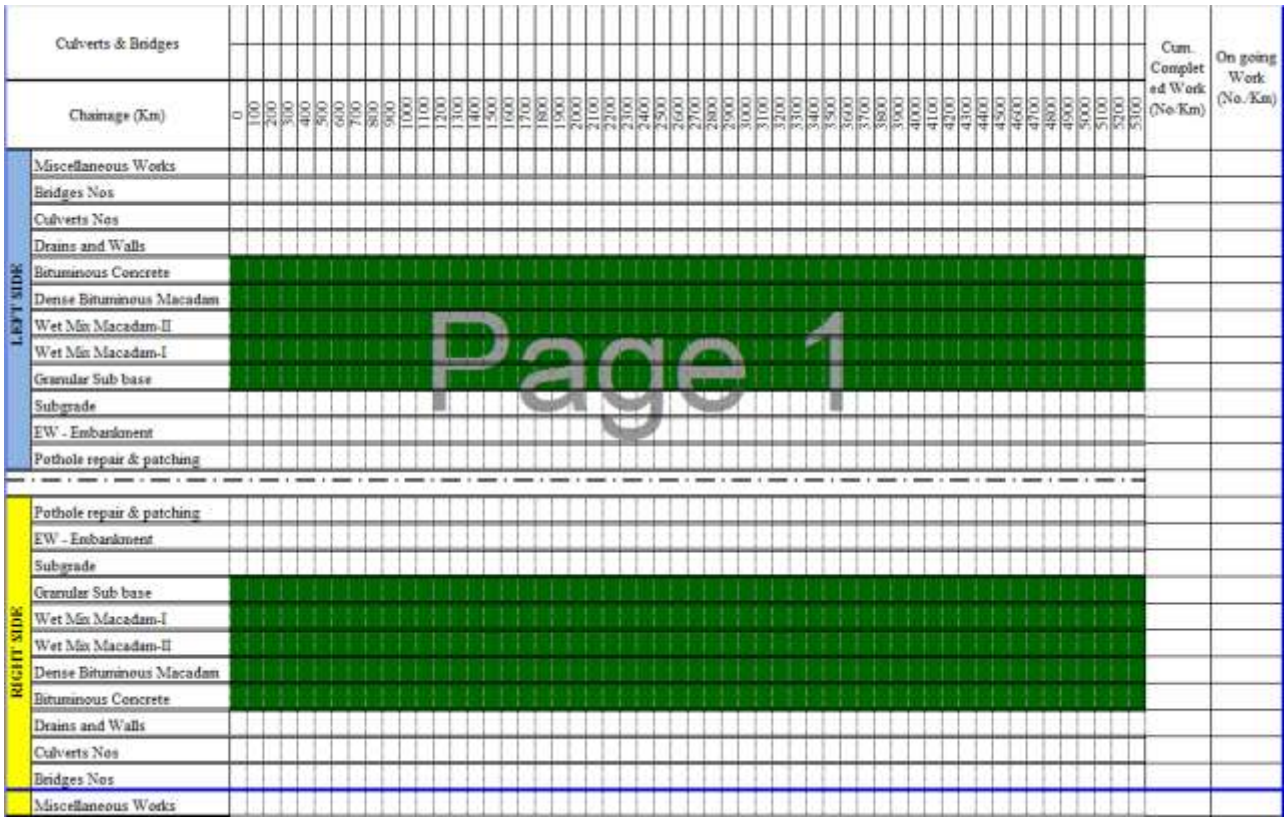
19.5 **S-Curve**

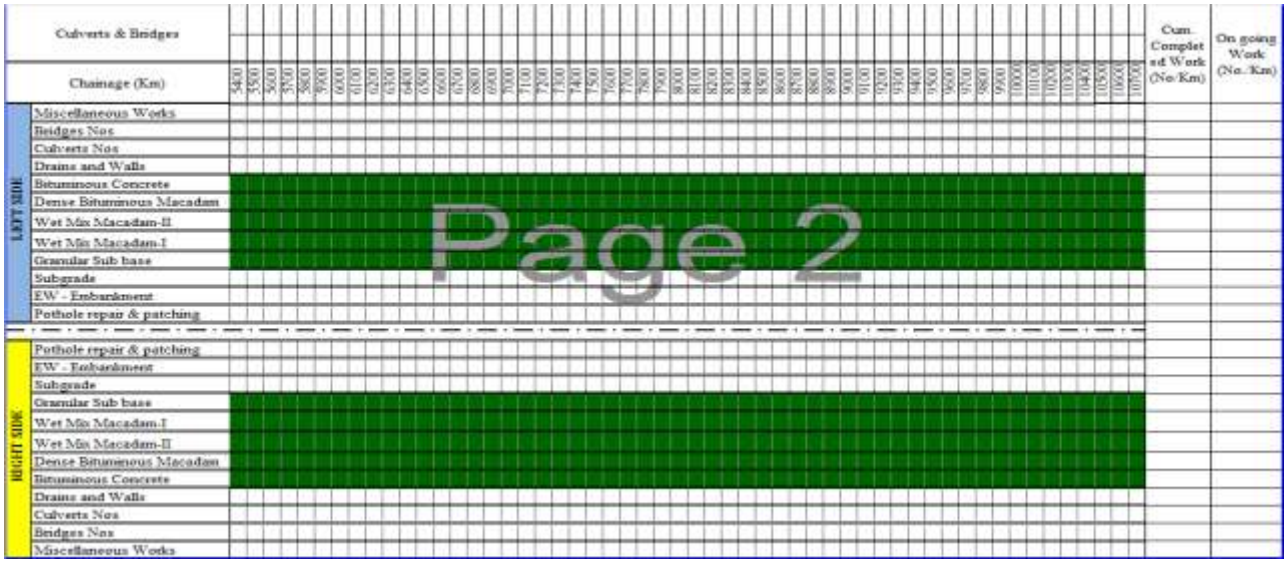


19.6 **Schedule of Culverts and Drainage works**

Nature of work	Original number	No. dwgs approved	Number completed	Number in progress	Number remaining	Original number	No. dwgs approved	Number completed	Number in progress	Number remaining	Original number	No. dwgs approved	Number completed	Number in progress	Number remaining
Culverts	**Milestone - I**					**Milestone - II**					**Milestone - III**				
Widening Slab Culverts	5	5	5			6	6	5	0	1	1	1	0	0	1
Slab Culvert retained	2		2			2				0	2		2		2
Reconstruction Slab/Box	24	24	24	0		40	40	40	0	0	21	21	6	12	3
New Box Culvert	3	3	3		0	3	3	3		0	2	2	2	0	0
Additional Box Culvert							2	2		0					
New Pipe Culvert	0					6	5	5		0	3	3	1	1	1
Total culverts	**34**	**34**	**34**	**0**	**0**	**57**	**55**	**56**	**0**	**1**	**29**	**27**	**11**	**13**	**7**
Bridges Retained	0					2				1	1				1
Widening Bridges	1		1	0	0	2	2	2	0	0	0				0
Reconstruction Bridges	0					2	2	2	0	0	0				0
Total Bridges	**1**	**0**	**1**	**0**	**0**	**6**	**4**	**4**	**0**	**1**	**1**	**0**	**0**	**0**	**1**

19.7 **Strip map**




Culverts & Bridges
Chainage (Km)
Cum. Completed Work (No./Km)
On going Work (No./Km)
LEFT SIDE
Miscellaneous Works
Bridges Nos
Culverts Nos
Drains and Walls
Bituminous Concrete
Dense Bituminous Macadam
Wet Mix Macadam-II
Wet Mix Macadam-I
Granular Sub base
Subgrade
EW - Embankment
Pothole repair & patching
RIGHT SIDE
Pothole repair & patching
EW - Embankment
Subgrade
Granular Sub base
Wet Mix Macadam-I
Wet Mix Macadam-II
Dense Bituminous Macadam
Bituminous Concrete
Drains and Walls
Culverts Nos
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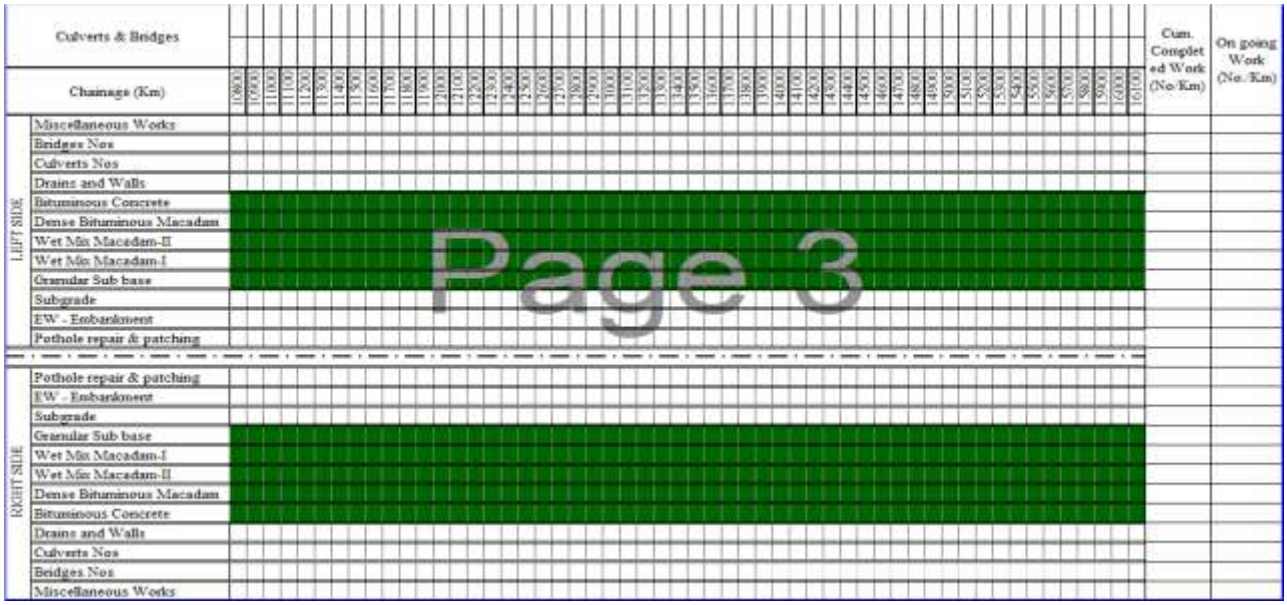
Miscellaneous Works
Page 2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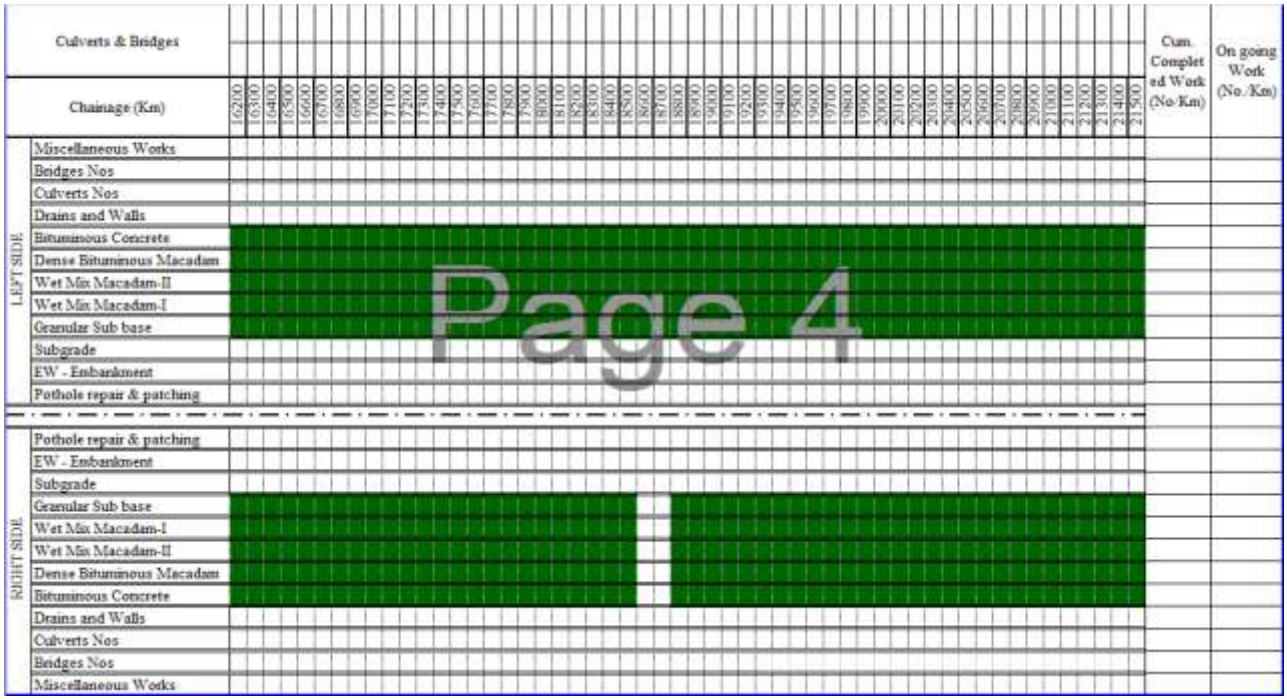
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Bridges Nos
Miscellaneous Works
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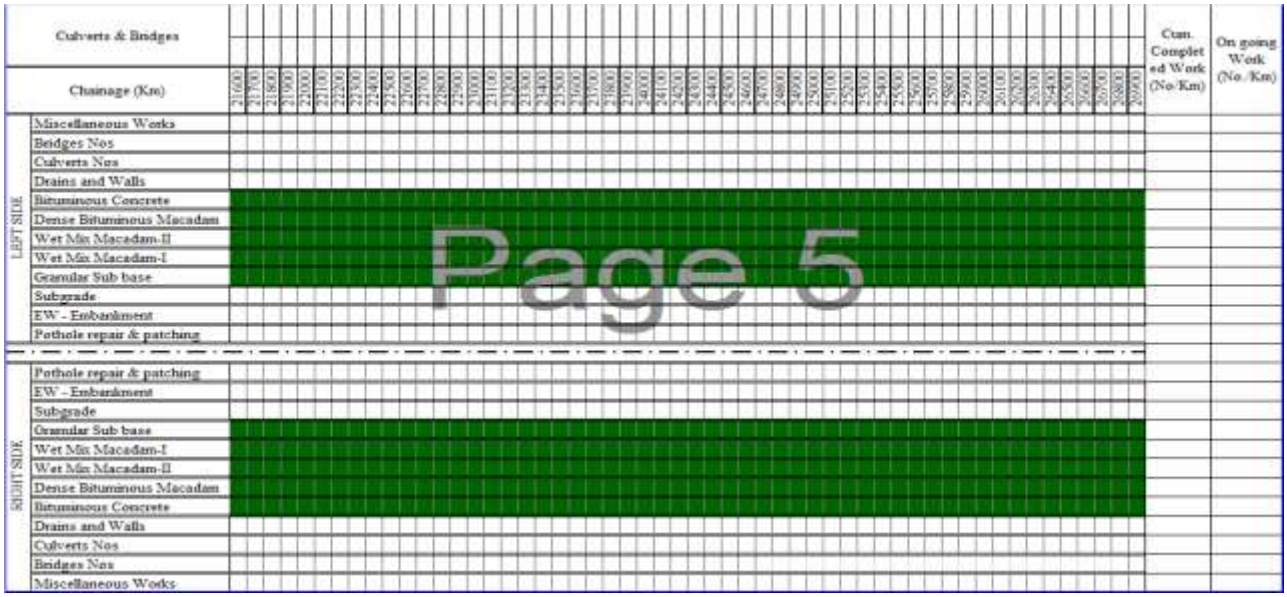
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On going Work (No./Km)
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Bituminous Concrete
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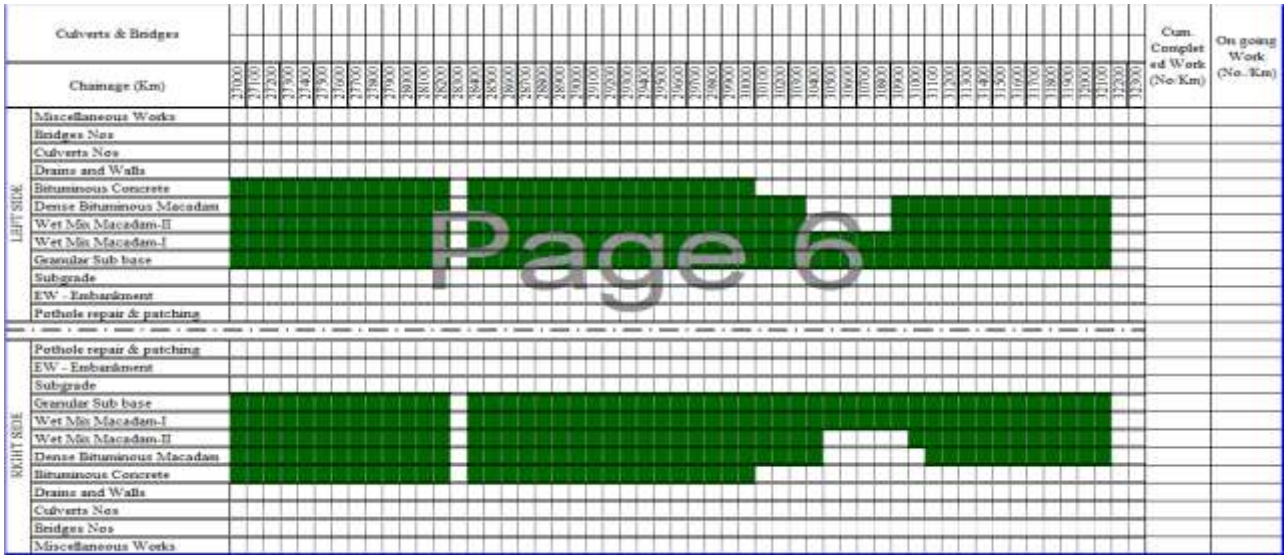
Bridges Nos
Miscellaneous Works
Page 5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Culverts Nos
Bridges Nos
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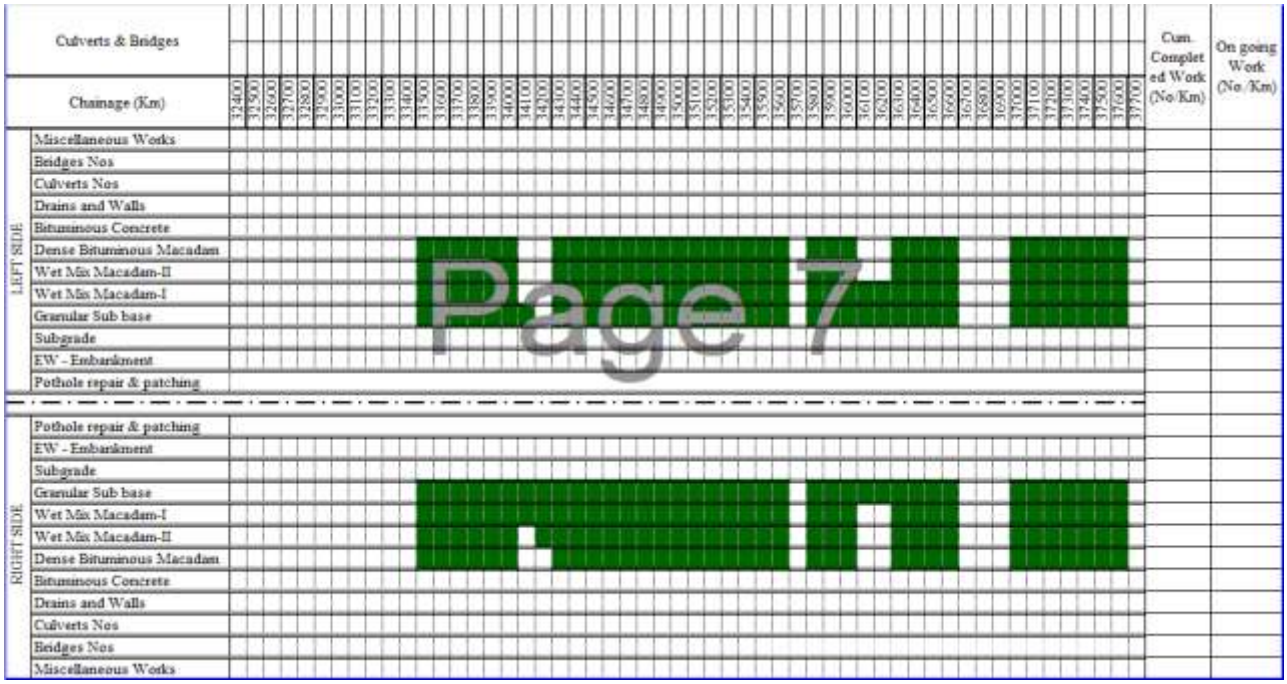
Page 6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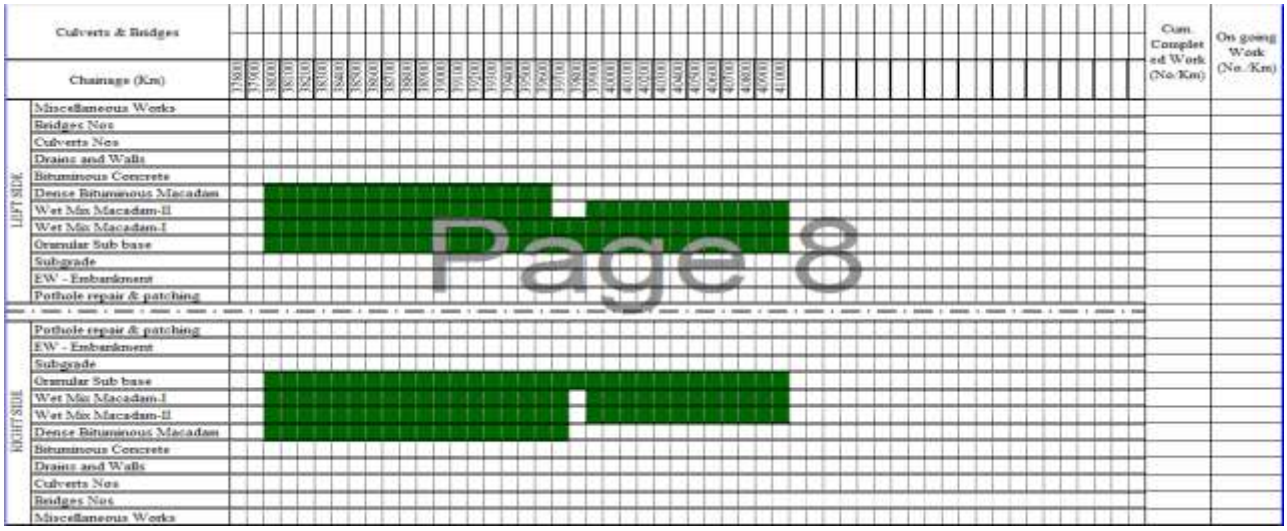


19.8 **Utilities**

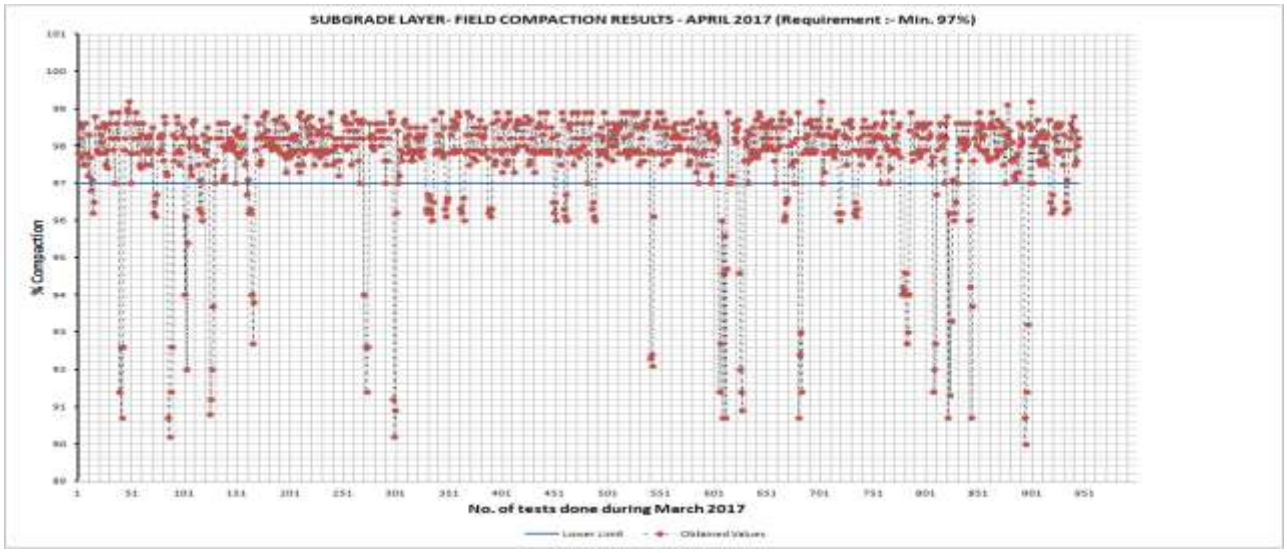
Relocation of electrical utilities and water supply line using materials issued by KSTP is the responsibility of Contractor. Removal of stumps of trees cut by agencies engaged by KSTP is also the responsibility of Contractor. KSTP/PMT has made arrangements with BSNL and other private agencies for relocation of cables, telephone posts and telephone pillars.

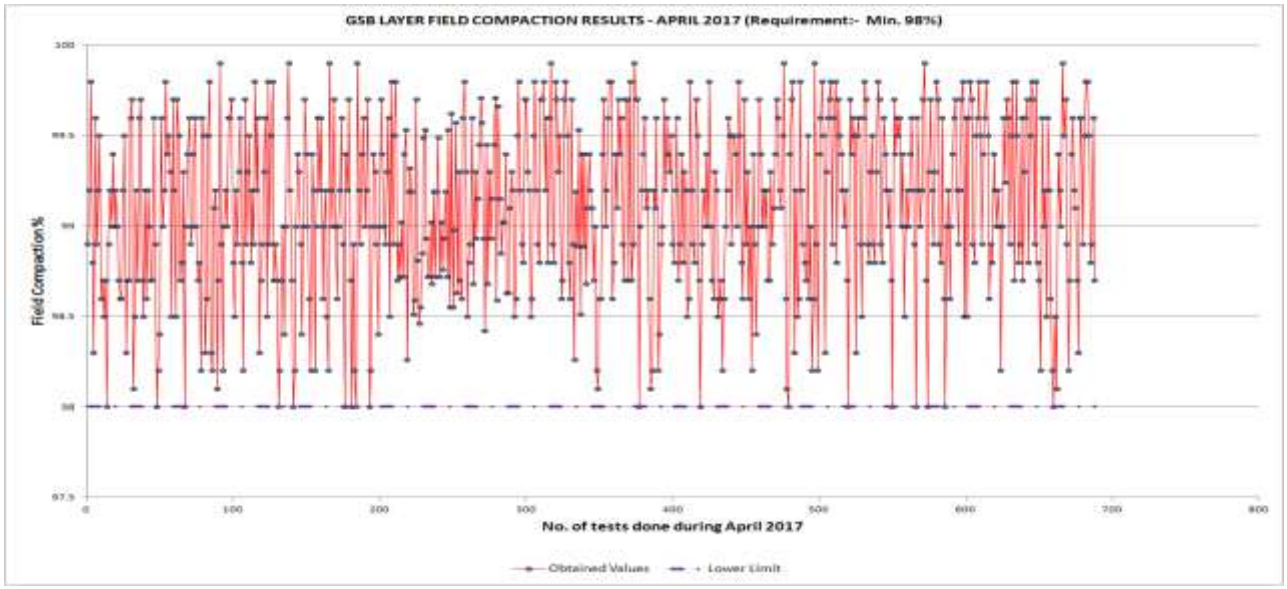
19.9 **Key issues:**

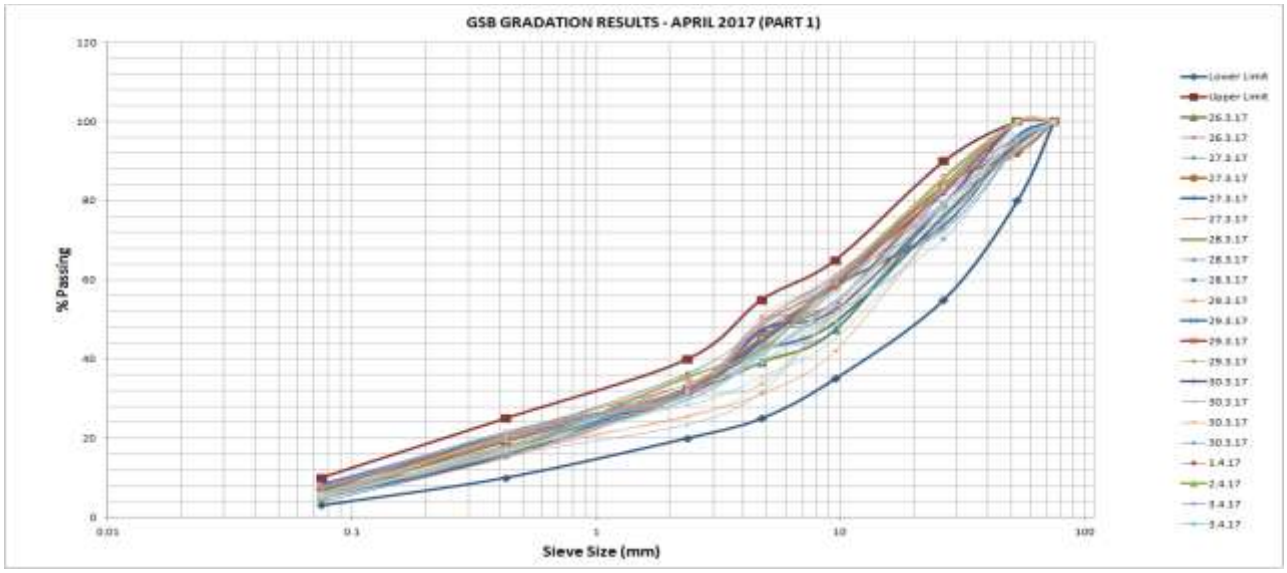
The following issues are very critical which may have adverse impact on the timely completion of the Project.

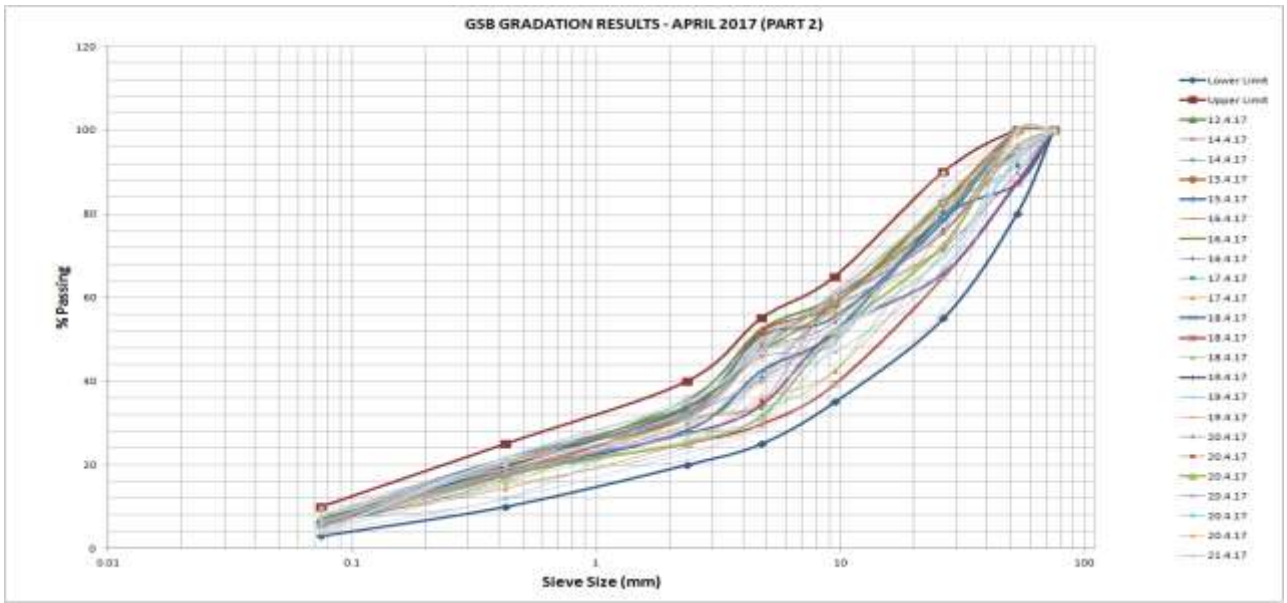
- Land acquisition between km 38+00 to 39+000
- Adequate resources available at site however improper planning delayed the progress.
- Occurrence of hard rock has delayed the progress.

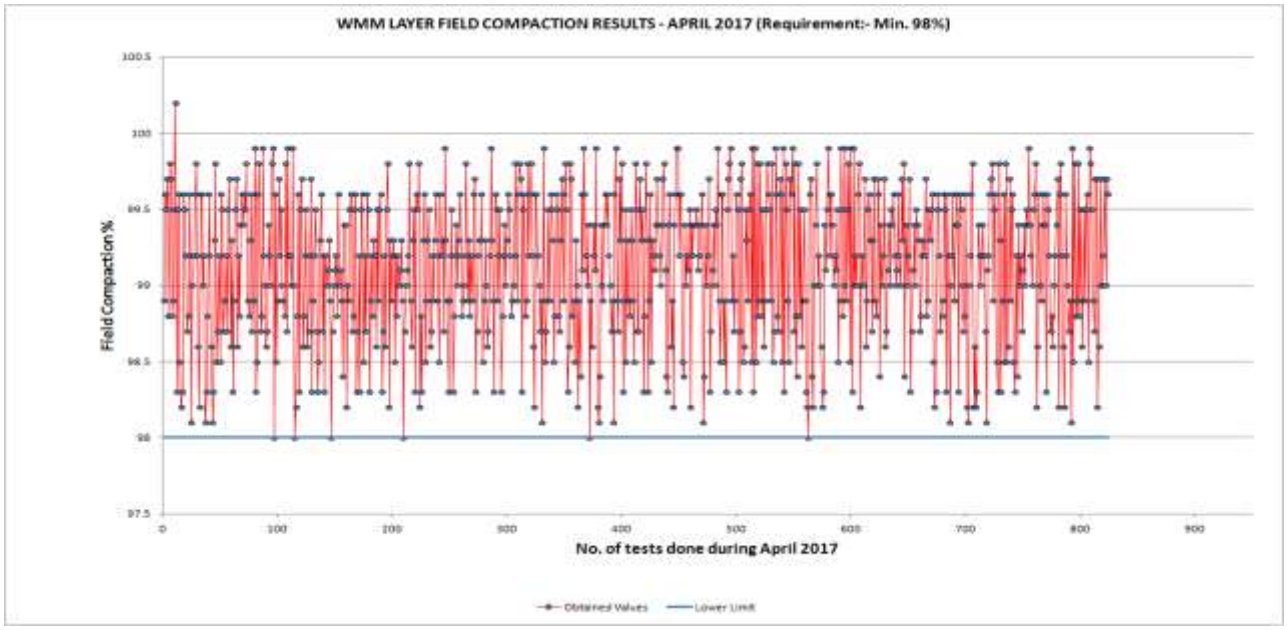
19.10 **Graphical Representation of Quality Control Tests**

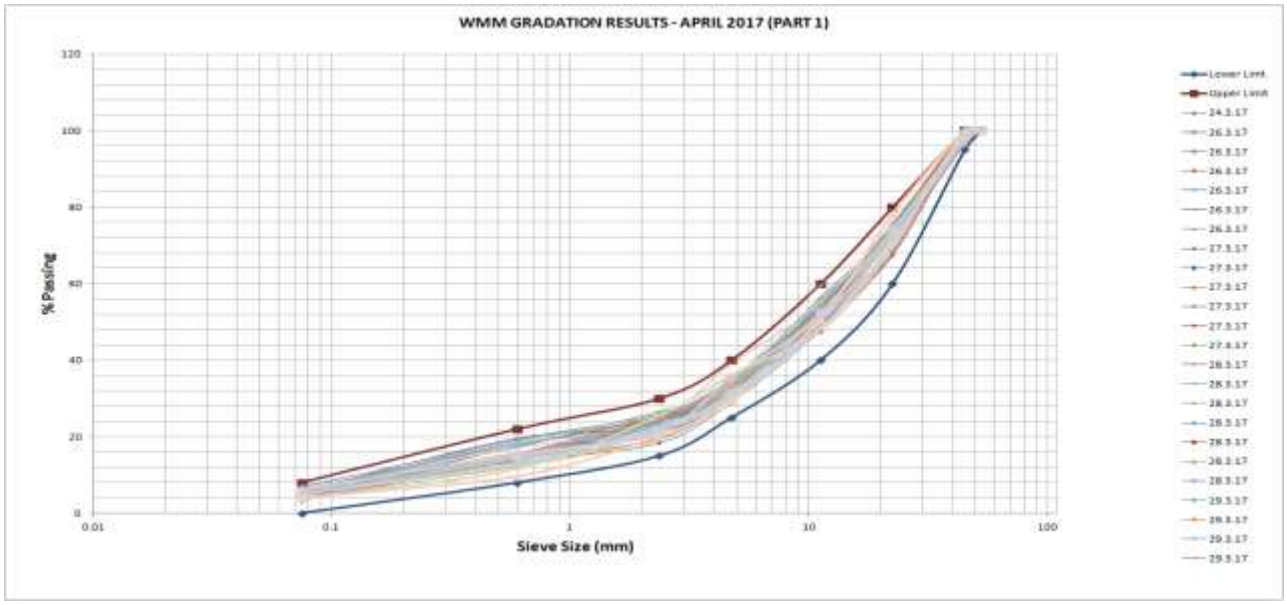


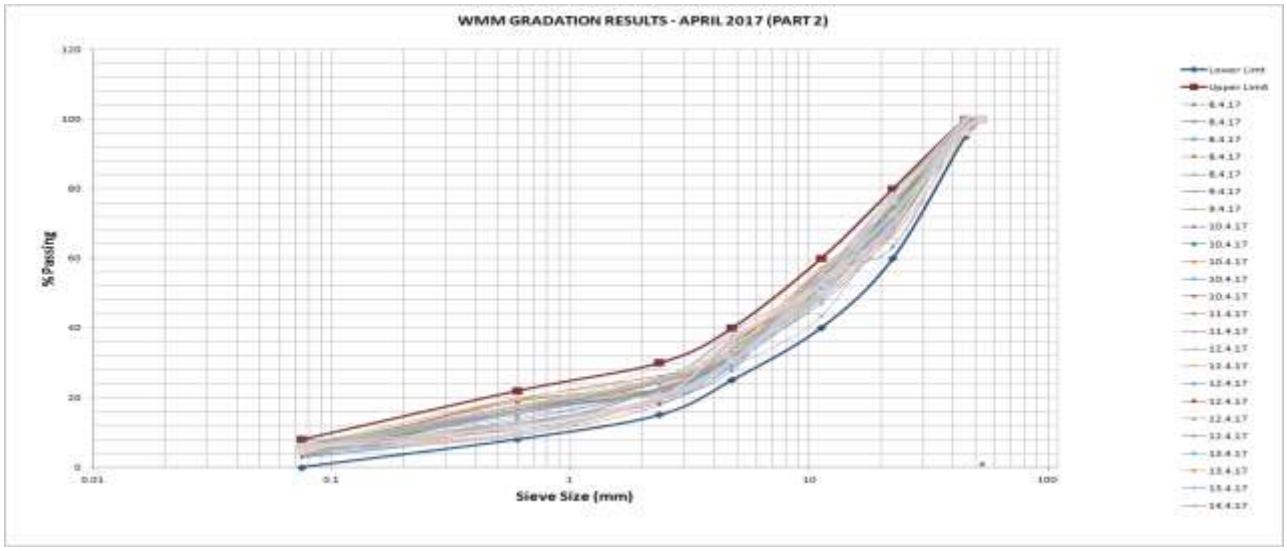

GSB LAYER FIELD COMPACTION RESULTS - APRIL 2017 (Requirement:- Min. 98%)
Field Compaction %
No. of tests done during April 2017
Obtained Values
Lower Limit

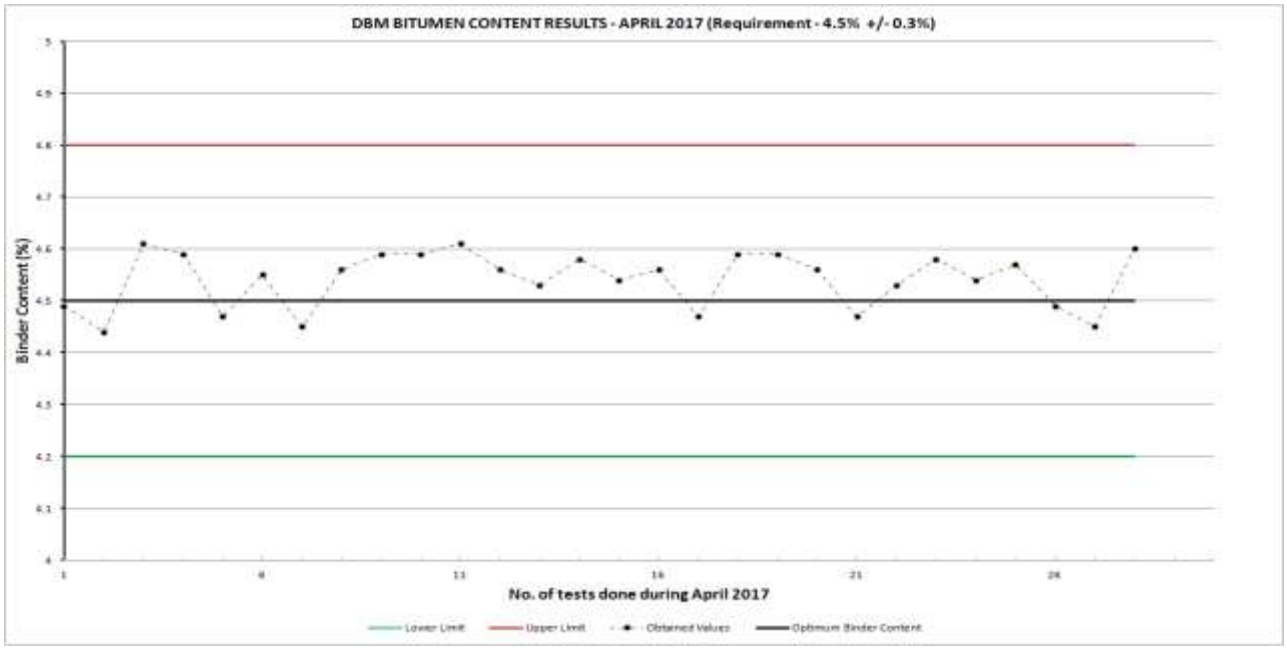

GSB GRADATION RESULTS - APRIL 2017 (PART 1)
% Passing
Sieve Size (mm)

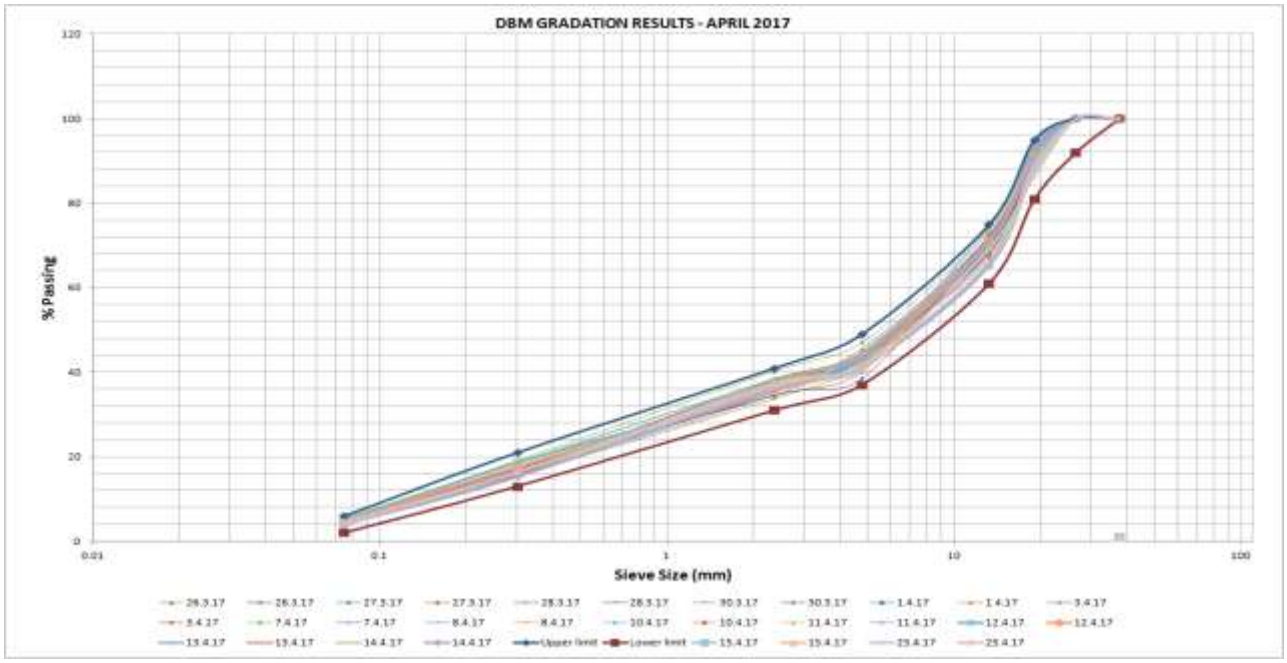

GSB GRADATION RESULTS - APRIL 2017 (PART 2)
% Passing
Sieve Size (mm)

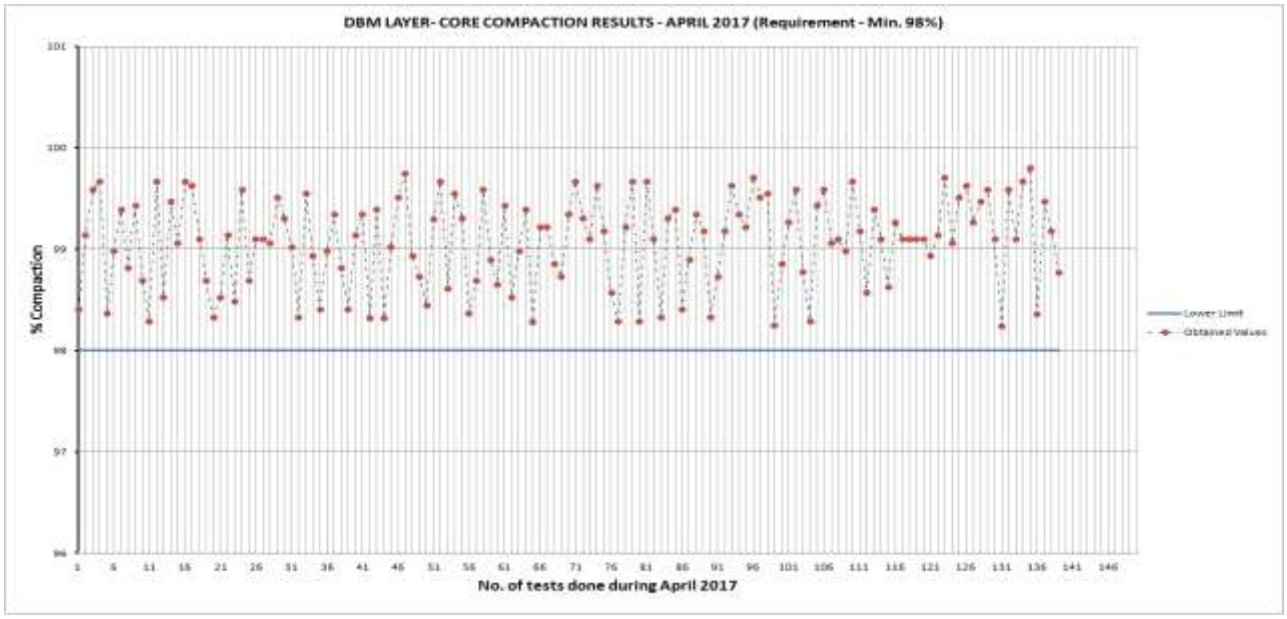

WMM LAYER FIELD COMPACTION RESULTS - APRIL 2017 (Requirement:- Min. 98%)
Field Compaction %
No. of tests done during April 2017
Obtained Values
Lower Limit

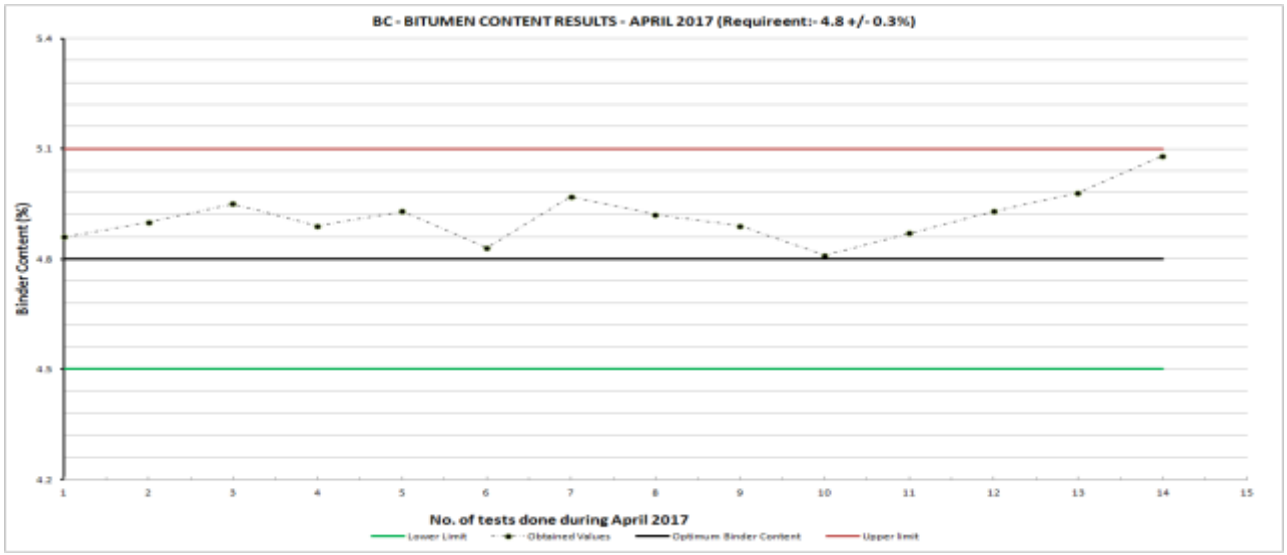

WMM GRADATION RESULTS - APRIL 2017 (PART 1)
% Passing
Sieve Size (mm)
Lower Limit
Upper Limit

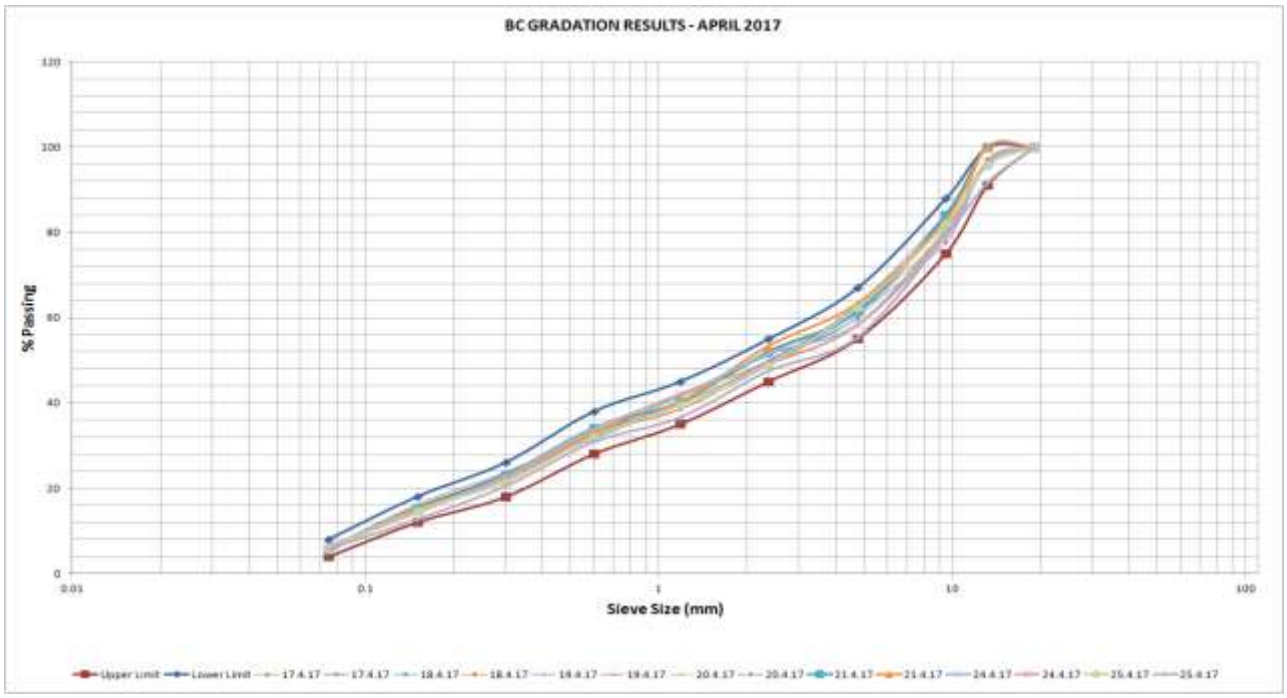

WMM GRADATION RESULTS - APRIL 2017 (PART 2)
% Passing
Sieve Size (mm)
Lower Limit
Upper Limit

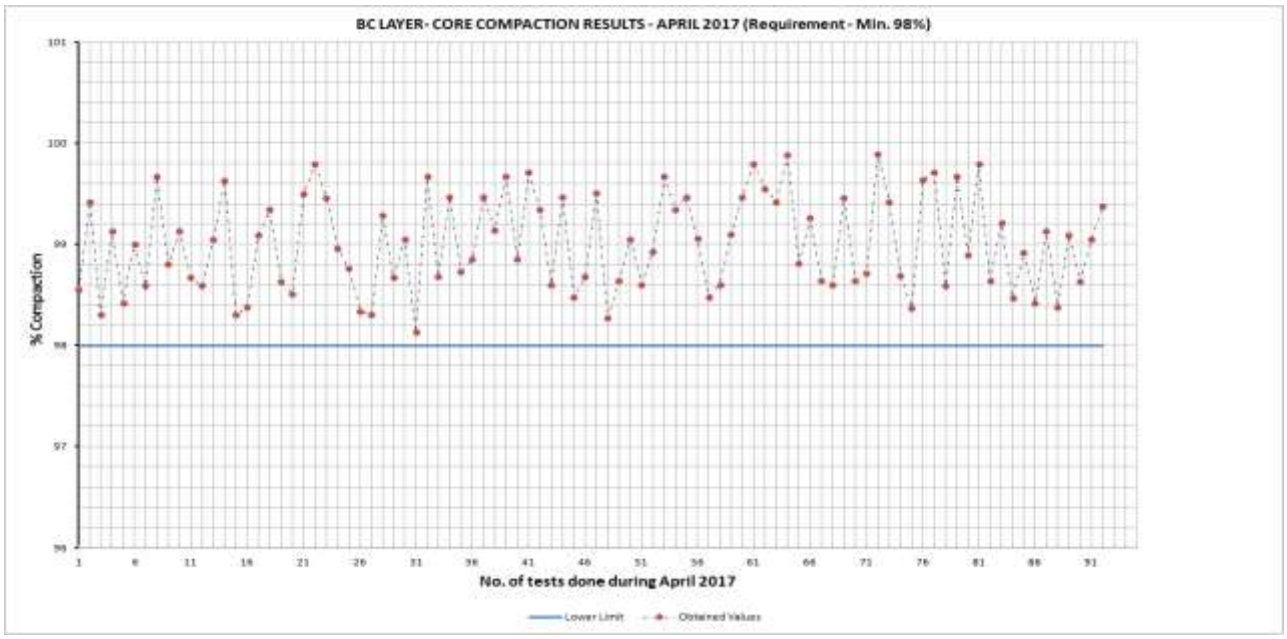

DBM BITUMEN CONTENT RESULTS - APRIL 2017 (Requirement - 4.5% +/- 0.3%)
Binder Content (%)
No. of tests done during April 2017
Lower Limit
Upper Limit
Obtained Values
Optimum Binder Content


DBM GRADATION RESULTS - APRIL 2017
% Passing
Sieve Size (mm)


DBM LAYER- CORE COMPACTION RESULTS - APRIL 2017 (Requirement - Min. 98%)
% Compaction
No. of tests done during April 2017
Lower Limit
Obtained Values


BC - BITUMEN CONTENT RESULTS - APRIL 2017 (Requireent:- 4.8 +/- 0.3%)
Binder Content (%)
No. of tests done during April 2017
Lower Limit
Obtained Values
Optimum Binder Content
Upper limit


BC GRADATION RESULTS - APRIL 2017
% Passing
Sieve Size (mm)
Upper Limit
Lower Limit


BC LAYER- CORE COMPACTION RESULTS - APRIL 2017 (Requirement - Min. 98%)
% Compaction
No. of tests done during April 2017
Lower Limit
Obtained Values

19.11 Payment to the contractor

The contractor has been paid Rs. 100.13 crores

19.12 Implementation of EMP

19.12.0.1 Environment Management at Project Ancillary Facilities

Contractor has obtained consent to operate for all the plants except crusher. The works are spread over to Km 30 to 42km.The safety of bridge site at Km 31.is to be improved; sides are to be protected with shoring. The camp management is to be improved. Contractor has mobilized an environmental engineer at site. The environmental expert visited site 18th March 2017 and remarks communicated to the contractor for further action. Disposal of waste material and reinstatement of natural water way which was disturbed during construction has still a serious problem to be resolved.

19.12.0.2 Traffic Management and Road Safety Measures

Contractor has submitted a traffic management plan for the balance works including Kuthattukulam town. Traffic safety management at site has to be improved in locations where high cutting and in the realignments where rock blasting is anticipated, safety provisions is to be increased. Contractor was asked to prepare site specific work zone traffic management plan.

Contractor has arranged a health checkup for the labor and report awaited.

The removal of waste material is an issue. Contractor has to remove all construction waste from the site and to be disposed.

19.13 Compliance report on observations of World Bank Mission

Issues affecting progress of work

S No	Issues	Scope	Time Required	Action/ Decision by
1	Land acquisition	Still to achieve finality in 300mt length of 39th Km	Likely date of completing the process – Dec 2016	PD
2	Shifting of Utilities	Water Lines Ductile iron pipes to be laid in place of existing pipes 15th km – 600m length 24th – 25th km – 1300mt length 34th& 40th km – about 1900mt length	Work requires procurement and placement which may take 4 months as per the contractor	Prompt decision by PD to decide mode of procurement of pipes.

		Electricity lines in km 22/0 – 40/960	Contractor's assessment – work can be completed by March 2017	PD has to plan procurement of poles for material to be available in advance of actual fixing

Factors contributing towards delay and variations

S No	Item	Issue	For consideration	Action by	Action taken
1	Rock excavation	Lowering the road bench by rock excavation to adjust pavement layers (all relevant stretches) Lowering of existing road bench in vertical curves to create required sight distance 3m depth – 33rd km 1.8m depth – 27th& 28th km	Profile correction with WMM may suffice for bituminous overlays The available sight distance vis-à-vis that required as per standards needs immediate reexamination to take a call on rationalizing extent of excavation	TL	Complied
2	Random Rubble masonry breast walls in cement mortar	Massive retaining structure in front of the rock	Avoiding wasteful activity	PD	Design changed
3 3a	Constriction of Gabions	In many stretches, only for the purpose of covering ROW where road traverses through open areas Quality of workmanship	Avoidable wasteful work of excavation and then raising Gabions consuming a lot of time Gabion Construction has shown marked improvement in workmanship	PD	Complete
4	Requirement of RE/DRE	There is no representative of Supervision Consultant at the project site	Action required to post in position is suitable person	TL to take immediate action	RE –Mr KK Paily joined office on16th January 2017. DRE will be mobilized on approval by KSTP.

ROAD SAFETY

1	All major junctions should be audited by the road safety auditor	Road safety audit done.
2	Footpath should be provided in all town areas	Will be constructed as per BOQ

19.14 **Photographs**

PAVEMENT MARKING @ KM 0+100

BC LAID @ KM 25+100

PRIMING COMPLETED @ CH 30+400 TO KM 30+520

BOX CULVERT @KM 30+300

20.1 **Contract Package VI**

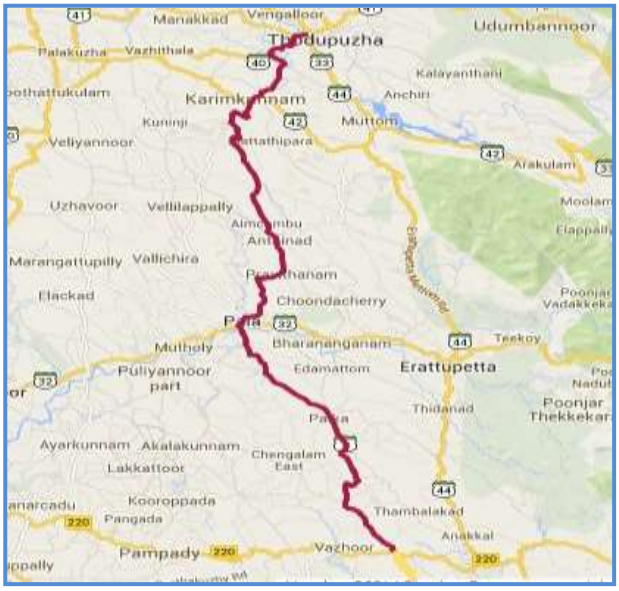
Upgradation of Road from Ponkunnam to Thodupuzha

Scope of work (46.363 km)

Minor Bridge reconstruction - 1 no.

Culvert:

Reconstruction	-	109 nos.
Widening	-	44nos.
New Construction	-	7 nos.
Drain	-	65 km
Foot Path	-	
Solar Street Light	-	



20.2 **Contract details:**

Letter of Acceptance date	::	04.02.2014
Agreement date	::	05.05.2014
Name of Contractor	::	M/s GHV-EKK (JV)
Contract price	::	Rs. 227,13,73,548
Notice to Commence	::	10.06.2014
Total Length	::	46.363 km
Contract Period	::	30 months
Completion date	::	09.12.2016
Defect Liability Period	::	365 days
1st Milestone	::	10 km
2nd Milestone	::	25 km
3rd Milestone	::	Completion of full stretch & Thodupuzha Bypass

20.3 Physical Progress:

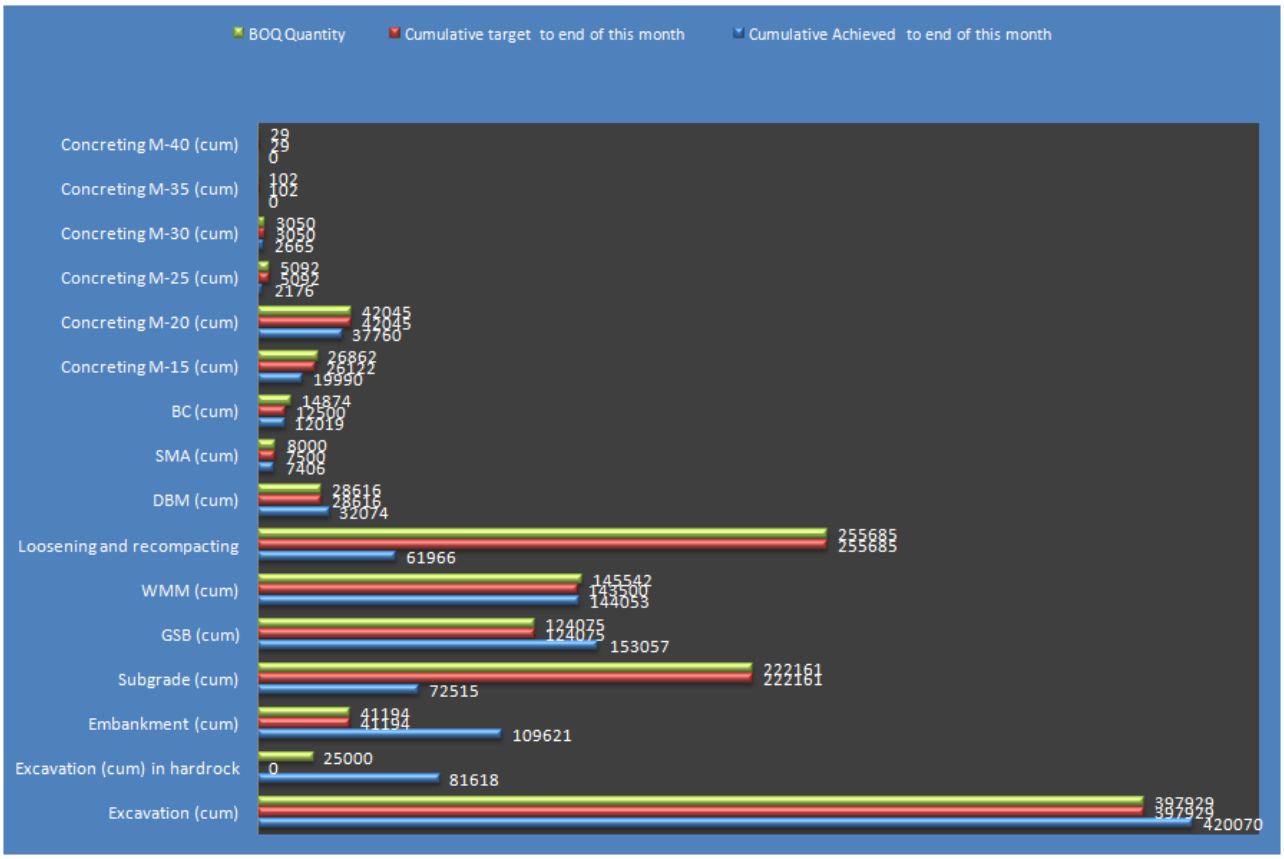
Summary of progress for major items is as follows:

Milestone	I (85+000 to 95+000)		II (84+000 to 85+000) Bypass 2.57 km (106+000to 117+430)*		III (95+000 to 106+000)* (117+430 to 131+015)	
Length in km	10.000		15.000		24.585	
Side	LHS	RHS	LHS	RHS	LHS	RHS
GSB completed in km	10.00	10.00	15.00	15.00	23.60	23.60
WMM completed in km	10.00	10.00	15.00	15.00	23.50	23.50
DBM completed in km	10.00	10.00	15.00	15.00	23.50	23.50
SMA completed in km	NIL	NIL	5.94	5.94	10.49	11.67
BC completed in km	10.00	10.00	9.06	9.06	12.37	12.37
CD works completed in No.'s	20/20		43/43		79/79	

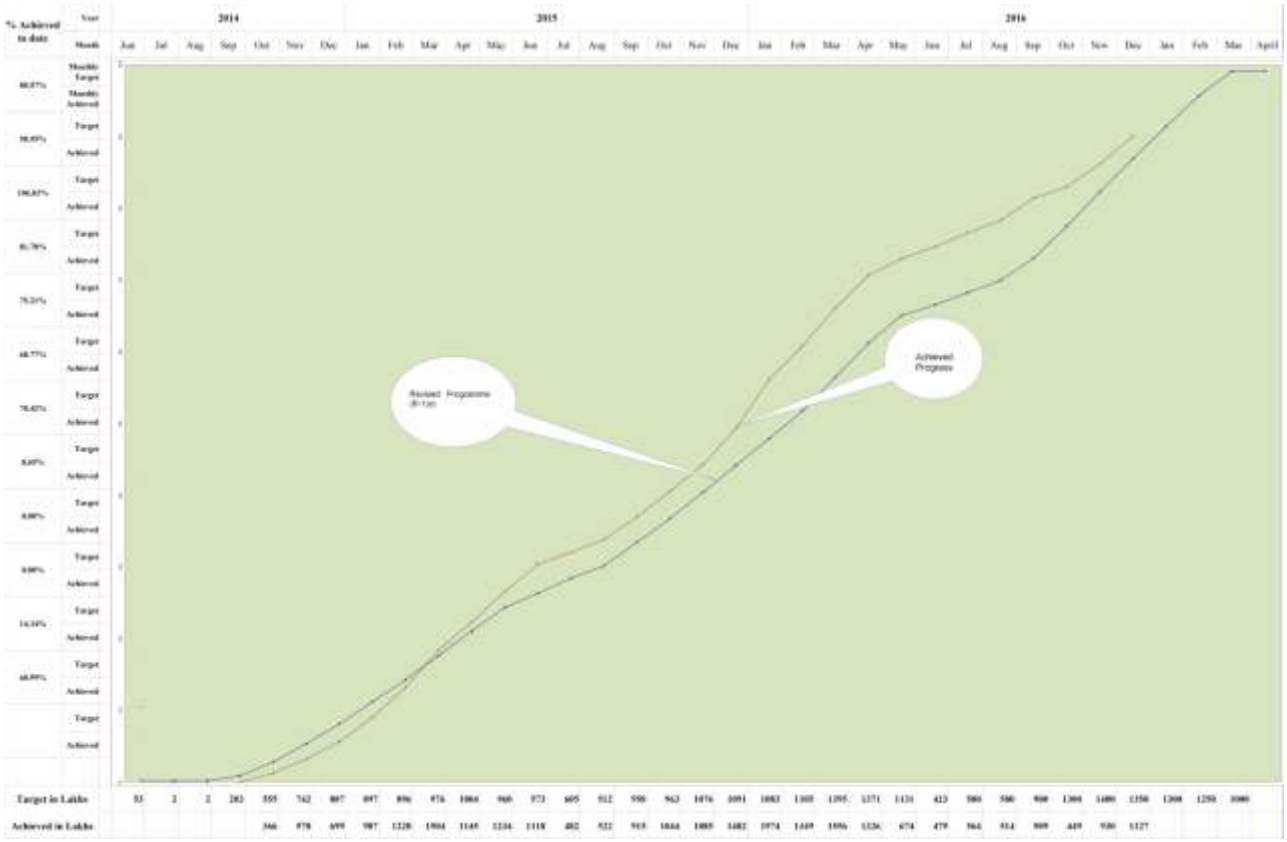
Work progress considering the contract price:

Up to previous month		This month		Cumulative (till end of this month)	
Target	Achieved	Target	Achieved	Target	Achieved (gross)
98.84%	114.28%	5.94%	4.96%	103.80%	119.63%

20.4 Bar Chart of Physical Progress:



20.5 **S-Curve**



20.6 **Schedule of Cross Drainage Works**

S. No.	Work Description	Total No	(85+000 to 95+000) 10 Km				(84+000 to 85+000) Bypass 2.57 km (95+000 to 106+400) 15				(106+400 to 117+430) (117+430 to 131+015) 24.615			
			Scope	Work in Progress	Half completed	Full completed	Scope	Work in Progress	Half completed	Full completed	Scope	Work in Progress	Half completed	Full completed
1	Pipe culvert	32	6	0	0	6	7	0	0	7	19	0	0	19
2	Precast box culvert	79	12	0	0	12	16	0	0	16	51	0	0	51
3	Box Culvert cast-in-situ	18	1	0	0	1	5	0	0	5	12	0	0	12
4	Box culvert widening	7	1	0	0	1	4	0	0	4	2	0	0	2
5	Cast-in-situ New	2	0	0	0	0	0	0	0	0	2	0	0	2
6	Box culvert retained	4	0	0	0	0	3	0	0	3	1	0	0	1
	Total For each	142	20	0	0	20	35	0	0	35	87	0	0	87

S. No.	Work Description	Scope in No.s	Upto Previous		Current Month		Upto Date		Targeted For April 2016
			Targeted	Achieved	Targeted	Achieved	Targeted	Achieved	
1	Pipe culvert	32	32	32	0	0	32	32	0
2	Precast box culvert	79	79	79	0	0	79	79	0
3	Box Culvert cast-in-situ	18	18	18	0	0	18	18	0
4	Box culvert widening	7	7	7	0	0	7	7	0
5	Cast-in-situ New	2	2	2	0	0	2	2	0
6	Box culvert retained	4	4	4	0	0	4	4	0
	Total For each	142	142	142	0	0	142	142	0

20.7 **Implementation of EMP**

B.	Physical Progress Report					
S. No.	**Enhancement/ Mitigation Measures**	**Physical target / (Achieved) (No's.)**	**Units carried over from previous month**	**Units started in reporting month**	**Units completed in reporting month**	**Units carried over to next month**
			(a)	**(b)**	**(c)**	**(d)**
1.	Noise Barrier	19/ (7)	1	0	0	1
2.	Hand pumps	6/(6)	0	1	1	0
3.	Bus Shelter	35	17	0	0	17
4.	Sign Boards	1445/(889)	0	47	47	0
5.	Preserving and landscaping the cultural properties like shrines and hyundi	7/(2)	0	0	0	0
6.	Constructing new well	3/(1)	0	1	0	1
7.	Providing new water taps	33	0	0	0	0
8.	Parking space for auto rickshaws, cars and jeep	**Quantity not estimated**				
9.	Landscaping of type C Oxbow lands	28/(2)	2	2	0	4
10.	Planting trees along road side	864/(584)	0	0	224	224
11.	Planting trees on inner side of sound insulating wall	440/(83)	0	0	0	0
12.	Providing 1.2 m high fencing under via duct	**Quantity not estimated**	0	0	0	0
13.	Concrete flooring with slope drains and oil interceptors	3/(1)	0	0	0	0
14	Water Sprinkling	1800 hrs /(1162 Approx.)	0	0	90	0
15	Air Quality Monitoring	36/(34)	0	0	0	0
16	Water Quality Monitoring	30/ (27)	0	0	0	0

C.	Details of Sites for Project Ancillary Facilities				
S. No.	**Type of Camp/Site**	**Cumulative No of sites opened**	**No of sites operational**	**Cumulative No of sites redeveloped**	**Cumulative No of sites Closed***
1.	Construction Camp	2	2	0	0
2.	Labour Camp	2	2	0	0
3.	Quarry & Stone crusher unit	1	1	0	0
4.	Borrow Area	0	0	0	0
5.	Debris Disposal Site	0	0	0	0
6.	Water Sources	3	3	0	0

20.8 **Payment to contractor**

Payment up to December 2016 is Rs. 210.16 crore

20.9 **Photographs**

Oxbow land turfing was in progress at Ch:91+100 (LHS)

Information Board installed in Pala town

LED Solar street light funtionality monitored

Rumble strips and go slow markings done

21.1 **Contract Package VIII**

Upgradation of Road from Punalur to Ponkunnam

Work has to be arranged under PPP mode (Modified Annuity). DPR submitted by M/s CDM Smith Associates is under review. The Transaction Advisory has been selected and assignment commenced. The Transaction Advisory is M/s L&T Ramboll in JV with M/s Fortress. The review of DPR and RFQ, RFP and Financial modal are completed. Bidding documents were placed before the Steering Committee and endorsed. The Government had expressed willingness to include the project in the Infrastructure Investment Fund being mobilized. Government have further informed that a "line item" in the State Budget will also be included. The pre-qualification bids were published and eight bids received. The pre-qualification of eight bidders has been approved by the World Bank and Steering Committee. The RFP to the bidders are being forwarded.

22.1 **Contract Package VII**

Upgradation of Road from Perumbilavu – Pattambi - Perintalmanna

Horizontal alignment finalized and boundary stone planted for land acquisition. The original proposal was to upgrade the project under EPC mode. But due to the delay anticipated in acquiring the land invoking the provision of the new LA Act for which rules are being finalized by the Government, it has been decided to provide a modest level of improvement to the surface. It is also proposed to make use of the savings due to the change in the improvement proposals for providing overlay to the SCDP road. Accordingly proposals have been submitted to the Government and to the Bank after obtaining approval of the Steering Committee on 28th July 2014. The work has been awarded. Due to a case before the Lok Ayukt filed by another contractor (bidder), the work was held up earlier and this is now ordered by the court in favour of the Department. The notice to commence issued and work has been. The total length completed is 18 km of BC work.

24.1 **Road Safety Component – Current Status**

Road Safety Capacity Building and Program Management Project

The focus of Road Safety Program Comprises of the following tasks:

To strengthen the capacity of Kerala Road Safety Authority and Road Safety Cell of PWD to introduce Sustainable International Best Practice in designing, implementing and Evaluation of Road Safety.

Development of Safe Corridor Demonstration Project (SCDP) by implementing the Multi-sectoral interventions to demonstrate the effectiveness of Road Safety Best Practices.

The Kazhakkoottam – Thaikod – Kottarakara – Adoor Corridor (80 km) improved during KSTP-I is identified for this purpose having high density of traffic

To replicate the lessons learned from the Safe Corridor Demonstration Project to develop another 10 safe corridors across the State through local partnerships using the challenge fund and the matching fund from the KRSA

Road Safety Capacity Building of the institutions responsible for managing Road Safety in the State.

The KSTP appointed M/s VicRoads, Australia, an internationally experienced consultant to support in implementing the above programs. The consultant has conducted stakeholders meetings and trained the Engineers and others in designing various Road Safety interventions in the SCDP. The bid has been approved by the Steering Committee and the works awarded. The overlay works and Road Safety interventions are clubbed. The work commenced. The proposals for enhancing the existing facilities in the Kottarakara, Adoor, Kesavapurama and Medical Collage, Trivandrum are under consideration now.

The proposal for strengthening the Kerala Road Safety Authority has been accepted by the Executive Committee and the actions for procuring specialists, to various positions has been initiated. 33 nos. of applications received are being evaluated.

Traffic counters were procured and installed at five locations, one in NH and four in location in the project roads. These counters shall be utilized for planning of future road geometrics requirements, capacity analysis, seasonal variations, daily variations of traffic volume during festivals etc.,

The KSTP has entrusted the consultant to take actions for the procurement of Market Research firms. The market research would support Development of the publicity and education programs, including future campaigns. Establishing benchmarks on knowledge, attitudes, perception of road safety issues and self-reported behaviors of road users for monitoring the impact of future road safety activities and effectively support the task of the Road Safety Capacity Building and Program Management Consultant. The firms are in place and the activities are on.

The project proposals for utilizing the challenge fund is awaited from the KRSA. This was agreed in a meeting held in the room of the Secretary to Government, Transport.

25.1 Institutional Strengthening Components – Current Status

Road Sector Modernization

Under this Component, KSTP have already arranged and completed studies and DPR preparation for Road Rehabilitation Projects, Strategic Option Studies for improving MDRs (newly taken over from Panchyat), Design of Green Building for KSTP and PWD Head Quarters, Review of IT system in PWD and other small studies with Bank's approval. The amount spent is Rs. 4.70 crore.

Further, we have streamlined the activities under the Road Sector Modernization in the Institutional Strengthening component considering, the current priorities of the State, in lieu of Strategic Road Network Program which include:

New Consultancy assignment for which ToR have been prepared

Public Information and Management System

Strengthening Kerala Highway Research Institute for Development in to a Centre of Excellence for Road Safety and Asset Management – Stage I

Capacity Building on Right to Fair Compensation and Transparent Compensation and R&R Act 2014

(For these assignments the ToR has been prepared and forwarded to World Bank for review. The ToR for PIMS was prepared in consultation with the World Bank Representative and M/s C-DAC, a research agency in this field has expressed interest to undertake the task.

Improving Public Communication and User Engagement in Road Development

Bidding process already in progress (evaluation for short listing is in progress) for the following consultancy services

Selection of consultant for Road User Satisfaction Survey
Selection of consultant for Community Participatory Road Safety and User Engagement

26.1 **Payment to the consultants as on end April 2017:**

M/s Egis India JV	-	Rs. 272785080
M/s MSV International	-	Rs. 4641766
M/s VicRoads	-	Rs. 85509035
M/s L&T Ramboll (TA)	-	Rs. 3041450

28.1 **Meetings, Site visits & Inspection**

Package-I

Dispute Board Chairman and members inspected the package on 20th April 2017 along with senior officials of KSTP, CSC and Contractor and held review meeting at Executive Engineer's Office Kannur.

Progress review meeting held on 28th April 2017 at PMT, KSTP Thiruvananthapuram

Package-II

Progress of works is slow and below par with scheduled programme due to shortage of resources i.e. material, manpower and equipment.

The Work zone safety arrangements are not satisfactory.

Package – III A

Progress review meeting held on 4th April-2017 at RE office, Kuthuparamba.

Safety meeting conducted at RE office, Kuthuparamba on 4th April-2017.

Environmental Engineer visited the site on 28th Apirl-2017.

Package – IIIB

Chief Engineer KSTP visited the site on 9 February 2017.

Construction Safety Engineer (EGIS) visited site on 24.01.2017.

Package-IV

Progress review meeting held on 28th April 2017 at PMT, KSTP, Thiruvananthapuram.

Package-IVA

Review meeting held on 21.04.2017

The identified variations are,

A proposal to construct a via-duct in lieu of high embankment with protective walls on both sides is under review from economic and environmental considerations.
For construction of Fly over due to change in the span arrangements, variation order to be initiated. Grade of concrete for Pile cap and Pier/abutment provided in the BoQ is different from that in the drawings. The Contractor has asked for revised rates for such items. Variation order has been initiated.

Construction of RCC Retaining wall on both sides between Km 1+780 to 1+980 is required due to inadequate ROW. Considering the low bearing pressure at site due to marshy land, large scale ground improvement will be required to construct high embankment with high protective walls on either side. Hence, the proposal to provide a via-duct on pile foundation is under consideration. A revised estimate covering the changed scope has been prepared for discussion with the Bank Mission during their next visit.

Ground improvement by replacing marshy soil with GSB at Ramanchira. Variation being initiated.

The Contractor has been transporting soil from Package 6 to Package 4A due to environmental restrictions to procure borrow material locally. The variation in cost of transport of soil has been initiated and submitted for approval.

The pay item for Maintenance of vehicle has exceeded the BOQ quantity. Variation order has been initiated.

The pay item for M 30 grade pile cap exceeded the BOQ quantity. Also the grade has changed to M 35. Variation order has been initiated.

The pay item for M 25 grade pier & solid abutment exceeded the BOQ quantity. Also the grade has changed to M 35. Variation order has been initiated.

The pay item for M15 retaining wall has exceeded the BOQ quantity. Variation order has been initiated.

The pay item for steel reinforcement (HYSD) for culverts and bridges has exceeded the BOQ quantity. Variation order has been initiated.

The pay item for high tensile steel wires/strands has exceeded the BOQ quantity. Variation order has been initiated.

The pay item for PSC/RCC M 45 grade for Superstructure for bridges has exceeded the BOQ quantity. Variation order has been initiated.

Variation for Coconut pile driving has been initiated

Variation for restoration of existing well has been initiated

Package-V

The Chief Engineer KSTP has convened a meeting on 28th April 2017 to review progress and other related issues.

Package-VI

Site visit has been conducted by World Bank Mission team on Dt. 10.11.2016.

Work shop on Road Safety by World Bank Mission & KSTP jointly has been conducted at Hotel Mascot on Dt. 14.11.2016.

Work shop by World Bank Mission has been conducted at PMT office on Dt. 15.11.2016.

Review meeting by Hon'ble Minister of Works has been conducted at PMT office on Dt. 21.11.2016

29.1 **Social Safeguard**

KSTP II GRIEVANCE MANAGEMENT REPORT			
Serial No.	**Nature of Grievance**	**Number of Petitions**	**Outcome/Time frame for further action**
1	Land Acquisition/ Alignment change	13	10 settled through participatory interaction between KSTP officials and PAPs. 3 cases are pending in the High Court.
2	Inadequate compensation of land/ Category change of the land	3	Category changes effected after re-examination by the Revenue authorities.
3	LAR Cases	262	200 cases settled. 62 cases pending in the Sub Courts
4	Variation in the extent of land	7	Resurvey done and difference found in 2 cases which were adequately compensated in the award.
5	Acquisition of missed structure/ Part/Full	11	Valuation of the missed out structure taken, got additional microplans approved by PMT and compensation paid to the PAPs
6	Inadequate compensation for structure	3	Rechecked the valuation at site in the presence of the PAP to convince the veracity.

7	Provision of retaining wall to protect structure	120	Retaining wall provided to protect 91 structures and the remaining will be done as the work progresses
8	Protection of well	75	65 wells have been protected by diverting drains and by providing concrete slabs/covers as required at each site.
9	Conversion of part valuation of structure to full or vice versa	3	Changes effected as requested by the PAP and payment released accordingly
10	Inadequacy of R&R assistance	201	GRC enhanced R&R assistance in 201 cases and 138 been paid already.
11	Extension of time limit for demolition	12	Time extended and structure demolished within the permitted period by 10 PAPs. 2 PAPs got stay from the High Court.
12	Restoration of access to property	460	Access of 240 restored and 220 have been provided with temporary measures for access. Direction given to provide permanent measures/restoration of lost access.
13	Providing new access	32	15 have been provided with new access while 9 were given temporary access and 8 in the process of approval
Serial No.	**Nature of Grievance**	**Number of Petitions**	**Outcome/Time frame for further action**
14	Water logging issues	33	32 cases settled and work in progress in one case
15	Drainage	90	Completed work in 49 cases while work is in progress in the remaining 41
16	Encroachment by contractor	15	Settlement has been reached in 11 cases. One is pending with PMT. RE has been directed to get the remaining 3 sites cleared by the contractor.
17	Damage to adjacent property	83	66 cases settled or repaired. 17 are under consideration of the REs.
18	Non-payment of compensation/entitlements	25	7 have been paid and 18 require correction of a GO by issuing an erratum for which request has been given to the Government.
19	Shifting of transformer	1	High Court ordered stay – Request submitted for vacating the stay.
20	Vacating the building by occupant	6	Extension granted for 6 months within which PAPs identified new sites and moved out.
21	Traffic safety	15	Contractors & REs have been instructed to abide the IRC directives of traffic safety at work site
22	Utility shifting	20	Contractors and REs are director to comply with the shifting of wayside utilities as the work progresses
23	Traffic Block	8	Being solved with assistance of Traffic Police

24	Maintenance of existing road	14	Directed contractors & REs to keep the roads traffic worthy
25	Renovation of byroads	9	REs directed to maintain byroads
26	Reconstruction of cross drainage	10	Proposal included in the upgradation and issued direction to respective RE for necessary action
27	Unauthorised movement of earth & rock	4	Contractor has been given directions for compliance
28	Reduction in width, quality of work etc	47	Resurvey of acquired land done to convince the petitioners
29	Junction improvements	3	Directed to REs to integrate in the regular work, if possible.
	Total	**1585**	

29.2 **Land Acquisition Status**

Sl. No	**Name of road & Length (km)**	**Land proposed for Acquisition (Ha)**	**Land Acquired (Ha)**	**Land Pending Acquisition (Hectare)**	**Present position/ Reasons for delay**
1	Kasargode – Kanhangad (24.00)	2.9177	2.9177	0	NA
2	Pilathara – Pappinssery (21.00)	7.3057	7.3057	0	NA
3	Thalasery – Valuvapara (53.78)	25.0312	24.9367	0.0634 (0.25%)	LA in progress. SIA notified on 20.12.2016 and study in progress
4	Chengannur – Ettumanoor (47.00)	11.1815	11.1815	0	LT from Postal Department pending clearance
5	Ettumanoor – Muvattupuzha (40.90)	15.6197	14.3655	1.2542 (8.03%)	291 M^2 in Kottayam District ready for DP. LAO yet to submit BVR. Acquisition of remaining 1.2 HA initiated under the new Act.
4A	Thiruvalla Bypass (1.2)	5.5105	5.1737	0.3368 (7.54%)	Issue relating to non patta land pending before the Steering Committee
6	Ponkunnam – Thodupuzha (50.10)	26.7401	26.7090	0.0311 (0.12%)	RDO issued notice to land owners to vacate the premises
7	Punalur – Ponkunnam (82.12)	26.6518	26.6518	0	NA
8	Perimpilavu – Perintalmanna (41.00)	9.7013	0	9.7013 (100%)	Requisition given , LA process in progress

31.1 **Status on Critical Actions identified by World Bank**

Action		By Whom	Action Taken
COMPONENT A – ROAD NETWORK UPGRADING AND SAFETY IMPROVEMENT:			
1.	Fill vacancy position of Chief Engineer within PMT	GoK	Filled
2.	Appoint a Client Safety Officer in PMT	GoK	Appointed – Designated, the Superintending Engineer in Aluva Circle (training being given)
3.	Appoint a legal and Contract Management Officer	GoK	Appointed
4.	Detailed work program for each site	Contractor/ Consultant/ KSTP	All packages have submitted program and approved by CSC and program being monitored
5.	Contractors to prepare revised work-zone traffic management plans	Contractor	Plan prepared and being monitored strictly
6.	Appoint a Resident Engineer and Deputy Resident Engineer for Package-5	Consultant	Resident Engineer joined in January 2017. Deputy Resident Engineer will be mobilized soon.
7.	Appoint a bridge engineer for Package-2	KSTP/ Consultant	Bridge Engineer Mr. Thanigvel was mobilized on 16.11.2016
8.	All contractors to submit revised Health and Safety on site plan	Contractor	All contractors submitted revised HSE plan
9.	Traffic Management Plan	Contractor	All packages submitted and being monitored
10.	Material test result summaries	Contractor/ Consultant	Submitted and been sent to World Bank on a monthly basis
11.	Training for health & safety on site for all projects staff	Contractor	Training done at Kalamassery in Co-ordination with World Bank representative.
12.	Report of bridge on contract 4 (KM 39+709)	KSTP/ Consultant	Load test of the bridge being finalized from SV Consultants and will be carried out after concurrent from "World Bank".
13.	Settle VOs and outstanding payments	GoK / KSTP	Most of the VO's has been approved
14.	Resolve 4A – land acquisition and way forward	GoK / KSTP	300 meters land acquisition (from 4 holdings) pending and requisition for acquisition given. Balance portion acquired
	SOCIAL		
15.	Freeze all land requirements and send report to World Bank	KSTP	Joint verification conducted in I and II week of December 2016
16.	Report on safe access for residents on project road	Contractor	Provision of access in roads in progress
17.	Report on Grievance Redressal Management	KSTP	GRM report submitted to Bank
	ENVIRONMENT		
18.	Confirm presence of environment officer for each site	KSTP/ Consultant/ Contractor	Pkg 1, 2, 3A, 3B, 4 & 5 in place and works in Package-6 over

Action		By Whom	Action Taken
19.	Fill Environment Officer vacancy in PMT	GoK	Offers received and posting order being issued
COMPONENT B – ROAD SAFETY MANAGEMENT:			
20.	Staff KRSA	GoK	Application received and under evaluation
21.	Get safety auditor for all projects	KSTP	Safety audit done by CSC Safety Officer
22.	Award contract for demonstration corridor	GoK	Awarded and work commenced
COMPONENT C – INSTITUTIONAL STRENGTHENING:			
23.	Award work Packages 2, 3, & 4	GoK	The SRNP has been dropped
24.	Submit revised approach to the Strategic Road Network Program	KSTP/ GoK	Prepared for Coastal Highway Project
	FINANCIAL MANAGEMENT		
25.	Submit IFR for period ended 31st December 2016	KSTP	Submitted for up to February 2017
26.	Complete procurement process and appoint internal auditors	KSTP	Auditor selected
27.	Complete physical verification of assets	KSTP	Completed
28.	Submit external audit report for FY 15-16	KSTP	Submitted
29.	Submit internal audit report for first half for first half of FY	KSTP	Audit in progress
30.	Submit internal audit report for second half of FY 16-17	KSTP	-do -
31.	Options for partial cancellation of loan	KSTP/ GoK	Cancellation of loan if any will be assessed by end 2018.