Executive Summary for Construction of Greenfield Road from Navegoan More-Konsari (Steel Plant) to Hedri (Surjagarh Mines), Districts – Chandrapur and Gadchiroli, Maharashtra

Project Proponent:

MSRDC

Maharashtra State Road Development Corporation Limited.

DPR Consultant:

Monarch Surveyors and Engineering Consultant Ltd. Pune.

Environmental Consultant:

ENVIRO RESOURCES

(NABET Certificate No. NABET/EIA/25-28/IA 0180)

EXECUTIVE SUMMARY

1.0 Introduction

Maharashtra State Road Development Corporation Limited (MSRDC, Project Proponent) has proposed Construction of Greenfield Road from Navegoan More- Konsari (Steel Plant) to Hedri (Surjagarh Mines), Districts – Chandrapur and Gadchiroli, Maharashtra. The proposed four-lane road with paved shoulders starts from Ghatkul Village 19°49'49.74"N / 79°43'41.78"E (CH 0+000) in Chandrapur District & ends at Hedri village 19°35'21.58"N / 80°22'41.80"E (CH 85+765) in Gadchiroli District. The total length of the project alignment is **85.765 km**. The proposed road comprises **67.475 km** of greenfield alignment and **18.29 km** of brownfield alignment.

As per Environment Impact Assessment (EIA) Notification dated 14th September 2006, and its amendments until date, the proposed project falls under 'Category B1' with activity number 7(f). Accordingly, the application was submitted for obtaining Terms of References (ToR) for Prior Environmental Clearance for proposed project. The project was discussed in 290th SEIAA meeting held on 23rd April 2025. The project was accorded ToR vide TOR Identification No. TO25B3602MH5615274N dated 29th April 2025 (copy of original and amended TOR is enclosed as ***Annexure 1***).

During the course of detailed project planning, surveys, and engineering investigations, certain modifications have been proposed in the project configuration/alignment to optimize design and improve safety. Right of Way (ROW) has been revised from 30m to 35m and the lane configuration has been modified from two lane to Four lane with divided carriage way, resulting in corresponding changes in land acquisition requirements but no change in total length. The same has been approved by Govt. of Maharashtra vide resolution dt. 17.03.2026.

To address future infrastructure requirements, suitable provisions have been incorporated in the project design for the laying of utilities, including the GAIL gas pipeline and other services, within the designated utility corridor. This integration has been planned to facilitate coordinated future development and to prevent repeated disturbances within the corridor. The above modification is in compliance with the directions issued by the infrastructure Cabinet Committee during its meeting held on 27.01.2026. Accordingly, an amendment to the TOR application has been submitted vide Proposal No. SIA/MH/INFRA1/573170/2026. The project was discussed in 334th SEIAA meeting held on 29th April 2026. The project was accorded ToR vide TOR Identification No. TO26B3602MH5164942A dated 10th May 2026 (copy of original and amended TOR is enclosed as ***Annexure 1***)

2.0 Project Location

The proposed project alignment passes through 44 villages and 5 forest stretches spread across four talukas - Pombhurna, Chamorshi, Mulchera & Etapalli of Chandrapur and Gadchiroli Districts in the state of Maharashtra. The key map of the project is as shown in **Figure 1** and Toposheet Map of the project site & study area is as shown in **Figure 2**.

The details of the area and length in each of the village are as provided in **Table 1**.

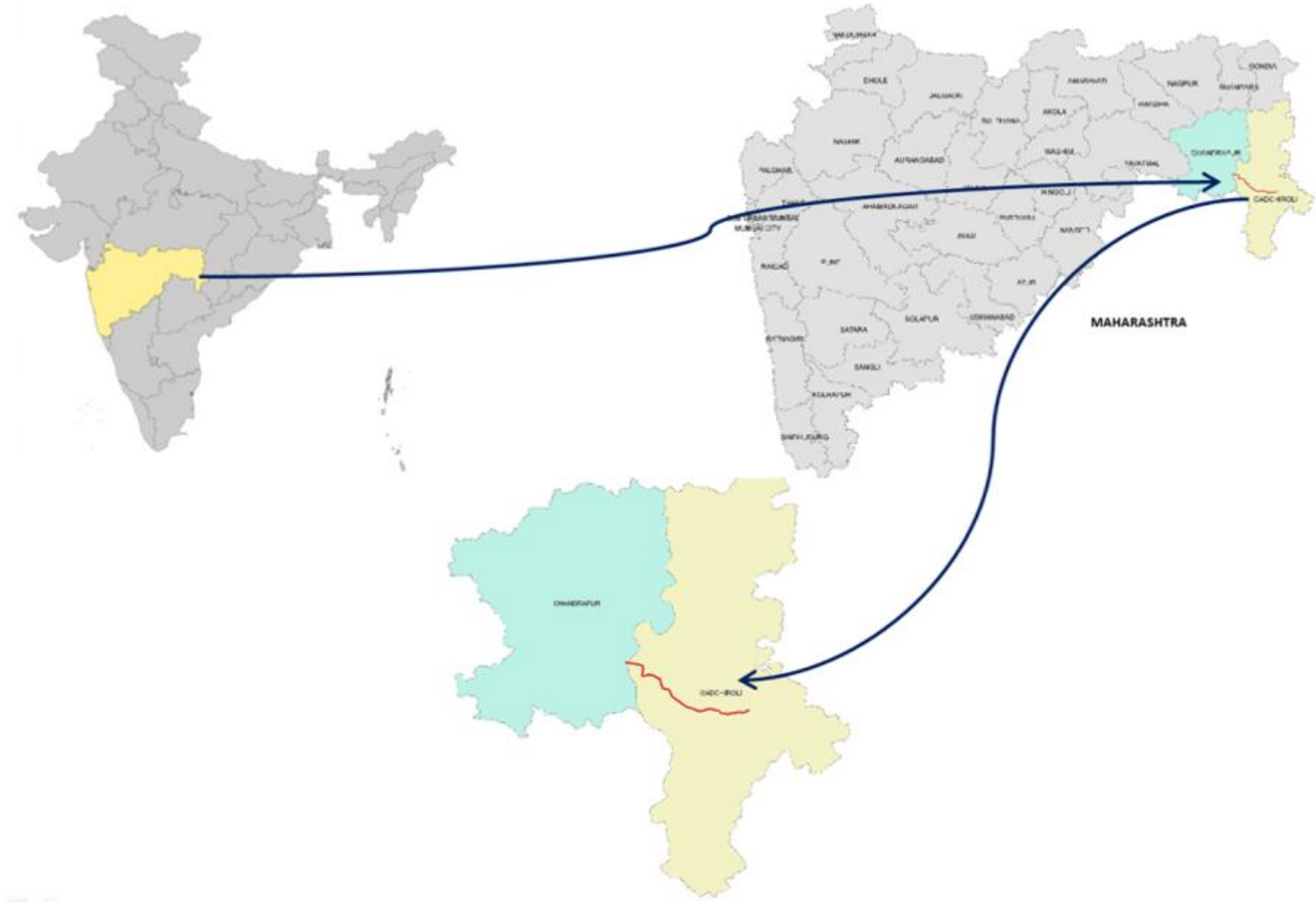


Figure 1: Location Map of the Project Site

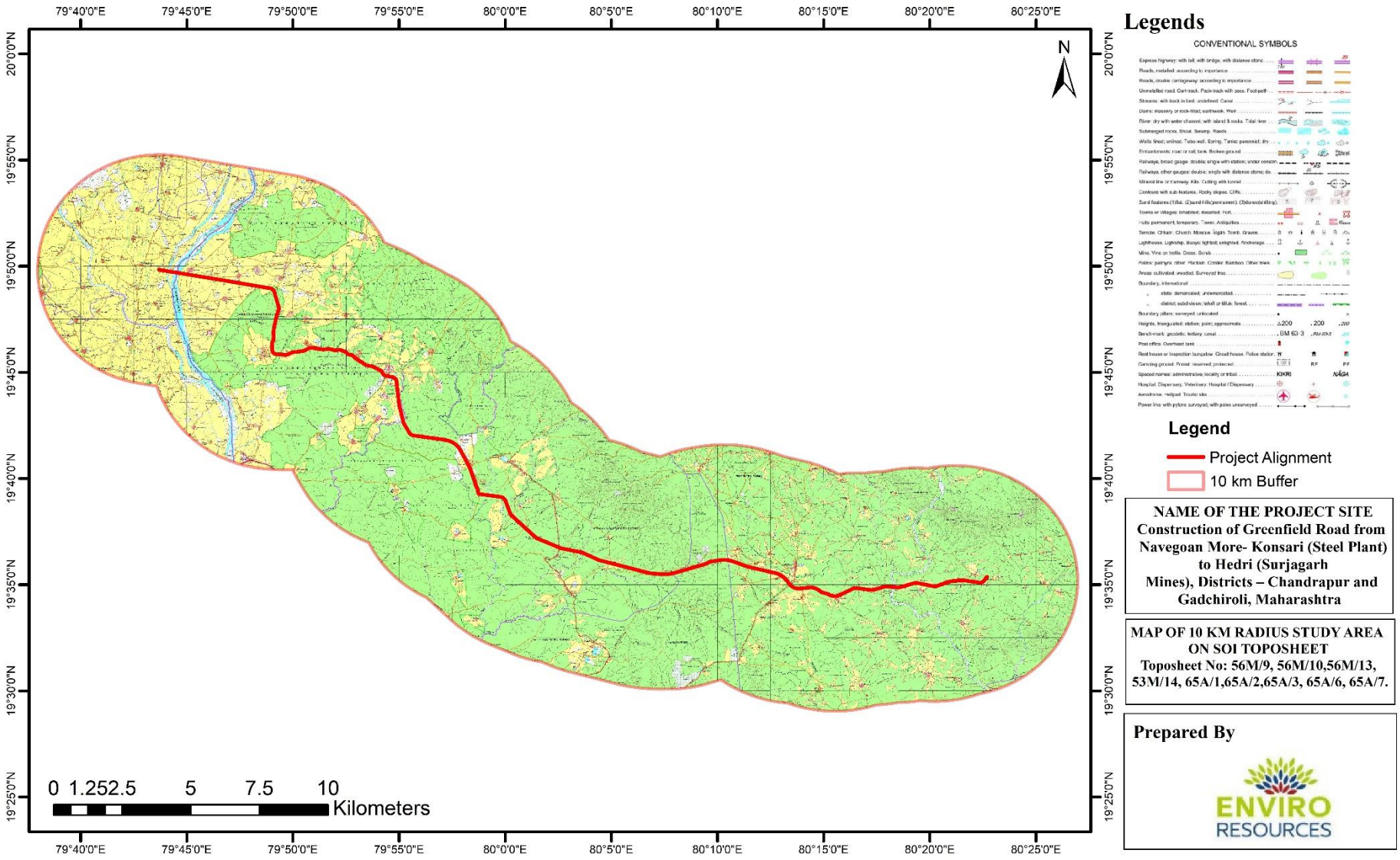


Figure 2: Toposheet Map of the Project Site & Study Area

Table 1: Details of Project Alignment Village-wise

SR NO	DISTRICT	TAHSIL	VILLAGE NAME	START CH	END CH
1.	CHANDRAPUR	Pombhurna	Ghatkul	0+00	0+700
2.	CHANDRAPUR	Pombhurna	Tok	0+700	1+500
3.	GADCHIROLI	Chamorshi	Ganpur Raiyyatwari	1+500	2+700
4.	GADCHIROLI	Chamorshi	Vitthalpur	2+700	4+700
5.	GADCHIROLI	Chamorshi	Laxmanpur	4+700	7+700
6.	GADCHIROLI	Chamorshi	Durgapur	7+700	8+950
7.	GADCHIROLI	Chamorshi	Yenapur	8+950	9+450
8.	GADCHIROLI	Charmoshi	Forest	9+450	14+250
9.	GADCHIROLI	Chamorshi	Konsari	14+250	15+350
10.	GADCHIROLI	Charmoshi	Forest	15+350	15+970
11.	GADCHIROLI	Charmoshi	Raipur	15+970	17+130
12.	GADCHIROLI	Chamorshi	Ramkrushnapur	17+130	19+270
13.	GADCHIROLI	Chamorshi	Forest	16+000	24+900
14.	GADCHIROLI	Chamorshi	Bahadurpur	20+700	23+570
15.	GADCHIROLI	Chamorshi	Subhashgram	23+570	25+960
16.	GADCHIROLI	Chamorshi	Forest	23+570	25+960
17.	GADCHIROLI	Chamorshi	Gundapalli	25+960	27+415
18.	GADCHIROLI	Chamorshi	Anandgram	27+415	29+850
19.	GADCHIROLI	Mulchera	Gandhinagar	29+850	31+870
20.	GADCHIROLI	Mulchera	Kalinagar	31+870	32+320
21.	GADCHIROLI	Mulchera	Vijaynagar	32+320	33+900
22.	GADCHIROLI	Mulchera	Laxmipur	33+900	35+465
23.	GADCHIROLI	Mulchera	Koparralli chak	35+465	36+030
				36+970	37+380
24.	GADCHIROLI	Mulchera	Koparalli mal	36+030	36+970
25.	GADCHIROLI	Mulchera	Vishwanathnagar	37+380	40+590
26.	GADCHIROLI	Mulchera	Vivekanandpur	40+590	42+320
27.	GADCHIROLI	Mulchera	Bandukpalli	42+320	44+390
28.	GADCHIROLI	Mulchera	Devnagar	44+390	45+180
29.	GADCHIROLI	Mulchera	Shrinagar	45+180	46+690
30.	GADCHIROLI	Mulchera	Bhagatnagar	46+690	47+555
31.	GADCHIROLI	Mulchera	Fuski chak	47+555	48+065
32.	GADCHIROLI	Mulchera	Sundarnagar	48+065	49+580
33.	GADCHIROLI	Mulchera	Fuski mal	49+580	50+415
34.	GADCHIROLI	Mulchera	Shrirampur	50+415	51+620
35.	GADCHIROLI	Mulchera	Mukhadi tola	51+620	54+765
36.	GADCHIROLI	Mulchera	Forest	54+765	62+960

SR NO	DISTRICT	TAHSIL	VILLAGE NAME	START CH	END CH
37.	GADCHIROLI	Etapalli	Wasamundi	62+960	65+170
38.	GADCHIROLI	Etapalli	Jaweli (m)	Junction	Junction
39.	GADCHIROLI	Etapalli	Marpalli (s)	65+170	66+430
40.	GADCHIROLI	Etapalli	Dumme (s)	66+430	68+260
41.	GADCHIROLI	Etapalli	Pandewahi (s)	68+260	69+960
42.	GADCHIROLI	Etapalli	Tumargunda kh	69+960	71+590
43.	GADCHIROLI	Etapalli	Tumargunda bk	71+590	74+280
44.	GADCHIROLI	Etapalli	Aldandi (m)	74+280	75+345
45.	GADCHIROLI	Etapalli	Aldandi (s)	75+345	77+655
46.	GADCHIROLI	Etapalli	Udera (m)	77+655	77+890
47.	GADCHIROLI	Etapalli	Parsalgondi (s)	77+890	83+590
48.	GADCHIROLI	Etapalli	Hedri (s)	83+590	85+300
49.	GADCHIROLI	Etapalli	Manger	85+300	85+765

Source: Design Report by Monarch

3.0 Project Description

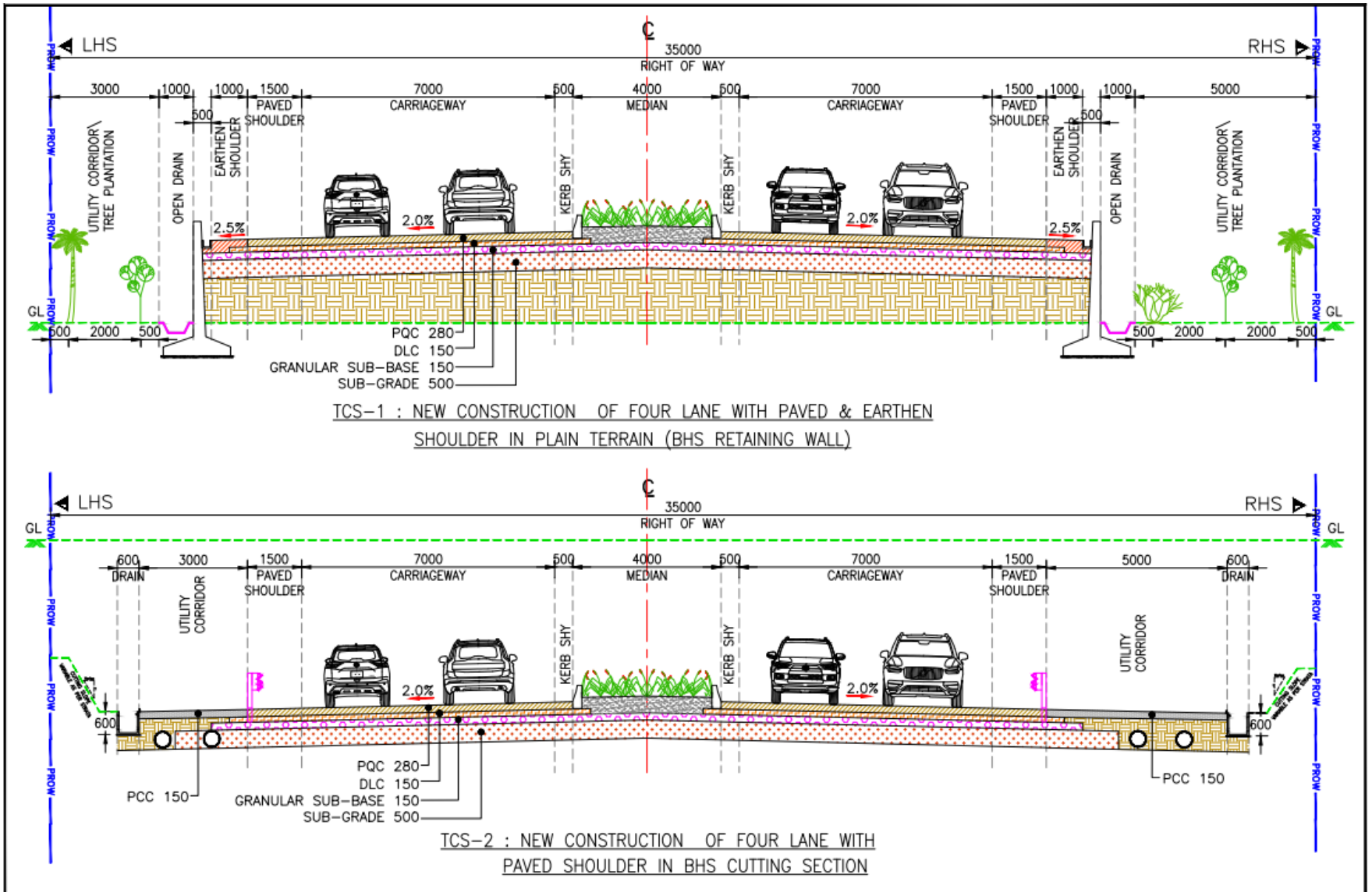
The salient features of the proposed project are as tabulated below in **Table 2**.

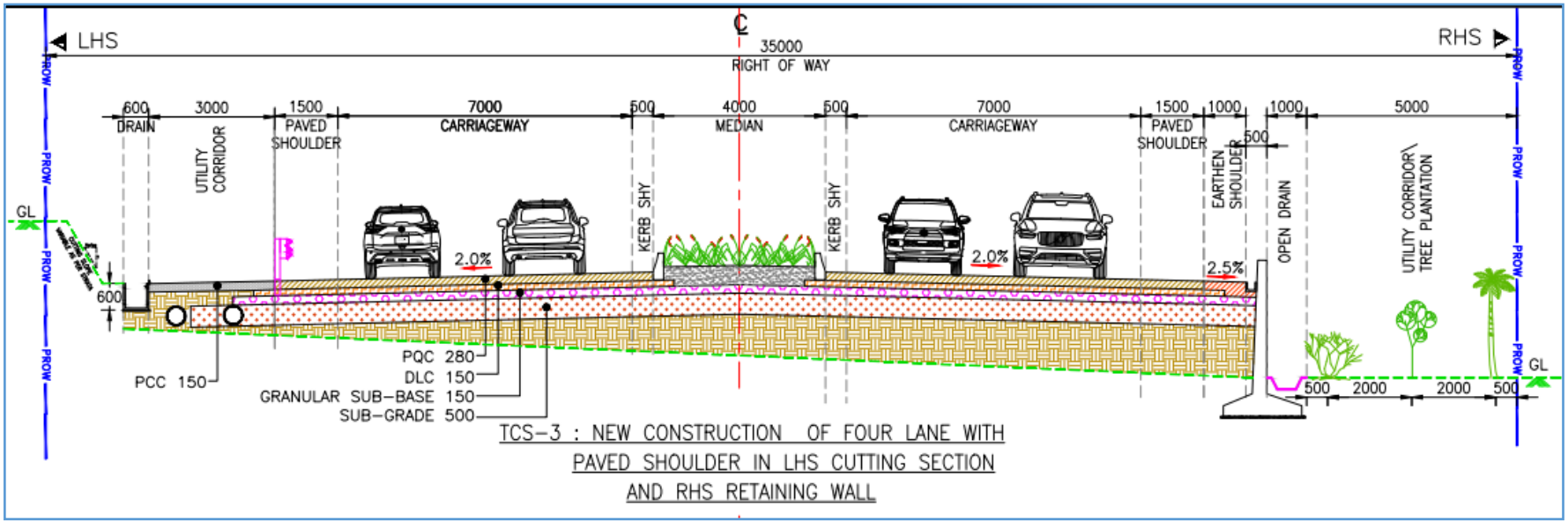
Table 2: Salient Features

<table>
<tr><td>1</td><td>Total Length</td><td>85.765 km</td></tr>
<tr><td>2</td><td>State</td><td>Maharashtra</td></tr>
<tr><td>3</td><td>District</td><td>Chandrapur and Gadchiroli</td></tr>
<tr><td>4</td><td>Talukas</td><td>Pombhurna, Chamorshi, Mulchera, Etapalli</td></tr>
<tr><td>5</td><td>Terrain</td><td>Mostly plain and hilly terrain</td></tr>
<tr><td>6</td><td>Seismic Zone</td><td>II as per IS 1893 (Part 1): 2016</td></tr>
<tr><td>7</td><td>Land Use</td><td>The predominant land use along the alignment is forest/tree cover followed by agricultural use</td></tr>
<tr><td>8</td><td>RoW</td><td>The Right of Way (ROW) is 35 m</td></tr>
<tr><td>9</td><td>Total Area of Land Acquisition</td><td>Total Land Acquisition: 289.0234 ha
Government Land and Private Land: 147.4524 ha
Forest Land: 141.5710 ha
(Source: Land records by Monarch; **Note: Forest land to be diverted may be changed during Forest Clearance process)</td></tr>
<tr><td>10</td><td>Main Carriageway (Proposed)</td><td>4 Lane divided Carriageway</td></tr>
<tr><td>11</td><td>No. of Structure</td><td><table><tr><th>Particulars</th><th>Chandrapur-Gadchiroli</th></tr><tr><td>Major Bridges</td><td>5</td></tr><tr><td>Minor Bridges</td><td>30</td></tr><tr><td>Flyovers</td><td>1</td></tr><tr><td>Wildlife crossing</td><td>3</td></tr><tr><td>Box Culverts</td><td>102</td></tr></table></td></tr>
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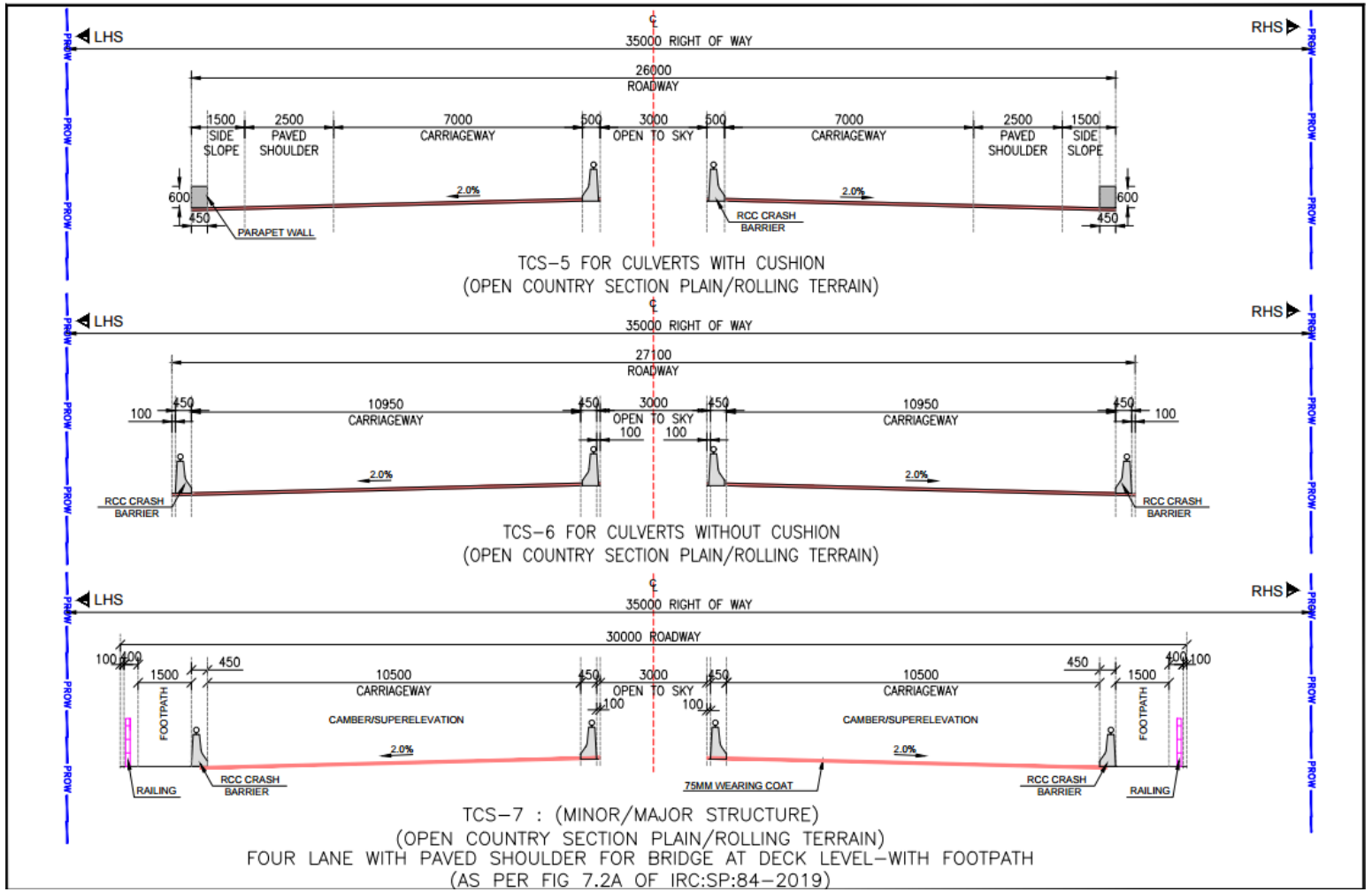
12	Rainwater Harvesting System	Rainwater harvesting shall be done as per IRC: SP: 50-2013 and as per Ministry Circular no. NHAI/TIC/VIP Ref/ 2012 dated 26th October 2015.
13	Toll Plaza	The tolling strategy proposed for the project corridor is closed loop system. The midblock toll plaza system is proposed at Ch. 47+350 km.
14	Construction Period	24 months
15	Employment	Approx. 2800 during construction and approx. 100 during operation phase
16	Total Civil Cost	2242.28 Cr.
17	R&R Plan	The R&R compensation activities shall be accomplished in consonance with Maharashtra Highways Act, 1955. Provisions of R&R Plan in Maharashtra Highways Act form the basis for Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013. The budget is already included in the land acquisition portion for the same.

The typical cross-section of the proposed alignment is as shown in **Figure 3**.


LHS
RHS
35000
RIGHT OF WAY
3000
1000
1000
1500
PAVED SHOULDER
7000
CARRIAGEWAY
500
4000
MEDIAN
5000
UTILITY CORRIDOR\ TREE PLANTATION
OPEN DRAIN
EARTHEN SHOULDER
KERB SHY
2.5%
2.0%
GL
PROW
PQC 280
DLC 150
GRANULAR SUB-BASE 150
SUB-GRADE 500
TCS-1 : NEW CONSTRUCTION OF FOUR LANE WITH PAVED & EARTHEN SHOULDER IN PLAIN TERRAIN (BHS RETAINING WALL)
600
DRAIN
UTILITY CORRIDOR
PCC 150
TCS-2 : NEW CONSTRUCTION OF FOUR LANE WITH PAVED SHOULDER IN BHS CUTTING SECTION



TCS-3 : NEW CONSTRUCTION OF FOUR LANE WITH PAVED SHOULDER IN LHS CUTTING SECTION AND RHS RETAINING WALL


LHS
RHS
35000 RIGHT OF WAY
26000
ROADWAY
1500
SIDE SLOPE
2500
PAVED SHOULDER
7000
CARRIAGEWAY
600
3000
OPEN TO SKY
2.0%
600
450
PARAPET WALL
RCC CRASH BARRIER
TCS–5 FOR CULVERTS WITH CUSHION
(OPEN COUNTRY SECTION PLAIN/ROLLING TERRAIN)
27100
ROADWAY
100
450
10950
CARRIAGEWAY
3000
OPEN TO SKY
TCS–6 FOR CULVERTS WITHOUT CUSHION
(OPEN COUNTRY SECTION PLAIN/ROLLING TERRAIN)
30000 ROADWAY
400
1500
FOOTPATH
10500
CARRIAGEWAY
CAMBER/SUPERELEVATION
RAILING
75MM WEARING COAT
TCS–7 : (MINOR/MAJOR STRUCTURE)
(OPEN COUNTRY SECTION PLAIN/ROLLING TERRAIN)
FOUR LANE WITH PAVED SHOULDER FOR BRIDGE AT DECK LEVEL–WITH FOOTPATH
(AS PER FIG 7.2A OF IRC:SP:84–2019)

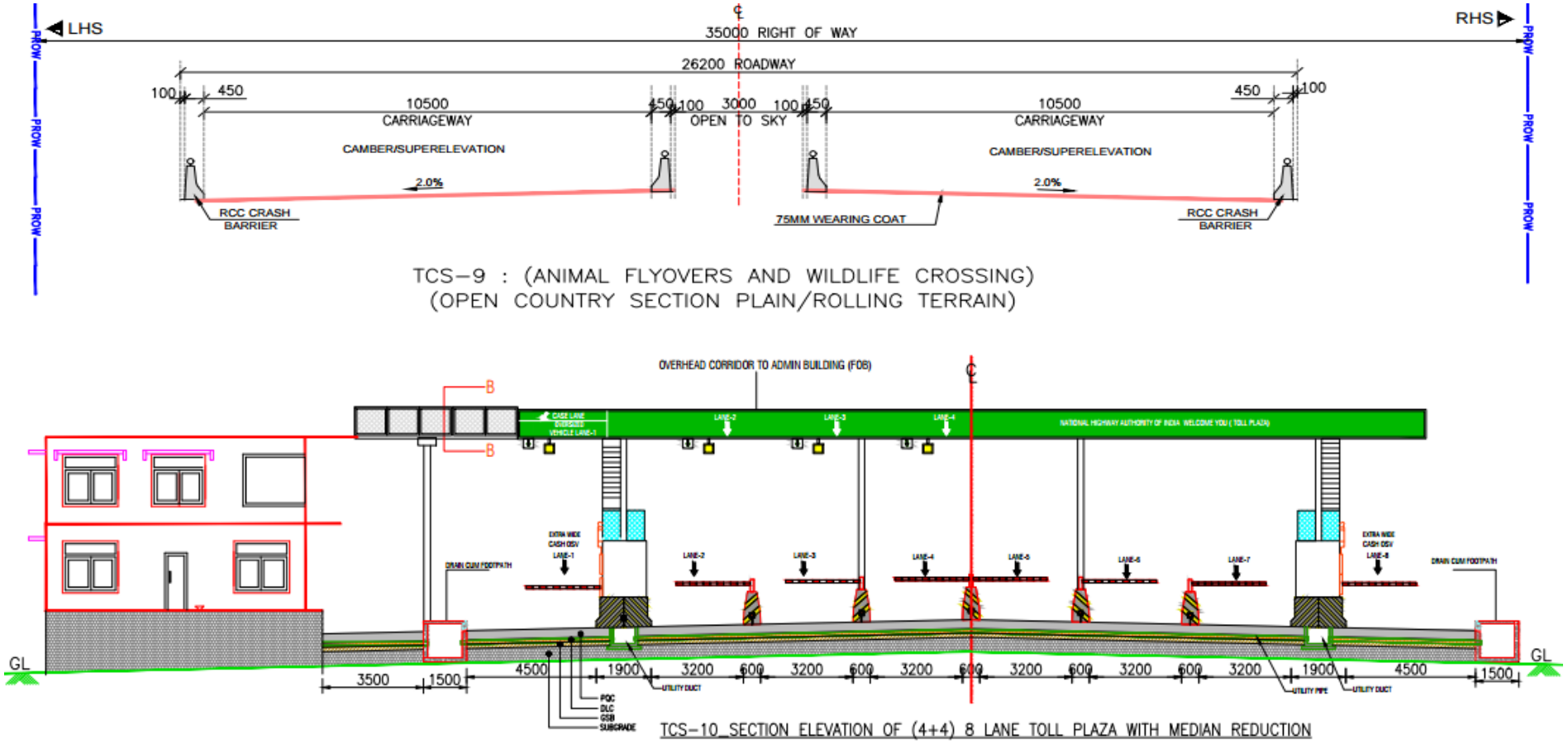


Figure 3: (Typ.) Cross Section of Proposed Alignment

Source: MSRDC (PP) and Monarch (DPR Consultant)

Project Schedule & Cost	:	The proposed project is scheduled to be completed within 24 months after Environment Clearance (EC) and other statutory approvals are granted. The estimated cost of the project is Rs. 2242.28 Crores. The budget for EMP for the proposed project is ~ 25 Crores.
Resource Requirements		
Land	:	The proposed project will be executed on a total land area of ~289.0234 ha which is being acquired by MSRDC, Government of Maharashtra.
Water	:	The water requirement will be approximately 96157 KL construction purpose & 126 KLD for 2800 labours. Additional water will be required for dust suppression. The water will be sourced from nearby surface water with prior consent from the authorities having Jurisdiction.
Power	:	LSD D.G sets will be used for power for onsite construction and labour camps, wherever grid supply is not available.
Manpower	:	The manpower envisaged is approximately 2800 for the proposed project.

4.0 Description of the Environment

As per the EIA Guidance Manual for Highways (MoEF&CC, February 2010), a study area of 15 km radius from the proposed alignment was considered for secondary data collection. Primary data has been collected within 500 meters on either side of the proposed alignment. Baseline environment monitoring was carried out for the period of October 2025 to December 2025.

Topography, Land use& its Classification – The topography around the project site is mostly plain and hilly terrain.

The land use and land cover of the study area was analyzed based on multispectral satellite imagery reveals that Agriculture is the highest category of Land Use accounting as much as Vegetation land was the dominant land use class with 819.11 km^2 followed by Agricultural Land with 541.35 km^2, whereas built up area was present in 36.83 km^2. The prevailing land cover forms in study area were Wastelands lands spanning in 733.37 km^2 was the largest land cover, Vegetation were present 819.11 km^2 and one land cover form viz. river-stream overlapped with land use class viz. lake/reservoir/tank which were in 21.62 km^2 of study area.

Soil - The soil quality was monitored at ten (10) locations within the study area. Some of the important soil parameters are summarised in the below table;

Parameter	Value
pH	7.2 - 8.64
Nitrogen mg/kg	580.4 – 595.41

Parameter	Value
Phosphorus mg/kg	44.94 - 52.7
Potassium mg/kg	210.36 – 275.36
Organic Carbon %	0.81 – 1

As per the Chemical Classification of Soil Quality by ICAR, the soils in study area come under moderate to highly productive, whereas as per Levels of Soil Fertility by Tondon H.L.S, the soils in study are can be classified under high fertile category.

Ambient Air Quality - The Ambient Air quality was monitored at ten (10) locations for parameters such as PM_{10}, $PM_{2.5}$, NOx, SO_2, CO in the study area.

Parameter		A1	A2	A3	A4	A 5	A6	A7	A8	A9	A10
$PM_{2.5}$ ($\mu g/m^3$)	Min.	24.53	21.82	22.68	26.39	26.74	20.84	20.41	22.65	20.15	22.36
	Max.	35.78	37.17	42.31	41.48	35.5	43.69	36.8	41.2	36.21	42.19
	Average	30.16	29.50	32.50	33.94	31.12	32.27	28.61	31.93	28.18	32.28
	98 %ile	35.06	36.43	41.46	40.65	34.79	42.82	36.06	40.38	35.49	41.35
PM_{10} ($\mu g/m^3$)	Min.	58.37	59.18	54.82	58.96	58.69	59.83	55.25	56.68	56.14	59.05
	Max.	75.69	78.28	72.98	74.32	73.98	73.66	74.58	76.64	77.66	73.21
	Average	67.03	68.73	63.90	66.64	66.34	66.75	64.92	66.66	66.90	66.13
	98 %ile	74.18	76.71	71.52	72.83	72.50	72.19	73.09	75.11	76.11	71.75
SO_2 ($\mu g/m^3$)	Min.	9.98	8.25	9.32	8.97	8.97	8.82	8.67	9.69	9.25	8.15
	Max.	16.36	14.45	13.77	15.74	13.03	13.65	15.69	14.65	15.78	15.69
	Average	13.17	11.35	11.55	12.36	11.00	11.24	12.18	12.17	12.52	11.92
	98 %ile	16.03	14.16	13.49	15.43	12.77	13.38	15.38	14.36	15.46	15.38
NO_X ($\mu g/m^3$)	Min.	14.63	13.25	12.25	16.89	12.66	15.61	13.4	13.36	16.85	14.57
	Max.	25.69	22.85	25.03	25.45	23.88	24.85	24.2	25.83	26.89	24.52
	Average	20.16	18.05	18.64	21.17	18.27	20.23	18.80	19.60	21.87	19.55
	98 %ile	25.18	22.39	24.53	24.94	23.40	24.35	23.72	25.31	26.35	24.03
CO (mg/m^3)	Min.	0.73	0.85	0.72	0.48	0.51	0.51	0.47	0.58	0.49	0.59
	Max.	1.13	1.27	1.09	0.98	0.93	0.88	0.90	0.96	1.08	1.03
	Average	0.93	1.06	0.91	0.73	0.72	0.70	0.69	0.77	0.79	0.81
	98 %ile	1.11	1.24	1.07	0.96	0.91	0.86	0.88	0.94	1.06	1.01

In general, the ambient air quality is satisfactory with respect to all major pollutants. The 98th percentile values of all pollutants were found to be below NAAQS, 2009 and its further amendments.

Noise Quality - The noise quality was monitored at ten (10) locations in the study area during the study period.

Station Coad	Name	Category	Leq daytime	Leq night time	Daytime Standard	Night time Standard
N1	Chekthanewasna	Residential	48.6	40.4	55	45

Station Coad	Name	Category	Leq daytime	Leq night time	Daytime Standard	Night time Standard
N2	Kishtapur	Residential	49.6	39.6	55	45
N3	Mudholi Chak	Residential	49.7	42.3	55	45
N4	Subhashgram	Residential	49.4	40.6	55	45
N5	Kalinagar	Residential	48.1	41.8	55	45
N6	Mulchera	Residential	50.4	40.3	55	45
N7	Sundarnagar	Residential	50.2	40.8	55	45
N8	Makkepalli	Residential	51.8	41.7	55	45
N9	Tumargunda bk.	Residential	46.9	39.6	55	45
N10	Hedri (s)	Residential	49.1	40.9	55	45

The noise quality in the study area was found to be satisfactory in the residential areas.

Water Quality - Surface water samples were collected once during the study period at eight (8) locations to assess the baseline water quality in the study area. The samples were compared with the CPCB's surface water classification, and they conform to 'Class B' Water Quality Criteria. Some of the important parameters are summarized in the below table.

Parameter	Value
pH	7.3 – 7.8
Dissolved Oxygen mg/l	5.9 - 6.2
Biochemical Oxygen Demand mg/l	2.1 – 2.5
Total Coliform No./100ml	80 - 350
E- Coli No./100 ml	Present

Ground water samples were collected from ten (10) locations to assess the existing groundwater quality of the study area during the study period. The physico-chemical characteristics of Ground water are confirming to permissible limits of drinking water standards, prescribed in IS:10500 (2012) (Test Characteristics for Drinking Water) and suitable for consumption. Some of the important parameters are summarized in the below table.

Parameter	Value
pH	7.05 – 7.88
Turbidity NTU	<0.1
Total Dissolved Solids mg/l	230.44 – 243.71
Total Hardness as CaCO3 mg/l	453.25– 496.8
Alkalinity	172 – 197
Fluoride as F mg/l	0.45 – 0.79
Nitrate as NO_3 mg/l	1.09 – 1.59

Biotic Environment

Project Site and surrounding- Flora & Fauna

The area in and around proposed alignment prevailed varied terrain features such as hills, hillocks, mounds, scrub lands, vegetated areas, depressions, plantations & agricultural fields. The observed in vegetation in study area was by virtue of natural vegetation & plantations in some locations.

Flora: 80 plant species were recorded, including 5 herb species, 4 grass species, 7 climber species, 14 shrub species, and 50 tree species.

Fauna: 22 bird species, 4 reptile species, 2 mammal species were recorded in and around the immediate vicinity of the proposed alignment.

Species of concern category – 80 plant species belonging 38 families were observed in and around the RoW of proposed road, the observed vegetation were commonest for the region in consideration with a very wide range of presence & abundance in the entire landscape of east vidharbha Districts with similar terrain settings. *Tectona grandis* (Teak), though frequently observed at the project site and very common in the Vidarbha region, is listed as Endangered under the IUCN Red List.

Study area Flora & Fauna

Flora: 150 plant species, which comprised of 20 herb species, 15 climber species, 30 shrub species, 10 grass species & 75 tree species.

Fauna: 54 bird species, 10 mammal species, 12 reptilian species were recorded from study area.

Species of concern category - 1 Near Threatened bird species viz. (*Mycteria leucocephala*-Painted stork) which are a resident species, 1 reptilian species viz. *Varanus bengalensis* (Indian monitor lizards), 1 Vulnarable species of reptiles viz. Python molurus (Python), 1 Endangered species of mammals viz. *Rusa unicolor* (Sambar) were recorded in study area from primary study and from interaction with locals. However, no mammal sighted in RoW of proposed alignment & nearby surrounding areas.

Socio-Economic Environment

The socio economics of study area was studied through primary and secondary survey. The socio-economic aspects of the study area is summarised in the table given below.

Parameters	Project Alignment
Total No. of Villages	44
Total no. of Households	8132
Total Population	38043
Sex ratio	955
SC/ST population	4.64% (SC) & 29.03% (ST)
Literacy Rate	68.24%

Source: Primary Census Abstract & DCHB 2011, Chandrapur & Gadchiroli District, State Maharashtra

In the study area, education is available from Anganwadi Centers, Preprimary School to Senior Secondary School. The scope for higher and technical education is existing only at the district place and only few people are able to take benefits of these educational institutions.

5.0 Anticipated Environment Impacts and Mitigation Measures

Construction Phase: The proposed project is a green field project. The construction involves ground clearing, as the profile of the proposed alignment will match the natural topography to the extent feasible. The construction phase of the proposed project will be of shorter duration for about 24 months only.

The potential impacts will be localised, very limited and insignificant due to the construction activity like fugitive dust, noise during excavation, civil works, operation of construction equipment's, storage & handling of construction material, surface water runoffs, etc.

These impacts shall be minimised by providing appropriate storage for construction material, provision of acoustic barriers and enclosures for high noise generating equipment, fugitive dust control by water sprinkling on road used by vehicles, construction activities shall be avoided during night time, surface runoff shall be checked for contaminations such as oil & grease by routing the surface runoffs in small bunds around the construction areas, all hazardous & non-hazardous material shall be handled as per statutory requirements.

Further except for the identified trees to be felled in ROW, the proposed project activities do not alter the surrounding the surrounding biotic environment in whatsoever manner. If pilling activity is to be done in riverbed, this may lead to rise in suspended solids which may render the bottom waters turbid. However, such effect will be temporal & original contours will be restored after cease of construction activity at riverbed.

Therefore, the impacts during construction phase are to be short term, reversible, localised and are not expected to contribute significantly.

Operational Phase: The potential environmental impacts due to the proposed project have been assessed in detail. These include impact on air quality, noise, water quality, solid waste, ecology and socio economics, etc. The modelling and analysis of the data indicate that the predicted impacts are minimal and are within the prescribed norms and standards. Comprehensive mitigation measures have been incorporated in the environment management plan to ensure that the environmental quality is protected and enhanced.

Air Environment:

The following probable sources are identified in operation phase:

- Vehicular emissions from vehicles plying on the constructed road

The prediction of the Ground Level Concentrations (GLC's) due to emissions of pollutants such as PM, SO_2, NOx and CO from the operation phase has been computed by A CALINEpro. CALINE3 based CO model with queuing and hot spot calculations and with a traffic model to calculate delays and queues that occur at signalized intersections.

The resultant modelled (incremental) concentrations for all the pollutants (PM, SO_2, NOx and CO) have been found to remain within the corresponding National Ambient and Air Quality Standards (NAAQS). Mitigation measures will be in place to minimize potential adverse impacts of air emissions on health of receptors. In view of this, the atmospheric emissions during the operation phase are anticipated to be localised and the impact significance is assessed as negligible.

Mitigation Measures

- BS-IV or higher version accommodating engines shall be adopted in future, however modelling is been performed considering emission factors for BS-II version vehicles.
- Roads shall be maintained regularly to avoid dust emissions
- Tree plantation shall be done to avoid dispersion of particles
- Native trees with higher APTI (Air Pollution Tolerance Index) value shall be planted

Noise Environment

Noise generating sources are due to the following activities:

- During operation phase/ after completion of road construction work, the major source of noise will be due to Vehicular movement by vehicles using the road.

The prediction of ambient noise from the proposed project was carried out using software tool "dhwani PRO". The anticipated noise generation by vehicles plying on the road will be 45 dB (A).

The distance wise drop down in anticipated cumulative noise from road in operational phase will be as given in following table.

Sr. No.	Distance in meters from alignment boundary	Noise in dB(A)
1	100	51.04
2	200	48.61
3	300	45.14
4	400	42.21
5	500	38.17

Thus, these noise levels will remain well within acceptable limits and will not have any impact outside the boundary from the proposed project.

Mitigation Measures

- Tree plantation is to be proposed along the alignment to minimize the intensity of dissipating noise
- Noise barrier shall be provided on bridges, links close to human habitation and forest area

Water Environment

The road operations do not require any significant water quantity, apart from time-to-time requirement during works such as maintenance of road. However, as needed water will be sourced from water tankers or from nearest surface water bodies with necessary consents from the jurisdictional authorities. Adequate precautions will be taken, and proper withdrawal management plan shall be thoroughly followed.

Land Environment

Land pollution may take place during the operation phase due to accidental spillage hazardous materials in case are transported/conveyed using the proposed road.

Mitigation Measures

- Such scenarios will be tackled by District Disaster Management in place & use.
- Littering of solid wastes on proposed road shall be strictly prohibited.

Biotic Environment

Emissions & Noise – Vehicular emissions & noise generated from vehicles plying on the proposed road, however such emissions will be non-point & non continuous & the concentration of such emissions escaping the proposed road corridor will be extremely minimal and noise generation will be event specific viz. only during passing/ travel course of vehicles at any given point of time. Hence adverse/negative impacts on surrounding biotic environment during road operational phase are not envisaged.

6.0 Analysis of Alternatives

The proposed alignment was thoroughly studied based on engineering, socio-economic, environmental, cost, and safety aspects. The weightage of parameters within each aspect was tabulated, and based on the ranking, the said alignment was finalized Details of alternative alignment locations have been discussed in detail within the EIA Report and the finalised alignment has been discussed and analysed within this EIA Report.

7.0 Environmental Monitoring Programme

The Environmental Monitoring Programs are also suggested to provide information on which management decisions may be taken during construction and operational phase. The objective of this program is to evaluate the efficiency of mitigation and enhancement measures, updating the actions & impacts of baseline data and adaptation of additional mitigation measures.

The environmental monitoring cost is estimated based on the length and existing environmental scenario of the proposed project. Environmental monitoring cost of, 59,01,800/- during Construction Phase and 98,52,000/- per year during Operation Phase has been allocated.

The sampling, analysis and frequency of environmental attributes including monitoring locations will be as per the guidelines provided by MoEF&CC/CPCB/MPCB. The monitoring shall be carried out by third party laboratories that are accredited by NABL or recognized by MoEF&CC.

8.0 Environmental Management Plan

The proposed project will be certified for the internationally accepted Environmental Management System based on ISO-14001, Quality Management and Occupational Health & Safety Management Systems. An environmental monitoring program shall be put in place; periodic review & audits shall be carried out for effective environmental management. The execution team should have an Environmental Management Cell which shall ensure overall effective implementation of the management plan.

In general, systems should be in place to ensure compliance with respect to environmental statutory requirements and Environment Policy are strongly adhered to all time.

9.0 Project Benefits

The proposed project is expected to bring significant improvements in physical, environmental, and social infrastructure in the region. The development of 4 Lane divided Carriageway connecting Navegoan More–Konsari (Steel Plant) to Hedri (Surjagarh Mines) will provide high-speed connectivity, reduce traffic congestion, and facilitate faster freight movement. Improved connectivity between Chandrapur and Gadchiroli will enhance trade, commerce, and economic activities while supporting industries such as manufacturing, tourism, and ancillary businesses. The project will also promote development in the outskirts of the Vidarbha region and improve road safety through highway and reduced traffic conflicts.

Environmental benefits will include improved riding quality, smoother traffic flow, and reduced travel time, which will lower vehicle operating costs and minimize fuel consumption. Better road conditions will decrease traffic congestion and vehicle emissions, contributing to improved air quality. Roadside landscaping and extensive plantation along the Right of Way (RoW), including compensatory afforestation, will enhance greenery, improve aesthetics, and act as natural pollution absorbers, thereby supporting overall environmental improvement in the region.

The project will also strengthen social infrastructure by improving connectivity between rural and urban areas, enabling better access to educational institutions, healthcare facilities, and government services. Enhanced connectivity will benefit farmers, local businesses, and industries, while also promoting tourism development. During the construction phase, the project is expected to generate employment for approximately 2,800 people, including skilled, semi-skilled, and unskilled workers, with preference given to local communities. In addition, indirect employment opportunities will arise through supporting services such as transportation, eateries, shops, garages, and other local businesses. Overall, the project will

contribute to regional development, improved living standards, and increased revenue generation for both the state and central governments.

10.0 Project Schedule and Cost

The proposed project is scheduled to be commissioned within 24 months after Environment Clearance (EC) and other statutory approvals are granted. The estimated cost of the proposed project is Rs. 2242.28 Crores. For protection of environment, it is proposed to spend 25 Crores as capital cost of EMP budget.

11.0 Conclusion

This impact assessment study indicates that the overall impact from the proposed project activities will be short term, reversible, localised and are not expected to contribute significantly to the surrounding environment. In addition, with the implementation of the pollution control and the environment management measures, these anticipated impacts due to construction and operation of the proposed project will be mitigated to reduce it further.

The project proponent will also ensure that the environmental performances of all the activities are monitored throughout execution of the project during both construction and operation phase. The project proponent will report environmental performance and monitoring reports regularly to statutory authorities.

The Project Proponent shall develop systems and procedures for effective environmental management. The effective management system coupled with monitoring of environmental components and efforts for continual improvements will result in exemplary environmental performance.

Based on the EIA study and surveys conducted for the Project, it can be safely concluded that associated potential adverse environmental impacts can be mitigated to an acceptable level by adequate implementation of the measures as stated in the EIA Report. Adequate provisions have been made in the Project to cover the environmental mitigation and monitoring requirements, and their associated costs as suggested in environmental budget. The proposed project shall improve Road efficiency and bring economic growth. In terms of air and noise quality, the project shall bring considerable improvement to possible exposure levels to population.