सड़क परिवहन और राजमार्ग मंत्रालय
MINISTRY OF ROAD TRANSPORT & HIGHWAYS
भारत सरकार
Government of India

National Highways Authority of India
(Ministry of Road Transport & Highways)

Four Laning of Cholopuram Thanjavur from Km. 116.440 to Km. 164.275 of NH-45C under NHDP-IV on Hybrid Annuity Mode Basis.

PATEL CHOLOPURAM THANJAVUR HIGHWAY PRIVATE LIMITED

MONTHLY PROGRESS REPORT

JULY 2023

List of Tables

List of Figures

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.

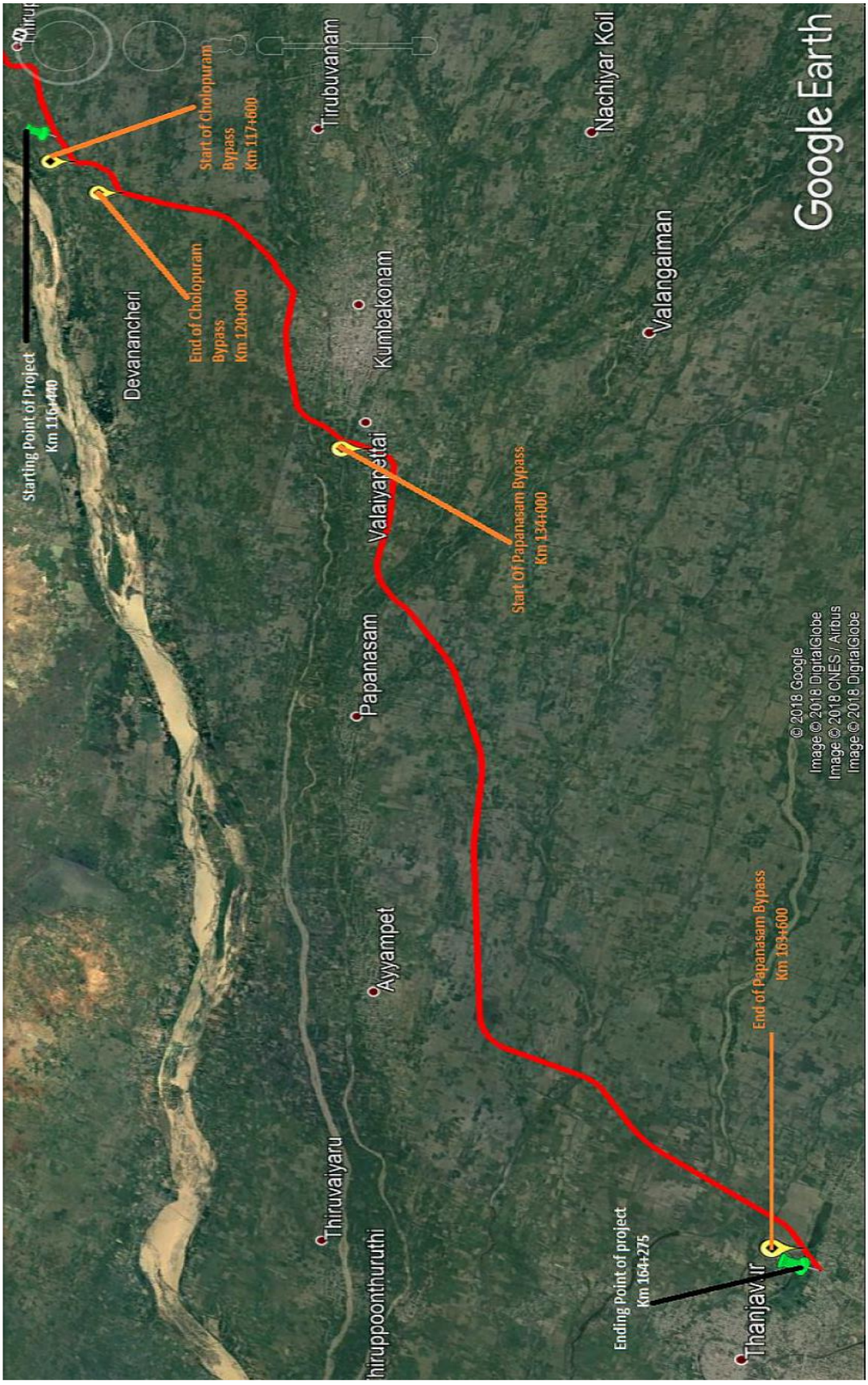
The Cholopuram to Thanjavur section of NH-45C is an important link to connect Metropolitan city of Chennai to religious and tourist places of Kumbakonam, Thanjavur, Tiruchirapalli. The project is also expected to provide improved connectivity to other religious places & other major cities like Thanjavur,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

Project Synopsis

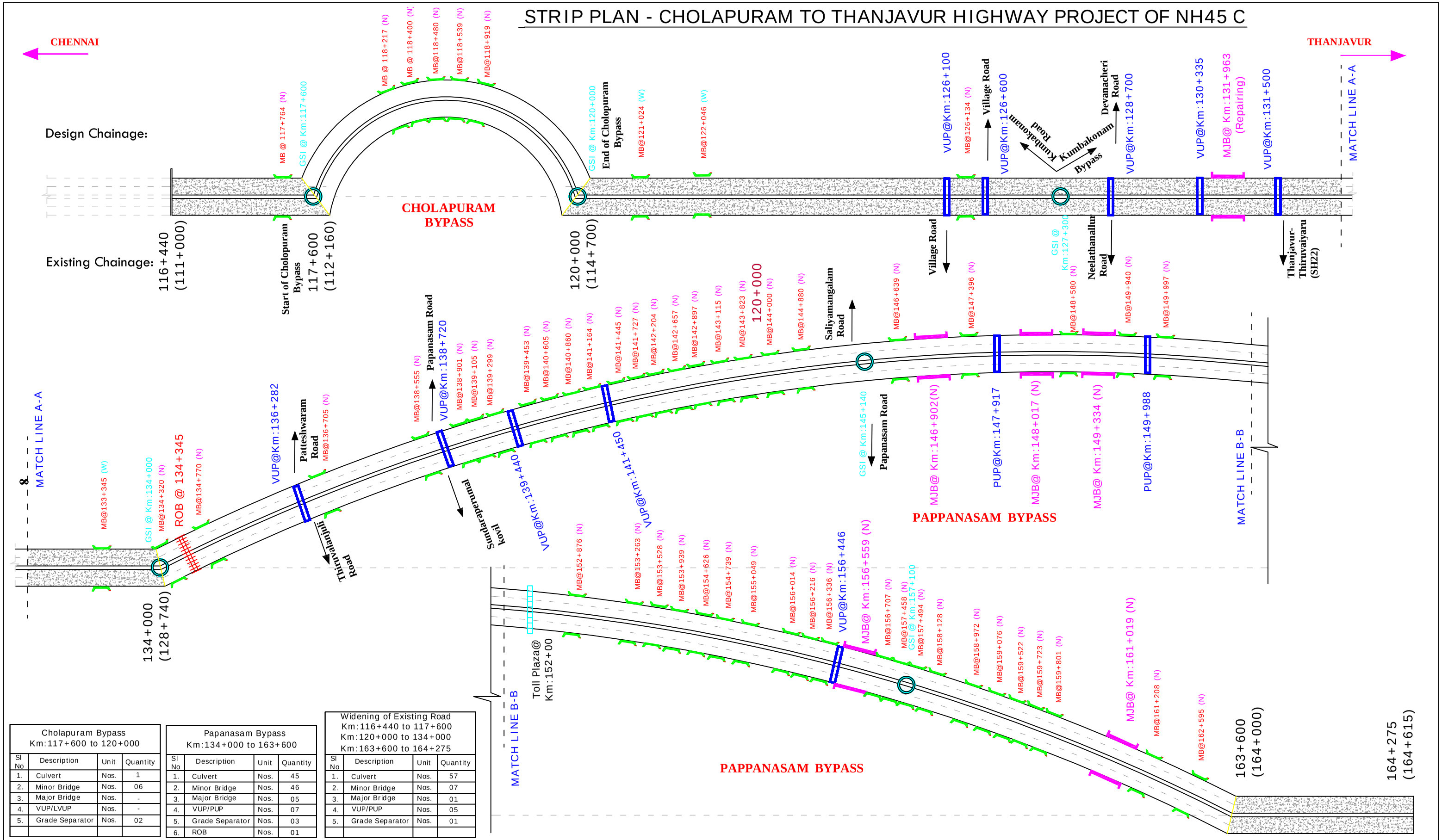
The Government of India had entrusted to the National Highway Authority of India (NHAI) the development, maintenance and management of National Highway No. 45C including the section from km 116.440 to Km 164.275 (approx. 47.835 Km). The Authority had resolved to augment for four Laning of Cholopuram - Thanjavur from Km 116.440 to Km 164.275 section of NH - 45C in the State of Tamilnadu under NHDP Phase-IV on "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



STRIP PLAN - CHOLAPURAM TO THANJAVUR HIGHWAY PROJECT OF NH45 C



Cholapuram Bypass Km:117+600 to 120+000			
Sl No	Description	Unit	Quantity
1.	Culvert	Nos.	1
2.	Minor Bridge	Nos.	06
3.	Major Bridge	Nos.	-
4.	VUP/LVUP	Nos.	-
5.	Grade Separator	Nos.	02

Papanasam Bypass Km:134+000 to 163+600			
Sl No	Description	Unit	Quantity
1.	Culvert	Nos.	45
2.	Minor Bridge	Nos.	46
3.	Major Bridge	Nos.	05
4.	VUP/PUP	Nos.	07
5.	Grade Separator	Nos.	03
6.	ROB	Nos.	01

Widening of Existing Road Km:116+440 to 117+600 Km:120+000 to 134+000 Km:163+600 to 164+275			
Sl No	Description	Unit	Quantity
1.	Culvert	Nos.	57
2.	Minor Bridge	Nos.	07
3.	Major Bridge	Nos.	01
4.	VUP/PUP	Nos.	05
5.	Grade Separator	Nos.	01

LEGEND:

- Major Bridge(MJB)
- Minor Bridge(MB)
- Grade Separated Structure
- ROB
- Vehicle Under Pass (LVUP/VUP)
- Toll Plaza
- Reconstruction of Existing Road
- Bypass/Newconstruction

Salient Features of Project:

Sl No	Description	Unit	Scope
1.	Total Length of Project	Km	47.835
2.	Length of Widening Portion	Km	15.335
3.	Length of Bypass	Km	32.000
4.	Length of service/Slip Road	Km	27.100
5.	Culverts		
	Box Culvert	Nos.	74

Sl No	Description	Unit	Scope
	Slab Culvert	Nos.	29
6.	Minor Bridge	Nos.	59
7.	Major Bridge	Nos.	06
8.	VUP/PUP	Nos.	12
9.	Grade Separated Structure	Nos.	06
10.	ROB	Nos.	01

Sl No	Description	Unit	Scope
11.	Minor Intersection	Nos.	22
12.	Major Intersection	Nos.	20
13.	Bus Bays and Shelters	Nos.	05
14.	Toll Plaza	Nos.	01

Drawing Title

Strip Plan - Cholopuram to Thanjavur Highway Project

Date.	Project No.
30-09-2018	PCTHP/NHAI/TN/001

Table- 01: Details of Project Alignments

Sr. no.	Design Chainage (Km)		Length (Km)	TCS Type	Remarks
	From	To			
1	116.440	117.200	0.760	Type-B (Fig 2.6 of the manual) without service road	Concentric widening
2	117.200	117.900	0.700	Figure 7.8- Grade separator and its approaches with RE wall and both side 7.5 m wide Slip road	
3	117.900	119.600	1.700	Type-A-3 (Fig 2.4 of the manual)	Bypass
4	119.600	120.420	0.820	Figure 7.8- Grade separator and its approaches with RE wall and both side 7.5 m wide Slip road	
5	120.420	122.000	1.580	Type-B (Fig 2.6 of the manual) without service road	Concentric widening
6	122.000	125.300	3.300	Type-A-3 (Fig 2.4 of the manual)	Eccentric widening
7	125.300	125.700	0.400	Type-B (Fig 2.6 of the manual) without service road	Concentric widening
8	125.700	127.700	2.000	Figure 7.8- Grade separator and its approaches with RE wall and both side 7.5 m wide Slip road	
9	127.700	128.300	0.600	Type-B (Fig 2.6 of the manual) without service road	Concentric widening
10	128.300	129.100	0.800	Figure 7.8- Grade separator and its approaches with RE wall and both side 7.5 m wide Slip road	
11	129.100	129.970	0.870	Type-B (Fig 2.6 of the manual) without service road	Concentric widening
12	129.970	130.700	0.730	Figure 7.8- Grade separator and its approaches with RE wall and both side 7.5 m wide Slip road	
13	130.700	131.050	0.350	Type-B (Fig 2.6 of the manual) without service road	Concentric widening
14	131.050	131.850	0.800	Figure 7.8- Grade separator and its approaches with RE wall and both side 7.5 m wide Slip road	
15	131.850	132.100	0.250	Type-A-3 (Fig 2.4 of the manual)	Eccentric widening
16	132.100	133.580	1.480	Type-B (Fig 2.6 of the manual) without service road	Concentric widening

Sr. no.	Design Chainage (Km)		Length (Km)	TCS Type	Remarks
	From	To			
17	133.580	134.800	1.220	Figure 7.8- Grade separator and its approaches with RE wall and both side 7.5 m wide Slip road	
18	134.800	136.000	1.200	Type-A-3 (Fig 2.4 of the manual)	Bypass
19	136.000	136.600	0.600	Figure 7.8- Grade separator and its approaches with RE wall and both side 7.5 m wide Slip road	
20	136.600	138.500	1.900	Type-A-3 (Fig 2.4 of the manual)	Bypass
21	138.500	139.750	1.250	Figure 7.8- Grade separator and its approaches with RE wall and both side 7.5 m wide Slip road	
22	139.750	141.100	1.350	Type-A-3 (Fig 2.4 of the manual)	Bypass
23	141.100	141.800	0.700	Figure 7.8- Grade separator and its approaches with RE wall and both side 7.5 m wide Slip road	
24	141.800	144.450	2.650	Type-A-3 (Fig 2.4 of the manual)	Bypass
25	144.450	145.580	1.130	Figure 7.8- Grade separator and its approaches with RE wall and both side 7.5 m wide Slip road	
26	145.580	147.600	2.020	Type-A-3 (Fig 2.4 of the manual)	Bypass
27	147.600	148.320	0.720	Figure 7.8- Grade separator and its approaches with RE wall and both side 7.5 m wide Slip road	
28	148.320	149.720	1.400	Type-A-3 (Fig 2.4 of the manual)	Bypass
29	149.720	150.450	0.730	Figure 7.8- Grade separator and its approaches with RE wall and both side 7.5 m wide Slip road	
30	150.450	152.700	2.250	Type-A-3 (Fig 2.4 of the manual)	Bypass
31	152.700	153.300	0.600	Toll Plaza	
32	153.300	156.000	2.700	Type-A-3 (Fig 2.4 of the manual)	Bypass
33	156.000	157.350	1.350	Figure 7.8- Grade separator and its approaches with RE wall and both side 7.5 m wide Slip road	
34	157.350	164.275	6.925	Type-A-3 (Fig 2.4 of the manual)	Bypass
		Total Length	47.835		

1.1. Project Overview

Name of Project	Four Laning of Cholopuram-Thanjavur from Km. 116.440 to Km. 164.275 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 Cholopuram-Thanjavur Highway Pvt Ltd, Patel House, Beside Prakruti Resorts, Chanani Road, Vadodara. Gujarat– 391740 Tel: +91-265 277 6678 Fax: +91-265 277 7878
Independent Engineer	M/s. Theme Engineering Services Pvt. Ltd, 8, Thomaiyammal Nagar, 6th Street, R.S College (Post), Thanjavur-613005.
EPC Contractor	M/s. Patel Infrastructure Limited, Patel House, Beside Prakruti Resorts, Chanani 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)	47.835 Kms.
Total Bid Cost	Rs. 1345.60 Crores (as per concession agreement)
Date of Concession Agreement	October 12, 2017
Concession Period	17 Years (Construction Period 2 Years from Appointed date, Operation period 15 years from COD)

Appointed Date	06.09.2018
Construction Period	02 years from Appointed date
Completion Date	04.09.2020
Date of Settlement Agreement No.01	04.03.2021
Date of Settlement Agreement No.02	20.03.2023
Revised Completion Date as per SA	30.06.2024
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	47.835 Kms
Service Road/ Slip Road	13.550 Kms
Major Bridge	06 Nos.
Minor Bridge	56 Nos.
Grade Separate Intersection	06 Nos.
Vehicular Underpass	10 Nos.
Pedestrian Underpass	02 Nos.
Rail-road Bridges	01 Nos
Culverts	103 Nos.
Major Intersections	20 Nos.
Minor Intersections	22 Nos.
Bus Bays	20 Nos.
Rest Area	01 Nos
Toll Plaza	01 Nos.

1.3. Contractual Project Milestones

Following is a listing of the Key Project Milestones:-

Mile Stone	Description	Target Dates as per CA	Dates as per Settlement Agreement Signed on dated 04.03.2021	Revised target dates as per Settlement Agreement Signed on dated 20.03.2023
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.	07th April 2019	➢ 31st May'2021- Total 22.846 Km. four lane to be completed for PCOD-I. ➢ 30th Nov'2021- Total 34.675 Km. four lane to be completed for PCOD-II. ➢ 31st July'2022- Total 46.665 Km. four lane to be completed for PCOD-III. ➢ Balance 1.170 Km. to be de-scoped from the scope of Concessionaire.	➢ 27h Aug'2021- Total 22.846 Km. four lane to be completed for PCOD-I . ➢ 27th Feb'2023- Total 32.500 Km. four lane to be completed for PCOD-II . ➢ 01st June'2023- Total 35.314 Km. four lane to be completed for PCOD-III . ➢ 30th June 2024- Total 47.835 Km four lane to be completed for final completion.
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.	05th August 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.	11th April 2020		
Scheduled Completion	Concessionaire shall have completed Project on 730th day from the Appointed Date.	04th September 2020		

Note:- The Settlement Agreement was signed between Authority and Concessionaire for the completion of 22.846 Kms length by 31.05.2021, and further completion of additional 11.829 Kms length by 30.11.2021 i.e. up to Payment Date of 1st Annuity. The non-workable length/non-handed over length is 13.160 Km as per joint site verification by Concessionaire, IE and NHAI. Out of the total non-workable length/non-handed over length of 13.160 Kms, length equal to 11.990 Kms shall be handed over to the Concessionaire by 31.05.2021 and shall be completed by 31.07.2022. Remaining length of 1.170 Kms (i.e. 13.160 kms -11.990 kms) shall be de-scoped from the scope of work of Concessionaire as per the provision given in Article 16.6 of the Concession Agreement.

However, out of 11.990 Kms, only 2.870 Kms was handed over to the Concessionaire by 31.05.2021. Out of the balance length equal to 9.120 Kms (i.e. 11.990 kms - 2.870 kms), Concessionaire considered 1.599 Kms length as workable length and remaining length equal to 7.521 Kms (i.e. 9.120 kms - 1.599 kms) was under approval of descope proposal at NHAI, HQ in addition to 1.170 Kms which was already descoped from the scope of work of Concessionaire.

The Independent Engineer (IE) also requested to Authority to provide EOT of 105 days for PCOD - 2 & PCOD - 3 on account of 2nd wave of COVID-19 and the request for EOT is also under approval at NHAI, HQ.

The Concessionaire had also requested to Authority/IE for the extension of time for PCOD-2 up to 28.02.2023 and PCOD-3 up to 28.06.2023 due to constraints of issue in obtaining permission for extracting soils from borrow area and also due to interruption in the availability of pond ash.

The Concessionaire had also submitted the proposal for additional descope to Authority/IE in 1.840 Km length in addition to the already proposed descoping of 8.691 Km length due to interruption in the availability of pond ash required for the construction of RE Wall stretches, also due to local villagers were not allowing the concessionaire to continue the construction activities in some stretches and due to presence of existing irrigation canal within the project alignment. Hence, the concessionaire was not able to execute any construction activity in 1.840 Km length up to 31.05.2021 and submitted the proposal of additional descope to Authority/IE.

In line of the submission done by the concessionaire, Independent Engineer has examined both the proposals submitted by the concessionaire and Independent Engineer vide IE letter no. 4896 Dt. 04.11.2022 has recommended both the proposals to PIU, NHAI (i.e. total comprehensive descope proposal in 10.531 Km length (8.691Km+1.84Km) and extension of time proposal for PCOD-02 (completion of 34.675 Km) up to 27.02.2023 and extension of time proposal for PCOD-03 (completion of 37.304 Km duly considering the descope proposal of 10.531 Km length) up to 01.06.2023 for the approval of competent authority.

In line of the recommendation done by IE, PIU NHAI vide letter no. 3152 Dt. 04.11.2022 has also recommended both the proposals to RO, NHAI (i.e. total comprehensive descope proposal in 10.531 Km length (8.691Km+1.84Km) and extension of time proposal for PCOD-02 (completion of 34.675 Km) up to 27.02.2023 and extension of time proposal for PCOD-03 (completion of 37.304 Km duly considering the descope proposal of 10.531 Km length) up to 01.06.2023 for getting the approval from the competent authority.

In line of the recommendation given by PIU, NHAI regarding total comprehensive descope proposal in 10.531 Km length & additional EOT for 200 days, Settlement Agreement has been signed between NHAI (Authority) & PCTHPL (Concessionaire) on dated 20.03.2023 and the following has been finalized between NHAI (Authority) & PCTHPL (Concessionaire):-

1. The cumulative length for the completion of PCC-2 has been revised from 34.675 Km to 32.500 Km due to local public not allowing the concessionaire to execute the construction activities & demanding for the construction of additional scope of work and hence the same need to be considered under the proposal of change of scope.

2. The cumulative length for the completion of PCC-3 has been revised from 37.304 Km (duly considering the descope proposal of 10.531 Km length) to 35.314 Km due to local public not allowing the concessionaire to execute the construction activities & demanding for the construction of additional scope of work and hence the same need to be considered under the proposal of change of scope.

3. It was acknowledged by both the parties i.e. NHAI (Authority) & PCTHPL (Concessionaire) that 100% encumbrance free land is now available for the completion of entire project. Hence, from the project completion point of view, the descope length (i.e. 10.531 Km) & the length affected due to additional change of scope (i.e. 1.99 Km) has been considered for PCC-4 and the target date finalized for the completion of PCC-4 (i.e. 10.531 Km + 1.99 Km = 12.521 Km) is 30.06.2024.

Status of Progress of Work as per Settlement Agreement signed on Dated 20.03.2023:-

Sr. No.	Description	Target Length & Date	Tentative BPC	Achieved as on date	Remarks
1	PCC-01	Completion of 22.846 kms by 27.08.2021	605.62 Cr.	72.32%	Presently, Work is in Progress in the PCC-04 Stretches by concessionaire.
2	PCC-02	Completion of 32.500 kms by 27.02.2023	898.19 Cr.		
3	PCC-03	Completion of 35.314 kms by 01.06.2023	987.68 Cr*		
4	PCC-04	Completion of 47.835 kms by 30.06.2024	1345.60 Cr*		
*NOTE:- Approximate amount mentioned for PCC-03 & PCC-04. The revised BPC would be derived for PCC-03 & PCC-04 and accordingly the subsequent payment would be paid to the concessionaire.					

1. IE vide letter no. 987 dated 02.11.2021 has issued the Provisional Completion Certificate-1 (PCC-1) for the completion of 22.846 Kms w.e.f. 27.08.2021.

2. IE vide letter no. 1438 dated 16.06.2023 has issued the Provisional Completion Certificate-2 (PCC-2) for the completion of 32.500 Kms w.e.f. 18.02.2023.

3. Concessionaire vide letter no. 1949 dated 25.05.2023 has informed to IE that the scheduled target for PCC-3 stretches will be achieved by the concessionaire as per the provisions defined in the settlement agreement signed on dated 20.03.2023 and also intimated to IE for conducting the necessary tests in the PCC-3 Stretches. However, necessary testing is under progress at site in the completed PCC-3 Stretches.

1.4. Payment milestone during Construction Period

Payment Milestone	Eligibility Criteria	Payment Amount (Rs.)
Milestone-I	On Achievement of 10% of Physical Progress	107.65 Crs.
Milestone-II	On Achievement of 30% of Physical Progress	107.65 Crs.
Milestone-III	On Achievement of 50% of Physical Progress	107.65 Crs.
Milestone-IV	On Achievement of 75% of Physical Progress	107.65 Crs.
Milestone-V	On Achievement of 90% of Physical Progress	107.65 Crs.

1.5. Permits & Approvals

Sr. No.	Details	Authority	Current Status	Remarks
1	Extraction of Boulders from Quarries	Dist. Mining Officer	Obtained	
2	Installation of Crusher	Village Panchayat Head	Obtained	
3	-----D O------	Pollution Control Board	Obtained	
4	Use of Explosives	Dist. Collector	Obtained	
5	Labour License	Labour Commissioner	Obtained	
6	Environmental Clearance		NA	
7	Trees Cutting Permission	Forest department through NHAI	Obtained	
8	Electric Poles Shifting	Tamil Nadu Electricity Board	Obtained	Work is in Progress
9	Water Pipes Shifting	Tamil Nadu Water Supply and Drainage Board	Obtained	Work is in Progress
10	Drawing Water from river/ reservoir	-	NA	-

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
(i) Full Right of Way (full width)				
Stretch	116.440 to 117.600	1.160	30	Within 15 (Fifteen) days from the date of Agreement.
Stretch	117.600 to 120.000	2.400	60	
Stretch	120.000 to 134.000	14.000	30	
Stretch	134.000 to 164.275	30.280	60	
Total Length		47.835		

Balance Right of way (width)				
	Design Chainage (Km)	Design Length (Km)	Width (m)	
Stretch	116.440 to 117.600	1.160	30	Within 90 (Ninety) days of the Appointed date
Stretch	120.000 to 120.340	0.34	20	
Stretch	124.700 to 126.100	1.40	20	
Stretch	126.700 to 127.655	0.95	20	
Stretch	130.600 to 134.000	3.40	20	
Total Length		7.250		

Besides this, the Authority has to acquire additional land at Toll plaza location, Bus bays/Bus Shelter, turning radius at Minor & Major junctions. The location of Bus bays/Bus Shelter as per Schedule C of Concession Agreement & Finalized by IE is given below in the tabular form:-

Sr. No.	Design Chainage	Side	Remarks
1	116.487	Both Hand Side	
2	116.860	Both Hand Side	
3	117.460	Both Hand Side	
4	120.600	Both Hand Side	
5	121.250	Both Hand Side	
6	121.630	Both Hand Side	
7	123.200	Both Hand Side	
8	123.850	Both Hand Side	
9	125.500	Both Hand Side	
10	126.100	Both Hand Side	
11	127.330	Both Hand Side	
12	128.715	Both Hand Side	
13	130.349	Both Hand Side	
14	131.750	Both Hand Side	
15	133.240	Both Hand Side	
16	134.010	Both Hand Side	
17	136.307	Both Hand Side	
18	145.165	Both Hand Side	

19	157.188	Both Hand Side	
20	163.620	Both Hand Side	

The status of compensation disbursement for Land & Structure is as below:-

Table 2.1-2:Compensation disbursement for land

Sr. No.	Name of the District	Total No. of Land cases	Amount paid (in Nos.)	Balance to be Paid (in Nos.)	Remarks
1	Thanjavur	1467	1467	0	
	Total in Nos.	1467	1467	0	
	Total in %		100%	0	

Table 2.1-3 - Compensation disbursement for Structures

Sr. No.	Name of the District	Total No. of structures	Amount paid (in Nos)	Balance to be Paid (in Nos)	Remarks
1	Thanjavur	813	813	0	
	Total in Nos	813	813	0	
	Total in %		100%	0	

2.2. Removal of Religious Structures

The following structures coming within the ROW are required 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	Thanjavur	13	10	3 (125+670-RHS 126+870-RHS 133+180-LHS)
Note: Pending for disbursement of payment to the Religious structures.				

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

Sl. No	Name of the District	Chainages			Total Number of Estimates	Remarks
		From	To	Length in Km		
1	Thanjavur	116+440	164+275	47.835	32	Work is in Progress

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

Sl. No	Name of the District	Chainages			Number of Estimates	Present Status	Remarks
		From	To	Length in Km			
1	Thanjavur	116+440	164+275	47.835	20	Work Completed	
2	Thanjavur	116+440	164+275	47.835	6	Work is in progress	

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 (including DI and PVC lines)	Kms.	34.950	13.200	21.750	Work is in Progress
2	BDO of Concern Union	Hand Pump/Pump Room with Bore well	Nos.	16	3	13	
3	BDO of Concern Union	Over Head Tank	Nos.	2	2	0	Completed
4	TNEB	Electrical Lines	Kms.	19.215	16.800	2.415	Work is in Progress

2.4. Tree felling

Table 2.4-1: Status of Tree felling

Sl. No.	Name of the District	Chainages			Effected Length in Kms	Total No. of Trees	Felled/ Removed as on Date	Balance no. of Trees	Remarks
		From	To	Length in Km					
1	Thanjavur	116+440	164+275	47.835	15.310	1461	1461	0	
2	Thanjavur	116+440	164+275	47.835	-	508	508	0	Teak Wood trees
			Total	47.835					

3.1. Pre-Construction Activities

Detailed Design & Drawings

The Plan and Profile, as well as the Pavement Design for the entire 47.835 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 Highway Design and Drawings as per concession agreement

Sl. No.	Description	Unit	Total Scope as per Sch.-B	Design/ Drawings submitted	Design/ Drawings Approved
1	Pavement Design	Km	47.835	47.835	47.835
2	Plan & Profile	Km	47.835	47.835	47.835
3	Typical Cross Sections	Type	5	5	-
4	Major Intersections	No	20	9	1
5	Minor Intersections	No	22	2	-
6	Toll Plaza	No	01	01	01
7	Rest Area	No	02	01	01
8	Bus Bay	No	20	20	20
9	Service Roads	No	27.10	26.97	26.97

Table 3.1-2 : Status of Structure Design and Drawings as per concession agreement

Sr. No	Description	Unit	Total Scope as per Sch. B	Design/ Drawings Submitted	Design/ Drawings Approved
1	Major Bridges	No	05	03	03
2	Minor Bridges	No	56	56	53
3	Grade Separated Intersection	No	06	06	06
4	VUP/PUP	No	12	12	12
5	Box /Slab Culvert	No	103	103	103
6	ROB	No	01	01	Structural drawing approved

Table 3.1-3: Status of Structure Design and Drawings additionally included under Positive Change of Scope due to demand of local public

Sr. No.	Location	Type of Structure	Unit	Design/ Drawings Submitted	Design/ Drawings Approved
1	118+730	LVUP	Nos	01	01
2	131+750	BOX CULVERT	Nos	01	-
3	147+430	PUP	Nos	01	-
4	153+940	LVUP	Nos	-	-

4.1. Physical Progress of Work

The following table summarize the quantum of work achieved towards the construction of the various elements of the highway.

The Progress of the Major works carried out at the Site till the month of July 2023 is as follows.

CUMULATIVE STATEMENT

For Main Carriageway

Sr. No.	Description	Total Length of Project (in. Km.)	Progress up to Previous Report (in Km)	Progress during this Report (In Km.)	Cumulative Progress Achieved up to this Report (In Km)	In Progress (In Km.)	Balance Length to be Completed	Cumulative % of Progress Achieved
1	Clearing and Grubbing							
	LHS	47.835	47.190	0.000	47.190	0.000	0.645	98.65%
	RHS	47.835	47.190	0.000	47.190	0.000	0.645	98.65%
2	Embankment Top							
	LHS	47.835	37.340	1.225	38.565	4.300	9.270	80.62%
	RHS	47.835	37.190	1.735	38.925	4.150	8.910	81.37%
3	Subgrade Top							
	LHS	47.835	37.130	1.285	38.415	0.150	9.420	80.31%
	RHS	47.835	37.170	1.495	38.665	0.260	9.170	80.83%
4	GSB/ Cement Treated Sub-Base							
	LHS	47.835	36.630	1.215	37.845	0.000	9.990	79.12%
	RHS	47.835	36.755	1.575	38.330	0.000	9.505	80.13%
5	Wet Mix Macadam							
	LHS	47.835	36.480	1.355	37.835	0.000	10.000	79.09%
	RHS	47.835	36.575	1.415	37.990	0.000	9.845	79.42%
6	Dense Bituminous Macadam							
	LHS	47.835	36.470	1.355	37.825	0.000	10.010	79.07%
	RHS	47.835	36.470	1.165	37.635	0.000	10.200	78.68%
7	Bituminous Concrete							
	LHS	47.835	36.450	0.670	37.120	0.000	10.715	77.60%
	RHS	47.835	36.450	0.670	37.120	0.000	10.715	77.60%

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 Top	27.100	11.020	0.240	11.260	0.000	15.840	41.55%
2	Sub grade Top	27.100	11.020	0.240	11.260	0.000	15.840	41.55%
3	GSB/ Cement Treated Sub Base	27.100	10.440	0.030	10.470	0.000	16.630	38.63%
4	Wet Mix Macadam	27.100	10.430	0.030	10.460	0.000	16.640	38.60%
5	Dense Bitumen Macadam	27.100	10.420	0.000	10.420	0.000	16.680	38.45%
6	Bituminous Concrete	27.100	8.680	0.350	9.030	0.000	18.070	33.32%

For Structure Work

Sr. No.	Type of Structure	Total No. of Structures	No. of Structures					
			Completed up to previous Report	Completed during this Report	Completed up to this Report	In Progress	Balance	Remarks
1	Culvert	103	92.775	1.225	94.000	8.000	1.00	
2	Pedestrian Underpass (PUP)	2	2	0	2	0	0	
3	Vehicular Under Pass (VUP)	10	9.00	0	9.00	0	1.00	Balance 1 No. has been included under Negative COS.
4	Minor Bridges (MNB)	56	49.50	0.25	49.75	4.25	2.00	Balance 2 Nos. has been included under Negative COS.
5	Major Bridges (MJB)	5	3.00	0	3.00	0	2.00	Balance 2 Nos. will be constructed as minor bridge as there is no requirement for Major Bridge as per site condition and the same will be considered under COS.
6	Flyover	6	6	0	6	0	0	
7	ROB	1	1.00	0	1.00	0	0	

The Physical Progress of the Project up to the month of July 2023 as per the weightages finalized in the approved Schedule G is given below:-

Item	Stage for Payment	Unit	Qty.	Weightage in percentage to Contract Price	Progress Achieved upto July'2023		Remarks
					Quantity	Physical Progress (%)	
Road works including culverts, minor bridges, underpasses, overpasses, approaches to ROB/ RUB/ Major Bridges/ Structures (but excluding service roads)	A- Widening and strengthening of existing road						
	(1) Earthwork up to top of the sub-grade	Km.	28.70	4.26%	20.124	2.985%	
	(2) Granular work (sub-base, base, shoulders)						
	(a) GSB/ Cement Treated Base	Km.	28.70	1.40%	19.694	0.962%	
	(b) WMM/ Cement Treated Base	Km.	28.70	2.10%	19.344	1.415%	
	(3) Shoulders	Km.	7.10	0.03%	7.10	0.030%	
	(4) Bituminous work						
	(a) DBM	Km.	28.70	1.61%	19.214	1.076%	
	(b) BC	Km.	28.70	1.48%	17.994	0.930%	
	(5) Rigid Pavement						
	Concrete Work	Km.					
	(6) Widening and Repair of Culverts	Nos.	33	0.57%	31.650	0.548%	
	(7) Widening and Repair of Minor Bridges	Nos.	3	0.38%	2.850	0.362%	
	B- New realignment/bypass						
	(1) Earthwork up to top of the sub-grade	Km.	63.33	16.30%	53.074	13.664%	
	(2) Granular work (sub-base, base, shoulders)						
	(a) GSB/ Cement Treated Base	Km.	62.13	3.39%	51.839	2.833%	
	(b) WMM/ Cement Treated Base	Km.	62.13	3.83%	51.839	3.194%	
	(3) Shoulders	Km.	48.19	0.10%	45.350	0.094%	
	(4) Bituminous work						
	(a) DBM	Km.	62.13	3.48%	51.604	2.890%	
	(b) BC	Km.	62.13	3.21%	51.604	2.668%	
	(5) Rigid Pavement						
	Concrete Work	Km					
	C- New culverts, minor bridges, underpasses, overpasses on existing road, realignments, bypasses:						
	(1) Culverts	Nos.	70	5.95%	62.050	5.270%	
	(2) Minor bridges						
	(i) Foundation	Nos.	170	6.71%	131.00	5.172%	
	(ii) Substructure	Nos.	270	3.50%	221.00	2.861%	
	(iii) Superstructure (including crash barrier etc. complete)	Nos.	142	3.78%	103.00	2.739%	
	(3) Cattle/Pedestrian underpasses						

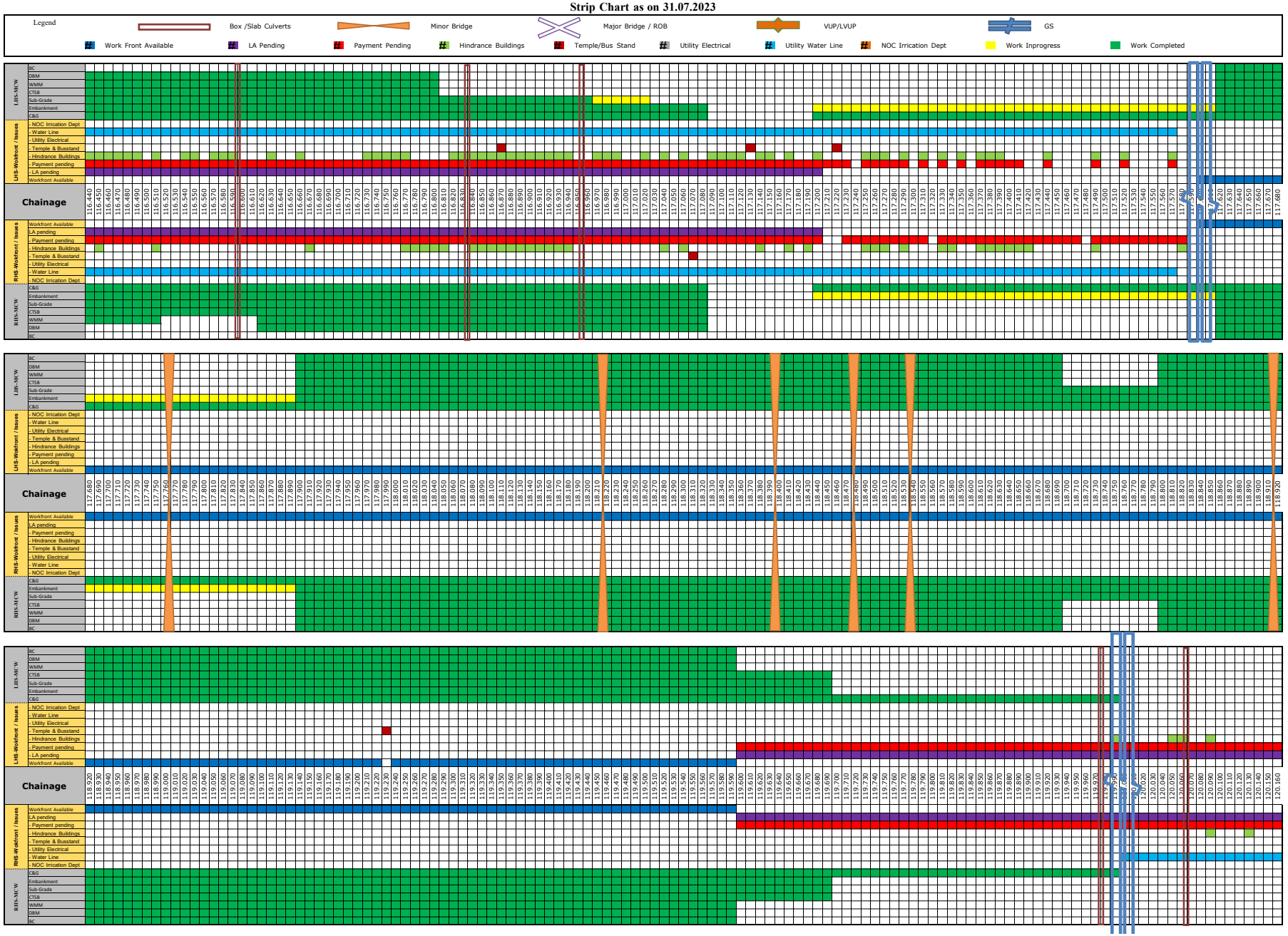
	(i) Foundation	Nos.	4	0.15%	4.00	0.150%	
	(ii) Substructure	Nos.	8	0.08%	8.00	0.084%	
	(iii) Superstructure (including crash barrier etc. complete)	Nos.	4	0.06%	3.70	0.052%	
	(4) Pedestrian overpasses						
	(i) Foundation	Nos.					
	(ii) Substructure	Nos.					
	(iii) Superstructure (including crash barrier etc. complete)	Nos.					
	(5) Grade separated structures						
	(a) Underpass (10 VUP)						
	(i) Foundation	Nos.	40	2.50%	36.00	2.249%	
	(ii) Substructure	Nos.	40	0.91%	36.00	0.818%	
	(iii) Superstructure (including crash barrier etc. complete)	Nos.	20	1.14%	16.05	0.912%	
	(c) Vehicular Overpass (VOP)						
	(i) Foundation	Nos.					
	(ii) Substructure	Nos.					
	(iii) Superstructure (including crash barrier etc. complete)	Nos.					
	(c) Flyover						
	(i) Foundation	Nos.	24	2.25%	24.00	2.250%	
	(ii) Substructure	Nos.	24	0.82%	24.00	0.818%	
	(iii) Superstructure (including crash barrier etc. complete)	Nos.	12	1.02%	10.65	0.908%	
Major Bridge works and ROB/ RUB	Major Bridge works and ROB/RUB						
	A- Widening and Repair of Minor Bridges						
	(1) Foundations						
	(a) Open Foundation	Nos.					
	(b) Pile foundation/ well foundation	Nos.					
	(2) Substructure	Nos.					
	(3) Superstructure (including crash barrier etc. complete)	Nos.					
	C- New Major Bridges						
	(1) Foundations						
	(a) Open Foundation	Nos.					
	(b) Pile foundation/ well foundation	Nos.	76	2.17%	50.00	1.431%	
	(2) Substructure	Nos.	76	1.23%	50.00	0.810%	
	(3) Superstructure (including crash barrier etc. complete)	Nos.	62	1.50%	37.50	0.905%	
	D- New rail-road bridges						
	(a) ROB						
	(i) Foundation	Nos.	8	1.50%	8.00	1.500%	
	(ii) Substructure	Nos.	8	0.80%	8.00	0.800%	
	(iii) Superstructure (including crash barrier etc. complete)	Nos.	6	1.49%	5.10	1.264%	

Structures (elevated sections, reinforced earth)	Structures (elevated sections, reinforced earth)						
	(1) Foundation	Nos.					
	(2) Substructure	Nos.					
	(3) Superstructure (including crash barrier etc. complete)	Nos.					
	(4) Reinforced earth Wall (includes Approaches of ROB, Underpasses, Overpasses,Flyover etc)						
	(a) Construction of RS Wall Facia	Sqm.	179469	7.52%	67,434.95	2.825%	
Other Works	Other Works						
	(i) Service roads/ Slip Roads	Km	27.1	3.86%	9.030	1.288%	
	(ii) Toll Plaza	Nos.	1	1.38%			
	(iii) Road side drains	Km	12.08	1.64%	3.129	0.424%	
	(iv) Road signs, markings, km stones, safety devices, ...						
	(a) Road signs, markings, km stones, ...	Km	95.67	2.02%	70.628	1.492%	
	(b) Concrete Crash Barrier/ W-Beam Crash Barrier in Road work	Km					
	(i) Concrete Crash Barrier	Km	25.42	2.01%	9.144	0.725%	
	(ii) W-Beam Crash Barrier	Km	32.75	0.70%	20.940	0.449%	
	(v) Project facilities						
	(a) Bus Bays	No.	20	0.01%	3.00	0.001%	
	(b) Truck Lay-byes	No.					
	(b) Rest areas	No.	2	0.22%			
	(vi) Repairs to bridges/structures	Nos.	4	0.01%			
	(vii) Road side plantation	Km	22.54	0.60%	15.460	0.410%	
	(viii) Protection works						
	(a) Boulder pitching on slopes	Km	32.75	0.19%	11.340	0.065%	
	(b) Toe/Retaining wall	Km					
	(x) Miscellaneous	Ls.	100%	0.150%			
	Total			100.00%		72.32%	

Four Laning of Cholopuram to Thanjavur from Km. 116.440 to Km. 164.275 Section of NH45C in the state of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode.

Cholopuram - Thanjavur Road Project

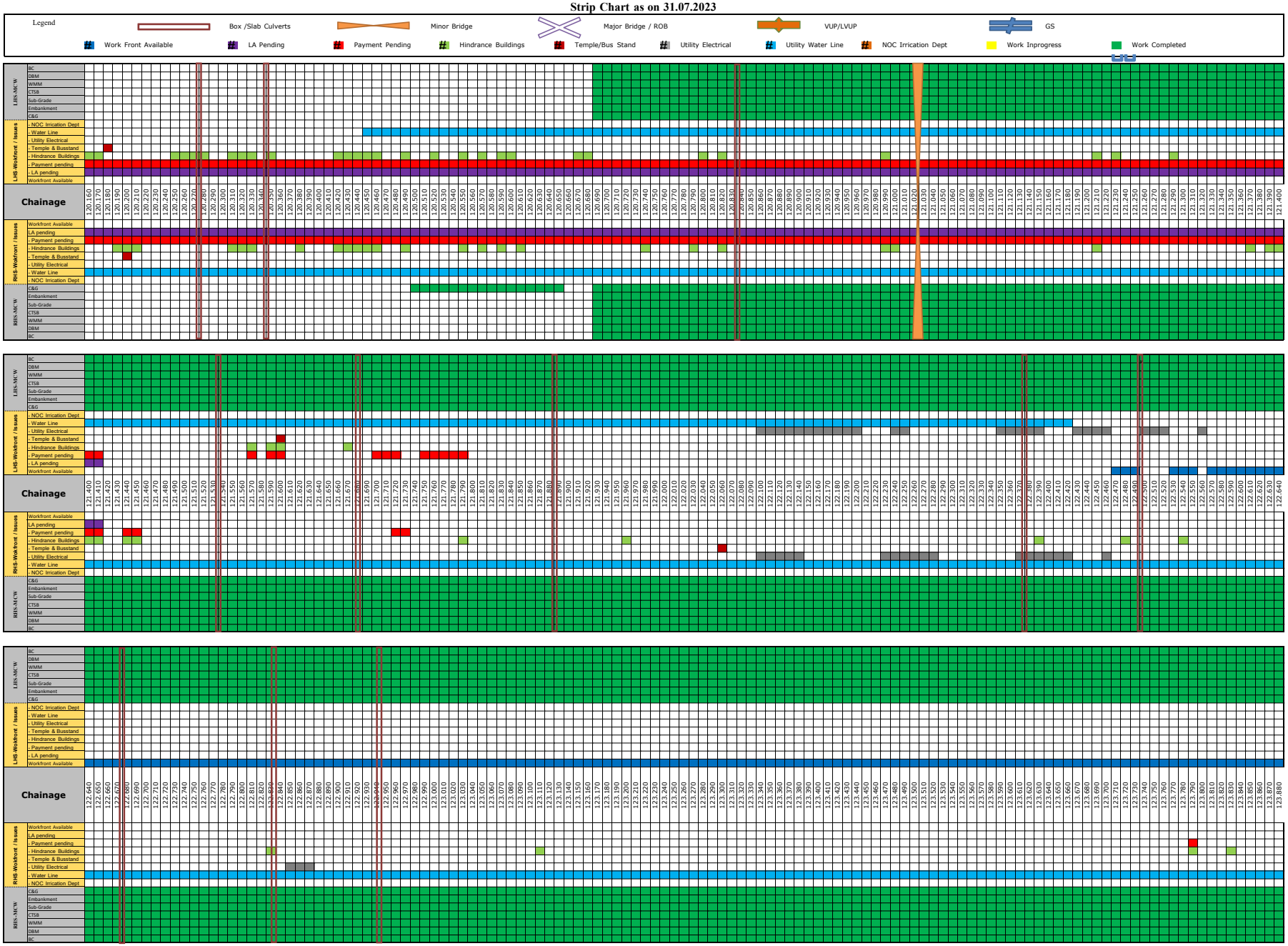
Strip Chart as on 31.07.2023



Four Laning of Cholopuram to Thanjavur from Km. 116.440 to Km. 164.275 Section of NH45C in the state of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode.

Cholopuram - Thanjavur Road Project

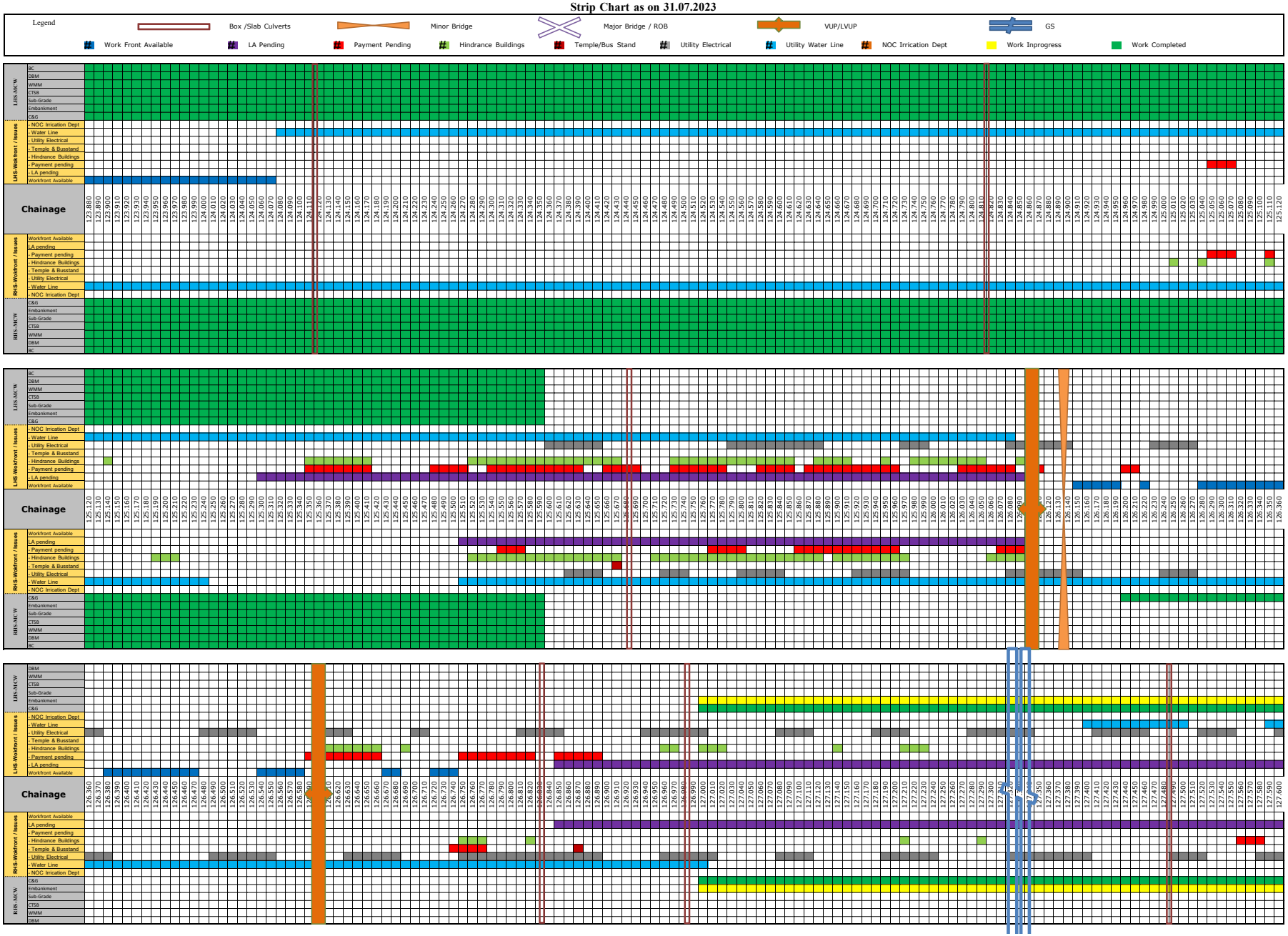
Strip Chart as on 31.07.2023



Four Laning of Cholopuram to Thanjavur from Km. 116.440 to Km. 164.275 Section of NH45C in the state of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode.

Cholopuram - Thanjavur Road Project

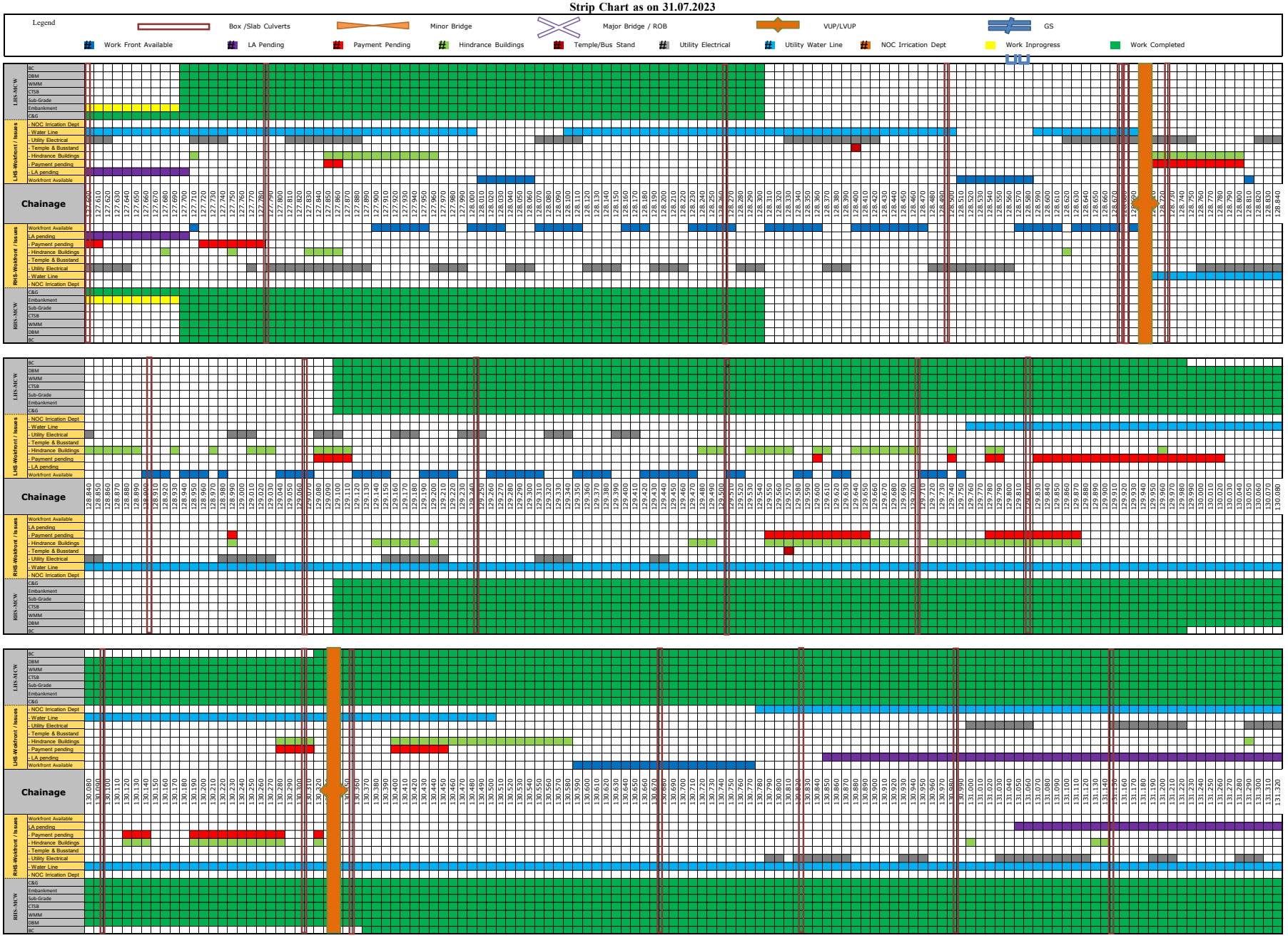
Strip Chart as on 31.07.2023



Four Laning of Cholopuram to Thanjavur from Km. 116.440 to Km. 164.275 Section of NH45C in the state of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode.

Cholopuram - Thanjavur Road Project

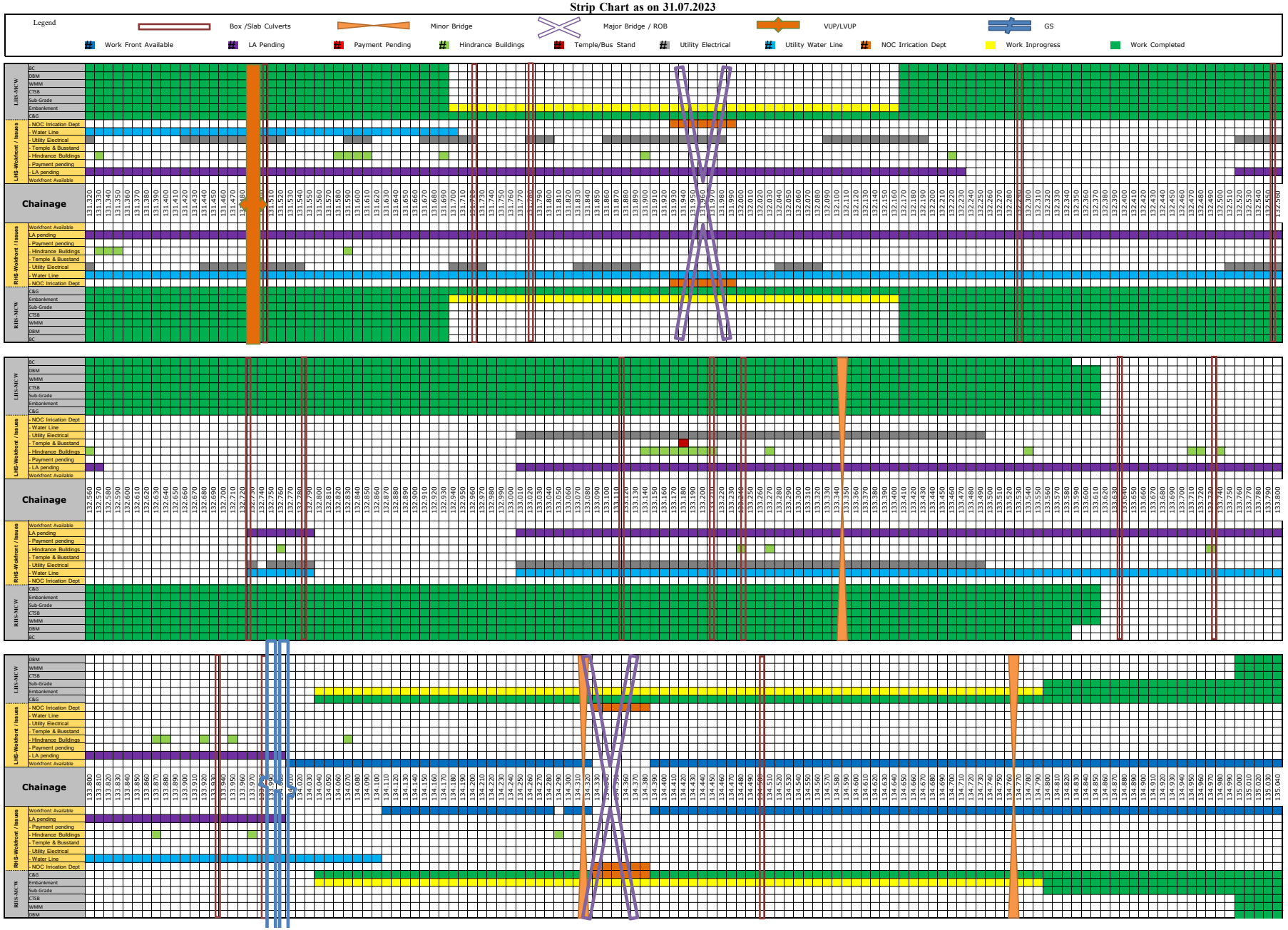
Strip Chart as on 31.07.2023



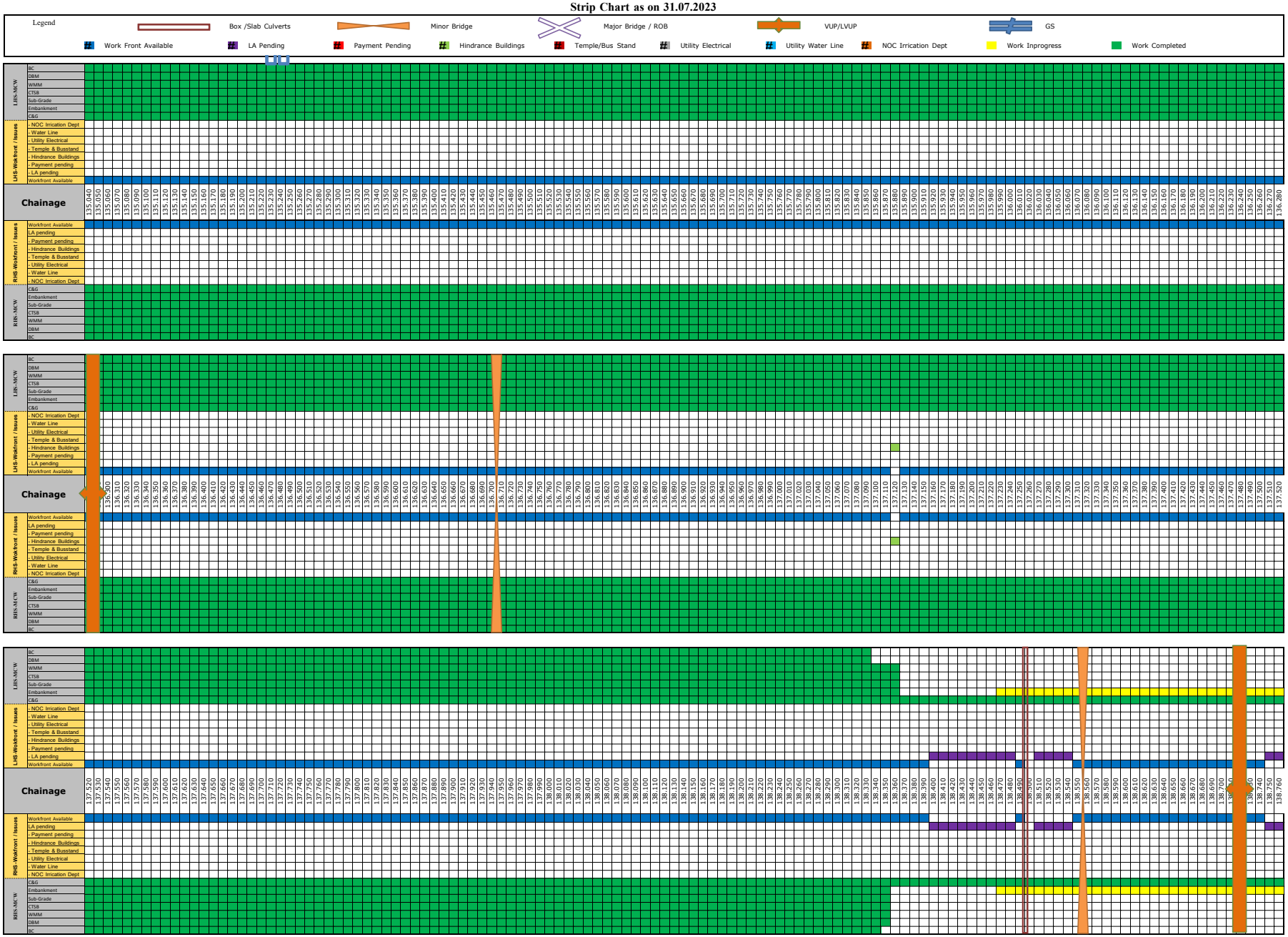
Four Laning of Cholopuram to Thanjavur from Km. 116.440 to Km. 164.275 Section of NH45C in the state of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode.

Cholopuram - Thanjavur Road Project

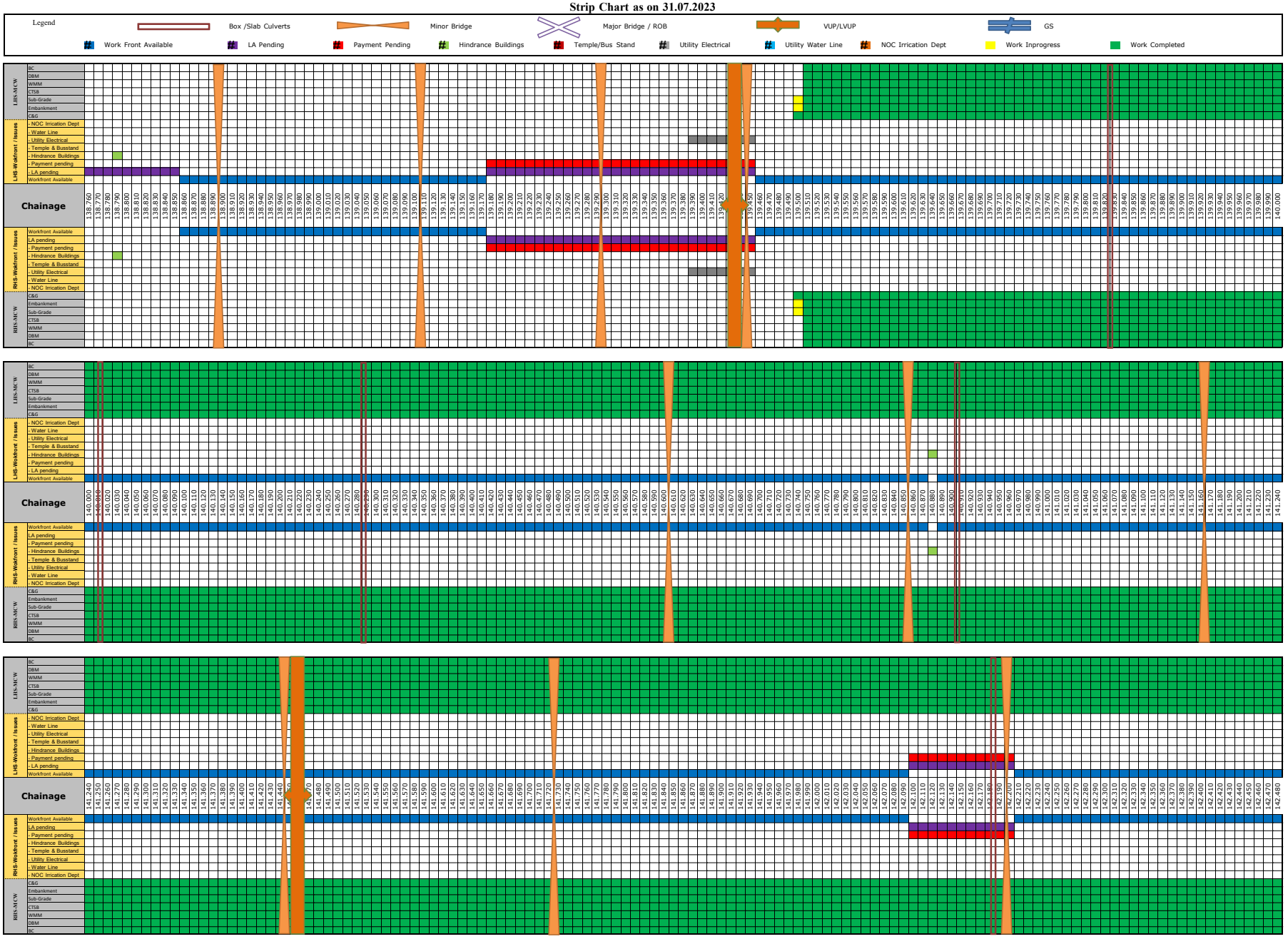
Strip Chart as on 31.07.2023



Strip Chart as on 31.07.2023



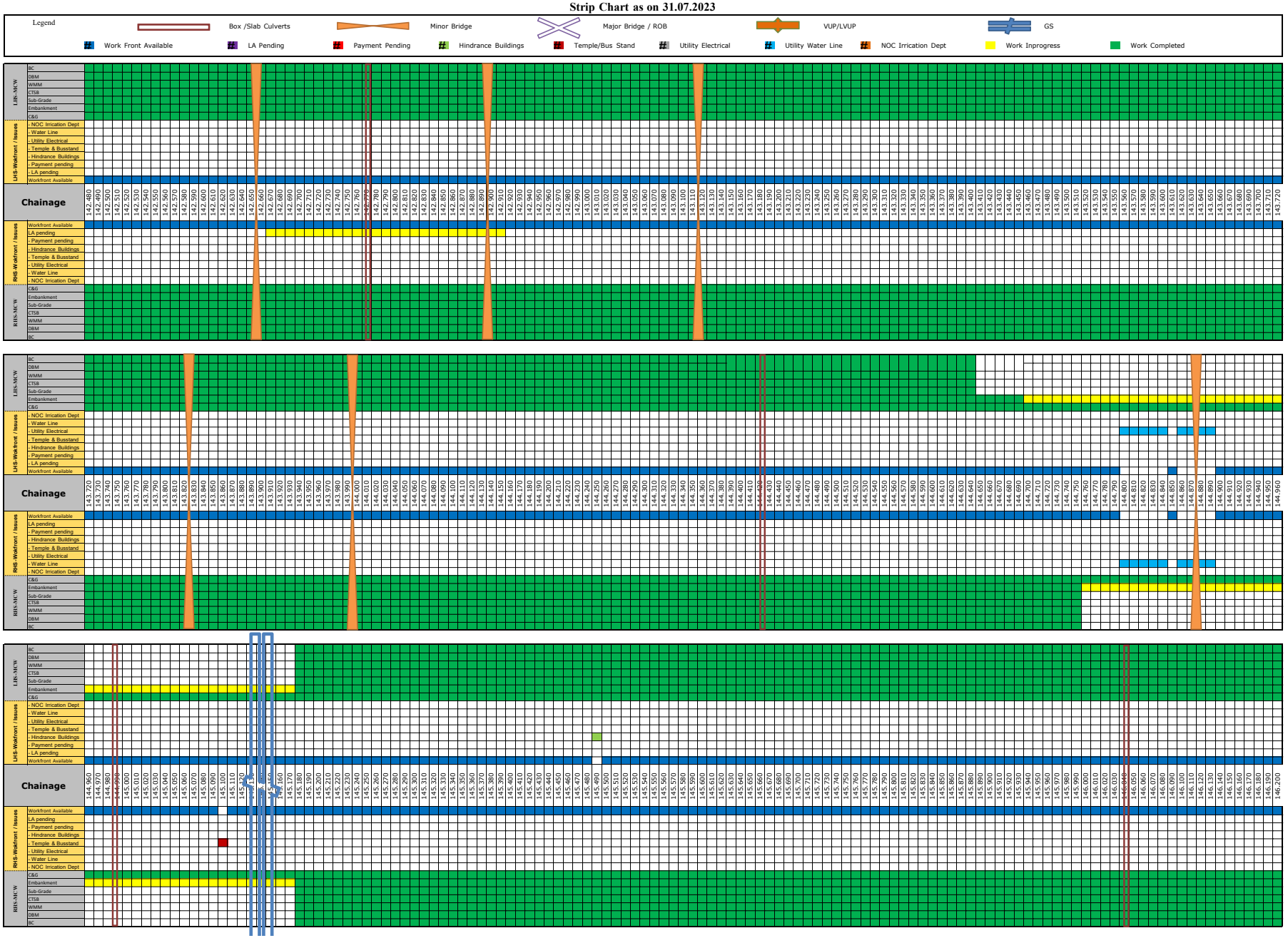
Strip Chart as on 31.07.2023



Four Laning of Cholopuram to Thanjavur from Km. 116.440 to Km. 164.275 Section of NH45C in the state of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode.

Cholopuram - Thanjavur Road Project

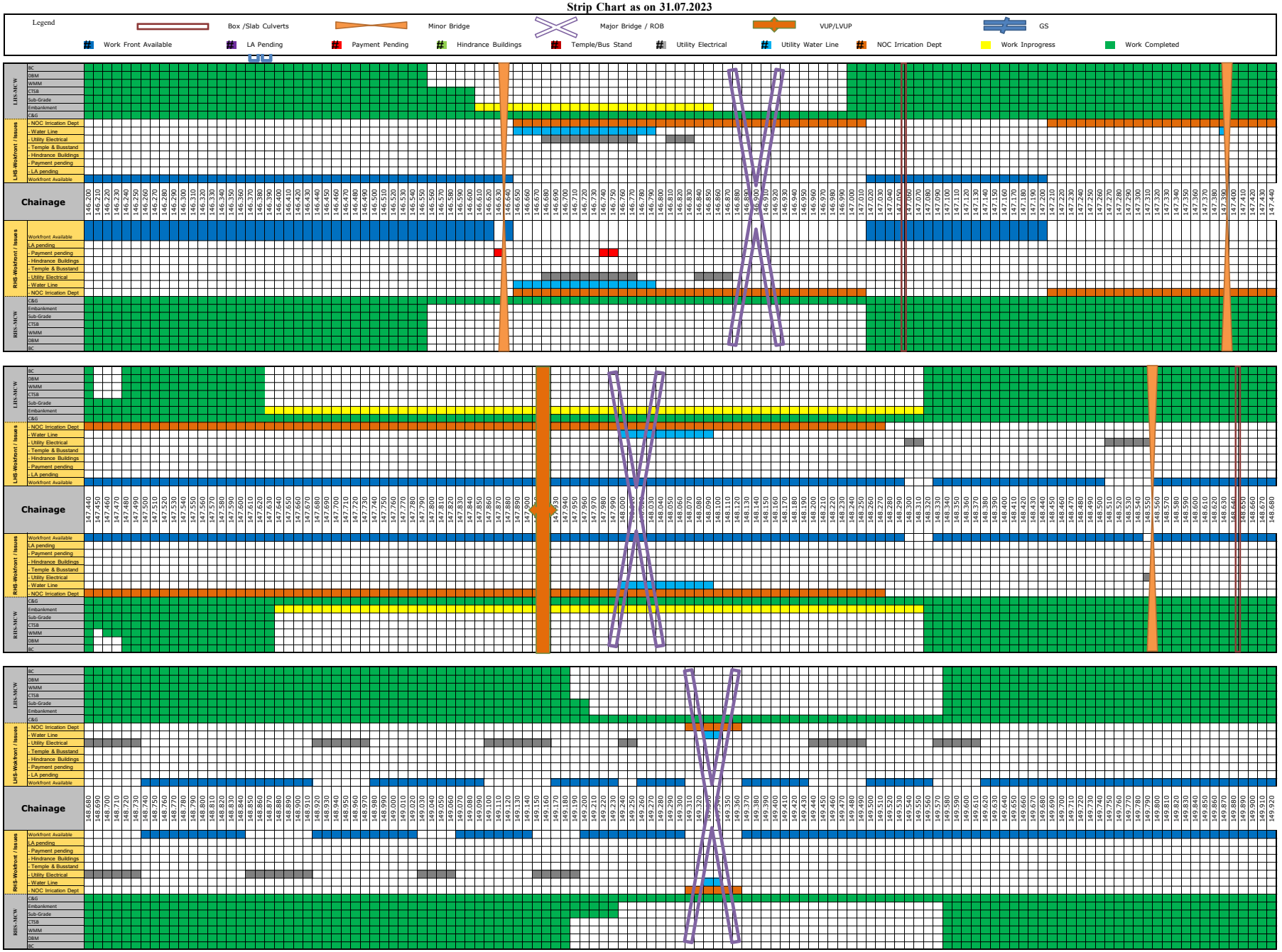
Strip Chart as on 31.07.2023



Four Laning of Cholopuram to Thanjavur from Km. 116.440 to Km. 164.275 Section of NH45C in the state of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode.

Cholopuram - Thanjavur Road Project

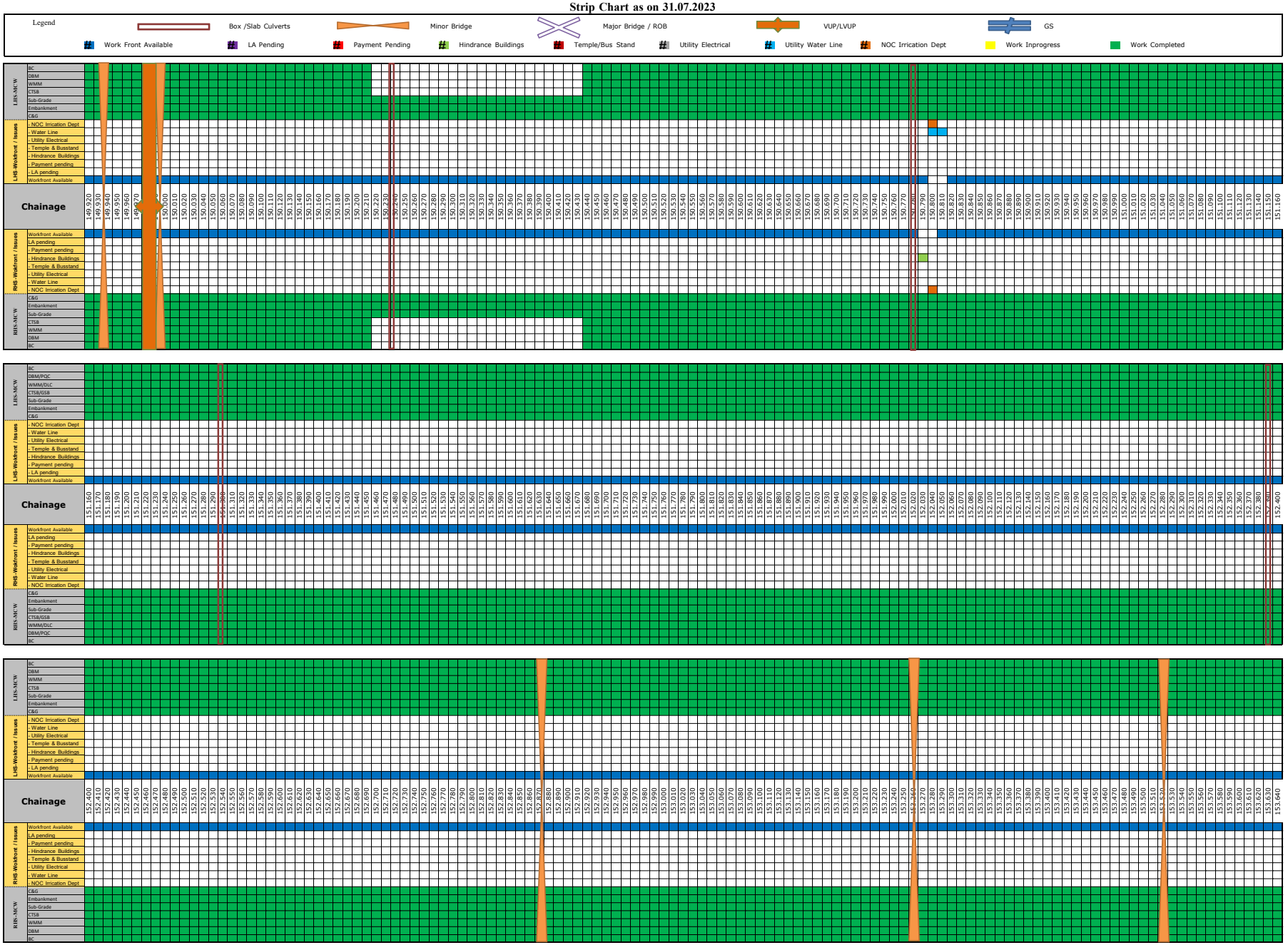
Strip Chart as on 31.07.2023



Four Laning of Cholopuram to Thanjavur from Km. 116.440 to Km. 164.275 Section of NH45C in the state of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode.

Cholopuram - Thanjavur Road Project

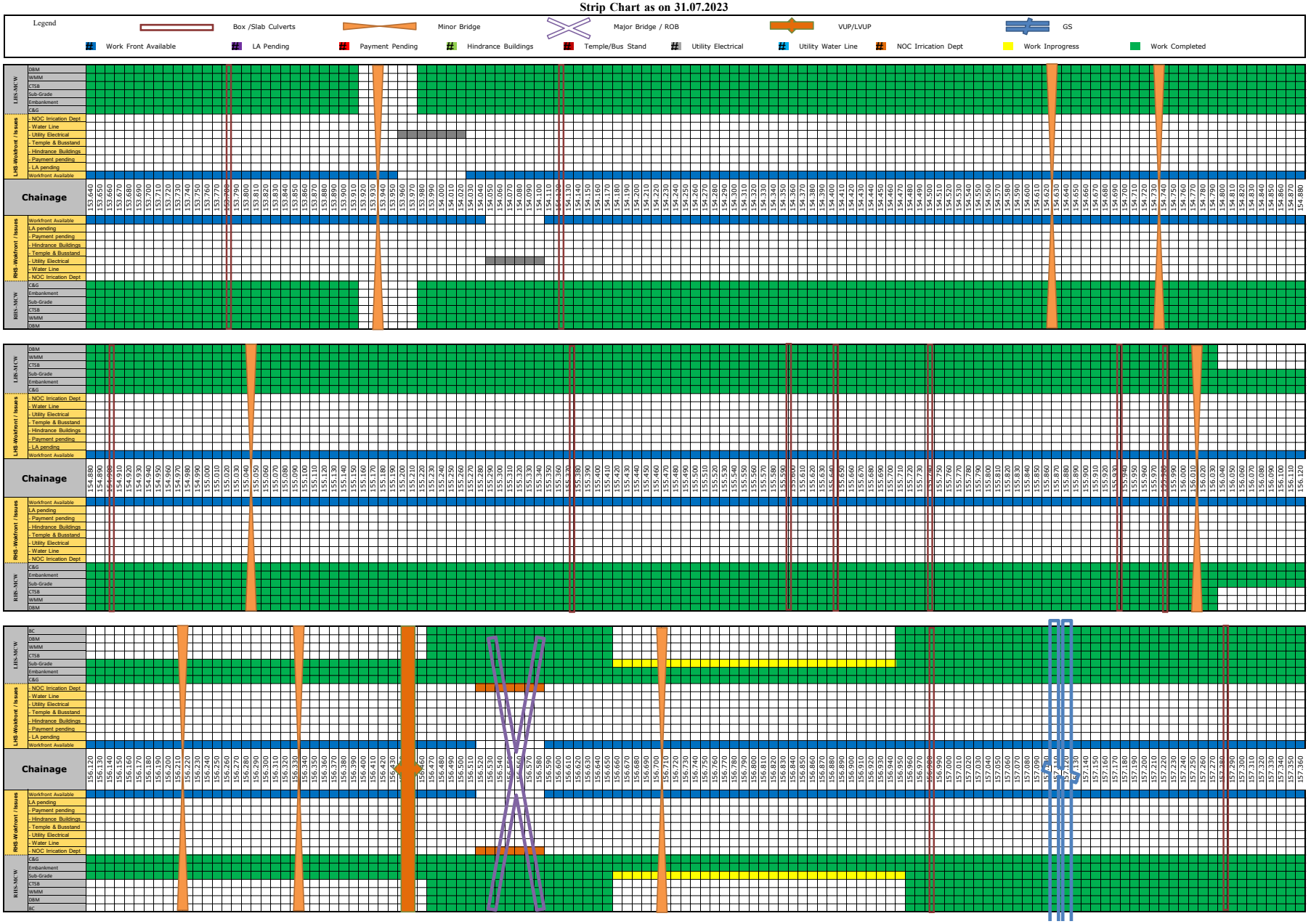
Strip Chart as on 31.07.2023



Four Laning of Cholopuram to Thanjavur from Km. 116.440 to Km. 164.275 Section of NH45C in the state of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode.

Cholopuram - Thanjavur Road Project

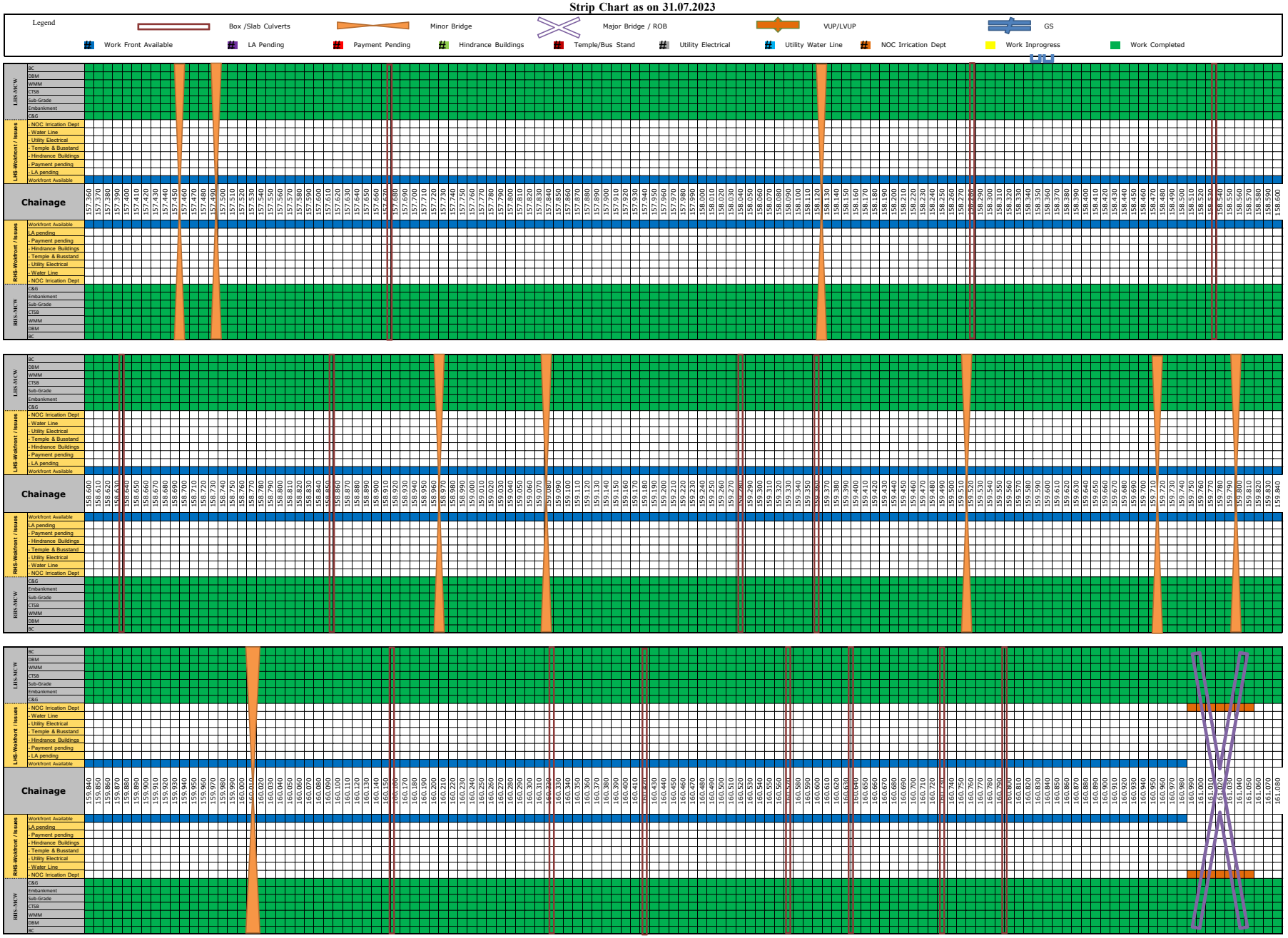
Strip Chart as on 31.07.2023



Four Laning of Cholopuram to Thanjavur from Km. 116.440 to Km. 164.275 Section of NH45C in the state of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode.

Cholopuram - Thanjavur Road Project

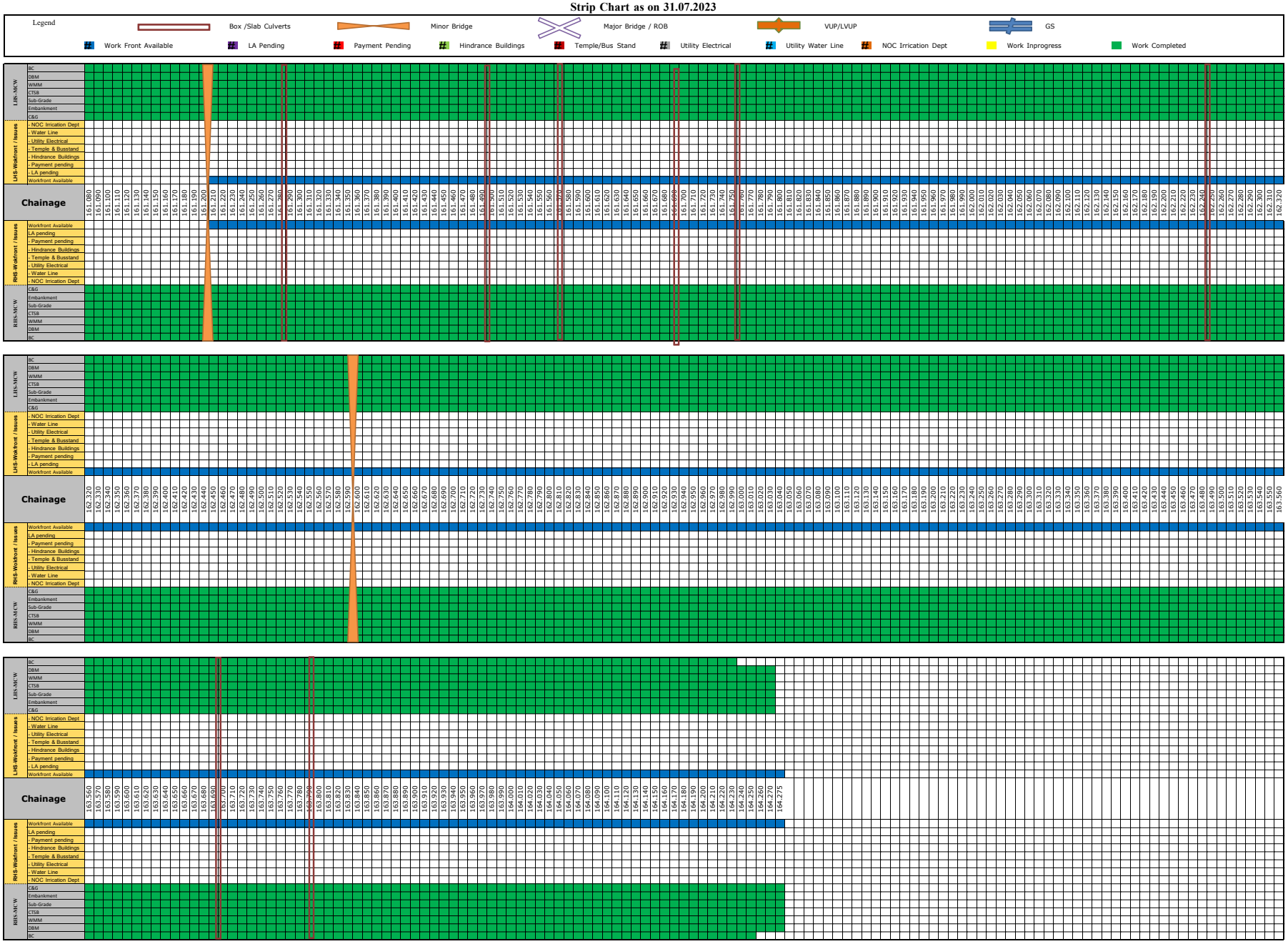
Strip Chart as on 31.07.2023



Four Laning of Cholopuram to Thanjavur from Km. 116.440 to Km. 164.275 Section of NH45C in the state of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode.

Cholopuram - Thanjavur Road Project

Strip Chart as on 31.07.2023



Four Laning of Cholopuram to Thanjavur from Km.116.440 to Km.164.275 Section of NH45C in the state of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode

Table 4.3 - 1 : Strip Chart for status of Box Culverts on Existing Road (Main Carriageway)

IN PROGRESS

COMPLETED

MPR JULY 2023

Sr. No.	Design Chainage As per CA	Revised Design Chainage	Number and Length of Spans (m)	Type of Construction	Type of Existing Structure	LHS								RHS							
						Protection Work	Return Wall & Parapet	Slab	Wall	Raft	PCC	Granular Filling	Excavation	Excavation	Granular Filling	PCC	Raft	Wall	Slab	Return Wall & Parapet	Protection Work
1	116.602	116.612	1 x 2.0m	Widening	Slab Culvert																
2	116.837	116.846	1 x 2.0m	Widening	Slab Culvert																
3	116.954	116.963	1 x 1.6m	Widening	Slab Culvert																
4	120.068	120.077	1 x 3.0m	Reconstruction	Slab Culvert																
5	120.280	120.289	1 x 1.5m	Reconstruction	Slab Culvert																
6	120.346	120.356	1 x 1.5m	Reconstruction	Box Culvert																
7	120.836	120.845	1 x 2.0m	Widening	Box Culvert																
8	121.540	121.550	1 x 3.0m	Widening	Slab Culvert																
9	121.683	121.693	1 x 1.5m	Widening	Slab Culvert																
10	121.885	121.895	2 x 1.0m	Widening	Pipe Culvert																
11	122.375	122.385	1 x 1.0m	Widening	Pipe Culvert																
12	122.497	122.508	2 x 1.0m	Widening	Pipe Culvert																
13	122.678	122.688	2 x 1.0m	Widening	Pipe Culvert																
14	122.835	122.845	1 x 3.0m	Widening	Slab Culvert																
15	122.943	122.952	2 x 1.0m	Widening	Pipe Culvert																
16	124.118	124.120	1 x 1.5m	Widening	Slab Culvert																
17	124.820	124.823	1 x 1.0m	Widening	Pipe Culvert																
18	125.682	125.685	1 x 1.5m	Widening	Slab Culvert																
19	126.836	126.854	1 x 3.0m	Reconstruction	Slab Culvert																
20	126.987	127.007	1 x 2.0m	Reconstruction	Slab Culvert																
21	127.488	127.498	1 x 1.2m	Reconstruction	Pipe Culvert																
22	127.600	127.612	3 x 1.2m	Reconstruction	Pipe Culvert																
23	127.788	127.800	1 x 0.9m	Widening	Pipe Culvert																
24	128.267	128.279	1 x 0.9m	Widening	Pipe Culvert																
25	128.494	128.505	1 x 1.2m	Reconstruction	Pipe Culvert																
26	128.675	128.667	1 x 2.0m	Reconstruction	Box Culvert																
27	128.682	128.693	1 x 2.0m	Reconstruction	Slab Culvert																
28	128.727	128.724	3 x 1.2m	Reconstruction	Pipe Culvert																
29	128.904	128.916	1 x 1.2m	Reconstruction	Pipe Culvert																
30	129.067	129.079	1 x 1.2m	Reconstruction	Pipe Culvert																
31	129.246	129.260	1 x 0.9m	Widening	Pipe Culvert																
32	129.507	129.519	1 x 3.0m	Widening	Slab Culvert																
33	129.707	129.719	1 x 2.5m	Widening	Slab Culvert																
34	129.823	129.835	1 x 0.9m	Widening	Pipe Culvert																
35	130.096	130.109	1 x 1.2m	Reconstruction	Pipe Culvert																
36	130.307	130.318	1 x 1.5m	Reconstruction	Slab Culvert																
37	130.357	130.369	1 x 1.5m	Reconstruction	Slab Culvert																
38	130.680	130.693	2 x 1.2m	Reconstruction	Pipe Culvert																
39	130.827	130.839	1 x 0.9m	Widening	Pipe Culvert																
40	130.989	130.999	1 x 3.0m	Widening	Slab Culvert																
41	131.146	131.159	1 x 0.9m	Widening	Pipe Culvert																
42	131.505	131.517	1 x 3.0m	Reconstruction	Slab Culvert																
43	131.722	131.733	1 x 1.2m	Reconstruction	Pipe Culvert																
44	131.780	131.792	1 x 1.2m	Reconstruction	Pipe Culvert																
45	132.300	132.319	1 x 3.0m	Widening	Slab Culvert																
46	132.557	132.571	1 x 3.0m	Widening	Slab Culvert																
47	132.730	132.742	1 x 3.0m	Widening	Slab Culvert																
48	132.789	132.803	1 x 2.0m	Widening	Slab Culvert																
49	133.115	133.128	1 x 5.0m	Widening	Slab Culvert																
50	133.210	133.222	1 x 2.0m	Widening	Slab Culvert																
51	133.240	133.268	1 x 0.9m	Widening	Pipe Culvert																
52	133.635	133.579	1 x 2.0m	Reconstruction	Slab Culvert																
53	133.734	133.748	1 x 2.0m	Reconstruction	Slab Culvert																
54	133.935	133.948	1 x 1.2m	Reconstruction	Pipe Culvert																
55	133.987	133.979	1 x 1.5m	Reconstruction	Slab Culvert																
56	163.700	163.700	2 x 0.9m	Widening	Pipe Culvert																
57	163.793	163.828	1 x 0.9m	Widening	Pipe Culvert																

Four Laning of Cholopuram to Thanjavur from Km.116.440 to Km.164.275 Section of NH45C in the state of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode

Table 4.3 - 1 : Strip Chart for status of Box Culverts on Existing Road (Service Road)

IN PROGRESS

COMPLETED

MPR JULY 2023

Sr. No.	Design Chainage As per CA	Revised Design Chainage	Number and Length of Spans (m)	Type of Construction	Type of Existing Structure	LHS								RHS							
						Protection Work	Return Wall & Parapet	Slab	Wall	Raft	PCC	Granular Filling	Excavation	Excavation	Granular Filling	PCC	Raft	Wall	Slab	Return Wall & Parapet	Protection Work
1	120.068	120.077	1 x 3.0	Reconstruction	Slab Culvert																
2	120.280	120.289	1 x 1.5	Reconstruction	Slab Culvert																
3	120.346	120.356	1 x 1.5	Reconstruction	Box Culvert																
4	126.836	126.854	1 x 3.0	Reconstruction	Slab Culvert																
5	126.987	127.007	1 x 2.0	Reconstruction	Slab Culvert																
6	127.488	127.498	1 x 1.2	Reconstruction	Pipe Culvert																
7	127.600	127.612	3 x 1.2	Reconstruction	Pipe Culvert																
8	128.494	128.505	1 x 1.2	Reconstruction	Pipe Culvert																
9	128.675	128.667	1 x 2.0	Reconstruction	Box Culvert																
10	128.682	128.693	1 x 2.0	Reconstruction	Slab Culvert																
11	128.727	128.724	3 x 1.2	Reconstruction	Pipe Culvert																
12	128.904	128.916	1 x 1.2	Reconstruction	Pipe Culvert																
13	129.067	129.079	1 x 1.2	Reconstruction	Pipe Culvert																
14	130.096	130.109	1 x 1.2	Reconstruction	Pipe Culvert																
15	130.307	130.318	1 x 1.5	Reconstruction	Slab Culvert																
16	130.357	130.369	1 x 1.5	Reconstruction	Slab Culvert																
17	130.680	130.693	2 x 1.2	Reconstruction	Pipe Culvert																
18	131.146	131.159	1 X 0.9	Widening	Pipe Culvert																
19	131.505	131.517	1 x 3.0	Reconstruction	Slab Culvert																
20	131.722	131.733	1 x 1.2	Reconstruction	Pipe Culvert																
21	131.780	131.792	1 x 1.2	Reconstruction	Pipe Culvert																
22	133.635	133.579	1 x 2.0	Reconstruction	Slab Culvert																
23	133.734	133.748	1 x 2.0	Reconstruction	Slab Culvert																
24	133.935	133.948	1 x 1.2	Reconstruction	Pipe Culvert																
25	133.987	133.979	1 x 1.2	Reconstruction	Pipe Culvert																

Four Laning of Cholopuram to Thanjavur from Km.116.440 to Km.164.275 Section of NH45C in the state of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode

Table 4.3 - 2 : Strip Chart for status of Box Culverts on Bypass (Main Carriageway)

IN PROGRESS

COMPLETED

MPR JULY 2023

Sr. No.	Design Chainage As per CA	Revised Design Chainage	Number and Length of Spans (m)	Type of Construction	Type of Structure	LHS								RHS							
						Protection Work	Return Wall & Parapet	Slab	Wall	Raft	PCC	Granular Filling	Excavation	Excavation	Granular Filling	PCC	Raft	Wall	Slab	Return Wall & Parapet	Protection Work
1	119.971	119.879	1 x 1.5m	Reconstruction	Slab Culvert																
2	134.500	134.514	1 x 2.0m x 2.0m	New Construction	Box Culvert																
3	138.492	138.523	1 x 4.0m x 2.0m	New Construction	Box Culvert																
4	139.827	139.856	1 x 2.0m x 2.0m	New Construction	Box Culvert																
5	140.010	140.040	1 x 2.0m x 2.0m	New Construction	Box Culvert																
6	140.292	140.322	1 x 3.0m x 2.0m	New Construction	Box Culvert																
7	140.911	140.945	1 x 4.0m x 2.0m	New Construction	Box Culvert																
8	142.189	142.048	1 x 4.0m x 2.0m	New Construction	Box Culvert																
9	142.776	142.812	1 x 4.0m x 2.0m	New Construction	Box Culvert																
10	144.426	144.500	1 x 4.0m x 2.0m	New Construction	Box Culvert																
11	146.049	146.079	1 x 3.0m x 2.0m	New Construction	Box Culvert																
12	147.060	147.075	1 x 4.0m x 2.0m	New Construction	Box Culvert																
13	148.650	148.650	1 x 4.0m x 2.0m	New Construction	Box Culvert																
14	150.237	150.265	1 x 4.0m x 2.0m	New Construction	Box Culvert																
15	150.780	150.791	1 x 4.0m x 2.0m	New Construction	Box Culvert																
16	152.390	152.418	1 x 4.0m x 2.0m	New Construction	Box Culvert																
17	153.781	153.809	1 x 2.0m x 2.0m	New Construction	Box Culvert																
18	154.129	154.157	1 x 4.0m x 2.0m	New Construction	Box Culvert																
19	154.900	154.927	1 x 3.0m x 2.0m	New Construction	Box Culvert																
20	155.381	155.407	1 x 3.0m x 2.0m	New Construction	Box Culvert																
21	155.601	155.628	1 x 4.0m x 2.0m	New Construction	Box Culvert																
22	155.645	155.672	1 x 3.0m x 2.0m	New Construction	Box Culvert																
23	155.743	155.770	1 x 2.0m x 2.0m	New Construction	Box Culvert																
24	155.938	155.962	1 x 4.0m x 2.0m	New Construction	Box Culvert																
25	156.984	157.012	1 x 3.0m x 2.0m	New Construction	Box Culvert																
26	157.283	157.310	1 x 4.0m x 2.0m	New Construction	Box Culvert																
27	157.678	157.701	1 x 4.0m x 2.0m	New Construction	Box Culvert																
28	158.283	158.310	1 x 2.0m x 2.0m	New Construction	Box Culvert																
29	158.531	158.558	1 x 2.0m x 2.0m	New Construction	Box Culvert																
30	158.639	158.665	1 x 2.0m x 2.0m	New Construction	Box Culvert																
31	158.852	158.882	1 x 5.0m x 2.0m	New Construction	Box Culvert																
32	159.282	159.300	1 x 4.0m x 2.0m	New Construction	Box Culvert																
33	159.361	159.385	1 x 3.0m x 2.0m	New Construction	Box Culvert																
34	160.157	160.176	1 x 4.0m x 2.0m	New Construction	Box Culvert																
35	160.326	160.350	1 x 3.0m x 2.0m	New Construction	Box Culvert																
36	160.420	160.445	1 x 2.0m x 2.0m	New Construction	Box Culvert																
37	160.572	160.594	1 x 2.0m x 2.0m	New Construction	Box Culvert																
38	160.635	160.658	1 x 2.0m x 2.0m	New Construction	Box Culvert																
39	160.733	160.754	1 x 2.0m x 2.0m	New Construction	Box Culvert																
40	160.798	160.850	1 x 2.0m x 2.0m	New Construction	Box Culvert																
41	161.288	161.310	1 x 4.0m x 2.0m	New Construction	Box Culvert																
42	161.499	161.501	1 x 2.0m x 2.0m	New Construction	Box Culvert																
43	161.573	161.595	1 x 4.0m x 2.0m	New Construction	Box Culvert																
44	161.693	161.717	1 x 2.0m x 2.0m	New Construction	Box Culvert																
45	161.757	161.759	1 x 2.0m x 2.0m	New Construction	Box Culvert																
46	162.243	162.255	1 x 4.0m x 2.0m	New Construction	Box Culvert																

Four Laning of Cholopuram to Thanjavur from Km.116.440 to Km.164.275 Section of NH45C in the state of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode

Table 4.3 - 2 : Strip Chart for status of Box Culverts on Bypass (Service Road)

IN PROGRESS

COMPLETED

MPR JULY 2023						LHS								RHS							
Sr. No.	Design Chainage As per CA	Revised Design Chainage	Number and Length of Spans (m)	Type of Construction	Type of Structure	Protection Work	Return Wall & Parapet	Slab	Wall	Raft	PCC	Granular Filling	Excavation	Excavation	Granular Filling	PCC	Raft	Wall	Slab	Return Wall & Parapet	Protection Work
1	119.971	119.879	1 x 1.5m	Reconstruction	Slab Culvert																
2	134.500	134.514	1 x 2.0m x 2.0m	New Construction	Box Culvert																
3	138.492	138.523	1 x 4.0m x 2.0m	New Construction	Box Culvert																
4	144.426	144.500	1 x 4.0m x 2.0m	New Construction	Box Culvert																
5	150.237	150.265	1 x 4.0m x 2.0m	New Construction	Box Culvert																
6	156.984	157.012	1 x 3.0m x 2.0m	New Construction	Box Culvert																
7	157.283	157.310	1 x 4.0m x 2.0m	New Construction	Box Culvert																

Four Laning of Cholopuram to Thanjavur from Km.116.440 to Km.164.275 Section of NH45C in the state of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode

Table 4.3 - 3 : Strip Chart for status of MNB - Box Type (Main Carriageway)

IN PROGRESS — COMPLETED

MPR JULY 2023

Sr. No.	Design Chainage As per CA	Revised Chainage	Number and Length of Spans (m)	Type of Structure	Stretch	LHS: Protection Work	LHS: Retaining Wall + CB	LHS: Slab	LHS: Wall	LHS: Raft	LHS: PCC	LHS: Granular Filling	LHS: Excavation	RHS: Excavation	RHS: Granular Filling	RHS: PCC	RHS: Raft	RHS: Wall	RHS: Slab	RHS: Retaining Wall + CB	RHS: Protection Work
MNB IN EXISTING LENGTH																					
1	121.024	121.035	1 x 6.0m	MNBB	Existing																
2	122.046	122.058	3 x 7.5m	MNBB	Existing																
MNB IN BYPASS																					
1	117.764	117.779	2 x 10.0m	MNBB	Bypass																
2	118.217	118.110	1 x 8.0m	MNBB	Bypass																
3	118.400	119.570	1 x 6.0m	MNBB	Bypass																
4	118.480	118.480	1 x 6.0m	MNBB	Bypass																
5	118.539	118.548	1 x 8.0m	MNBB	Bypass																
6	118.919	119.100	1 x 6.0m	MNBB	Bypass																
7	126.134	126.134	2 X 10.0m	MNBB	Bypass																
8	134.320	134.320	2x 10.0m	MNBB	Bypass																
9	134.770	134.774	1 x 10.0m	MNBB	Bypass																
10	136.705	136.738	1 x 6.0m	MNBB	Bypass																
11	138.555	138.585	1 x 6.0m	MNBB	Bypass																
12	138.901	138.935	6 x 7.5m	MNBB	Bypass																
13	139.105	139.138	2 x 15m	MNBB	Bypass																
14	139.299	139.335	4 x 7.5m	MNBB	Bypass																
15	139.453	139.485	1 x 7.0m	MNBB	Bypass																
16	140.605	140.637	1 x 6.0m	MNBB	Bypass																
17	140.860	140.892	1 x 8.0m	MNBB	Bypass																
18	141.164	141.145	1 x 10.0m	MNBB	Bypass																
19	141.445	141.466	1 x 8.0m	MNBB	Bypass																
20	141.727	141.760	1 x 8.0m	MNBB	Bypass																
21	142.204	142.235	1 x 8.0m	MNBB	Bypass																
22	142.657	142.687	1 x 6.0m	MNBB	Bypass																
23	142.897	142.932	2 x 8.0m	MNBB	Bypass																
24	143.115	143.136	6 x 7.5m	MNBB	Bypass																
25	143.823	143.852	2 x 8.0m	MNBB	Bypass																
26	144.000	143.995	2 x 10.0m	MNBB	Bypass																
27	144.880	144.916	4 x 7.5m	MNBB	Bypass																
28	146.639	146.671	1 x 10.0m	MNBB	Bypass																
29	147.396	147.426	1 x 8.0m	MNBB	Bypass																
30	148.560	148.592	1 x 8.0m	MNBB	Bypass																
31	149.940	149.962	1 x 10.0m	MNBB	Bypass																
32	149.997	150.028	1 x 6.0m	MNBB	Bypass																
32	150.800			MNBB	Bypass																
32	152.876	152.911	2 x 10.0m	MNBB	Bypass																
32	153.263	153.287	1 x 10.0m	MNBB	Bypass																
35	153.528	153.557	1 x 6.0m	MNBB	Bypass																
36	153.939	153.968	1 x 10.0m	MNBB	Bypass																
37	154.626	154.659	1 x 6.0m	MNBB	Bypass																
38	154.739	154.764	1 x 10.0m	MNBB	Bypass																
39	155.049	155.082	2 x 7.5m	MNBB	Bypass																
40	156.014	156.040	1 x 8.0m	MNBB	Bypass																
41	156.216	156.244	1 x 6.0m	MNBB	Bypass																
42	156.336	156.366	1 x 6.0m	MNBB	Bypass																
43	156.707	156.734	1 x 10.0m	MNBB	Bypass																
44	157.458	157.485	1 x 7.0m	MNBB	Bypass																
45	157.494	157.517	1 x 8.0m	MNBB	Bypass																
46	158.128	158.155	1 x 7.0m	MNBB	Bypass																
47	158.972	158.994	1 x 6.0m	MNBB	Bypass																
48	159.076	159.103	1 x 8.0m	MNBB	Bypass																
49	159.723	159.742	1 x 6.0m	MNBB	Bypass																
50	159.801	159.835	1 x 6.0m	MNBB	Bypass																
51	161.208	161.227	1 x 8.0m	MNBB	Bypass																
52	162.595	162.618	2 x 15m	MNBB	Bypass																

Four Laning of Cholopuram to Thanjavur from Km.116.440 to Km.164.275 Section of NH45C in the state of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode

Table 4.3 - 3 : Strip Chart for status of MNB - Deck Type (Main Carriageway)

IN PROGRESS

COMPLETED

MPR JULY 2023

SR. NO.	MNB at Chainage	Span	Pier/ Abutment	LHS								RHS							
				Crash Barrier	Slab	Girder Launching	Girder Casting	Piercap/Abtcap	Pier/Abt	Open Foundation	PCC For foundation	PCC For foundation/Piling work	Open Foundation/Pile Cap	Pier/Abt	Piercap/Abtcap	Girder Casting	Girder Launching	Slab	Crash Barrier
1	133+345	3x12.5m	A1	EXISTING STRUCTURE															
			P1																
			P2																
			A2																
2	159+522	1x15.0m	A1																
			A2																

Four Laning of Cholopuram to Thanjavur from Km.116.440 to Km.164.275 Section of NH45C in the state of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode

Table 4.3 - 3 : Strip Chart for status of MNB - Box Type (Service Road)

IN PROGRESS

COMPLETED

MPR JULY 2023

Sr. No.	Design Chainage As per CA	Revised Chainage	Number and Length of Spans (m)	Type of Structure	Stretch	LHS							RHS						
						Protection Work	Slab	Wall	Raft	PCC	Granular Filling	Excavation	Excavation	Granular Filling	PCC	Raft	Wall	Slab	Protection Work
MNB SERVICE ROAD IN BYPASS																			
1	117.764	117.779	2 x 10.0m	MNBB	Bypass														
2	126.134	126.134	2 X 10.0m	MNBB	Realign														
3	134.320	134.320	2x 10.0m	MNBB	Bypass														
4	134.770	134.774	1 x 10.0m	MNBB	Bypass														
5	138.555	138.585	1 x 6.0m	MNBB	Bypass														
6	138.901	138.935	6 x 7.5m	MNBB	Bypass														
7	139.105	139.138	2 x 15m	MNBB	Bypass														
8	139.299	139.335	4 x 7.5m	MNBB	Bypass														
9	139.453	139.485	1 x 7.0m	MNBB	Bypass														
10	141.164	141.145	1 x 10.0m	MNBB	Bypass														
11	141.445	141.466	1 x 8.0m	MNBB	Bypass														
12	141.727	141.760	1 x 8.0m	MNBB	Bypass														
13	144.880	144.916	4 x 7.5m	MNBB	Bypass														
14	149.940	149.962	1 x 10.0m	MNBB	Bypass														
15	149.997	150.028	1 x 6.0m	MNBB	Bypass														
16	156.014	156.040	1 x 8.0m	MNBB	Bypass														
17	156.216	156.244	1 x 6.0m	MNBB	Bypass														
18	156.336	156.366	1 x 6.0m	MNBB	Bypass														
19	156.707	156.734	1 x 10.0m	MNBB	Bypass														

Four Laning of Cholopuram to Thanjavur from Km.116.440 to Km.164.275 Section of NH45C in the state of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode

Table 4.3 - 4 : Strip Chart for status of PUP — IN PROGRESS — COMPLETED

MPR JULY 2023

Sr. No.	Design Chainage As per CA	Chainage as Per Site	Number and Length of Spans (m)		LHS: Protection Work	LHS: Slab	LHS: Wall	LHS: Raft	LHS: PCC	LHS: Excavation	RHS: Excavation	RHS: PCC	RHS: Raft	RHS: Wall	RHS: Slab	RHS: Protection Work
1	147.917	147.951	1 X 7 m	BYPASS												
2	149.988	150.023	1 X 7 m	BYPASS												

Table 4.3- 5 : Strip Chart for status of MJB (Main Carriageway)

IN PROGRESS

COMPLETED

MPR JULY 2023

MJB at Chainage 131+980 (3x20) -WIDENING RHS

	LHS/LSR								RHS/RSR							
	Crash Barrier	Slab	Girder Launching	Girder Casting	Pier Cap/Abt Cap	Pier/Abt	Pile Cap	Pile	Pile	Pile Cap	Pier/Abt	Pier Cap/Abt Cap	Girder Casting	Girder Launching	Slab	Crash Barrier
A1	Existing Bridge (Repair Only)															
P1																
P2																
A2																

MJB at Chainage 149+334 (3x20)- BYPASS

	LHS/LSR								RHS/RSR							
	Crash Barrier	Slab	Girder Launching	Girder Casting	Pier Cap/Abt Cap	Pier/Abt	Pile Cap	Pile	Pile	Pile Cap	Pier/Abt	Pier Cap/Abt Cap	Girder Casting	Girder Launching	Slab	Crash Barrier
A1																
P1																
P2																
P3																
A2																

MJB at Chainage 156+559 (6x20)- BYPASS

	LHS/LSR								RHS/RSR							
	Crash Barrier	Slab	Girder Launching	Girder Casting	Pier Cap/Abt Cap	Pier/Abt	Pile Cap	Pile	Pile	Pile Cap	Pier/Abt	Pier Cap/Abt Cap	Girder Casting	Girder Launching	Slab	Crash Barrier
P2																
P3																
P4																
P5																
P6																
A2																

MJB at Chainage 161+019 (6x20)- BYPASS

	LHS/LSR								RHS/RSR							
	Crash Barrier	Slab	Girder Launching	Girder Casting	Pier Cap/Abt Cap	Pier/Abt	Pile Cap	Pile	Pile	Pile Cap	Pier/Abt	Pier Cap/Abt Cap	Girder Casting	Girder Launching	Slab	Crash Barrier
A1																
P1																
P2																
P3																
P4																
P5																
P6																
A2																

Four Laning of Cholopuram to Thanjavur from Km.116.440 to Km.164.275 Section of NH45C in the state of Tamil Nadu
Under NHDP Phase-IV on Hybrid Annuity Mode

Table 4.3 - 6 : Strip Chart for status of Flyover — IN PROGRESS — COMPLETED

MPR JULY 2023					LHS									RHS								
Sr. No.	FO at Chainage	Span			Crash Barrier	Slab	Girder Launching	Girder Casting	Piercap/Abtcap	Pier/Abt	Pile Cap	PCC	Pile	Pile	PCC	Pile Cap	Pier/Abt	Piercap/Abtcap	Girder Casting	Girder Launching	Slab	Crash Barrier
1	117+600	1 x 30 m	BYPASS+ EXISTING	A1																		
				A2																		
2	120+000	1 x 30 m	BYPASS+ EXISTING	A1																		
				A2																		
3	127+300	1 x 30 m	EXISTING	A1																		
				A2																		
4	134+000	1 x 30 m	BYPASS+ EXISTING	A1																		
				A2																		
5	145+140	1 x 30 m	BYPASS	A1																		
				A2																		
6	157+100	1 x 30 m	BYPASS	A1																		
				A2																		

Four Laning of Cholopuram to Thanjavur from Km.116.440 to Km.164.275 Section of NH45C in the state of Tamil Nadu
Under NHDP Phase-IV on Hybrid Annuity Mode

Table 4.3 - 7 : Strip Chart for status of VUP — IN PROGRESS — COMPLETED

MPR JULY 2023

Sr. No.	VUP at Chainage	Span			LHS: Crash Barrier	Slab	Girder Launching	Girder Casting	Piercap/Abtcap	Pier/Abt	Pile Cap	PCC	Pile	RHS: Pile	PCC	Pile Cap	Pier/Abt	Piercap/Abtcap	Girder Casting	Girder Launching	Slab	Crash Barrier
1	126+100	1x25	EXISTING	A1																		
				A2																		
2	126+600	1x25	EXISTING	A1	Negative Change of Scope									Negative Change of Scope								
				A2																		
3	128+700	1x25	EXISTING	A1																		
				A2																		
4	130+335	1x25	EXISTING	A1																		
				A2																		
5	131+500	1x25	EXISTING	A1																		
				A2																		
6	136+282	1x25	BYPASS	A1																		
				A2																		
7	138+720	1x25	BYPASS	A1																		
				A2																		
8	139+440	1x25	BYPASS	A1																		
				A2																		
9	141+450	1x25	BYPASS	A1																		
				A2																		
10	156+446	1x30	BYPASS	A1																		
				A2																		

Four Laning of Cholopuram to Thanjavur from Km.116.440 to Km.164.275 Section of NH45C in the state of Tamil Nadu
Under NHDP Phase-IV on Hybrid Annuity Mode

Table 4.3 - 8 : Strip Chart for status of ROB — IN PROGRESS — COMPLETED

MPR JULY 2023 — ROB at Chainage 134+345 (1 x 20.285m+1 x 30.426m+1 x 20.285m (Skew 9.6 °))- EXISTING

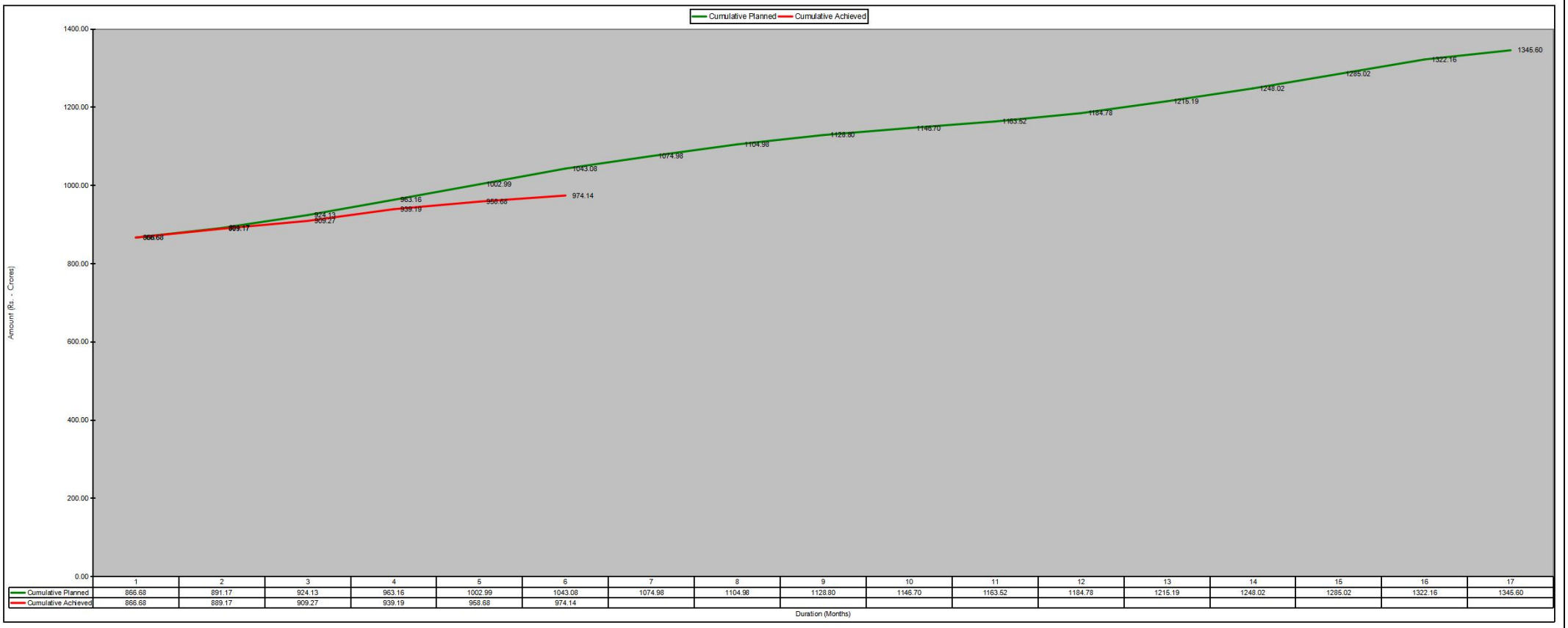
	LHS/LSR										RHS/RSR									
	Crash Barrier	Slab	Steel Girder Launching	Steel Girder Fabrication	Girder Launching	Girder Casting	Pier Cap/Abt Cap	Pier/Abt	Pile Cap	Pile	Pile	Pile Cap	Pier/Abt	Pier Cap/Abt Cap	Girder Casting	Girder Launching	Steel Girder Fabrication	Steel Girder Launching	Slab	Crash Barrier
A1			NA	NA													NA	NA		
P1					NA	NA									NA	NA				
P2					NA	NA									NA	NA				
A2			NA	NA													NA	NA		

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

Figure 3b : Physical Progress - Planned vs Achieved - S Curve

Four Laning of Cholopuram - Thanjavur from Km. 116.440 to 164.275 Section of NH45C in the state of Tamilnadu under NHDP-IV on Hybrid Annuity Mode.

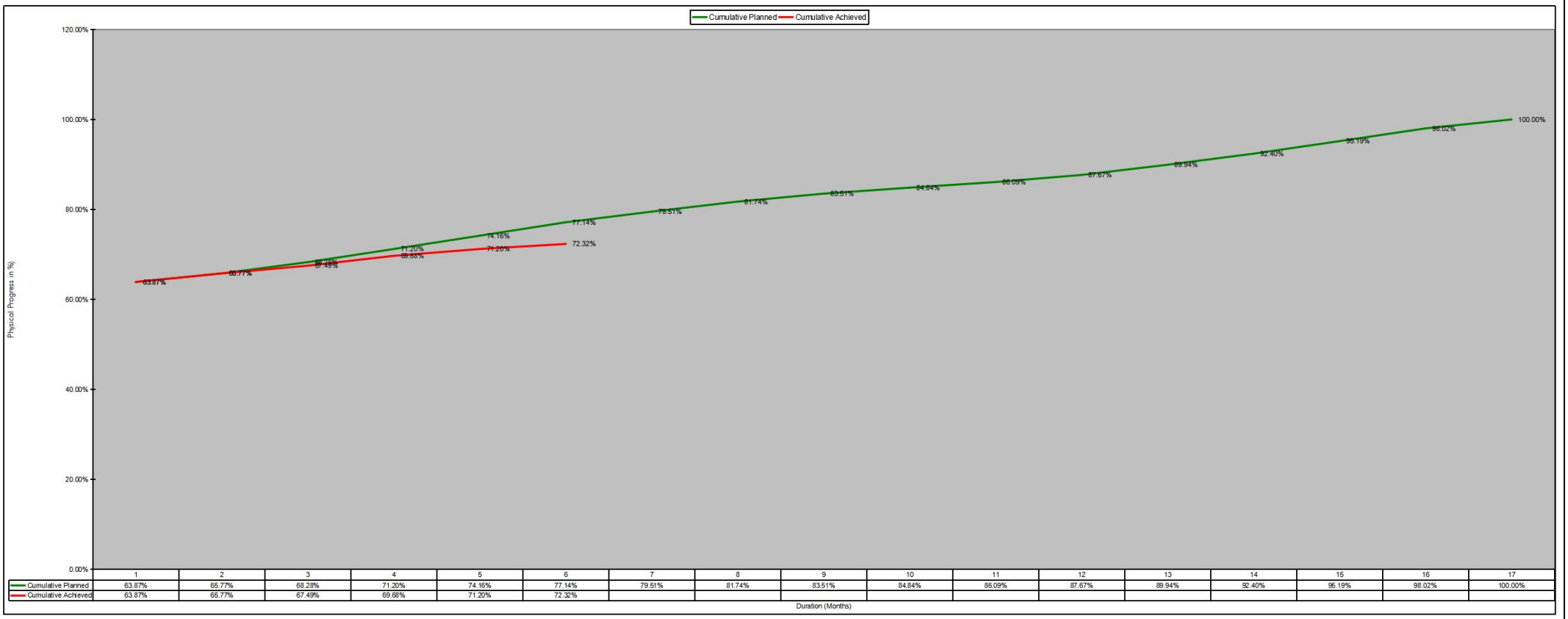
Fig. 03a- Financial Progress (Revised S-Curve) as per Settlement Agreement signed on dated 20.03.2023.



		2023											2024					
	Schedule	Up to February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Revised Target vs Achieved as per Revised Target set forth in the Settlement Agreement signed on dated 20.03.2023	Monthly Planned	866.68	24.49	32.97	39.02	39.83	40.10	31.89	30.01	23.82	17.90	16.82	21.26	30.41	32.83	37.00	37.14	23.44
	Monthly Achieved	866.68	22.50	20.10	29.92	19.48	15.46											
	Cumulative Planned	866.68	891.17	924.13	963.16	1002.99	1043.08	1074.98	1104.98	1128.80	1146.70	1163.52	1184.78	1215.19	1248.02	1285.02	1322.16	1345.60
	Cumulative Achieved	866.68	889.17	909.27	939.19	958.68	974.14											
	Monthly Planned (%)	64.41%	1.8%	2.5%	2.9%	3.0%	3.0%	2.4%	2.2%	1.8%	1.3%	1.3%	1.6%	2.3%	2.4%	2.8%	2.8%	1.7%
	Monthly Achieved (%)	64.41%	1.67%	1.49%	2.22%	1.45%	1.15%											
	Cumulative Planned (%)	64.41%	66.2%	68.7%	71.6%	74.5%	77.5%	79.9%	82.1%	83.9%	85.2%	86.5%	88.0%	90.3%	92.7%	95.5%	98.3%	100.0%
	Cumulative Achieved (%)	64.41%	66.08%	67.57%	69.80%	71.25%	72.39%											

Four Laning of Cholopuram - Thanjavur from Km. 116.440 to 164.275 Section of NH45C in the state of Tamilnadu under NHDP-IV on Hybrid Annuity Mode.

Fig. 03b- Physical Progress (Revised S-Curve) as per Settlement Agreement signed on dated 20.03.2023.



	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Cumulative Planned	63.87%	65.77%	68.28%	71.20%	74.16%	77.14%	79.51%	81.74%	83.51%	84.84%	86.09%	87.67%	89.94%	92.40%	95.19%	98.02%	100.00%
Cumulative Achieved	63.87%	65.77%	67.49%	69.68%	71.20%	72.32%											

	Schedule	2023											2024					
		Up to February	March	April	May	June	July	August	September	October	November	December	January	February	March	April	May	June
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Revised Target vs Achieved as per Revised Target set forth in the Settlement Agreement signed on dated 20.03.2023	Monthly Planned	63.87%	1.90%	2.51%	2.92%	2.96%	2.98%	2.37%	2.23%	1.77%	1.33%	1.25%	1.58%	2.27%	2.46%	2.79%	2.83%	1.98%
	Monthly Achieved	63.87%	1.90%	1.72%	2.19%	1.52%	1.12%											
	Cumulative Planned	63.87%	65.77%	68.28%	71.20%	74.16%	77.14%	79.51%	81.74%	83.51%	84.84%	86.09%	87.67%	89.94%	92.40%	95.19%	98.02%	100.00%
	Cumulative Achieved	63.87%	65.77%	67.49%	69.68%	71.20%	72.32%											

The Escrow Details / Financial Expenses details up to the month of July 2023 are given below in the tabular form:-

Table 5.1- 1 Pen Picture Escrow

Total Project Cost (Cr.)	Cumulative inflow to Escrow till July-2023 (Cr.)	Cumulative out flow from escrow till July-2023 (Cr.)	Inflow to Escrow During July-2023 (Cr.)	Outflow from Escrow during July-2023 (Cr.)
1,345.60	1,323.83	1,323.14	21.02	20.79

Table 5.1- 2 Escrow Details

Total Project Cost (Cr.)	Cumulative expenses till July-2023 (Cr.)	Escrow Plan till July-2023 - Debt (HAM) (Cr.)	Escrow Plan till July-2023 - Equity (HAM) (Cr.)	Escrow Plan till July-2023 - VGF (HAM) (Cr.)	Escrow actual till July-2023 - Debt (HAM) (Cr.)	Escrow actual till July-2023 - Equity (HAM) (Cr.)	Escrow actual till July-2023 - VGF (HAM) (Cr.)
1,345.60	1,010.12	645.89	161.47	538.24	367.47	118.51	461.49

6.1. List of Lab Equipment's

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

Sl. No	Equipment List	Quantity
	A) SOIL	
1	Proctor Moulds (Big) Collar or Base plate & Rammer 4.89 kg	6
2	Proctor Moulds (Small) Collar or Base plate & Rammer 2.6 kg	4
3	Atterberg Limits Test(Apparatus)	1
4	Soil Cone Penetrometer	1
5	CBR Moulds with collar or Base Plate	60
6	CBR Plunger	4
7	Proving Ring(25 KN)	1
8	Proving Ring(10 KN)	1
9	Proving Ring(2.5 KN)	1
10	FSI JARS BOROSIL -100 ml	40
11	Spacer Disc(with Handle)	4
12	CBR Testing Machine	1
13	CBR Surcharge Central Hole Weights 2.5 kg	60
14	CBR Surcharge Slotted Weights 2.5 kg	60
15	CBR Perorated Brass plates	60
16	Sand Pouring Cylinders (100 mm Dia) Complete with Calibrating Container with Trays	2
17	Sand Pouring Cylinders (150 mm Dia) Complete with Calibrating Container with Trays	2
18	Sand Pouring Cylinders (200 mm Dia) Complete with Calibrating Container with Trays	2
19	Rapid Moisture Meters	4
20	Calcium Carbide Bottles	10
21	Spatula Big	10
22	Spatula Small	10
23	Hammers big	4
24	Chisels big	20
25	Electronic Balance Capacity 100 kg (10 gram accuracy)	1
26	Electronic Balance Capacity 50 kg (1 gram accuracy)	2
27	Electronic Balance Capacity 30 kg (1 gram accuracy)	2
28	Electronic Balance Capacity 10 kg (1 gram accuracy)	1
29	Electronic Balance Capacity 5 kg (0.5 gram accuracy)	1
30	Electronic Balance Capacity 600gram(0.01 gram accuracy)	2
31	Hot Air Oven (Big)250oC	1
32	Hot Air Oven (Small)250oC	1
33	Direct Shear Test Apparatus	1
34	Filter Paper Dia 100 mm	10
35	Filter Paper Dia 150 mm	10
36	Pipettes	4
37	Plastic Bottles	4
38	Enamel tray -450x300x40 mm	12

39	G.I tray-1500x1500x100mm	4
40	French Curves	2
	B) CONCRETE WORKS	
41	Compressive Testing machine(2000KN)	1
42	Flexural strength testing machine digital	1
43	Concrete Cube Moulds With Base Plate(15cm)	200
44	Concrete Cube Moulds With Base Plate(10cm)	18
45	Motor Cube Moulds (7.06cm) with Base Plate	12
46	Motor Cube Vibrating Machine(12000 Rmp)	1
47	Concrete Mixer Electrically Operated	1
48	Cube Vibrating Machine (Big)	1
49	Slump Cone Testing Apparatus	10
50	Vicat Needle Apparatus , with dash pot complete with set of needles and brass mould	2
51	Soundness Testing Apparatus	2
52	Trowels With Wooden Handles	4
53	A I V Testing Machine	1
54	Loss Angels abrasion Testing Machine	1
55	Sand Equivalent Testing Apparatus	1
56	Flakiness Index Test Gauge	1
57	Elongation Index Test Gauge	1
58	Density Basket	2
59	Bulk Density Cylinder (5lt)	1
60	Bulk Density Cylinder (15lt)	1
61	Bulk Density Cylinder (30lt)	1
62	Gi trays -450x600x50mm	9
63	Enamel trays -300x250x40 mm	9
64	Trays for Samples Collections	12
65	Riffle Box (40 MM)	1
66	Riffle Box (20 MM)	1
67	Pycnometer Bottles (1000 ml)	4
68	Specific Gravity & water absorption test apparatus with Electronic balance	1
69	DLC Compaction vibrating hammer	1
70	Cement mortar cube mould 5.0 cm	12
71	Standard Sand Grade-1 bag of 25 kg	2
72	Standard Sand Grade-2 bag of 25 kg	2
73	Standard Sand Grade-3 bag of 25 kg	2
	C) BITUMINOUS WORKS	
74	Specific Gravity Bottles (50 ml)	2
75	Specific Gravity Bottles (100 ml)	2
76	Pen Sky- Martins closed Tester (Flash & Fire point)	2
77	Dial gauge 0.01x30 mm adis make	4
78	Ring & Ball Apparatus (Softening Point)	1
79	Bitumen Penetrometer (automatic)	1
80	Marshall Stability Apparatus (set)	1
81	Marshall Compaction Pedestal	2
82	Marshall Compaction Rammer 4.53 KG	4
83	Marshall Moulds (101.6 mm Dia)	30
84	Modified Marshall Compaction Pedestal	1
85	Modified Marshall Compaction Rammer 10.2 KG	4
86	viscometer u tub size no 12	2

87	Breaker - glass 600 ml for ring and ball apparatus	4
88	Bitumen Extraction Apparatus (centrifuge Type)	1
89	Proving Ring(50 KN)	1
90	Proving Ring(100 KN)	1
91	Digital Thermometers	10
92	Glass Thermometer	10
93	IR Thermometer	5
94	Core Cutting Machine With Apparatus (set)	1
95	Diamond Core Cutting Bit (100mm Dia)	1
96	Core Barrels for Core Cutting Machine	1
97	Vacuum Pump (specific Gravity of Bitumen Mix GMM)	1
98	Constant temperature Water bath (Digital)	2
99	Penetration cup 55x70 mm	2
100	penetration cup 55x35 mm	2
101	Specific Gravity Flask (2000 ml)	1
102	Specific Gravity Flask (5000 ml)	1
103	Specimen Extractor (Tikki, Goli & Rod)Marshall	1
104	Emulsion Trays	6
105	Viscometer viscosity of emulsified bitumen	1
106	Stop Watch	4
107	Hot Plates Electrical	2
108	Viscometer viscosity of bitumen	1
	FOR I.S SIEVES 450 MM DIA	
109	100MM	2
110	90MM	2
111	75MM	2
112	63MM	2
113	53MM	2
114	50MM	2
115	45MM	2
116	40MM	2
117	37.5MM	2
118	31.5MM	2
119	26.5MM	2
120	25MM	2
121	22.4MM	2
122	20MM	2
123	19MM	2
124	16 MM	2
125	14MM	2
126	13.2MM	2
127	12.5MM	2
128	11.2MM	2
129	10MM	2
130	9.5MM	2
131	6.3MM	2
132	5.6MM	2
133	4.75MM	2
134	2.36 MM	2
	FOR I.S SIEVES 200 MM DIA	
135	37.5MM	2
136	6.5MM	2

137	22.4MM	2
138	19MM	2
139	16MM	2
140	14 MM	2
141	13.2MM	2
142	12.5MM	2
143	11.2MM	2
144	10MM	2
145	9.5MM	2
146	5.6MM	2
147	4.75MM	2
148	2.80MM	2
149	2.36MM	2
150	2.00MM	2
151	1.80MM	2
152	1.40MM	2
153	1.18MM	2
154	1.00MM	2
155	0.710 mc	1
156	0.600 mc	2
157	0.500 mc	1
158	0.45 mc	1
159	0.425 mc	2
160	0.355 mc	2
161	0.300 mc	2
162	0.150 mc	2
163	0.090 mc	2
164	0.075 mc	6
GENERAL & CONTROL OF PROFILE AND SURFACE EVENNESS		
165	Rain Gauge	1
166	Vernier Calliper	1
167	Glass Measuring Cylinder -1000 ml	2
168	Glass Measuring Cylinder -500 ml	2
169	Glass Measuring Cylinder -250 ml	2
170	Glass Measuring Cylinder -250 ml	2
171	Plastic Measuring Cylinder- 1000 ml	2
172	Plastic Measuring Cylinder- 500 ml	2
173	Plastic Measuring Cylinder- 250 ml	2
174	Plastic Measuring Cylinder- 250 ml	2
175	Depth gauge	4
176	Digital thermo hygrometer	2
177	Sampling containers 100 gms	200
178	3 Meter straight edge and measuring wedge	1
179	Camber template board	2
180	5 mtr tape	2
181	10 mtr tape	2
182	30 mtr tape	4
183	50 mtr tape	4

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 July 2023 are tabulated below:-

Four Laning of Cholopuram - Thanjavur From Km 116.440 to Km 164.275 Section of NH-45C in the State of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode.															
Summary of Quality Control Report / Monthly Progress Report (QC) - MONTH : July-2023															
Sr. No.	Description	IS Specification Clause	Frequency of Tests	Test conducted upto Previous month				Tests conducted during reporting month July 2023				Test conducted upto this month			
				Nos. of test Conducted	Passed	Failed	Nos. of test witnessed by IE	Nos. of test Conducted	Passed	Failed	Nos. of test witnessed by IE	Nos. of test Conducted	Passed	Failed	Nos. of test witnessed by IE
1.0 Tests on OGL															
1.1	Grain size analysis	IS:2720 (Part4)	1 test/250 meters	421	421	0	224	0	0	0	0	421	421	0	224
1.2	Atterberg Limits	IS:2720 (Part5)	1 test/250 meters	421	421	0	224	0	0	0	0	421	421	0	224
1.3	Proctor	IS:2720 (Part8)	1 test/250 meters	233	233	0	68	0	0	0	0	233	233	0	68
1.4	Free Swell index	IS:2720 (Part40)	1 test/250 meters	421	403	18	224	0	0	0	0	421	403	18	224
2.0 Cutting & Existing portion for EMB/SG (MoRT&H 305)															
2.1	Grain size analysis	IS:2720 (Part4)	1 test /1500 m^3	114	114	0	42	0	0	0	0	114	114	0	42
2.2	Atterberg Limits	IS:2720 (Part5)	1 test /1500 m^3	114	114	0	42	0	0	0	0	114	114	0	42
2.3	Proctor	IS:2720 (Part8)	1 test /1500 m^3	114	114	0	42	0	0	0	0	114	114	0	42
2.4	Free Swell index	IS:2720 (Part40)	1 test /1500 m^3	114	114	0	42	0	0	0	0	114	114	0	42
2.5	California bearing ratio	IS:2720 (Part16)	1 test /3000 m^3	108	108	0	44	0	0	0	0	108	108	0	44
3.0 Borrow Area for EMB/Subgrade (MoRT&H 305)															
3.1	Grain size analysis	IS:2720 (Part4)	1 test /1500 m^3	2876	2876	0	630	81	81	0	16	2957	2957	0	646
3.2	Atterberg Limits	IS:2720 (Part5)	1 test /1500 m^3	2876	2876	0	630	81	81	0	16	2957	2957	0	646
3.3	Proctor	IS:2720 (Part8)	1 test /1500 m^3	2927	2927	0	636	81	81	0	16	3008	3008	0	652
3.4	Free Swell index	IS:2720 (Part40)	1 test /1500 m^3	2872	2872	0	630	81	81	0	16	2953	2953	0	646
3.5	California bearing ratio	IS:2720 (Part16)	1 test /3000 m^3	343	343	0	138	2	2	0	1	345	345	0	139
3.6	Angle of Internal Friction (ø)	IS:2720 (Part13)	As required	358	358	0	90	35	35	0	6	393	393	0	96
4.0 Field Density Test (MoRT&H 305)															
4.1	Field density (OGL)	IS:2720 (Part28)	10 test /3000 sqm	7136	7121	15	2308	30	30	0	10	7166	7151	15	2318
4.2	Field density (EMB)	IS:2720 (Part28)	10 test /3000 sqm	34127	33918	209	24863	5922	5922	0	1480	40049	39840	209	26343
4.3	Field density (SG)	IS:2720 (Part28)	10 test /2000 sqm	14165	14455	3	2615	100	100	0	30	14265	14555	3	2645
4.4	Field density (Shoulder)	IS:2720 (Part28)	10 test /2000 sqm	752	752	0	152	0	0	0	0	752	752	0	152
5.0 Safe Bearing capacity of soil (Highway & Structure)															
5.1	Grain size analysis	IS:2720 (Part4)	As required	170	170	0	42	0	0	0	0	170	170	0	42
5.2	Atterberg Limits	IS:2720 (Part5)	As required	170	170	0	42	0	0	0	0	170	170	0	42
5.3	Proctor	IS:2720 (Part8)	As required	170	170	0	41	0	0	0	0	170	170	0	41
5.4	Free Swell index	IS:2720 (Part40)	As required	170	163	7	42	0	0	0	0	170	163	7	42
5.5	Bearing Capacity	IS:6403 / IS:1888	As required	170	19	151	42	0	0	0	0	170	19	151	42
5.6	Plate Load Test	IS:6403 / IS:1888	As required	40	40	0	29	0	0	0	0	40	40	0	29
6.0 Filter Media & Back filling (MoRT&H 2500)															
6.1	Gradation		As required	497	497	0	143	20	20	0	10	517	517	0	153
6.2	Backfilling field density		1 test /1000 m^3	48	48	0	36	0	0	0	0	48	48	0	36
7.0 Granular Bedding Material (For Structures-Ground Improvement)-Stock & Site Testing															
7.1	Gradation	Table 400-1	As required	277	277	0	62	3	3	0	1	280	280	0	63
7.2	Atterberg Limits	IS:2720 (Part5)	As required	277	277	0	62	3	3	0	1	280	280	0	63
7.3	Proctor	IS:2720 (Part8)	As required	140	140	0	27	0	0	0	0	140	140	0	27
7.4	CBR Test	IS:2720 (Part16)	As required	30	30	0	25	0	0	0	0	30	30	0	25
7.5	Aggregate Impact value	IS:2386 (Part4)	As required	50	50	0	33	1	1	0	1	51	51	0	34
7.6	Field Density	IS:2720 (Part28)	As required	2256	2256	0	493	20	20	0	9	2276	2276	0	502
8.0 CTSB															
8.1	Gradation	Table 400-4	1 test/400m^3	596	596	0	148	5	5	0	2	601	601	0	150
8.2	Atterberg Limits	IS:2720 (Part5)	1 test/400m^3	594	594	0	147	5	5	0	2	599	599	0	149
8.3	Proctor	IS:2720 (Part8)	As required	27	27	0	25	1	1	0	1	28	28	0	26
8.4	Aggregate Impact value	IS:2386 (Part4)	As required	130	130	0	77	1	1	0	1	131	131	0	78
8.5	Field Density	IS:2720 (Part28)	1 set of 2 Test per 500 Sqm	6297	6297	0	1286	117	117	0	50	6414	6414	0	1336
8.6	Specific gravity & Water absorption	IS:2386 (Part3)	As required	5	5	0	5	0	0	0	0	5	5	0	5
8.7	Cubes casting & Testing (Sets)	IRC:SP:89 (2010)	A set of 3 specimens	1590	1590	0	348	25	25	0	5	1615	1615	0	353
8.8	CBR Test	IS:2720 (Part16)	As required	16	16	0	13	0	0	0	0	16	16	0	13

Four Laning of Cholopuram - Thanjavur From Km 116.440 to Km 164.275 Section of NH-45C in the State of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode.															
Summary of Quality Control Report / Monthly Progress Report (QC) - MONTH : July-2023															
Sr. No.	Description	IS Specification Clause	Frequency of Tests	Test conducted upto Previous month				Tests conducted during reporting month July 2023				Test conducted upto this month			
				Nos. of test Conducted	Passed	Failed	Nos. of test witnessed by IE	Nos. of test Conducted	Passed	Failed	Nos. of test witnessed by IE	Nos. of test Conducted	Passed	Failed	Nos. of test witnessed by IE
9.0 WMM															
9.1	Individual / Combined Gradation	Table 400-3	1 test/200m^3	582	582	0	126	6	6	0	3	588	588	0	129
9.2	Aggregate Impact Value	IS:2386 (Part4)	1 test/1000m^3	335	335	0	83	3	3	0	2	338	338	0	85
9.3	Flakiness & Elongation index	IS:2386 (Part1)	1 test/500m^3	327	327	0	91	3	3	0	2	330	330	0	93
9.4	Atterberg Limits	IS:2720 (Part5)	1 test/200m^3	548	548	0	121	6	6	0	3	554	554	0	124
9.5	Proctor	IS:2720 (Part8)	As required	20	20	0	17	0	0	0	0	20	20	0	17
9.6	CBR	IS:2720 (Part16)	As required	16	16	0	14	0	0	0	0	16	16	0	14
9.7	Field Density	IS:2720 (Part28)	1 set Test per 1000 Sqm / 3 pits	2179	2179	0	533	33	33	0	10	2212	2212	0	543
10.0 Dense Bituminous Macadam (Grade - II)															
10.1	Gradation	MoRT&H Section-500/Clause-507 & Table 500-10	One set for individual constituent and mixed aggregate from dryer for each 400 tonnes of mix produced subject to minimum of two Tests per day per plant	528	528	0	158	3	3	0	1	531	531	0	159
10.2	Flakiness & Elongation Index	IS: 2386 (Part1) 1963	1 Test for 350 m^3	183	183	0	68	1	1	0	1	184	184	0	69
10.3	Aggregate Impact Value Test	IS: 2386 (Part4) 1963	1 Test for 350 m^3	183	183	0	68	1	1	0	1	184	184	0	69
10.4	Binder content and grading of mix	IRC:SP:11-1988 (APP-5)	One Test for each 400 tonnes of mix produced subject to a minimum of two test per day per plant	212	212	0	78	2	2	0	1	214	214	0	79
10.5	Marshall Stability of mix	ASTM D 2726/1188	3 Tests for stability flow value density and void contents for each 400 tonnes of mix produced subject to minimum of two Tests per plant per day	306	306	0	93	2	2	0	1	308	308	0	94
10.6	Core Cutting and Density of Compacted Layer	Table 900-4 of MoRT&H	1 set Test per 700 Sqm / 1 pit	948	948	0	278	5	5	0	3	953	953	0	281
10.7	Sand Equivalent Test	IS: 2720 (Part37) 1963	One Test for each source	16	16	0	15	0	0	0	0	16	16	0	15
10.8	Los Angeles Abrasion Value	IS: 2386 (Part3) 1963	1 Test for 350 m^3	145	145	0	49	1	1	0	1	146	146	0	50
10.9	Stripping	IS:6241	One Test for each source	7	7	0	7	0	0	0	0	7	7	0	7
10.10	Retained Tensile Strength	AASHTO 284	One Test for each source	8	8	0	8	0	0	0	0	8	8	0	8
10.11	Water absorption of Aggregates	IS:2386 (Part3)	One Test for each source	3	3	0	1	0	0	0	0	3	3	0	1
10.12	Plasticity Index	IS:2720 (Part5)	One Test for each source	6	6	0	5	0	0	0	0	6	6	0	5
11.0 Bituminous Concrete (Grade - II)															
11.1	Gradation	MORTH Section-500/Clause-507 & Table 500-10	One set for individual constituent and mixed aggregate from dryer for each 400 tonnes of mix produced subject to minimum of two Tests per day per plant	273	273	0	68	0	0	0	0	273	273	0	68
11.2	Flakiness & Elongation Index	IS: 2386 (Part1) 1963	1 Test for 350 m^3	96	96	0	30	0	0	0	0	96	96	0	30
11.3	Aggregate Impact Value Test	IS: 2386 (Part4) 1963	1 Test for 350 m^3	96	96	0	30	0	0	0	0	96	96	0	30
11.4	Binder content and grading of mix	IRC:SP:11-1988 (APP-5)	One Test for each 400 tonnes of mix produced subject to a minimum of two test per day per plant	141	141	0	49	0	0	0	0	141	141	0	49
11.5	Marshall Stability of mix	ASTM D 2726/1188	3 Tests for stability flow value density and void contents for each 400 tonnes of mix subject to minimum of two Tests per plant per day	564	564	0	47	0	0	0	0	564	564	0	47
11.6	Core Cutting and Density Of Compatied Layer	Table 900-4 of MoRT&H	1 set Test per 700 Sqm / 1 pit	883	883	0	248	0	0	0	0	883	883	0	248
11.7	Sand Equivalent Test	IS: 2720 (Part37) 1963	One Test for each source	1	1	0	1	0	0	0	0	1	1	0	1
11.8	Los Angeles Abrasion Value	IS: 2386 (Part3) 1963	1 Test for 350 m^3	96	96	0	29	0	0	0	0	96	96	0	29
11.9	Stripping	IS: 6241	One Test for each source	2	2	0	2	0	0	0	0	2	2	0	2
11.10	Retained Tensile Strength	AASHTO 284	One Test for each source	2	2	0	2	0	0	0	0	2	2	0	2
11.11	Water absorption of Aggregates	IS:2386 (Part3)	One Test for each source	2	2	0	2	0	0	0	0	2	2	0	2
11.12	Plasticity Index	IS:2720 (Part5)	One Test for each source	2	2	0	2	0	0	0	0	2	2	0	2

Four Laning of Cholopuram - Thanjavur From Km 116.440 to Km 164.275 Section of NH-45C in the State of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode.															
Summary of Quality Control Report / Monthly Progress Report (QC) - MONTH : July-2023															
Sr. No.	Description	IS Specification Clause	Frequency of Tests	Test conducted upto Previous month				Tests conducted during reporting month July 2023				Test conducted upto this month			
				Nos. of test Conducted	Passed	Failed	Nos. of test witnessed by IE	Nos. of test Conducted	Passed	Failed	Nos. of test witnessed by IE	Nos. of test Conducted	Passed	Failed	Nos. of test witnessed by IE
12.0 Bitumen test															
12.1	Absolute Viscosity at 60ºC poise, Minimum	IS: 1206-1978 (Part2)	As per table 2 of IS:73-2013	213	213	0	67	5	5	0	3	218	218	0	70
12.2	Penetration Test at 25ºC, 100gr, 0.1mm, 5 sec	IS: 1203-1978	As per table 2 of IS:73-2013	293	293	0	69	5	5	0	3	298	298	0	72
12.3	Softening point (R&B) Min	IS: 1205-1978	As per table 2 of IS:73-2013	340	340	0	89	5	5	0	3	345	345	0	92
12.4	Elastic Recovery of half thread in ductilometer at 15°C, Percent, min	IS:15462-2019	As per table 2 of IRC:SP:53	142	142	0	43	3	3	0	1	145	145	0	44
12.5	Separation, Difference in Softening Point (R&B)ºC max	IS:15462-2019	As per table 2 of IRC:SP:53	136	136	0	43	3	3	0	1	139	139	0	44
12.6	Test on Residue from TFOT														
12.7	Viscosity ratio at 60ºC max	IS: 1206-1978 (Part2)	1 Test per Lot	61	61	0	33	2	2	0	1	63	63	0	34
12.8	Ductility at 25ºC, cm, Min	IS: 1208-1978	1 Test per Lot	61	61	0	33	2	2	0	1	63	63	0	34
13.0 Emulsion SS1 & RS1															
13.1	Saybolt furol Viscosity	IS: 13117	1 Test per Lot	39	39	0	25	0	0	0	0	39	39	0	25
13.2	Residue on 600 micron IS sieve	IS: 8887	1 Test per Lot	39	39	0	25	0	0	0	0	39	39	0	25
13.3	Water Content, Percent by mass	IS: 8887	1 Test per Lot	39	39	0	25	0	0	0	0	39	39	0	25
14.0 Emulsion Prime Coat & Tack Coat															
14.1	Rate of Spread of Binder	IRC: SP:16	Three test per Day	852	852	0	204	12	12	0	3	864	864	0	207
15.0 Coarse/Fine Aggregate (MoRT&H 1007 & 1008)															
15.1	Gradation	IS:2386 (Part2)	As required	1248	1248	0	392	30	30	0	10	1278	1278	0	402
15.2	Specific gravity & Water absorption	IS:2386 (Part3)	As required	80	80	0	44	0	0	0	0	80	80	0	44
15.3	Aggregate Impact Value	IS:2386 (Part4)	As required	256	256	0	93	10	10	0	3	266	266	0	96
15.4	Flakiness index	IS:2386 (Part1)	As required	253	253	0	91	10	10	0	3	263	263	0	94
16.0 Cement (MoRT&H 1006)															
16.1	Fineness	IS:4031 (Part1)	500mt (or) Every week	327	327	0	123	4	4	0	2	331	331	0	125
16.2	Normal Consistency	IS:4031 (Part4)	500mt (or) Every week	327	327	0	123	4	4	0	2	331	331	0	125
16.3	Initial & Final setting time	IS:4031 (Part5)	500mt (or) Every week	327	327	0	123	4	4	0	2	331	331	0	125
16.4	Soundness of Cement	IS:4031 (Part3)	500mt (or) Every week	167	167	0	73	0	0	0	0	167	167	0	73
16.5	Compressive Strength-set	IS:4031 (Part6)													
	3 days		500mt (or) Every week	349	349	0	131	5	5	0	3	354	354	0	134
	7 days		500mt (or) Every week	335	335	0	127	5	5	0	3	340	340	0	130
	28 days		500mt (or) Every week	335	335	0	106	5	5	0	3	340	340	0	109
17.0 Concrete Cube Strength of Site Cubes 28 Days															
17.1	M15 PCC	IS:516 / IS:456	MoRT&H Sec. 1700	1905	1905	0	540	66	66	0	13	1971	1971	0	553
17.2	M20 PCC	IS:516 / IS:456	MoRT&H Sec. 1700	146	146	0	49	6	6	0	0	152	152	0	49
17.3	M20 RCC	IS:516 / IS:456	MoRT&H Sec. 1700	435	435	0	51	0	0	0	0	435	435	0	51
17.4	M20 KERB	IS:516 / IS:456	MoRT&H Sec. 1700	607	607	0	442	0	0	0	0	607	607	0	442
17.5	M25 RCC	IS:516 / IS:456	MoRT&H Sec. 1700	447	447	0	103	12	12	0	3	459	459	0	106
17.6	M30 RCC	IS:516 / IS:456	MoRT&H Sec. 1700	2654	2654	0	672	0	0	0	0	2654	2654	0	672
17.7	M30 RCC PUMPABLE	IS:516 / IS:456	MoRT&H Sec. 1700	1041	1041	0	265	126	126	0	50	1167	1167	0	315
17.8	M35 RCC	IS:516 / IS:456	MoRT&H Sec. 1700	1110	1093	17	375	0	0	0	0	1110	1093	17	375
17.9	M35 RCC PILING	IS:516 / IS:456	MoRT&H Sec. 1700	3050	3050	0	1008	0	0	0	0	3050	3050	0	1008
17.1	M35 RCC PUMPABLE	IS:516 / IS:456	MoRT&H Sec. 1700	5812	5812	0	1646	306	306	0	90	6118	6118	0	1736
17.11	M35 RE BLOCK	IS:516 / IS:456	MoRT&H Sec. 1700	1931	1931	0	616	0	0	0	0	1931	1931	0	616
17.12	M40 RCC	IS:516 / IS:456	MoRT&H Sec. 1700	1908	1908	0	385	111	111	0	30	2019	2019	0	415
17.13	M45 PUMP	IS:516 / IS:456	MoRT&H Sec. 1700	656	656	0	170	0	0	0	0	656	656	0	170
17.14	Cement Grout	IS:516 / IS:456	MoRT&H Sec. 1700	56	56	0	13	0	0	0	0	56	56	0	13

Four Laning of Cholopuram - Thanjavur From Km 116.440 to Km 164.275 Section of NH-45C in the State of Tamil Nadu Under NHDP Phase-IV on Hybrid Annuity Mode.																
Summary of Quality Control Report / Monthly Progress Report (QC) - MONTH : July-2023																
Sr. No.	Description	IS Specification Clause	Frequency of Tests	Test conducted upto Previous month				Tests conducted during reporting month July 2023				Test conducted upto this month				
				Nos. of test Conducted	Passed	Failed	Nos. of test witnessed by IE	Nos. of test Conducted	Passed	Failed	Nos. of test witnessed by IE	Nos. of test Conducted	Passed	Failed	Nos. of test witnessed by IE	
18.0 BENTONITE																
18.1	Density	MoRT&H Sec. 1115.2.3	As required	446	446	0	136	0	0	0	0	446	446	0	136	
18.2	Marsh Cone Viscosity			446	446	0	136	0	0	0	0	446	446	0	136	
18.3	pH Value			446	446	0	136	0	0	0	0	446	446	0	136	
18.4	Silt Content			15	15	0	6	0	0	0	0	15	15	0	6	
18.5	Liquid Limit			18	18	0	7	0	0	0	0	18	18	0	7	
19.0 Fine Aggregate (MoRT&H 1008)-(RE-Block)																
19.1	Grade / Sieve analysis	IS:2386 (Part1)	As required	731	731	0	225	20	20	0	5	751	751	0	230	
19.2	Fineness Modulus	MoRT&H Sec. 1008 & 383	As required	731	731	0	225	20	20	0	5	751	751	0	230	
19.3	Specific gravity & Water absorption	IS:2386 (Part2)	As required	24	24	0	12	0	0	0	0	24	24	0	12	
20.0 Coarse Aggregate (MoRT&H 1007)-(RE-Block)																
20.1	Gradation	IS:2386 (Part2)	As required	679	679	0	184	20	20	0	5	699	699	0	189	
20.2	Specific gravity & Water absorption	IS:2386 (Part3)	As required	27	27	0	19	0	0	0	0	27	27	0	19	
20.3	Aggregate Impact Value	IS:2386 (Part4)	1 test / each source & monthly	74	74	0	37	5	5	0	5	79	79	0	42	
20.4	Flakiness index	IS:2386 (Part1)	1 test / each source & monthly	54	54	0	24	5	5	0	5	59	59	0	29	
21.0 Dense Lean Concrete (DLC)																
21.1	Gradation	MoRT&H Section-601	1 test/400m^3	11	11	0	5	0	0	0	0	11	11	0	5	
21.2	Field Density	MoRT&H Sec 903.5.1	3 Sample for 2000 Sqm	43	43	0	10	0	0	0	0	43	43	0	10	
21.3	Cubes casting & Testing (Sets)	IS:516	1 set for 1000 Sqm	20	20	0	6	0	0	0	0	20	20	0	6	
22.0 Pavement Quality Concrete (PQC)																
22.1	Gradation	IS:2386 (Part1)	1 Test per day	35	35	0	11	0	0	0	0	35	35	0	11	
22.2	Aggregate Impact Value	IS:2386 (Part4) 1963	As required	16	16	0	7	0	0	0	0	16	16	0	7	
22.3	Los Angeles Abrasion Value	IS:2386 (Part4) 1963	As required	16	16	0	7	0	0	0	0	16	16	0	7	
22.4	Compressive Strength	IS:516	2 Cubes /150 cum (min 6 cubes)	42	42	0	13	0	0	0	0	42	42	0	13	
22.5	Flexural Strength	IS:516	2 Beams /150 cum (min 6 Beams)	42	42	0	14	0	0	0	0	42	42	0	14	
22.6	Measurement of thickness for trial length	IS:516	3 cores per trial length	16	16	0	7	0	0	0	0	16	16	0	7	
23.0 Steel Third Party																
23.1	8 mm Dia	IS:1786	Physical & Chemical Properties:- (1) Test on first lot. (2) Further supply will be provided with mtc. (3) As required by engineer.	23	23	0	14	1	1	0	1	24	24	0	15	
23.2	10 mm Dia	IS:1786		26	26	0	17	1	1	0	1	27	27	0	18	
23.3	12 mm Dia	IS:1786		30	30	0	19	1	1	0	1	31	31	0	20	
23.4	16 mm Dia	IS:1786		32	32	0	20	0	0	0	0	32	32	0	20	
23.5	20 mm Dia	IS:1786		25	25	0	13	0	0	0	0	25	25	0	13	
23.6	25 mm Dia	IS:1786		25	25	0	15	0	0	0	0	25	25	0	15	
23.7	32 mm Dia	IS:1786		10	10	0	5	0	0	0	0	10	10	0	5	
Remarks:																

Date	Temperature (Celsius)		Humidity (%)		Rainfall (mm)	Remarks
	Min	Max	Min	Max		
01-07-2023	27.2	38.3	37	74	0.00	Sunny
02-07-2023	27.2	32.9	53	75	0.00	Sunny
03-07-2023	27.1	36.0	44	72	0.00	Sunny
04-07-2023	25.8	33.8	50	72	0.00	Sunny
05-07-2023	26.5	35.2	41	70	0.00	Sunny
06-07-2023	26.4	33.2	48	70	0.00	Sunny
07-07-2023	26.9	34.4	49	68	0.00	Sunny
08-07-2023	27.3	37.6	42	67	0.00	Sunny
09-07-2023	27.1	38.4	37	83	35.00	Rainy
10-07-2023	24.5	38.4	37	87	12.50	Rainy
11-07-2023	25.4	32.3	63	90	0.00	Cloudy
12-07-2023	26.1	34.4	52	87	0.00	Cloudy
13-07-2023	25.9	36.6	44	82	0.00	Sunny
14-07-2023	25.9	38.7	40	82	4.00	Rainy
15-07-2023	29.4	31.4	69	76	0.00	Sunny
16-07-2023	26.2	35.9	45	79	0.00	Sunny
17-07-2023	26.9	36.6	42	73	0.00	Sunny
18-07-2023	26.8	37.4	37	73	0.00	Sunny
19-07-2023	26.8	36.5	40	67	0.00	Sunny
20-07-2023	26.8	37.1	36	67	0.00	Sunny
21-07-2023	29.8	37.1	36	67	0.00	Sunny
22-07-2023	27.7	37.6	40	61	0.00	Sunny
23-07-2023	26.8	37.3	41	69	0.00	Sunny
24-07-2023	25.5	37.3	37	86	0.00	Sunny
25-07-2023	26.5	36.9	37	75	0.00	Sunny
26-07-2023	26.2	37.5	36	75	0.00	Sunny
27-07-2023	26.0	38.2	37	68	0.00	Sunny
28-07-2023	27.4	37.9	39	74	0.00	Sunny
29-07-2023	26.5	36.7	40	67	0.00	Sunny
30-07-2023	27.1	38.3	35	67	0.00	Sunny
31-07-2023	28.9	39.3	41	64	0.00	Sunny

Various issues related to environment and safety, such as 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 construction work in the project.

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

Safety instructions given to Drivers and Reflecting stickers pasting at Ch. 140+100

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

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

2. NOC from PWD/WRO, Govt. of Tamil Nadu for the construction of project highways in the existing ponds (in a length of 1.667 Kms).

3. Additional land acquisition for the construction of Bus bays/Bus Shelter, Turning radius at Minor & Major junctions.

4. Removal of Religious structures of 03 Nos. and existing Bus stand from the proposed ROW.

5. Required State Support Agreement between NHAI & Govt. of Tamil Nadu as due priority will be given to NH Projects by the State Govt. officials.

6. Estimate for shifting of water supply utilities in Missing locations-Request Authority for earlier Approval.

7. Unprecedented/Unseasonal heavy rainfall within the project alignment affecting the construction activities and progress of work at site.

8. Principle approval from the competent authority for the recommended additional scope of work by IE under Positive Change of Scope.

Table 10.1. Details of Important Events

Sl. No	Date of Events	Description of Events	Remarks

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

1. Fig. 4 - Organization Chart - EPC Team

2. Fig. 5 - Organization Chart - SPV Team

Figure - 4 Organization Chart of EPC

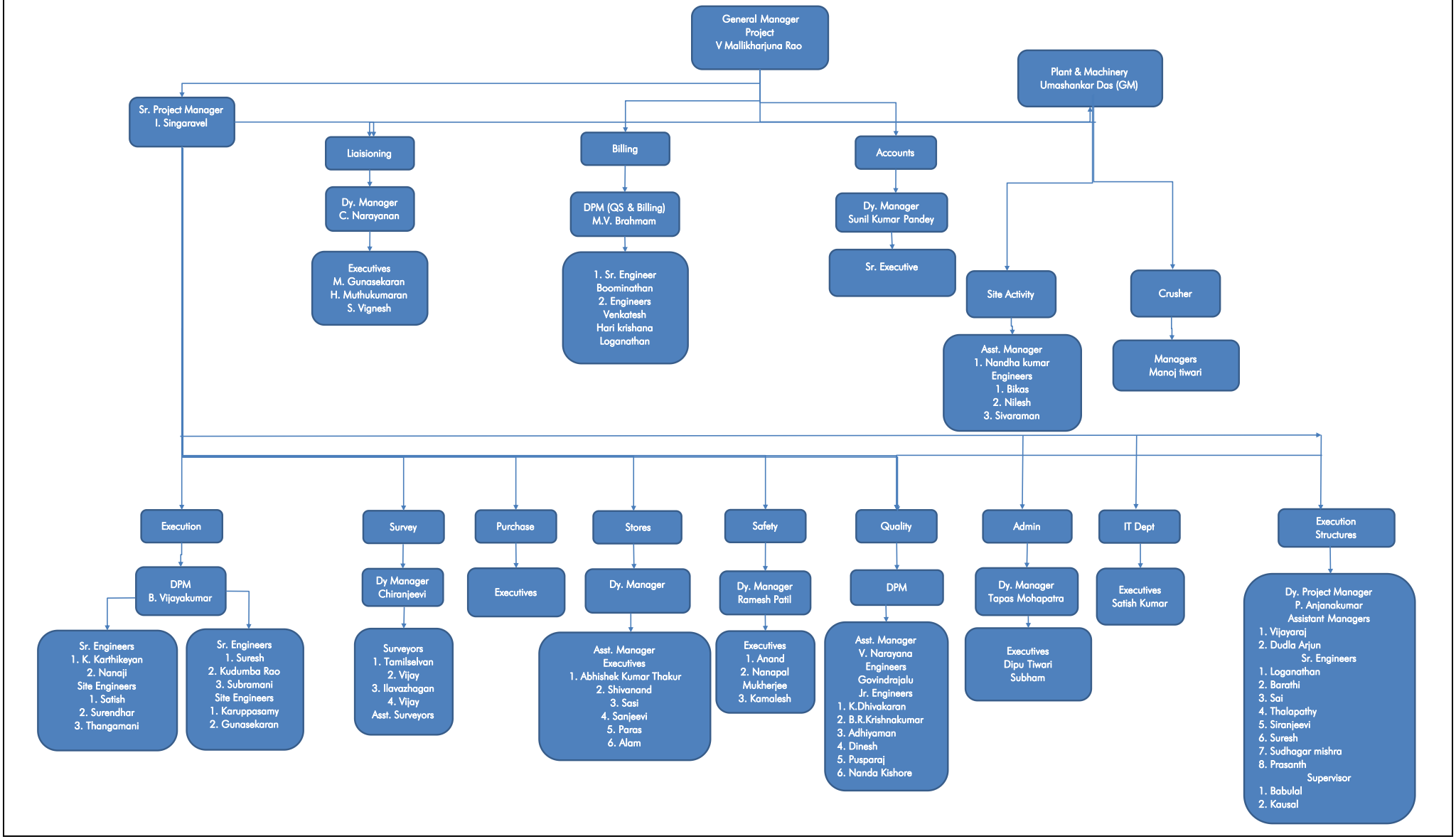


Figure - 5 Organization Chart of Concessionaire

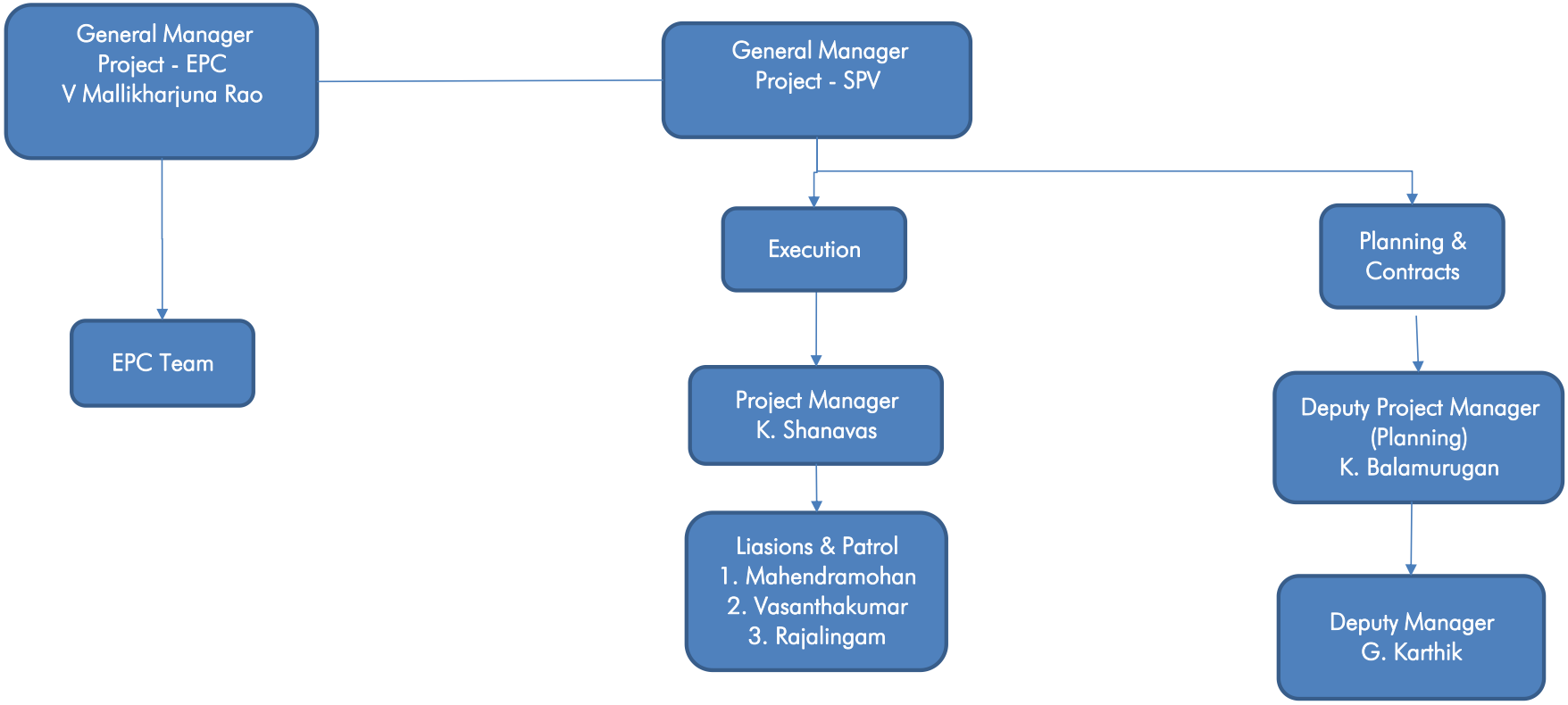


Table 12.1 List of Plants, Machinery and Equipment's

S.No	Name of the Machinery	Capacity / Model	Mobilized at Site	Remarks
1	Grader	120K2	5	
2	Excavator/JCB	JCB-220	3	
3	PT Roller		1	
4	Soil Compactor	HAMM 311	7	
5	Backhoe Loader	JCB 3DX	4	
6	Tipper	Bharat Benz- 3128C	21	
7	Transit Mixer	2523C	06	
8	Loader	455 ZX	10	
9	Trailer		2	
10	Water Tanker		9	
11	Diesel Tanker		2	
12	Tandem Roller		3	
13	Tractor	5036 D V-2	4	
14	Mobile Service Van		1	
15	Tower Light	AJASKY	7	
16	Hydra Crane		2	
17	Asphalt Batch Mix Plant		1	
18	Wet Mix Plant	250 TPH	1	
14	Concrete Batch Mix Plant 45 cum	45 cum	2	
15	Bitumen sprayer		2	
16	Crusher Plant (3 Stage)	250 TPH	2	
17	Weigh Bridge for Camp 100MT	100MT	4	
18	Weigh Bridge for Crusher 100MT	100MT	3	
19	Genset Base Camp	25KV	2	
20	Genset (Crusher) 63KVA	63KVA	1	
21	Genset (H.M & B/P)	82.50KV	2	
22	Genset (B/P-CP-45)	125KV	2	
23	Genset 650 KVA	650 KVA	1	
26	Genset (Crusher)	500KVA	2	

27	Genset 15KVA	45KVA	1	
28	Light moving vehicles-car, Jeep, Van		21	
29	Paver		3	
30	Kerb laying Machine		1	

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	Approval obtained from the Authority.	3.76 Cr.	06.02.2020
2	Upgradation strengthening the Incident Management services.	10.05.2019	IE recommended to Authority vide ref. 148 for issuance under COS and is under scrutiny with Authority	NA	NA
3	Comprehensive Change of Scope proposal	19.03.2019	Approval obtained from the Authority.	9.37 Cr.	23.03.2022
4	Interchanging of Structures	26.09.2020	IE recommended to Authority for approval.	(-) 2.99 Cr.	NA
5	Additional work required to be done as per demand of local public	17.03.2023	Tentative cost estimate recommended by IE for obtaining the receipt of Change of Scope notice from the competent authority.	13.10 Cr. (Tentative cost estimate as recommended by IE)	NA

The following tables list out the correspondences held between the parties in the particular month.

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

Four laning of Cholapuram to Thanjavur from Km 116+440 to 164+275 section of NH-45C in the state of Tamilnadu under NHDP-IV on Hybrid Annuity Mode.				
TABLE 14.1 - CORRESPONDANCE - CONCESSIONAIRE TO NHAI				
Sr. No.	Date	Letter No	Subject	Remarks
1	04.07.2023	PCTHPL-HO-CTP-PIU-025-2023	Submission Audited Financial Report for FY 2021-22	
2	08.07.2023	PCTHPL/CTP/NHAI/2023/2009	Permission required for operating Borrow area during nighttime at Ariyalur district	
3	12.07.2023	PCTHPL/CTP/NHAI/2023/2016	Recording of Drone video for the month of June 2023-reg	
4	12.07.2023	PCTHPL/CTP/NHAI/2023/2017	Submission of RA Bill-06 for Recording of Drone video-reg	
5	12.07.2023	PCTHPL/CTP/NHAI/2023/2018	Removal of unused beam at Kurungalur village- Reg	
6	22.07.2023	PCTHPL-HO-CTP-PIU-027-2023	Reimbursement of expenditure of safety requirements as per Cl 18.1.2 & 18.2 of CA	

Four laning of Cholapuram to Thanjavur from Km 116+440 to 164+275 section of NH-45C in the state of Tamilnadu under NHDP-IV on Hybrid Annuity Mode.

TABLE 14.2 - CORRESPONDANCE - NHAI TO CONCESSIONAIRE

Sr. No.	Date	Letter No	Subject	Remarks
1	06.07.2023	NHAI/PIU/Thanjavur/11026/15/2018/1885	PMS-04 and IPC-01 of PMS-05 Approval requested	
2	07.07.2023	NHAI/PIU/Thanj/11026/06/2018/1915	Villagers of thiruvaipadi requesting to provide busstop, street lights, service road and drainage facilities	
3	07.07.2023	NHAI/PIU/Thanj/11026/06/2018/1903	Regarding request the road between kallani -poombuhar SH	
4	10.07.2023	NHAI/PIU/Thanj/11025/17/2018/1941	Supply of fly ash from TPPs-Requested	
5	12.07.2023	NHAI/PIU/Thanj/TDS/16A/2022-23/Q4/1977	NHAI_Form 16A-forwarding-reg	
6	12.07.2023	NHAI/PIU/Thanj/11025/03/2018/1995	Villagers of thiruvaipadi requesting to provide busstop, street lights, service road and drainage facilities	
7	18.07.2023	NHAI/PIU/Thanj/11025/11/2018/2033	Expenditure on safety requirements-claim	
8	18.07.2023	NHAI/PIU/Thanj/11025/03/2018/2035	Sundipallam requesting to provide subway-reg	
9	19.07.2023	NHAI/14013/50/2023/RO Madurai/1201	Minutes of meeting dated 21.06.2023	
10	26.07.2023	NHAI/PIU/Thanj/11026/06/2018/2108	Melachemmangudi village- Provided pathway	
11	26.07.2023	NHAI/PIU/Thanj/11026/06/2018/2109	Melachemmangudi village- Provided pathway	

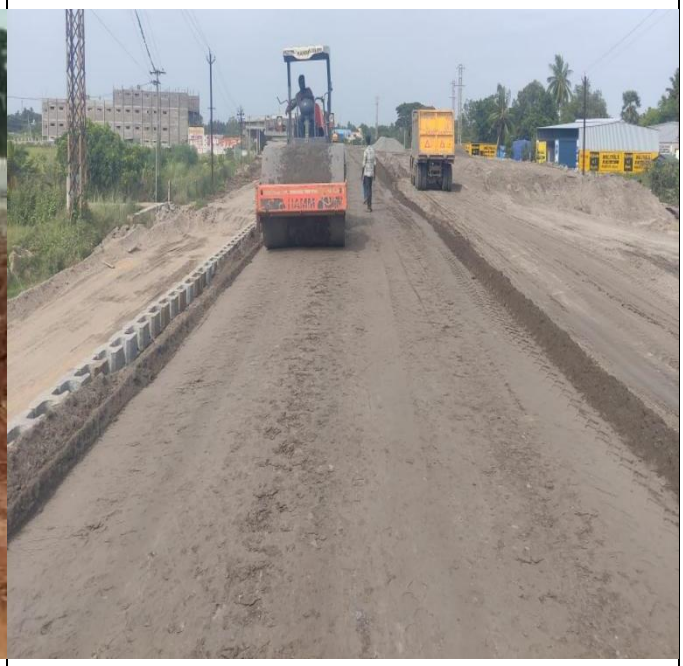
Four laning of Cholapuram to Thanjavur from Km 116+440 to 164+275 section of NH-45C in the state of Tamilnadu under NHDP-IV on Hybrid Annuity Mode.				
TABLE 14.3 - CORRESPONDANCE - CONCESSIONAIRE TO INDEPENDENT ENGINEER				
Sr. No.	Date	Letter No	Subject	Remarks
1	06.07.2023	PCTHPL/CTP/IE/2023/2006	Submission of MPR for the month of June 2023	
2	07.07.2023	PCTHPL/CTP/IE/2023/2008	Submission of MSR for the month of June 2023	
3	12.07.2023	PCTHPL/CTP/IE/2023/2015	Submission of D&D of MJB at Km. 146+902 & 148+017- Reg	
4	12.07.2023	PCTHPL/CTP/IE/2023/2019	Compliance report- Review of June 2023 MPR	
5	12.07.2023	PCTHPL/CTP/IE/2023/2020	Submission of Job mix formula for BC (Grading-II) (JMF-05) -Reg	
6	14.07.2023	PCTHPL/CTP/IE/2023/2025	Submission of compliance report for clarification sought by the F&A RO, Madurai on PMS 04 and IPC 01 of PMS-05-reg	
7	15.07.2023	PCTHPL/CTP/IE/2023/2028	Submission of D&D of MJB at Km. 146+902 & 148+017	
8	26.07.2023	PCTHPL/CTP/IE/2023/2034	Submission of revised P&P between Km. 125+000 to Km. 128+000	
9	27.07.2023	PCTHPL/CTP/IE/2023/2037	Submission of D&D of PUP proposed at Ch. 147+448 under COS	

Four laning of Cholapuram to Thanjavur from Km 116+440 to 164+275 section of NH-45C in the state of Tamilnadu under NHDP-IV on Hybrid Annuity Mode.

TABLE 14.4 - CORRESPONDANCE - INDEPENDENT ENGINEER TO CONCESSIONAIRE / NHAI

Sr. No.	Date	Letter No	Subject	Remarks
1	08.07.2023	THEME/NHAI/CHO-TNJR/ATH/0623/1072	Reg road between kallanai - poombuhar	
2	11.07.2023	THEME/NHAI/CHO-TNJR/CON/0623/1409	Review of June 2023-MPR	
3	12.07.2023	THEME/NHAI/CHO-TNJR/CON/0623/1410	Submission of D&D of MJB at Km. 146+902 and Km. 148+017	
4	14.07.2023	THEME/NHAI/CHO-TNJR/CON/0623/1413	Job mix design for BC Grade-II (JMF-05)	
5	15.07.2023	THEME/NHAI/CHO-TNJR/ATH/0723/1076	PMS-04 and IPC-01 of PMS 05-Clarification submitted-reg	
6	17.07.2023	THEME/NHAI/CHO-TNJR/ATH/0723/1078	Inspection report for the month of June 2023-reg	
7	17.07.2023	THEME/NHAI/CHO-TNJR/ATH/0723/1079	O&M Inspection report for the month of June 2023	
8	19.07.2023	THEME/NHAI/CHO-TNJR/ATH/0723/1080	Submission of D&D of MJB at Km. 146+902 and Km 148+017	
9	19.07.2023	THEME/NHAI/CHO-TNJR/ATH/0723/1081	Melachemmangudi village- Papanasam taluk-Request for pathway	
10	21.07.2023	THEME/NHAI/CHO-TNJR/CON/0723/1416	Review of MSR for the month of June-2023	
11	27.07.2023	THEME/NHAI/CHO-TNJR/ATH/0723/1085	Information sought under RTI-report called for	
12	31.07.2023	THEME/NHAI/CHO-TNJR/CON/0723/1420	Review for the Design and Drawings for the MNBs located at Ch. 138+935, Ch. 139+138, Ch. 139+299, Retaining wall from Ch. 144+700 to Ch. 144+890 and Box structure at Ch. 131+766–reg.	

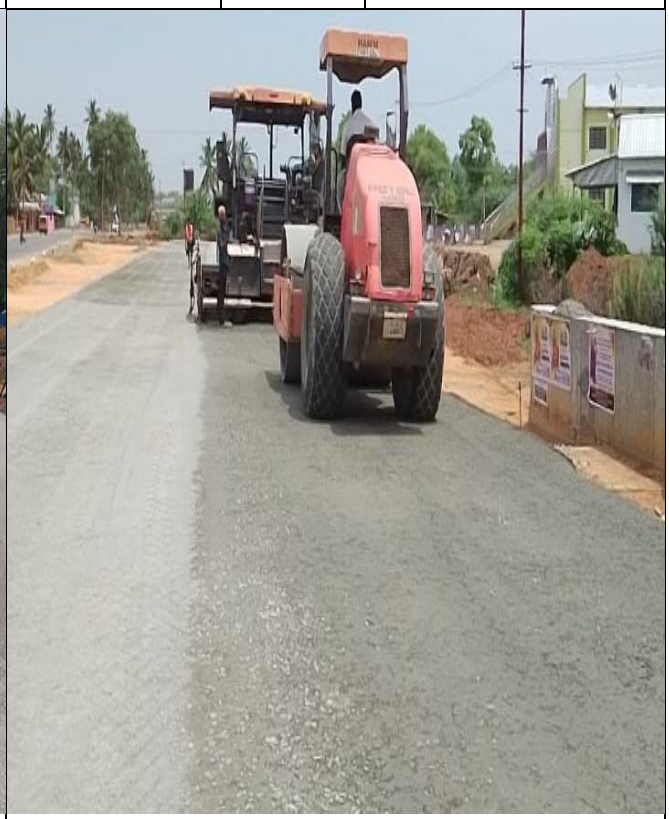
Sr. No	Description	Location	Side	Remarks
1.	Embankment Layer work in progress	156+090	RSR	Bypass
2.	RE Wall Embankment Layer work in progress	127+581	BHS	Bypass



Sr. No	Description	Location	Side	Remarks
3.	Subgrade Layer work in progress	129+970	BHS	Existing Road
4.	Subgrade Layer work in progress	147+960	LHS	Bypass

Sr. No	Description	Location	Side	Remarks
5.	CTSB Layer work in progress	130+120	LHS	Existing Road
6.	CTSB Layer work in progress	156+040	LHS	Bypass

Sr. No	Description	Location	Side	Remarks
7.	WMM Layer work in progress	116+440	RHS	Existing Road
8.	WMM Layer work in progress	116+920	RHS	Existing Road



Sr. No	Description	Location	Side	Remarks
9.	DBM Layer work in progress	116+540	LHS	Existing Road
10.	DBM Layer work in progress	156+030	RHS	Bypass

Sr. No	Description	Location	Side	Remarks
11.	BC Layer work in progress	156+100	LHS	Bypass
12.	BC Layer work in progress	156+100	RHS	Bypass

Sr. No	Description	Location	Side	Remarks
13.	Superstructure work in progress	155+407	LSR	Box culvert
14.	Foundation work in progress	146+671	LHS	Minor Bridge

Sr. No	Description	Location	Side	Remarks
15.	Foundation work in progress	131+766	LHS	Box Culvert