National Highway Authority of India

(Ministry of Road Transport & Highways)

PATEL SETHIYAHOPU - CHOLOPURAM HIGHWAY PRIVATE LIMITED

Four laning of Sethiyahopu - Cholopuram from Km 65.960 to Km.116.440 section of NH-45C in the state of Tamil Nadu under NHDP Phase-IV on Hybrid Annuity Mode.

INDEPENDENT ENGINEER

M/s. Theme Engineering Services Pvt. Ltd

MONTHLY PROGRESS REPORT

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Executive Summary

The old National Highway (NH -36) runs through the state of Tamil Nadu. The project road is part of the 168 km long Vikravandi to Thanjavur section of the existing National Highway 36 (NH-36). Recently MORTH has amended the number and Length of the National Highways. The old NH 12 in the state of Tamil Nadu has become the part of the New National Highway 45C. It links Chennai with Thanjavur and is 418 km long.

The Sethiyahopu to Cholopuram section of NH-45C is an important link to connect Metropolitan city of Chennai to religious and tourist places of Cholopuram, Thanjavur, kumbakonam, Puducherry. The project is also expected to provide improved connectivity to other religious places & other major cities like Rameswaram, Madurai, Tiruchirappalli, etc.

Project Synopsis

The Government of India had entrusted to the National Highway Authority of India (NHAI) the development, maintenance and management of National Highway No. 45C including the section from km 65.960 to Km 116.440 (approx. 50.480 Km). The Authority had resolved to augment for four Laning of Sethiyahopu - Cholopuram from Km 65.960 to Km 116.440 section of NH - 45C in the State of Tamil Nadu under NHDP Phase-IV on design, build, operate and transfer (the "DBOT Annuity" or "Hybrid Annuity") basis.

The scope of work will broadly include rehabilitation, upgradation and widening of the existing carriageway to four - lane standards with construction of new pavement, rehabilitation of existing pavement, construction and/or rehabilitation of major and minor bridges, culverts, road intersections, interchanges, drains etc. Including those prescribed in the Concession Agreement and its Schedule and the operation and maintenance itself. The map of project road is given in Figures below. The details of habitations are given in table - 01.

Figure 1: Project Location Map

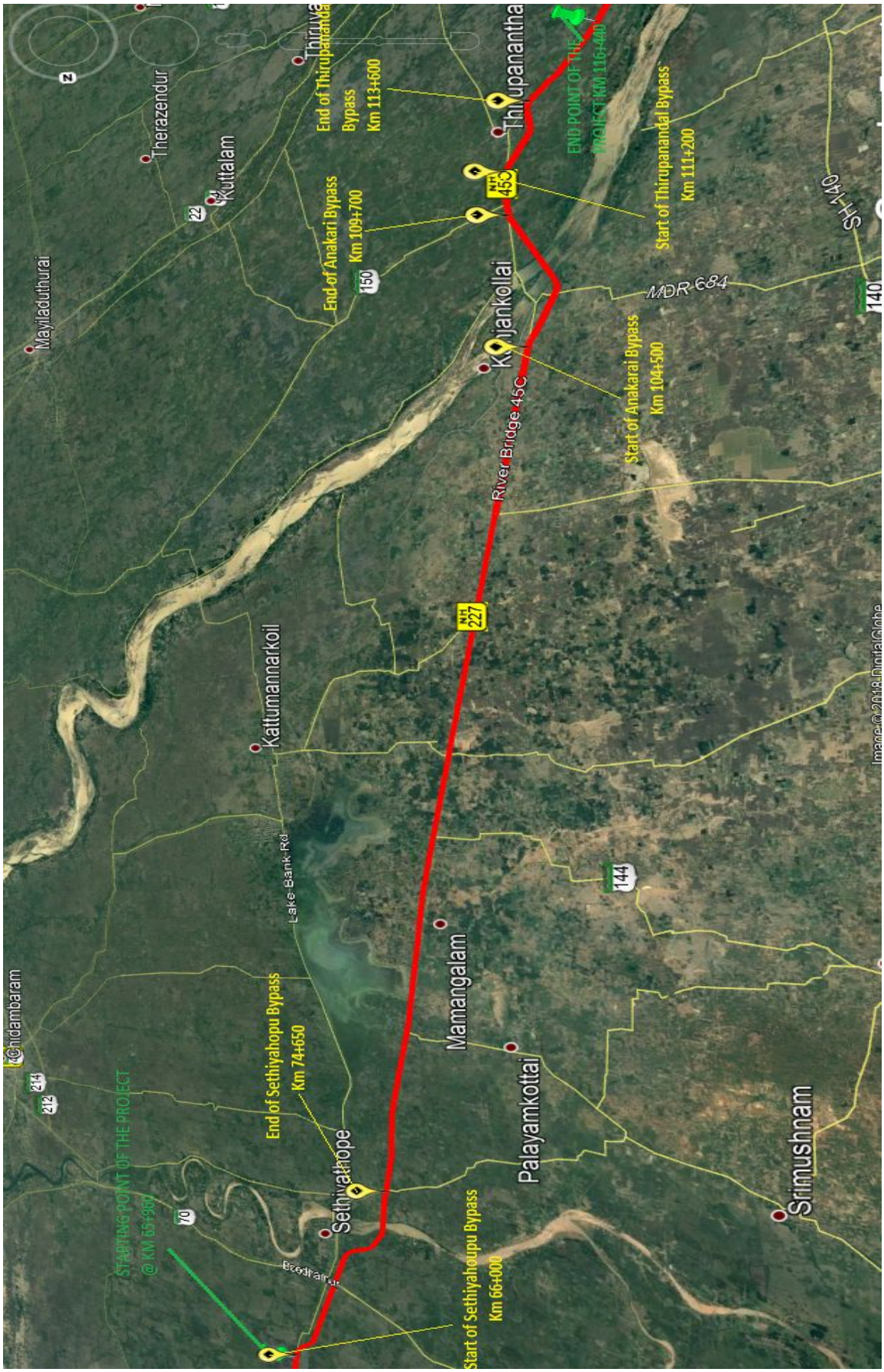

Table - 1.1 : Details of Project Alignments

Existing and Proposed Alignments							
Sl. no.	Existing Chainage (Km)		Design Chainage (Km)		LENGTH (Km)	TCS Type	Remarks
	From	To	From	To			
1	60.250	Bypass	65.960	69.460	3.500	Type-A-3 (Fig 2.4 of the manual)	Bypass
2	Bypass	Bypass	69.460	70.090	0.630	Figure 7.8- Grade separator and its approaches with RE wall and both side 5.5 m wide Slip road	
3	Bypass	Bypass	70.090	72.350	2.260	Type-A-3 (Fig 2.4 of the manual)	Bypass
4	Bypass	Bypass	72.350	72.775	0.425	Figure 7.8- Grade separator and its approaches with RE wall and both side 5.5 m wide Slip road	
5	Bypass	Bypass	72.775	74.335	1.560	Type-A-3 (Fig 2.4 of the manual)	Bypass
6	Bypass	69.820	74.335	74.960	0.625	Figure 7.8- Grade separator and its approaches with RE wall and both side 5.5 m wide Slip road	
7	69.820	70.375	74.960	75.520	0.560	Type-A-3 (Fig 2.4 of the manual)	Eccentric Widening
8	70.375	71.010	75.520	76.150	0.630	Figure 7.8- Grade separator and its approaches with RE wall and both side 5.5 m wide Slip road	
9	71.010	71.855	76.150	76.900	0.750	Type-B (Fig 2.6 of the manual) with both side service road	Eccentric Widening
10	71.855	72.170	76.900	77.220	0.320	Type-B (Fig 2.6 of the manual) with both side service road	Concentric Widening
11	72.170	72.570	77.220	77.620	0.400	Figure 7.8- Grade separator and its approaches with RE wall and both side 5.5 m wide Slip road	
12	72.570	72.800	77.620	77.850	0.230	Type-B (Fig 2.6 of the manual) with both side service road	Concentric Widening
13	72.800	73.230	77.850	78.300	0.450	Type-B (Fig 2.6 of the manual) with both side service road	Eccentric Widening
14	73.230	75.105	78.300	80.150	1.850	Type-A-3 (Fig 2.4 of the manual)	Eccentric Widening
15	75.105	76.080	80.150	81.120	0.970	Figure 7.8- Grade separator and its approaches with RE wall and both side 5.5 m wide Slip road	
16	76.080	76.460	81.120	81.500	0.380	TCS-1	Concentric Widening
17	76.460	77.000	81.500	82.240	0.740	Type-A-3 (Fig 2.4 of the manual)	Eccentric Widening
18	77.000	78.115	82.240	83.150	0.910	Type-B (Fig 2.6 of the manual) with both side service road	Eccentric Widening
19	78.115	79.110	83.150	84.150	1.000	Type-B (Fig 2.6 of the manual) with both side service road	Concentric Widening
20	79.110	79.510	84.150	84.550	0.400	Type-B (Fig 2.6 of the manual) with both side service road	Eccentric Widening
21	79.510	80.610	84.550	85.650	1.100	Type-A-3 (Fig 2.4 of the manual)	Eccentric Widening
22	80.610	81.555	85.650	86.580	0.930	Type-B (Fig 2.6 of the manual) with both side service road	Concentric Widening
23	81.555	82.170	86.580	87.210	0.630	Figure 7.8- Grade separator and its approaches with RE wall and both side 5.5 m wide Slip road	

24	82.170	82.320	87.210	87.360	0.150	Type-B (Fig 2.6 of the manual) with both side service road	Concentric Widening
25	82.320	82.910	87.360	87.990	0.630	Figure 7.8- Grade separator and its approaches with RE wall and both side 5.5 m wide Slip road	
26	82.910	83.180	87.990	88.265	0.275	Type-B (Fig 2.6 of the manual) with both side service road	Concentric Widening
27	83.180	83.660	88.265	88.745	0.480	Type-A-3 (Fig 2.4 of the manual)	Eccentric Widening
28	83.660	85.220	88.745	90.265	1.520	Type-B (Fig 2.6 of the manual) with both side service road	Concentric Widening
29	85.220	85.850	90.265	90.895	0.630	Figure 7.8- Grade separator and its approaches with RE wall and both side 5.5 m wide Slip road	
30	85.850	86.555	90.895	91.600	0.705	Type-A-3 (Fig 2.4 of the manual)	Eccentric Widening
31	86.555	87.015	91.600	92.050	0.450	TCS-1	Concentric Widening
32	87.015	87.525	92.050	92.560	0.510	Type-A-3 (Fig 2.4 of the manual)	Eccentric Widening
33	87.525	90.000	92.560	95.035	2.475	Type-B (Fig 2.6 of the manual) with both side service road	Concentric Widening
34	90.000	90.830	95.035	95.865	0.830	Figure 7.8- Grade separator and its approaches with RE wall and both side 5.5 m wide Slip road	
35	90.830	91.350	95.865	96.400	0.535	Type-B (Fig 2.6 of the manual) with both side service road	Concentric Widening
36	91.350	91.970	96.400	96.910	0.510	TCS-1	Concentric Widening
37	91.970	92.460	96.910	97.535	0.625	Figure 7.8- Grade separator and its approaches with RE wall and both side 5.5 m wide Slip road	
38	92.460	93.550	97.535	98.535	1.000	TCS-1	Concentric Widening
39	93.550	94.370	98.535	99.335	0.800	Figure 7.8- Grade separator and its approaches with RE wall and both side 5.5 m wide Slip road	
39A	94.370	94.875	99.335	99.840	0.505	Type-A-3 (Fig 2.4 of the manual)	Eccentric Widening
40	94.875	95.350	99.840	100.300	0.460	Type-B (Fig 2.6 of the manual) with both side service road	
41	95.350	96.630	100.300	101.590	1.290	Type-A-3 (Fig 2.4 of the manual)	Eccentric Widening
42	96.630	97.260	101.590	102.225	0.635	Figure 7.8- Grade separator and its approaches with RE wall and both side 5.5 m wide Slip road	
43	97.260	97.720	102.225	102.685	0.460	Type-B (Fig 2.6 of the manual) with both side service road	Eccentric Widening
44	97.720	98.360	102.685	103.315	0.630	Figure 7.8- Grade separator and its approaches with RE wall and both side 5.5 m wide Slip road	
45	98.360	99.190	103.315	104.160	0.845	Type-B (Fig 2.6 of the manual) with both side service road	Eccentric Widening
46	99.190	Bypass	104.160	104.990	0.830	Figure 7.8- Grade separator and its approaches with RE wall and both side 5.5 m wide Slip road	
47	Bypass	Bypass	104.990	106.000	1.010	Type-A-3 (Fig 2.4 of the manual)	Bypass

48	Bypass	Bypass	106.000	106.625	0.625	Figure 7.8- Grade separator and its approaches with RE wall and both side 5.5 m wide Slip road	
49	Bypass	Bypass	106.625	109.035	2.410	Type-A-3 (Fig 2.4 of the manual)	Bypass
50	Bypass	104.260	109.035	109.660	0.625	Figure 7.8- Grade separator and its approaches with RE wall and both side 5.5 m wide Slip road	
51	104.260	105.015	109.660	110.515	0.855	Figure 7.8- Grade separator and its approaches with RE wall and both side 5.5 m wide Slip road	
52	105.015	105.390	110.515	110.890	0.375	Type-B (Fig 2.6 of the manual) with both side service road	Eccentric Widening
53	105.390	Bypass	110.890	111.515	0.625	Figure 7.8- Grade separator and its approaches with RE wall and both side 5.5 m wide Slip road	
54	Bypass	Bypass	111.515	112.430	0.915	Type-A-3 (Fig 2.4 of the manual)	Bypass
55	Bypass	Bypass	112.430	112.840	0.410	Figure 7.8- Grade separator and its approaches with RE wall and both side 5.5 m wide Slip road	
56	Bypass	Bypass	112.840	113.225	0.385	Type-A-3 (Fig 2.4 of the manual)	Bypass
57	Bypass	108.410	113.225	113.850	0.625	Figure 7.8- Grade separator and its approaches with RE wall and both side 5.5 m wide Slip road	
58	108.410	109.395	113.850	114.835	0.985	Type-A-3 (Fig 2.4 of the manual)	Eccentric Widening
59	109.395	110.220	114.835	115.660	0.825	Figure 7.8- Grade separator and its approaches with RE wall and both side 5.5 m wide Slip road	
60	110.220	111.000	115.660	116.440	0.780	Type-A-3 (Fig 2.4 of the manual)	Eccentric Widening

1.1. Project Overview

Name of Work	Four Laning of Sethiyahopu-Cholopuram from km. 65.960 to Km.116.440 of NH-45C under NHDP-IV on Hybrid Annuity Mode Basis
Name of Employer	National Highways Authority of India (NHAI) G-5 & 6, Sector-10, Dwarka, New Delhi -110075
Name of Concessionaire	Patel Sethiyahopu –Cholopuram Highway Pvt Ltd, Patel House, Beside Prakruti Resorts, Channi Road,Vadodara. Gujarat– 391740 Tel: +91-265 277 6678 Fax: +91-265 277 7878
Independent Engineer	M/s. Theme Engineering Services Pvt. Ltd, S.F B1&B2, gateway Apartments, koranattu Karuppur, Kumbakonam – 612501.
EPC Contractor	M/s. Patel Infrastructure Limited, Patel House, Beside Prakruti Resorts, Channi Road,Vadodara Gujarat– 391740, Tel: +91-265 277 6678 Fax: +91-265 277 7878
Design Consultant	CTL Global Services Pvt. Ltd.. 101, Ist Floor, Krishna Chambers, HAL, Airport Road, Bangalore-560017
Senior Lender	Punjab National Bank, Large Corporate Branch, Neelkamal Building, Opp. Sales India, Ashram Road, Ahmedabad - 380009
Lenders Independent Engineers	Sharul Techno-Financial Consultancy Services Pvt. Ltd., 403, Aspire Tower 5, Amanora Park Town, Hadapsar, Pune - 411028.
Length of Road (Design Length)	50.480 Kms
Total Bid Cost	Rs. 1461.00 Crores (as per concession agreement)
Date of Concession Agreement	November 9, 2017
Concession Period	17 Years (Construction Period 2 Years from Appointed date, Operation period 15 years from COD)
Appointed Date	16.08.2018
Construction Period	2 years from Appointed date
Completion Date	15.08.2020
Maintenance Period	15 years from COD

1.2. Salient Project Features

Besides the construction of new carriageways and widening and strengthening of existing carriageways, the following table summaries the major elements of the project construction:

4 - Lane Divided Carriage Way	50.48 Km.
Service Road/ Slip Road	26.595 Km
Major Bridge	04 Nos.
Minor Bridge	25 Nos.
Grade Separate Intersection	08 Nos.
Vehicular Underpass	13 Nos.
Light Vehicular Underpass	2 Nos.
Box Culverts	53 Nos.
Slab Culverts	07 Nos.
Major Intersections	100 Nos.
Minor Intersections	07 Nos.
Bus Bays	09 Nos.
Toll Plaza	01 Nos.

1.3. Contractual Project Milestones

Following is a listing of the Key Project Milestones:

Mile Stone	Description	Target Date
Mile Stone-I	Concessionaire shall expended not less than 20 % of the Total capital cost and shall have commenced construction of the project and achieved 20% of physical progress on 214th day from the Appointed Date.	18th March 2019
Mile Stone-II	Concessionaire shall expended not less than 35% of the Total capital cost and shall have commenced construction of the project and achieved 35% of physical progress on 334th day from the Appointed Date	16th July 2019
Mile Stone-III	Concessionaire shall expended not less than 75 % of the Total capital cost and shall have commenced construction of the project and achieved 75% of physical progress on 584th day from the Appointed Date	22nd March 2020
Scheduled Completion	Concessionaire shall have completed Project on 730th day from the Appointed Date	15th August 2020

1.4. Payment milestone during Construction Period

Payment Mile Stone	Eligibility Criteria	Payment Amount (Rs.)
Mile Stone-I	On Achievement of 10% of Physical Progress	116.88 Crs.
Mile Stone-II	On Achievement of 30% of Physical Progress	116.88 Crs.
Mile Stone-III	On Achievement of 50% of Physical Progress	116.88 Crs.
Mile Stone-IV	On Achievement of 75% of Physical Progress	116.88 Crs.
Mile Stone-V	On Achievement of 90% of Physical Progress	116.88 Crs.

1.5. Permits & Approvals

Sr. No.	Details	Authority	Current Status	Remarks
1	Extraction of Boulders from Quarries	Dist. Mining Officer	Obtained	We have executed an agreement with Mr. Thiru V. Sekar for supply of boulders that is having a valid license for extraction of boulders for the quarry at Padalur Village, Perambalur District.
2	Installation of Crusher	Village Panchayat Head	Obtained	
3	-----D O------	Pollution Control Board	Obtained	
4	Use of Explosives	Distt. Collector	Obtained	
5	Labour License	Labour Commissioner	Obtained	
6	Environmental Clearance		NA	

Sr. No.	Details	Authority	Current Status	Remarks
7	Trees Cutting Permission	Forest department through NHAI	In Progress	Tree felling permission obtained for all the three districts & Work in Progress.
8	Electric Poles Shifting	Tamilnadu Electricity Board	In progress	Work in progress in Cuddalore & Thanjavur district, for Ariyalur district, estimate approval is in progress.
9	Water Pipes Shifting	Tamilnadu Water Supply and Drainage Board	In Progress	All the estimates are approved and supervision charges also remitted to the concern department.
10	Drawing Water from river/ reservoir		NA	

2. Right of Way Status

2.1. Land Acquisition

As per the Schedule – A of Concession Agreement, the Proposed Right of Way (ROW) is of 45 & 60 meters as per table below.

Table 2.1-1: Details of proposed ROW as per Schedule-A

	Design Chainage (Km)	Design Length (Km)	Width (m)	Remarks
Full Right of Way (full width)				
Stretch	65.960 to 75.150	9.190	60.00	Within 15 days of date of Agreement.
Stretch	75.150 to 82.380	7.230	45.00	
Stretch	82.380 to 83.080	0.700	60.00	
Stretch	83.080 to 84.050	0.970	45.00	
Stretch	84.050 to 86.440	2.390	60.00	
Stretch	86.440 to 87.660	1.220	52.50	
Stretch	87.660 to 91.730	4.070	45.00	
Stretch	91.730 to 93.730	2.000	52.50	
Stretch	93.730 to 95.900	2.170	45.00	
Stretch	95.900 to 99.700	3.800	60.00	
Stretch	99.700 to 104.500	4.800	30.00	
Stretch	104.500 to 109.700	5.200	60.00	
Stretch	109.700 to 110.980	1.280	30.00	
Stretch	110.980 to 113.700	2.720	60.00	
Stretch	113.700 to 116.440	2.740	30.00	
Total Length		**50.480**		

Balance Right of way (width)				
	Design Chainage (Km)	Design Length (Km)	Width (m)	Within 90(Ninety) days of the Appointed date
Stretch	099.700 to 104.500	4.800	15.00	
Stretch	109.700 to 110.980	1.280	15.00	
Stretch	113.700 to 116.400	2.740	15.00	

Besides this, the Authority has to acquire additional land at Toll plaza location, Bus bays, Turning radius at Major junctions.

Table 2.1-2: Status of Land Acquisition as per Site Condition.

Sl. No.	Description	Unit	Present Status	Remarks
A)	**Total Length of the Project Highway**	**Km**	**50.48**	
i)	Use of Existing Road Portion	Km	34.23	
ii)	Proposed Bypass / Realignment portion	Km	16.25	
B)	**Hindered Length**			
1.	LA pending	Km	7.620	
2.	Payment Pending	Km	10.460	
3.	Existing Buildings	Km	4.860	
4.	Temple & Bus stand	Km	0.105	
5.	Electrical Lines	Km	4.350	
6.	Rural Water Supply lines	Km	21.595	
7.	NOC Irrication Dept	Km	2.050	
8.	Paddy/Cotton fields	Km	5.450	
9.	Trees	Km	3.175	
10.	Net Hindered Length (both Side)	Km	45.03	
C)	Total Project Length (both Side)	Km	100.96	
D)	**% Hindered Length**	**%**	**44.60%**	

The details of land acquisition status and available hindrances are produced on a strip chart under section 04.

The status of compensation disbursed is as below: -

Table 2.1-3:Compensation disbursement for land					
SL No.	Name of the District	Total No. of Land cases	Amount paid (in Nos.)	Balance to be Paid (in Nos.)	Remarks
1	Cuddalure	710	537	173	
2	Ariyalur	328	100	228	
3	Thanjavur	102	53	49	
	Total in Nos.	**1140**	**690**	**450**	
		Total in %	**60.53%**	**39.47%**	

Table 2.1-4 - Compensation disbursement for Structures					
Sl No.	Name of the District	Total No.of structures	Amount paid (in Nos.)	Balance to be Paid (in Nos.)	Remarks
1	Cuddalore	386	240	146	
2	Ariyalur	359	177	182	
3	Thanjavur	153	96	57	
	Total in Nos.	**898**	**513**	**385**	
		Total in %	**57.13%**	**42.87%**	

The details of chainages under hindrance due to such balance compensation issues to their land owners, structure payment issues, standing crops, water pipe lines etc. are as below -

Table 2.1.5 - Details of Stretches Under Hindrance						
Sr. No.	From	To	Length	Effective Hindered Length	Side	Remarks
1	66+100	66+260	160	320	BHS	Veeranam Pipe Line
2	68+550	68+620	70	140	BHS	Compensation Disbursement balance - Not allowed to work by owner
3	70+520	70+600	80	160	BHS	Compensation Disbursement balance - Not allowed to work by owner
4	70+800	70+900	100	200	BHS	Compensation Disbursement balance - Not allowed to work by owner
5	71+400	71+700	300	600	BHS	Compensation Disbursement balance - Not allowed to work by owner
6	72+450	72+600	150	300	BHS	Compensation Disbursement balance - Not allowed to work by owner
7	72+600	72+700	100	200	BHS	Compensation Disbursement balance - Not allowed to work by owner
8	72+800	73+100	300	600	BHS	Compensation Disbursement balance - Not allowed to work by owner
9	73+900	74+200	300	600	BHS	Compensation Disbursement balance - Not allowed to work by owner
10	74+570		10	20	BHS	Structure - Payment pending

Sr No.	From	To	Length	Effective Hindered Length	Side	Remarks
11	75+500	76+150	650	1300	BHS	Compensation Disbursement balance - Not allowed to work by owner
12	76+300	76+500	200	400	BHS	Compensation Disbursement balance - Not allowed to work by owner
13	77+200	77+600	400	800	BHS	Village Limit - Ribbon Development - Compensation Disbursement balance - Not allowed to work owner
14	80+100	81+150	1050	2100	BHS	Village Limit - Ribbon Development - Compensation Disbursement balance - Not allowed to work owner
15	82+700	84+500	1800	3600	BHS	Compensation Disbursement balance - Not allowed to work by owner
16	84+700	88+200	3500	7000	BHS	Compensation Disbursement balance - Not allowed to work by owner
17	88+900	91+000	2100	4200	BHS	Compensation Disbursement balance - Not allowed to work by owner
18	95+050	95+850	800	1600	BHS	Village Limit - Ribbon Development - Compensation Disbursement balance - Not allowed to work owner
19	98+500	99+400	900	1800	BHS	Village Limit - Ribbon Development - Compensation Disbursement balance - Not allowed to work owner
20	99+400	99+900	500	500	RHS	Compensation Disbursement balance - Not allowed to work by owner
21	99+900	100+300	400	800	BHS	Village Limit - Ribbon Development - Compensation Disbursement balance - Not allowed to work owner
22	100+300	101+600	1300	1300	RHS	Compensation Disbursement balance - Not allowed to work by owner
23	101+600	102+230	630	1260	BHS	Village Limit - Ribbon Development - Compensation Disbursement balance - Not allowed to work owner
24	102+230	102+700	470	940	BHS	Village Limit - Ribbon Development - Compensation Disbursement balance - Not allowed to work owner
25	102+700	103+320	620	620	RHS	Compensation Disbursement balance - Not allowed to work by owner

Sr No.	From	To	Length	Effective Hindered Length	Side	Remarks
26	103+320	104+200	880	880	RHS	Compensation Disbursement balance - Not allowed to work by owner
27	104+200	104+500	300	600	BHS	Compensation Disbursement balance - Not allowed to work by owner
28	109+500	110+600	1100	2200	BHS	Village Limit - Ribbon Development - Compensation Disbursement balance - Not allowed to work owner
29	110+600	110+900	300	600	BHS	Compensation Disbursement balance - Not allowed to work by owner
30	110+900	111+100	200	200	RHS	Compensation Disbursement balance - Not allowed to work by owner
31	112+200	112+400	200	400	BHS	Temple Land, Local not allowing to Work
32	112+900	113+450	550	1100	BHS	Temple Land, Local not allowing to Work
33	114+400	114+650	250	500	BHS	Village Limit - Ribbon Development - Compensation Disbursement balance - Not allowed to work owner
34	115+700	116+440	740	1480	BHS	Toll Plaza Area - LA under Progress
	Total Hindered Length (Km.)			39.320		
	Total Project Length including both side (Km.)			100.960		
	% Hindered Length			38.95%		

2.2. Removal of Religious Structures

The following structures coming within the ROW are to be demolished

Table 2.2-1: Status of Removal of Religious structures

Sl No.	Name of the District	Total No. Of structures	Removed as on Date (in Nos.)	Balance (in Nos.)
1	Cuddalore	10	0	10
2	Ariyalur	10	0	10
3	Thanjavur	2	0	2
	Total in Nos.	**22**	**0**	**22**

2.3. Shifting of Utilities and Electrical HT/LT Lines

To proceed with the project construction, several utilities are required to be shifted under the supervision of the respective authorities. These include a water supply line, hand pumps, overhead water tanks, besides Electrical lines, as shown in the table below.

Table 2.3-1: Status of sanction of Estimates - Relocation of RWS Pipe line

Sr. No.	Name of the District	Chainages			Total Number of Estimates	Remarks
		From	To	Length in Km		
1	Cuddalore	65+960	86+440	20.48	25	Work in Progress
2	Ariyalur	86+440	106+860	20.42	46	
3	Thanjavur	106+860	116+440	9.58	4	

Table 2.3-2: Status of sanction of Estimates - Electrical Lines Relocation

Sr. No	Name of the District	Chainages			Number of Estimates	Present Status	Remarks
		From	To	Length in Km			
1	Cuddalore	65+960	86+440	20.48	10	Estimate Approved	Supervision Charges paid.
2	Ariyalur	86+440	106+860	20.42	5	Estimate Approved	Supervision Charges paid.
3	Thanjavur	106+860	116+440	9.58	4	Estimate Approved	Supervision Charges paid.

Estimates for shifting of the above Electric lines have been prepared. The estimated cost is approximately Rs. 17.45 Crores.

Estimates have been done for the shifting of the water supply pipeline & related items mentioned above. The final amount of Rs. 15.87 Crores sanctioned by RO, NHAI, Madurai.

Table 2.3-3: Status of Utility Relocation

Sl. No.	Authority	Description	Unit	Total Length/ Nos.	Work done	Balance	Remarks
1	BDO & EE,TWAD	Water Supply Pipe Line	Kms.	21.595	2.366	19.299	Work in progress
2	BDO of Concern Union	Hand Pump/Pump Room with Bore well	Nos.	24	Nil	24.0	
3	BDO of Concern Union	Over Head Tank	Nos.	17	3 Nos In Progress	17.0	
4	TNEB	Electrical Lines	Kms.	6.83	2.48	4.35	

2.4. Tree felling

Table 2.4-1: Status of Tree felling

Sl.No.	Name of the District	Chainages			Effected Length in Kms.	Completed as on Date	Balance as on Date	Balance no. of Trees	Remarks
		From	To	Length in Km					
1	Cuddalore	65+960	86+440	20.48	6.535	5.965	0.490	58	Work in Progress
2	Ariyalur	86+440	106+860	20.42	8.385	8.220	0.170	57	
3	Thanjavur	106+860	116+440	9.58	2.515	1.500	1.015	286	
Total				**50.48**	**17.65**	**15.685**	**1.675**	**401**	

3.1. Pre-Construction Activities

Detailed Design & Drawings

The Plan and Profile, as well as the Pavement Designs for the entire 50.48 km project length has been completed and reviewed by the Independent Engineer (IE). Construction Methodology, QA & QC procedures submitted to the IE has been reviewed and accepted.

Table 3.1-1: Status of Design and Drawings-Highway

Sl No.	Description	Unit	Total Scope as per Sch.B As per Sch. B	Design submitted	Drawing Approved
1	Pavement Design	Km	50.480	50.48	50.48
2	Plan & Profile	Km	50.480	50.48	48.48
3	Typical Cross Sections	Type	7	7	7
4	Major Intersections	No	07	-	-
5	Minor Intersections	No	100	-	-
6	Toll Plaza (Typical Details)	No	01	-	-
7	Service Roads	No	27.10	27.10	-

Table 3.1-2 : Status of Design and Drawings –Structures

Sr. No	Description	Unit	Total Scope As per Sch. B	Design Submitted	Drawing Approved
1	Major Bridges	No	04	04	0
2	Minor Bridges	No	25	21	13
3	Grade Separated Intersection	No	08	08	8
4	VUP/LVUP	No	15	15	12
5	Box /Slab Culvert	No	60	56	47

4. Physical Progress of Work

4.1. Physical Progress of Work

The Progress of the Major Works carried out at the Site in the Month of November 2018 is as follows.

CUMMULATIVE STATEMENT

For Main Carriageway

Sr. No.	Description	Total Length of Highway Excluding Toll Plaza (in. Km.)	Progress up to Previous Month (in Km)	Progress during this Month (In Km.)	Cumulative Progress Achieved up to this Month (In Km)	In Progress (In Km.)	Balance Length to be Completed	Cumulative % of Progress Achieved
1	Clearing and Grubbing							
	LHS	47.28	19.46	0	19.46	0	28.36	40.69%
	RHS	47.28	17.11	0	17.11	0	30.71	35.78%
2	Embankment							
	LHS	47.28	0	0	0	4.165	47.28	0.00%
	RHS	47.28	0	0	0	3.520	47.28	0.00%
3	Sub grade							
	LHS	47.28	0	0	0	0	47.28	0.00%
	RHS	47.28	0	0	0	0	47.28	0.00%
4	GSB/ Cement Treated Base							
	LHS	47.28	0	0	0	0	47.28	0.00%
	RHS	47.28	0	0	0	0	47.28	0.00%
5	Wet Mix Macadam							
	LHS	47.28	0	0	0	0	47.28	0.00%
	RHS	47.28	0	0	0	0	47.28	0.00%
6	Dense Bitumen Macadam							
	LHS	47.28	0	0	0	0	47.28	0.00%
	RHS	47.28	0	0	0	0	47.28	0.00%
7	Bituminous Concrete							
	LHS	47.28	0	0	0	0	47.28	0.00%
	RHS	47.28	0	0	0	0	47.28	0.00%

For Service Road

Sr. No.	Description	Total Length of Service Road (Km.)	Progress up to Previous Month (in Km)	Progress during this Month (In Km.)	Cumulative Progress Achieved up to this Month (In Km)	In Progress (In Km.)	Balance Length to be Completed	Cumulative % of Progress Achieved
1	Embankment	53.19	0	0	0	0	53.19	0.00%
2	Sub grade	53.19	0	0	0	0	53.19	0.00%
3	GSB/ Cement Treated Base	53.19	0	0	0	0	53.19	0.00%
4	Wet Mix Macadam	53.19	0	0	0	0	53.19	0.00%
5	Dense Bitumen Macadam	53.19	0	0	0	0	53.19	0.00%
6	Bituminous Concrete	53.19	0	0	0	0	53.19	0.00%

Structure Work

Sr. No.	Type of Structure	Total No. of Structures	Nos. Of Structures		
			Completed	In Progress	Balance
1	Culvert	60	0	16	44
2	Light Vehicular Underpass	2	0	0	2
3	Vehicular Underpass	13	0	4	9
4	Minor Bridges	25	0	10	15
5	Major Bridge	4	0	1	3
6	Flyover	8	0	4	4

5. Financial Progress of Work

Figure 3: Financial Progress - Planned vs Achieved - S Curve

6.1. List of Lab Equipment's

A site laboratory has been set up with all equipment required for testing soil, GSB, WMM, Bitumen, aggregate and concrete. Following tables represents the list of QA/QC equipment's available at Annaikarai & Meensurity Lab.

Table 6.1 - 1 QA/QC Lab Equipment at Annaikarai Lab

Sl. NO	EQUIPEMENT LIST'S	QUANTITY
1	compression testing machine 2000 kN	1
2	cement mortar vibrating machine	1
3	AIV Apparatus	1
4	Elecrronic weighing balance (50 kg)	1
5	Elecrronic weighing balance (600 gm)	1
6	Hot Air Oven(250◦ c)	1
7	Hot plate	1
8	Rain Gauge	1
9	Sieve: as per IS 460 -1962 200 dia Brass frame	
10	4.75 mm	1
11	1.18 mm	1
12	600 mic	1
13	300 mic	1
14	90 mic	1
15	75 mic	1
16	Pan with Lid	1
17	Sieve: as per IS 460 -1962 200 dia GI frame	
18	40 mm	1
19	20 mm	1
20	12.5 mm	1
21	10 mm	1
22	4.75 mm	1
23	2.36 mm	1
24	Pan with Lid	1
25	Thickness Gauge	1
26	Glass Rain measuring jar (200CM^2)	2
27	GI Tray (18 x24 x50)	5
28	Enamel Tray (medium)	4
29	Enamel Tray (small)	6
30	spactula wooden handle	8
31	GI Tray ()	1
32	Iron tray	1
33	slump cone apparatus with tamping rod	2

Table 6.1 - 2 QA/QC Lab Equipment at Meensurity Lab		
Sl. NO	EQUIPEMENT LIST'S	QUANTITY
1	Test Sieves Set 450mm internal diameter as per IS complete with lid & pan of hole sizes	
a	100mm	2 Nos
b	75mm	2 Nos
c	90mm	2 Nos
d	63mm	2 Nos
e	53mm	2 Nos
f	50mm	2 Nos
g	45mm	2 Nos
h	40mm	2 Nos
i	37.5mm	2 Nos
j	31.5mm	2 Nos
k	26.5mm	2 Nos
l	25mm	2 Nos
m	22.4mm	2 Nos
n	20.0mm	2 Nos
o	19.0mm	2 Nos
p	18mm	2 Nos
q	16mm	2 Nos
r	14mm	2 Nos
s	13.2mm	2 Nos
t	12.5mm	2 Nos
v	11.2mm	2 Nos
u	10mm	2 Nos
w	9.5mm	2 Nos
x	6.3mm	2 Nos
y	5.6mm	2 Nos
z	4.75mm	2 Nos
2	Test Sieves Set 200mm internal diameter (Brass frame & steel or brass wire cloth mesh) as per IS complete with lid & pan of sieve	
a	37.5mm	2 Nos
b	26.5mm	2 Nos
c	22.4mm	2 Nos
d	19mm	2 Nos
e	16mm	2 Nos
f	14mm	2 Nos
g	13.2mm	2 Nos
h	12.5	2 Nos
i	11.2mm	2 Nos
j	10mm	2 Nos
k	9.5mm	2 Nos
l	4.75mm	2 Nos
m	2.8mm	2 Nos
n	2.36mm	2 Nos
o	2.0mm	2 Nos

Sl. NO	EQUIPEMENT LIST'S	QUANTITY
p	1.80mm	2 Nos
q	1.7mm	2 Nos
r	1.4mm	2 Nos
s	1.18mm	2 Nos
t	1.0mm	3 Nos
v	0.600mm	2 Nos
u	0.425mm	2 Nos
w	0.355mm	2 Nos
x	0.300mm	2 Nos
y	0.180	2 Nos
z	0.090mm	2 Nos
aa	0.075mm	6 Nos
3	Measuring cylinder - Borosilicate glass - 100ML	40 Nos
4	Glass Thermometer 0^0c to 300^0c	10 Nos
5	Flash filtering borosil glass - 2000ML	1 No
6	Flash filtering borosil glass - 5000ML	1 No
7	Round hot Plate	2 Nos
8	Measuring cylinder - Borosilicate glass - 1000ML	4 Nos
9	Measuring cylinder - Borosilicate glass - 250ML	4 Nos
10	Measuring cylinder- Borosilicate glass - 500ML	4 Nos
11	Beakers - glass borosil - low from cap 600ML	4 Nos
12	Compaction pedestal - 4"	4 Nos
13	Extractor plate - 6" dia for marshal test	1 No
14	Rammer marshal - 4"	4 Nos
15	Thermometer Infra red - MTX - 2	2 Nos
16	LE - Chatlier mould one set of six	2 Nos
17	Cone penetrometer	1 No
18	Los angeles abrasion testing machine	1 No
19	Marshal Mould - 4" dia	51 nos
20	G.I Tray - 1500*1500*100MM	4 Nos
21	Compaction pedestal - 6"	1 No
22	Marshal stability apparatus	1 No
23	Measuring cylinder- Plastic - 50ML	4 Nos
24	Measuring cylinder- Plastic - 250ML	2 Nos
25	Measuring cylinder- Plastic - 500ML	2 Nos
26	Measuring cylinder- Plastic - 1000ML	2 Nos
27	Vibrating machine with digital timer	1 No
28	Hot Air Oven - Thermostatic - NoN Digital - 45*45*45 CM	1 No
29	Hot Air Oven - Thermostatic - NoN Digital - 90*60*60 CM	1 No
30	Penetration cup - 55*70 MM	2 Nos
31	Penetration cup - 55*35MM	6 Nos
32	Standard Penetrometer - Automatic with digital timer	1 No
33	proctor compaction mould 100mm dia with 2.69kg Rammer mid steel	4 Nos
34	proctor compaction mould 150mm dia with 4.89kg Rammer mid steel	6 Nos
35	proving ring compression type 10kn	1 Nos

Sl. NO	EQUIPEMENT LIST'S	QUANTITY
36	proving ring compression type 2.5kn	1 Nos
37	proving ring compression type 25kn	1 Nos
38	proving ring compression type 50kn	1 Nos
39	pycnometter bottle	4 Nos
40	Rapid moisture meter-0-25%	4 Nos
41	Riffle sample divider -G.I-20mm , no of slot ;16	1 nos
42	Riffle sample divider -G.I-40mm , no of slot ;12	1 Nos
43	Pipette borosilicate glass - 10 ml	4 Nos
44	Sant equivalent value test apparaus with accessories	1 Nos
45	fileld density test app - sand replacement method small	2 Set
46	shrinkage limit set W/O mercury	1 Nos
47	Mercury 250 Gm	1 Nos
48	Buoyancy balance	1 Nos
49	Spatula 8"	10 Nos
50	Spatula 4"	10 Nos
51	Standard sand - grade III - Bag of 25 kg	2 Nos
52	Standard sand - grade I - Bag of 25 kg	2 Bag
53	Standard sand - grade II - Bag of 25 kg	2 Bag
54	stanard penetrometer - automatic with digital timer	1 Nos
55	Beaking head assembly - 6'	1 Nos
56	Bulk density cylinderical metal measure - 15 LTR	1 Nos
57	Bulk density cylinderical metal measure - 5 LTR	1 Nos
58	Bulk density cylinderical metal measure - 30 LTR	1 Nos
59	Calcium carbide - 500 GM for rapid moisture meter	10 Nos
60	Liquid limits device - hand operated	1 Nos
61	CBR mould mild steel 150mm dia eith coller and base plate	60 Nos
62	Perforrated plate - for CBR test AS per 1377	57 Nos
63	Spacer disc - for CBR test	4 nos
64	surcharge weight 2.5kg annular for cbr test	120 nos
65	cbr load frame electrical single speed	1 nos
66	chiesel 25mm wide *300mm long	20 nos
67	compression testing machine 2000kn digital manual pace	1 nos
68	cube moulds 7.06cm isi marked for cement	12
69	Concrete mixer - Tilting drum type	1 No
70	Constant temperature waterbath for marshal test with digital	2 Nos
71	Core drilling machine with disel engine	1 No
72	Electronic weighing balance - 10KG	1 No
73	Cube moulds - 10CM	18 Nos
74	Cube moulds - 5CM	12 Nos
75	Electronic weighing balance - 600Gms	2 Nos
76	Dial gauge 0.01*30mm	4 Nos
77	Electronic platform balance - 100KG	1 Nos
78	Electronic weighing balance - 30KG	2 Nos
79	Electronic weighing balance - 50KG	2 Nos
80	Electronic weighing balance - 5KG	1 No
81	Stop watch - digital	4 Nos

Sl. NO	EQUIPEMENT LIST'S	QUANTITY
82	Direct shear apparatus	1 No
83	Bottle wash plastic - 1000ML	4 Nos
84	Length gauge	1 No
85	Tray - G.I 300*300MM (12"*12")	6 Nos
86	Enamel tray -300*250*40 mm (10"*12")	9 Nos
87	Tray G.I -300*250*40 mm (10"*12")	9 Nos
88	Enamel tray -450*600*40 mm (18"*12")	12 Nos
89	Field density test app -sand replacement method medium	2 Set
90	Field density test app -sand replacement method Large	2 Set
91	Filter paper for marshal test 100mm dia	10 PKT
92	Filter paper for CBR test 15cm dia PKT of 100 circles	10 PKT
93	Flakiness gauge - M.S .Chrome / powder coated	1 Nos
94	Pensky marten flash piot apparatus	1 Nos
95	Flexural strength testing machine curve	1 Nos
96	French curve	2 Nos
97	Slump test appratus with tamping rod 16mm dia *600mm long	9 Nos
98	Thermometer dial 100mm dia * 300mm long 0^0 - 300^0c	10 Nos
99	Tripod stand for CBR test	4 Nos
100	Gauging trowel 6" (150mm)	4 Nos
101	U tube glass viscometer	1 Nos
102	Saybolt viscometer with energy regulator	1 Nos
103	Vacuum pump -Singal Stage	1 Nos
104	Vibrating table -60*60 CM	1 Nos
105	Needle final setting time for vicat needle appratus	1 Nos
106	Needle Intial setting time for vicat needle appratus	1 Nos
107	Vicat Needle apparatus	2 Nos
108	Hammer with Handle - 1000 GM	4 Nos
109	Aggregate Impact testing machine	1 Nos
110	Beakers - glass borosil - low form cap ; 600ML	2 Nos
111	Beam mould -15*15*70 CM - Mild steel	17 Nos

6.2. Quality Control Test Summary

GSB material, soil samples from borrow areas, aggregates, cement and bitumen are being tested regularly. Trial mix design for concrete with different admixtures is also in progress.

The detailed list of quality control test conducted up to the month of December - 2018 are tabulated below -

7. Weather Report

DATE	Temperature (°C)		Rainfall in mm	Humidity in %		Remarks
	Min	Max		Min	Max	
01-12-2018	29.3	37.8	_	63	80	Sunny
02-12-2018	30.1	35.8	_	65	78	Sunny
03-12-2018	22.3	29.6	20	66	82	Rainy
04-12-2018	26.6	35.5	_	60	89	Cloudy
05-12-2018	27.5	33.0	10	67	89	Rainy
06-12-2018	26.9	35.6	_	85	87	Sunny
07-12-2018	28.4	33.9	_	67	82	Sunny
08-12-2018	29.6	37.2	_	62	80	Sunny
09-12-2018	27.2	34.2	_	51	85	Sunny
10-12-2018	27.0	35.4	_	49	86	Sunny
11-12-2018	27.2	31.5	_	60	75	Sunny
12-12-2018	27.7	32.3	_	58	72	Sunny
13-12-2018	23.4	31.5	_	82	90	Sunny
14-12-2018	24.2	31.9	_	57	90	Sunny
15-12-2018	25.2	31.4	_	52	86	Sunny
16-12-2018	24.9	35.8	_	38	69	Sunny
17-12-2018	22.0	34.1	_	39	84	Sunny
18-12-2018	23.5	33.2	_	38	84	Sunny
19-12-2018	24.1	31.5	_	56	78	Sunny
20-12-2018	23.2	31.4	_	52	83	Sunny
21-12-2018	25.9	29.8	_	69	87	Sunny
22-12-2018	26.9	27.4	32	83	97	Rainy
23-12-2018	25.7	28.1	3	80	99	Rainy
24-12-2018	24.1	29.5	_	50	99	Sunny
25-12-2018	22.5	31.1	_	53	96	Sunny
26-12-2018	27.7	32.3	_	58	72	Sunny
27-12-2018	29.6	37.2	_	62	80	Sunny
28-12-2018	22	34.1	_	39	84	Sunny
29-12-2018	27.7	32.3	_	58	72	Sunny
30-12-2018	23.1	31.3	_	50	82	Sunny
31-12-2018	26.3	35.2	_	58	87	Sunny

8. Safety

Various issues related to environment and safety, such as traffic management, safety signages, disposal of waste materials and oil spillage, housekeeping, area barricading and traffic management, etc, are being taken care of during the execution of the project.

Periodic Safety meetings being conducted on a regular basis and the details of the photographs for the same along with action taken are as below.

9. Support required from NHAI

Concessionaire requests NHAI to take early action on the following issues:

1. Pending Disbursement of Payment to the beneficiaries from CALA towards Land and Buildings.

2. Payment of Supervision charges for TNEB for relocation of Electrical lines in Thanjavur District and Ariyalur District.

3. Relocation of High Tension transmission tower lines.

4. Relocation of electrical substation of TANGENDCO at Km: 85+300 to 85+400(LHS) and Km:113+700 to 113+800(RHS).

5. NOC from PWD/WRO for commencement construction activities of Irrigation Structures.

6. Permission from Local Authorities for procurement of Borrow Earth from Irrigation Tanks.

7. In sufficient Right of Way with respect to the land handed over as per Clause 10.3.1 of Concession Agreement at the time of Signing of Joint Memorandum.

8. Payment disbursement and necessary clearances required for removal of religious and Govt buildings.

9. Necessary permission required for removal or relocation of irrigation Sluices.

10. Permission required for rerouting of irrigation channels.

10. Important Events

Table 10.1. Details of Important Events

Sl. No	Date of Events	Description of Events	Remarks
1)	01-12-2018	AIDS day- Awarness programme	
2)	06-12-2018	Joint Factory inspection of M/s Sanfield India limited, Bhopal for procurement of bearings for the project.	

11. Organization Chart

The following figures represents the organization structure of the EPC and SPV Team.

1. Fig. 4 - Organization Chart - EPC Team

2. Fig. 5 - Organization Chart - SPV Team

12. List of Plants, Machinery and Equipment's

Table 12.1 - List of Plants, Machinery and Equipment's

S.No	Name of the Machinery	Capacity / Model	Mobilized in Nos.	Remarks
1	Grader	120K2	9	
2	Excavator	JCB-220	9	
3	Dozer		3	
4	Soil Compactor	HAMM 311	8	
5	Backhoe Loader	JCB 3DX	7	
6	Tipper	Bharat Benz- 3128C	65	
7	Transit Mixture	2523C	8	
8	Loader	455 ZX	4	
9	Trailer		2	
10	Water Tanker		5	
11	Boom Placer	S-36	1	
12	Tractor	5036 D V-2	2	
13	Mobile Service Van		1	
14	Tower Light	AJASKY	3	
11	Hydra Crane		2	
12	Asphalt Batch Mix Plant		1	Erection in Progress
13	Wet Mix Plant	250 TPH	1	Erection in Progress
14	Concrete Batch Mix Plant	45 cum	1	
15	Concrete Batch Mix Plant	60 cum	1	
16	Crusher Plant (3 Stage)	250 TPH	1	
17	Weigh Bridge for Camp 100MT	100MT	3	
18	Weigh Bridge for Crusher 100MT	100MT	2	
19	Genset Base Camp	25KV	1	
20	Genset 63KVA Boiler	63KVA Boile	1	
21	Genset (H.M & B/P)	82.50KV	3	
22	Genset (B/P-CP-45)	125KV	2	
23	Genset Concrete Plant-180 KVA	180 KVA	1	
24	Genset (Crusher)	1010KVA	3	

Table 13.1 - Status of Change of Scope Proposals

Sl. No	Proposal Details	Date of Proposal	Current Status	COS Amount	Actual Date of Approval
1	Replacement of Pipe Culvert with box Culvert	25.04.2018	Approved in-principle by Authority. Preparation of Details Quantities in proper order is in Progress.	NA	NA
2	Relocation of VUP from Km. 113+550 to Km. 113+273	13.11.2018	The proposal for Shifting of VUP at Km. 113+550 had been submitted to IE/Authority through letter no. PSCHPL/HO/IE/101/2018 dated 13.11.2018 and awaiting for the change of scope Notice from IE/ Authority.	NA	NA

14. Details of Correspondences

The following tables list out the correspondences between the parties.

Table 14.1. - Concessionaire to NHAI

Table 14.2. - NHAI to Concessionaire

Table 14.3. - Concessionaire to Independent Engineer

Table 14.4. - Independent Engineer to Concessionaire

15. Progress Photographs

Sl. No	Description	Location	Side	Remarks
1.	Existing Building dismantling in progress	-	-	

Sl. No	Description	Location	Side	Remarks
2.	Existing Building Dismantling works in progress	-	-	

Sl. No	Description	Location	Side	Remarks
3.	Clearing & Grubbing in progress	87+450	RHS	

Sl. No	Description	Location	Side	Remarks
4.	Box Culvert Raft in progress	108+540	-	-

Sl. No	Description	Location	Side	Remarks
5.	Box Culvert Raft in progress	110+167	LHS	

Sl. No	Description	Location	Side	Remarks
6.	Box Culvert Raft in progress	110+980		

Sl. No	Description	Location	Side	Remarks
7.	Minor Bridge wall in Progress	74+175		

Sl. No	Description	Location	Side	Remarks
8.	Minor Bridge Wall in Progress	74+605		

Sl. No	Description	Location	Side	Remarks
9.	Minor Bride wall In Progress	82+006	LHS	

Sl. No	Description	Location	Side	Remarks
10.	Minor Bride Slab in Progress	85+140	LHS	

Sl. No	Description	Location	Side	Remarks
11.	Minor bridge Slab Completed	88+510	LHS	

Sl. No	Description	Location	Side	Remarks
12.	VUP Abutment Completed	106+320		

Sl. No	Description	Location	Side	Remarks
13.	GSI Pile Camp in progress	74+655	RHS	

Sl. No	Description	Location	Side	Remarks
14.	Test Pile Completed	74+340		

Sl. No	Description	Location	Side	Remarks
15.	Diversion Completed	98+950		

Sl. No	Description	Location	Side	Remarks
16.	Existing Road maintenance in progress