

Annex - I

(Schedule-B)

Description of the Project

1 Width of Carriageway for Four Lanning

- 1.1 Four lane divided Carriageway shall be undertaken. The paved carriageway shall be 18.0m (Eighteen) wide excluding the Median in accordance with the typical cross sections drawings in the Manual.

Provided that in the built-up areas the carriageway width is 19.0m (Nineteen) and Grade separated structures the carriageway width is 25.0m (Twenty Five) wide.

- 1.2 Except as otherwise provided in this Agreement, [but subject to the provisions of Annex-II of this Schedule-B,] the width of the paved carriageway shall conform to Clause 1.1 above.

2 Project Facilities

Project facilities shall be constructed in conformity with Annex-I of Schedule- C.

3 Specifications and Standards

The Project shall be constructed in conformity with the Specifications and Standards specified in Annex-I of Schedule-D.

4. Other Features of four laning**4.1 Cross Section**

The project highway Cross sections should follow IRC: SP: 84-2014, "Manual of Standards & Specifications for Four Laning of Highways on Public Private Partnership" as per **Appendix B-I**

Summary of Widening Scheme

S.No.	Existing Chainage (km)		Design Chainage (m)		Length (m)	Type of TCS	Type of Widening
	From	To	From	To			
1	367+200	367+350	199275	199431	156	1	Eccentric widening in Rural Area-Left
2	367+350	367+358	199431	199439	8	-	Minor Bridge
3	367+358	367+500	199439	199570	131	1C	New Construction for Realignment/ Reconstruction in Rural Area
4	367+500	367+700	199570	199770	200	1	Eccentric widening in Rural Area-Left
5	367+700	368+040	199770	200050	280	1C	New Construction for Realignment/ Reconstruction in Rural Area
6	368+040	368+830	200050	200830	780	1	Eccentric widening in Rural Area-Left

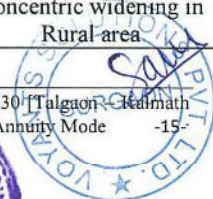
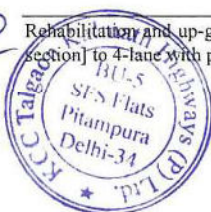
Rehabilitation and up-gradation of NH-66 (erstwhile NH-17) from Km 367/200 to Km 406/030 (Talgaon - Kalmath section) to 4 lane with paved shoulder in the state of Maharashtra under NHDP -IV on Hybrid Annuity Mode

S.No.	Existing Chainage (km)		Design Chainage (m)		Length (m)	Type of TCS	Type of Widening
	From	To	From	To			
7	368+830	369+000	200830	201000	170	1C	New Construction for Realignment/ Reconstruction in Rural Area
8	369+000	369+480	201000	201480	480	1	Eccentric widening in Rural Area-Left
9	369+480	369+720	201480	201720	240	8	Typical Cross Section of Vehicular/ Light Vehicular Underpass
10	369+720	369+740	201720	201740	20	-	VUP
11	369+740	369+890	201740	201890	150	8	Typical Cross Section of Vehicular/ Light Vehicular Underpass
12	369+890	369+980	201890	201983	93	-	Major Bridge
13	369+980	370+540	201983	202570	587	8	Typical Cross Section of Vehicular/ Light Vehicular Underpass
14	370+540	370+552	202570	202582	12	-	LVUP
15	370+552	370+800	202582	202820	238	8	Typical Cross Section of Vehicular/ Light Vehicular Underpass
16	370+800	370+900	202820	202920	100	1B	Concentric widening in Rural area
17	370+900	371+730	202920	203660	740	1C	New Construction for Realignment/ Reconstruction in Rural Area
18	371+730	371+751	203660	203681	21	-	Minor Bridge
19	371+751	372+300	203681	204165	484	1C	New Construction for Realignment/ Reconstruction in Rural Area
20	372+300	372+550	204165	204425	260	1	Eccentric widening in Rural Area-Left
21	372+550	372+900	204425	204760	335	1C	New Construction for Realignment/ Reconstruction in Rural Area
22	372+900	373+100	204760	204965	205	1	Eccentric widening in Rural Area-Left
23	373+100	373+300	204965	205165	200	1C	New Construction for Realignment/ Reconstruction in Rural Area
24	373+300	373+407	205165	205260	95	1	Eccentric widening in Rural Area-Left
25	373+407	373+415	205260	205268	8	-	Minor Bridge

Rehabilitation and up-gradation of NH-66 (erstwhile NH-17) from Km 362+000 to Km 406+030 (Talgaon - Kalmath section) to 4-lane with paved shoulder in the state of Maharashtra under NHAI JV on Hybrid Annuity Mode

S.No.	Existing Chainage (km)		Design Chainage (m)		Length (m)	Type of TCS	Type of Widening
	From	To	From	To			
26	373+415	373+610	205268	205460	192	1	Eccentric widening in Rural Area-Left
27	373+610	373+860	205460	205710	250	1B	Concentric widening in Rural area
28	373+860	374+130	205710	205960	250	1	Eccentric widening in Rural Area-Left
29	374+130	374+350	205960	206130	170	1C	New Construction for Realignment/ Reconstruction in Rural Area
30	374+350	374+400	206130	206200	70	1	Eccentric widening in Rural Area-Left
31	374+400	374+700	206200	206430	230	5	New Construction for Realignment/ Reconstruction - Left Side Hill
32	374+700	375+150	206430	206875	445	4	Eccentric widening - Left Side Hill
33	375+150	375+400	206875	207100	225	5	New Construction for Realignment/ Reconstruction - Left Side Hill
34	375+400	375+520	207100	207215	115	4	Eccentric widening - Left Side Hill
35	375+520	376+500	207215	208200	985	1	Eccentric widening in Rural Area-Left
36	376+500	376+600	208200	208300	100	1B	Concentric widening in Rural area
37	376+600	376+750	208300	208450	150	1	Eccentric widening in Rural Area-Left
38	376+750	376+900	208450	208600	150	1B	Concentric widening in Rural area
39	376+900	376+955	208600	208650	50	1	Eccentric widening in Rural Area-Left
40	376+955	376+963	208650	208658	8	-	Minor Bridge
41	376+963	377+100	208658	208800	142	1	Eccentric widening in Rural Area-Left
42	377+100	377+270	208800	208970	170	1B	Concentric widening in Rural area
43	377+270	377+469	208970	209167	197	1A	Eccentric widening in Rural Area-Right
44	377+469	377+492	209167	209188	21	-	Minor Bridge
45	377+492	377+770	209188	209465	277	1A	Eccentric widening in Rural Area-Right
46	377+770	377+920	209465	209615	150	1	Eccentric widening in Rural Area-Left
47	377+920	378+220	209615	209915	300	1B	Concentric widening in Rural area

Rehabilitation and up-gradation of NH-66 (erstwhile NH-17) from Km 367+500 to Km 406+030 (Talgaon - Badmath section) to 4-lane with paved shoulder in the state of Maharashtra under WAP-IV on Hybrid Annuity Mode -15-



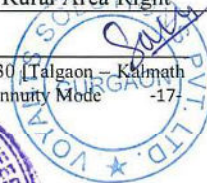
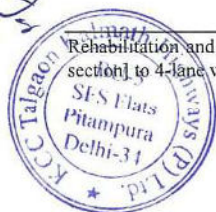
S.No.	Existing Chainage (km)		Design Chainage (m)		Length (m)	Type of TCS	Type of Widening
	From	To	From	To			
48	378+220	378+770	209915	210465	550	1A	Eccentric widening in Rural Area-Right
49	378+770	379+090	210465	210775	310	1	Eccentric widening in Rural Area-Left
50	379+090	379+175	210775	210870	95	1A	Eccentric widening in Rural Area-Right
51	379+175	379+764	210870	211461	591	1	Eccentric widening in Rural Area-Left
52	379+764	379+771	211461	211469	8	-	Minor Bridge
53	379+771	379+930	211469	211625	156	1	Eccentric widening in Rural Area-Left
54	379+930	379+970	211625	211665	40	1B	Concentric widening in Rural area
55	379+970	380+326	211665	212035	370	1	Eccentric widening in Rural Area-Left
56	380+326	380+338	212035	212043	8	-	Minor Bridge
57	380+338	380+560	212043	212265	222	1	Eccentric widening in Rural Area-Left
58	380+560	381+160	212265	212855	590	1A	Eccentric widening in Rural Area-Right
59	381+160	381+191	212855	212891	36	1	Eccentric widening in Rural Area-Left
60	381+191	381+201	212891	212899	8	-	Minor Bridge
61	381+201	381+320	212899	213020	121	1	Eccentric widening in Rural Area-Left
62	381+320	381+400	213020	213095	75	1A	Eccentric widening in Rural Area-Right
63	381+400	381+580	213095	213265	170	1C	New Construction for Realignment/ Reconstruction in Rural Area
64	381+580	382+060	213265	213755	490	1A	Eccentric widening in Rural Area-Right
65	382+060	382+520	213755	214215	460	1	Eccentric widening in Rural Area-Left
66	382+520	383+000	214215	214685	470	1A	Eccentric widening in Rural Area-Right
67	383+000	383+280	214685	214975	290	1	Eccentric widening in Rural Area-Left
68	383+280	383+380	214975	215075	100	1A	Eccentric widening in Rural Area-Right
69	383+380	383+530	215075	215225	150	1	Eccentric widening in Rural Area-Left
70	383+530	383+950	215225	215650	425	1A	Eccentric widening in Rural Area-Right
71	383+950	384+300	215650	215985	335	8	Typical Cross Section of Vehicular/ Light Vehicular Underpass

Rehabilitation and up-gradation of NH-66 (erstwhile NH-17) from Km 367/200 to Km 406/030 (Talgaon - Kalmath section) to 4-lane with paved shoulder in the state of Maharashtra under NHDP on 15th Aug, 2014, Annuity Mode.



S.No.	Existing Chainage (km)		Design Chainage (m)		Length (m)	Type of TCS	Type of Widening
	From	To	From	To			
72	384+300	384+410	215985	216095	110	-	Flyover
73	384+410	384+712	216095	216400	305	8	Typical Cross Section of Vehicular/ Light Vehicular Underpass
74	384+712	384+733	216400	216421	21	-	Minor Bridge
75	384+733	385+410	216421	217100	679	8	Typical Cross Section of Vehicular/ Light Vehicular Underpass
76	385+410	385+490	217100	217180	80	-	Flyover
77	385+490	385+900	217180	217600	420	8	Typical Cross Section of Vehicular/ Light Vehicular Underpass
78	385+900	387+600	217600	219300	1700	1A	Eccentric widening in Rural Area-Right
79	387+600	387+926	219300	219430	130	8	Typical Cross Section of Vehicular/ Light Vehicular Underpass
80	387+926	387+938	219430	219442	12	-	LVUP
81	387+938	388+200	219442	219900	458	8	Typical Cross Section of Vehicular/ Light Vehicular Underpass
82	388+200	388+850	219900	220550	650	1A	Eccentric widening in Rural Area-Right
83	388+850	389+010	220550	220715	165	1	Eccentric widening in Rural Area-Left
84	389+010	389+860	220715	221560	845	1A	Eccentric widening in Rural Area-Right
85	389+860	390+400	221560	222100	540	1	Eccentric widening in Rural Area-Left
86	390+400	390+470	222100	222170	70	1B	Concentric widening in Rural area
87	390+470	390+739	222170	222443	273	1	Eccentric widening in Rural Area-Left
88	390+739	390+802	222443	222506	63	-	Major Bridge
89	390+802	391+090	222506	222800	294	1	Eccentric widening in Rural Area-Left
90	391+090	391+770	222800	223470	670	1A	Eccentric widening in Rural Area-Right
91	391+770	392+330	223470	224025	555	8	Typical Cross Section of Vehicular/ Light Vehicular Underpass
92	392+330	392+350	224025	224045	20	-	VUP
93	392+350	392+750	224045	224450	405	8	Typical Cross Section of Vehicular/ Light Vehicular Underpass
94	392+750	392+900	224450	224594	144	1A	Eccentric widening in Rural Area-Right

Rehabilitation and up-gradation of NH-66 (erstwhile NH-17) from Km 367/200 to Km 406/030 (Talgaon - Kalmath section) to 4-lane with paved shoulder in the state of Maharashtra under NHDP - 22 on Hybrid Annuity Mode -17



S.No.	Existing Chainage (km)		Design Chainage (m)		Length (m)	Type of TCS	Type of Widening
	From	To	From	To			
95	392+900	393+220	224594	224920	326	1	Eccentric widening in Rural Area-Left
96	393+220	393+588	224920	225294	374	8	Typical Cross Section of Vehicular/ Light Vehicular Underpass
97	393+588	393+600	225294	225306	12	-	LVUP
98	393+600	393+980	225306	225680	374	8	Typical Cross Section of Vehicular/ Light Vehicular Underpass
99	393+980	394+706	225680	226412	732	1B	Concentric widening in Rural area
100	394+706	394+714	226412	226420	8	-	Minor Bridge
101	394+714	394+960	226420	226660	240	1	Eccentric widening in Rural Area-Left
102	394+960	395+370	226660	227075	415	1A	Eccentric widening in Rural Area-Right
103	395+370	395+560	227075	227265	190	1	Eccentric widening in Rural Area-Left
104	395+560	395+780	227265	227485	220	1A	Eccentric widening in Rural Area-Right
105	395+780	396+290	227485	227994	509	1	Eccentric widening in Rural Area-Left
106	396+290	396+414	227994	228118	124	-	Major Bridge
107	396+414	397+490	228118	229185	1067	1	Eccentric widening in Rural Area-Left
108	397+490	398+070	229185	229765	580	1A	Eccentric widening in Rural Area-Right
109	398+070	399+330	229765	231025	1260	1	Eccentric widening in Rural Area-Left
110	399+330	399+500	231025	231190	165	1A	Eccentric widening in Rural Area-Right
111	399+500	399+710	231190	231395	205	1	Eccentric widening in Rural Area-Left
112	399+710	399+800	231395	231485	90	1A	Eccentric widening in Rural Area-Right
113	399+800	400+120	231485	231785	300	1C	New Construction for Realignment/ Reconstruction in Rural Area
114	400+120	400+200	231785	231865	80	1B	Concentric widening in Rural area
115	400+200	400+250	231865	231920	55	1	Eccentric widening in Rural Area-Left
116	400+250	400+500	231920	232170	250	8	Typical Cross Section of Vehicular/ Light Vehicular Underpass
117	400+500	400+515	232170	232185	15	-	VUP

Rehabilitation and up-gradation of NH-66 (erstwhile NH-17) from Km 362/200 to Km 406/030 [Talgaon A-Kalmath section] to 4 lane with paved shoulder in the state of Maharashtra under VOP on Hybrid Annuity Mode

S.No.	Existing Chainage (km)		Design Chainage (m)		Length (m)	Type of TCS	Type of Widening
	From	To	From	To			
118	400+515	400+830	232185	232500	315	8	Typical Cross Section of Vehicular/ Light Vehicular Underpass
119	400+830	401+000	232500	232665	165	1A	Eccentric widening in Rural Area-Right
120	401+000	401+100	232665	232870	205	1B	Concentric widening in Rural area
121	401+100	401+420	232870	233084	214	8	Typical Cross Section of Vehicular/ Light Vehicular Underpass
122	401+420	401+432	233084	233096	12	-	LVUP
123	401+432	401+900	233096	233570	474	8	Typical Cross Section of Vehicular/ Light Vehicular Underpass
124	401+900	402+247	233570	233909	339	1A	Eccentric widening in Rural Area-Right
125	402+247	402+268	233909	233930	21	-	Minor Bridge
126	402+268	402+435	233930	234095	165	1A	Eccentric widening in Rural Area-Right
127	402+435	402+700	234095	234360	265	1	Eccentric widening in Rural Area-Left
128	402+700	403+271	234360	234934	574	1A	Eccentric widening in Rural Area-Right
129	403+271	403+279	234934	234942	8	-	Minor Bridge
130	403+279	403+700	234942	235360	418	1A	Eccentric widening in Rural Area-Right
131	403+700	403+800	235360	235460	100	1B	Concentric widening in Rural area
132	403+800	404+035	235460	235660	200	1A	Eccentric widening in Rural Area-Right
133	404+035	405+400	235660	237055	1395	1	Eccentric widening in Rural Area-Left
134	405+400	405+540	237055	237195	140	1B	Concentric widening in Rural area
135	405+540	405+685	237195	237340	145	1	Eccentric widening in Rural Area-Left
136	405+685	405+800	237340	237455	115	1A	Eccentric widening in Rural Area-Right
137	405+800	406+030	237455	237655	200	1	Eccentric widening in Rural Area-Left
				Total	38380		

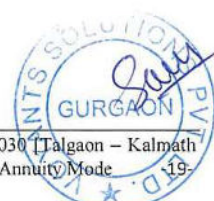
Note: - Median & Carriageway width tapering shall be provided as per IRC-SP-84-2014 Clause no.2.5.4.; median width tapering details provided in clause 1.3.4 in schedule B.

Provision in various types of cross section

22



Rehabilitation and up-gradation of NH-66 (erstwhile NH-17) from Km 367/200 to Km 406/030 (Talgaon - Kalmath section) to 4 lane with paved shoulder in the state of Maharashtra under Hybrid Annuity Mode



S. No.	Type of C/S	Proposed Typical Cross Sections	Length in m
1	Type-1	4 Lane Divided Carriageway - Eccentric widening in Rural Area-Left	14235
2	Type-1A	4 Lane Divided Carriageway - Eccentric widening in Rural Area-Right	10774
3	Type-1B	4 Lane Divided Carriageway - Concentric widening in Rural area	2445
4	Type-1C	4 Lane Divided Carriageway New Construction for Realignment/ Reconstruction in Rural Area	3001
5	Type-4	4 Lane Divided Carriageway - Eccentric widening - Left Side Hill	560
6	Type-5	4 Lane Divided Carriageway New Construction for Realignment/ Reconstruction - Left Side Hill	455
7	Type-8	Typical Cross Section of Vehicular/ Light Vehicular Underpass	6910
		Total (in m)	38380

4.2 Alignment Plan and Longitudinal Section

An alignment plan and vertical profile of project highway is given at Appendix BII in soft copy. The minimum FRL given in enclosed drawing shall have to be achieved by Concessionaire. Based on site/design requirement, the Concessionaire may, however, improve/upgrade upon the alignment plans and profiles as indicated in Appendix B-II and raise the finished roadway level (FRL) with approval from the Independent Engineer within the available Right of Way.

4.3 Bypass and Realignment

There are 14 re-alignments in the project highway. The details of realignments to be provided are given at **Appendix B-III**.

4.4 Service Road/Slip Road

Service/Slip Roads shall be provided in lengths indicated in **Appendix –B IV**.

Cross sections should follow IRC: SP: 84-2014, "Manual of Standards & Specifications for Four Laning of Highways on Public Private Partnership".

4.5 Type of Shoulder and Footpath

(a) In built-up sections, footpaths shall be provided in the following table.

Sr. No.	Design Chainage (M)		Width of Footpath	Side	Linear Length of Footpath along the main C/W (m)
	From	To			
1	201480	201720	1.5	Both Side	480
2	201720	201740	1.5	Both Side	40
3	201740	201890	1.5	Both Side	300
4	201890	201983	1.5	Both Side	186
5	201983	202570	1.5	Both Side	1174
6	202570	202582	1.5	Both Side	24
7	202582	202820	1.5	Both Side	476
8	215650	215985	1.5	Both Side	670

Rehabilitation and up-gradation of NH-66 (Erstwhile NH-17) from Km 362/000 to Km 406/030 [Talgaon – Kalmath section] to 4-lane with paved shoulder in the state of Maharashtra under Public Private Partnership Hybrid Annuity Mode.

Sr. No.	Design Chainage (M)		Width of Footpath	Side	Linear Length of Footpath along the main C/W (m)
	From	To			
9	215985	216095	1.5	Both Side	220
10	216095	216400	1.5	Both Side	610
11	216400	216421	1.5	Both Side	42
12	216421	217100	1.5	Both Side	1358
13	217100	217180	1.5	Both Side	160
14	217180	217600	1.5	Both Side	840
15	219300	219430	1.5	Both Side	260
16	219430	219442	1.5	Both Side	24
17	219442	219900	1.5	Both Side	916
18	223470	224025	1.5	Both Side	1110
19	224025	224045	1.5	Both Side	40
20	224045	224450	1.5	Both Side	810
21	224920	225294	1.5	Both Side	748
22	225294	225306	1.5	Both Side	24
23	225306	225680	1.5	Both Side	748
24	231920	232170	1.5	Both Side	500
25	232170	232185	1.5	Both Side	30
26	232185	232500	1.5	Both Side	630
27	232870	233084	1.5	Both Side	428
28	233084	233096	1.5	Both Side	24
29	233096	233570	1.5	Both Side	948
Total					13820

(b) In open country, earthen shoulders of 2.0 m width shall be provided with 150 mm thick compacted layer of granular material.

4.6 Six Lane Stretches

Details of stretches to be constructed as Six Lane without paved are as indicated in **Appendix BV**

4.7 Proposed Right of Way (ROW)

The details of the Proposed ROW are given in **Appendix B VI**.

4.8 At Grade Intersection

At grade intersections shall be provided as per locations specified in **Appendix-BVII** for major and minor intersections.

Note: The concessionaire shall take up 'Detailed Engineering study' to ascertain further details of all intersections and treatment of the intersections shall be designed in accordance with the latest guidelines mentioned out in section-3 of Manual.

4.9 Type of Pavement

Pavement design shall be carried out in accordance with Section 5 of the Manual.

Rehabilitation and up-gradation of NH-66 (erstwhile NH-17) from Km 367/200 to Km 406/030 (Tadgaon - Kalmath section) to 4 lanes with paved shoulder in the state of Maharashtra under NHDP -IV on Hybrid Annuity Mode.



The existing 2-lane carriageway shall be widened/strengthened as flexible pavement as per manual requirements while the additional 2-lane carriageway/new 4-lane carriageway [bypass/realignment/concentric widening stretches] shall be rigid pavement. Rigid pavement shall also be provided for bus bays and truck lay bye locations.

Notwithstanding anything to the contrary contained in this Agreement or the Manual, the minimum pavement composition for main carriageway and service road shall be as given below

Rigid pavement:

- i) The thickness of Pavement Quantity Concrete (PQC) shall not be less than **320 mm** and rest over Dry Lean Concrete (DLC) sub base of **150mm** thickness.
- ii) The DLC will meet the minimum cement and compressive strength requirement as prescribed in IRC:SP:49 DLC will extend beyond the PQC (including that in shoulder, if any) 0.75 m on either side.
- iii) Below DLC layer, a properly designed drainage layer **Granular Sub Base (GSB) of 150 mm** thickness shall be provided throughout the road width. It shall be designed to obtain a drainage coefficient of not less than 20 m per day
- iv) Ade-bonding interlayer of polythene sheet having a minimum thickness of 125 micron is recommended separation layer between DLC and PQC.

Existing carriageway & Service road (Flexible)

Existing carriageway(Flexible)		Service road (minimum)
Existing carriageway Widening (minimum)	Overlay over existing carriageway (minimum)	
200mm GSB+ 250mmWMM+ 100mm DBM + 50mm BC	100mm DBM+50mm BC	200mm GSB+ 250mmWMM+ 60mm DBM+ 40 mm BC

Note:- Thickness mentioned in above table shall be treated as minimum. Any variations in the thickness specified in this Schedule-B shall not constitute a Change of Scope, save and except any variations in the thickness arising out of a Change of Scope expressly undertaken in accordance with the provisions of Article 13.

4.10 Grade Separated Intersections

The grade separated intersections shall be as provided as given at **Appendix-B VIII.**

4.11 Utility Structure

The details of the Utility Structure are given in **Appendix BIX.**

4.12 Underpasses/Elevated Structure/Flyover

Vehicular underpass and Light Vehicular Underpass shall be provided at location given at **Appendix-BX(i)**

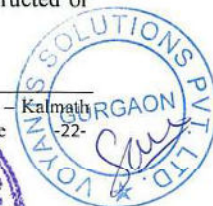
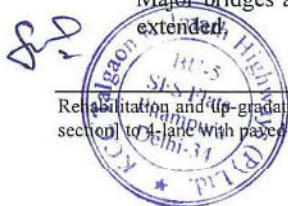
Flyover/Elevated Structure shall be provided at location given at **Appendix-BX(ii)** and

Pedestrian /cattle underpass shall be provided at location given at **Appendix-BXI.**

4.13 Major bridges

Major bridges as listed in **Appendix BXII** shall be provided, widened, reconstructed or

extended, Rehabilitation and Up-gradation of NH-66 (Erstwhile NH-17) from Km 367/200 to Km 416/200 Talgaon – Kalmath section to 4-lane with paved shoulder in the state of Maharashtra under NHDP –IV of Hybrid Annuity Mode



4.14 Minor bridges

Minor bridges as listed in **Appendix BXIII** shall be provided, widened, reconstructed or extended.

4.15 Culverts

Culverts shall be provided, widened, reconstructed or extended as listed in **Appendix-BXIV**.

4.16 ROB/RUB

Details of ROB/RUBs to be provided are given at **Appendix BXV** following points shall be taken care of:

- I) The proposed span arrangements of the ROB are tentative and subject to change as per availability of railway boundaries/ requirement of the railways.
- II) ROB shall be designed, constructed and maintained as per the requirements of Railway authorities. The construction plans shall be prepared in consultation with the concerned railway authority.
- III) The ROB shall be constructed and maintained by the concessionaire under supervision of the Railways.
- IV) All expenditure related to construction, maintenance and supervision of ROB (except P&E charges) shall be borne by the Concessionaire.

4.17 Slope protection

The side slope shall be protected by using suitable slope protection measures wherever required along project highway.

4.18 Utilities

Various utilities like electric and telephone poles, OFC lines, water pipe lines/sewage pipes and Hand pumps are located close to the Project Highway. With the proposal of widening of the existing road from 2-lane to 4-lane with paved shoulders with divided carriageway, it will be necessary to shift the utilities falling in the widening alignment, in consultation with IE/Authority.

4.19 Rainwater Harvesting

As per Ministry of Environment and Forests Notification, New Delhi dated 14.01.1997 (as amended on 13.01.1998, 05.01.1999 & 6.11.2000), the construction of Rain water, harvesting structure is mandatory in and around Water Crisis area, notified by the Central Ground Water Board.

4.18 Type and Width of Median

The minimum width of median, subject to availability of Right of way, for various locations shall be as in **Appendix BXVI** according to clause 2.5.1 of IRC:SP-84-2009.

4.20 Location of Footpath and drains

Drain cum footpath shall be provided in urban stretches as **Appendix – BXVII**. The dimensions of the footpath and drain shall be approved by Independent engineer.

4.21 Provision for extra widening at sharp curves

Extra widening to the carriageway shall be provided at sharp curve locations. The details of extra widening locations are as given in **Appendix BXVIII**.



Rehabilitation and up-gradation of NH-66 (erstwhile NH-17) from Km 367/200 to Km 406/000, Flakson - Kalmath section to 4-lane with paved shoulder in the state of Maharashtra under NHDP -IV of Hybrid Annuity Mode.

