

SCHEDULE - C (PART I)

(See Clause 2.1)

PROJECT FACILITIES

1. Project Facilities

The Concessionaire shall construct the Project Facilities in accordance with the provisions of this Agreement. Such Project Facilities shall include:

- (a) Toll Plazas;
- (b) Roadside Furniture;
- (c) Highway Lighting;
- (d) Pedestrian Facilities;
- (e) Truck lay-byes;
- (f) Bus-bays and bus shelters;
- (g) Cattle crossings;
- (h) Traffic aid posts;
- (i) Medical aid posts;
- (j) Vehicle rescue posts;
- (k) Highway patrol Unit;
- (l) Emergency Medical Services;
- (m) Crane services;
- (n) Operation & Maintenance Centre;
- (o) Landscaping and Tree Plantation;
- (p) Communication system; and

2. Project Facilities for Four-Laning

Project Facilities forming part of Four-Laning and to be completed on or before the Project Completion Date have been described in Annex-I of this Schedule-C.

Annex - I

(Schedule-C)

Project Facilities for Four-Laning

1. Project Facilities

The Concessionaire shall construct the Project Facilities described in this Annex-I to form part of the Four-Lane Project Highway. The Project Facilities shall include:

- (a) Toll Plazas;
- (b) Roadside Furniture;
- (c) Highway Lighting;
- (d) Pedestrian Facilities;
- (e) Truck lay-byes;
- (f) Bus-bays and bus shelters;
- (g) Cattle crossings;
- (h) Traffic aid posts;
- (i) Medical aid posts;
- (j) Vehicle rescue posts;
- (k) Highway patrol Unit;
- (l) Emergency Medical Services;
- (m) Crane services;
- (n) Operation & Maintenance Centre;
- (o) Landscaping and Tree Plantation;
- (p) Communication system; and

2. Description of Project Facilities

Each of the Project Facilities is briefly described below:

a) Toll Plazas

Except otherwise provided in this Schedule-C. Toll plaza shall be design as per Section 10 of the Manual (IRC: SP: 84:2019), Toll Plazas including all facilities shall be provided at the following locations:

Location of Toll Plaza:

S. No	Design Chainage	Direction	No. of toll lanes (Extra wide ETC + ETC+ Extra wide ETC)
1	18+600	Vidisha-Mehulwa	4+4

b) Road Side Furniture

Road side furniture comprising road signs, road markings, object markers, hazard marker, studs, delineators, attenuators, safety barriers, pedestrian guard rails, boundary stones, kilometer stone etc. shall be provided as per manual.

The roadside furniture shall also include the following minimum provisions:

- I. Crash Barrier: New Jersey crash barriers shall be provided as per TCS. W beam Metal Crash Barrier shall be provided at required locations as shown in TCS drawing and at all other locations as per the Manual. W beam crash barrier shall invariably be provided in median on both sides height minimum 3 M.
- II. Pedestrian Guard Rail (MS Railings) shall be provided as per Manual.
- III. Traffic Signs: Traffic Signs viz. roadside signs, overhead signs and kerb mounted signs shall be provided along the entire Project Highway as per Manual. 3 sets of Traverse bar marking on Main Carriageway with thickness 5mm 5mm & 15mm.
- IV. Pavement markings: The pavement markings shall cover the road markings for the entire Project Highway as per Manual.
- V. LED Traffic Beacons: These shall be provided on the entire project highway near pedestrian crossings, public gathering places (Educational Institutions, Hospitals, Worship places etc.) cross roads at Major and Minor Junctions and wherever required as per Manual.
- VI. Studs: Road Studs shall be provided at Horizontal Curve below 700m, median opening, intersections, Cross roads & Built-up areas (Excluding Toll Plaza location) and wherever required as per Manual, throughout the stretch @ 9m C/C
- VII. Delineators: Delineators for night time visibility shall be provided for the entire project Highway as per Manual throughout the stretch @ 18m C/C.
- VIII. Boundary stones shall be provided at the boundary on both sides of Right of Way as per IRC SP: 84 : 2019.
- IX. Hectometer/Kilometer Stones: Shall be provided for the entire Project Highway.

c) Highway Lighting/Street lighting:

Highway lighting (LED) shall be provided at the following locations with Solar lighting

- i. At Rest area, Truck lay bye, Bus bays, bus shelter, junctions, Interchanges and Grade separators including approaches & underneath of Underpasses/Overpasses, built up sections, Slip Road & junctions as location given in schedule - B, and wherever else required as per Manual.
- ii. High mast Lighting

High mast lighting shall be provided along the Project Highway at Toll Plazas, Rest-areas, Truck Laybys, at Grade Major Junctions and Bypass Start & End and wherever required as per Manual

Not to be limited to the above specified locations and it shall be finalized in consultation with Authority Engineer / Project Director, NHAI.

Concessionaire shall install, maintain and operate highway lighting/ street lighting and electrical connection in the name of authority during entire concession period including operation & maintenance period. The electricity bills for the highway lighting being used for purpose of illuminating the highway shall be borne by the Authority.

Tunnel lighting: Proper lighting arrangements at tunnel approach, portals and inside tunnel shall be made as per Schedule D and the location shall be finalized in consultation with IE. Tunnel lighting shall be provided as per CIE 88- 2004 and BS 5489 or any other latest specifications.

d) Pedestrian Facilities

Pedestrian facilities in the form of guard rails, footpath, lighting, etc. shall be provided as specified in Manual referred in Schedule D.

e) Truck Lay-byes Nil

f) Bus Bays and Bus Shelters

The concessionaire shall provide 14 nos. of Bus Shelters along the project highway at the locations given in Appendix C I. The locations of these bus bays shall be finalized by the concessionaire in consultation with the IE.

g) Pedestrian/Cattle Crossing:

Pedestrian facilities shall be provided in accordance with the Manual of Specifications and Standards as referred in Schedule “D”.

h) Traffic Aid Posts

Traffic aid post shall be constructed at the location identified by the Authority as per manual.

i) Medical Aid Post

Medical aid post shall be constructed at the location identified by the Authority as per manual.

j) Vehicular Rescue Posts

Vehicular aid post shall be constructed at the location identified by the Authority as per manual.

k) Ambulance

One no ambulance including its operation along with required staff and maintenance units having facilities as per latest NHAI/ policy guide lines/ strengthening the incident management services/2018/policy no 12.19 dated 20-03-2018 shall be provided from construction completion up to end of concession period.

l) Cranes

One no crane fitted with GPS based vehicle tracking system with minimum capacity of 30T as per manual including its operation and required staff and maintenance units shall be provided from construction Completion up to end of concession period.

m) Highway Patrolling vehicle

One no highway patrol vehicle including its operation along with required staff and maintenance units having facilities as per latest NHAI/ policy guide lines/ strengthening the incident management services/2018/policy no 12.19 dated 20-03-2018 shall be provided from construction completion up to end of maintenance period.

n) Landscaping and Tree Plantation

Landscaping of the highway shall be done on, but not limited to the following

- i. Toll Plaza Area, Truck lay bye area and Interchange.
- ii. Road-side avenue tree plantation as per GreenHighwayPolicy2015.

Landscaping, Beautification, Median & Avenue Plantation and Tree Shifting.

I. Landscaping , Beautification and Median Plantation

Landscaping of the highway shall be done on Toll Plaza areas, Truck lay bye areas, Interchanges, below the viaducts and islands along with landscaping and beautification of Median of approaches of structures with hedges of 2m. thick Duranta of Red and Golden green colour, One row of shrubs like madhukamni, Chandni, Tabebuia rosea, Tecoma stens, Tabebuia argentia and Bouganvillas of different colours shall be planted. The pattern of hedge and colourful plants will be as follows:

- a) Medians of approaches of bridges/structures including continuous road upto 600m. each side and near habitation will be planted with 1 meter thick hedge of Red Duranta and 1m. thick hedge of Golden Duranta making 2m. thick hedge in staggered fashion. Thus, each side of 600m. length of hedge will have 75m. continuous hedge(2m. thick) at left of median alternate with 75m. continuous hedge (2m. thick) at right of median in staggered manner. Red colour hedge will be maintained at 60

cm height while golden green colour hedge will be maintained at 1m. height. There shall be one row of shrub and small tree like Madhukamni, Chandni, Tabebuia Rosia, Tecoma stens, Tabebuia argentea, Bouganvillea, Gulturra, Cassia biflora etc. One side of approach will have only one species to have a single colour scheme upto total approach length of one structure. The height of saplings shall have at least 1.5 m. height at the time of plantation.

- b) Approaches of grade separators be planted with small to middle size tree species like Tecoma, Cassia biflora, Gulturra, Amaltas, Tabebuia etc.
- c) The concessionaire shall be responsible for filling median with good plantable soil upto 70cm. depth. There shall be 4 rows of plants in median (excluding approaches of structures). Two rows each side after leaving 1m. distance from carriageway will have species like Tecoma, Cassia biflora, Tabebuia Rosea, Tabebuia argentea, Caesalpinia pulcherrima etc. at 3m. interval (Plant to Plant). Another 2 rows will be planted 6m. apart (Plant to Plant) in staggered manner leaving 1m. distance from centre of median to accommodate proper drainage of water. These two rows will have species like Kachnar, Kanak Champa, Amaltas, Tabebuia, Saoni, Bottle brush, Jacaranda etc. The height of saplings at the time of plantation should be at least 1.5m.
- d) The Species to be planted at Toll Plaza areas, Truck lay by areas, Interchanges, below the viaducts and islands for beautification shall be approved by Authority Engineer and Authority.

II. Landscaping, Beautification and Avenue Plantation:-

The Concessionaire will be responsible to dig continuous trench of 75 cm. width and 50 cm. depth on the extreme edge of ROW leaving 1m. space outer side to heap the dug soil. This will demarcate the boundaries of ROW from that of private field. While making heap care should be taken to leave some space towards trench so that the trenches are not filled with such heaped soil by angle of repose.

The concessionaire shall be responsible to plant and maintain minimum 1400 nos. of saplings per km. length of highway in avenue i.e. on both sides of highway wherever space is required. The pit size would be 60cm x 60 cm x 60 cm and 1/3 of volume & pit should be filled with good plantable soil and 1/3 of volume with cow dung manure (CDM). Species of plants/ saplings to be planted on avenue shall be approved by the Independent Engineer and Authority. Cement Concrete Tree Guards shall be installed with all the Avenue tree plantations at the ROW Edge for protection of the same. Wired Fencing shall be used for protection of other Plantation.

In ROW, the first row to be planted with Kachnar, Amaltas, Tabebuia, Saoni, Tecoma, bottle brush, Kankchampa etc at 3m. interval (plant to plant).

The second row of ROW shall be planted with Neem, Bel, Kaith, Safed siris, Mahogany, Karanj, Jamun, sissoo, Arjun etc at 6m. interval. Black cotton soil to be planted with safed siris, water logged areas with Jamun and Arjun and Dry and stony areas to be planted with species like Chirol, Neem. Each km. should have at least one plant of Peepal, Bargad, Imli and Aam.

The edge of ROW should invariably be planted with Bamboo species preferably with Katang bamboo making a green curtain. The Bamboos will be planted on the soil heaped on the extreme edge of ROW at 4m. intervals. Seed of Ber, Sitafal etc. should be soon in gaps between bamboo plants just before monsoon.

The saplings of minimum 2m. height and more than 2 years of age are to be planted in ROW at the time of plantation. The root system of such saplings should not be coiled. This must be ensured by selecting saplings in bigger size poly pots. For bamboo species, the plant should be more than 1year old and the rhizome of bamboo should be of male thumb thickness. The number of saplings to be planted in ROW shall be as per strip chart as prepared by Authority engineer. This will be in conformity to IRC:SP:21:2009 except the last row where the Bamboo species are planted at 4m. interval.

Appendix C I

Locations of Bus Shelters

S.No	Design Chainage (Km)	Side	Remarks
1	3200	Both	
2	9050	Both	
3	11750	Both	
4	15150	Both	
5	17550	Both	
6	19500	Both	
7	23600	Both	
8	26250	LHS	

Note: The location shown above for Bus shelter is indicative and it may vary as per actual site condition and No CHANGE OF SCOPE shall be provided in case of change on location.