



Monthly Progress Report

Construction of Eight Lane Vadodara Kim Expressway from Km. 323.00 to Km. 355.00 (Sanpa to Padra Section of Vadodara Mumbai Expressway) in the State of Gujarat under NHDP Phase-VI Hybrid Annuity Mode (Phase IA-Package II).

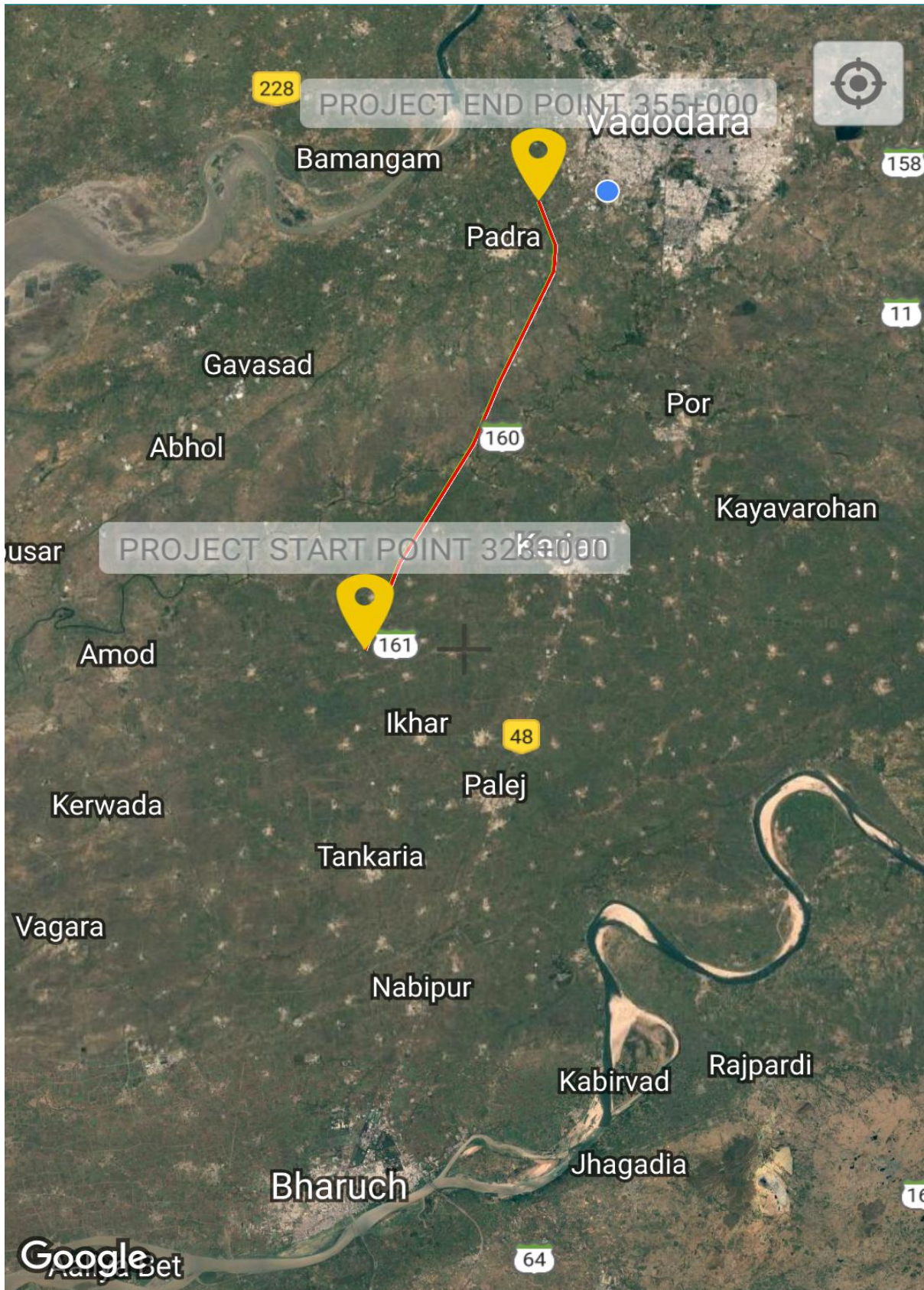
<u>Authority</u>	:	National Highways Authority of India
<u>Concessionaire</u>	:	IRCON Vadodara Kim Expressway Limited
<u>EPC Contractor</u>	:	Ircon International Ltd.
<u>Contractor</u>	:	Patel Infrastructure Ltd.
<u>Independent Engineer</u>	:	Aarvee Associates Architects Engineers Consultants Pvt. Ltd., Hyderabad.

April - 2019

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1. LOCATION PLAN



2. EXECUTIVE SUMAPRILY

The Government of India had entrusted to the Authority the development, maintenance and management of Vadodara Kim Expressway (Sanpa to Padra Section of Vadodara Mumbai Expressway) in the State of Gujarat under NHDP Phase-VI Hybrid Annuity Mode (Phase IA-Package II) including the section from km 323.000 to Km 355.000 (32.000 Km). Eight Lane Project on design, build, operate and transfer basis, which shall be partly financed by the Concessionaire who shall recover its investment and cost through payments to be made by the Authority in accordance with the terms & conditions stipulated in Concession Agreement.

The Authority adopted a single stage two envelope bidding process and accordingly invited proposal by its Request for Proposals dated January, 2018 for qualification and short listing of bidders for construction, operation and maintenance of the Project on Hybrid Annuity Mode.

Letter of Award has been issued to M/s Ircon International Ltd. vide letter no. NHAI/VME Phase 1A/HAM/PkgII/2018/115402 dated 28.03.2018 and concession agreement was signed on 25.05.2018.

Concessionaire achieved financial close on 27.09.2018.

NHAI declared appointed date for the project w.e.f. 31.01.2019 vide letter no. NHAI/VME Phase 1A/HAM/Pkg II/2018/129991 dated 31.01.2019.

Concessionaire has appointed Ircon International Limited (IRCON) as their EPC contractor. Further EPC contractor M/s Ircon International Limited has selected Patel Infrastructure Limited as their Contractor and awarded the entire work of construction on Lump sum Contract basis. M/s Specialized Engineering Services Pvt. Ltd. has been appointed as Design Consultant by Patel Infrastructure Ltd.

Authority has appointed M/s Aarvee Associates Architects Engineers and Consultants Pvt. Ltd. as Independent Engineer vide letter no. NHAI/VME Phase-IA/IE-1/124408 dated 28.09.2018.

3. PROJECT OVERVIEW

Project	Construction of Eight Lane Vadodara Kim Expressway from Km 323.00 to Km 355.00 (Sanpa to Padra Section of Vadodara Mumbai Expressway) in the State of Gujarat under NHDP Phase - VI on EPC Mode (Package-II)
Authority	National Highways Authority of India
Concessionaire	IRCON Vadodara Kim Expressway Limited
EPC Contractor	Iron International Ltd.
Contractor	Patel Infrastructure Ltd.
Independent Engineer	Aarvee Associates Architects Engineers & Consultants Private
Project Length	32.00 Km
Total Bid Project Cost	1865.00 Cr.
Concession Period	15 Years
Construction Period	730 Days from the Appointed Date.
Date of LOA	28.03.2018
Date of Concession Agreement	25.05.2018
Date of Financial Close	25.09.2018
Appointed Date	31.01.2019
Schedule Date of Competition	30.01.2021

(i) TCS Details :

SR. NO.	Chainage as per CA		Chainage as per P&P		TCS TYPE
	To	From	To	From	
1	323+000	323+530	323+000	323+530	TCS 4/structure
2	323+530	323+700	323+530	323+700	TCS 5
3	323+700	329+300	323+700	329+300	TCS 1
4	329+300	329+400	329+300	329+400	TCS 2
5	329+400	331+850	329+400	331+825	TCS 1
6	331+850	332+050	331+825	332+050	TCS 3
7	332+050	334+325	332+020	334+325	TCS 1
8	334+325	334+430	334+325	334+430	TCS 2
9	334+430	337+050	334+430	337+050	TCS 1
10	337+050	337+500	337+050	337+500	TCS 2
11	337+500	341+500	337+500	341+550	TCS 1
12	341+500	341+760	341+550	341+810	TCS 2
13	341+760	343+870	341+810	343+850	TCS 1
14	343+870	344+000	343+850	344+000	TCS 3
15	344+000	344+550	344+000	344+460	TCS 7/Structure
16	344+550	344+750	344+460	344+750	TCS 6
17	344+750	346+750	344+750	346+725	TCS 1
18	346+750	347+150	346+725	347+150	TCS 3
19	347+150	353+050	347+150	353+050	TCS 1
20	353+050	353+550	353+050	353+550	TCS 5
21	353+550	354+850	353+550	354+850	TCS 1
22	354+850	355+000	354+850	355+000	TCS 2

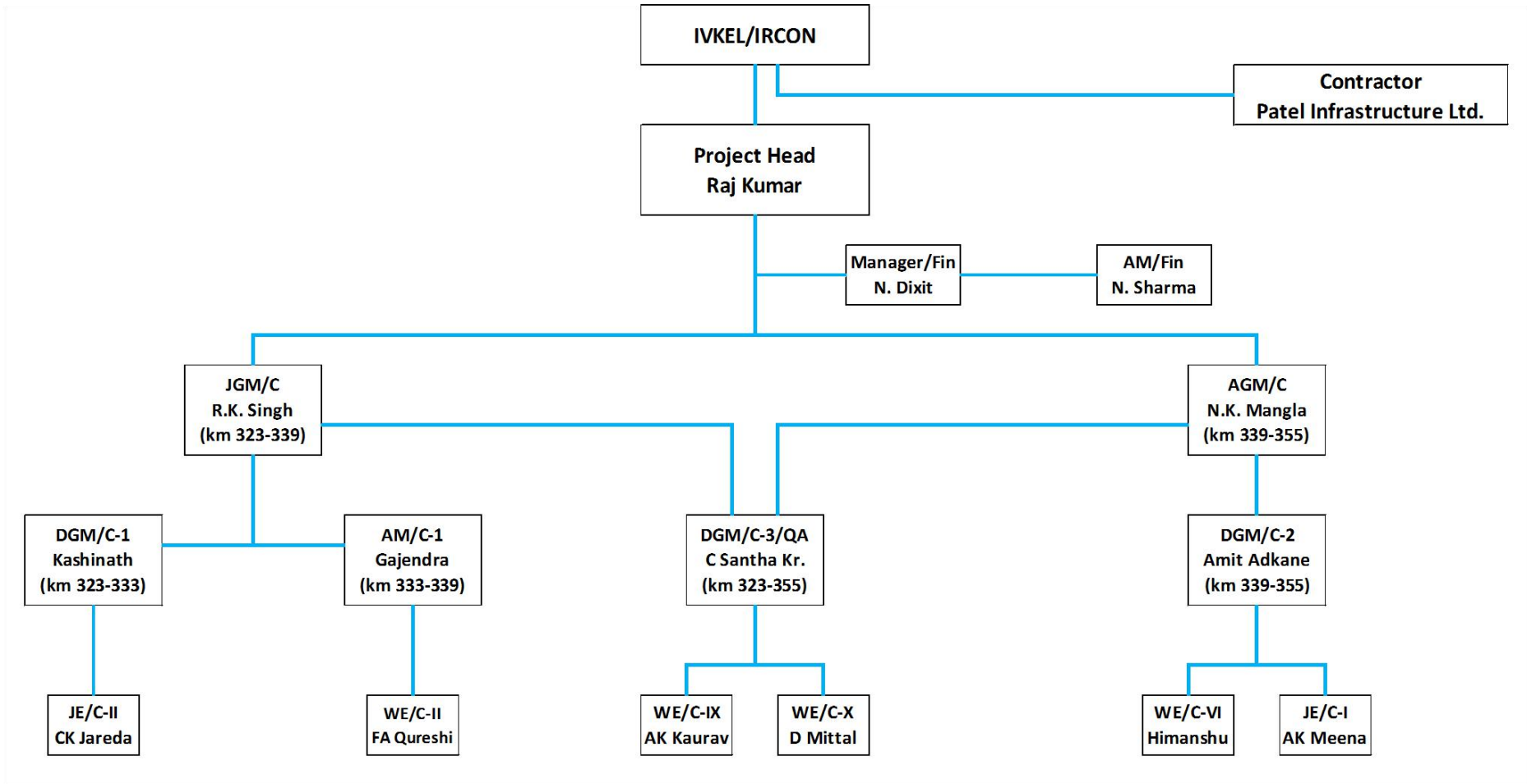
(ii) Structures:

S. No.	Feature	Description
1	Major Bridge	01 Nos. – (6X42.20mtr)
2	Flyover	01 Nos. – (1X22.627+1X42.065+1X22.627mtr)
3	Interchange	02 Nos. (1X16.9+1X47.2+1X16.9mtr.)
4	ROB	01 Nos. – (2X37.20mtr)
5	Minor bridges	09 Nos.
6	Vehicular underpass	05 Nos. – (1X12mtr)
7	Light Vehicular Underpasses	08 Nos. – (1X12mtr)
8	Culverts (HP/BC)	94 Nos. (42 Nos. Pipe / 52 Nos. Box)
9	CUP	34 Nos. (1X12mtr)
10	Vehicular Overpass	02 Nos. – (2x48.221mtr, 2X41.350mtr)
Total		157

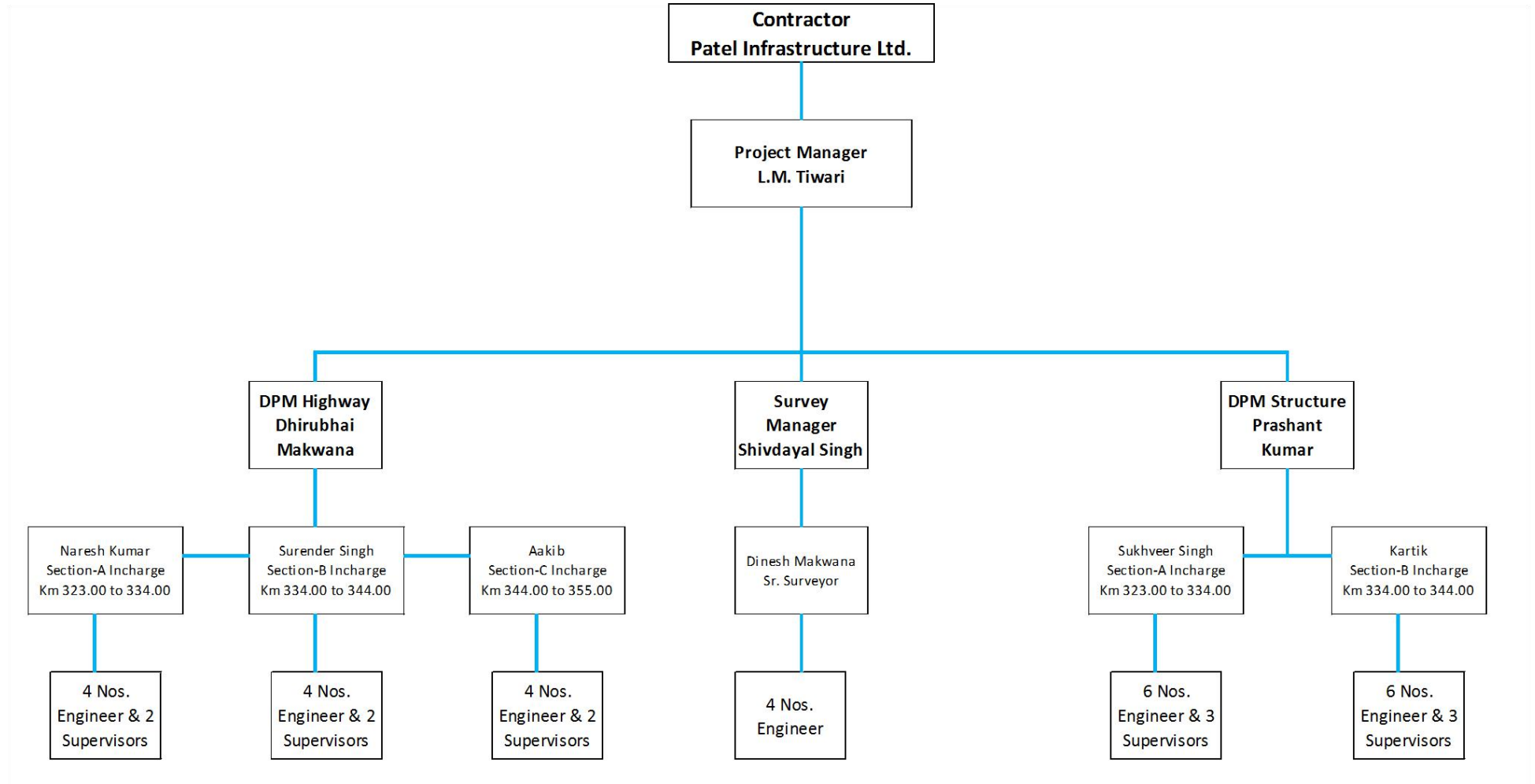
(iii) Milestones as per CA :

Project Milestone	Condition		Time Line
	Physical Progress	Financial Progress	
I	Commenced construction of Project and achieved 20% of Physical Progress	Concessionaire shall have expended not less than 20% of the total capital cost set forth in the Financial Package.	150 th Day from Appointed date
II	Commenced construction of Project and achieved 35% of Physical Progress	Concessionaire shall have expended not less than 35% of total capital cost set forth in the Financial Package.	330 th Day from Appointed date
III	Commenced construction of Project and achieved 75% of Physical Progress	Concessionaire shall have commenced construction of all Project Facilities and expended not less than 75% of total capital cost set forth in the Financial Package.	480 th Day from Appointed date
IV	Completion Of the Project 100% of Physical Progress	Concessionaire shall have expended not less than 100% of total capital cost set forth in the Financial Package	730 th Day from Appointed date

(iv) Details of Key Personnel:



Details of Key Personnel:



(v) Details of Plant and Machinery Deployed:

Plants & Machinery			
Sr. No	Name of Machinery	TOTAL	Remarks
1	Excavator	29	
2	Hywa/Tipper	105	
3	Soil Compactor	22	
4	Dozer	7	
5	Motor Grader	18	
6	Back hoe loader	11	
7	Water Tanker	45	
8	Diesel Dispenser	3	
9	Transit Mixer	15	
10	Concrete Batching Plant	5	
11	Weigh Bridge	2	
12	Tractor	8	
13	Tower Light	3	
14	DG Set	5	
15	Light Vehicle	15	
16	Trailer	4	

4. PROJECT PROGRESS

i) Physical Progress:

A. Highway Progress :

Sr. No.	Item	Unit	Scope of work	Completed / Work in progress	Balance work
1	C & G	Km	32.00	12.10	19.90
2	Earthwork	Km	32.00	10.90	21.10
3	GSB	Km	32.00	0.00	32.00
4	DLC	Km	32.00	0.00	32.00
5	PQC	Km	32.00	0.00	32.00

B. Structure Progress:

Sr. No.	Structure	Unit	Scope	Completed	Work Started	Yet to be Work Started
1	Major Bridge	Nos	1	0	0	1
2	CUP	Nos	34	0	19	15
3	Minor Bridge	Nos	9	0	1	8
4	Box Culvert	Nos	52	0	16	36
5	Pipe Culvert	Nos	42	0	27	15
6	Vehicular Underpass	Nos	5	0	0	5
7	Light Vehicular Underpass	Nos	8	0	0	8
8	Flyover	Nos	1	0	0	1
9	ROB	Nos	1	0	0	1
10	Interchange	Nos	2	0	2	0
11	Vehicular Overpass	Nos	2	0	1	1
12	Utility	Nos	64	0	0	0

ii) Financial Progress :

Contract Price Weightage as per Schedule-G of CA has been submitted vide letter no. IVKEL/3019/VKE/AARVEE/151 dated 27.02.2018. Financial Progress shall be prepared once the Contract Price Weightage gets finalised by IE in due consultation with NHAI.

iii) S-Curve:

Contract Price Weightage as per Schedule-G of CA has been submitted vide letter no. IVKEL/3019/VKE/AARVEE/151 dated 27.02.2018. S-Curve shall be prepared once the Contract Price Weightage gets finalised by IE in due consultation with NHAI.

5. Status of Land Acquisition

- Total land for which compensation was paid by NHAI/CALA as on 31.05.2019 : **96.875% i.e. 31 Km. out of total 32km.**
- Length of various utilities(hindrances) falling in the clear length **31 km: 5.835Km**

Details of above utilities and their affected length of road is given below.

Details of Hindrances	Hindered Length in mtr
Total Hindered length due to Electrical Utilities	2310
Total Hindered length due to water pipeline etc.	290
Total Hindered Area due to Disputed Land	2175
Total Hindered length due to Gas lines	820
Total Hindered length due to Religious Structures	40
Total Hindered length due to Trees	200
Total	5835

- Net unencumbered/Unhindered length of road = **31 – 5.835 = 25.165 km. i.e. 81.18%**
- Approval for Shifting of utilities and other hindrances is still pending at utilities owning authorities/NHAI in spite of continuous follow up by Concessionaire.

9. STATEMENT OF RFIs

<u>MONTH :- April 2019</u>				
S.No.	Total RFI	Approved RFI	RFI Re-submitted after corrections suggested	Remarks
<u>Highway</u>				
1	1850	1360	490	
<u>Structure</u>				
1	658	359	299	
<u>Laboratory (QA/QC)</u>				
1	201	201	0	
<u>Survey</u>				
1	25	17	8	

10. SUMAPRILY OF TESTS CONDUCTED

Sr. No	Type of Test	Test Procedure	Frequency	Total No. of Tests conducted					Test witnessed By I.E	Acceptance Criteria
				Up to last month	During This Month	Total	Pass	Fail		
1	Soil for OGL									
a	Free swelling Index of soil	IS 2720 Part 40	As required	125	5	130	130	0	5	<50%
b	Grain size Analysis	IS 2720 Part 4	2 test for 3000m ³	125	5	130	130	0	5	
c	Atterberg Limits	IS 2720 Part 5	2 test for 3000m ³	125	5	130	130	0	5	
d	Proctor Density Test	IS 2720 Part 8	2 test for 3000m ³	125	5	130	130	0	5	
e	CBR Test	IS 2720 Part 16	1 test for 3000m ³	0	0	0	0	0	0	
2	Borrow Area Soil for Emb/SG/Shoulder									
a	Free swelling Index of soil	IS 2720 Part 40	As required	374	312	686	686	0	43	<50%
b	Grain size Analysis	IS 2720 Part 4	2 test for 3000m ³	374	312	686	686	0	43	
c	Atterberg Limits	IS 2720 Part 5	2 test for 3000m ³	374	312	686	686	0	43	
d	Proctor Density Test	IS 2720 Part 8	2 test for 3000m ³	374	312	686	686	0	43	
e	CBR Test	IS 2720 Part 16	1 test for 3000m ³	0	2	2	2	0	1	
3	GRANULAR SUB BASE (GSB)									
a	Gradation	Table 400-1 of MORTH	1 Test for every 400m ³	0	12	12	12	0	7	
b	Atterberg Limits	IS 2720 Part 5	1 Test for every 400m ³	0	12	12	12	0	7	LL<25% PI<6
c	Proctor Density Test	IS 2720 Part 8	As required per source	0	3	3	3	0	3	
d	CBR	Is 2720 Part 16	As required per source	0	3	3	3	0	2	
e.	Aggregate impact value	IS 2386 Part 4	1 Test for every 200m ³	0	3	3	3	0	3	<40
f	Density of compacted Layer	IS 2386 Part 28	1 Test Per 1000 m ²	0	18	18	18	0	4	98% of MDD

Sr. No	Type of Test	Test Procedure	Frequency	Total No. of Tests conducted					Test witnessed By I.E	Acceptance Criteria
				Up to last month	During This Month	Total	Pass	Fail		
4	CEMENT									
a	Consistency	IS 4031-1968	Once per lot	1	4	5	5	0	2	As per IS Code
b	Initial setting time & final setting time	IS 4031-1968	Once for each source	1	4	5	5	0	2	
c	fineness	IS 4031-1968	Once test for each batch	1	4	5	5	0	2	
d	Compressive Strength	IS 4031-1968	Once test for each batch(Each 3 sets)	1	4	5	5	0	1	
5	Coarse & fine Aggregates									
a	Gradation	IS 2386 part 1	one test per day/ each fraction	22	29	51	51	0	10	As per Mix Design
b	Aggregates Impact value	IS 2386 part 4	minimum of 1 test per day work	22	29	51	51	0	10	
c	Flakiness/Elongation Index	IS 2386 part 1	minimum of 1 test per day work	22	29	51	51	0	10	<35%
d	Los Angles abrasion value	IS 2386 part 4	minimum of 1 test per day work	0	0	0	0	0	0	
e	Specific Gravity & W.A.	IS 2386 part 2	As required	4	4	8	8	0	0	As per Mix Design
6	DLC									
a	Compressive Strength	Morth clause 903.5.2.1	3 sample per 1000m ²	0	0	0	0	0	0	
b	Compaction Test	Morth Clause 903.5.1.1	1 Test Per 2000 m ²	0	0	0	0	0	0	
7	PQC									
a	Compressive & Flexural Strength 7 Days	MORTH close 903.5.2.1	6 Cube & 6 Beam per 150 cum or part or one day work	0	0	0	0	0	0	

Sr. No	Type of Test	Test Procedure	Frequency	Total No. of Tests conducted					Test witnessed By I.E	Acceptance Criteria
				Up to last month	During This Month	Total	Pass	Fail		
b	Compressive & Flexural Strength 28 Days	MORTH close 903.5.2.1	6 Cube & 6 Beam per 150 cum or part or one day work	0	0	0	0	0	0	
g	Concrete Mix Design									
A	Compressive strength of concrete @ 7 Days									
a	M-20 (Sets)	IS 516	As per quantity executed	5	12	17	17	0	8	As Per mix Design
b	M-30 (Sets)			5	12	17	17	0	8	
c	M-35 (RCC)			5	12	17	17	0	8	
d	M-35 (Pile)			5	12	17	17	0	8	
e	M-40			5	12	17	17	0	8	
f	M-40PQC			0	0	0	0	0	0	
B	Compressive strength of concrete @ 28 Days									
a	M-20 (Sets)			5	8	13	13	0	6	As Per mix Design
b	M-30 (Sets)			3	1	4	4	0	6	
c	M-35 (RCC)			3	1	4	4	0	6	
d	M-35 (Pile)			3	1	4	4	0	6	
e	M-40			3	1	4	4	0	6	
f	M-40PQC			0	0	0	0	0	6	
9	Concrete for Structures (Site)									
A	Compressive strength of concrete @ 7 Days									
a	M-20 (Sets)	IS 516	As per quantity executed	6	50	56	56	0	23	
b	M-30 (Sets)			0	9	9	9	0	9	
c	M-35 (RCC)			0	0	0	0	0	0	
d	M-35 (Pile)			0	0	0	0	0	0	
e	M-40			0	0	0	0	0	0	
f	M-40PQC			0	0	0	0	0	0	

Sr. No	Type of Test	Test Procedure	Frequency	Total No. of Tests conducted					Test witnessed By I.E	Acceptance Criteria
				Up to last month	During This Month	Total	Pass	Fail		
B	Compressive strength of concrete @ 28 Days									
a	M-20 (Sets)	IS 516	As per quantity executed	0	42	42	42	0	42	
b	M-25 (Sets)			0	6	6	6	0	6	
c	M-30 (Sets)			0	0	0	0	0	0	
d	M-35 (RCC)			0	0	0	0	0	0	
e	M-35 (Pile)			0	0	0	0	0	0	
f	M-40			0	0	0	0	0	0	
g	M-40PQC			0	0	0	0	0	0	
10	Equipment Calibration									
a	Sand Pouring Cylind(100,150,200)			8	4	12	12	0	4	
b	CBR Moulds			0	0	0	0	0	0	
c	Moisture Container			1	1	2	1	0	1	
d	Calibration of Batching Plant			1	3	4	4	0	4	
11	Sampling for third party Test									
a	Cement			0	2	2	2	0	2	
b	Steel			0	6	6	6	0	6	
c	Admixture			0	1	1	0	0	1	
12	OGL/EMB/SG/Shoulder Construction									
a	Compaction of OGL	As per MORTH Clause 903.2.2	1 Test/3000m2 or Min. 10 Test	1420	49	1469	1464	5	0	
b	Compaction of Embankment		Emb.1 test/3000m2 or Min. 10 Test	178	457	635	635	0	0	
c	Compaction of Sub Grade		SG test/2000m2 or Min. 10 Test	0	0	0	0	0	0	
d	Compaction of Shoulder		Shoulder test/2000m2 or Min. 10 Test	0	0	0	0	0	0	

11. CORRESPONDENCE WITH IE & NHAI

1. Construction Methodology, Quality Assurance Procedure, Design Basis Report, Safety & Traffic Management Plan and Environmental Plan were submitted vide letter IVKEL/3019/VKE/AARVEE/32 dated 10.12.2018. Comments on the same (except design basis report) have been communicated by IE vide letter No. AA/VKE/IVKEL/040/18-19/QAP/226 dated 29.03.19 for further compliance.
2. Observations of IE on GAD of 24 Nos. Box Culverts were compiled on 18.03.2016 and balance 12 Nos. on 03.04.2019.
3. Plan & Profile along with all typical cross sections for the entire project length was submitted vide letter No. IVKEL/3019/VKE/AARVEE/76 dated 30.01.19. Comments on the same was given by IE vide letter No. AA/VKE/IVKEL/031/18-19/DESIGN REVIEW/168 dated 07.03.19.
4. Traffic & Pavement Design Report for the entire project length was submitted vide letter No. IVKEL/3019/VKE/AARVEE/80 dated 01.02.19. The same was approved by IE vide letter No. AA/VKE/IVKEL/014/18-19/DESIGN REVIEW/102 dated 21.02.19.
5. Construction time schedule was submitted vide letter No. IVKEL/3019/VKE/AARVEE/96 dated 07.02.19. Comments on the same was received from IE vide letter No. AA/VKE/IVKEL/028/18-19/PROGRAMME/160 dated 05.03.19 received on 15.03.2019.
6. Proposed location of utility corridor was submitted vide letter No. IVKEL/3019/VKE/AARVEE/105 dated 12.02.19. Comments on the same was received from IE vide letter No. AA/VKE/IVKEL/041/18-19/FACILITIES/229 dated 29.03.19 received on 02.04.2019.
7. Construction methodology for cast in-situ concrete pile was submitted for review & comments, if any, vide letter No. IVKEL/3019/VKE/AARVEE/189 dated 14.03.19. Comments on the same are still awaited.
8. Verification of locations of all structures of the project expressway was done jointly by representatives of Concessionaire & IE and submitted for information & suitable necessary action to IE vide letter No. IVKEL/3019/VKE/AARVEE/209 dated 19.03.19
9. Memorandum as per Cl.10.3 of CA was signed jointly by representatives of NHAI, Concessionaire & IE for the status as on 15th January 2019. As per the memorandum, 81.18% of the total land was found clear on the basis of compensation paid for the same land to the land owners. However, details of all utilities found in the ROW of the available 81.18% of clear land and having adverse impact on the construction works was annexed in the appendix of the memorandum.
10. Concessionaire further informed to PIU Surat vide letter No. IVKEL/3019/VKE/NHAI/64 dated 23.01.19 that the hindered length in the clear length of 81.18% stands as 6.69 km, thus the land available for construction works in the available clear length of 81.18% was 60.28%.

11. PD, NHAI, PIU Surat forwarded the above letter of concessionaire to IE vide letter NHAI/PIU Surat (Expressway)/P-2/2019/540 dated 28.01.2019 with copy to Concessionaire to examine the same and submit their comments/report.
12. General Manager (Tech), Bharatmala, NHAI, New Delhi vide letter no. NHAI/VME Phase-IA/HAM/Pkg 2/2018/129991 dated 31.01.2019 declared Appointed Date w.e.f 31st January 2019.
13. Concessionaire further informed vide letter no. IVKEL/3019/VKE/NHAI/NIL dated 02.02.19 to GM (Tech), Bharatmala, NHAI, New Delhi to review declaration of appointed date on availability of actual 80% unhindered/unencumbered land.
14. Concessionaire vide letter no. IVKEL/3019/VKE/NHAI/99 dated 08.02.19 to PD, PIU Surat, NHAI requested to expedite the pending land compensation for which detail list of land owners with survey no and letters from village sarpanch, Husepur (Km. 338.500 to 339.500) was provided.
15. In continuation of above submission, Concessionaire further submitted similar cases in other stretches vide letter no. IVKEL/3019/VKE/NHAI/137 dated 22.02.19. Detail list of land owners with their survey nos. for which land compensation was pending was annexed in the same letter.
16. Concessionaire vide letter no. IVKEL/3019/VKE/NHAI/169 dated 05.03.19 informed to PD, PIU Surat, NHAI that preparation of estimates for shifting of obstructing utilities is delayed by owning authorities and sought the help of PIU Surat for early approval for shifting of all utilities obstructing construction works.

Embankment Bed Rolling at CH 336+400 to 336+600



FDD Checking at CH 337+200 to 337+400



OGI Preparation at CH 350+600 to 350+700



CUP Ground Improvement at CH 334+868



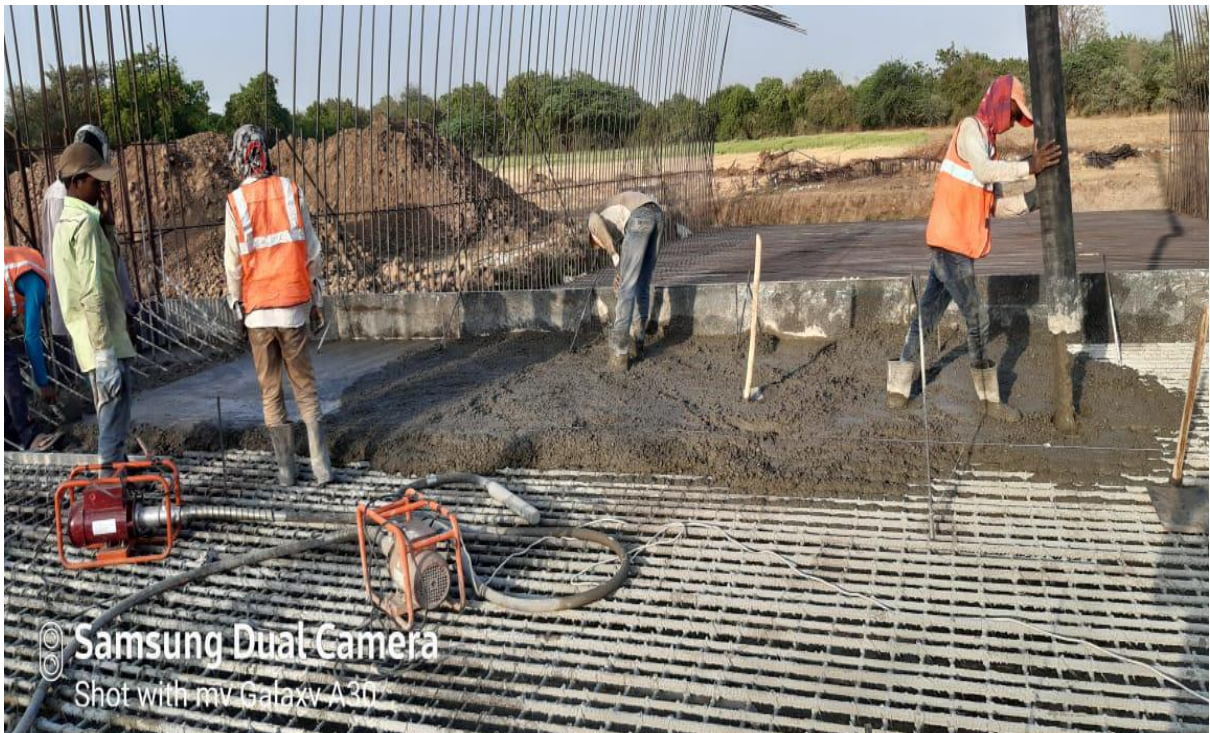
FDD Checking at CH 335+700 to 335+900



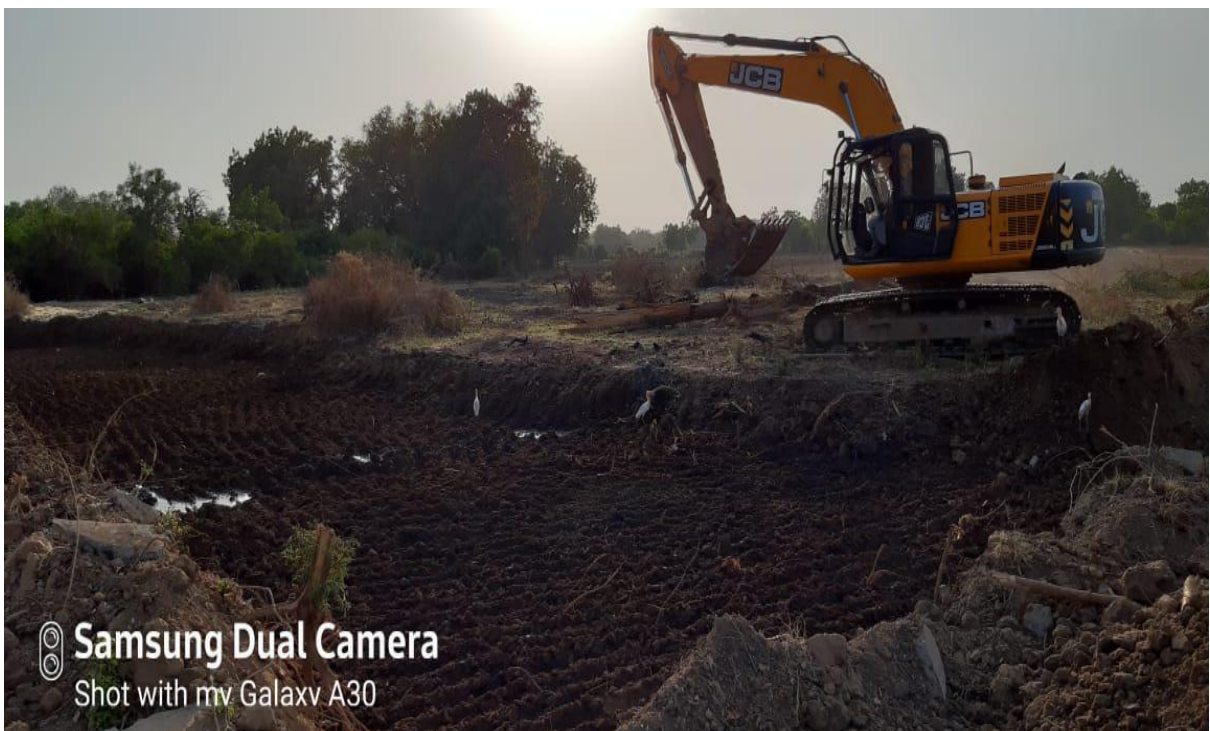
Embankment Bed Watering at Km.337+050 to 337+150



Raft Concreting of CUP at 350+831



Excavation of CUP at 352+317



Load Test arrangements for VOP at 349+441



Pile reinforcement Cage lowering for VOP at 349+441



Haunch Concreting for CUP at 340+855



Cradle Concreting of Pipe Culvert at 329+509



