



# **NATIONAL HIGHWAYS AUTHORITY OF INDIA**

(Ministry of Shipping, Road Transport & Highways)

Government of India

FOUR LANING OF KUNDAPUR - SURATHKAL SECTION OF NH-17 AND  
MANGLORE – KERALA BORDER ( TOTAL LENGTH 90.08) IN THE STATE  
OF KARNATAKA UNDER NHDP PHASE III ON DESIGN,BUILD,FINANCE,  
OPERATE AND TRANSFER (THE “ DBFOT”) BASIS

between

## **NATIONAL HIGHWAYS AUTHORITY OF INDIA**

G-5&6,sector- 10, Dwarka, New Delhi -110 075

and

## **NAVAYUGA UDUPI TOLLWAYS PRIVATE LIMITED**

1259,Lakshmi Towers, Road No.36,Jubilee Hills,Hyderabad-500033

Andhra Pradesh

9<sup>th</sup> March 2010

VOLUME – I (Part II)

**SCHEDULES TO CONCESSION AGREEMENT**

## TABLE OF CONTANTS

<u>S.NO.</u>	<u>SCHEDULES</u>	<u>DESCRIPTION</u>	<u>PAGE NO.</u>
1	Schedule - A	Site of the Four/Six Lane Project Highway	140-192
2	Schedule - B	Development of the Project Highway	193-333
3	Schedule - C	Project Facilities	334-341
4	Schedule - D	Specifications and Standards	342-346
5	Schedule - E	Applicable Permits	347
6	Schedule - F	Performance Security	348-350
7	Schedule - G	Project Completion Schedule	351
8	Schedule - H	Drawings	352-353
9	Schedule - I	Tests	354-355
10	Schedule - J	Completion Certificate	356-357
11	Schedule - K	Maintenance Requirements	358-363
12	Schedule - L	Safety Requirements	364-367
13	Schedule - M	Monthly Fee Statement	368
14	Schedule - N	Weekly Traffic Census	369-370
15	Schedule - O	Traffic Sampling	371
16	Schedule - P	Selection of Independent Consultant	372-373
17	Schedule - Q	Terms of Reference for Independent Consultant	374-380
18	Schedule - R	Fee Notification, Ministry of Road Transport and Highways	381-398
19	Schedule - S	Escrow Agreement	399-412
20	Schedule - T	Panel of Chartered Accountants	413-414
21	Schedule - U	Vesting Certificate	415
22	Schedule - V	Substitution Agreement	416-425
23	Schedule - W	State Support Agreement	426-441

**SCHEDULE-A**  
(See Clause 10.1)

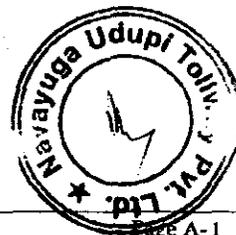
**SITE OF THE FOUR/SIX LANE PROJECT HIGHWAY**

**1 THE SITE**

- 1.1** Site of the Four-Lane Project Highway shall include the land, buildings, structures and road works as described in **Annex-I** of this **Schedule-A**.
- 1.2** An inventory of the Site including the land, buildings, structures, road works, trees and any other immovable property on or attached to the Site shall be prepared jointly by the Authority Representative and the Concessionaire and such inventory shall form part of the memorandum referred to in Clause 10.3.1 of the Agreement.
- 1.3** Additional land required for Toll Plazas, [Traffic Aid Posts, Medical Aid Posts and vehicle rescue posts or for] construction of works specified in Change of Scope Order shall be acquired in accordance with the provisions of this Agreement. Upon acquisition, such land shall form part of the Site and vest in the Authority.

**2 ADDITIONAL LAND FOR SIX-LANING**

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140

**Annex – I**  
**(Schedule-A)**  
**Site for Four Laning**

**1.1 The Site**

The project highway aims at developing the existing two lanes to four lanes from existing Chainage Km 283+300 at Kundapura Town, (Design Chainage : Km 283+300) to existing Chainage : Km 358+080 at Surathkal Town (Design Chainage: Km 358+686) for Section- 1 and from existing Chainage Km 375+300 (here onwards referred as Km 1+900) to Km 376+700 (i.e. Nantur circle to Mahaveer circle) and Km 3+700 to Km 17+200 (i.e. Mahaveer circle to Kerala border) for Section-2 of NH- 17 in the State of Karnataka .

Thus the construction package for the project includes developing the existing two lane carriageway to Four lane dual carriageway configurations including strengthening of existing two lanes between existing Chainage Km 283+300 at Kundapura Town, (Design Chainage : Km 283+300) to existing Chainage : Km 358+080 at Surathkal Town (Design Chainage: Km 358+686) for Section- 1 and between existing Chainage Km 375+300 (here onwards referred as Km 1+900) to Km 376+700 (i.e. Nantur circle to Mahaveer circle) and Km 3+700 to Km 17+200 (i.e. Mahaveer circle to Kerala border) for Section-2 of NH- 17 defined as “Project Highway”.

**1.2 Description of the Project Highway**

The project highway is generally 2-lane and the road is passing through the built up areas of towns and villages enroute. Important towns along the alignment are Kundapura , Koteswara , Kumbhashi , Thkkatte , Kota , Saligrama , Yadabettu , Gundmi , Saasthan , Hangarakatta , Uppinakote , Brahnavar , Herur , Puttur , Kotpadi , Kaup , Muloor , Uchila , Padubidri , Mulky , Haleyangadi , Mukka and Surathkal in Section-1 and kallapu, Thokutu, Kolya and Thalapady in Section-2. An index map and location plan of the Project Highway is given at Appendix A-I.

**1.2.1 Referencing System**

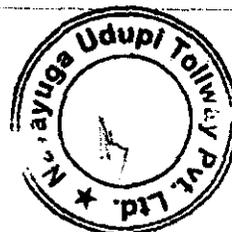
Kilometer stones are existing in entire length of the project highway. It is called the "Existing Chainage". During topography survey with Total Station, observations made are referred to "Design Chainage". The relationship between the "Existing Chainage" and the "Design Chainage" as per field surveys of the location of existing km stones using the Total Station for the "Project Highway" is given at Appendix A-II.

**1.3 Latitudes & Longitudes**

Latitude and longitude of the project corridor lies between 13° 37' 26"N to 12° 59' 22"N and 74° 41' 32"E to 74° 48' 01"E respectively.

**1.4 Terrain**

The project road passes through plain terrain .



**1.5 Traffic**

Traffic count details as per the survey conducted by design consultant during September 2006 for Section-1 and during July 2006 for Section-2 on the project highway are given at **Appendix A-III**

**1.6 Abutting Land Use**

Agriculture is predominant land use along the project highway. Settlements and ribbon developments are observed intermittently along the project highway. The land use in these sections is commercial or residential. The Urban / Built up Settlements along the project highway are given at **Appendix A-IV**.

**1.8 Land**

The Details of existing ROW are at **Appendix A-V**.

**1.9 Road Works**

An inventory of road works and their condition is at **Appendix A-VI**.

**2.0 Structures**

An inventory of the existing structures is at **Appendix A-VII**.

**2.1 Facilities**

An inventory of the existing facilities is at **Appendix A-VIII**.

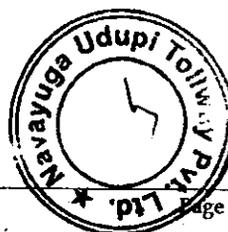
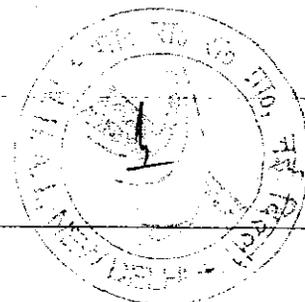
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Annex – II  
(Schedule-A)

SITE OF THE SIX-LANING

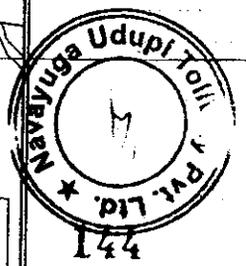
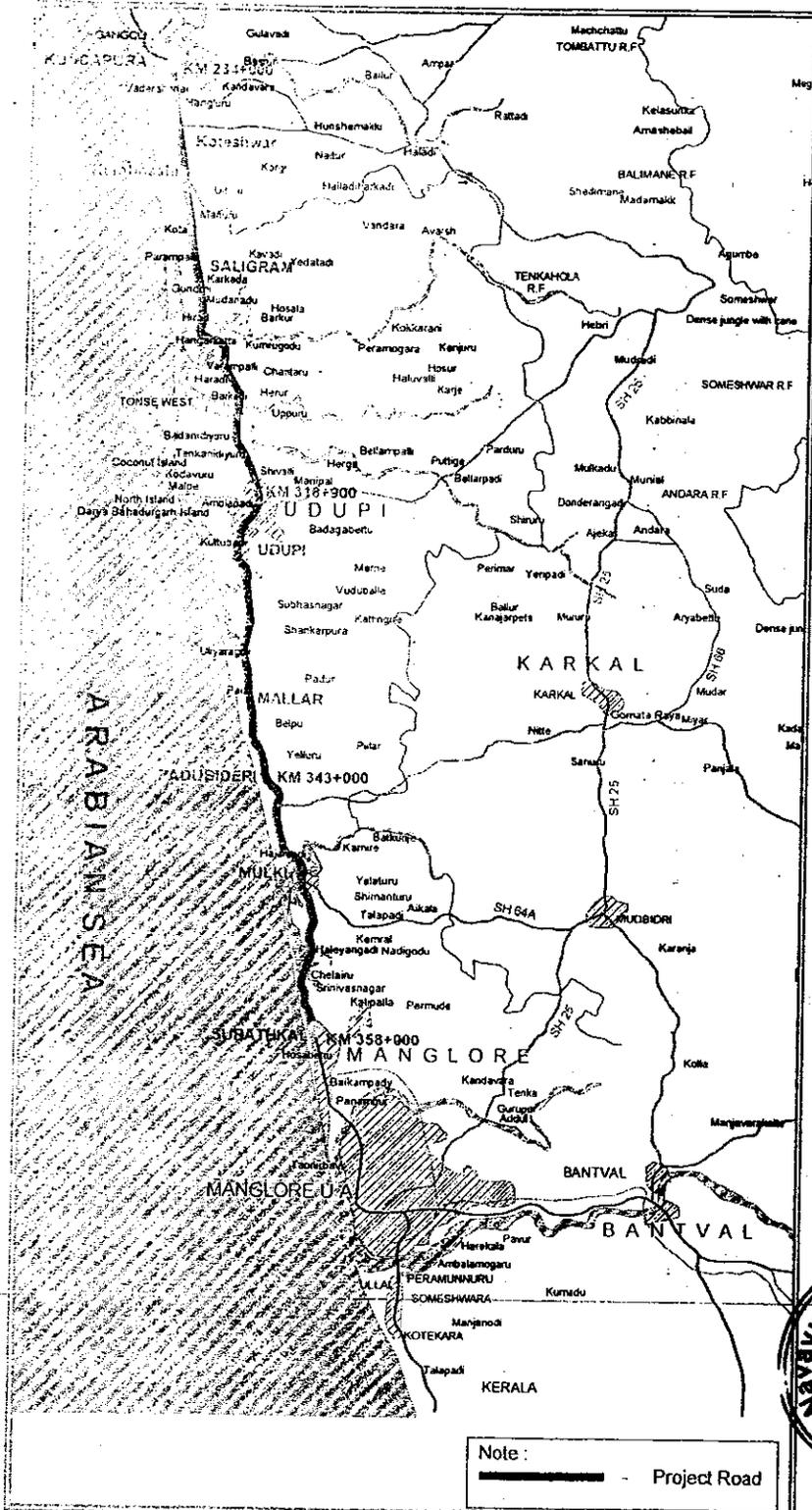
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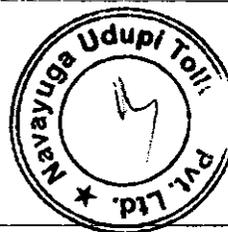
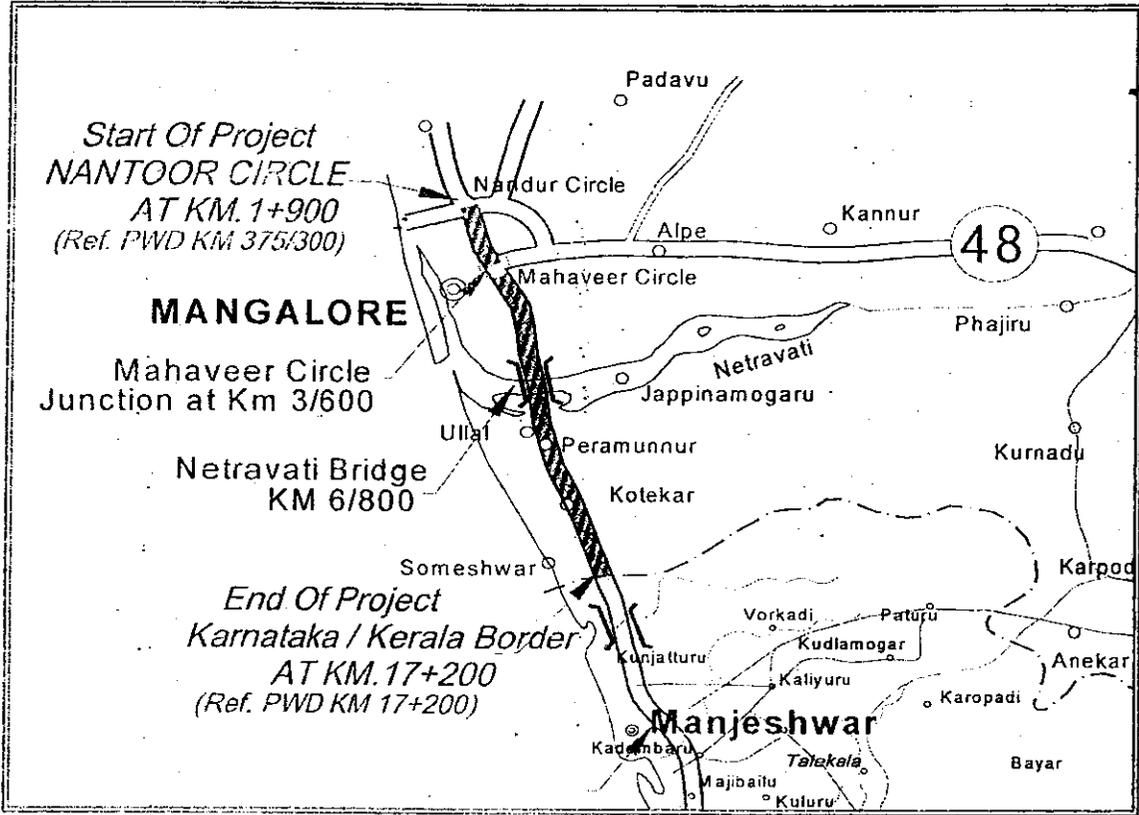
143

**Appendix A-I**

**Index map of Project Highway  
Section 1- NH 17 portion starts from km283+300 to km 358+080**

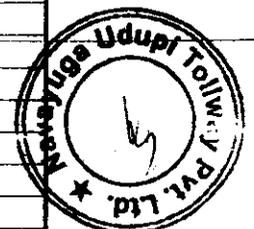
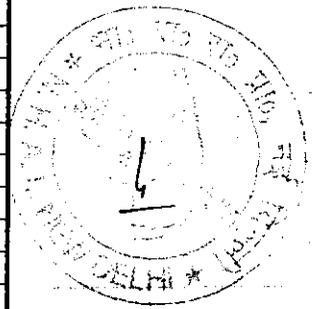


Section 2 - NH 17 portion starts from km1+900 to km17+200



**Appendix A-II****Design Chainage corresponding to existing chainage****Section 1**

Existing Chainage (Km)	Design Chainage (Km)	Name of place
284+000	283+898	Kundapura
285+000	284+911	Kundapura
286+000	285+957	Kundapura
287+000	286+992	Koteshwara
288+000	288+033	Koteshwara
289+000	289+083	Kumbhashi
290+000	290+118	Kumbhashi
291+000	291+087	Kumbhashi
292+000	292+117	Thkkatte
293+000	293+116	Thkkatte
294+000	294+120	Kota
295+000	295+114	Kota
296+000	296+115	Kota
297+000	297+114	Saligrama
298+000	298+103	Saligrama
299+000	299+126	Yadabettu
300+000	300+116	Gundmi
301+000	301+168	Saasthan
302+000	302+152	Saasthan
303+000	303+167	Hangarakatta
304+000	304+153	Hangarakatta
305+000	305+134	Uppinakote
306+000	306+128	Brahmavar
307+000	307+112	Brahmavar
308+000	308+058	Brahmavar
309+000	309+071	Brahmavar
310+000	310+160	Herur
311+000	311+146	Herur
312+000	312+109	Herur
313+000	313+143	Puttur
314+000	313+954	Puttur
315+000	314+979	Puttur
316+000	315+935	Puttur
317+000	316+920	Puttur
318+000	317+907	Puttur
319+000	318+909	Puttur
320+000	319+899	Puttur
321+000	320+846	Kotpadi
322+000	321+819	Kotpadi
323+000	322+832	Kotpadi
324+000	323+819	Kotpadi
325+000	325+009	Kotpadi
326+000	326+014	Kotpadi
327+000	327+002	Kotpadi
328+000	328+021	Kotpadi

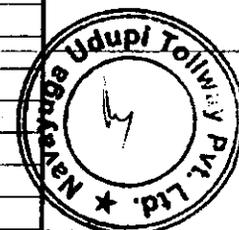


146

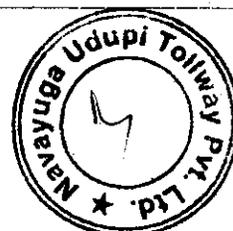
Existing Chainage (Km)	Design Chainage (Km)	Name of place
329+000	329+012	Kotpadi
330+000	329+974	Kotpadi
331+000	331+003	Kaup
332+000	331+983	Kaup
333+000	332+979	Kaup
334+000	333+998	Muloor
335+000	334+999	Muloor
336+000	335+989	Muloor
337+000	336+996	Uchila
338+000	337+979	Uchila
339+000	338+962	Uchila
340+000	339+952	Padubidri
341+000	340+953	Padubidri
341+650	341+600	Padubidri
342+000	341+952	Padubidri
343+000	343+263	Padubidri
344+000	344+105	Padubidri
344+630	344+650	Padubidri
345+000	345+011	Padubidri
346+000	346+040	Mulky
347+000	347+032	Mulky
348+000	348+009	Mulky
348+780	348+800	Mulky
349+000	348+963	Mulky
350+000	350+436	Haleyangadi
350+290	350+700	Haleyangadi
351+000	351+411	Haleyangadi
352+000	352+395	Mukka
353+000	353+406	Mukka
354+000	354+500	Mukka
355+000	355+515	Kundapura
356+000	356+603	Kundapura
357+000	357+586	Koteshwara
358+000	358+551	Surathkal

## Section 2

Design Chainage (Km)	Existing Chainage (Km)	Remarks
1+900	375+300	Start of Project Stretch
3+700	376+700	
4+000	4+000	
5+000	5+010	
6+000	6+035	
7+000	7+025	
8+000	8+034	
9+000	9+028	
10+000	10+026	
11+000	11+030	
12+000	12+020	



Design Chainage (Km)	Existing Chainage (Km)	Remarks
13+000	13+031	
14+000	14+033	
15+000	15+037	
16+000	16+056	
17+000	17+057	
17+139	17+200	End of Project Stretch



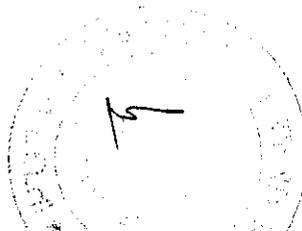
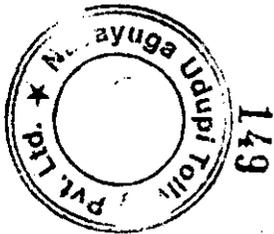
148

**Appendix A-III****Traffic Table****Section 1****Traffic Table**

Survey Location	Year of survey	Two - Wheeler	Three - Wheelers	Hard carts	Car / Jeep / Van	Bus	LCV	2 Axle Truck	3 Axle Truck	Mini Bus	MAV	Tractor	Cycle	Total Vehicles	Total PCUs
Kotteshwara, Km 287+000	2006	5487	1036	-	2810	1035	508	1418	830	280	89	4	2264	15763	21429
KinniMulki, Km 323+400	2006	3648	849	-	3013	916	690	1469	654	279	94	10	115	11736	18191

**Section 2****Traffic Table**

Location	Year of survey	Two Wheeler	3 Wheeler	Car/ Jeep	Bus	2- Axle	3- Axle	Mini bus	MAV	Tractor	Pedal cycle	Total vehicles
km 12.45	2006	3368	931	3408	1212	900	181	95	180	7	55	10735



**Appendix A-IV****Urban /Built up Settlements along the Project Highway****Section 1****Location of villages and towns**

Existing Chainage		Left/Right	Name of Town / Village
From	To		
283+200	287+000	Both	Kundapura
287+000	289+000	Both	Koteshwara
289+000	291+600	Both	Kumbhashi
291+600	293+600	Both	Thkkatte
293+600	296+600	Both	Kota
296+600	299+000	Both	Saligrama
299+000	299+800	Both	Yadabettu
299+800	300+600	Both	Gundmi
300+600	302+400	Both	Saasthan
302+400	304+200	Both	Hangarakatta
304+200	305+600	Both	Uppinakote
305+600	309+200	Both	Brahmavar
309+200	312+200	Both	Herur
312+200	320+400	Both	Puttur
320+400	330+400	Both	Kotpadi
330+400	334+000	Both	Kaup
334+000	336+600	Both	Muloor
336+600	339+800	Both	Uchila
339+800	347+200	Both	Padubidri
347+200	352+600	Both	Mulky
352+600	356+000	Both	Haleyangadi
356+000	357+000	Both	Mukka
357+000	358+000	Both	Surathkal

**Section 2**

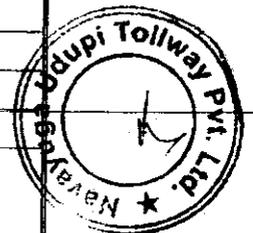
Sl. No.	Existing Chainage (Km)	Design Chainage (Km)	Left/Right	Major Towns
1	8+400	8+366	Both	Kallapu
2	9+200	9+178	Both	Thokutu
3	11+000	10+970	Both	Kolya
4	15+000	14+970	Both	Thalapady



150

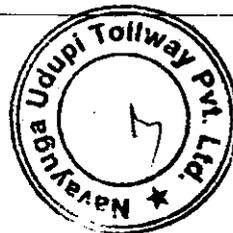
**Appendix A-V****Existing Right of Way****Section 1**

Sl. No	Existing Chainage (km)		Location	RoW (m)
	From	To		
1	283+300	290+000	Kundapura, Koteshwara	41
2	290+000	291+000	Kumbhashi	39
3	291+000	292+000	Thkkatte	47
4	292+000	293+000	Kota	25
5	293+000	294+000	Kota	41
6	294+000	295+000	Kota	24
7	295+000	296+000	Kota	24
8	296+000	297+000	Saligrama	35
9	297+000	298+000	Saligrama	28
10	298+000	299+000	Saligrama	33
11	299+000	300+000	Yadabettu	30
12	300+000	301+000	Gundmi	37
13	301+000	302+000	Saasthan	20
14	302+000	303+000	Hangarakatta	35
15	303+000	304+000	Hangarakatta	40
16	304+000	305+000	Uppinakote	22
17	305+000	306+000	Brahmavar	40
18	306+000	307+000	Brahmavar	47
19	307+000	308+000	Brahmavar	30
20	308+000	309+000	Brahmavar	36
21	309+000	315+000	Herur	38
22	315+000	316+000	Puttur	30
23	316+000	318+000	Puttur	33
24	318+000	320+000	Puttur	27
25	320+000	322+000	Kotpadi	34
26	322+000	323+000	Kotpadi	24
27	323+000	324+000	Kotpadi	36
28	324+000	326+000	Kotpadi	42
29	326+000	328+000	Kotpadi	25
30	328+000	334+000	Kaup	35
31	334+000	338+000	Muloor, Uchila	28
32	338+000	348+000	Padubidri	35
33	348+000	358+686	Mulky, Haleyangadi, Mukka, Surathkal	31



## Section 2

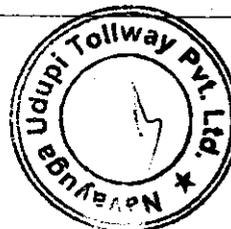
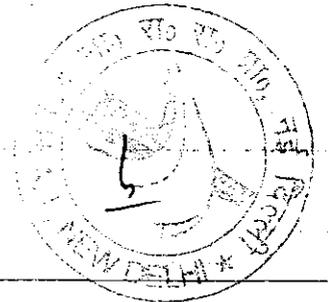
Sl. No	Existing Chainage (km)		Location	RoW (m)
	From	To		
1	375+300	376+700		27
2	376+700	4+000		44
3	4+000	5+010		42
4	5+010	6+035		47
5	6+035	6+800		60
6	6+800	7+800		River
7	7+800	9+028		53
8	9+028	10+026		41
9	10+026	11+030		40
10	11+030	12+020		32
11	12+020	13+031		22
12	13+031	14+033		33
13	14+033	15+037		29
14	15+037	16+056		38
15	16+056	17+057		46
16	17+057	17+200		13



Appendix A-VI

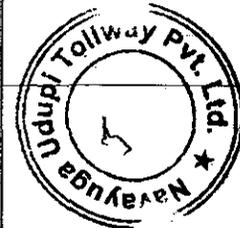
Inventory of Road works

a.	Existing Carriageway Width	Appendix A-VI(a)
b.	Existing Crust	Appendix A-VI(b)
c.	Pavement Roughness	Appendix A-VI(c)
d.	Pavement deflection	Appendix A-VI(d)
e.	Existing Major junctions	Appendix A-VI(e)
f.	Existing Minor junctions	Appendix A-VI(f)
g.	Existing Truck Laybys	Appendix A-VI(g)
h.	Existing Bus bays	Appendix A-VI(h)



**Appendix A-VI (a)****Existing Carriageway Width****Section 1**

Existing Chainage		Carriage Way Width	Paved Shoulder		Earthen Shoulder	
From	To		Left	Right	Left	Right
284+000	285+000	7	1.5	1.5	1.5	1.2
285+000	286+000	7	1.5	1.5	1.5	1.5
286+000	287+000	6.9	1.5	1.5	1.3	1.7
287+000	288+000	7	1.5	1.4	1.6	1.6
288+000	289+000	6.8			1.5	1.2
289+000	290+000	7			1.5	1.5
290+000	291+000	7.6			1.3	1.7
291+000	292+000	6.9			1.6	1.6
292+000	293+000	6.8			1.7	1.6
293+000	294+000	7			2	1.7
294+000	295+000	6.9			1.8	1.5
295+000	296+000	7			1.6	1
296+000	297+000	7.1			1.4	1.3
297+000	298+000	7			1.5	1.8
298+000	299+000	6.7			2.1	1
299+000	300+000	6.9			2.2	1.5
300+000	301+000	6.8			1.9	1.5
301+000	302+000	6.7			2	1.7
302+000	303+000	7			1.3	1.2
303+000	304+000	6.9			1.5	1.1
304+000	305+000	7.2			1.4	1.1
305+000	306+000	7			1.4	1.2
306+000	307+000	7			1.4	1.4
307+000	308+000	6.9			1.6	1.3
308+000	309+000	6.8			1.9	1.8
309+000	310+000	6.8			1.4	1.4
310+000	311+000	6.9			1.4	1.3
311+000	312+000	7			1.4	1.5
312+000	313+000	6.9			1.5	1.5
313+000	314+000	7			1.4	1.1
314+000	315+000	8.8			1.3	1.2
315+000	316+000	7	1.5	1.5	1.4	1.3
316+000	317+000	7	1.4	1.4	1.4	1.5
317+000	318+000	7			1.1	1.1
318+000	319+000	6.9			1.5	1.5



154

Existing Chainage		Carriage Way Width	Paved Shoulder		Earthen Shoulder	
From	To		Left	Right	Left	Right
319+000	320+000	5.8	1.5	1.5	1.5	1.5
320+000	321+000	6.9			1.5	1.5
321+000	322+000	7			1.3	1.2
322+000	323+000	7			1	1.2
323+000	324+000	5.9			1.3	1.2
324+000	325+000	7			1.7	1.5
325+000	326+000	7			1.7	1.6
326+000	327+000	6.9			1.4	1.4
327+000	328+000	7			1.4	1.4
328+000	329+000	7			1.1	1.1
329+000	330+000	6.9			1.4	1.5
330+000	331+000	7			1.2	1.3
331+000	332+000	6.8			1.3	1.2
332+000	333+000	7.1			1	1
333+000	334+000	6.8			1.3	1.3
334+000	335+000	6.9			1.7	1.6
335+000	336+000	6.9			1.9	1.9
336+000	337+000	7			1.6	1.6
337+000	338+000	7			1.6	1.5
338+000	339+000	7.1			1.8	1.8
339+000	340+000	6.9			1	1
340+000	341+000	7			1.4	1.3
341+000	342+000	7.7			1.4	1.4
342+000	343+000	7	1.5	1.5	1.3	1.3
343+000	344+000	7	1.8	1.7	1.7	1.6
344+000	345+000	7	1.8	1.7	1.9	1.9
345+000	346+000	7	1.5	1.5	1.6	1.6
346+000	347+000	7	1.5	1.5	1.6	1.5
347+000	348+000	7	1.6	1.6	1.8	1.8
348+000	349+000	7	2	2	1.4	1.3
349+000	350+000	7	2	2	1.4	1.4
350+000	351+000	7	1.5	1.5	1.7	1.6
351+000	352+000	7	1.4	1.3	1.9	1.9
352+000	353+000	7	1	1	1.6	1.6
353+000	354+000	7	1	1	1.6	1.5
354+000	355+000	7	1	1	1.3	1.7
355+000	356+000	7	1	1	1.6	1.6
356+000	357+000	7	1	1	1.4	1.4



155

Existing Chainage		Carriage Way Width	Paved Shoulder		Earthen Shoulder	
From	To		Left	Right	Left	Right
357+000	358+000	7	1.1	1.1	1.7	1.6
358+000	359+000	7	1.5	1.5	1.9	1.9

## Section 2

Existing Chainage (km)		Carriage Way Width	Gravel/ Earthen Shoulder	Paved Shoulder
From	To			
375+300	376+700	9.5	2.5	-
376+700	4+000	8.6	2.65	-
4+000	5+010	10.8	1.26	-
5+010	6+035	9.7	1.2	-
6+035	6+800	9.28	-	1.9
6+800	7+800	River		
7+800	9+028	9.3	1	-
9+028	10+026	10.2	2.1	-
10+026	11+030	8	3.1	-
11+030	12+020	7.16	3.5	-
12+020	13+031	7.15	2.5	-
13+031	14+033	7.24	2.7	-
14+033	15+037	7.34	3.2	-
15+037	16+056	7.2	3	-
16+056	17+057	7.28	2.46	-
17+057	17+200	7.7	2	-



156

## Appendix A-VI (b)

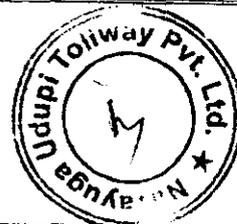
## Existing Crust

## Section 1

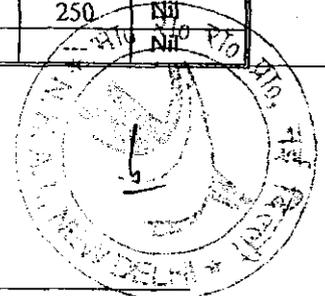
Existing Chainage		Wearing Coat	DBM	BM	WMM	WBM	GSB	Cement Concrete Road
From	To	Bituminous Surface			Base Course		Sub base	
283	290	-	-	75	-	165	260	Nil
290	300	-	-	100	-	175	260	Nil
300	308	-	-	75	-	175	255	Nil
308	310	-	-	115	-	225	280	Nil
310	320	-	-	90	-	165	230	Nil
320	322	-	-	115	-	225	220	Nil
322	330	-	-	100	-	165	340	Nil
330	332	-	-	85	-	140	210	Nil
332	334	-	-	125	-	175	280	Nil
334	336	-	-	100	-	150	260	Nil
336	340	-	-	75	-	225	220	Nil
340	344	-	-	75	-	150	210	Nil
344	350	-	-	95	-	225	270	Nil
350	354	-	-	90	-	175	240	Nil
354	358	-	-	125	-	225	240	Nil

## Section 2

Existing Chainage		Wearing Coat	DBM	BM	WMM	WBM	GSB	Cement Concrete Road
From	To	Bituminous Surface			Base Course		Sub base	
1+900	3+850			200	50		250	Nil
3+850	5+800			130	50		200	Nil
5+800	9+300			120	110		250	Nil
9+300	14+700			150	110		250	Nil
14+700	17+200			110	100		250	Nil

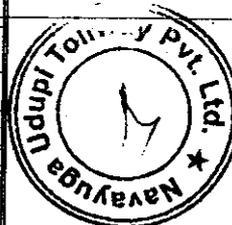


157



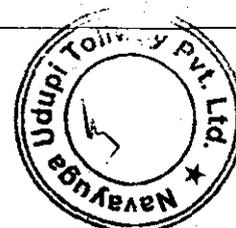
**Appendix A-VI (c)****Pavement roughness****Section 1**

Start chainage	End chainage	Roughness values (mm)	IRI m/km
283+000	284+000	2120	3.9
284+000	285+000	2154	4.0
285+000	286+000	2080	3.8
286+000	287+000	2140	3.9
287+000	288+000	1890	3.4
288+000	289+000	2347	4.4
289+000	290+000	2016	3.7
290+000	291+000	2040	3.7
291+000	292+000	1784	3.2
292+000	293+000	1811	3.3
293+000	294+000	1894	3.4
294+000	295+000	2414	4.5
295+000	296+000	1951	3.5
296+000	297+000	1992	3.6
297+000	298+000	2277	4.2
298+000	299+000	2136	3.9
299+000	300+000	2381	4.4
300+000	301+000	1932	3.5
301+000	302+000	2462	4.6
302+000	303+000	3819	7.5
303+000	304+000	4216	8.4
304+000	305+000	4051	8.0
305+000	306+000	3288	6.4
306+000	307+000	3169	6.1
307+000	308+000	3315	6.4
308+000	309+000	1941	3.5
309+000	310+000	2167	4.0
310+000	311+000	2238	4.1
311+000	312+000	2151	4.0
312+000	313+000	2263	4.2
313+000	314+000	2094	3.8



158

Start chainage	End chainage	Roughness values (mm)	IRI m/km
314+000	315+000	2349	4.4
315+000	316+000	2415	4.5
316+000	317+000	5012	10.2
317+000	318+000	4986	10.1
318+000	319+000	2621	4.9
319+000	320+000	2487	4.7
320+000	321+000	2165	4.0
321+000	322+000	2721	5.1
322+000	323+000	6412	13.4
323+000	324+000	3125	6.0
324+000	325+000	2845	5.4
325+000	326+000	5412	11.1
326+000	327+000	2368	4.4
327+000	328+000	2681	5.1
328+000	329+000	2163	4.0
329+000	330+000	2491	4.7
330+000	331+000	2243	4.1
331+000	332+000	2620	4.9
332+000	333+000	2457	4.6
333+000	334+000	2615	4.9
334+000	335+000	2548	4.8
335+000	336+000	2316	4.3
336+000	337+000	2784	5.3
337+000	338+000	6892	14.6
338+000	339+000	2413	4.5
339+000	340+000	2136	3.9
340+000	341+000	2644	5.0
341+000	342+000	2741	5.2
342+000	343+000	3215	6.2
343+000	344+000	6678	14.1
344+000	345+000	4126	8.2
345+000	346+000	3856	7.6
346+000	347+000	4129	8.2
347+000	348+000	2846	5.4
348+000	349+000	2644	5.0
349+000	350+000	1983	3.6
350+000	351+000	2147	3.9
351+000	352+000	2257	4.2
352+000	353+000	2194	4.0
353+000	354+000	1976	3.6
354+000	355+000	2346	4.4
355+000	356+000	2503	4.7

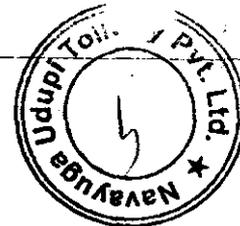


159

Start chainage	End chainage	Roughness values (mm)	IRI m/km
356+000	357+000	2578	4.8
357+000	358+000	1893	3.4
358+000	359+000	1953	3.7

## Section 2

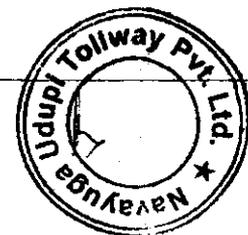
Chainage		LEFT CARRIAGEWAY			RIGHT CARRIAGEWAY		
From	To	Roughness values			Roughness values		
		Run 1	Run 2	Average	Run 1	Run 2	Average
NANDOOR CIRCLE(Km 1.90)	MAHAVEER CIRCLE(Km 3.7)	2.83	2.76	2.79	4.14	3.47	3.81
MAHAVEER CIRCLE	KM4	4.07	3.86	3.96	3.46	3.46	3.46
KM4	KM5	3.15	3.24	3.19	2.57	2.60	2.59
KM5	KM6	3.57	3.63	3.60	3.78	3.96	3.87
KM6	KM7	5.39	5.48	5.44	4.87	4.49	4.68
KM7	KM8	4.03	3.92	3.98	4.79	4.51	4.65
KM8	KM9	4.17	4.15	4.16	3.39	2.99	3.19
KM9	KM10	3.92	4.32	4.12	3.91	3.45	3.68
KM10	KM11	2.01	1.96	1.99	2.25	2.08	2.17
KM11	KM12	1.94	1.88	1.91	2.08	2.10	2.09
KM12	KM13	2.04	2.13	2.09	2.20	2.29	2.24
KM13	KM14	2.17	2.18	2.17	2.27	2.22	2.24
KM14	KM15	1.96	1.96	1.96	2.52	2.31	2.41
KM15	KM16	2.10	2.20	2.15	2.55	2.57	2.56
KM16	KM17	2.38	2.14	2.26	2.54	2.30	2.42
KM17	KM18	3.21	2.94	3.07	2.63	2.59	2.61



160

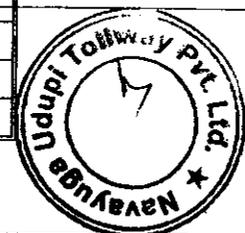
**Appendix A-VI (d)****Pavement Deflection****Section-1**

Existing Stretch		Characteristic Deflection
From	To	
283+000	284+000	1.636
284+000	285+000	1.652
285+000	286+000	1.517
286+000	287+000	1.560
287+000	288+000	1.232
288+000	289+000	1.442
289+000	290+000	1.675
290+000	291+000	1.134
291+000	292+000	1.589
292+000	293+000	1.592
293+000	294+000	1.889
294+000	295+000	1.443
295+000	296+000	1.686
296+000	297+000	1.449
297+000	298+000	1.638
298+000	299+000	1.615
299+000	300+000	1.691
300+000	301+000	1.635
301+000	302+000	1.388
302+000	303+000	1.772
303+000	304+000	1.667
304+000	305+000	1.692
305+000	306+000	1.699
306+000	307+000	1.590
307+000	308+000	1.548
308+000	309+000	1.418
309+000	310+000	1.337
310+000	311+000	1.570
311+000	312+000	0.949
312+000	313+000	0.973
313+000	314+000	1.215
314+000	315+000	1.107
315+000	316+000	1.096
316+000	317+000	1.241
317+000	318+000	1.368
318+000	319+000	1.373



161

Existing Stretch		Characteristic Deflection
From	To	
319+000	320+000	1.134
320+000	321+000	1.269
321+000	322+000	1.352
322+000	323+000	1.336
323+000	324+000	1.370
324+000	325+000	1.372
325+000	326+000	1.156
326+000	327+000	1.118
327+000	328+000	1.054
328+000	329+000	0.934
329+000	330+000	1.035
330+000	331+000	1.224
331+000	332+000	1.189
332+000	333+000	1.077
333+000	334+000	1.027
334+000	335+000	0.798
335+000	336+000	1.121
336+000	337+000	1.329
337+000	338+000	1.243
338+000	339+000	1.213
339+000	340+000	1.175
340+000	341+000	1.135
341+000	342+000	1.082
342+000	343+000	1.434
343+000	344+000	1.366
344+000	345+000	1.535
345+000	346+000	1.415
346+000	347+000	1.442
347+000	348+000	1.675
348+000	349+000	1.344
349+000	350+000	1.314
350+000	351+000	1.140
351+000	352+000	1.666
352+000	353+000	1.672
353+000	354+000	1.367
354+000	355+000	1.489
355+000	356+000	1.483
356+000	357+000	1.393
357+000	358+000	1.389
358+000	359+000	1.329



162

## Section 2

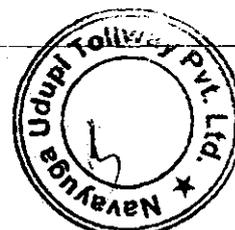
Stretch	Characteristic Deflection (mm)
Nantoor Circle 0.100 (2.30) (L)	0.978
1.100 (R) (376.400)	1.261
After Mahaveer Circle 3.850(L)	2.493
4.200 ( R )	2.233
5.200(L)	2.326
6.100( R )	3.312
8.200(L)	3.197
9.400(L)	2.631
10.200( R )	1.222
11.400(L)	1.102
12.300(L)	0.910
13.500( R )	0.485
14.600(L)	0.487
15.400(L)	1.044
16.800( R )	0.765
17.300(L)	1.005



163

**Appendix A-VI (e)****Existing Major Junctions****Section 1**

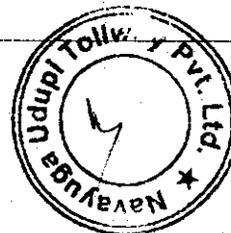
Sl. No.	Junction		Location Existing Chainage (km)	Type of junction
	LHS	RHS		
1		Kundapura	284+040	Y Junction
2	Shivamoga		285+070	T Junction
3	Shimoga	Koteshwara Town	287+620	4 legged (x - type)
4	To Vinayak Temple		290+300	3 legged (Y - type)
5	Madarti	Handath	296+840	4 legged (+ - type)
6		To Saligrama	297+670	3 legged (Y - type)
7	Narasimha Swami Temple	Anjaneya Swamy Temple	298+000	4 legged (+ - type)
8	Barkur		306+450	3 legged (T - type)
9	Village		315+850	3 legged (y - type)
10	Udupi	Malpai	318+970	4 legged (+ - type)
11	Udupi	Ambalapadi Temple	320+040	4 legged (+ - type)
12	Udupi	Kannapadi	321+500	5 legged (- type)
13		Kutapadi	322+540	3 legged (y - type)
14	Shankara Pura	Bus stand	326+050	4 legged (+ - type)
15	Kaup		331+670	3 legged (T - type)
16	SH-66	SH-66	Bypass	4legged



164

## Section 2

Sl. No.	Junction	Location Existing Chainage (km)	Type of junction
1	Nantoor	1+900	4 legged (x - type)
2	Mahaveer	3+700	Rotary
3	Thekkottu	9+600	3 legged (T- type)



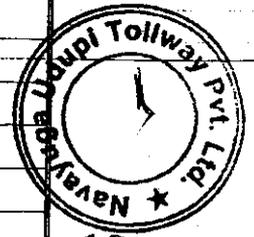
165

## Appendix A-VI (f)

## Existing Minor junctions

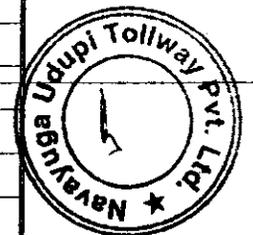
## Section 1

Sl.No	Existing Chainage	Side	Destination	Type of junction
1	283+960	RHS	--	T
2	283+982	LHS	To Bivivas	T
3	284+135	LHS	Cross Road	T
4	284+208	LHS	AKH Road	T
5	284+260	RHS	--	T
6	284+310	LHS	To Houses	T
7	284+355	LHS	--	T
8	284+425	RHS	To NH Sub Division Office	T
9	284+485	RHS	To Police Station	T
10	284+510	LHS	To Houses	T
11	284+690	RHS	To Rayyappana Matha	T
12	285+103	RHS	TT Road	T
13	285+218	RHS	--	T
14	285+238	LHS	--	T
15	285+263	LHS	--	T
16	285+428	RHS	To Houses	T
17	285+566	RHS	To Brahmagiri	T
18	285+723	RHS	To Brahmagiri	T
19	285+793	LHS	To Hunganallur	Staggared +
		RHS	To Houses	
20	285+983	RHS	To Houses	T
21	286+090	RHS	To Venugopala Swamy Temple	T
22	286+233	RHS	To Houses	T
23	286+290	LHS	--	T
24	286+365	RHS	To Varnakere	T
25	286+390	LHS	To Gopaladi	T
26	286+415	RHS	To Houses	T
27	286+640	LHS	--	T
28	286+875	RHS	--	T
29	286+892	LHS	To Kundurkere	T
30	287+105	RHS	To Church	T
31	287+225	LHS	--	Y
32	287+285	RHS	To Beach	T



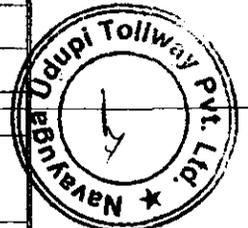
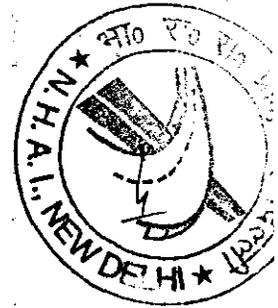
166

Sl.No	Existing Chainage	Side	Destination	Type of junction
33	287+345	RHS	To koteeswara Town	Y
34	288+181	RHS	To koteeswara Town	T
35	288+541	LHS	To Village	Y
36	288+831	LHS	To Village	Y
37	288+971	RHS	To koteeswara Town	Y
38	289+211	LHS	--	Y
39	289+251	RHS	--	T
40	289+391	LHS	--	T
41	289+746	LHS	--	T
42	289+764	RHS	To Padugodadi	T
43	290+611	RHS	To Houses	T
44	290+976	LHS	To Vidyagiri	T
45	291+016	RHS	To Beach	T
46	291+249	LHS	To Allugudde	T
47	291+590	RHS	To Houses	T
48	291+645	RHS	To Ragavendra Statue	T
49	292+005	RHS	To Houses	T
50	292+170	LHS	To Nandikeswara Temple	T
51	292+300	RHS	To Village	T
52	292+385	LHS	To Village	T
53	292+675	RHS	--	Y
54	292+695	LHS	To Village	T
55	292+800	LHS	To Houses	T
56	293+134	RHS	To Houses	T
57	293+414	LHS	To Houses	T
58	293+694	RHS	To Houses	T
59	294+074	RHS	To Houses	T
60	294+104	LHS	To Bobayya Swamy Temple	T
61	294+508	RHS	--	T
62	294+608	LHS	To Houses	T
63	294+873	RHS	To Police Station	Y
64	295+028	LHS	--	T
65	295+202	RHS	To Kota	T
66	295+737	LHS	To Houses	T
67	295+977	LHS	To Moodu Giligar	T
68	296+425	LHS	To Houses	T
69	296+610	LHS	--	T



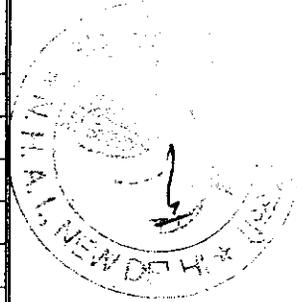
167

Sl.No	Existing Chainage	Side	Destination	Type of junction
70	297+010	RHS	--	T
71	297+309	RHS	To Houses	T
72	297+659	RHS	--	T
73	297+896	LHS	To Houses	T
74	297+981	LHS	--	T
75	298+109	LHS	To Houses	T
76	298+277	LHS	--	T
77	298+470	RHS	To Saligram	Y
78	298+492	RHS	--	T
79	298+542	LHS	To Kakarda Village	T
80	298+700	RHS	--	T
81	298+920	RHS	To Field	T
82	299+077	RHS	To Bhagyavathi Temple	T
83	299+165	LHS	--	T
84	299+270	RHS	To Houses	T
85	299+352	RHS	To Village	T
86	299+508	LHS	To Houses	T
87	299+642	LHS	To Village	T
88	299+760	RHS	To Village	T
89	299+863	LHS	--	T
90	299+895	LHS	--	+
		RHS	To Channakesava Temple	
91	300+360	LHS	To Brammalingeswara Temple	T
92	300+632	RHS	To Indra Nagar	T
93	300+880	RHS	To Houses	T
94	301+030	RHS	To Houses	T
95	301+223	LHS	To Pandeshwar	T
96	301+666	RHS	To Indra Nagar	T
97	301+843	LHS	To Sastan	T
98	301+923	LHS	To Houses	T
99	302+172	RHS	To Temple	T
100	302+782	RHS	To Houses	T
101	302+877	RHS	To Irody	Y
102	304+738	LHS	To Kumbragodu	Skew +
		RHS	To Vinayaka Temple	
103	304+808	RHS	--	Y
104	305+008	RHS	To Uppinakote	Y



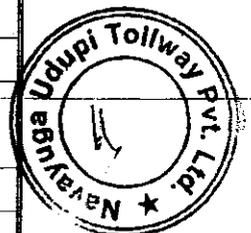
168

Sl.No	Existing Chainage	Side	Destination	Type of junction
105	305+409	RHS	To Uppinakote	Y
106	305+539	RHS	To Houses	T
107	306+059	LHS	To Colony	Y
108	307+033	RHS	To Houses	T
109	307+202	LHS	To Town	Y
110	307+327	LHS	--	Y
111	307+516	LHS	To Brahmavara	+
		RHS	To Houses	
112	307+617	RHS	--	T
113	307+717	RHS	To Town	T
114	307+817	RHS	To Brahmavara	T
115	308+263	LHS	To Houses	T
116	308+603	LHS	To Houses	Staggared +
		RHS	To Houses	
117	308+823	LHS	To Houses	Staggared +
		RHS	To Sugar Factory	
118	309+003	RHS	--	T
119	309+386	RHS	To Houses	T
120	309+456	RHS	To Houses	Y
121	309+716	LHS	To Nilavaya Gosalu	Skew +
		RHS	--	
122	310+165	LHS	To Herur Village	Skew +
		RHS	To Houses	
123	310+490	LHS	To Herur Village	Y
124	310+790	RHS	To Hirebetta	Y
125	311+581	LHS	To Uggalabetta	Y
126	311+751	RHS	To River	T
127	311+878	LHS	To Houses	T
128	311+911	RHS	To Houses	T
129	312+126	LHS	To Houses	T
130	312+824	LHS	To Perdur	T
131	313+438	LHS	To Houses	T
132	313+498	LHS	To Village	T
133	314+190	RHS	To Houses	T
134	314+250	LHS	To Houses	T
135	314+270	RHS	To Houses	T
136	314+510	RHS	To Gopalapura	T



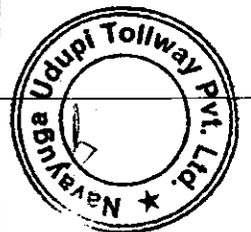
169

Sl.No	Existing Chainage	Side	Destination	Type of junction
137	315+054	RHS	To Houses	T
138	315+384	LHS	To Nayampalli	Staggared +
		RHS	To Houses	
139	315-644	LHS	To Nayampalli	T
140	315-684	RHS	To Vasuki Nagar	T
141	315+734	RHS	To Houses	T
142	316+240	LHS	To Houses	Skew +
		RHS	To Subramanya Nagar	
143	316+710	LHS	To Silas school	T
144	316+770	RHS	To Houses	T
145	316+910	RHS	To Houses	Y
146	317+045	LHS	To Houses	+
		RHS	To Houses	
147	317+535	LHS	To Houses	Skew +
		RHS	To Houses	
148	319+074	LHS	To Houses	T
149	319+264	LHS	To Sirman Nagar	T
150	319+554	RHS	To Kalikamba Nagar	T
151	319+674	LHS	To Houses	T
152	319+804	RHS	To Santhosh nagar	T
153	319+944	RHS	To Santhosh nagar	Y
154	320+019	LHS	To Gandhi Nagar	Skew +
		RHS	To Sandeep nagar	
155	320+249	LHS	To Nayarkere	T
156	320+324	RHS	To Houses	T
157	320+404	LHS	To Houses	T
158	320+684	LHS	--	T
159	320+891	LHS	To Houses	T
160	320+961	LHS	To Houses	T
161	320+981	RHS	Kannapardy 2nd Road	Y
162	321+031	LHS	To NGO Colony	T
163	321+466	RHS	To Houses	T
164	321+511	LHS	To Houses	+
		RHS	To Houses	
165	321+671	RHS	To LEO House	T
166	322+474	LHS	To Houses	T
167	322+644	RHS	To Houses	Y



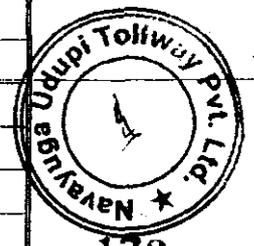
170

Sl.No	Existing Chainage	Side	Destination	Type of junction
168	322+724	RHS	To Houses	Y
169	322+804	LHS	To Houses	T
170	323+067	LHS	To Houses	T
171	323+272	LHS	To Houses	+
		RHS	To Houses	
172	323+637	LHS	To Houses	T
173	323+697	LHS	--	+
		RHS	--	
174	323+943	LHS	To Vidyavar	Skew +
		RHS	To Houses	
175	324+713	LHS	To Houses	Y
176	324+793	RHS	To Ennagudde	T
177	325+404	RHS	To Katapadi	Y
178	326+269	LHS	To Houses	+
		RHS	To Houses	
179	327+247	RHS	To Houses	Y
180	327+507	LHS	To Houses	T
181	327+687	LHS	To Houses	T
182	327+887	RHS	To Houses	T
183	327+952	LHS	To mahalingeshwara Temple	T
184	328+086	RHS	--	Y
185	328+581	RHS	To Pangala	Y
186	329+037	RHS	To Village	Y
187	329+062	LHS	To Village	T
188	329+999	LHS	To Pangala	Y
189	330+112	RHS	To Bava Guttu	T
190	330+329	RHS	--	Staggared +
		LHS	--	
191	330+394	RHS	To Houses	T
192	330+329	LHS	--	Staggared +
		RHS	--	
193	330+574	LHS	--	T
194	330+684	RHS	To Houses	T
195	330+749	RHS	To Houses	T
196	330+799	RHS	--	T
197	330+959	RHS	--	T
198	331+008	LHS	Deviprasad Road	T



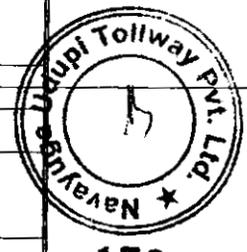
171

Sl.No	Existing Chainage	Side	Destination	Type of junction
199	331+238	RHS	To Houses	T
200	331+398	LHS	To bantakal	T
201	331+493	RHS	Pollipu Fisheris Road	T
202	332+258	LHS	--	T
203	332+318	RHS	--	T
204	332+443	LHS	Police Station Road	T
205	332+588	RHS	To Houses	T
206	332+728	RHS	Old Mariyamman Road	Y
207	333+114	RHS	To Houses	T
208	333+194	RHS	To Houses	T
209	333+714	RHS	To Kaup Light House	T
210	333+754	LHS	To Houses	T
211	334+603	LHS	To Village	T
212	334+863	RHS	To Village	Y
213	335+214	RHS	To Village	Y
214	335+604	RHS	To Village	T
215	335+819	RHS	To Darga	T
216	336+126	RHS	To Houses	T
217	336+229	LHS	To Houses	T
218	336+334	RHS	Narayan Guru Road	T
219	336+669	RHS	To Houses	T
220	336+729	RHS	--	Y
221	336+934	RHS	--	Y
222	336+969	LHS	To Bada	+
		RHS	To mahalingeswara Temple	
223	337+201	LHS	To nandikur	T
224	337+401	LHS	Chuch Road	skew +
		RHS	To Shankar Matha	
225	337+851	RHS	To Houses	Y
226	338+594	RHS	To Village	T
227	339+037	LHS	Lakshmi Narayana Temple Road	T
228	339+062	RHS	To Yarnal village	T
229	339+207	LHS	To Adamaru	T
230	340+257	LHS	To Houses	T
231	340+557	RHS	To Bobayya Swamy Temple	T
232	340+832	RHS	--	T
233	340+867	RHS	To Narayana swamy Mandir	T



172

Sl.No	Existing Chainage	Side	Destination	Type of junction
234	341+383	RHS	--	T
235	345+099	RHS	--	T
236	345+056	LHS	To Howpur Matha	T
237	345+076	RHS	To Ganapathy Temple	4-Legged
		LHS	To Jayamatha Temple	
238	345+296	LHS	To Houses	T
239	345+706	RHS	To Yajamadi	Y
240	345+896	LHS	--	T
241	346+430	LHS	To Durga Mandir	Y
242	346+965	LHS	To mahalingeshwara Temple	+
		RHS	To Narayana Guru Road	
243	347+507	LHS	--	T
244	347+567	RHS	To Habegodi	Y
245	347+807	LHS	To Aejamadi	Y
246	348+849	LHS	To Houses	+
		RHS	To Durga Mandir	
247	Bypass	LHS	To Temple	Skew +
		RHS	To Houses	
248	Bypass	LHS	To Houses	Skew +
		RHS	To Houses	
249	351+303	LHS	To Village	Skew +
		RHS	To Village	
250	351+528	RHS	To Kakur	Y
251	351+558	LHS	To Church	Y
252	352+178	LHS	To Village	Y
253	352+452	LHS	To Shrinidhi Spun Pipes	T
254	352+502	RHS	To Santa Village	Y
255	352+882	LHS	To Koland	T
256	352+982	LHS	To Chandramouleeswar Temple	T
257	353+162	RHS	To Houses	Y
258	353+993	LHS	To Padu Panambur	+
		RHS	To Houses	
259	354+537	LHS	To Jumma Masidi	Y
260	354+967	LHS	To Houses	T
261	355+217	LHS	To College	+
		RHS	To Haleyangadi	
262	355+462	LHS	To halayangalli	T

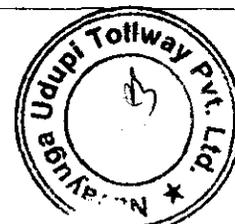


173

Sl.No	Existing Chainage	Side	Destination	Type of junction
263	356+162	RHS	--	Y
264	356+222	LHS	To Pavanje	Y
265	356+407	RHS	--	T
266	356+650	LHS	--	T
267	357+030	RHS	--	Y
268	357+500	LHS	--	Y
269	358+014	RHS	--	T
270	358+124	RHS	--	Y
271	358+444	LHS	--	T

## Section 2

Sl.No	Existing Chainage	Side	Destination	Type of junction
There are 15 minor junctions in the project corridor which leads to intermediate villages.				



174

**Appendix A-VI (g)****Existing truck laybys****Section 1**

SI No	Existing Chainage	Side (Left/Right)	Type of facility
Nil			

**Section 2**

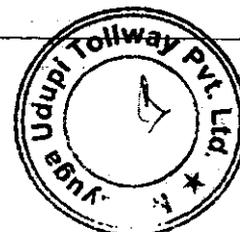
SI No	Existing Chainage	Side (Left/Right)	Type of facility
Nil			



175

**Appendix A-VI (h)****Existing Bus Bays****Section 1**

Sl No	Existing Chainage	Side (LHS / RHS)	Type of facility
1	285+000	LHS	-
2	285+800	LHS	-
3	289+000	LHS	-
4	290+000	LHS	-
5	290+000	RHS	-
6	295+000	LHS	-
7	298+200	LHS	-
8	298+200	RHS	-
9	300+000	RHS	-
10	306+300	LHS	-
11	307+100	LHS	-
12	307+100	RHS	-
13	311+300	LHS	-
14	312+600	LHS	-
15	314+200	LHS	-
16	314+200	RHS	-
17	314+600	LHS	-
18	315+350	LHS	-
19	316+300	LHS	-
20	318+900	LHS	-
21	318+900	RHS	-
22	320+000	RHS	-
23	322+500	LHS	-
24	324+700	LHS	-
25	324+700	RHS	-
26	326+750	LHS	-
27	330+100	LHS	-
28	330+800	LHS	-
29	330+800	RHS	-
30	331+420	LHS	-
31	331+420	RHS	-
32	332+800	LHS	-
33	335+300	LHS	-
34	336+100	LHS	-
35	337+000	LHS	-
36	337+000	RHS	-
37	338+200	RHS	-
38	339+100	LHS	-

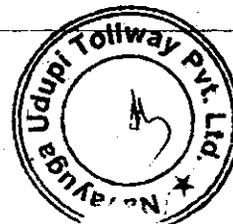


176

Sl No	Existing Chainage	Side (LHS / RHS)	Type of facility
39	340+600	LHS	-
40	342+400	LHS	-
41	343+100	LHS	-
42	345+000	LHS	-
43	345+600	RHS	-
44	348+800	LHS	-
45	348+800	RHS	-
46	349+350	RHS	-
47	353+300	LHS	-
48	354+300	LHS	-
49	354+300	RHS	-
50	354+800	LHS	-
51	355+400	LHS	-
52	357+000	LHS	-
53	357+400	RHS	-
54	357+800	LHS	-
55	357+800	RHS	-
56	358+180	LHS	-
57	359+300	LHS	-
58	359+300	LHS	-
59	360+600	RHS	-

## Section 2

Sl No	Existing Chainage	Side (LHS / RHS)	Type of facility
Nil			

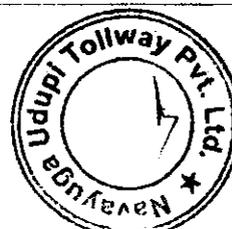


177

**Appendix A-VII**

**Inventory of structures**

- |                                |                    |
|--------------------------------|--------------------|
| (i) Major & Minor Bridges      | Appendix A-VII (a) |
| (ii) Minor Bridges             | Appendix A-VII (b) |
| (iii) Culverts                 | Appendix A-VII (c) |
| (iv) Grade separated junctions | Appendix A-VII (d) |
| (v) ROBs / RUBs                | Appendix A-VII (e) |
| (vi) Railway level crossings   | Appendix A-VII (g) |



## Appendix A-VII (a)

Existing Major Bridges  
Section 1

Sl. No	Name of the bridge	Bridge No	Chainage (km)	Total Width	Span arrangement	Total Length	Type Of structure			Type of Superstructure
							Type of Foundation	Type of sub-structure		
							Abutment	Pier		
1	Mabukala (Seetha River)	304/2	303+400	8.3	10X29	290	Well	SSM	SSM	RCC twin cell hollow box girder
2	Bhadragiri (Madisali River)	311/1	310+300	8.2	3X29	87	Well	SSM	SSM	RCC twin cell hollow box girder
3	Kalyanpur (Swarna River)	313/5	312+980	8.2	7X29	203	Well	SSM	SSM	RCC twin cell hollow box girder
4	Udayavar	325/2	324+700	8.2	9X29	261	Well	SSM	SSM	RCC twin cell hollow box girder
5	Pangala	330/1	330+300	8.2	3X19.9	59.55	Well	RCC	SSM	RCC T Beam
6	Mulky (Shambaki River)	349/4	348+400	8.2	6X29	174.6	Well	SSM	SSM	RCC twin cell hollow box girder
7	Pavanje (Nandini River)	356/3	355+800	8.2	5X29.1	145.5	Well	SSM	SSM	RCC twin cell hollow box girder

179



## Section 2

Sl. No	Name of the bridge	Bridge No.	Chainage (km)	Total Width	Span arrangement	Total Length	Type Of structure		
							Type of Foundation	Substructure	Type of Superstructure
1	Netravathy Bridge	-	6+800	10.3	24 x 33.5	804.0	Well	Well Foundation with RCC piers and abutment-	PSC 'I' Girder with slab
2	Talpady bridge-	-	16+400	8.1	2x8.4 + 2x25	66.8	Open-	PCC Abutment + RCC Pier-	PSC 'I' Girder with slab + Solid Slab

180



## Existing Minor Bridges

## Appendix A-VII (b)

## Section 1

Sl. No	Name of the bridge	Bridge No	Chainage (km)	Total Width	Span arrangement	Total Length	Type Of structure			
							Type of Foundation	Type of Sub-structure		Type of Superstructure
							Abutment	Pier		
1	Canal	313/2	312+300	7.8	1X6.7	6.7	Open	SSM	-	RCC Slab
2	Nittur	319/2	318+300	8.4	6X3.5	21				RCC Cast - in - situ pipes
3	Canal		327+120	7.8	1X8	8	Open	SSM	-	RCC Slab
4	Padubidri	342/2	341+950	8.2	1X18.6+2X5.1	28.8	Open	RCC	RCC	RCC Slab
5	Hejamadi	347/1	346+250	8.5	1X7	7	Open	SSM	-	RCC Slab
6	Canal	347/3	346+650	11.2	3X2.85	9.1	Open	RCC	RCC	Box structure
7	Canal	353/4	352+850	8.2	1X13.5	13.5	Open	RCC	-	RCC T Beam

181



## Section 2

Sl.No	Name of the bridge	Bridge No.	Chainage (km)	Total Width	Total Length	Span arrangement	Foundation	Type Of structure	Type of Superstructure
1	Stream	-	5+500	8.0	8.0	1x8	Open	RR Abutment	Box
2	Stream	-	6+200	8.0	8.0	1x8	Open	RR Abutment	Box
3	Stream	-	14+800	8.0		2 x5 + 1x25	Open	Solid Wall type RCC	PSC 'I' Girder with slab + Solid Slab

182



7

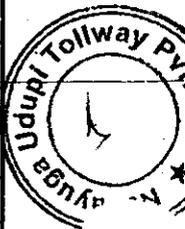
**Appendix A-VII (c)****Culverts****Section 1****1. List of Pipe Culverts**

Sl. No.	Chainage (km)	Culvert. No.	No of rows	Dia. of pipe(mm)
1	285+585	286/1	1	0.9
2	286+610	287/1	1	0.9
3	287+700	288/2	1	0.6
4	287+900	288/4	1	0.9
5	288+350	289/2	1	0.9
6	288+630	289/3	1	0.9
7	289+100	290/1	1	0.9
8	293+100	294/1	1	0.9
9	293+600	294/2	1	0.9
10	295+800	296/2	1	0.9
11	297+100	298/1	2	0.9
12	302+300	303/1	1	0.9
13	302+950	303/3	1	0.9
14	303+100	304/1	1	0.9
15	304+180	305/1	1	0.9
16	305+720	306/1	1	0.9
17	308+150	309/1	2	0.9
18	308+650	309/2	1	0.6
19	309+750	310/3	1	0.9
20	310+760	311/2	1	0.9
21	310+900	311/3	1	0.9
22	311+300	312/1	1	0.9
23	312+050	313/1	1	0.9
24	312+200	313/2	1	0.9
25	312+920	313/4	1	0.9
26	313+450	314/2	2	0.9
27	316+400	317/1	1	0.9
28	316+800	317/2	1	0.9
29	318+650	319/3	1	0.9



Sl. No.	Chainage (km)	Culvert. No.	No of rows	Dia. of pipe(mm)
30	318+900	319/4	1	0.9
31	319+600	320/1	1	0.9
32	319+700	320/2	1	0.9
33	319+920	320/4	1	0.6
34	320+950	321/2	2	0.9
35	321+350	322/2	1	0.9
36	321+890	322/3	1	0.9
37	321+970	322/4	1	0.6
38	322+350	323/2	2	0.9
39	323+050	324/1	1	0.9
40	323+720	324/2	1	0.6
41	323+870	324/3	1	0.6
42	325+040	326/1	1	0.9
43	327+220	328/2	1	0.6
44	328+850	329/3	1	0.6
45	328+930	329/4	1	0.6
46	330+700	331/1	1	0.9
47	331+200	332/1	1	0.9
48	331+900	332/2	1	0.9
49	332+160	333/2	1	0.9
50	336+900	337/3	1	0.9
51	337+650	338/2	1	0.9
52	337+998		1	0.9
53	338+050	339/1	1	0.6
54	339+300	340/1	1	0.6
55	339+900	340/2	1	0.6
56	341+830	342/1	1	0.9
57	343+700	344/2	2	0.6
58	343+750	344/3	2	0.6
59	343+980	344/4	1	0.9
60	344+200	345/1	2	0.9
61	344+450	345/2	1	0.6
62	344+650	345/3	1	0.6
63	344+860	345/4	1	0.9
64	345+950	346/2	1	0.6

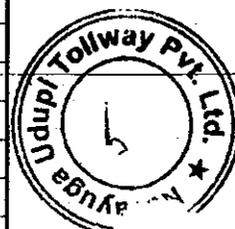
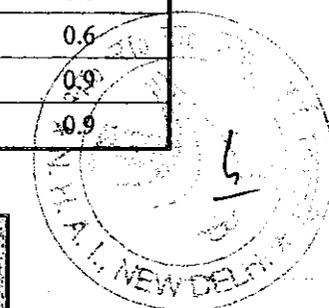
184



Sl. No.	Chainage (km)	Culvert. No.	No of rows	Dia. of pipe(mm)
65	346+500	347/2	1	0.9
66	347+250	348/1	1	0.9
67	347+400	348/2	1	0.9
68	348+050	349/1	1	0.9
69	348+100	349/2	1	0.9
70	348+300	349/3	1	0.9
71	348+700		1	0.9
72	348+800	349/5	1	0.9
73	349+100	350/1	2	0.9
74	350+350	351/1	1	0.6
75	350+400	351/2	1	0.6
76	350+410	351/3	1	0.9
77	350+995	351/4	1	0.9
78	352+200	353/1	1	0.9
79	352+700	353/3	1	0.9
80	353+800	354/1	1	0.9
81	353+900	354/2	1	0.9
82	353+930	354/3	2	0.9
83	354+500	355/1	1	0.9
84	354+700	355/2	1	1.2
85	354+820	355/3	1	1.2
86	354+950	355/4	1	0.6
87	354+980	355/5	1	0.6
88	355+100	356/1	1	0.9
89	356+100	357/1	1	0.9

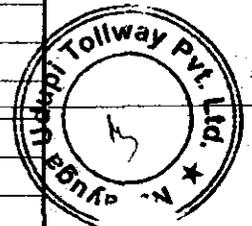
## 2. List of Slab / Box Culverts

Sl. No.	Chainage (km)	Culvert. No.	Size (BxH)(m)	Width(m)	Type
1	283+500	284/2	0.9x0.9	11.6	Slab
2	283+700	284/3	0.9x0.9	11.6	Slab
3	284+230	285/1	0.9x0.9	11.6	Slab
4	284+925	285/2	0.9x0.9	11.6	Slab
5	287+550	288/1	0.9x0.4	11.3	Slab
6	287+830	288/3	1x0.9	26.6	Skew slab
7	288+050	289/1	0.7x0.7	12.1	Slab
8	288+980	289/4	0.9x0.7	11.6	Slab



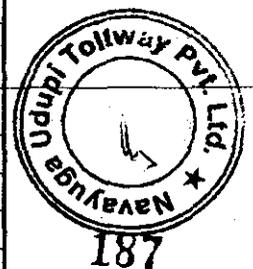
185

Sl. No.	Chainage (km)	Culvert. No.	Size (BxH)(m)	Width(m)	Type
9	289+500	290/2	3x1	11.7	Slab
10	289+800	290/3	0.9x0.9	11.7	Slab
11	290+050	291/1	2.5x2	11.8	Slab
12	290+900	291/2	0.9x0.5	11.6	Slab
13	291+200	292/1	0.9x0.6	11.6	Slab
14	291+750	292/2	0.9x0.9	11.6	Slab
15	291+920	292/3	0.9x0.7	11.6	Slab
16	292+270	293/1	0.9x0.4	11.4	Box
17	292+450	293/2	0.9x0.3	11.2	Slab
18	292+600	293/3	0.9x0.7	11.2	Slab
19	293+720	294/3	0.9x0.9 on LHS 0.9x1.6 on RHS	11.2	Slab
20	293+960	294/4	0.9x0.45	11.4	Slab
21	294+070	295/1	0.9x0.4	11.2	Slab
22	294+300	295/2	0.9x0.5	11.0	Slab
23	294+600	295/3	0.9x0.2	11.3	Slab
24	295+150	296/1	0.9x0.2	11.4	Slab
25	295+900	296/3	0.9x0.2	11.0	Slab
26	296+500	297/1	0.9x0.15	11.2	Slab
27	297+470	298/2	0.9x0.4	11.3	Slab
28	298+100	299/1	0.9x0.7	11.2	slab
29	298+650	299/2	0.9x0.4	11.2	Slab
30	299+150	300/1	0.9x0.9	11.5	Slab
31	299+280	300/2	0.9x0.5	11.4	Slab
32	299+650	300/3	0.9x0.4	11.2	Slab
33	299+900	300/4	0.9x0.9	10.8	Slab
34	301+010	302/1	0.9x0.9	11.0	Slab
35	301+250	302/2	0.9x0.2	11.0	Slab
36	301+800	302/3	0.9x0.5	11.4	Box
37	302+530	303/2	0.9x0.6	11.0	Slab
38	304+300	305/2	1.2x0.5	11.3	Slab
39	304+380	305/3	1.2x0.2	11.4	Slab
40	304+480	305/4	1.2x0.6	11.2	Slab
41	304+650	305/5	0.9x0.9	11.4	Slab
42	304+950	305/6	0.9x0.9	11.3	Slab
43	306+015	307/1	3.7x3.7	10.9	Box
44	306+960	307/2	3.7x2.5	11.2	Slab
45	307+650	308/1	2.4x0.7	11.2	Slab
46	309+130	310/1	1.5x2.55	11.2	Slab
47	309+300	310/2	0.9x0.6	11.4	Slab
48	311+600	312/2	1.5x3.4	11.3	Slab



186

Sl. No.	Chainage (km)	Culvert. No.	Size (BxH)(m)	Width(m)	Type
49	312+800	313/3	1.5x3.4	11.0	Slab
50	313+150	314/1	0.9x2.4	11.3	Slab
51	315+500	316/1	0.9x0.7	11.3	Slab
52	315+900	316/2	1.2 x0.7	11.6	Slab
53	317+900	318/1	3x 1.5	11.6	Slab
54	320+170	321/1	2.4x2.5	11.3	Slab
55	321+100	322/1	4.5x2.6	11.2	Slab
56	322+080		4x4	11.4	Slab
57	322+250	323/1	1.5x2.8	11.6	Skew slab
58	322+440	323/3	3.5x3.5	18.8	Slab
59	324+200	325/1	4.5x2.6	11.0	slab
60	324+970	325/3	0.9x3.4	10.8	Slab
61	325+550	326/2	4x4.2	11.4	slab
62	327+300	328/3	1.2x1.3	11.0	Slab
63	327+400	328/4	1.2x1.6	11.4	Slab
64	327+850	328/5	0.9x0.5	11.2	Slab
65	328+100	329/1	0.9x0.2	11.6	Slab
66	328+650	329/2	4x2.9	11.6	Slab
67	333+060	334/1	1.2x1.3	11.4	Slab
68	333+500	334/2	0.9x0.9	11.6	Slab
69	333+900	334/3	0.9x0.5	11.8	Slab
70	335+250	336/1	0.9x0.2	11.2	Slab
71	336+500	337/1	0.9x0.2	11.4	Slab
72	336+750	337/2	0.9x0.5	11.2	Slab
73	338+400	339/2	0.7x0.5	11.3	Slab
74	338+790	339/3	0.9x0.7	11.8	Slab
75	342+970	343/1	0.9x0.6	11.6	Slab
76	343+600	344/1	1.2x1.1	11.4	Slab
77	344+920	345/5	0.9x0.9	11.4	Slab
78	345+840	346/1	0.9x0.2	11.8	Slab
79	347+850	348/3	1.2x0.2	14.5	Slab
80	348+850	349/6	0.9x0.9	11.7	Slab
81	348+900	349/7	3.5x1.6	11.8	Slab
82	349+870	350/2	1.2x1.2	26.0	Skew slab culvert
83	349+980	350/3	1.5x2.4	10.8	Slab
84	351+300	352/1	3x2	11.3	Slab
85	352+300	353/2	1.2x1.2	11.4	Slab
86	352+900	353/4	1x1		Slab



Sl. No.	Chainage (km)	Culvert. No.	Size (BxH)(m)	Width(m)	Type
87	352+960	353/5	1x1		Slab
88	355+200	356/2	0.9x0.4	11.4	Slab
89	356+150	357/2	0.9x0.2	11.2	Slab
90	356+250	357/3	0.9x0.3	11.2	Slab

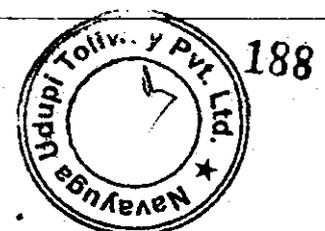
## Section 2

## 1. List of Pipe Culverts

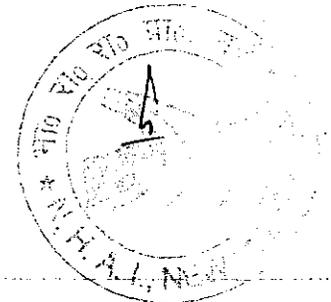
Sl. No.	Chainage (km)	Culvert. No.	No of vents	Dia. of vent
1	3.64	4/1	1	1.05
2	3.82	4/2	1	0.6
3	3.96	4/3	2	1
4	3.97	4/4	1	0.6
5	4.1	5/1	2	1.1
6	4.23	5/2	1	1.05
7	4.63	5/3	2	1
8	5.32	6/1	1	1.2
9	5.425	6/2	1	0.6
10	5.58	6/4	1	1
11	5.94	6/5	2	1
12	6.47	7/2	3	1.1
13	8.26	9/1	2	1.1
14	8.87	9/2	2	1.1
15	9.05	10/1	1	1.1
16	9.14	10/2	1	1.1
17	16.17	17/1	1	0.9
18	16.4	17/2	1	1.1
19	11	11/2	1	0.15

## 2. List of Slab / Box Culverts

Sl. No.	Chainage	Culvert no.	No of vents	width	Type
1	9.6	10/3	1	1.8	RCC Slab Culvert
2	9.87	10/4	1	0.9	RCC Slab Culvert
3	10.2	11/1	1	1.7	RCC Slab Culvert
5	11.05	12/1	1	1.4	RCC Slab Culvert
6	12.04	13/1	1	2.4	RCC Slab Culvert
7	12.84	13/2	1	0.9	RCC Slab Culvert



Sl. No.	Chainage	Culvert no.	No of vents	width	Type
8	12.96	13/3	1	0.9	RCC Slab Culvert
9	13.29	14/1	1	1	RCC Slab Culvert
10	13.4	14/2	1	0.9	RCC Slab Culvert
11	14.08	15/1	1	0.9	RCC Slab Culvert
12	14.25	15/2	1	0.9	RCC Slab Culvert
13	14.3	15/3	1	0.9	RCC Slab Culvert
14	14.45	15/4	1	0.9	RCC Slab Culvert
15	14.5	15/5	1	0.9	RCC Slab Culvert
16	15.38	16/1	1	0.9	RCC Slab Culvert
17	15.72	16/2	1	0.9	RCC Slab Culvert



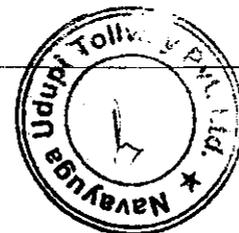
189

**Appendix A-VII (d)****Grade separated junctions****Section 1**

Sl No	Name of Junction	Chainage (from -to) (km)	Width	Span arrangement & Total Length	Type of structure		
					Foundation	Sub-structure	Super Structure
Nil							

**Section 2**

Sl.No	Name of Junction	Chainage (from -to) (km)	Width	Span arrangement & Total Length	Type of structure		
					Foundation	Sub-structure	Super Structure
Nil							



190

Appendix A-VII (e)

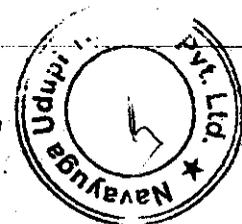
**ROBs / RUBs**

**Section 1**

Sl No	Chainage	ROB/RUB	Width	Span arrangement & Total Length	Type of structure			Clear height available
					Foundation	Sub-structure	Super-Structure	
Nil								

**Section 2**

Sl No	Chainage	ROB/RUB	Width	Span arrangement & Total Length	Type of structure			Clear height available
					Foundation	Sub-structure	Super-Structure	
Nil								

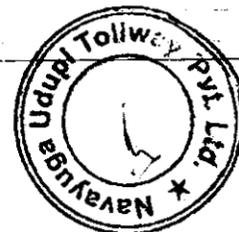


**Appendix A-VII (f)****Railway level crossings****Section I**

SI No	Chainage	Railway Chainage/No	Width (metres)
Nil			

**Section II**

SI No	Chainage	Remark	Width (metres)
1	5/000	Railway level crossing is present for broad gauge line from Mangalore – Sakleshpur-	10.3



192

**SCHEDULE - B**  
(See Clause 2.1)

**DEVELOPMENT OF THE PROJECT HIGHWAY**

**1. DEVELOPMENT OF THE PROJECT HIGHWAY**

Development of the Project Highway shall include construction of the Project Highway as described in this **Schedule-B** and in **Schedule-C**.

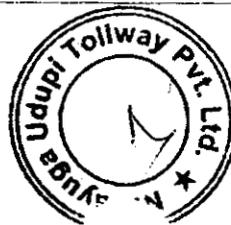
**2. FOUR-LANING**

**2.1** Four-Laning shall include construction of the Four-Lane Project highway as described in **Annex-I** of this **Schedule-B** and **Annex-I** of **Schedule-C**.

**2.2** Four Laning shall be undertaken and completed by the Concessionaire in conformity with the Specifications and Standards set forth in **Annex-I** of **Schedule-D**.

**3 [SIX-LANING]**

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Annex – I  
(Schedule – B)

**Description of Four – Laning**

**1. Width of Carriageway**

The paved carriageway shall be 17.5 meters wide excluding the median and edge strip near median:

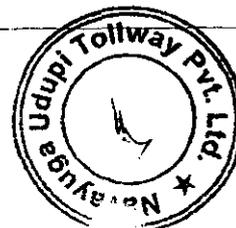
Except as otherwise provided in this Agreement, the width of the paved carriageway shall conform to clause 1.1 above.

**2. Project Facilities**

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

**3. Specifications and Standards**

The Project Highway 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 Sections**

The Project Highway shall be widened to Four lane dual configuration with paved shoulder with or without Service Roads. A typical cross section alongwith different types of cross section required to be developed in different segments of the project highway are indicated in Appendix BI.

**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.

**4.3 Bypasses & Realignment**

There are 2 bypasses and 5 realignments in Section 1 and 2 realignments in Section 2 the of project highway. The details of bypasses and realignments to be provided are given at Appendix BIII.

**4.4 Service Road**

Service Roads shall be provided in lengths indicated in Appendix –BIV.

**4.5 Proposed Right of Way**

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

**4.6 At Grade Intersection**

At grade intersections shall be provided at the intersection of service roads and all intersecting roads at locations specified in Appendix -B VI for major intersections and in Appendix BVII for minor intersections.

**4.7 Grade Separated Intersections**

The grade separated intersections shall be provided as given in Appendix BVIII.

**4.8 Underpasses**

Vehicular underpass shall be provided at location given at Appendix -BIX

Pedestrian /cattle underpass shall be provided at location given at Appendix –BX.

**4.9 Major bridges**

Major bridges as listed in Appendix BXI shall be provided, widened, reconstructed, or extended

195



**4.10 Minor bridges**

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

**4.11 Culverts**

Culverts shall be provided, widened, reconstructed, or extended as listed in Appendix BXIII

**4.12 ROB/RUB**

No ROB/RUBs provided in Section 1 and I ROB is provide in Section 2 , the details are given at Appendix BXIV. Following points shall be taken care of:

- i). The proposed span arrangements of the ROB's 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's 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.
- v) During construction, the existing level crossings shall be widened to 12 metres or two separate level crossings of 7 metres each shall be provided

**4.13 Entry /exit ramps**

No Entry /exit ramps are provided.

**4.14 Slope protection**

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

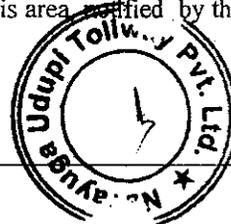
**4.15 Utilities**

Provision of accommodating utilities shall be made both over as well as underground wherever required.

**4.16 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.

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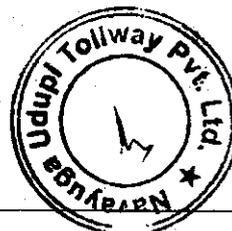


196

ANNEX – II  
(Schedule – B)  
Description of (Six – Laning)

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197

## Appendix BI

1. Typical Cross Sections
2. Cross Section Type along the Project Corridor

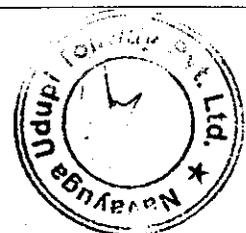
## Section 1 NH 17 – From km 283+300 to km 350+290

CS-01	Concentric widening & Strengthening of existing 2 lane pavement with 4.5m median in open area
CS-02	Eccentric widening (LHS/RHS) with 4.5m median & strengthening of existing 2 lane pavement in open area
CS-03	New 4 lane with 4.5m median for new construction in open area
CS-04	Concentric widening with 4.5m median & strengthening of existing pavement with 5.5m service road
CS-05	Eccentric widening (LHS/RHS) with 4.5m median & strengthening of existing 2 lane pavement with 5.5m service road
CS-06	New four lane with 4.5m median for new construction with 7m service road
CS-07	Concentric widening with 1.2m median & strengthening of existing 2 Lane pavement with 5.5m service road
CS-08	Eccentric widening (LHS/RHS) with 1.2m median & strengthening of existing 2 Lane pavement with 5.5m service road
CS-09	Typical cross section at underpass approach with combined earthen & reinforced earthen embankment
CS-10	Typical cross section at underpass approach in heavy builtup area
CS-11	Typical cross section of overpass (cross road above) approach with service road

Sl No	Design Chainage (Km)		Length (m)	Type of Cross Section
	From	To		
1	283300	283500	200	CS-07
2	283500	283950	450	CS-10
3	283950	284250	300	CS-10
4	284250	284690	440	CS-07
5	284690	284990	300	CS-07
6	284990	285290	300	CS-07
7	285290	287250	1960	CS-07
8	287250	287440	190	CS-08
9	287440	287690	250	CS-07
10	287690	287880	190	CS-08
11	287880	288000	120	CS-07
12	288000	288700	700	CS-01
13	288700	288820	120	CS-02

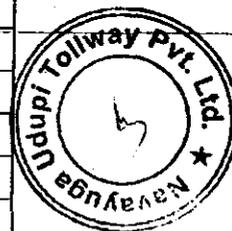


Sl No	Design Chainage (Km)		Length (m)	Type of Cross Section
	From	To		
14	288820	288960	140	CS-01
15	288960	289180	220	CS-02
16	289180	292500	3320	CS-01
17	292500	293500	1000	CS-02
18	293500	293900	400	CS-08
19	293900	295300	1400	CS-07
20	295300	295500	200	CS-08
21	295500	295780	280	CS-02
22	295780	297700	1920	CS-02
23	297700	297900	200	CS-03
24	297900	298100	200	CS-03
25	298100	298250	150	CS-01
26	298250	298450	200	CS-03
27	298450	298730	280	CS-01
28	298730	298930	200	CS-02
29	298930	299020	90	CS-01
30	299020	300030	1010	CS-02
31	300030	302000	1970	CS-01
32	302000	302570	570	CS-02
33	302570	302900	330	CS-03
34	302900	303100	200	CS-02
35	303100	304420	1320	CS-02
36	304420	304560	140	CS-02
37	304560	304900	340	CS-03
38	304900	305140	240	CS-02
39	305140	305900	760	CS-02
40	305900	306000	100	CS-05
41	306000	306130	130	CS-04
42	306130	306240	110	CS-05
43	306240	306500	260	CS-06
44	306500	306600	100	CS-04
45	306600	306840	240	CS-05
46	306840	307080	240	CS-04
47	307080	307500	420	CS-06
48	307500	307600	100	CS-05
49	307600	307770	170	CS-02
50	307770	308200	430	CS-01



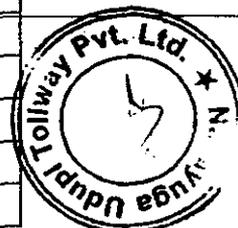
199

Sl No	Design Chainage (Km)		Length (m)	Type of Cross Section
	From	To		
51	308200	309000	800	CS-02
52	309000	309120	120	CS-01
53	309120	309300	180	CS-02
54	309300	309510	210	CS-03
55	309510	310100	590	CS-02
56	310100	310220	120	CS-01
57	310220	310700	480	CS-02
58	310700	310900	200	CS-02
59	310900	312580	1680	CS-02
60	312580	312900	320	CS-03
61	312900	313300	400	CS-02
62	313300	313900	600	CS-03
63	313900	314000	100	CS-03
64	314000	314100	100	CS-06
65	314100	314200	100	CS-05
66	314200	314500	300	CS-04
67	314500	314830	330	CS-05
68	314830	315000	170	CS-05
69	315000	315100	100	CS-02
70	315100	315780	680	CS-01
71	315780	315950	170	CS-03
72	315950	318600	2650	CS-01
73	318600	318900	300	CS-03
74	318900	319200	300	CS-03
75	319200	321050	1850	CS-04
76	321050	321350	300	CS-11
78	321350	321650	300	CS-11
77	321650	322260	610	CS-01
79	322260	322500	240	CS-02
80	322500	324100	1600	CS-01
81	324100	325800	1700	CS-02
82	325800	325930	130	CS-05
83	325930	326640	710	CS-04
84	326640	326800	160	CS-05
85	326800	329170	2370	CS-02
86	329170	329300	130	CS-01
87	329300	329700	400	CS-03



200

Sl No	Design Chainage (Km)		Length (m)	Type of Cross Section
	From	To		
88	329700	330500	800	CS-02
89	330500	330620	120	CS-03
90	330620	331300	680	CS-01
91	331300	331560	260	CS-04
92	331560	331870	310	CS-05
93	331870	332000	130	CS-05
94	332000	332200	200	CS-05
95	332200	332400	200	CS-04
96	332400	332650	250	CS-01
97	332650	332820	170	CS-02
98	332820	334870	2050	CS-02
99	334870	336300	1430	CS-02
100	336300	336450	150	CS-02
101	336450	336700	250	CS-02
102	336700	336900	200	CS-02
103	336900	338500	1600	CS-01
104	338500	338700	200	CS-02
105	338700	338930	230	CS-02
106	338930	339200	270	CS-02
107	339200	339950	750	CS-03
107	339950	340750	800	CS-02
108	340750	341100	350	CS-01
109	341100	341200	100	CS-02
110	341200	341600	400	CS-02
111	341600	342800	1200	CS-03
112	342800	343100	300	CS-09
113	343100	343400	300	CS-09
114	343400	344650	1250	CS-03
115	344650	344960	310	CS-02
116	344960	345120	160	CS-02
117	345120	345350	230	CS-02
118	345350	345500	150	CS-02
119	345500	345650	150	CS-02
120	345650	347740	2090	CS-02
121	347740	348800	1060	CS-02
122	348800	350700	1900	CS-03
123	350700	352100	1400	CS-02



201

Sl No	Design Chainage (Km)		Length (m)	Type of Cross Section
	From	To		
124	352100	352270	170	CS-02
125	352270	352420	150	CS-02
126	352420	352530	110	CS-01
127	352530	355100	2570	CS-02
128	355100	355200	100	CS-02
129	355200	355800	600	CS-02
130	355800	355940	140	CS-02
131	355940	356850	910	CS-02
132	356850	357000	150	CS-02
133	357000	357140	140	CS-02
134	357140	357340	200	CS-02
135	357340	357550	210	CS-02
136	357550	357700	150	CS-05
137	357700	357830	130	CS-04
138	357830	358686	856	CS-05
	Total		75386	

## Section - 2 NH 17 -From km 1+900 to km 17+200

CS-01	Concentric Widening and strengthening of existing two lane Pavement with median width as 4.5m/1.5m based on availability of land with approval of ICE
CS-02	Concentric Widening and strengthening of existing two lane Pavement with median width as 4.5m/1.5m based on availability of land with approval of ICE
CS-03	New Construction in the Rural Area without Service Roads with 4.5m median width
CS-04	Concentric Widening and strengthening of existing two lane Pavement with Provision of 5.5m Service roads on either side with median with as 4.5m/1.5m based on availability of land with approval ICE
CS-05	Eccentric Widening and Strengthening of existing two lane Pavement with Provision of 5.5m service roads on either side with median width as 4.5m/1.5m based on availability of land with approval of ICE
CS-06	Typical cross section in Approaches to underpasses with service roads
CS-07	Typical cross section in Approaches to Flyover with service roads
CS-08	Typical cross section in Embankment height more than 3m



202

Design Chainage (Km)		Length (km)	Land Use	TCS Type
From	To			
1+870	2+400	0.53	Urban	1
2+400	2+700	0.3	Urban	2
2+700	3+200	0.5	Urban	1
3+200	3+900	0.7	Flyover	7
3+900	4+800	0.9	Urban	4
4+800	4+985	0.185	Rural	2
4+985	5+225	0.24	Rural	3
5+225	6+420	1.195	Rural	2
6+420	6+550	0.13	Rural	3
6+550	8+000	1.45	Rural	2
8+000	9+100	1.1	Rural	2
9+100	10+200	1.1	Flyover	7
10+200	11+450	1.25	Rural	1
11+450	12+000	0.55	Urban	5
12+000	12+700	0.7	Rural	2
12+700	13+500	0.8	Urban	5
13+500	14+000	0.5	Rural	2
14+000	14+700	0.7	Rural	1
14+700	15+200	0.5	Rural	2
15+200	15+800	0.6	Urban	5
15+800	16+200	0.4	Rural	2
16+200	16+500	0.3	Rural	2
16+500	16+800	0.3	Rural	3
16+800	17+200	0.4	Rural	2

3. Typical Cross Sections of High Embankments (Approaches to Grade Separator's / Underpasses / Bridges / ROB's)

Sl No	Design Chainage (Km) From	C/s Type*
	Included in above table	

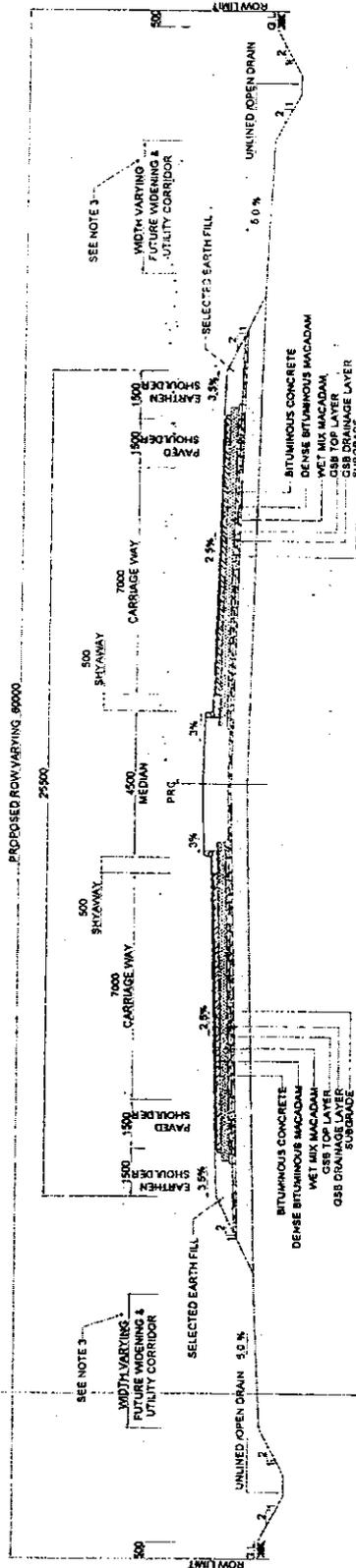
\* Type of Cross Section are given below



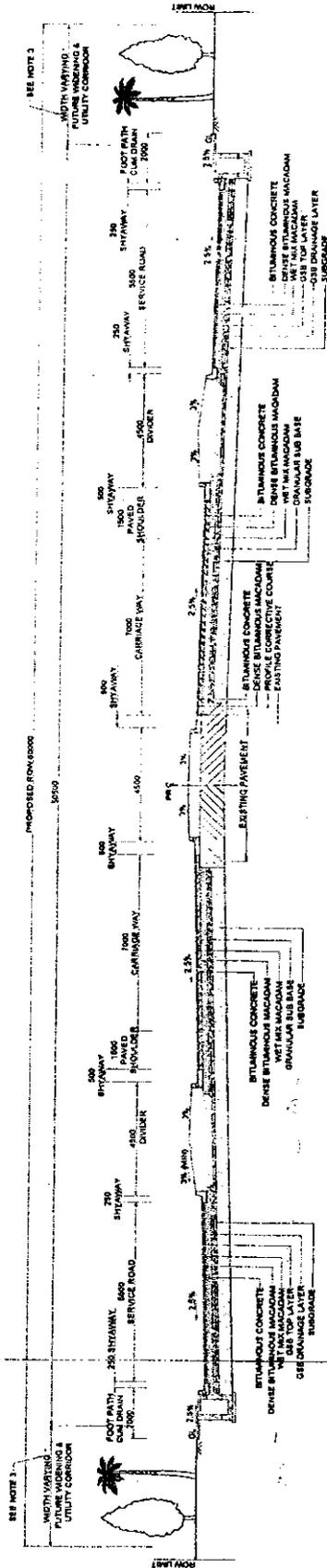
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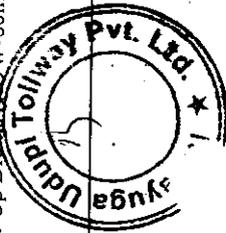


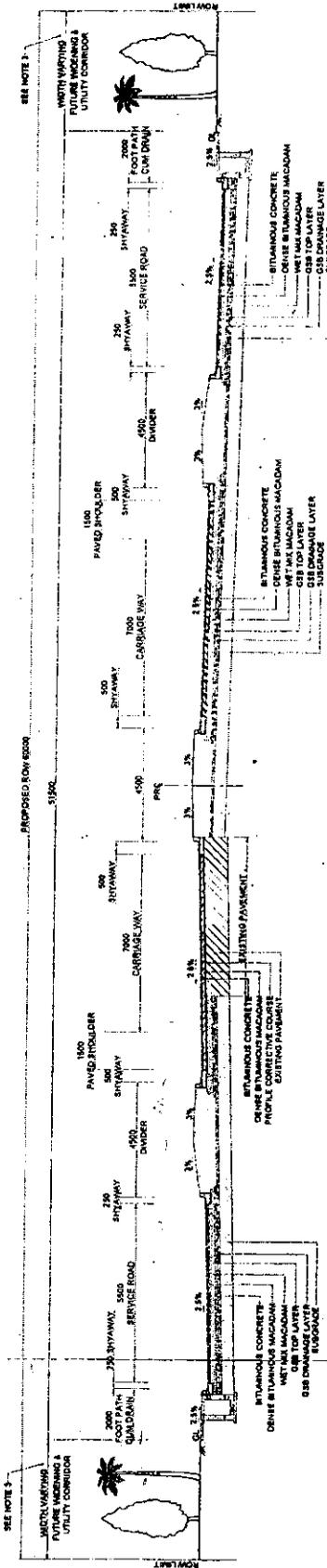
Typical Geometric Section of New Construction in the Rural Area without Service Roads (Type CS-03)



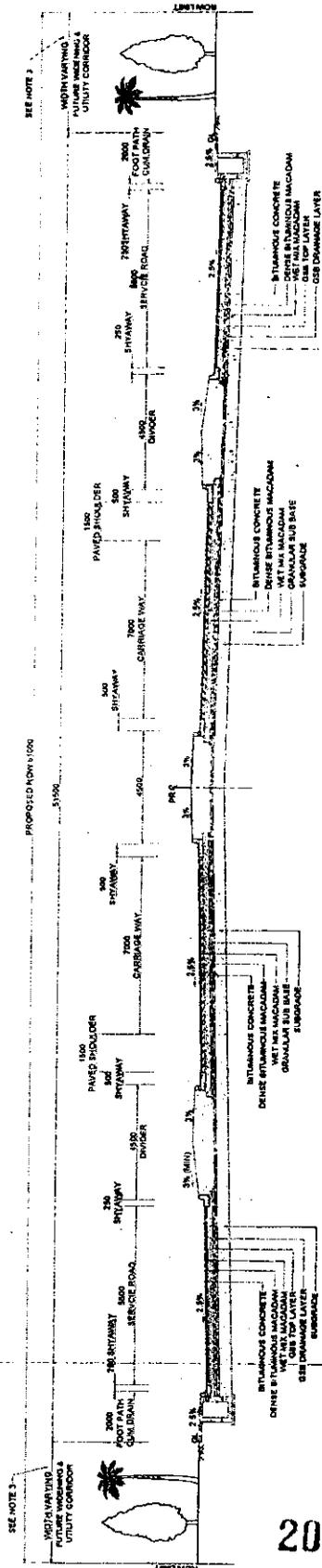
Typical Geometric Section of Concentric widening along Built-Up Area with Service Roads & Built-Up Drains (ROW-60m) (Type CS-04)

205



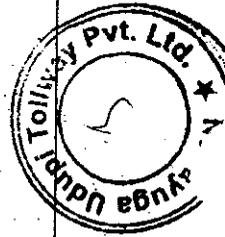


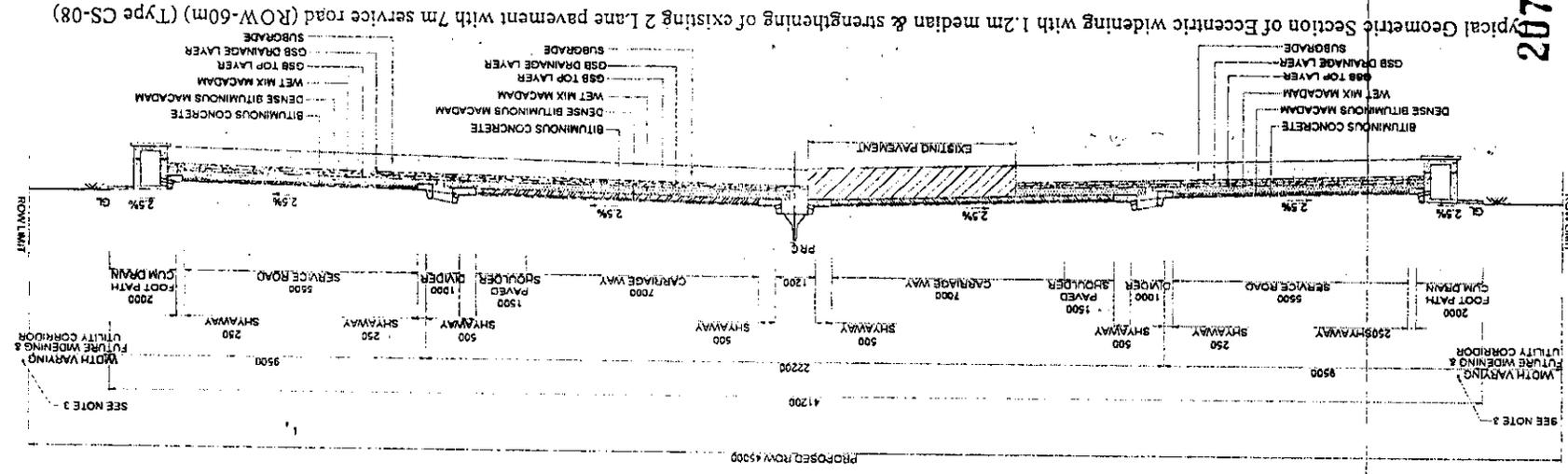
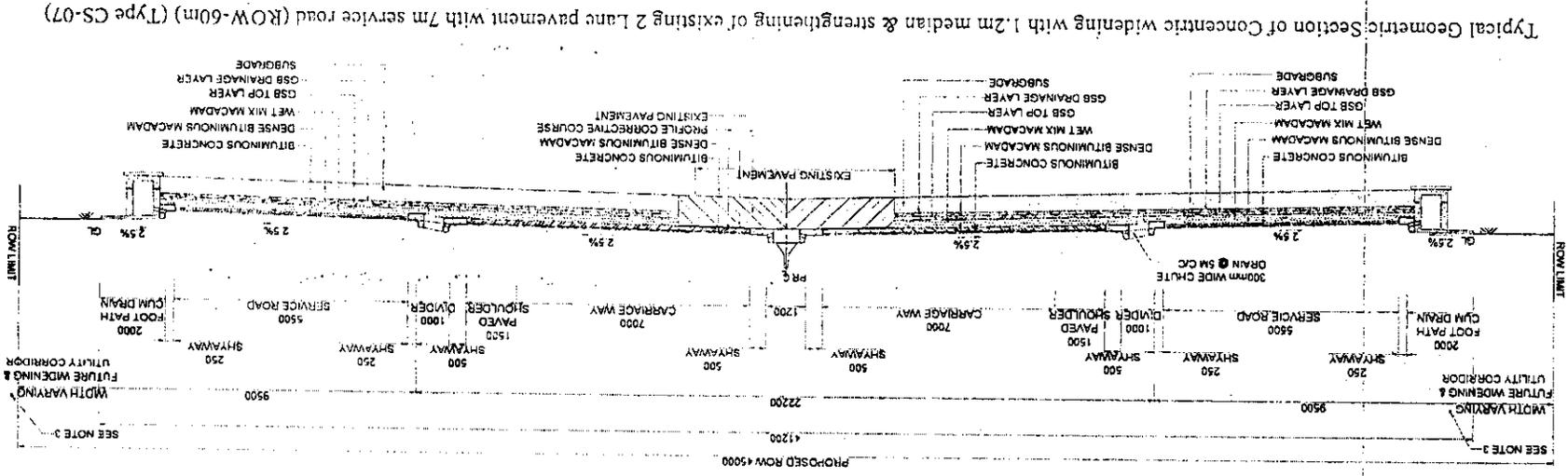
Typical Geometric Section of Eccentric widening along Built-Up Area with Service Roads & Built-Up Drains (ROW-60m) (Type CS-05)



Typical Geometric Section of New Construction along Built-Up Area with Service Roads & Built-Up Drains (ROW-60m) (Type CS-06)

206

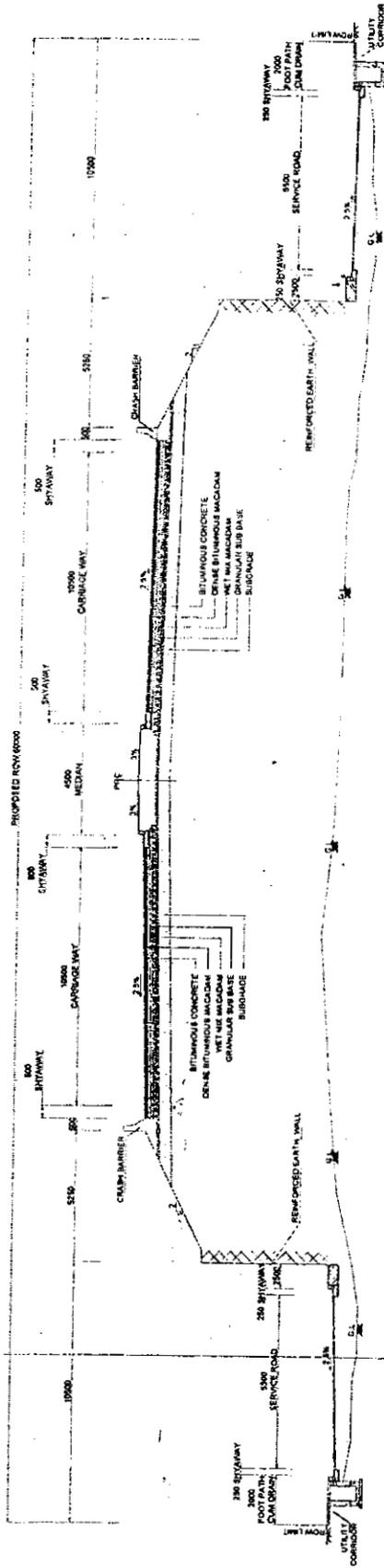




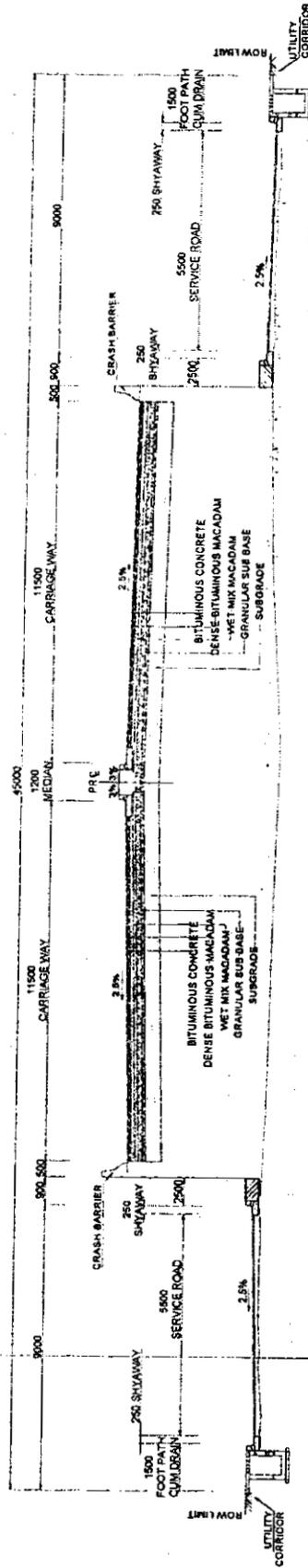
4 Laning of Kundapur - Surathkal and Mangalore -Karnataka/  
Kerala Border sections of NH 17 (Total Length 90.08 Km)  
in the State of Karnataka under NHDP Phase III on BOT Basis



207

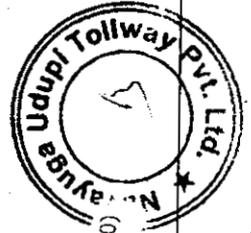


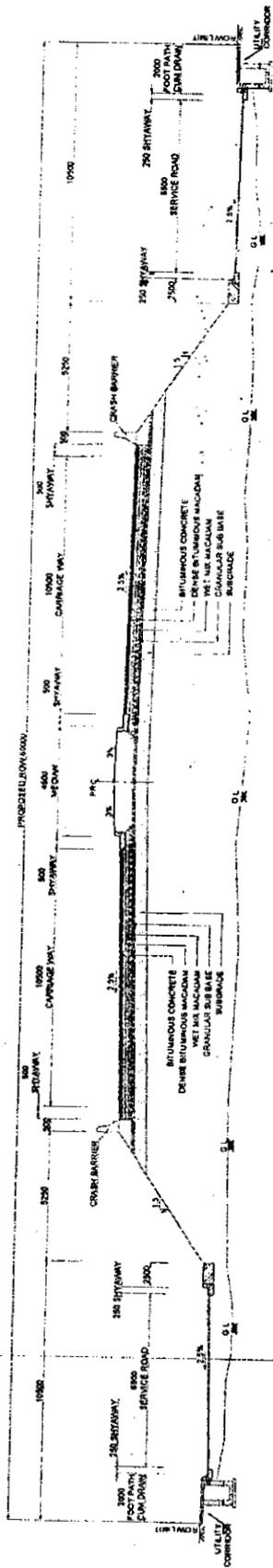
Typical Cross Section of at underpass approach with combined earthen and reinforced earthen walls (ROW-60m)-(Type CS-09)



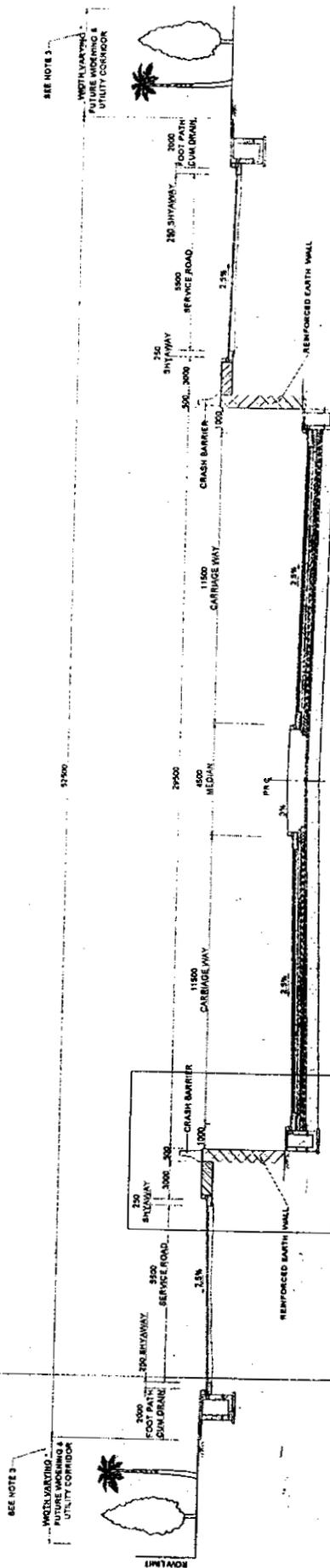
Typical Cross Section of at underpass approach in heavy built-up area (ROW-45m)-(Type CS-10)

208

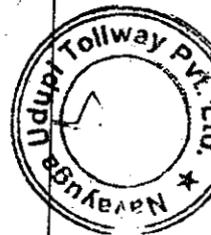


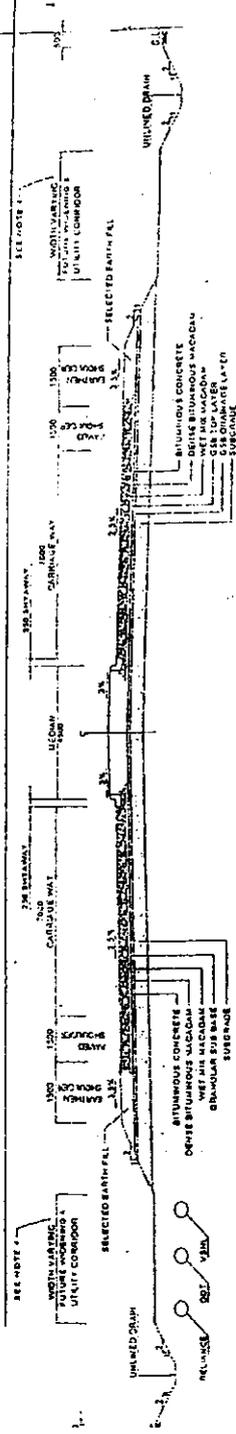


Typical Cross Section of Cattle cum Pedestrian Pass Approach with Service Roads (ROW-60m)

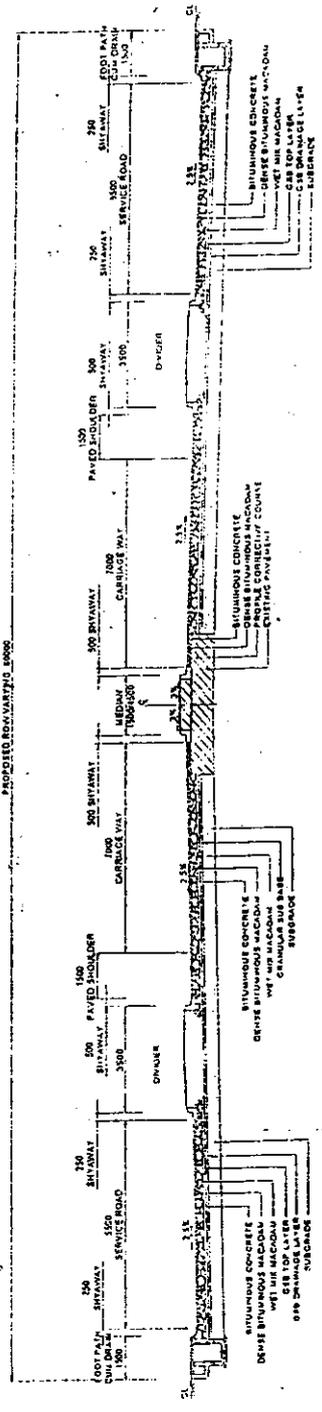


Typical Cross Section of Overpass Approach with Service Roads (ROW-60m) Type CS-11

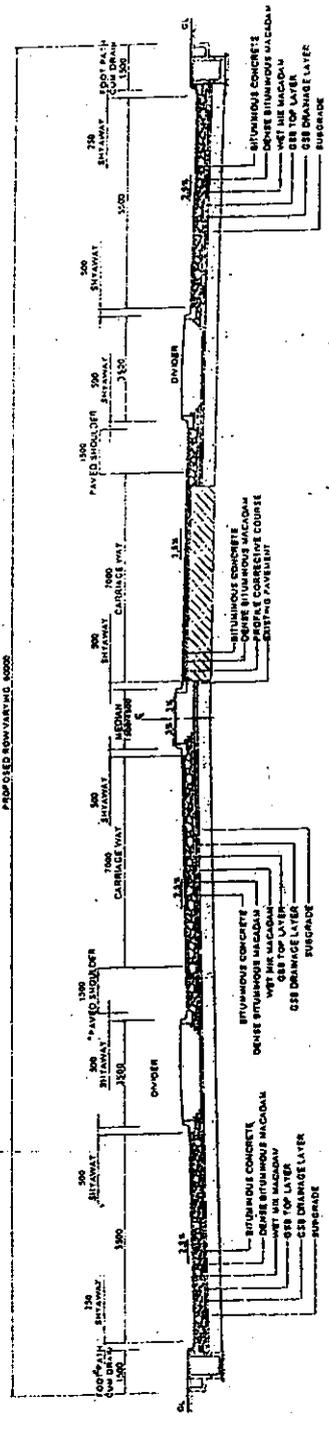




(TYPE - 3) NEW FOUR LANE FOR REALIGNED PORTIONS



(TYPE - 4) ECCENTRIC WIDENING AND STRENGTHENING OF EXISTING TWO LANE PAVEMENT WITH 3.5M SERVICE ROAD



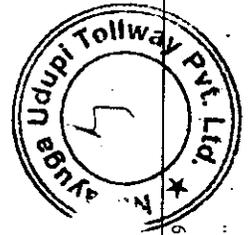
(TYPE - 5) ECCENTRIC WIDENING AND STRENGTHENING OF EXISTING TWO LANE PAVEMENT WITH 3.5M SERVICE ROAD

210

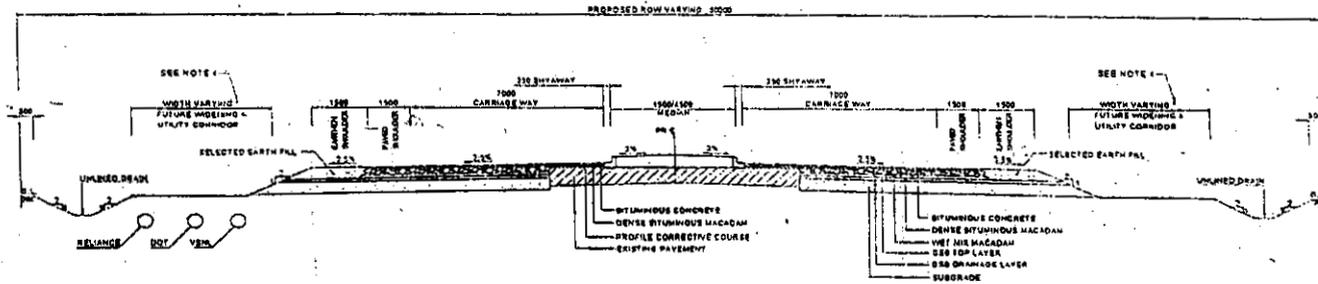


4 Laning of Kundapur - Suratkal and Mangalore - Karnataka/  
Kerala Border sections of NH 17 (Total Length 90.08 Km)  
in the State of Karnataka under NHDP Phase III on BOT Basis

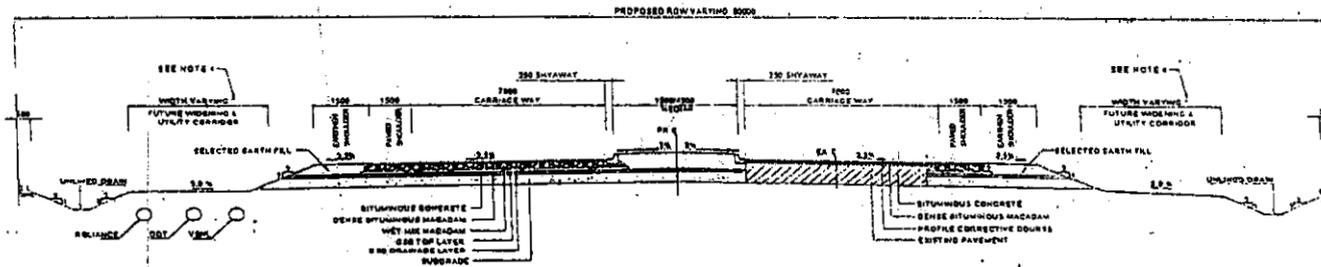
4. Laning of Kundapur - Surathkal and Mangalore -Karnataka/  
Kerala Border sections of NH 17 (Total Length 90.08 Km)  
in the State of Karnataka under NHDP Phase III on BOT Basis



Typical Cross Section for Section 2



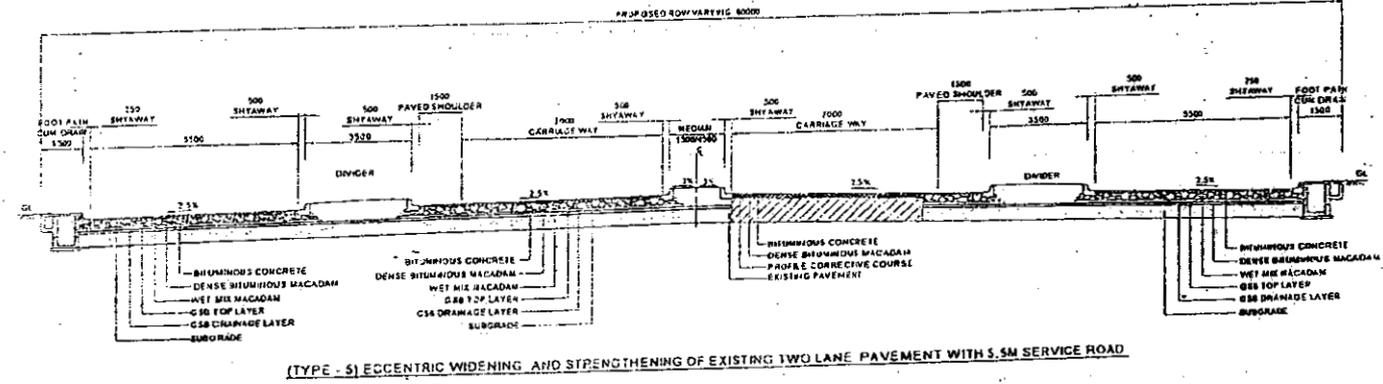
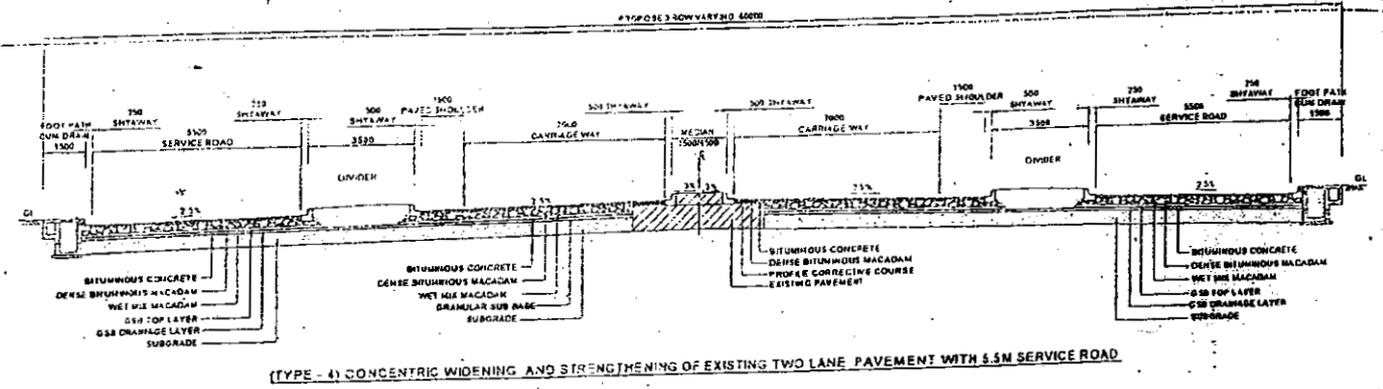
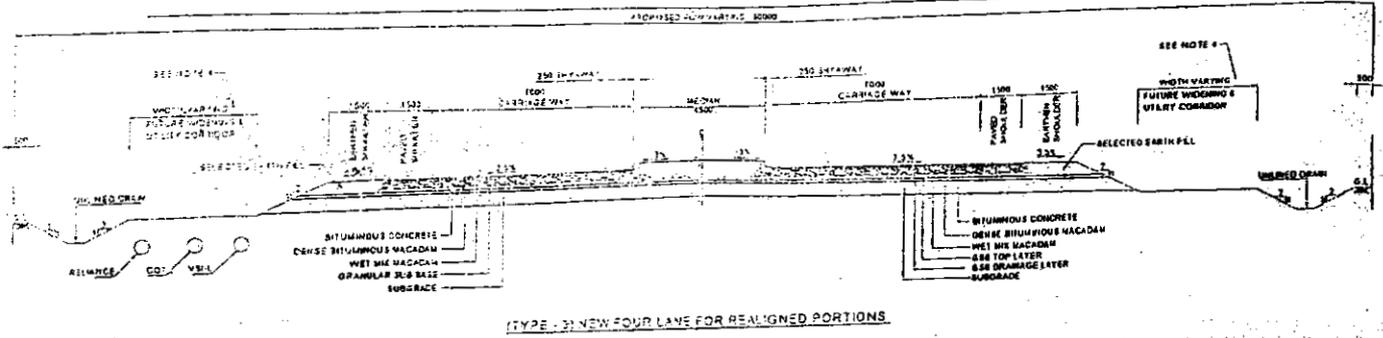
(TYPE - 1) CONCENTRIC WIDENING AND STRENGTHENING OF EXISTING TWO LANE PAVEMENT



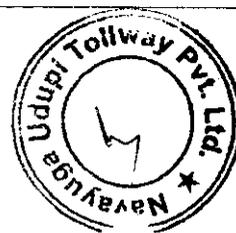
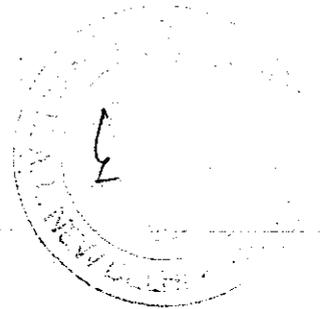
(TYPE - 2) ECCENTRIC WIDENING AND STRENGTHENING OF EXISTING TWO LANE PAVEMENT



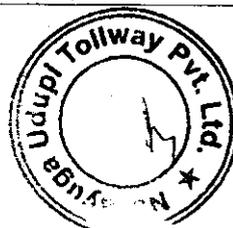
212



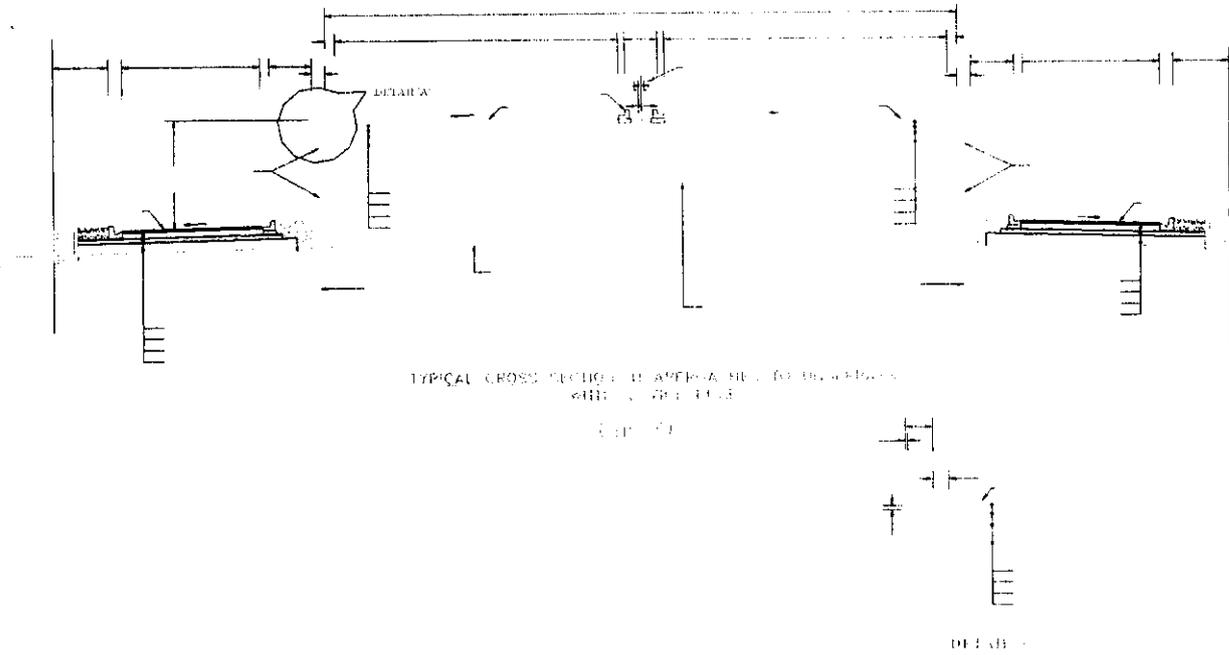
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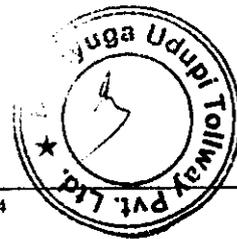
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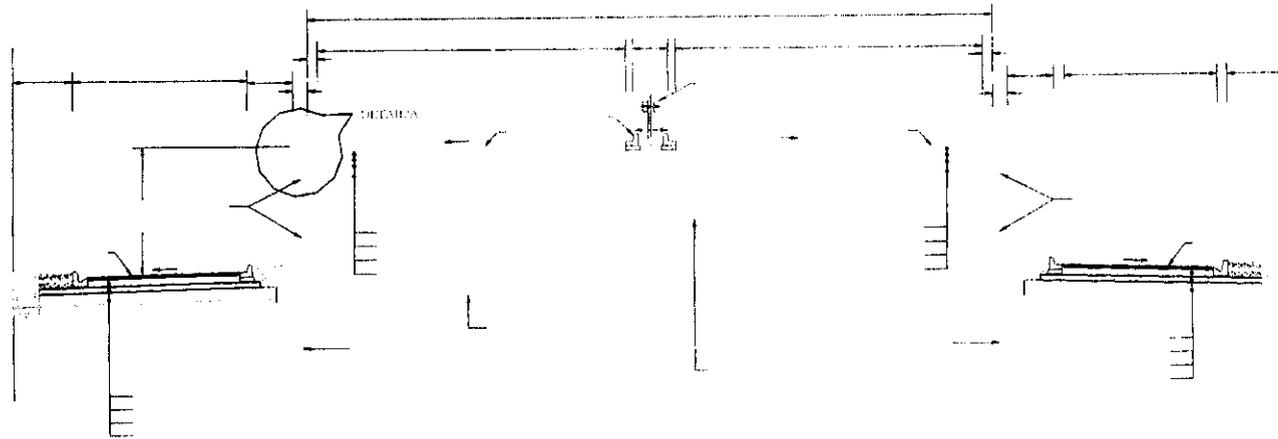


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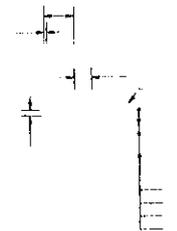


216





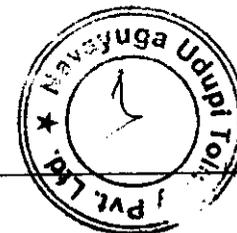
TYPICAL CROSS SECTION OF BRIDGE WITH TWO SPANS

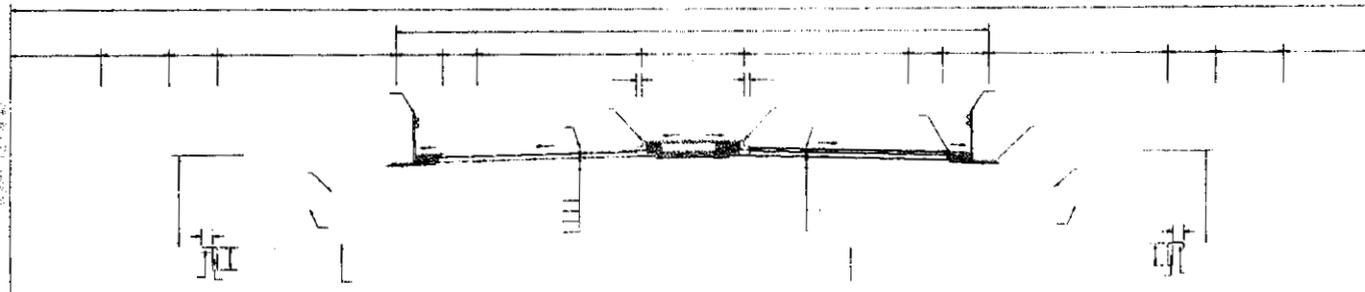


PIER

217

7





TYPICAL CROSS SECTION OF ROAD WITH DRAINAGE SYSTEM  
Figure-01

218

4



**Appendix-BII**  
Alignment Plan and Longitudinal Section are enclosed in digital form in CD marked as Appendix BII

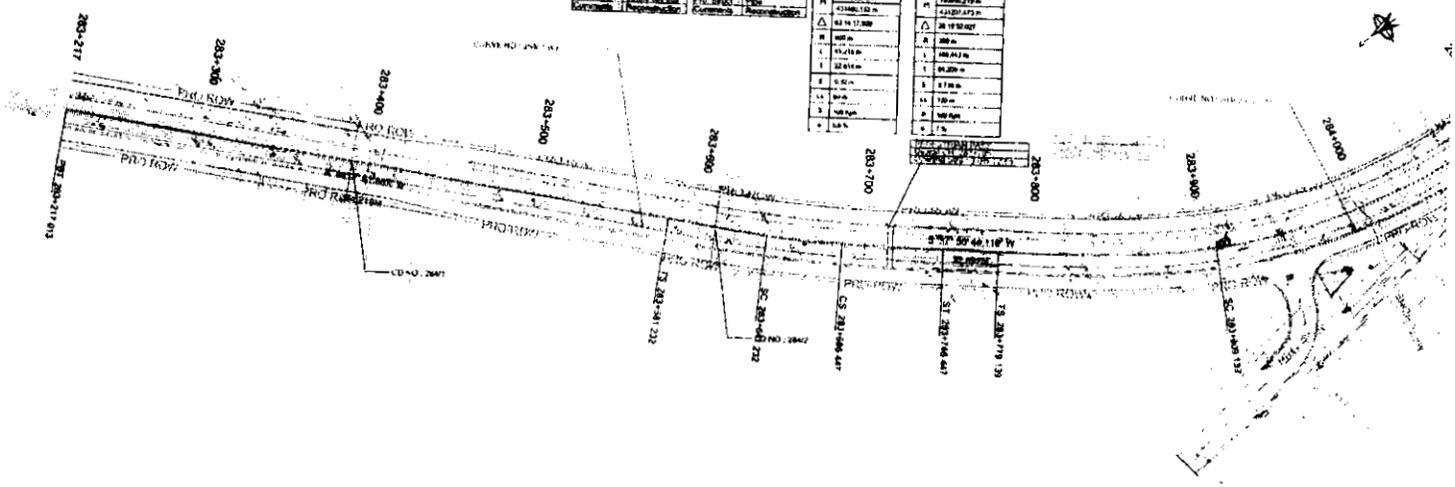
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220

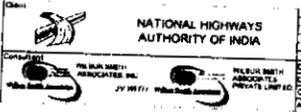
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CH	283-219	1.10	1.10
CH	283-220	1.10	1.10
CH	283-221	1.10	1.10
CH	283-222	1.10	1.10
CH	283-223	1.10	1.10
CH	283-224	1.10	1.10
CH	283-225	1.10	1.10
CH	283-226	1.10	1.10
CH	283-227	1.10	1.10
CH	283-228	1.10	1.10
CH	283-229	1.10	1.10
CH	283-230	1.10	1.10
CH	283-231	1.10	1.10
CH	283-232	1.10	1.10
CH	283-233	1.10	1.10
CH	283-234	1.10	1.10
CH	283-235	1.10	1.10
CH	283-236	1.10	1.10
CH	283-237	1.10	1.10
CH	283-238	1.10	1.10
CH	283-239	1.10	1.10
CH	283-240	1.10	1.10
CH	283-241	1.10	1.10
CH	283-242	1.10	1.10
CH	283-243	1.10	1.10
CH	283-244	1.10	1.10
CH	283-245	1.10	1.10
CH	283-246	1.10	1.10
CH	283-247	1.10	1.10
CH	283-248	1.10	1.10
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CH	283-250	1.10	1.10



DATUM 4.000	
Station	Profile
283+217	1.10
283+218	1.10
283+219	1.10
283+220	1.10
283+221	1.10
283+222	1.10
283+223	1.10
283+224	1.10
283+225	1.10
283+226	1.10
283+227	1.10
283+228	1.10
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283+240	1.10
283+241	1.10
283+242	1.10
283+243	1.10
283+244	1.10
283+245	1.10
283+246	1.10
283+247	1.10
283+248	1.10
283+249	1.10
283+250	1.10

CH	Center Line
ME	Median
PC	Proposed Carriage Way
PS	Paved Shoulder
DS	Ditch
ES	Earth Shoulder
SR	Service Road
FC	Footpath
CD	Clearance Driveway
PR	Proposed Right of Way

TR	Transformer
RP	Rectangular Pole
FS	Falling Stone
NP	Hand Pump
NS	Name Stone
LP	Light Pole
ST	Setting Stone
OT	Other



**NATIONAL HIGHWAYS AUTHORITY OF INDIA**

Project: SURATKAL

Scale: 1:1000

Date: JUN-2008

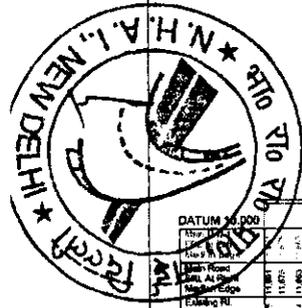
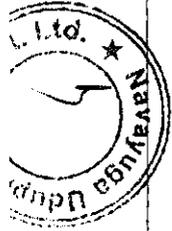
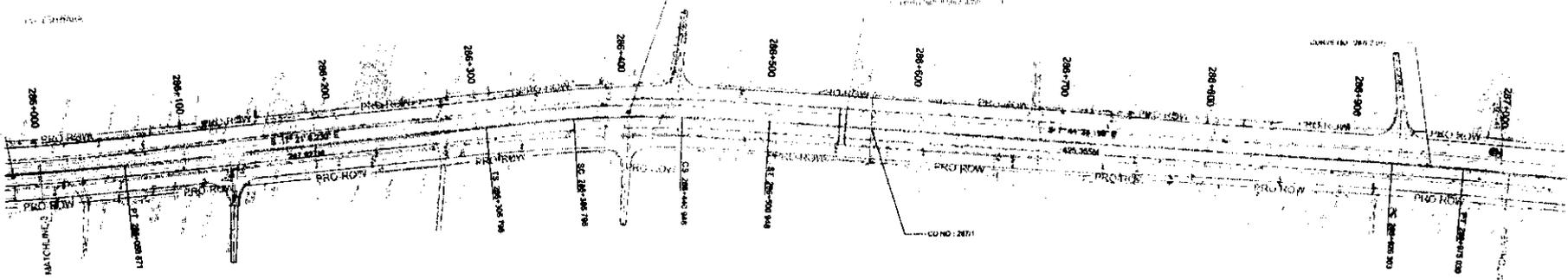
Sheet No: 1 OF 76







Station No.	286+000	286+100	286+200	286+300	286+400	286+500	286+600	286+700	286+800	286+900
CH	286+000.000	286+100.000	286+200.000	286+300.000	286+400.000	286+500.000	286+600.000	286+700.000	286+800.000	286+900.000
PA	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000
RA	400.000	400.000	400.000	400.000	400.000	400.000	400.000	400.000	400.000	400.000
TA	80.000	80.000	80.000	80.000	80.000	80.000	80.000	80.000	80.000	80.000
LA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
SA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GA	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000



Station No.	Elevations		Vertical Curve	Slope	Grade	Sight Distance	Clearance	Remarks
	Proposed	Existing						
286+000	100.00	100.00						
286+100	100.00	100.00						
286+200	100.00	100.00						
286+300	100.00	100.00						
286+400	100.00	100.00						
286+500	100.00	100.00						
286+600	100.00	100.00						
286+700	100.00	100.00						
286+800	100.00	100.00						
286+900	100.00	100.00						
287+000	100.00	100.00						

Legend	Symbol	Description
—	—	CENTRE LINE
—	—	MEDIAN
—	—	PROPOSED CONCRETED SHOULDER
—	—	PAVED SHOULDER
—	—	DYKER
—	—	BARBER SHOULDER
—	—	SERVICE ROAD
—	—	FOOTPATH CURB DRAIN
—	—	PROPOSED ROW

**NATIONAL HIGHWAYS AUTHORITY OF INDIA**

PROJECT NO. 060/004  
DRAWING NO. KS-1D-23-001

DATE: JUN-2006

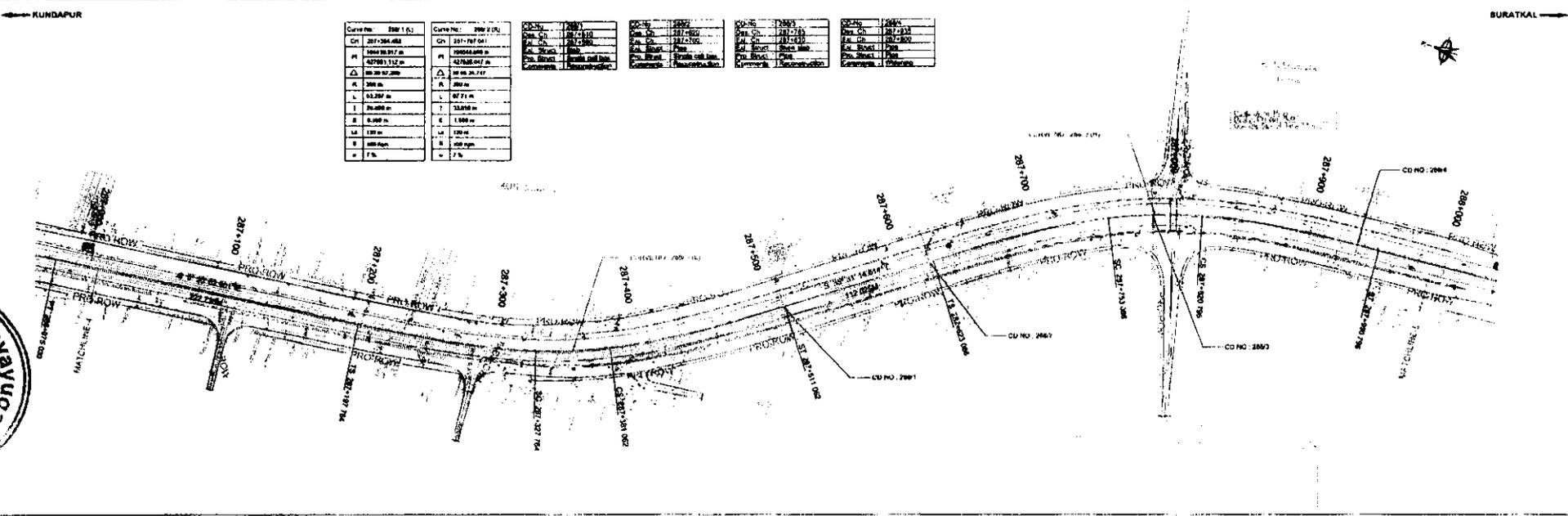
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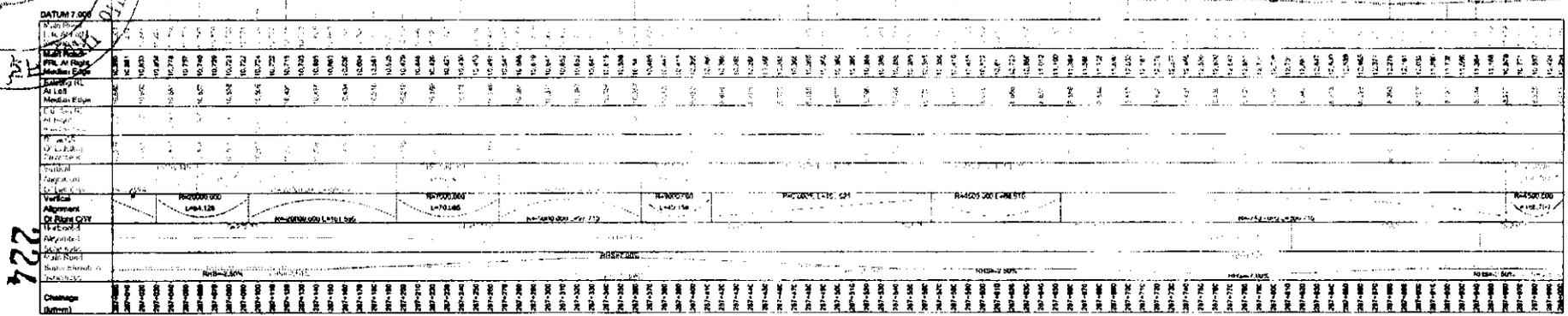
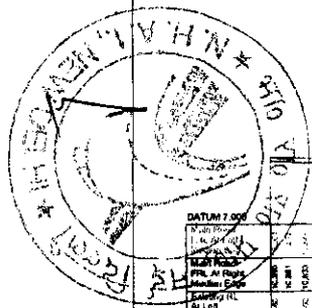
DESIGNED BY: [Name]  
CHECKED BY: [Name]  
APPROVED BY: [Name]

CONTRACT NO. [Number]  
SECTION OF ROAD [Number]

FROM CH 286+000 TO 287+000



Curve No. 288 (R)		Curve No. 289 (L)		Curve No. 290 (R)		Curve No. 291 (L)		Curve No. 292 (R)		Curve No. 293 (L)	
CR	CH										
287+364.488	287+787.041	287+787.041	287+787.041	287+787.041	287+787.041	287+787.041	287+787.041	287+787.041	287+787.041	287+787.041	287+787.041
6444.9917 m	6444.9917 m										
42781.112 m	42781.112 m										
80.36 37.288	80.36 37.287	80.36 37.287	80.36 37.287	80.36 37.287	80.36 37.287	80.36 37.287	80.36 37.287	80.36 37.287	80.36 37.287	80.36 37.287	80.36 37.287
R	R	R	R	R	R	R	R	R	R	R	R
288 m	288 m										
L	L	L	L	L	L	L	L	L	L	L	L
63.287 m	67.71 m	67.71 m	67.71 m	67.71 m	67.71 m	67.71 m	67.71 m	67.71 m	67.71 m	67.71 m	67.71 m
I	I	I	I	I	I	I	I	I	I	I	I
26.488 m	23.888 m	23.888 m	23.888 m								
E	E	E	E	E	E	E	E	E	E	E	E
6.288 m	1.888 m	1.888 m	1.888 m								
L	L	L	L	L	L	L	L	L	L	L	L
138 m	138 m										
S	S	S	S	S	S	S	S	S	S	S	S
288 m	288 m										
e	e	e	e	e	e	e	e	e	e	e	e
7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%	7%



<p><b>Legend</b></p> <ul style="list-style-type: none"> <li>Centre Line</li> <li>Median</li> <li>Proposed Carriageway</li> <li>Paved Shoulder</li> <li>Driveway</li> <li>Earth Shoulder</li> <li>Service Road</li> <li>Footpath</li> <li>Open Drain</li> <li>Proposed Row</li> </ul>	<p><b>Profile</b></p> <ul style="list-style-type: none"> <li>Grade</li> <li>Pipe Culvert</li> <li>Box Culvert</li> </ul>	<p><b>Legend</b></p> <ul style="list-style-type: none"> <li>Transformer</li> <li>Electrical Pole</li> <li>Telephone Pole</li> <li>Tree</li> <li>Culvert</li> <li>Limiting Point of Sight</li> <li>Fence</li> <li>Gate</li> </ul>	<p><b>Notes</b></p> <ul style="list-style-type: none"> <li>Official Sign Labels</li> <li>Telephone Pole</li> <li>Tree</li> <li>Culvert</li> <li>Limiting Point of Sight</li> <li>Fence</li> </ul>	<p><b>Client</b></p> <p>NATIONAL HIGHWAYS AUTHORITY OF INDIA</p>	<p><b>Design</b></p> <p>Scale: 1:1000</p> <p>Scale: 1:200</p> <p>Scale: 1:500</p>	<p><b>Project</b></p> <p>COMBIA TANC SERVICES FOR FEASIBILITY STUDY &amp; DETAILED PROJECT REPORT FOR 66 LANE OF KARAVATI-BURATKAL SECTION OF NH-17 IN THE STATE OF KARNATAKA UNDER NHDP PHASE - B (PROJECT NO. NHDP INDIA/06)</p> <p><b>Drawing Title</b></p> <p>PLAN AND PROFILE FROM CH-287+000 TO 289+000</p>	<p><b>Date</b></p> <p>JUN-2009</p> <p><b>Project No.</b></p> <p>0807004</p> <p><b>Drawing No.</b></p> <p>KS-1D-23-001</p> <p><b>Sheet No.</b></p> <p>5 OF 76</p> <p><b>Rev.</b></p> <p>FDPR</p>
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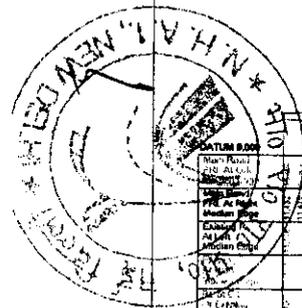
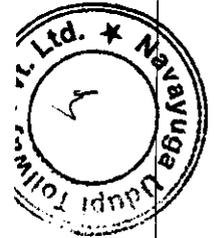
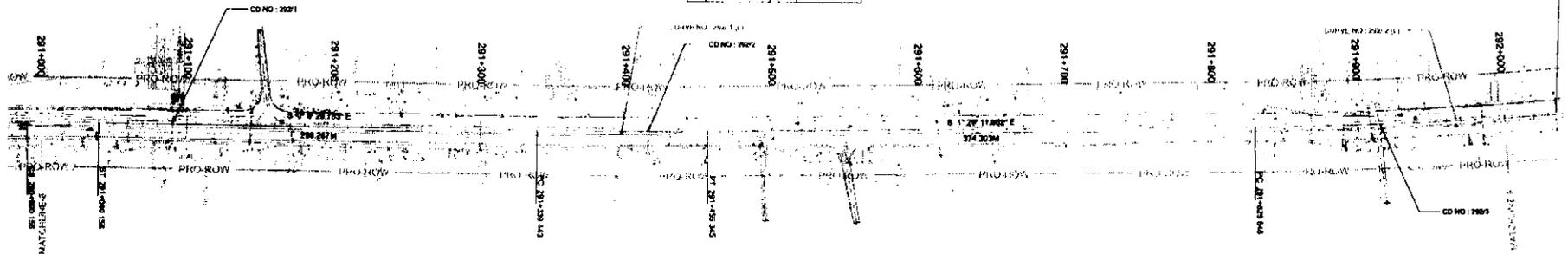








Curve No.	269 1 & 2	Curve No.	269 2 & 3	Curve No.	269 3	Curve No.	269 4
CA	291+387.367	CA	291+667.006	CA	291+980	CA	291+618
PI	198834.283 m						
LA	429379.203 m						
Δ	91.3817296	Δ	91.3817296	Δ	91.3817296	Δ	91.3817296
R	1000 m						
L	178.800 m						
E	87.000 m						
F	8.200 m						
LA	0 m						
R	1000 m						
PL	0	PL	0	PL	0	PL	0

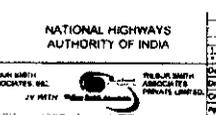


Station	291+000	291+050	291+100	291+150	291+200	291+250	291+300	291+350	291+400	291+450	291+500	291+550	291+600	291+650	291+700	291+750	291+800	291+850	291+900	291+950	292+000
Proposed Road	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Existing Road	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Shoulder	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
Right of Way	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00

228

Legend	Symbol	Description
—	—	CENTRE LINE
—	—	MECHANICAL
—	—	PROPOSED CARRIAGEWAY
—	—	PAVED SHOULDER
—	—	GRASS
—	—	EARTHEN SHOULDER
—	—	SERVICE ROAD
—	—	FOOTPATH/GUM DRAIN
—	—	PROPOSED ROW

Legend	Symbol	Description
—	—	TRANSFORMER
—	—	ELECTRICAL POLE
—	—	FUEL OIL TOWER
—	—	WATER TOWER
—	—	WATER PUMP
—	—	LIGHT POLE
—	—	ALUMINIUM STUMP
—	—	GATE



**NATIONAL HIGHWAYS AUTHORITY OF INDIA**

PROJECT: **NEW DELHI**

SECTION: **FROM CH-261+000 TO 262+000**

DRAWING TITLE: **PLAN AND PROFILE**

DATE: **JUN-2009**

PROJECT NO.: **0607004**

DRAWING NO.: **KS-1D-23-001**

SHEET NO.: **9 OF 16**

SCALE: **AS SHOWN**

DESIGNED BY: **...**

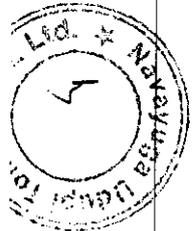
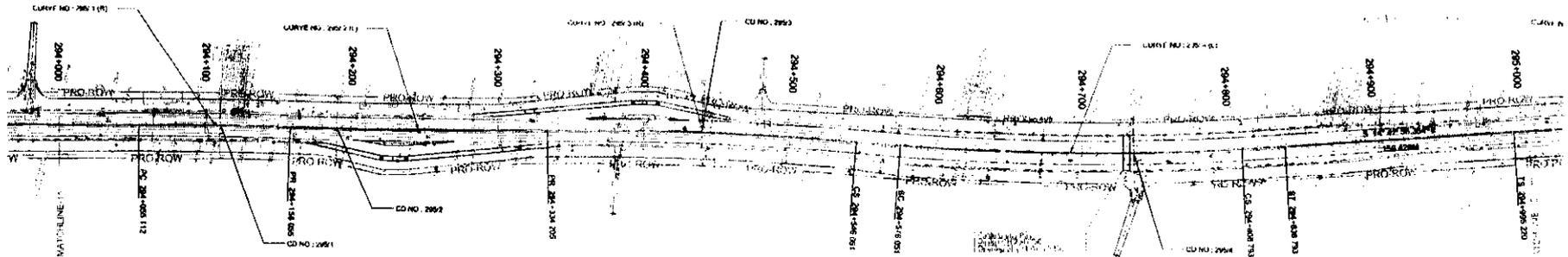
DRAWN BY: **...**

CHECKED BY: **...**

APPROVED BY: **...**







Curve No.	294+100	Curve No.	294+200	Curve No.	294+300	Curve No.	294+400
Ch	294+100.000	Ch	294+200.000	Ch	294+300.000	Ch	294+400.000
PI	294+100.000	PI	294+200.000	PI	294+300.000	PI	294+400.000
Δ	61.87 34.878	Δ	62.31 23.298	Δ	62.23 34.820	Δ	62.21 34.298
R	3000 m	R	4000 m	R	2500 m	R	3000 m
L	100.000 m	L	176.16 m	L	100.000 m	L	142.744 m
T	51.411 m	T	68.086 m	T	100.000 m	T	118.833 m
E	0.442 m	E	0.817 m	E	2.486 m	E	2.748 m
Ls	0 m	Ls	0 m	Ls	0 m	Ls	20 m
S	100 Km/h						
Δ	4%	Δ	4%	Δ	4%	Δ	4%

Curve No.	294+500	Curve No.	294+600	Curve No.	294+700	Curve No.	294+800
Ch	294+500.000	Ch	294+600.000	Ch	294+700.000	Ch	294+800.000
PI	294+500.000	PI	294+600.000	PI	294+700.000	PI	294+800.000
Δ	62.21 34.298						
R	3000 m						
L	142.744 m						
T	118.833 m						
E	2.748 m						
Ls	20 m						
S	100 Km/h						
Δ	4%	Δ	4%	Δ	4%	Δ	4%

DATUM 8.000		ELEVATION		DISTANCE		CHANGING	
Top Road	8.000	8.000	8.000	8.000	8.000	8.000	8.000
Sub Road	8.000	8.000	8.000	8.000	8.000	8.000	8.000
Proposed Road	8.000	8.000	8.000	8.000	8.000	8.000	8.000
Proposed Shoulder	8.000	8.000	8.000	8.000	8.000	8.000	8.000
Proposed Footpath	8.000	8.000	8.000	8.000	8.000	8.000	8.000
Proposed Drain	8.000	8.000	8.000	8.000	8.000	8.000	8.000
Proposed Fencing	8.000	8.000	8.000	8.000	8.000	8.000	8.000
Proposed Utility	8.000	8.000	8.000	8.000	8.000	8.000	8.000
Proposed Signal	8.000	8.000	8.000	8.000	8.000	8.000	8.000
Proposed Structure	8.000	8.000	8.000	8.000	8.000	8.000	8.000
Proposed Other	8.000	8.000	8.000	8.000	8.000	8.000	8.000

231

<p>Centre Line</p> <p>Proposed Camber</p> <p>Proposed Shoulder</p> <p>Proposed Footpath</p> <p>Proposed Drain</p> <p>Proposed Fencing</p> <p>Proposed Utility</p> <p>Proposed Signal</p> <p>Proposed Structure</p> <p>Proposed Other</p>	<p>Proposed</p>	<p>Proposed</p>	<p>Proposed</p>	<p>Proposed</p>	<p>Proposed</p>	<p>Proposed</p>	<p>Proposed</p>	<p>Proposed</p>
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**NATIONAL HIGHWAYS AUTHORITY OF INDIA**

WILBUR SMITH & ASSOCIATES PVT. LTD.

CONSULTANTS

SURATKAL

PROJECT NO. NH-10/2008

SECTION NO. 10/11

FROM CH-294+000 TO 295+000

DATE: JUN-2008

DRAWING NO.: 060/004

SHEET NO.: 12 OF 78

SCALE: 1:2000

PROJECTED BY: [Signature]

CHECKED BY: [Signature]

APPROVED BY: [Signature]

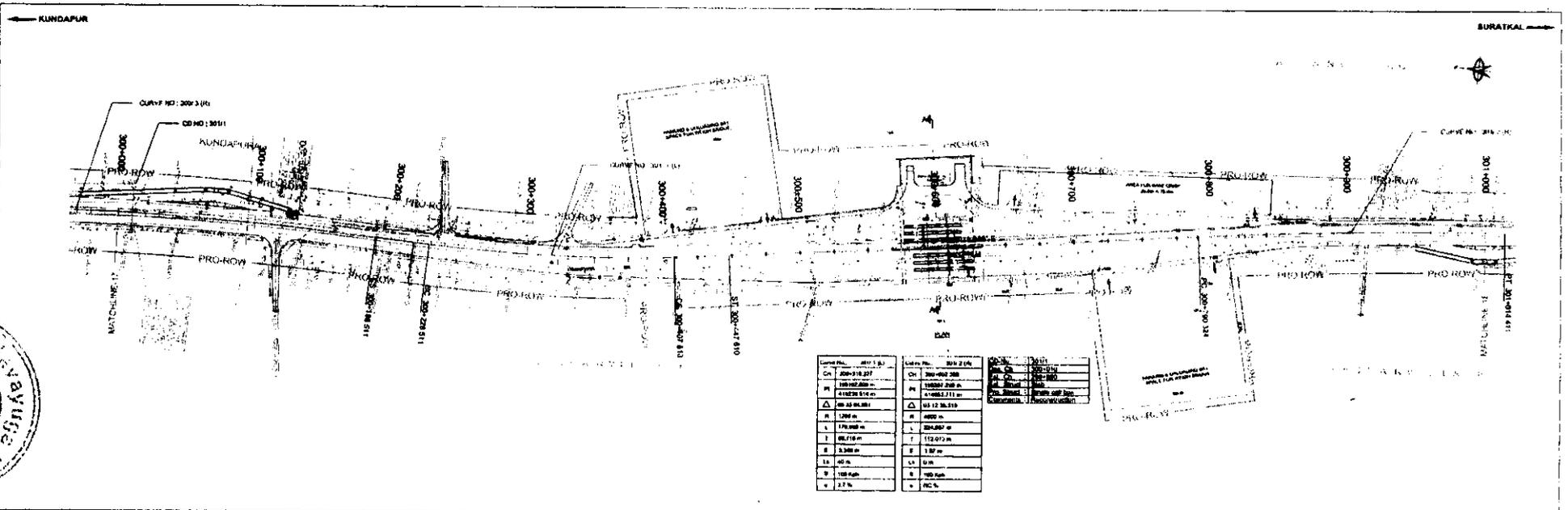
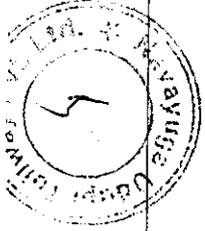








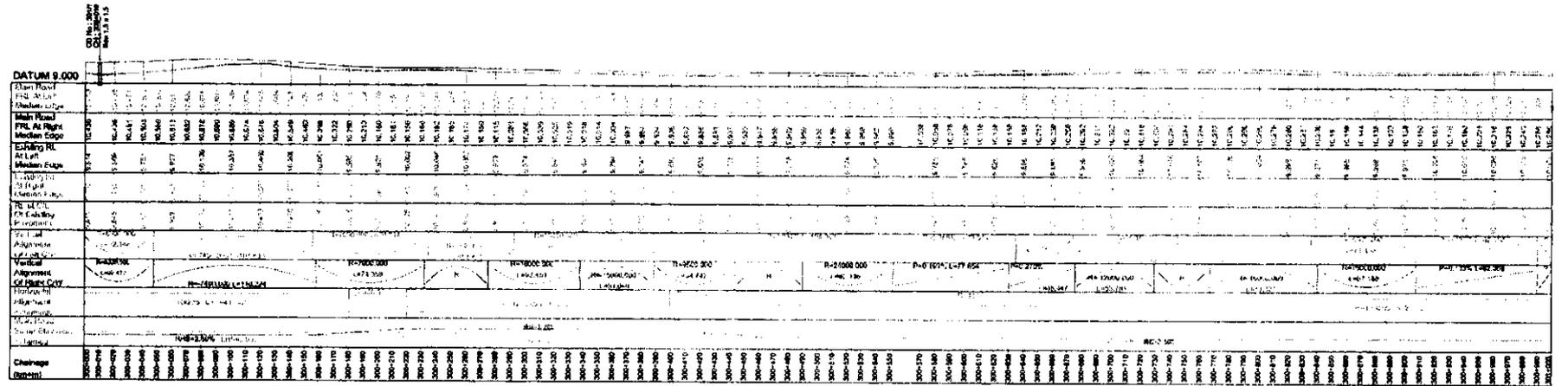




Stationing	300+000 to 301+000	Stationing	300+000 to 301+000
Ch. 1	100.000 m	Ch. 1	100.000 m
Ch. 2	100.000 m	Ch. 2	100.000 m
Ch. 3	100.000 m	Ch. 3	100.000 m
Ch. 4	100.000 m	Ch. 4	100.000 m
Ch. 5	100.000 m	Ch. 5	100.000 m
Ch. 6	100.000 m	Ch. 6	100.000 m
Ch. 7	100.000 m	Ch. 7	100.000 m
Ch. 8	100.000 m	Ch. 8	100.000 m
Ch. 9	100.000 m	Ch. 9	100.000 m
Ch. 10	100.000 m	Ch. 10	100.000 m

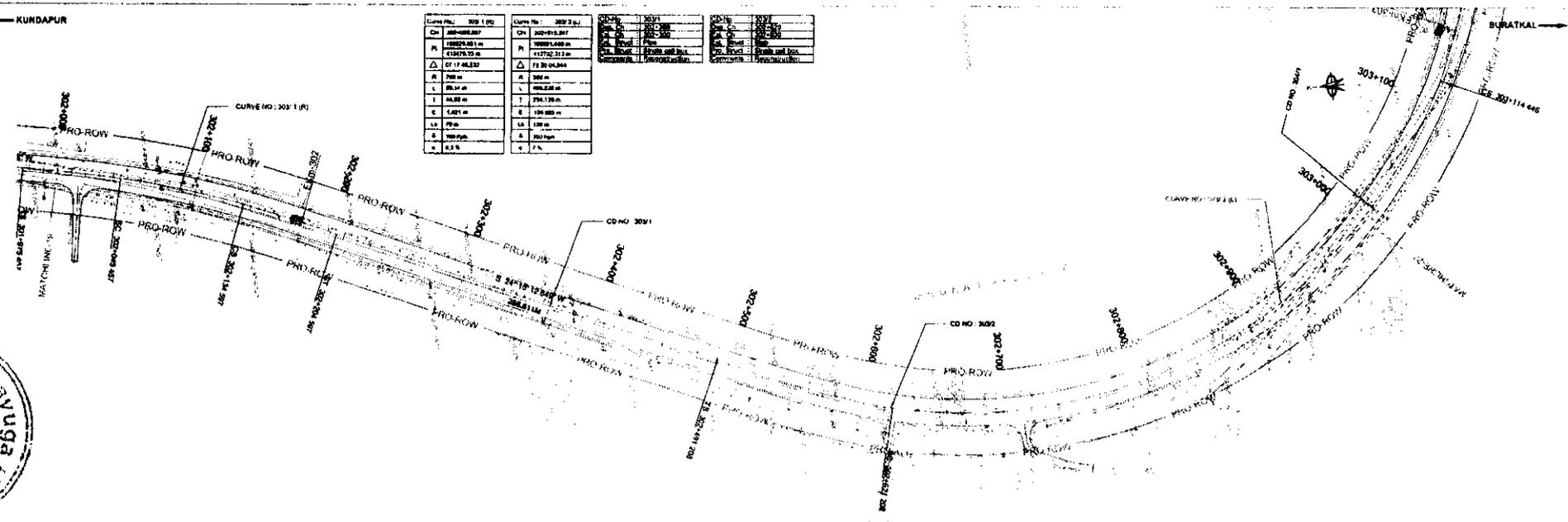
3

237

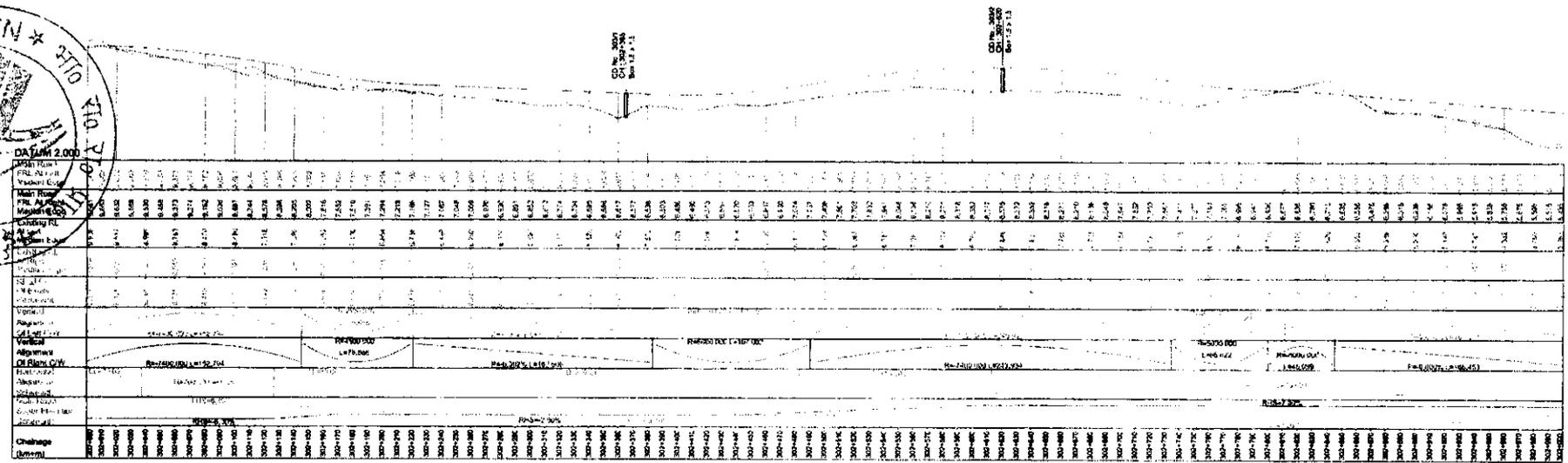


<p><b>Legend</b></p> <p>Centre Line Median Proposed Carriageway Paved Shoulder Dyker Earth Shoulder Service Road Footpath cum Drain Proposed Foot</p>	<p><b>Legend</b></p> <p>Bridge PPS Chyvert SMA Layert</p>	<p><b>Legend</b></p> <p>Transformer Electrical Pole Fluorid Slope Hand Pump Name Board Light Pole Anular Pit Gate</p>	<p><b>Legend</b></p> <p>UTP Cable Lane Telephone Pole Tree Gas Post Utility Name Board Substation Gate</p>	<p><b>Notes</b></p>	<p><b>NATIONAL HIGHWAYS AUTHORITY OF INDIA</b></p> <p>Project No. 0807004 Scale 1:1000 Date: JUN-2008</p>	<p><b>PLAN AND PROFILE FROM CH 300+000 TO 301+000</b></p> <p>Sheet No. 18 OF 18</p>
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Curve No. 303 1 (R)	Curve No. 303 2 (L)
Ch 100+000.000	Ch 100+000.000
PI 100+000.000	PI 100+000.000
Δ 07 17 46.83	Δ 78 26 04.84
R 200 m	R 300 m
L 20.34 m	L 66.28 m
T 26.89 m	T 394.130 m
C 1.607 m	C 124.869 m
L1 1.70 m	L1 1.70 m
A 300 mm	A 300 mm
e 6.5%	e 7%



239

Centre Line	Median	Proposed Carriageway	Paved Shoulder	Overseer	Earthed Shoulder	Service Road	Footpath cum Drain	Proposed ROW									
Brook	Pipe Culvert	Box Culvert	Legal Limiting	Threshhold	Electrical Pole	Fun and Stone	Hand Pump	Water Board	Light Pole	Aluminum Stump	Gate	Optical Fibre Cable	Telephone Poles	Time	Culvert	Utility	Location Point of New Fence

**NATIONAL HIGHWAYS AUTHORITY OF INDIA**

Project: COMBINATION OF FEDERAL FUNDS WITH STATE FUNDS FOR THE CONSTRUCTION OF NATIONAL HIGHWAYS UNDER THE PROVISIONS OF THE NATIONAL HIGHWAYS ACT, 1956.

Section: FROM CH/302+000 TO 303+000

Scale: 1:1000

Date: JUN-2009

Project No: 0607004

Drawing No: KS-1D-23-001

Sheet No: 20 OF 76

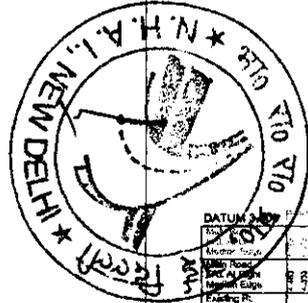
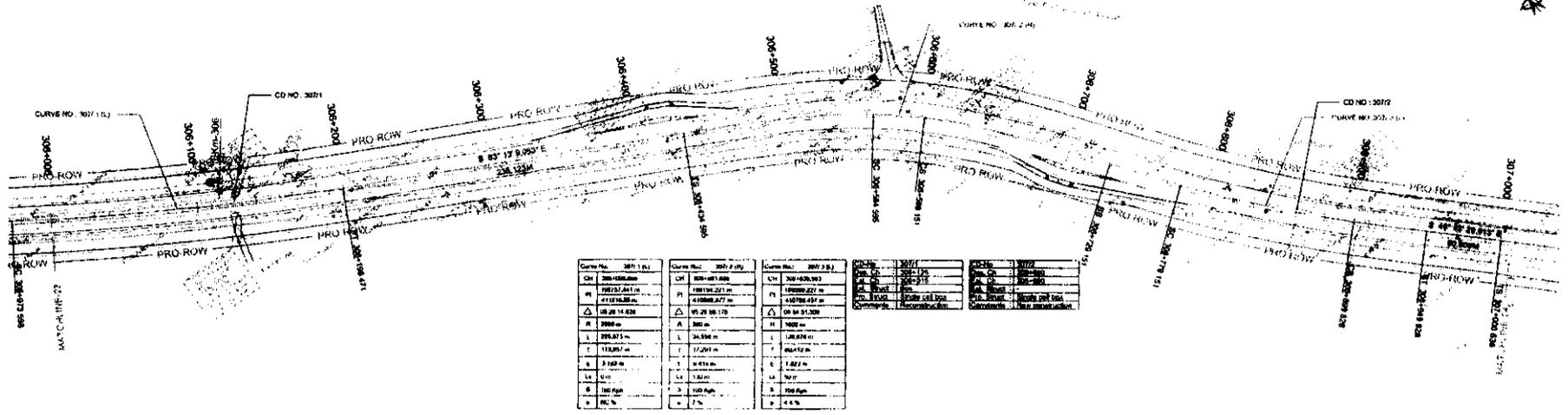






KUNDAPUR

SURATKAL



213

Stationing	Vertical Alignment		Grade (%)	Slope (%)	Sight Distance (m)	Clearance (m)	Obstruction (m)	Remarks
	Grade (%)	Clearance (m)						
299+000	0.00	1.50	0.00	0.00	100	3.00	0.00	
299+100	0.00	1.50	0.00	0.00	100	3.00	0.00	
299+200	0.00	1.50	0.00	0.00	100	3.00	0.00	
299+300	0.00	1.50	0.00	0.00	100	3.00	0.00	
299+400	0.00	1.50	0.00	0.00	100	3.00	0.00	
299+500	0.00	1.50	0.00	0.00	100	3.00	0.00	
299+600	0.00	1.50	0.00	0.00	100	3.00	0.00	
299+700	0.00	1.50	0.00	0.00	100	3.00	0.00	
299+800	0.00	1.50	0.00	0.00	100	3.00	0.00	
299+900	0.00	1.50	0.00	0.00	100	3.00	0.00	
300+000	0.00	1.50	0.00	0.00	100	3.00	0.00	
300+100	0.00	1.50	0.00	0.00	100	3.00	0.00	
300+200	0.00	1.50	0.00	0.00	100	3.00	0.00	
300+300	0.00	1.50	0.00	0.00	100	3.00	0.00	
300+400	0.00	1.50	0.00	0.00	100	3.00	0.00	
300+500	0.00	1.50	0.00	0.00	100	3.00	0.00	
300+600	0.00	1.50	0.00	0.00	100	3.00	0.00	
300+700	0.00	1.50	0.00	0.00	100	3.00	0.00	
300+800	0.00	1.50	0.00	0.00	100	3.00	0.00	
300+900	0.00	1.50	0.00	0.00	100	3.00	0.00	
301+000	0.00	1.50	0.00	0.00	100	3.00	0.00	
301+100	0.00	1.50	0.00	0.00	100	3.00	0.00	
301+200	0.00	1.50	0.00	0.00	100	3.00	0.00	
301+300	0.00	1.50	0.00	0.00	100	3.00	0.00	
301+400	0.00	1.50	0.00	0.00	100	3.00	0.00	
301+500	0.00	1.50	0.00	0.00	100	3.00	0.00	
301+600	0.00	1.50	0.00	0.00	100	3.00	0.00	
301+700	0.00	1.50	0.00	0.00	100	3.00	0.00	
301+800	0.00	1.50	0.00	0.00	100	3.00	0.00	
301+900	0.00	1.50	0.00	0.00	100	3.00	0.00	
302+000	0.00	1.50	0.00	0.00	100	3.00	0.00	
302+100	0.00	1.50	0.00	0.00	100	3.00	0.00	
302+200	0.00	1.50	0.00	0.00	100	3.00	0.00	
302+300	0.00	1.50	0.00	0.00	100	3.00	0.00	
302+400	0.00	1.50	0.00	0.00	100	3.00	0.00	
302+500	0.00	1.50	0.00	0.00	100	3.00	0.00	
302+600	0.00	1.50	0.00	0.00	100	3.00	0.00	
302+700	0.00	1.50	0.00	0.00	100	3.00	0.00	
302+800	0.00	1.50	0.00	0.00	100	3.00	0.00	
302+900	0.00	1.50	0.00	0.00	100	3.00	0.00	
303+000	0.00	1.50	0.00	0.00	100	3.00	0.00	
303+100	0.00	1.50	0.00	0.00	100	3.00	0.00	
303+200	0.00	1.50	0.00	0.00	100	3.00	0.00	
303+300	0.00	1.50	0.00	0.00	100	3.00	0.00	
303+400	0.00	1.50	0.00	0.00	100	3.00	0.00	
303+500	0.00	1.50	0.00	0.00	100	3.00	0.00	
303+600	0.00	1.50	0.00	0.00	100	3.00	0.00	
303+700	0.00	1.50	0.00	0.00	100	3.00	0.00	
303+800	0.00	1.50	0.00	0.00	100	3.00	0.00	
303+900	0.00	1.50	0.00	0.00	100	3.00	0.00	
304+000	0.00	1.50	0.00	0.00	100	3.00	0.00	
304+100	0.00	1.50	0.00	0.00	100	3.00	0.00	
304+200	0.00	1.50	0.00	0.00	100	3.00	0.00	
304+300	0.00	1.50	0.00	0.00	100	3.00	0.00	
304+400	0.00	1.50	0.00	0.00	100	3.00	0.00	
304+500	0.00	1.50	0.00	0.00	100	3.00	0.00	
304+600	0.00	1.50	0.00	0.00	100	3.00	0.00	
304+700	0.00	1.50	0.00	0.00	100	3.00	0.00	
304+800	0.00	1.50	0.00	0.00	100	3.00	0.00	
304+900	0.00	1.50	0.00	0.00	100	3.00	0.00	
305+000	0.00	1.50	0.00	0.00	100	3.00	0.00	
305+100	0.00	1.50	0.00	0.00	100	3.00	0.00	
305+200	0.00	1.50	0.00	0.00	100	3.00	0.00	
305+300	0.00	1.50	0.00	0.00	100	3.00	0.00	
305+400	0.00	1.50	0.00	0.00	100	3.00	0.00	
305+500	0.00	1.50	0.00	0.00	100	3.00	0.00	
305+600	0.00	1.50	0.00	0.00	100	3.00	0.00	
305+700	0.00	1.50	0.00	0.00	100	3.00	0.00	
305+800	0.00	1.50	0.00	0.00	100	3.00	0.00	
305+900	0.00	1.50	0.00	0.00	100	3.00	0.00	
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306+100	0.00	1.50	0.00	0.00	100	3.00	0.00	
306+200	0.00	1.50	0.00	0.00	100	3.00	0.00	
306+300	0.00	1.50	0.00	0.00	100	3.00	0.00	
306+400	0.00	1.50	0.00	0.00	100	3.00	0.00	
306+500	0.00	1.50	0.00	0.00	100	3.00	0.00	
306+600	0.00	1.50	0.00	0.00	100	3.00	0.00	
306+700	0.00	1.50	0.00	0.00	100	3.00	0.00	
306+800	0.00	1.50	0.00	0.00	100	3.00	0.00	
306+900	0.00	1.50	0.00	0.00	100	3.00	0.00	
307+000	0.00	1.50	0.00	0.00	100	3.00	0.00	
307+100	0.00	1.50	0.00	0.00	100	3.00	0.00	
307+200	0.00	1.50	0.00	0.00	100	3.00	0.00	
307+300	0.00	1.50	0.00	0.00	100	3.00	0.00	
307+400	0.00	1.50	0.00	0.00	100	3.00	0.00	
307+500	0.00	1.50	0.00	0.00	100	3.00	0.00	
307+600	0.00	1.50	0.00	0.00	100	3.00	0.00	
307+700	0.00	1.50	0.00	0.00	100	3.00	0.00	
307+800	0.00	1.50	0.00	0.00	100	3.00	0.00	
307+900	0.00	1.50	0.00	0.00	100	3.00	0.00	
308+000	0.00	1.50	0.00	0.00	100	3.00	0.00	
308+100	0.00	1.50	0.00	0.00	100	3.00	0.00	
308+200	0.00	1.50	0.00	0.00	100	3.00	0.00	
308+300	0.00	1.50	0.00	0.00	100	3.00	0.00	
308+400	0.00	1.50	0.00	0.00	100	3.00	0.00	
308+500	0.00	1.50	0.00	0.00	100	3.00	0.00	
308+600	0.00	1.50	0.00	0.00	100	3.00	0.00	
308+700	0.00	1.50	0.00	0.00	100	3.00	0.00	
308+800	0.00	1.50	0.00	0.00	100	3.00	0.00	
308+900	0.00	1.50	0.00	0.00	100	3.00	0.00	
309+000	0.00	1.50	0.00	0.00	100	3.00	0.00	
309+100	0.00	1.50	0.00	0.00	100	3.00	0.00	
309+200	0.00	1.50	0.00	0.00	100	3.00	0.00	
309+300	0.00	1.50	0.00	0.00	100	3.00	0.00	
309+400	0.00	1.50	0.00	0.00	100	3.00	0.00	
309+500	0.00	1.50	0.00	0.00	100	3.00	0.00	
309+600	0.00	1.50	0.00	0.00	100	3.00	0.00	
309+700	0.00	1.50	0.00	0.00	100	3.00	0.00	
309+800	0.00	1.50	0.00	0.00	100	3.00	0.00	
309+900	0.00	1.50	0.00	0.00	100	3.00	0.00	
310+000	0.00	1.50	0.00	0.00	100	3.00	0.00	
310+100	0.00	1.50	0.00	0.00	100	3.00	0.00	
310+200	0.00	1.50	0.00	0.00	100	3.00	0.00	
310+300	0.00	1.50	0.00	0.00	100	3.00	0.00	
310+400	0.00	1.50	0.00	0.00	100	3.00	0.00	
310+500	0.00	1.50	0.00	0.00	100	3.00	0.00	
310+600	0.00	1.50	0.00	0.00	100	3.00	0.00	
310+700	0.00	1.50	0.00	0.00	100	3.00	0.00	
310+800	0.00	1.50	0.00	0.00	100	3.00	0.00	
310+900	0.00	1.50	0.00	0.00	100	3.00	0.00	

<p><b>Legend</b></p> <ul style="list-style-type: none"> <li>--- CENTRE LINE</li> <li>--- PROPOSED CHANGEPATH</li> <li>--- EXISTING SHOULDER</li> <li>--- DIVIDER</li> <li>--- EARTHEN SHOULDER</li> <li>--- SERVICE ROAD</li> <li>--- FOOTPATH CURB DRAN</li> <li>--- PROPOSED ROW</li> </ul>	<p><b>Symbol</b></p> <ul style="list-style-type: none"> <li>--- BRIDGE</li> <li>--- PIPE CULVERT</li> <li>--- ROADWAY</li> </ul>	<p><b>Legend</b></p> <ul style="list-style-type: none"> <li>--- TRANSFORMER</li> <li>--- ELECTRICAL POLE</li> <li>--- FUEL GAS STORE</li> <li>--- WIND PUMP</li> <li>--- WIRE BOUND</li> <li>--- LIGHT POLE</li> <li>--- BALANCING BLOW</li> <li>--- GATE</li> </ul>	<p><b>Symbol</b></p> <ul style="list-style-type: none"> <li>--- OPTICAL FIBRE CABLE</li> <li>--- TELEPHONE POLE</li> <li>--- FIRE CULVERT</li> <li>--- WATER</li> <li>--- BARRING RIGHT OF WAY</li> <li>--- FENCE</li> </ul>	<p><b>Notes</b></p>	<p><b>Scale</b></p> <p>1:1000</p>	<p><b>Scale</b></p> <p>1:1000</p>	<p><b>Scale</b></p> <p>1:1000</p>	<p><b>Scale</b></p> <p>1:1000</p>
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**NATIONAL HIGHWAYS AUTHORITY OF INDIA**

FOR THE LAYING OF RAJAPUR-BURATKAL SECTION OF NH-1 IN THE STATE OF RAJASTHAN UNDER TOP PROFILE - B (PACKAGE NO. NHAP INDIA)

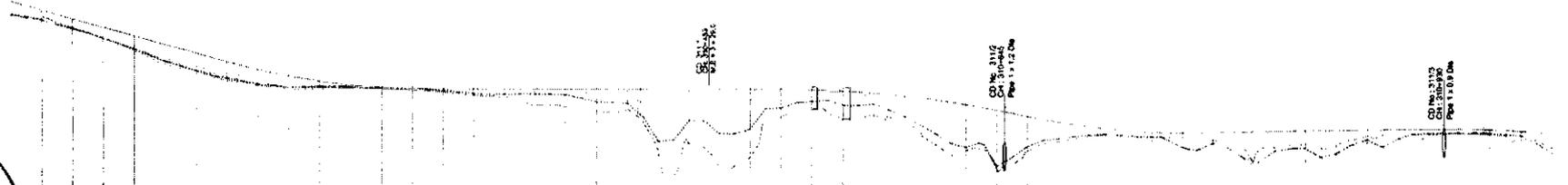
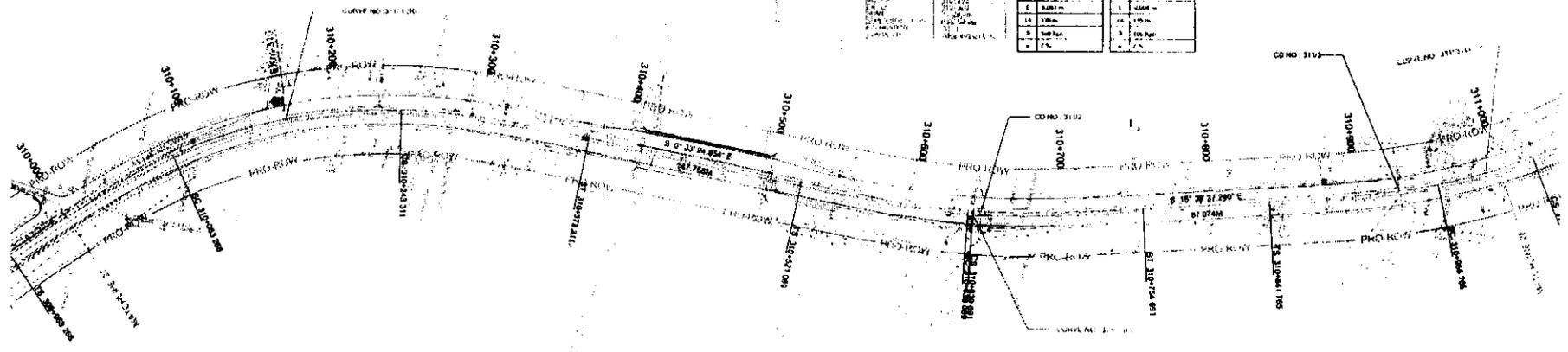
Project No. 0607004    Drawing No. KB-1D-23-001    Sheet No. 24 OF 76    Rev. FDPR



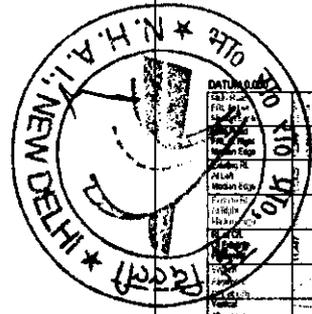




NO. OF	3102	NO. OF	3102	NO. OF	3102
...	...	...	...	...	...



Stationing	Ground Level	Proposed Road Level	Grade (%)	Vertical Curve Data
310+000	112.00	112.00	0.00	
310+050	111.50	111.50	0.00	
310+100	111.00	111.00	0.00	
310+150	110.50	110.50	0.00	
310+200	110.00	110.00	0.00	
310+250	109.50	109.50	0.00	
310+300	109.00	109.00	0.00	
310+350	108.50	108.50	0.00	
310+400	108.00	108.00	0.00	
310+450	107.50	107.50	0.00	
310+500	107.00	107.00	0.00	
310+550	106.50	106.50	0.00	
310+600	106.00	106.00	0.00	
310+650	105.50	105.50	0.00	
310+700	105.00	105.00	0.00	
310+750	104.50	104.50	0.00	
310+800	104.00	104.00	0.00	
310+850	103.50	103.50	0.00	
310+900	103.00	103.00	0.00	
310+950	102.50	102.50	0.00	
311+000	102.00	102.00	0.00	



247

Legend	Centre Line	Median	Proposed Carriage Way	Shoulder	Divided	Earthed Shoulder	Service Road	Footpath Old Drawn	Proposed Now
Legend	Brook	Pipe Culvert	Box Culvert	Transformer	Electrical Pole	Pur and Stone	Wood Pole	Wire Borne	Light Pole
Legend	Optical Fibre Cable	Telephone Cable	Trees	Canal	Utility	Right of Way	Fence		

**NATIONAL HIGHWAYS AUTHORITY OF INDIA**

Project: NHAI, New Delhi

Scale: 1:1000

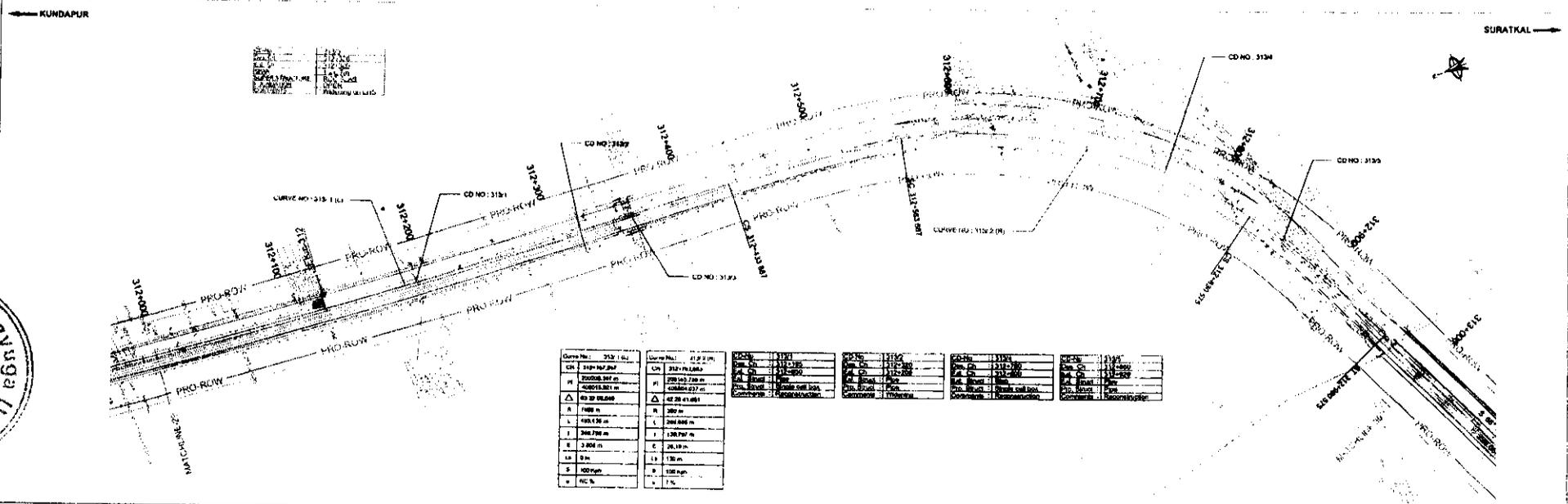
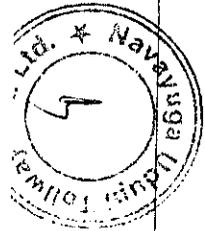
Date: JUN-2008

Sheet No: 26 OF 76

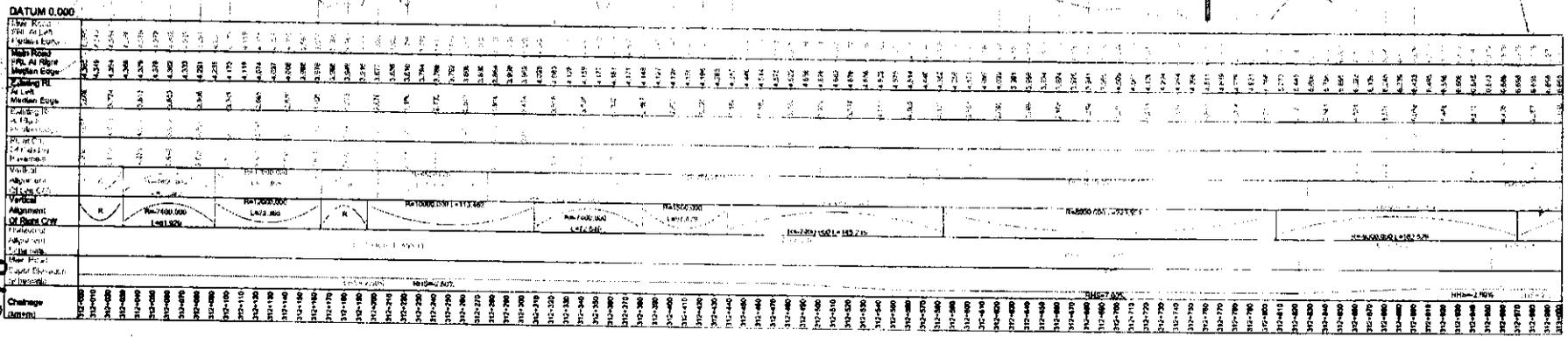
Project No: 0607004

KS-1D-23-001





Curve No: 215 (R)		Curve No: 216 (R)		Curve No: 217 (R)		Curve No: 218 (R)		Curve No: 219 (R)		Curve No: 220 (R)	
CH	215+00.00	CH	216+00.00	CH	217+00.00	CH	218+00.00	CH	219+00.00	CH	220+00.00
R	200.00 m										
H	400.00 m										
A	100.00 m										
B	100.00 m										
I	100.00 m										
E	100.00 m										
L	100.00 m										
S	100.00 m										
RC %	7%										



219

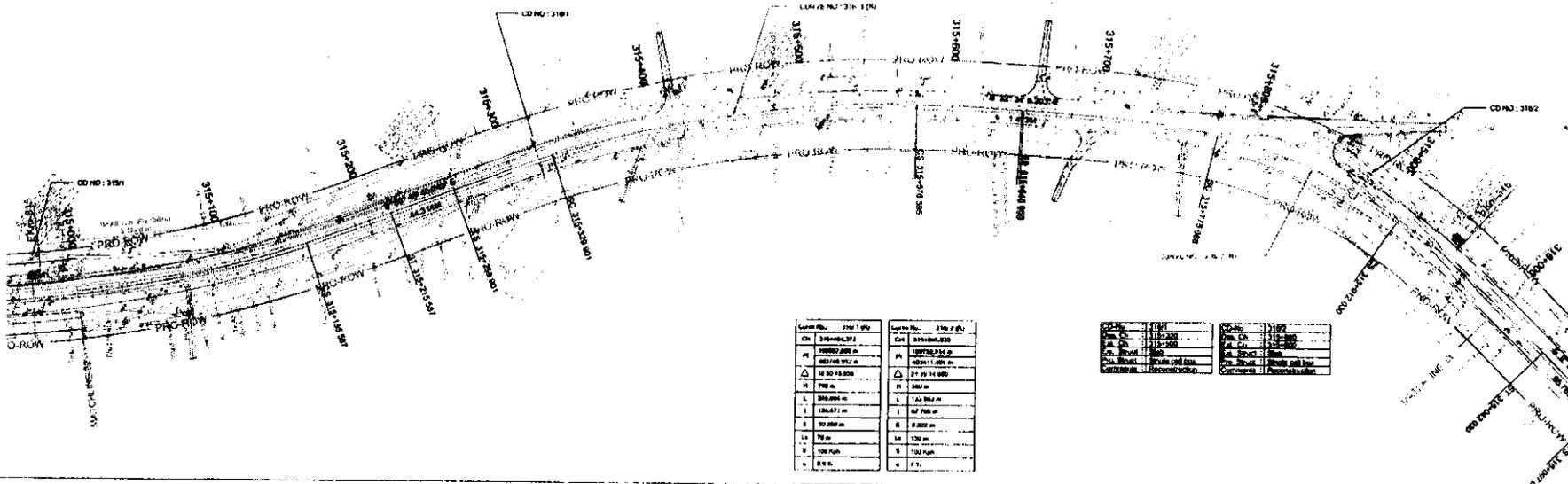
<p><b>Legend</b></p> <p>--- CENTRE LINE</p> <p>--- PROPOSED CARRIAGEWAY</p> <p>--- PAVED SHOULDER</p> <p>--- DIVIDER</p> <p>--- EARTHEN SHOULDER</p> <p>--- SERVICE ROAD</p> <p>--- FOOTPATH</p> <p>--- PROPOSED ROW</p>	<p><b>Symbol</b></p> <p>--- BRIDGE</p> <p>--- PIPE CULVERT</p> <p>--- BOX CULVERT</p>	<p><b>Legend</b></p> <p>--- TRANSDUCER</p> <p>--- ELECTRICAL POLE</p> <p>--- TELEPHONE POLE</p> <p>--- TELEGRAM POLE</p> <p>--- TELEVISION POLE</p> <p>--- TELEGRAPH POLE</p> <p>--- TELEPHONE POLE</p> <p>--- TELEGRAM POLE</p> <p>--- TELEVISION POLE</p> <p>--- TELEGRAPH POLE</p>	<p><b>Scale</b></p> <p>Scale: 1:1000</p> <p>Scale: 1:2000</p> <p>Scale: 1:5000</p> <p>Scale: 1:10000</p>	<p><b>Project Information</b></p> <p>Project No: 060/1004</p> <p>Sheet No: 30 OF 75</p> <p>Scale: 1:1000</p> <p>Scale: 1:2000</p> <p>Scale: 1:5000</p> <p>Scale: 1:10000</p>	<p><b>Company</b></p> <p>NATIONAL HIGHWAYS AUTHORITY OF INDIA</p> <p>WILSON BROTHERS ASSOCIATES INC.</p> <p>WILSON BROTHERS ASSOCIATES PRIVATE LIMITED</p>	<p><b>Approval</b></p> <p>Checked: [Signature]</p> <p>Approved: [Signature]&lt;/</p>
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KUNDAPUR

SURATKAL

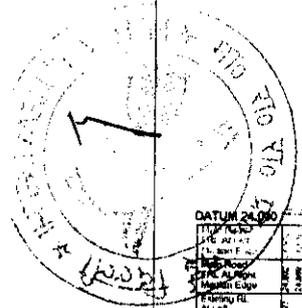


Curve No. 2101 (R)		Curve No. 2102 (L)	
Ch	315+00 to 317+00	Ch	317+00 to 318+00
R	12000.000 m	R	12000.000 m
L	400.000 m	L	400.000 m
Δ	45.000°	Δ	45.000°
W	7.000 m	W	7.000 m
L	120.000 m	L	120.000 m
E	120.000 m	E	120.000 m
LA	7.000 m	LA	7.000 m
EA	7.000 m	EA	7.000 m
W	100.000 m	W	100.000 m
E	100.000 m	E	100.000 m

Scale	1:1000	Scale	1:1000
Proj. Syst.	Universal Transverse Mercator	Proj. Syst.	Universal Transverse Mercator
Zone	48 N	Zone	48 N
Datum	Mean Sea Level	Datum	Mean Sea Level

DATUM 24.00

Station	315+00	315+10	315+20	315+30	315+40	315+50	315+60	315+70	315+80	315+90	316+00	316+10	316+20	316+30	316+40	316+50	316+60	316+70	316+80	316+90	317+00	317+10	317+20	317+30	317+40	317+50	317+60	317+70	317+80	317+90	318+00				
Right Edge	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000				
Right Fil	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000			
Right Marked Edge	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000		
Left Edge	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000		
Left Fil	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	
Left Marked Edge	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000	24.000



252

Legend:

	CENTRE LINE		PROPOSED CARRIAGE WAY
	PAVEMENT SHOULDER		PROPOSED ROAD
	EARTH SHOULDER		FOOTPATH
	SERVICE ROAD		FOOTPATH DRAIN
	PROPOSED ROW		

Legend:

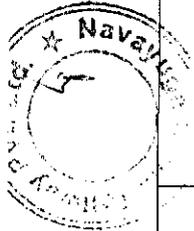
	15000 OHM		ELECTRICAL POLE
	BUILDING STONE		HAND PUMP
	FIRE BOMB		LEVEL POLE
	EXISTING POLE		EXISTING POLE
	EXISTING POLE		EXISTING POLE



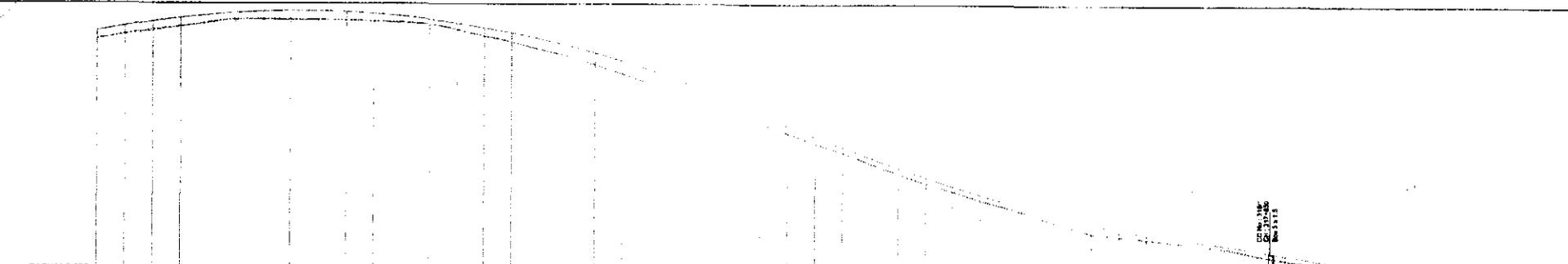
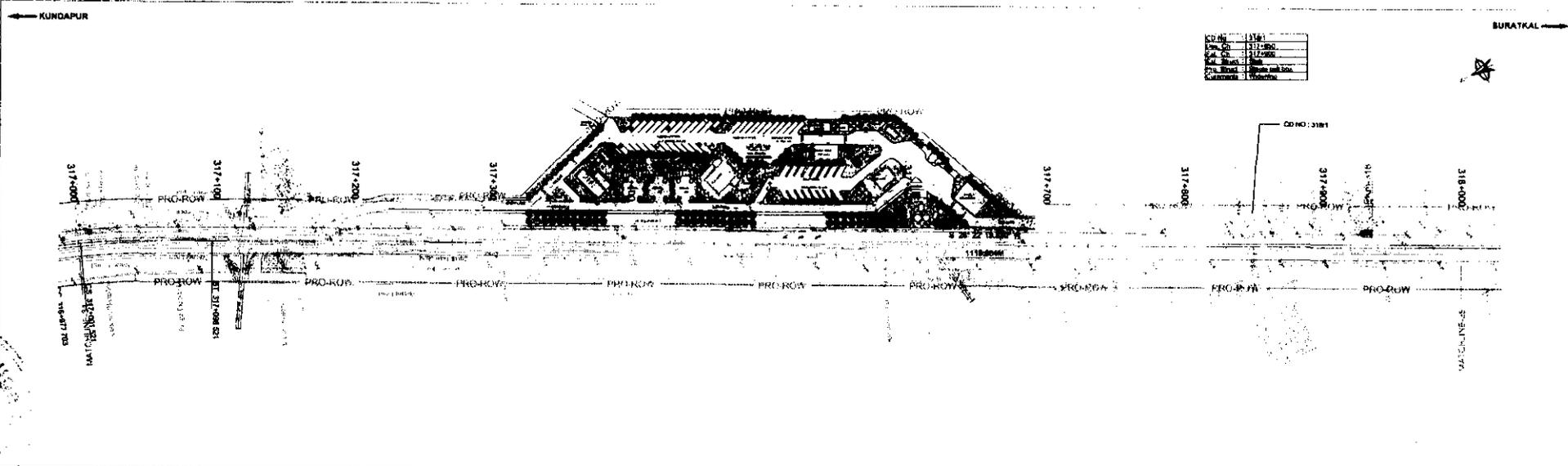
NATIONAL HIGHWAYS AUTHORITY OF INDIA

Checked	By	Date
Checked	By	Date
Checked	By	Date





Scale	1:1000
Proj. No.	317-000
Sheet No.	35 OF 76
Drawn By	...
Checked By	...
Approved By	...



DATUM 6.000	
Chainage	317+000 to 318+000
PRO-ROW	...
Median Edge	...
Existing RL	...
Proposed RL	...
Vertical Curve	...
Alignment of Road	...
Grade	...
Chaque	...

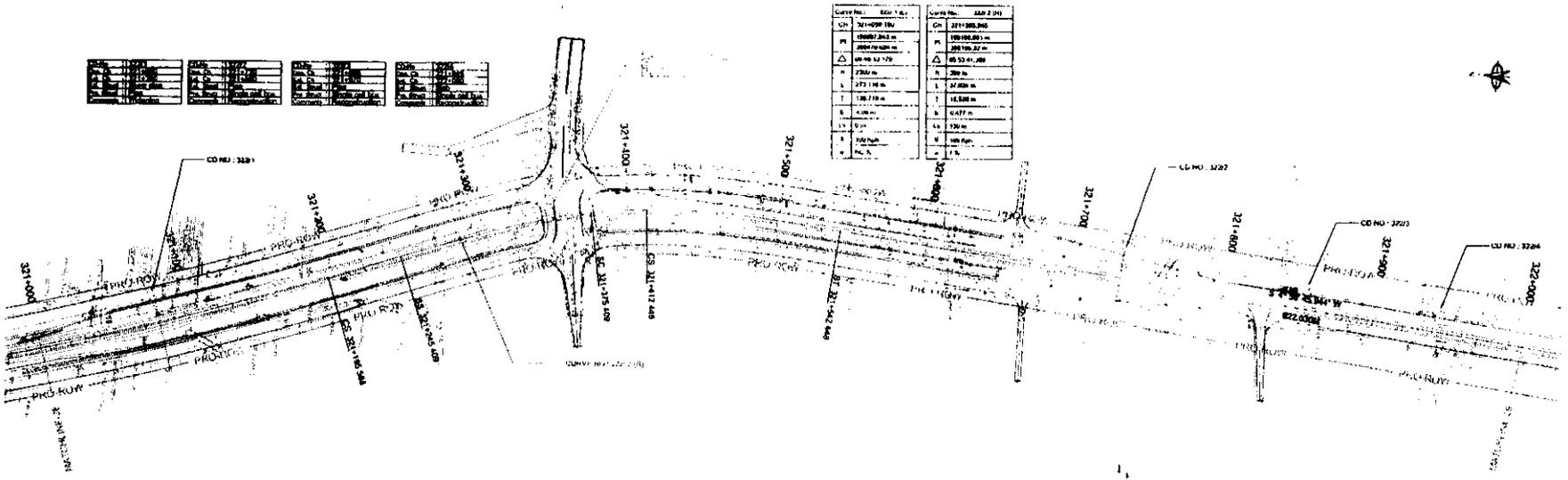
254

<p><b>Legend/Proposed:</b></p> <ul style="list-style-type: none"> <li>CENTRE LINE</li> <li>MIDWAY</li> <li>PROPOSED CANCHAIWAY</li> <li>PAVED SHOULDER</li> <li>ON/DER</li> <li>EARTH SHOULDER</li> <li>SERVICE ROAD</li> <li>FOOTPATH CLM DRAIN</li> <li>PROPOSED ROW</li> </ul>	<p><b>Legend/Existing:</b></p> <ul style="list-style-type: none"> <li>TRANSFORMER</li> <li>ELECTRICAL POLE</li> <li>PUM AND STONE</li> <li>WIND PUMP</li> <li>NAME BOARD</li> <li>LIGHT POLE</li> <li>RAILWAY SIGNAL</li> <li>DATE</li> </ul>	<p><b>Other:</b></p> <ul style="list-style-type: none"> <li>OPTICAL FIBRE CABLE</li> <li>TELEPHONE POLE</li> <li>TREE</li> <li>LANDMARK</li> <li>UTILITY</li> <li>EXISTING RIGHT OF WAY FENCE</li> </ul>	<p><b>NATIONAL HIGHWAYS AUTHORITY OF INDIA</b></p> <p>Project: JUN-2009</p> <p>Sheet No: 35 OF 76</p>
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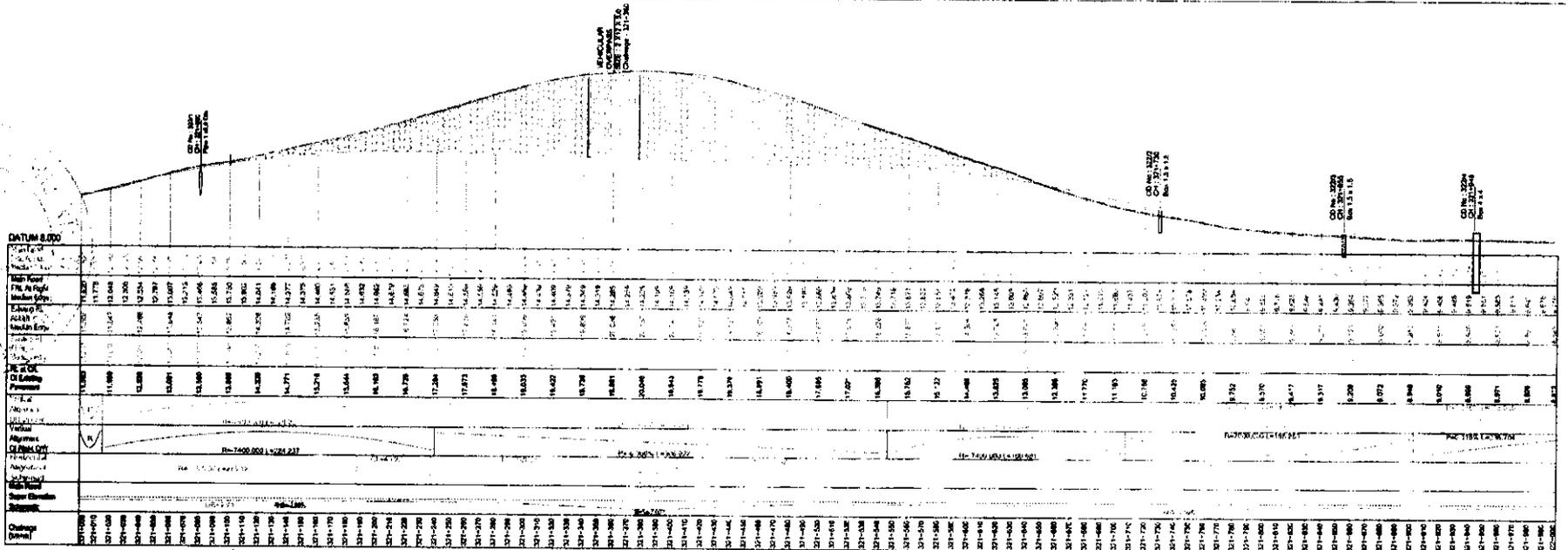








CH	21+000 TO 21+050	CH	21+100 TO 21+150
PH	21+000 TO 21+050	PH	21+100 TO 21+150
△	21+000 TO 21+050	△	21+100 TO 21+150
□	21+000 TO 21+050	□	21+100 TO 21+150
○	21+000 TO 21+050	○	21+100 TO 21+150
◇	21+000 TO 21+050	◇	21+100 TO 21+150
▽	21+000 TO 21+050	▽	21+100 TO 21+150
◇	21+000 TO 21+050	◇	21+100 TO 21+150
◇	21+000 TO 21+050	◇	21+100 TO 21+150
◇	21+000 TO 21+050	◇	21+100 TO 21+150
◇	21+000 TO 21+050	◇	21+100 TO 21+150
◇	21+000 TO 21+050	◇	21+100 TO 21+150



Stationing	Proposed Road Level	Ground Level	Clearance
21+000	11.775	11.775	0.000
21+010	11.840	11.840	0.000
21+020	12.000	12.000	0.000
21+030	12.250	12.250	0.000
21+040	12.500	12.500	0.000
21+050	12.750	12.750	0.000
21+060	13.000	13.000	0.000
21+070	13.250	13.250	0.000
21+080	13.500	13.500	0.000
21+090	13.750	13.750	0.000
21+100	14.000	14.000	0.000
21+110	14.250	14.250	0.000
21+120	14.500	14.500	0.000
21+130	14.750	14.750	0.000
21+140	15.000	15.000	0.000
21+150	15.250	15.250	0.000
21+160	15.500	15.500	0.000
21+170	15.750	15.750	0.000
21+180	16.000	16.000	0.000
21+190	16.250	16.250	0.000
21+200	16.500	16.500	0.000
21+210	16.750	16.750	0.000
21+220	17.000	17.000	0.000
21+230	17.250	17.250	0.000
21+240	17.500	17.500	0.000
21+250	17.750	17.750	0.000
21+260	18.000	18.000	0.000
21+270	18.250	18.250	0.000
21+280	18.500	18.500	0.000
21+290	18.750	18.750	0.000
21+300	19.000	19.000	0.000
21+310	19.250	19.250	0.000
21+320	19.500	19.500	0.000
21+330	19.750	19.750	0.000
21+340	20.000	20.000	0.000
21+350	20.250	20.250	0.000
21+360	20.500	20.500	0.000
21+370	20.750	20.750	0.000
21+380	21.000	21.000	0.000
21+390	21.250	21.250	0.000
21+400	21.500	21.500	0.000
21+410	21.750	21.750	0.000
21+420	22.000	22.000	0.000
21+430	22.250	22.250	0.000
21+440	22.500	22.500	0.000
21+450	22.750	22.750	0.000
21+460	23.000	23.000	0.000
21+470	23.250	23.250	0.000
21+480	23.500	23.500	0.000
21+490	23.750	23.750	0.000
21+500	24.000	24.000	0.000
21+510	24.250	24.250	0.000
21+520	24.500	24.500	0.000
21+530	24.750	24.750	0.000
21+540	25.000	25.000	0.000
21+550	25.250	25.250	0.000
21+560	25.500	25.500	0.000
21+570	25.750	25.750	0.000
21+580	26.000	26.000	0.000
21+590	26.250	26.250	0.000
21+600	26.500	26.500	0.000
21+610	26.750	26.750	0.000
21+620	27.000	27.000	0.000
21+630	27.250	27.250	0.000
21+640	27.500	27.500	0.000
21+650	27.750	27.750	0.000
21+660	28.000	28.000	0.000
21+670	28.250	28.250	0.000
21+680	28.500	28.500	0.000
21+690	28.750	28.750	0.000
21+700	29.000	29.000	0.000
21+710	29.250	29.250	0.000
21+720	29.500	29.500	0.000
21+730	29.750	29.750	0.000
21+740	30.000	30.000	0.000
21+750	30.250	30.250	0.000
21+760	30.500	30.500	0.000
21+770	30.750	30.750	0.000
21+780	31.000	31.000	0.000
21+790	31.250	31.250	0.000
21+800	31.500	31.500	0.000
21+810	31.750	31.750	0.000
21+820	32.000	32.000	0.000
21+830	32.250	32.250	0.000
21+840	32.500	32.500	0.000
21+850	32.750	32.750	0.000
21+860	33.000	33.000	0.000
21+870	33.250	33.250	0.000
21+880	33.500	33.500	0.000
21+890	33.750	33.750	0.000
21+900	34.000	34.000	0.000
21+910	34.250	34.250	0.000
21+920	34.500	34.500	0.000
21+930	34.750	34.750	0.000
21+940	35.000	35.000	0.000
21+950	35.250	35.250	0.000
21+960	35.500	35.500	0.000
21+970	35.750	35.750	0.000
21+980	36.000	36.000	0.000
21+990	36.250	36.250	0.000
22+000	36.500	36.500	0.000

258

Legend/Remarks	Centre Line	Median	Proposed Shoulder	Proposed Road	Proposed Row
Centre Line	—	—	—	—	—
Median	—	—	—	—	—
Proposed Shoulder	—	—	—	—	—
Proposed Road	—	—	—	—	—
Proposed Row	—	—	—	—	—

Legend/Remarks	Proposed	Existing
TRANSFORMER	—	—
ELECTRIC POLE	—	—
FULL CORD STONE	—	—
POWER PUMP	—	—
POWER SPOKE	—	—
LIGHT POLE	—	—
VALVING STATION	—	—
DATE	—	—

**NATIONAL HIGHWAYS AUTHORITY OF INDIA**

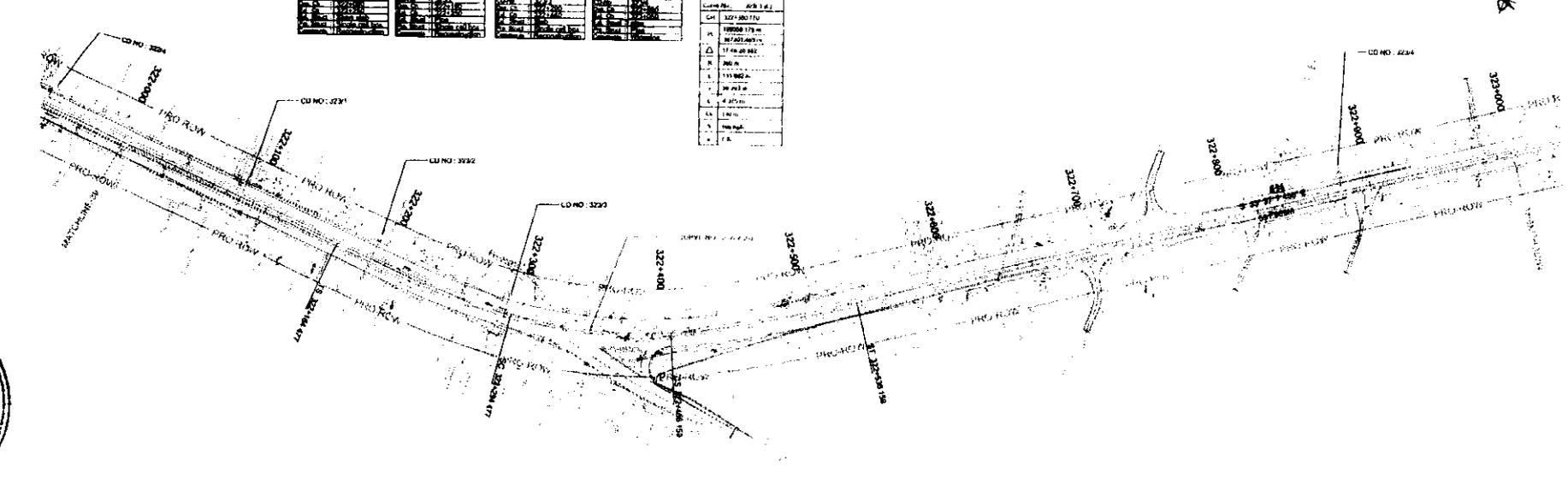
WB&A SOUTH ASSOCIATES PVT. LTD.

WB&A SOUTH ASSOCIATES PRIVATE LIMITED

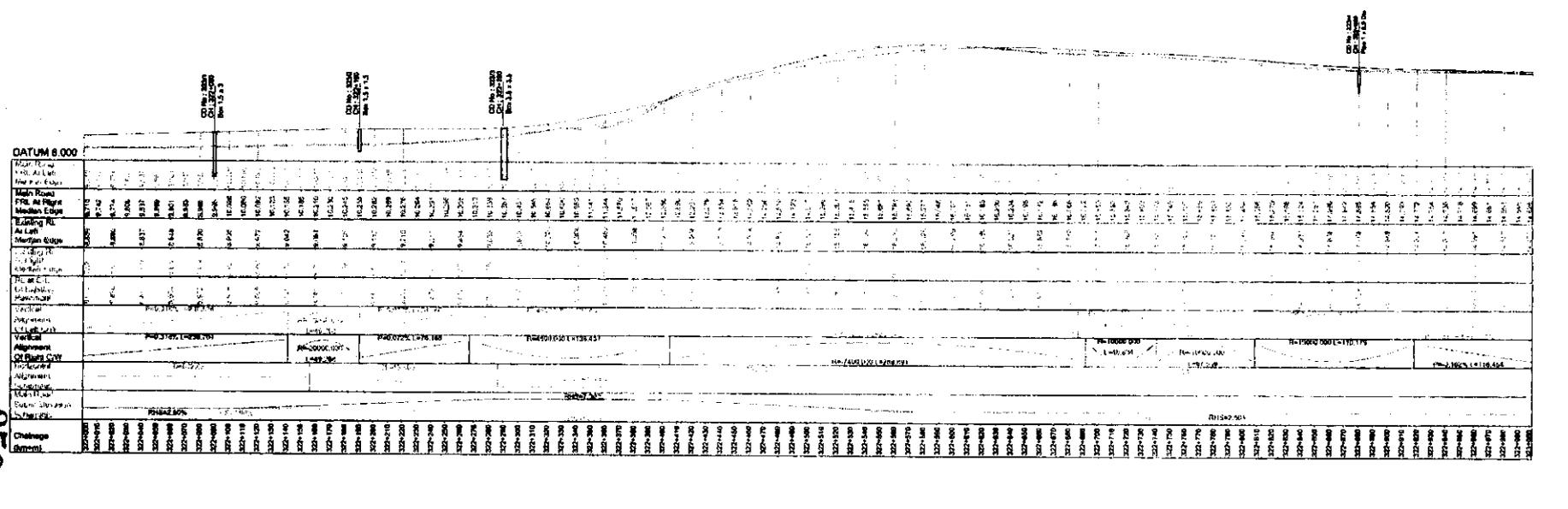
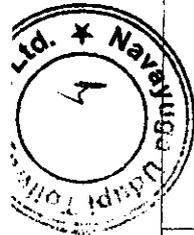
27/07/11 WB&A South

Project No.	0807004	Drawing No.	KS-1D-23-001	Sheet No.	39 OF 76
Date	JUN-2008	Project No.	0807004	Drawing No.	KS-1D-23-001
Scale	1:1000	Scale	1:1000	Scale	1:1000
Author	AS	Scale	1:1000	Scale	1:1000
Checked	AJ	Scale	1:1000	Scale	1:1000
Approved	MS	Scale	1:1000	Scale	1:1000

KUNDAPUR ← SURATHAL →



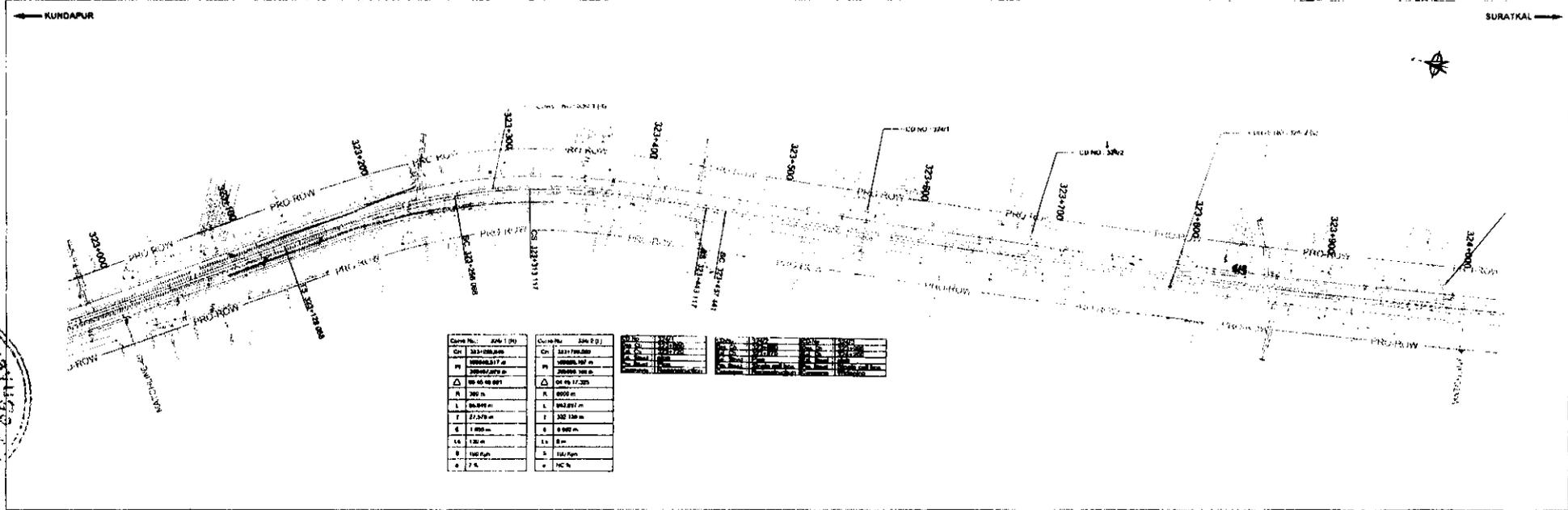
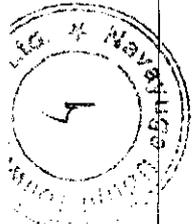
Code No.	Description	Quantity
1	10000 LTR	1
2	10000 LTR	1
3	10000 LTR	1
4	10000 LTR	1
5	10000 LTR	1
6	10000 LTR	1
7	10000 LTR	1
8	10000 LTR	1
9	10000 LTR	1
10	10000 LTR	1



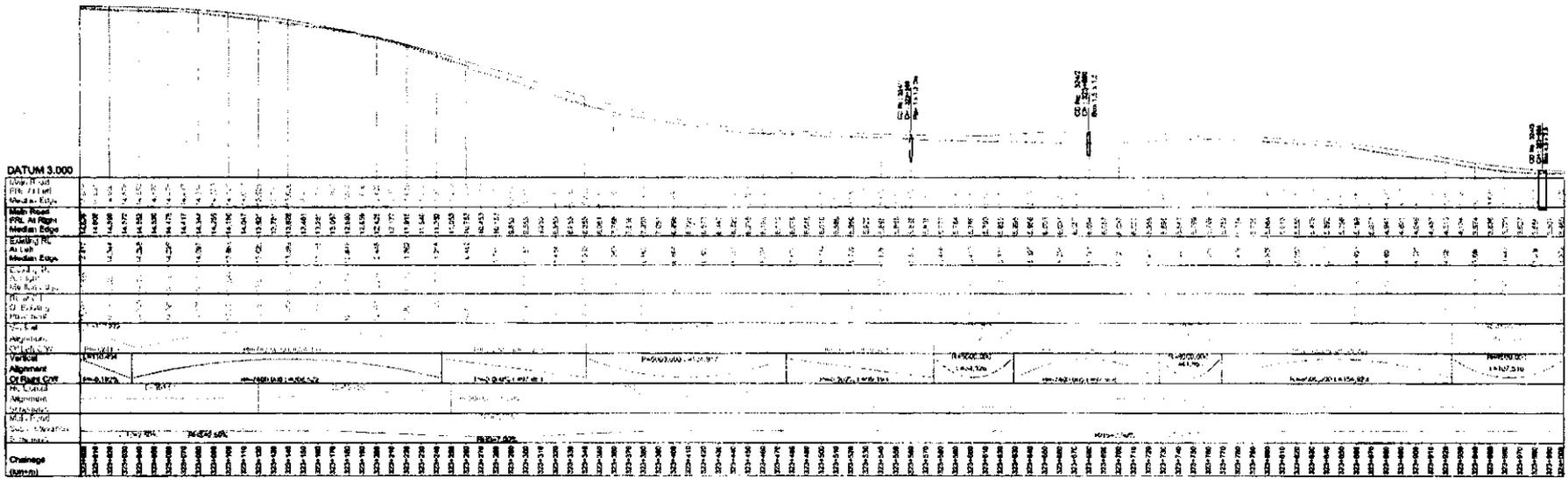
Station	Prop. Road	Ex. Road	Median Edge	Existing RL	Prop. RL	Vertical Curve
322+000	8.110	8.110	8.110	8.110	8.110	
322+020	8.120	8.120	8.120	8.120	8.120	
322+040	8.130	8.130	8.130	8.130	8.130	
322+060	8.140	8.140	8.140	8.140	8.140	
322+080	8.150	8.150	8.150	8.150	8.150	
322+100	8.160	8.160	8.160	8.160	8.160	
322+120	8.170	8.170	8.170	8.170	8.170	
322+140	8.180	8.180	8.180	8.180	8.180	
322+160	8.190	8.190	8.190	8.190	8.190	
322+180	8.200	8.200	8.200	8.200	8.200	
322+200	8.210	8.210	8.210	8.210	8.210	
322+220	8.220	8.220	8.220	8.220	8.220	
322+240	8.230	8.230	8.230	8.230	8.230	
322+260	8.240	8.240	8.240	8.240	8.240	
322+280	8.250	8.250	8.250	8.250	8.250	
322+300	8.260	8.260	8.260	8.260	8.260	

259

<b>Legend</b> CENTRE LINE PROPOSED CARRIAGEWAY PAVED SHOULDER DIVIDER EXISTING SHOULDER SERVICE ROAD FOOTPATH/CUL-DE-SAC PROPOSED ROW	<b>GRADE</b> PIPE DIA 150 R/S DIA 150	<b>Legend (Continued)</b> TRANSFORMER ELECTRICAL POLE PUMP ONE BEFORE PUMP NAME BOARD LIGHT POLE ALL OTHER STONE GWT	<b>Legend (Continued)</b> OPTICAL FIBRE CABLE TELEPHONE POLE TREE OVERTAKE UTILITY EXISTING RIGHT OF WAY FENCE		<b>NATIONAL HIGHWAYS AUTHORITY OF INDIA</b> PROJECT: KUNDAPUR SURATHAL SECTION OF NH-10 DRAWING NO: PS-10-23-001	Scale: 1:1000 Date: JUN-2009	Sheet No: 40 OF 16
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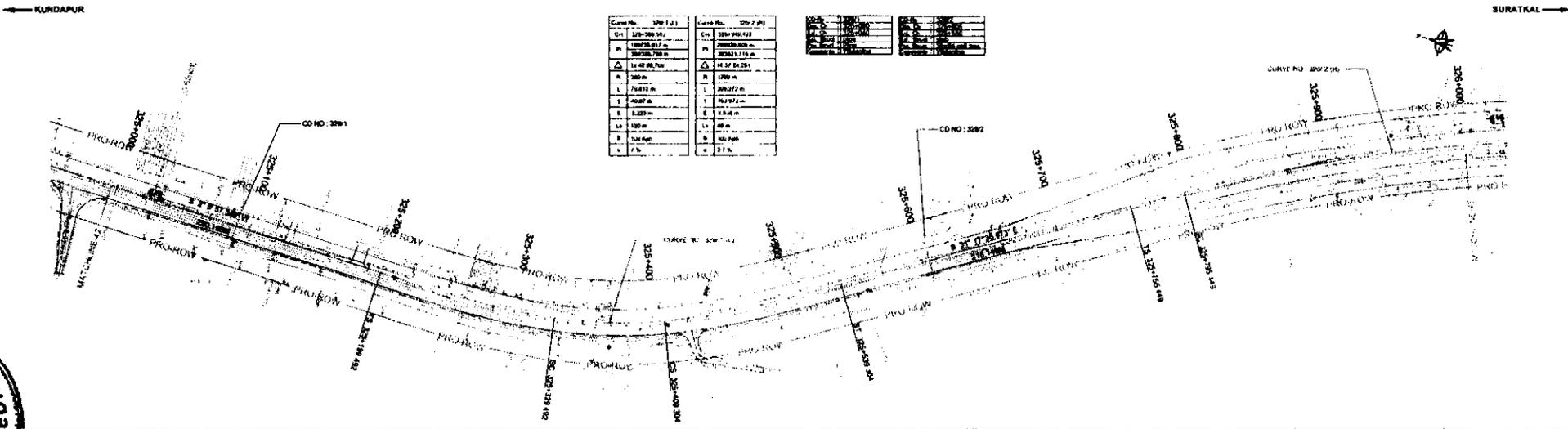
Curve No. 206 (P)		Curve No. 206 (S)	
Ch	323+000.000	Ch	323+700.000
PI	323+000.000	PI	323+700.000
R	80.46 m	R	8000 m
L	96.84 m	L	96.84 m
T	27.27 m	T	202.10 m
E	1.00 m	E	0.00 m
Ls	1.00 m	Ls	0 m
B	100 m	B	100 m
a	7%	a	10%



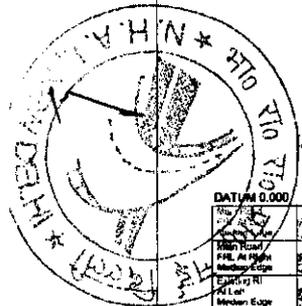
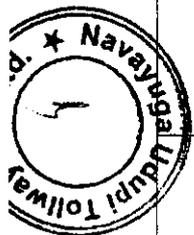
250

<p><b>Legend:</b></p> <ul style="list-style-type: none"> <li>— CENTRE LINE</li> <li>— PROPOSED CARRIAGEWAY</li> <li>— PAVED SHOULDER</li> <li>— SHOULDER</li> <li>— BARTHEN SHOULDER</li> <li>— SERVICE ROAD</li> <li>— FOOTPATH CLEAR DRAIN</li> <li>— PROPOSED ROW</li> </ul>	<p><b>LEGEND:</b></p> <ul style="list-style-type: none"> <li>— SANDS</li> <li>— PIPE CULVERT</li> <li>— BOX CULVERT</li> </ul>	<p><b>Legend:</b></p> <ul style="list-style-type: none"> <li>— TRANSFORMER</li> <li>— ELECTRICAL POLE</li> <li>— PULL LINE STORE</li> <li>— WIND PUMP</li> <li>— NAME BOARD</li> <li>— LIGHT POLE</li> <li>— ALONG LINE STATION GATE</li> </ul>	<p><b>Legend:</b></p> <ul style="list-style-type: none"> <li>— OPTICAL FIBRE CABLE</li> <li>— TELEPHONE POLE</li> <li>— FENCE</li> <li>— CULVERT</li> <li>— EXISTING RIGHT OF WAY FENCE</li> </ul>	<p><b>NATIONAL HIGHWAYS AUTHORITY OF INDIA</b></p> <p>WILBUR SMITH ASSOCIATES PRIVATE LIMITED</p> <p>WILBUR SMITH ASSOCIATES PRIVATE LIMITED</p> <p>WILBUR SMITH ASSOCIATES PRIVATE LIMITED</p>	<p><b>DESIGNED:</b> 09</p> <p><b>CHECKED:</b> 01</p> <p><b>APPROVED:</b> 008</p> <p><b>Scale:</b> 1:1000</p> <p><b>Scale:</b> 4:100</p> <p><b>Date:</b> JUN-2009</p> <p><b>Project No:</b> 060/004</p> <p><b>Drawing No:</b> AS-1D-23-001</p> <p><b>Sheet No.:</b> 41 OF 76</p> <p><b>FOR:</b> FDP</p>
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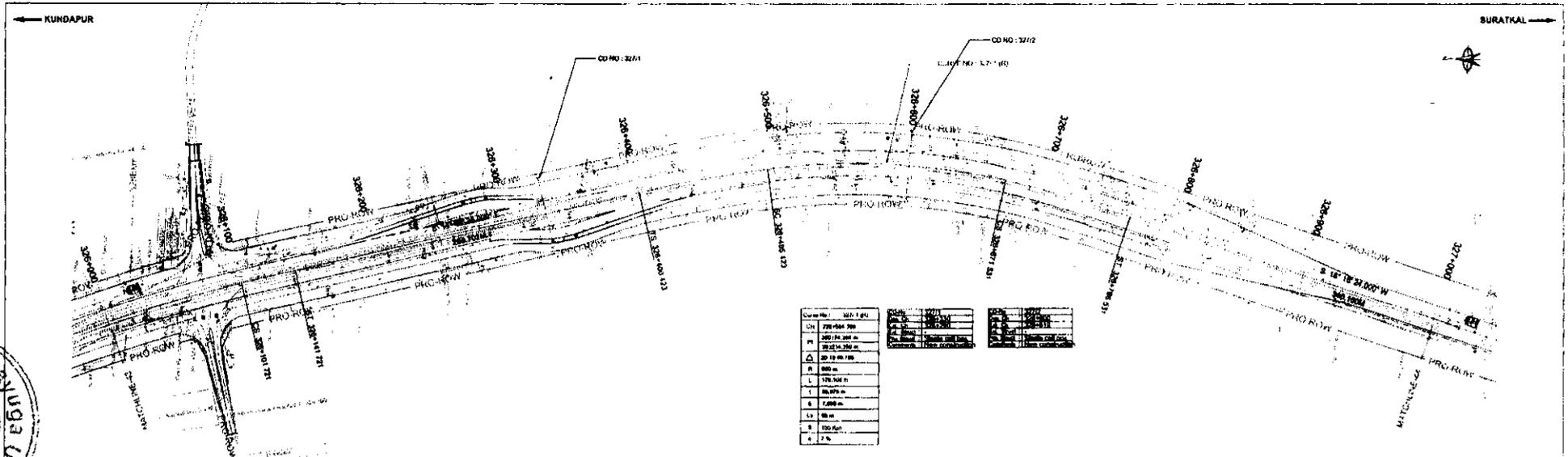
Curve No.	281 (L.S.)	Curve No.	282 (P.S.)
CH	127.200 m	CH	129.960 m
R	1000.000 m	R	1000.000 m
E	202.000 m	E	202.000 m
Δ	14.07 m	Δ	14.07 m
R	1200 m	R	1200 m
L	74.47 m	L	74.47 m
E	40.00 m	E	40.00 m
L	13.50 m	L	13.50 m
R	137.00 m	R	137.00 m
E	10.00 m	E	10.00 m
R	1200 m	R	1200 m
L	74.47 m	L	74.47 m



Stationing	DATUM 0.000		Elevation	Profile	Vertical Curve	Slope	Grade	Remarks
	Proposed	Existing						
3281+00	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3281+10	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3281+20	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3281+30	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3281+40	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3281+50	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3281+60	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3281+70	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3281+80	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3281+90	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3282+00	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3282+10	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3282+20	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3282+30	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3282+40	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3282+50	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3282+60	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3282+70	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3282+80	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3282+90	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3283+00	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3283+10	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3283+20	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3283+30	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3283+40	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3283+50	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3283+60	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3283+70	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3283+80	0.00	0.00	10.00	10.00	10.00	0.00	0.00	
3283+90	0.00	0.00	10.00	10.00	10.00	0.00	0.00	

262

<p>Legend</p> <ul style="list-style-type: none"> <li>CENTRE LINE</li> <li>ROADWAY</li> <li>PROPOSED CARRIAGEWAY</li> <li>PAVED SHOULDER</li> <li>OPEN SHOULDER</li> <li>EARTHEN SHOULDER</li> <li>SEWER MAIN</li> <li>FOOTPATH CUM DRAIN</li> <li>PROPOSED ROW</li> </ul>	<p>SEWER</p> <ul style="list-style-type: none"> <li>PIPE DUCT</li> <li>BOX CULVERT</li> </ul>	<p>Legend</p> <ul style="list-style-type: none"> <li>TRANSFORMER</li> <li>ELECTRICAL POLE</li> <li>FUEL OIL STORE</li> <li>WATER PUMP</li> <li>NAME BOARD</li> <li>LIGHT POLE</li> <li>EXISTING STATION</li> <li>DATE</li> </ul>	<p>Legend</p> <ul style="list-style-type: none"> <li>OPTICAL FIBRE CABLE</li> <li>TELEPHONE POLE</li> <li>MARKER</li> <li>WATER</li> <li>EXISTING RIGHT OF WAY</li> <li>PERMITS</li> </ul>	<p>Client</p> <p><b>NATIONAL HIGHWAYS AUTHORITY OF INDIA</b></p> <p>Project</p> <p>FOR 44 LANE OF KURDAPUR-SURATKAL SECTION OF NH-17 IN THE STATE OF GUJARAT UNDER ROAD PROFILE - B PROVISION NO. 10-01</p>	<p>Scale</p> <p>Horizontal: 1:1000</p> <p>Vertical: 1:100</p> <p>Date: JUN-2009</p> <p>Project No: 0807004</p> <p>Sheet No: KS-1D-23-001</p> <p>Sheet of: 43 OF 78</p> <p>Rev: FDR</p>
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Curve No.	326+100
Ch	326+000-326
PI	326+100.000
Δ	30.1848196
R	300.000
L	178.500
T	36.875
S	1.000
L <sub>1</sub>	68.000
L <sub>2</sub>	110.500
Δ	2%



DATUM 4,000

Station	Prop. Road	Prop. At Right	Prop. At Left	Prop. At Top	Prop. At Bottom	Prop. At Side	Prop. At End	Prop. At Corner	Prop. At Junction	Prop. At Intersection	Prop. At Abutment	Prop. At Bridge	Prop. At Tunnel	Prop. At Viaduct	Prop. At Overpass	Prop. At Underpass	Prop. At Culvert	Prop. At Drainage	Prop. At Retention	Prop. At Erosion	Prop. At Slope	Prop. At Embankment	Prop. At Excavation	Prop. At Foundation	Prop. At Structure	Prop. At Detail	Prop. At Note
326+000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
326+100	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
326+200	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
326+300	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
326+400	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
326+500	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
326+600	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
326+700	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
326+800	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
326+900	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
327+000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	

263

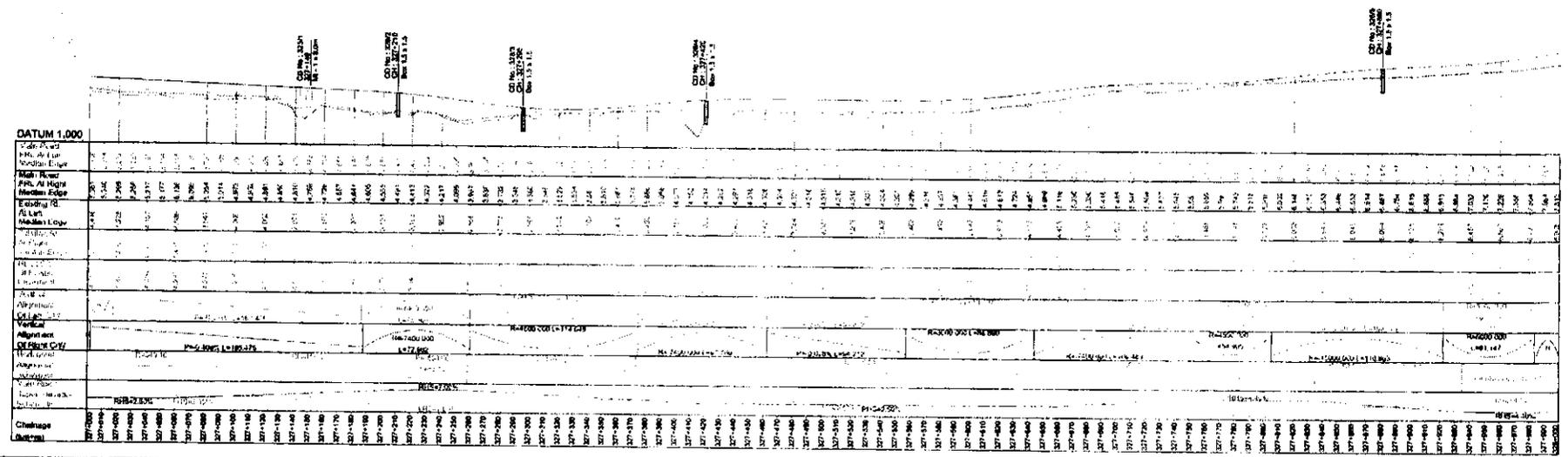
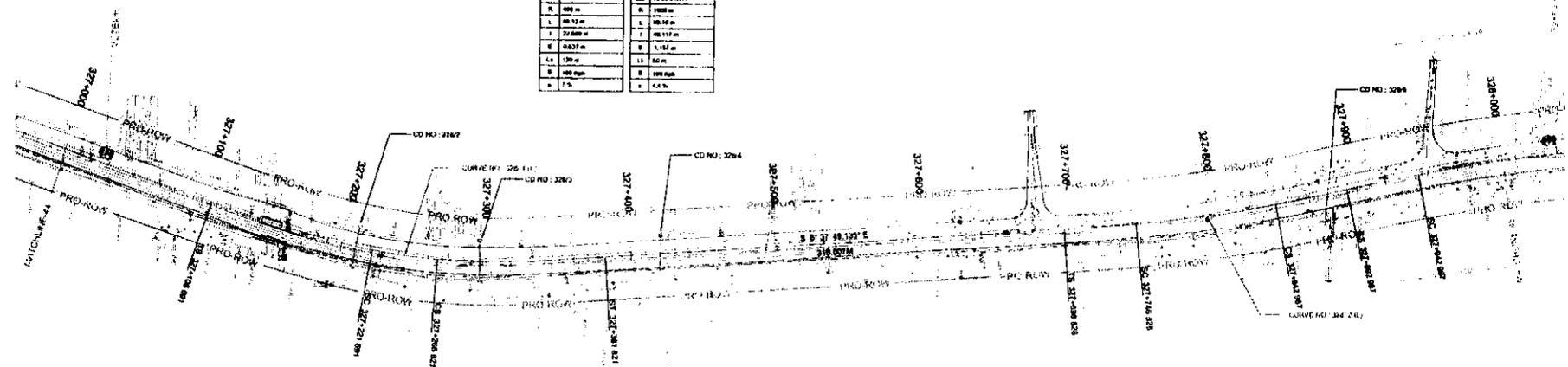
<p>Legend</p> <ul style="list-style-type: none"> <li>Existing LHM</li> <li>Median</li> <li>Proposed Carriageway</li> <li>Paved Shoulder</li> <li>Open</li> <li>Barthen Shoulder</li> <li>Service Road</li> <li>Footpath cum Drain</li> <li>Proposed ROW</li> </ul>	<p>SHOES</p> <ul style="list-style-type: none"> <li>PIPE CULVERT</li> <li>BOX CULVERT</li> </ul>	<p>Legend</p> <ul style="list-style-type: none"> <li>THRESHOLD</li> <li>ELECTRICAL POLE</li> <li>PAVING STONE</li> <li>MANHOLE</li> <li>MANHOLE BOARD</li> <li>LIGHT POLE</li> <li>SECURE THE STONE</li> <li>GATE</li> </ul>	<p>Legend</p> <ul style="list-style-type: none"> <li>OPTICAL FIBRE CABLE</li> <li>TELEPHONE POLE</li> <li>TREES</li> <li>DRAINAGE</li> <li>UTILITY</li> <li>EXISTING HEIGHT OF ROAD FENCE</li> </ul>	<p>NATIONAL HIGHWAYS AUTHORITY OF INDIA</p> <p>WILBUR SMITH ASSOCIATES PRIVATE LIMITED</p> <p>27 PETH, WILBUR SMITH ASSOCIATES PRIVATE LIMITED</p>	<p>Scale: 1:1000</p> <p>Sheet No: 44 OF 76 (DPA)</p>
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KURDAPUR

SURATRAL

Curve No. 207 (S)		Curve No. 208 (S)	
CH	271.940	CH	271.940
PI	269.140	PI	270.000
LA	10.215	LA	10.215
L	48.30	L	48.30
E	22.80	E	22.80
M	0.407	M	0.407
N	1.20	N	1.20
R	145.00	R	145.00
S	1%	S	0.4%

CH	271.940	CH	271.940	CH	271.940	CH	271.940
PI	269.140	PI	270.000	PI	270.000	PI	270.000
LA	10.215	LA	10.215	LA	10.215	LA	10.215
L	48.30	L	48.30	L	48.30	L	48.30
E	22.80	E	22.80	E	22.80	E	22.80
M	0.407	M	0.407	M	0.407	M	0.407
N	1.20	N	1.20	N	1.20	N	1.20
R	145.00	R	145.00	R	145.00	R	145.00
S	1%	S	0.4%	S	0.4%	S	0.4%



264

	CENTRE LINE		BRIDGE		TRANSVERSE GROOVE		OPTICAL FIBRE CABLE
	MEDIAN		PIPE CLAY BT		ELECTRICAL POLE		FREE
	PAVED SHOULDER		SOIL CLAY BT		FULL SIZE STONE		QUARRY
	DIVIDER		HAND PUMP		UTILITY		EAST END OF NEW FENCE
	EARTH SHOULDER		JAMB BOARD		LIGHT POLE		EXISTING FOOT OF NEW FENCE
	SERVICE ROAD		LIGHT POLE		EXISTING FOOT OF NEW FENCE		
	FOOTPATH OR DRAIN		GATE				
	PROPOSED ROW						

**NATIONAL HIGHWAYS AUTHORITY OF INDIA**

PROJECT: **PROVIDING AND MAINTAINING ROAD INFRASTRUCTURE**

FROM CH. 327+000 TO 328+000

Scale: 1:500

Date: JUN-2009

Project No: 0607004

Drawing No: KS-1D-23-001

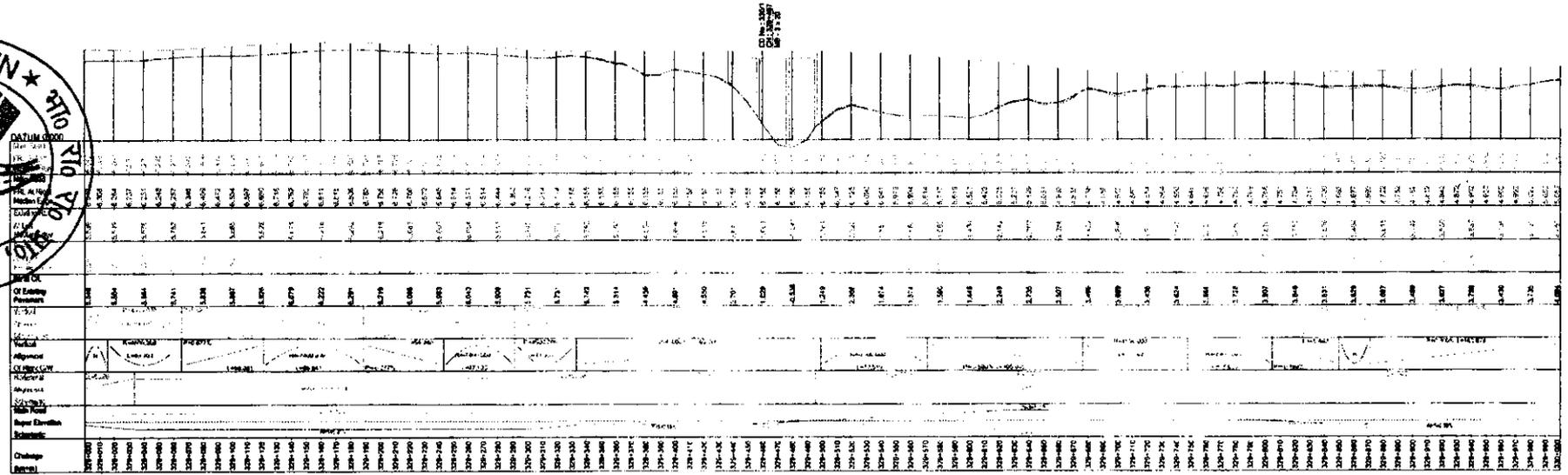
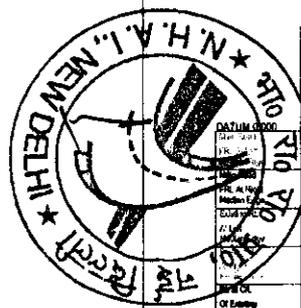
Sheet No: 45 OF 76

Rev: FDR





Curve No. 328 (1.0)		Curve No. 329 (3.0)	
LC1	328+170.000	LC1	329+484.141
PC	328+000.000	PC	329+228.000
PT	328+170.000	PT	329+417.000
LC2	328+170.000	LC2	329+417.000
PC	328+000.000	PC	329+228.000
PT	328+170.000	PT	329+417.000
LC3	328+170.000	LC3	329+417.000
PC	328+000.000	PC	329+228.000
PT	328+170.000	PT	329+417.000
LC4	328+170.000	LC4	329+417.000
PC	328+000.000	PC	329+228.000
PT	328+170.000	PT	329+417.000



266

Legend/Proposed:

CENTRE LINE	==
MICHION	---
PROPOSED CARRIAGE WAY	---
PAVED SHOULDER	---
DRAIN	---
EARTHEN SHOULDER	---
SERVICE ROAD	---
FOOTPATH/GUM DRAIN	---
PROPOSED NOW	---

Legend/Existing:

THRESHOLD	---
ELECTRICAL POLE	---
PUMP OR/STOP	---
WIRE PUMP	---
WIRE BRANCH	---
LIGHT POLE	---
WALL/PAV. SIGN	---
DATE	---

Legend/Proposed:

OPTICAL FIBRE CABLE	---
TELEPHONE POLE	---
TRUSS	---
CULVERT	---
UTILITY	---
EARTH TIGHTEN OF MAT	---
PAVING	---

**NATIONAL HIGHWAYS AUTHORITY OF INDIA**

Project: **CH-328-000 TO 330+000**

Scale: 1:1000

Date: JUN-2009

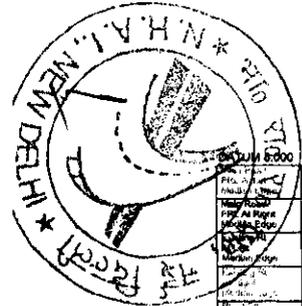
Stationing	Elevation	Grade (%)	Vertical Curve Data
328+000	10.00	0.00	
328+100	10.50	0.50	
328+200	11.00	1.00	
328+300	11.50	1.50	
328+400	12.00	2.00	
328+500	12.50	2.50	
329+000	13.00	3.00	
329+100	13.50	3.50	
329+200	14.00	4.00	
329+300	14.50	4.50	
329+400	15.00	5.00	
329+500	15.50	5.50	











271

Sl. No.	Particulars	Amount	Total
1	...	...	...
2	...	...	...
3	...	...	...
4	...	...	...
5	...	...	...
6	...	...	...
7	...	...	...
8	...	...	...
9	...	...	...
10	...	...	...
11	...	...	...
12	...	...	...
13	...	...	...
14	...	...	...
15	...	...	...
16	...	...	...
17	...	...	...
18	...	...	...
19	...	...	...
20	...	...	...
21	...	...	...
22	...	...	...
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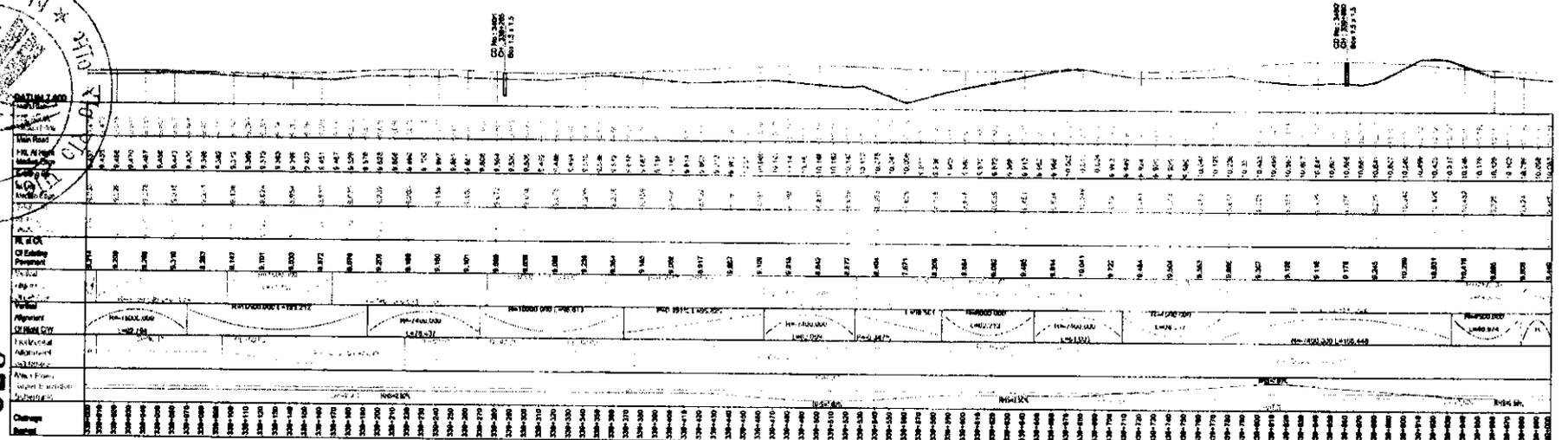
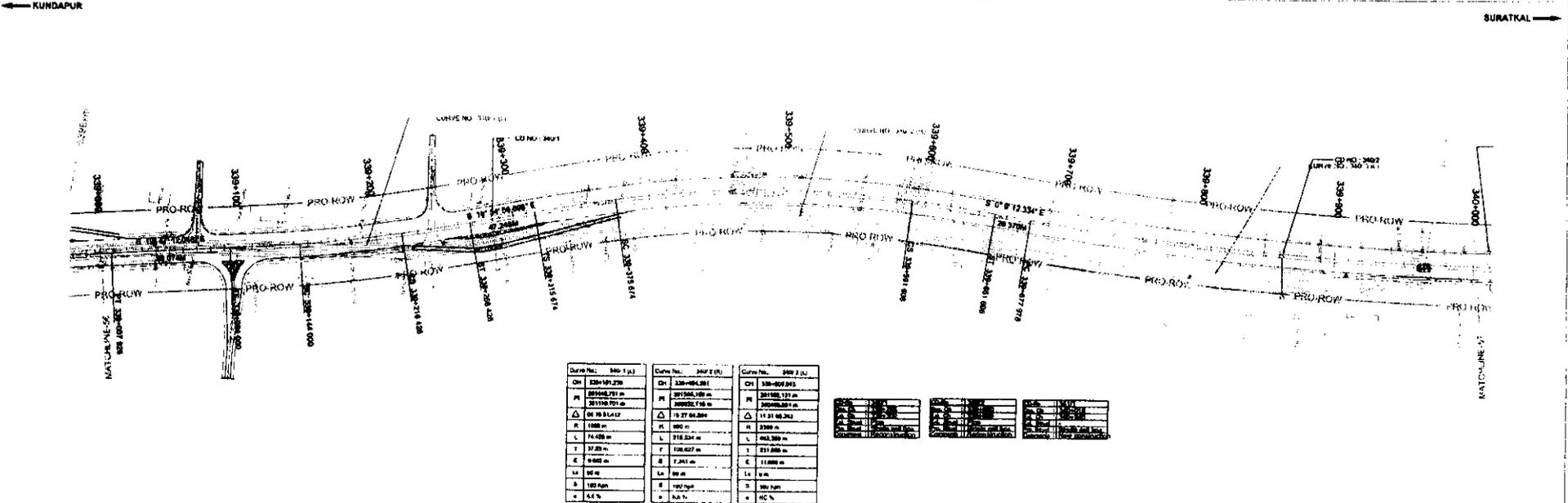
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276

<b>Legend (Symbol)</b> CENTRE LINE MEDIAN PROPOSED CARRIAGE WAY PAVED SHOULDER DIVIDER SURFACE SHOULDER SERVICE ROAD FOOTPATH CURB DRAIN PROPOSED ROW	<b>SYMBOL</b> PIPE CULVERT BOX CULVERT	<b>Legend (Symbol)</b> TOWERPOST ELECTRICAL POLE PUBLIC STORE FENCED POND RAIL SIGN LIGHT POLE SIGNAGE DATE	<b>SYMBOL</b> OPTICAL FIBRE CABLE TELEPHONE POLE FIRE GAS LIGHT VILLAGE EASTING POINT OF ROAD FENCE	<b>NATIONAL HIGHWAYS AUTHORITY OF INDIA</b> DESIGNER: J.S. CHECKED: A.P. APPROVED: M.M. SCALE: 1:1000 DATE: JUN-2009 PROJECT NO.: 0007004 DRAWING NO.: KS-1D-23-001 SHEET NO.: 57 OF 75 FOR:
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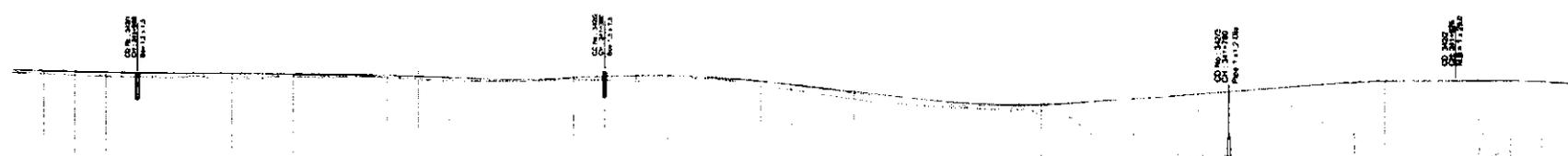
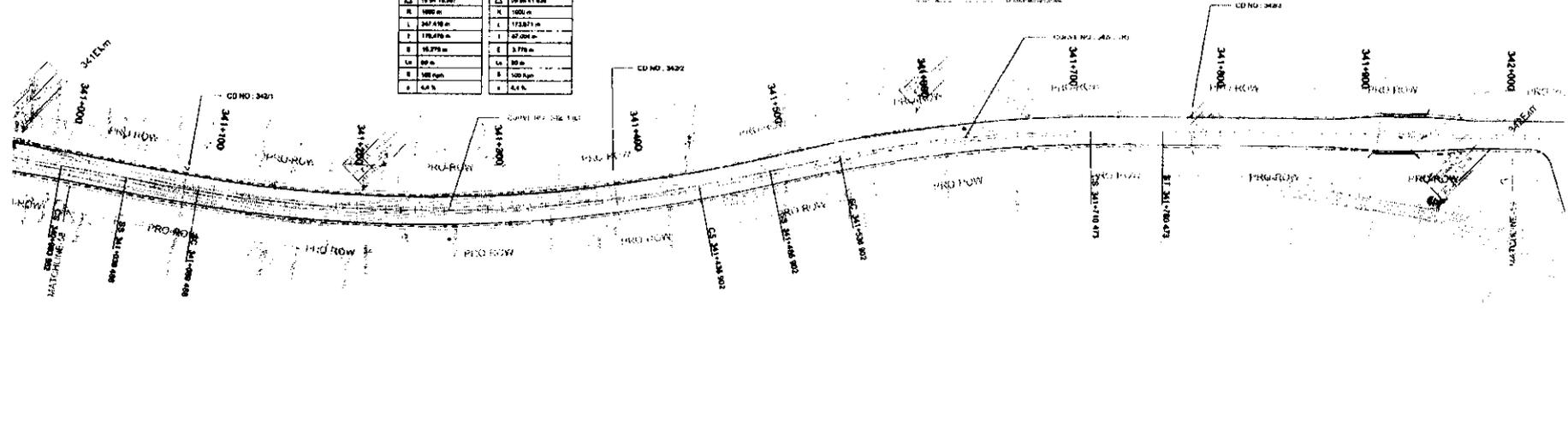
272

STATION	CHANGING	PROPOSED	EXISTING	REMARKS
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0+10	1.00	1.00	1.00	
0+20	1.00	1.00	1.00	
0+30	1.00	1.00	1.00	
0+40	1.00	1.00	1.00	
0+50	1.00	1.00	1.00	
0+60	1.00	1.00	1.00	
0+70	1.00	1.00	1.00	
0+80	1.00	1.00	1.00	
0+90	1.00	1.00	1.00	
1+00	1.00	1.00	1.00	
1+10	1.00	1.00	1.00	
1+20	1.00	1.00	1.00	
1+30	1.00	1.00	1.00	
1+40	1.00	1.00	1.00	
1+50	1.00	1.00	1.00	
1+60	1.00	1.00	1.00	
1+70	1.00	1.00	1.00	
1+80	1.00	1.00	1.00	
1+90	1.00	1.00	1.00	
2+00	1.00	1.00	1.00	
2+10	1.00	1.00	1.00	
2+20	1.00	1.00	1.00	
2+30	1.00	1.00	1.00	
2+40	1.00	1.00	1.00	
2+50	1.00	1.00	1.00	
2+60	1.00	1.00	1.00	
2+70	1.00	1.00	1.00	
2+80	1.00	1.00	1.00	
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3+10	1.00	1.00	1.00	
3+20	1.00	1.00	1.00	
3+30	1.00	1.00	1.00	
3+40	1.00	1.00	1.00	
3+50	1.00	1.00	1.00	
3+60	1.00	1.00	1.00	
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4+50	1.00	1.00	1.00	
4+60	1.00	1.00	1.00	
4+70	1.00	1.00	1.00	
4+80	1.00	1.00	1.00	
4+90	1.00	1.00	1.00	
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5+10	1.00	1.00	1.00	
5+20	1.00	1.00	1.00	
5+30	1.00	1.00	1.00	
5+40	1.00	1.00	1.00	
5+50	1.00	1.00	1.00	
5+60	1.00	1.00	1.00	
5+70	1.00	1.00	1.00	
5+80	1.00	1.00	1.00	
5+90	1.00	1.00	1.00	
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6+20	1.00	1.00	1.00	
6+30	1.00	1.00	1.00	
6+40	1.00	1.00	1.00	
6+50	1.00	1.00	1.00	
6+60	1.00	1.00	1.00	
6+70	1.00	1.00	1.00	
6+80	1.00	1.00	1.00	
6+90	1.00	1.00	1.00	
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7+20	1.00	1.00	1.00	
7+30	1.00	1.00	1.00	
7+40	1.00	1.00	1.00	
7+50	1.00	1.00	1.00	
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7+80	1.00	1.00	1.00	
7+90	1.00	1.00	1.00	
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19+40	1.00	1.00	1.00	
19+50	1.00	1.00	1.00	
19+60	1.00	1.00	1.00	
19+70	1.00	1.00	1.00	
19+80	1.00	1.00	1.00	
19+90	1.00	1.00	1.00	
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20+50	1.00	1.00	1.00	
20+60	1.00	1.00	1.00	
20+70	1.00	1.00	1.00	
20+80	1.00	1.00	1.00	
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21+50	1.00	1.00	1.00	
21+60	1.00	1.00	1.00	
21+70	1.00	1.00	1.00	
21+80	1.00	1.00	1.00	
21+90	1.00	1.00	1.00	
22+00	1.00	1.00	1.00	
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22+20	1.00	1.00	1.00	
22+30	1.00	1.00	1.00	
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22+50	1.00	1.00	1.00	
22+60	1.00	1.00	1.00	
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KUNDAPUR

BURATKAL

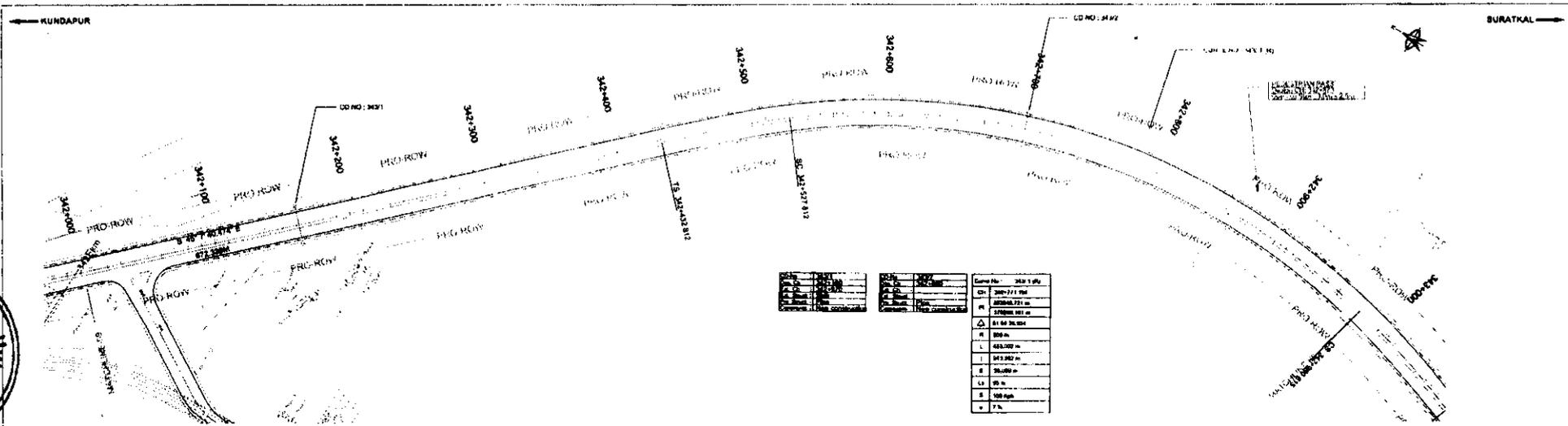
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R	1000 m	R	1000 m
L	247.279 m	L	247.279 m
E	17.079 m	E	17.079 m
B	16.279 m	B	16.279 m
Ld	50 m	Ld	50 m
E	100 mm	E	100 mm
B	4.4%	B	4.4%



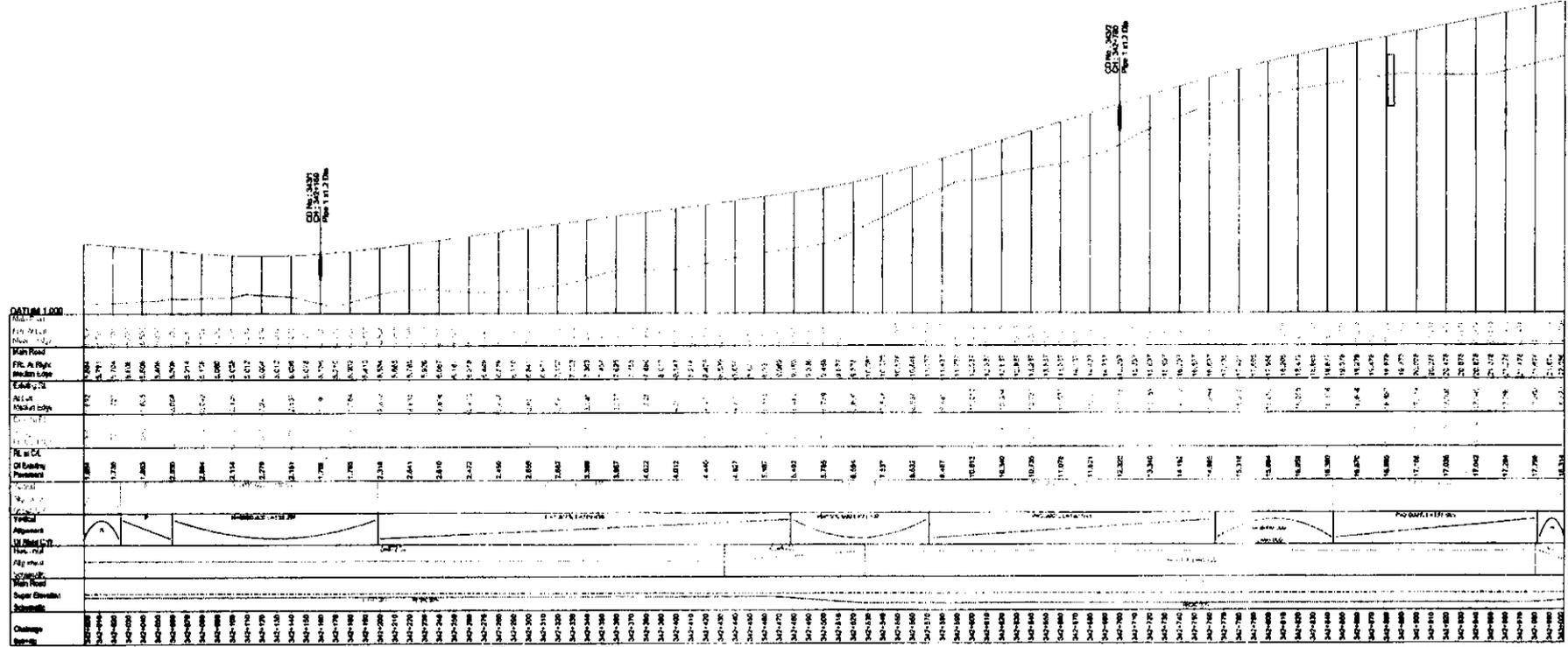
DATUMS (m)		ROAD ELEVATION		GROUND ELEVATION		VERTICAL CURVE DATA	
ROAD ELEVATION	GROUND ELEVATION	ROAD ELEVATION	GROUND ELEVATION	ROAD ELEVATION	GROUND ELEVATION	ROAD ELEVATION	GROUND ELEVATION
341+000	17.079	341+000	17.079	341+000	17.079	341+000	17.079
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341+100	15.479	341+100	15.479	341+100	15.479	341+100	15.479
341+150	14.679	341+150	14.679	341+150	14.679	341+150	14.679
341+200	13.879	341+200	13.879	341+200	13.879	341+200	13.879
341+250	13.079	341+250	13.079	341+250	13.079	341+250	13.079
341+300	12.279	341+300	12.279	341+300	12.279	341+300	12.279
341+350	11.479	341+350	11.479	341+350	11.479	341+350	11.479
341+400	10.679	341+400	10.679	341+400	10.679	341+400	10.679
341+450	9.879	341+450	9.879	341+450	9.879	341+450	9.879
341+500	9.079	341+500	9.079	341+500	9.079	341+500	9.079
341+550	8.279	341+550	8.279	341+550	8.279	341+550	8.279
341+600	7.479	341+600	7.479	341+600	7.479	341+600	7.479
341+650	6.679	341+650	6.679	341+650	6.679	341+650	6.679
341+700	5.879	341+700	5.879	341+700	5.879	341+700	5.879
341+750	5.079	341+750	5.079	341+750	5.079	341+750	5.079
341+800	4.279	341+800	4.279	341+800	4.279	341+800	4.279
341+850	3.479	341+850	3.479	341+850	3.479	341+850	3.479
341+900	2.679	341+900	2.679	341+900	2.679	341+900	2.679
341+950	1.879	341+950	1.879	341+950	1.879	341+950	1.879
342+000	1.079	342+000	1.079	342+000	1.079	342+000	1.079

278

<p>Legend (Symbol)</p> <ul style="list-style-type: none"> <li>CENTRE LINE</li> <li>MEDIAN</li> <li>PROPOSED CARRIAGEWAY</li> <li>PAVED SHOULDER</li> <li>DRAINAGE</li> <li>EARTHEN SHOULDER</li> <li>SURFACE ROAD</li> <li>FOOTPATH CURB DRAIN</li> <li>PROPOSED ROW</li> </ul>	<p>Symbol</p> <ul style="list-style-type: none"> <li>BRIDGE</li> <li>PUMP</li> <li>CLAYPIST</li> <li>SEA WALL</li> </ul>	<p>Legend (Symbol)</p> <ul style="list-style-type: none"> <li>TRANSFORMER</li> <li>ELECTRICAL POLE</li> <li>FULLING STORE</li> <li>WIND PUMP</li> <li>WATER DRAIN</li> <li>WATER POND</li> <li>WATER PILLAR</li> <li>WATER TOWER</li> <li>WATER TANK</li> </ul>	<p>Symbol</p> <ul style="list-style-type: none"> <li>OPTICAL FIBRE CABLE</li> <li>TELEPHONE POLE</li> <li>TREE</li> <li>CLAYPIST</li> <li>WATER</li> <li>EARTHED HEIGHT OF ROAD</li> <li>FENCE</li> </ul>	<p>Client</p> <p>NATIONAL HIGHWAYS AUTHORITY OF INDIA</p>	<p>Project</p> <p>CONTRACT SERVICES FOR FEASIBILITY STUDY &amp; DESIGN PROJECT REPORT FOR RAMPALING OF RAMPALING-BURATKAL SECTION OF NH-103 IN THE STATE OF KARNATAKA UNDER RAMPALING - II (PACKAGE NO. RAMP 03/05/06)</p>
<p>Scale: 1:500</p>		<p>Scale: 1:500</p>		<p>Date: JUN-2008</p>	
<p>Project No: 0607004</p>		<p>Drawing No: KS-1D-23-001</p>		<p>Sheet No: 58 OF 76</p>	

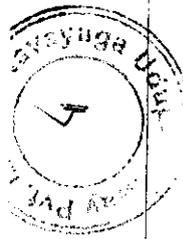


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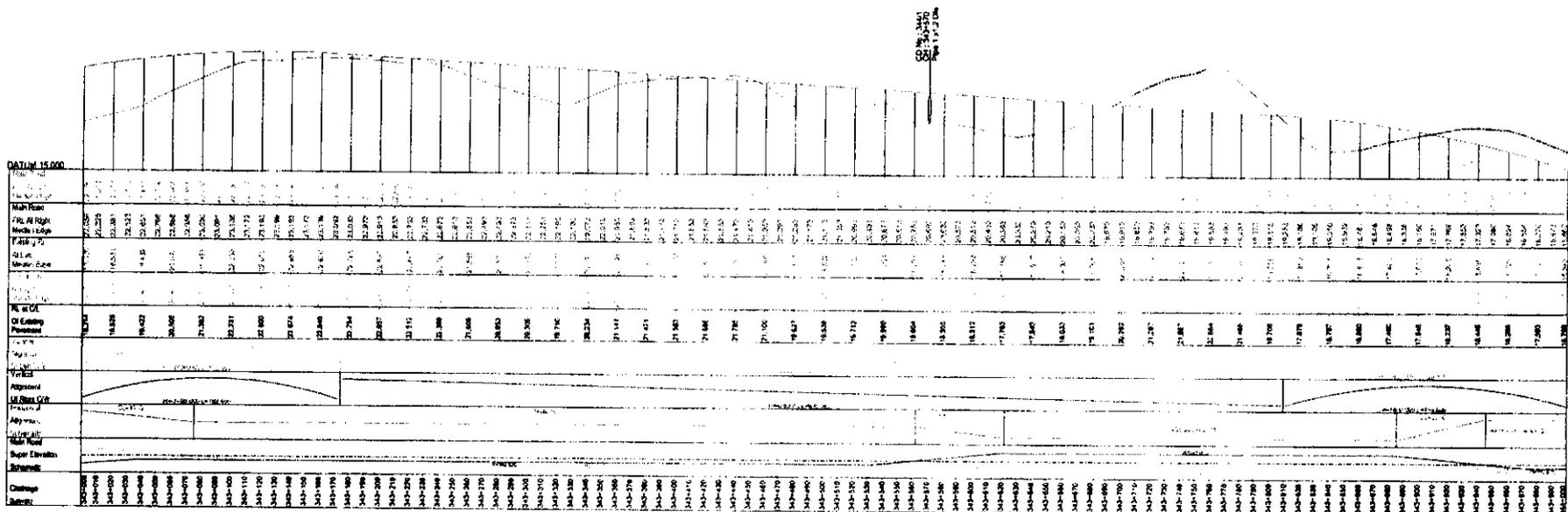
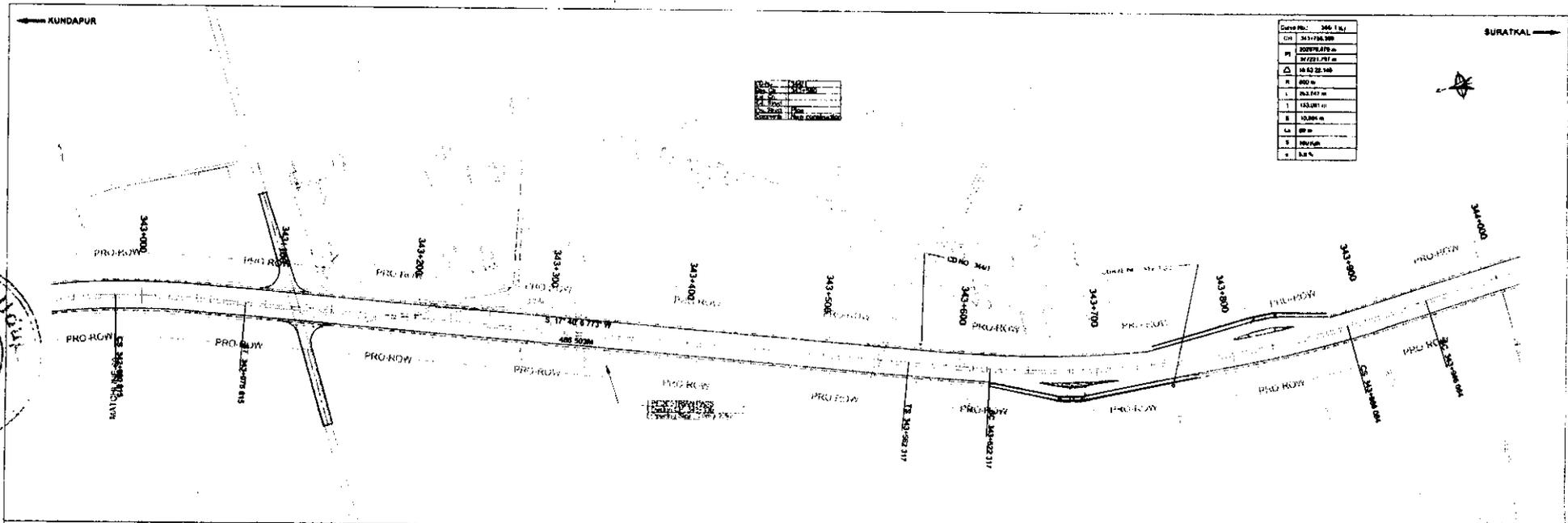


279

<p>Legend (Proposed)</p> <ul style="list-style-type: none"> <li>CENTRE LINE</li> <li>MEDIUM</li> <li>PROPOSED CARRIAGEWAY</li> <li>PAVED SHOULDER</li> <li>DITCH</li> <li>EARTHEN SHOULDER</li> <li>SERVICE ROAD</li> <li>FOOTPATH OR DRAIN</li> <li>PROPOSED ROW</li> </ul>	<p>Legend (Existing)</p> <ul style="list-style-type: none"> <li>TRANSFORMER</li> <li>ELECTRICAL POLE</li> <li>PUMP OR STONE</li> <li>WIRE POLE</li> <li>WIRE BOARD</li> <li>LIGHT POLE</li> <li>WATER PIPE</li> <li>DATE</li> </ul>	<p>Legend (Other)</p> <ul style="list-style-type: none"> <li>OPTICAL FIBRE CABLE</li> <li>TELEPHONE POLE</li> <li>DRINK</li> <li>UTILITY</li> <li>EXISTING RIGHT OF WAY</li> <li>FENCE</li> </ul>	<p>Scale</p> <p>Horizontal Scale: 1:1000</p> <p>Vertical Scale: 1:100</p>	<p>Project</p> <p>Corpus Plan: SERVICES FOR FEASIBILITY STUDY &amp; DETAILED PROJECT REPORT FOR 4 LANE OF GUJARATI-BUNTING SECTION OF ROAD IN THE STATE OF KARNATAKA UNDER NHDP PHASE - II (PACKAGE NO. NHDP 02/508)</p> <p>Drawing Title: PLAN AND PROFILE FROM CH:342+000 TO 343+000</p> <p>Scale: AS SHOWN</p> <p>Date: JUN-2009</p> <p>Project No: 0807064</p> <p>Drawing No: KS-1D-23-001</p> <p>Sheet No: 60 OF 78</p> <p>Rev: FOPR</p>
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Drawn No.	346-1-1
CH	343+760.000
M	343+760.000
A	343+760.000
R	343+760.000
L	343+760.000
S	343+760.000
Ch	343+760.000
M	343+760.000
A	343+760.000
R	343+760.000
L	343+760.000
S	343+760.000
Ch	343+760.000
M	343+760.000
A	343+760.000
R	343+760.000
L	343+760.000
S	343+760.000



280

**Legend**

—	CENTRE LINE	—	BRIDGE	—	LEGEND (Symbol)	—	OPTIONAL FRAME CABLE TELEPHONE POLE	
---	PROPOSED CAMPAIGN WAY	—	PIPE CULVERT	—	+	FRAMING CROSS	—	TRUSS TELEPHONE POLE
---	PAVED SHOULDER	—	BOX CULVERT	—	A	ELECTRICAL POLE	—	TRUSS TELEPHONE POLE
---	DIVIDER	—		—	B	PUMP HOUSE	—	TRUSS TELEPHONE POLE
---	BARRIER SHOULDER	—		—	C	WATER PUMP	—	TRUSS TELEPHONE POLE
---	SERVICE ROAD	—		—	D	WATER PUMP	—	TRUSS TELEPHONE POLE
---	FOOTPATH	—		—	E	WATER PUMP	—	TRUSS TELEPHONE POLE
---	DRAIN	—		—	F	WATER PUMP	—	TRUSS TELEPHONE POLE
---	PROPOSED ROW	—		—	G	WATER PUMP	—	TRUSS TELEPHONE POLE

**NATIONAL HIGHWAYS AUTHORITY OF INDIA**

MEMBER OF THE PUBLIC WORKS DEPARTMENT, GOVERNMENT OF INDIA

HYDRAULIC ENGINEERING DIVISION

NEW DELHI

**Project Details**

Project Name: **CONSTRUCTION OF SERVICE ROAD AT KUNDAPUR SURATKAL SECTION OF NH-10**

Scale: **1:1000**

Date: **JUN-2009**

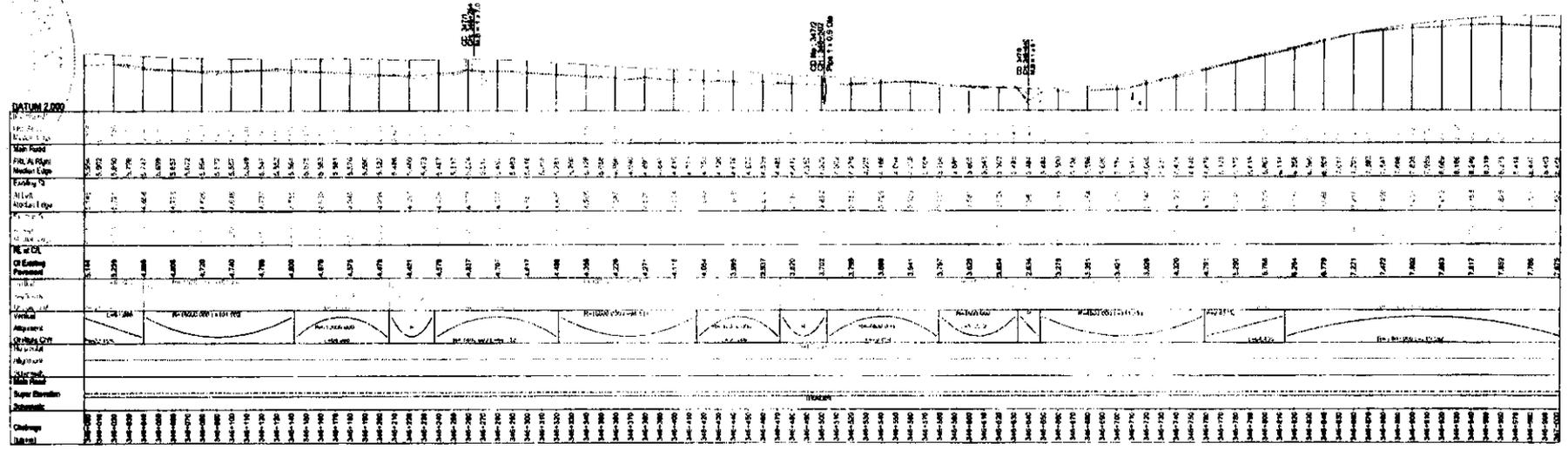
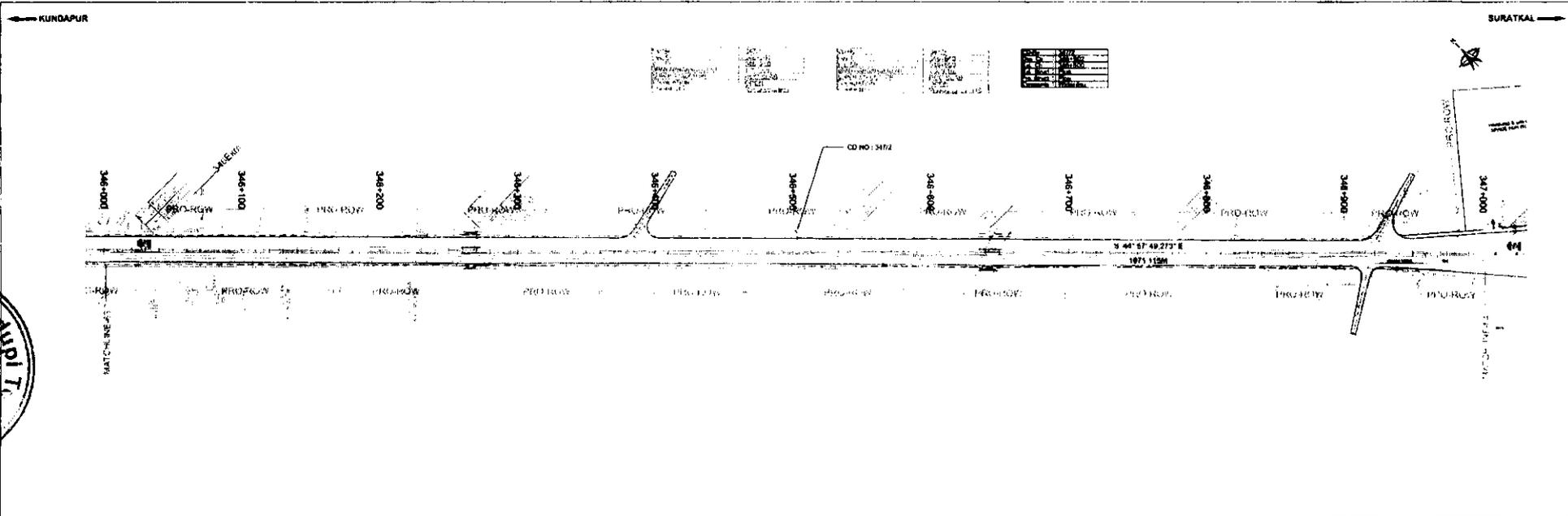
Project No: **0807004**

Drawing No: **KS-10-23-001**

Sheet No: **81 OF 78**

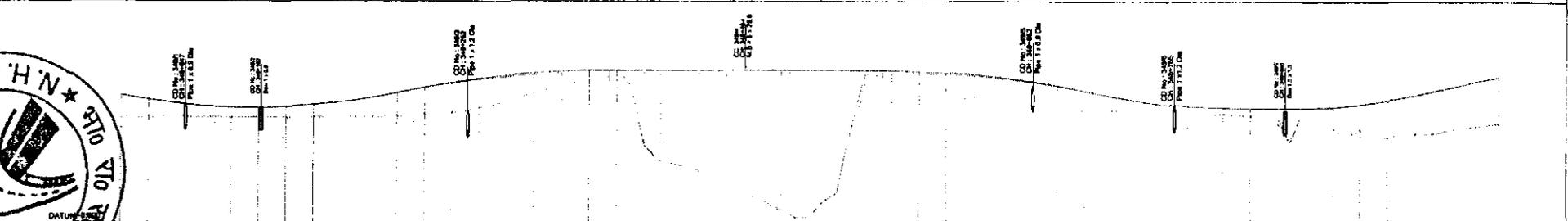
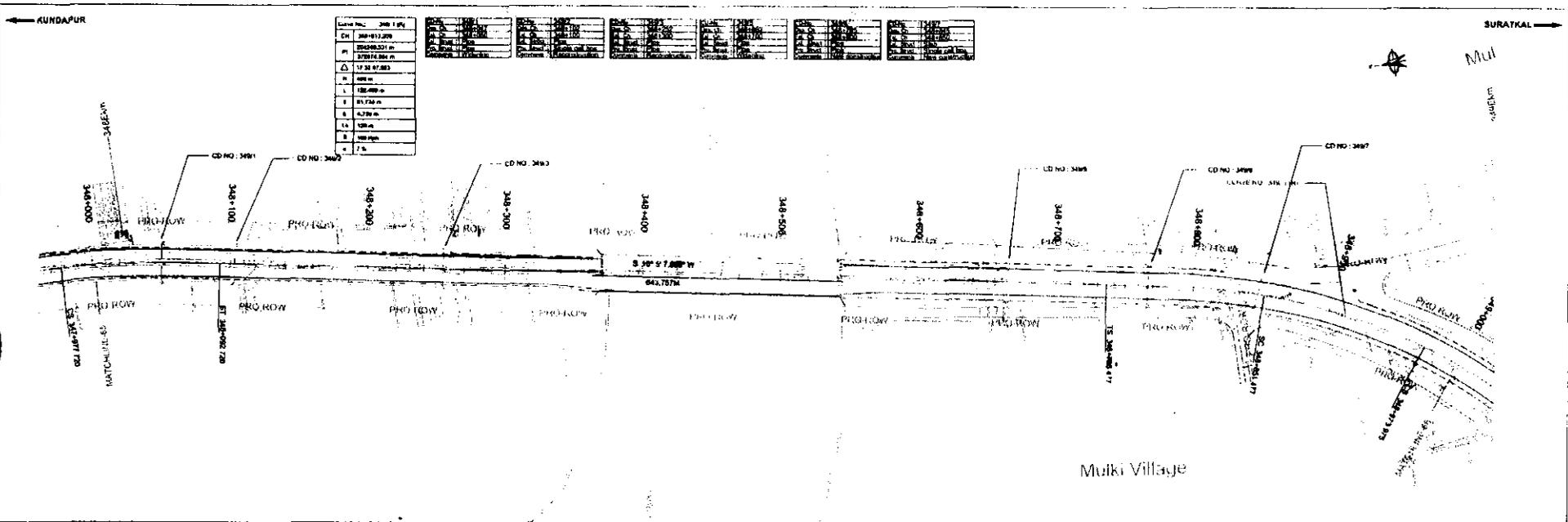
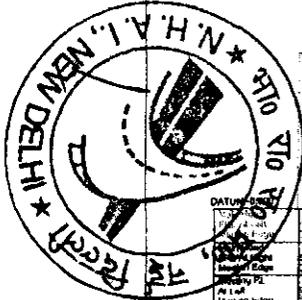






<p>Legend (continued)</p> <p>--- CENTRE LINE</p> <p>--- PROPOSED CARRIAGEWAY</p> <p>--- PAVED SHOULDER</p> <p>--- DIVIDER</p> <p>--- GRAVEL SHOULDER</p> <p>--- SERVICE ROAD</p> <p>--- HOUSHPATH QUAM DRAIN</p> <p>--- PROPOSED HOV</p>	<p>SPICE</p> <p>PIPE DIA 100</p> <p>BOX DIA 100</p>	<p>Legend (continued)</p> <p>--- TRANSFORMER</p> <p>--- SUBSTATION POLE</p> <p>--- PUMP HOUSE</p> <p>--- HAND PUMP</p> <p>--- WIRE SUPPORT</p> <p>--- LIGHT POLE</p> <p>--- ALONG THE STORM DATE</p>	<p>Legend (continued)</p> <p>--- OPTICAL FIBRE CABLE</p> <p>--- TELEPHONE POLE</p> <p>--- TRIP</p> <p>--- CANTILET</p> <p>--- UTILITY</p> <p>--- SIGN THE RIGHT OF WAY</p> <p>--- FENCE</p>	<p>NATIONAL HIGHWAYS AUTHORITY OF INDIA</p> <p>PROJECT NO. 0807004</p> <p>SECTION NO. RS-1D-23-001</p> <p>DATE: JUN-2008</p> <p>SCALE: 1:1000</p> <p>PROJECT NO. 0807004</p> <p>DRAWING NO. RS-1D-23-001</p> <p>SHEET NO. 84 OF 76</p> <p>REV. FDP</p>
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Stationing	Proposed Grade	Ground Level	Clearance	Notes
3481+00	1.50	1.50	0.00	
3481+10	1.50	1.50	0.00	
3481+20	1.50	1.50	0.00	
3481+30	1.50	1.50	0.00	
3481+40	1.50	1.50	0.00	
3481+50	1.50	1.50	0.00	
3481+60	1.50	1.50	0.00	
3481+70	1.50	1.50	0.00	
3481+80	1.50	1.50	0.00	
3481+90	1.50	1.50	0.00	
3482+00	1.50	1.50	0.00	
3482+10	1.50	1.50	0.00	
3482+20	1.50	1.50	0.00	
3482+30	1.50	1.50	0.00	
3482+40	1.50	1.50	0.00	
3482+50	1.50	1.50	0.00	
3482+60	1.50	1.50	0.00	
3482+70	1.50	1.50	0.00	
3482+80	1.50	1.50	0.00	
3482+90	1.50	1.50	0.00	
3483+00	1.50	1.50	0.00	
3483+10	1.50	1.50	0.00	
3483+20	1.50	1.50	0.00	
3483+30	1.50	1.50	0.00	
3483+40	1.50	1.50	0.00	
3483+50	1.50	1.50	0.00	
3483+60	1.50	1.50	0.00	
3483+70	1.50	1.50	0.00	
3483+80	1.50	1.50	0.00	
3483+90	1.50	1.50	0.00	
3484+00	1.50	1.50	0.00	
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3484+20	1.50	1.50	0.00	
3484+30	1.50	1.50	0.00	
3484+40	1.50	1.50	0.00	
3484+50	1.50	1.50	0.00	
3484+60	1.50	1.50	0.00	
3484+70	1.50	1.50	0.00	
3484+80	1.50	1.50	0.00	
3484+90	1.50	1.50	0.00	
3485+00	1.50	1.50	0.00	
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3485+20	1.50	1.50	0.00	
3485+30	1.50	1.50	0.00	
3485+40	1.50	1.50	0.00	
3485+50	1.50	1.50	0.00	
3485+60	1.50	1.50	0.00	
3485+70	1.50	1.50	0.00	
3485+80	1.50	1.50	0.00	
3485+90	1.50	1.50	0.00	
3486+00	1.50	1.50	0.00	
3486+10	1.50	1.50	0.00	
3486+20	1.50	1.50	0.00	
3486+30	1.50	1.50	0.00	
3486+40	1.50	1.50	0.00	
3486+50	1.50	1.50	0.00	
3486+60	1.50	1.50	0.00	
3486+70	1.50	1.50	0.00	
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3486+90	1.50	1.50	0.00	
3487+00	1.50	1.50	0.00	
3487+10	1.50	1.50	0.00	
3487+20	1.50	1.50	0.00	
3487+30	1.50	1.50	0.00	
3487+40	1.50	1.50	0.00	
3487+50	1.50	1.50	0.00	
3487+60	1.50	1.50	0.00	
3487+70	1.50	1.50	0.00	
3487+80	1.50	1.50	0.00	
3487+90	1.50	1.50	0.00	

**Legend (Proposed):**

- CENTER LINE
- MEDIAN
- PROPOSED SHOULDER
- PROPOSED SHOULDER DRAINAGE
- GARTHER SHOULDER
- SERVICE ROAD
- FOOTPATH
- PROPOSED ROW

**Legend (Existing):**

- TRANSFORMER
- ELECTRICAL POLE
- PILING STORE
- WIND PUMP
- IRON BOARD
- LIGHT POLE
- ALONG THE STONE
- GATE

**Notes:**

- OPTICAL FIBRE CABLE
- TELEPHONE POLE
- TREE
- CULTIVAT
- WATER
- STARTING HEIGHT OF ROAD
- POLE

**Scale:** 1:1000

**Project No.:** 0807004

**Date:** JUN-2009

**Project Name:** NATIONAL HIGHWAYS AUTHORITY OF INDIA

**Scale:** 1:1000

**Project No.:** 0807004

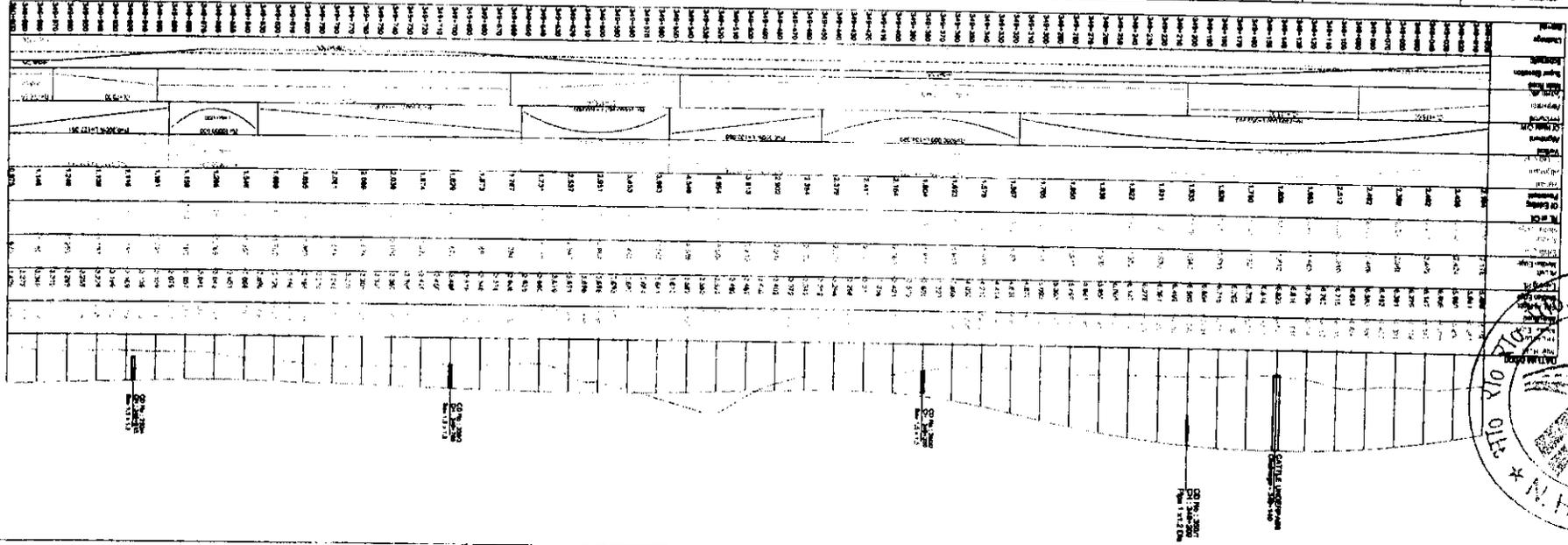
**Date:** JUN-2009

**Project Name:** NATIONAL HIGHWAYS AUTHORITY OF INDIA

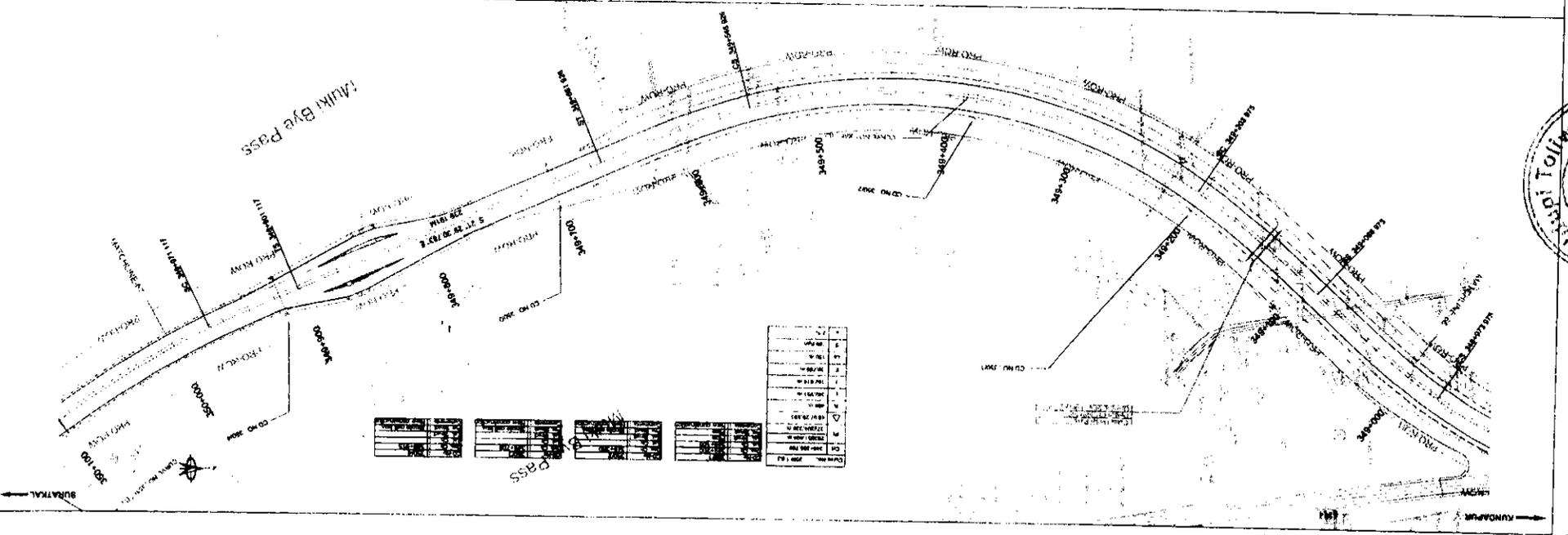
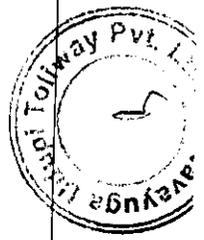
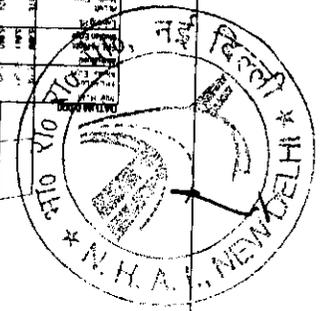
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**Project No.:** 0807004

**Date:** JUN-2009

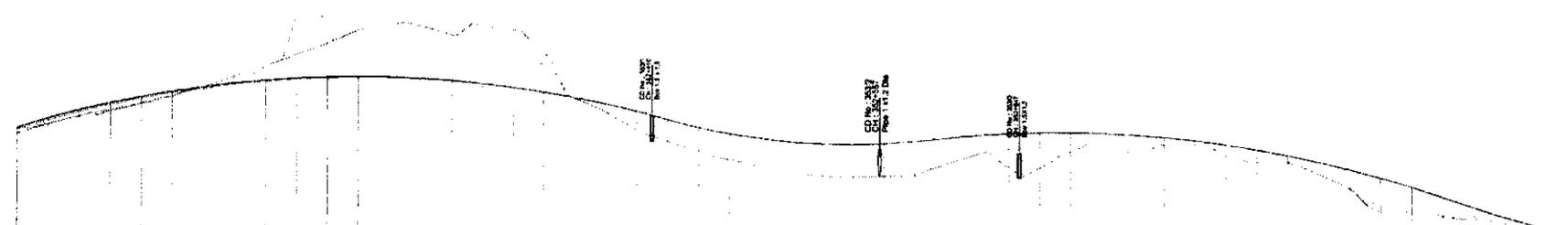
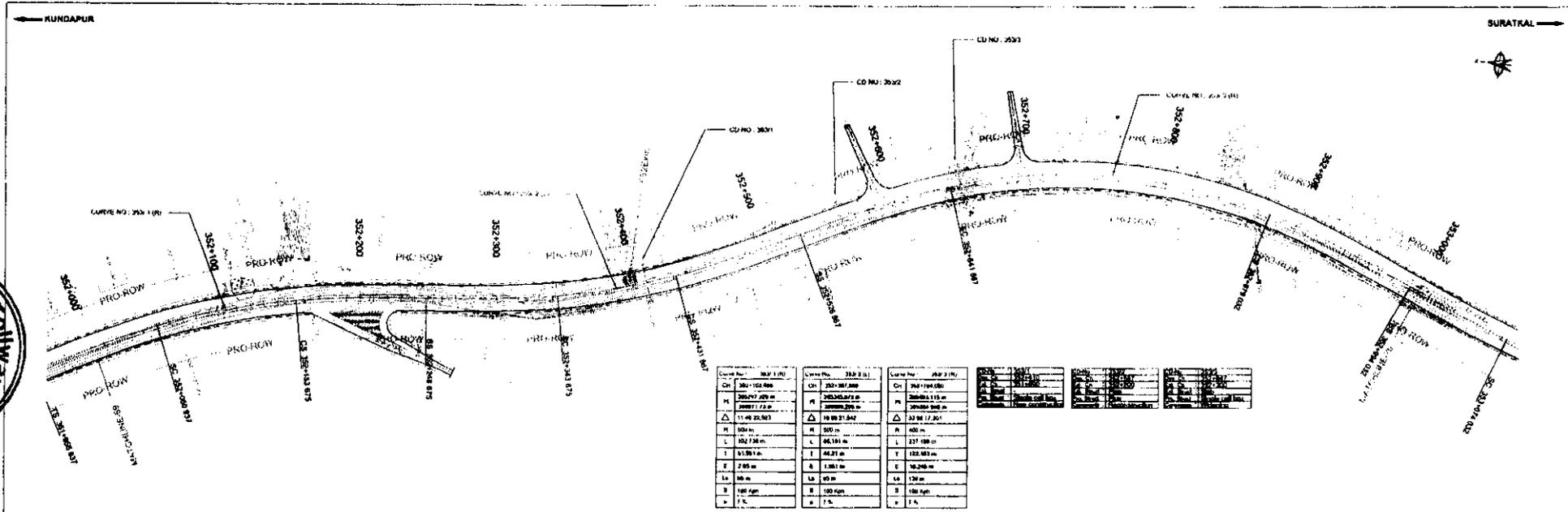


286









Stationing	Proposed Road	Existing Ground	Clearance
200+000	10.00	10.00	0.00
200+050	10.25	10.10	0.15
200+100	10.50	10.20	0.30
200+150	10.75	10.30	0.45
200+200	11.00	10.40	0.60
200+250	11.25	10.50	0.75
200+300	11.50	10.60	0.90
200+350	11.75	10.70	1.05
200+400	12.00	10.80	1.20
200+450	12.25	10.90	1.35
200+500	12.50	11.00	1.50
200+550	12.75	11.10	1.65
200+600	13.00	11.20	1.80
200+650	13.25	11.30	1.95
200+700	13.50	11.40	2.10
200+750	13.75	11.50	2.25
200+800	14.00	11.60	2.40
200+850	14.25	11.70	2.55
200+900	14.50	11.80	2.70
200+950	14.75	11.90	2.85
201+000	15.00	12.00	3.00

289

**Legend (Left):**

- Centre Line
- Median
- Proposed Camber/PAV
- Proposed Shoulder
- Diversion
- Barbed Wire/Shoulder
- Service Road
- Footpath cum Drain
- Proposed ROW

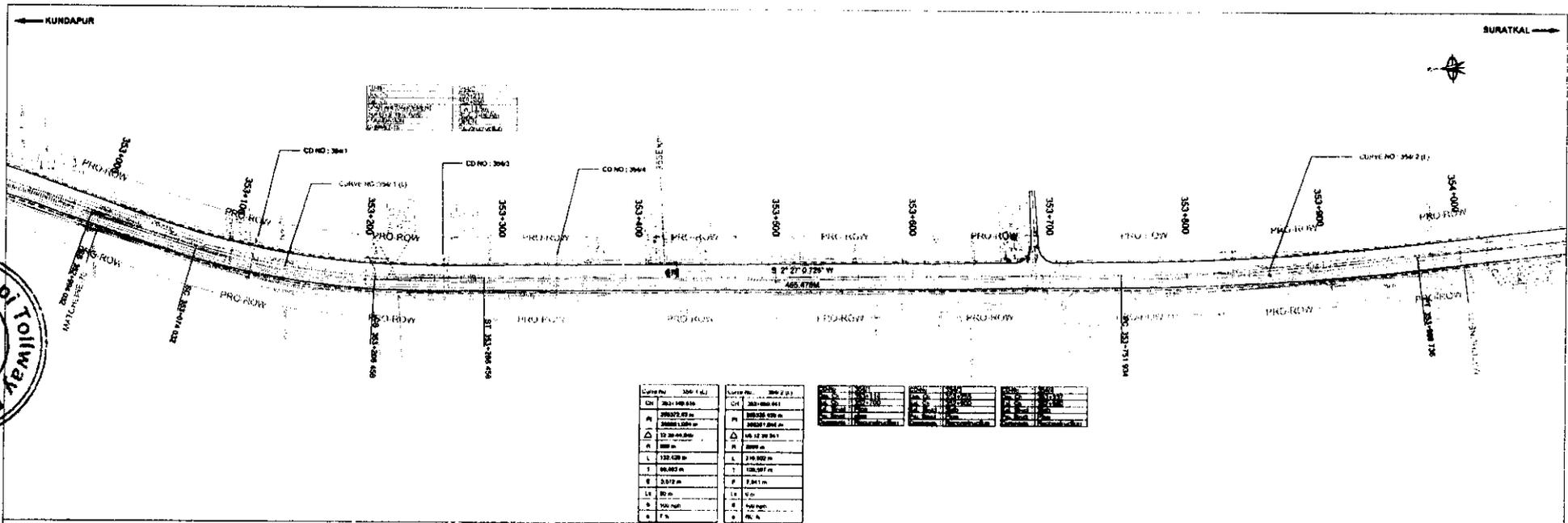
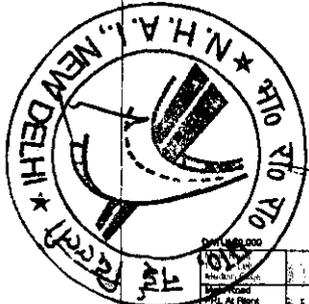
**Legend (Right):**

- Watermark
- Electrical Pole
- Building Stone
- Wood Pulp
- Frame Board
- Utility Pole
- Concrete Stone
- Gate
- Office/Phone Cable
- Telephone Pole
- Tree
- Current Utility
- Barbed Wire/Right of Way
- Fence

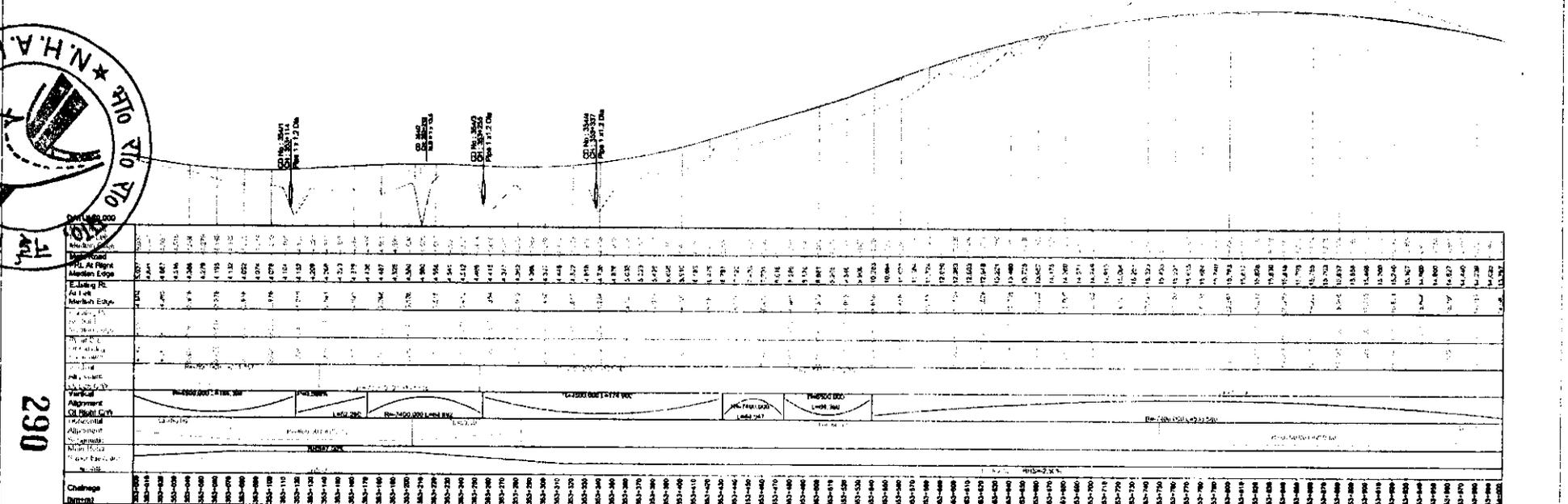
**NATIONAL HIGHWAYS AUTHORITY OF INDIA**

**Project Details:**

Project No: 0807004  
 Drawing No: KS-10-23-001  
 Sheet No: 70 OF 76  
 Date: JUN-2009

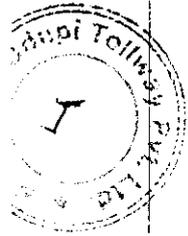
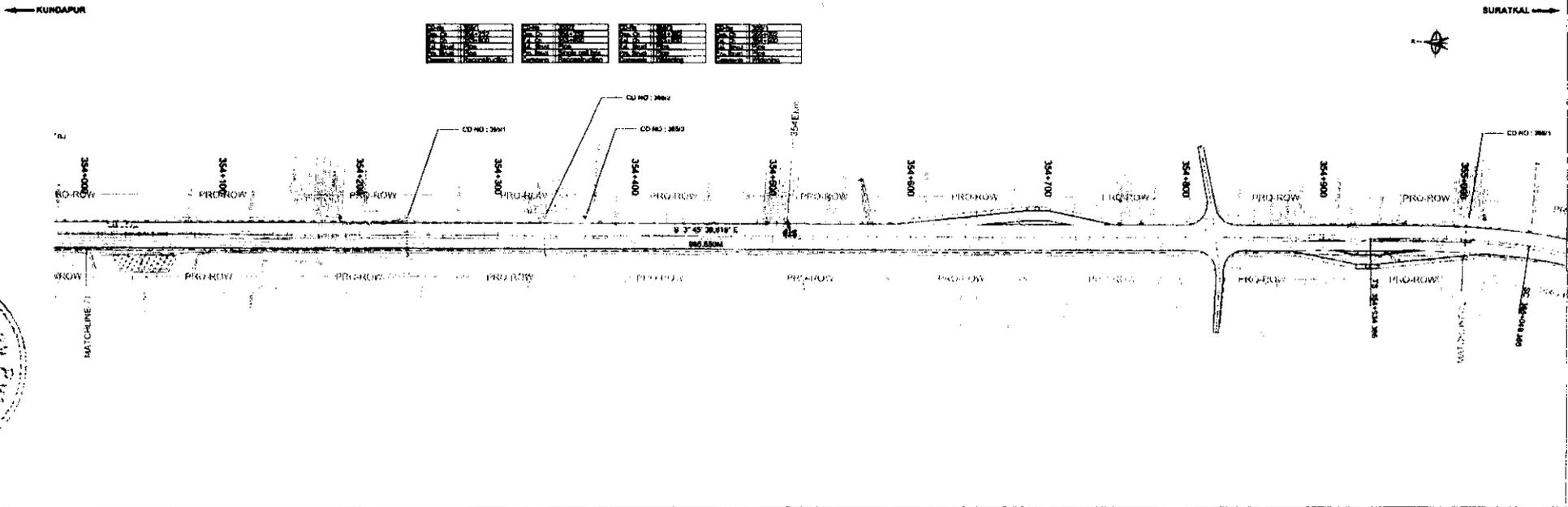


Curve No. 3941 (L)		Curve No. 3942 (L)	
Ch	393+400.000	Ch	393+400.000
R	2000.000 m	R	2000.000 m
L	120.000 m	L	120.000 m
T	60.000 m	T	60.000 m
E	3.012 m	E	3.012 m
Lt	0.000 m	Lt	0.000 m
h	100.000 m	h	100.000 m
g	0.000 %	g	0.000 %



290

<p><b>Legend (Proposed)</b></p> <ul style="list-style-type: none"> <li>CENTRE LINE</li> <li>MECHAN</li> <li>PROPOSED CARRIAGE WAY</li> <li>PAVED SHOULDER</li> <li>DIVIDER</li> <li>EARTHEN SHOULDER</li> <li>SERVICE ROAD</li> <li>FOOTPATH CURB DRAIN</li> <li>PROPOSED ROW</li> </ul>	<p><b>Legend (Existing)</b></p> <ul style="list-style-type: none"> <li>BRIDGE</li> <li>PIPE CULVERT</li> <li>BOX CULVERT</li> <li>TRANSFORMER</li> <li>ELECTRICAL POLE</li> <li>PURCHING STONE</li> <li>WIND PUMP</li> <li>WATER HOSE</li> <li>GRAVITY FILL</li> <li>WALLING PILE</li> <li>DATE</li> </ul>	<p><b>Legend (Other)</b></p> <ul style="list-style-type: none"> <li>OFFICIAL 7.5M CABLE</li> <li>TELEPHONE POLE</li> <li>TRUSS</li> <li>CULVERT</li> <li>UTILITY</li> <li>BASTION HEIGHT OF RAIP</li> <li>RENCE</li> </ul>	<p><b>Scale</b></p> <p>PLAN: 1:1000</p> <p>PROFILE: 1:100</p>	<p><b>NATIONAL HIGHWAYS AUTHORITY OF INDIA</b></p> <p>PROJECT: KSR-10-23-001</p> <p>SECTION: FROM CH 393+000 TO 394+000</p>	<p><b>Revision Table</b></p> <table border="1"> <tr> <th>No.</th> <th>Date</th> <th>Description</th> </tr> <tr> <td>1</td> <td></td> <td>ISSUED FOR TENDER</td> </tr> <tr> <td>2</td> <td></td> <td>ISSUED FOR BIDDING</td> </tr> </table>	No.	Date	Description	1		ISSUED FOR TENDER	2		ISSUED FOR BIDDING	<p><b>Project Information</b></p> <p>Project No: 0807004</p> <p>Drawing No: KS-10-23-001</p> <p>Sheet No: 71 OF 76</p> <p>Scale: 1:1000</p>
No.	Date	Description													
1		ISSUED FOR TENDER													
2		ISSUED FOR BIDDING													



Stationing	Right of Way	Proposed Road	Proposed Shoulder	Proposed Drain	Proposed Cable	Proposed Pole	Proposed Structure	Proposed Utility	Proposed Right of Way
2867.00	2867.00	2867.00	2867.00	2867.00	2867.00	2867.00	2867.00	2867.00	2867.00
2867.50	2867.50	2867.50	2867.50	2867.50	2867.50	2867.50	2867.50	2867.50	2867.50
2868.00	2868.00	2868.00	2868.00	2868.00	2868.00	2868.00	2868.00	2868.00	2868.00
2868.50	2868.50	2868.50	2868.50	2868.50	2868.50	2868.50	2868.50	2868.50	2868.50
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CENTRE LINE  
MEDIAN  
PROPOSED SHOULDER  
PROPOSED ROAD  
EARTHEN SHOULDER  
SERVICE ROAD  
FOOTPATH OR DRAIN  
PROPOSED ROW

SECTION

PIPE CULVERT  
BOX CULVERT

LEGEND

PROPOSED DRAIN  
ELECTRIC POLE  
PUMPING STATION  
WATER PUMP  
WATER SOURCE  
LIGHT POLE  
SIGNAL POLE  
RAILWAY CROSSING

SYMBOLS

UPPER CASE - PIPE CABLE  
TRIANGLE - TELEPHONE POLE  
SQUARE - POLE  
CIRCLE - CULVERT  
INVERT  
DOTTED LINE - RIGHT OF WAY  
PICKET

APPROVED

NATIONAL HIGHWAYS AUTHORITY OF INDIA

Project No. 0807004  
Drawing No. KS-1D-23-001  
Scale: 1:1000

DATE: JUN-2009

PROJECT NO: 0807004

DRAWING NO: KS-1D-23-001

SHEET NO: 72 OF 78

291

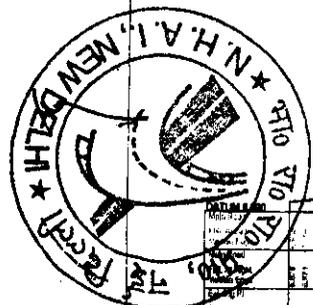
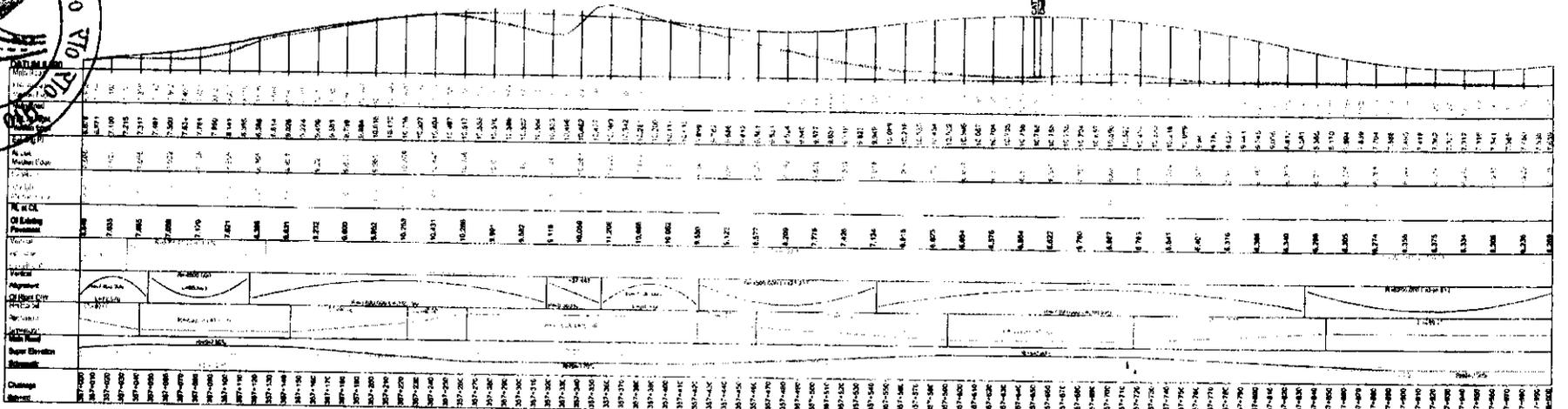
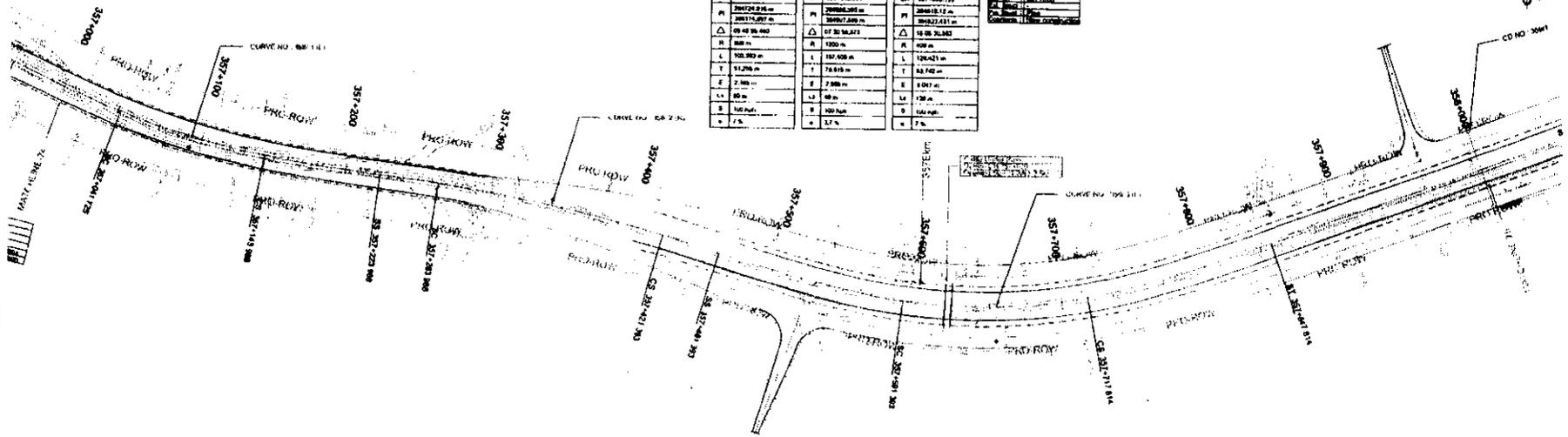




KUNDAPUR

BURATKAL

Curve No. 357-100		Curve No. 357-200		Curve No. 357-300	
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CR	200.000 m	CR	200.000 m	CR	200.000 m
LA	200.000 m	LA	200.000 m	LA	200.000 m
EA	200.000 m	EA	200.000 m	EA	200.000 m
TA	200.000 m	TA	200.000 m	TA	200.000 m
SA	200.000 m	SA	200.000 m	SA	200.000 m
CA	357100.000	CA	357200.000	CA	357300.000
CR	200.000 m	CR	200.000 m	CR	200.000 m
LA	200.000 m	LA	200.000 m	LA	200.000 m
EA	200.000 m	EA	200.000 m	EA	200.000 m
TA	200.000 m	TA	200.000 m	TA	200.000 m
SA	200.000 m	SA	200.000 m	SA	200.000 m



294

<p>CLIMATE LINE</p> <p>MEDIUM</p> <p>PROPOSED CARRIAGEWAY</p> <p>PAVED SHOULDER</p> <p>DYKES</p> <p>EARTHEN SHOULDER</p> <p>SERVICE ROAD</p> <p>FOOTPATH</p> <p>LAND DRAIN</p> <p>PROPOSED ROW</p>	<p>BRIDGE</p> <p>PPS CULVERT</p> <p>SUA CULVERT</p> <p>SUB MER TUN</p>	<p>Legend (if any)</p> <p>TRANSFORMER</p> <p>ELECTRICAL POLE</p> <p>PILING ON STONE</p> <p>WIRE PILE</p> <p>WIRE BOND</p> <p>LIGHT POLE</p> <p>WATER PIPE</p> <p>DATE</p>	<p>OPTICAL FIBRE CABLE</p> <p>TELEPHONE POLE</p> <p>TRUSS</p> <p>CHALK SET</p> <p>UTL LIT</p> <p>SMALL HEIGHT OF ROAD</p> <p>POLE</p>	<p>NATIONAL HIGHWAYS AUTHORITY OF INDIA</p> <p>WILSON BROTHERS ASSOCIATES PRIVATE LIMITED</p> <p>Scale: 1:1000</p> <p>Project No: 0807004</p> <p>Sheet No: 75 OF 76</p>
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## Appendix-BIII

## Details of Bypasses/Realignment

1. Bypasses

## Section 1

Name of Bypass	Existing Chainage (km)		Design Chainage (km)		Length (km)
	From	To	From	To	
Padubidri Bypass	341+650	344+630	341+600	344+650	3.05
Mulki Bypass	348+780	350+290	348+800	350+700	1.90

## Section 2

Name of Bypass	Existing Chainage (km)		Design Chainage (km)		Length (km)
	From	To	From	To	
Nil					

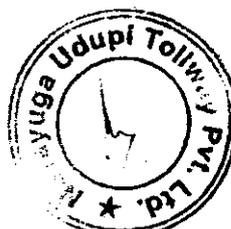
2. Realignments

## Section 1

Existing Chainage (km)		Design Chainage (km)		Length (km) From
From	To	From	To	
297+593	297+997	297+700	298+100	0.4
298+144	298+339	298+250	298+450	0.2
304+415	304+761	304+560	304+900	0.34
313+194	314+045	313+300	314+000	0.7
330+511	330+628	330+500	330+620	0.12

## Section 2

Existing Chainage (km)		Design Chainage (km)		Length (km) From
From	To	From	To	
4+975	5+220	4+985	5+225	0.34
6+424	6+662	6+420	6+555	0.135



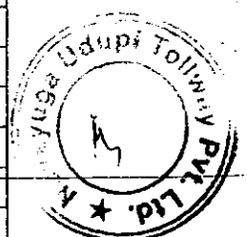
295

## Appendix BIV

## Details of Service Roads

## Service Roads for Section 1

Sl. No.	Existing Chainage (Km)		Design Chainage (Km)		Length (m)	Width (m)	Side	C/s Type
	From	To	From	To				
1	283+300	283+552	283+300	283+450	150	5.5	Both	CS-07
2	283+552	284+052	283+450	283+950	500	5.5	Both	CS-10
3	284+052	284+350	283+950	284+250	300	5.5	Both	CS-10
4	284+350	284+790	284+250	284+690	440	5.5	Both	CS-07
5	284+790	285+090	284+690	284+990	300	5.5	Both	CS-07
6	285+090	285+410	284+990	285+290	300	5.5	Both	CS-07
7	285+410	287+250	285+290	287+250	1960	5.5	Both	CS-07
8	287+250	287+440	287+250	287+440	190	5.5	Both	CS-08
9	287+440	287+690	287+440	287+690	250	5.5	Both	CS-07
10	287+690	287+880	287+690	287+880	190	5.5	Both	CS-08
11	287+880	288+040	287+880	288+000	120	5.5	Both	CS-07
12	288+980	289+080	289+080	289+180	100	5.5	Both	CS-02
13	289+080	289+400	289+180	289+500	320	5.5	Both	CS-01
14	293+480	293+880	293+500	293+900	400	5.5	Both	CS-08
15	293+880	295+180	293+900	295+300	1400	5.5	Both	CS-07
16	295+180	295+380	295+300	295+500	200	5.5	Both	CS-08
17	297+680	297+780	297+800	297+900	100	5.5	Both	CS-03
18	297+780	297+990	297+900	298+100	200	5.5	Both	CS-03
19	297+990	298+140	298+100	298+250	150	5.5	Both	CS-01
20	298+140	298+270	298+250	298+380	130	5.5	Both	CS-03
21	305+780	305+880	305+900	306+000	100	5.5	Both	CS-06
22	305+880	306+010	306+000	306+130	130	5.5	Both	CS-04
23	306+010	306+120	306+130	306+240	110	5.5	Both	CS-06
24	306+120	306+380	306+240	306+500	260	5.5	Both	CS-06
25	306+380	306+480	306+500	306+600	100	5.5	Both	CS-04
26	306+480	306+720	306+600	306+840	240	5.5	Both	CS-06
27	306+720	306+960	306+840	307+080	240	5.5	Both	CS-04
28	306+960	307+400	307+080	307+500	420	5.5	Both	CS-06
29	307+400	307+500	307+500	307+600	100	5.5	Both	CS-06
30	314+020	314+120	314+000	314+100	100	5.5	Both	CS-06
31	314+120	314+220	314+100	314+200	100	5.5	Both	CS-05
32	314+220	314+520	314+200	314+500	300	5.5	Both	CS-04
33	314+520	314+850	314+500	314+830	330	5.5	Both	CS-06
34	314+850	315+020	314+830	315+000	170	5.5	Both	CS-05
35	319+270	321+190	319+200	321+050	1850	5.5	Both	CS-04



Sl. No.	Existing Chainage (Km)		Design Chainage (Km)		Length (m)	Width (m)	Side	C/s Type
	From	To	From	To				
36	321+190	321+490	321+050	321+350	300	5.5	Both	CS-11
37	321+490	321+790	321+350	321+650	300	5.5	Both	CS-11
38	325+770	325+900	325+800	325+930	130	5.5	Both	CS-06
39	325+900	326+510	325+930	326+640	710	5.5	Both	CS-04
40	326+610	326+770	326+640	326+800	160	5.5	Both	CS-06
41	329+870	330+400	329+900	330+400	500	5.5	Both	CS-03
42	331+290	331+550	331+300	331+560	260	5.5	Both	CS-04
43	331+550	331+860	331+560	331+870	310	5.5	Both	CS-05
44	331+860	332+000	331+870	332+000	130	5.5	Both	CS-06
45	332+000	332+200	332+000	332+200	200	5.5	Both	CS-05
46	332+200	332+400	332+200	332+400	200	5.5	Both	CS-04
47	349+020	349+630	349+020	349+630	610	5.5	Both	CS-03
48	356+845	356+925	357+470	357+550	80	5.5	Both	CS-03
49	356+925	357+075	357+550	357+700	150	5.5	Both	CS-06
50	357+075	357+205	357+700	357+830	130	5.5	Both	CS-04
51	357+205	358+061	357+830	358+686	856	5.5	Both	CS-06
52								
53								

The Total length of Service road is 34.56 Kms.

#### Service Roads for Section 2

Sl. No.	Design Chainage (Km)		Side	Length (km)	Width (m)	Location
	From	To				
1	3+200	4+800	Both	1.6	5.5	Pumpwell/Mahaveer Circle
2	9+100	10+200	Both	1.1	5.5	Ullala Village; Thokhodu Block
3	11+450	12+000	Both	0.55	5.5	Kotekara
4	12+700	13+500	Both	0.8	5.5	Talapaddy Town
5	15+200	15+800	Both	0.6	5.5	Near Talapaddy Bridge

The Total Length of Service road is 9.3kms



## Appendix BV.

Details of Proposed ROW  
Section 1

Sl No	Design Chainage		Proposed ROW (m).
	From	To	
1	283+000	288+000	45
2	288+000	293+500	60
3	293+500	295+500	45
4	295+500	358+686	60

## Section 2

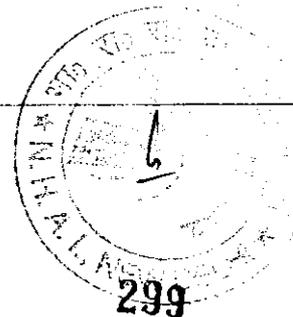
Sl No	Design Chainage (Km)		Proposed ROW (m)
	From	To	
1	1+900	2+445	60
2	2+445	2+915	60
3	2+915	4+540	60
4	4+540	4+985	60
5	4+985	5+225	60
6	5+225	5+805	60
7	5+805	6+420	60
8	6+420	6+555	60
9	6+555	8+050	60
10	8+050	9+005	60
11	9+005	9+500	60
12	9+500	9+850	60
13	9+850	12+890	60
14	12+89	13+470	60
15	13+470	14+350	60
16	14+350	14+730	60
17	14+730	14+980	60
18	14+980	15+700	60
19	15+700	18+100	60



## Appendix BVI

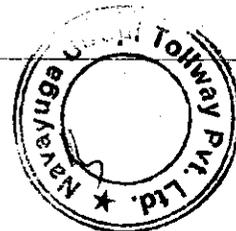
Major Intersections  
Section 1

Sl. No.	Existing Chainage (km)	Design Chainage (km)	Category of Road	Type of junction	Remarks
1	284+080	284+000	B.T Road	Y Junction	at km 284.310, 284.335 and 284.350 cross roads. At km 284+700; L/s temple in ROW
2	285+070	284+990	B.T Road	T Junction	-
3	287+620	287+800	B.T Road	4 legged (x - type)	cross road
4	290+300	290+510	B.T Road	3 legged (Y - type)	-
5	296+840	296+920	B.T Road	4 legged (+ - type)	-
6	297+670	297+810	B.T Road	3 legged (Y - type)	Y junction
7	298+000	298+120	B.T Road	4 legged (+ - type)	-
8	306+450	306+580	B.T Road	3 legged (T- type)	-
9	314+200	314+200	B.T Road	3 legged(y -type)	Y junction
10	315+850	315+820	B.T Road	3 legged (y - type)	-
11	318+970	318+900	B.T Road	4 legged (+ - type)	T junction
12	320+040	319+960	B.T Road	4 legged (+ - type)	-
13	321+500	321+350	B.T Road	5 legged (- type)	-
14	322+540	322+380	B.T Road	3 legged (y - type)	Y junction
15	326+050	326+070	B.T Road	4 legged (+ - type)	X junction
16	331+670	331+680	B.T Road	3 legged (T- type)	L/s Mosque at 331+650 And Y - Junction
17	342+020	341+985	B.T Road	3 legged (T- type)	-
18	343+100	343+100	B.T Road	4 Legged(+Type)	-
19	344+500	344+530	B.T Road	3 legged (T- type)	-
20	348+910	348+945	B.T Road	3 legged (T- type)	-
21	350+140	350+520	B.T Road	3 legged (Y type)	-



## Section 2

Sl. No.	Existing Chainage (km)	Design Chainage (km)	Category of Road	Type of junction	Remarks
1	1+900	1+900	National Highway	4 legged (x - type)	Atgrade improvement suggested
2	3+700	3+700	National Highway	Rotary	Flyover proposed
3	9+600	-	-	3 legged (T-type)	Flyover proposed



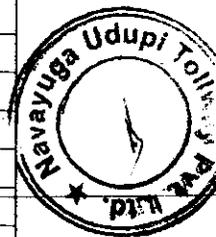
## Appendix BVII

## Minor Junctions

Section 1  
Minor Junctions

Sl.No	Existing Chainage	Design Chainage	Side	Carriageway Width (m)	Category
1	283-950	284+040	RHS	3.40	BT
2	283-982	284+062	LHS	3.80	BT
3	284+135	284+215	LHS	2.86	BT
4	284+208	284+288	LHS	4.34	BT
5	284+260	284+340	RHS	4.25	BT
6	284+310	284+390	LHS	3.31	BT
7	284+355	284+435	LHS	2.85	BT
8	284+425	284+505	RHS	3.75	BT
9	284+485	284+565	RHS	3.15	BT
10	284+510	284+590	LHS	2.50	BT
11	284+690	284+770	RHS	3.56	BT
12	285+103	285+185	RHS	3.95	BT
13	285+218	285+300	RHS	3.45	BT
14	285+238	285+320	LHS	2.75	BT
15	285+263	285+345	LHS	3.00	BT
16	285+428	285+510	RHS	3.16	BT
17	285+566	285+648	RHS	2.35	BT
18	285+723	285+805	RHS	2.60	BT
19	285+793	285+875	LHS	3.10	BT
			RHS	3.50	BT
20	285+983	286+023	RHS	3.00	BT
21	286+090	286+130	RHS	2.78	BT
22	286+233	286+273	RHS	2.50	BT
23	286+290	286+330	LHS	3.50	BT
24	286+365	286+405	RHS	2.50	BT
25	286+390	286+430	LHS	3.16	BT
26	286+415	286+455	RHS	2.95	BT
27	286+640	286+680	LHS	2.80	BT
28	286+875	286+915	RHS	2.56	BT
29	286+892	286+932	LHS	3.15	BT
30	287+105	287+105	RHS	2.86	BT
31	287+225	287+225	LHS	2.62	BT
32	287+285	287+285	RHS	3.42	BT
33	287+345	287+345	RHS	6.42	BT
34	288+181	288+140	RHS	2.50	BT
35	288+541	288+500	LHS	3.38	BT
36	288+831	288+790	LHS	2.95	BT
37	288+971	288+930	RHS	4.40	BT
38	289+211	289+120	LHS	3.50	BT

Sl.No	Existing Chainage	Design Chainage	Side	Carriageway Width (m)	Category
39	289+251	289-160	RHS	3.80	BT
40	289-391	289+300	LHS	3.75	BT
41	289+746	289+655	LHS	2.80	BT
42	289-764	289+673	RHS	3.33	BT
43	290-611	290+485	RHS	2.20	BT
44	290-776	290+850	LHS	4.68	BT
45	291+016	290+890	RHS	4.90	BT
46	291+249	291+154	LHS	2.94	BT
47	291+590	291+495	RHS	1.95	BT
48	291+645	291+550	RHS	2.19	BT
49	292+005	291+910	RHS	3.50	BT
50	292+170	292+045	LHS	2.68	BT
51	292+300	292+175	RHS	3.22	BT
52	292+385	292+260	LHS	5.00	BT
53	292+675	292+550	RHS	3.27	BT
54	292+695	292+570	LHS	3.00	BT
55	292+800	292+675	LHS	3.69	BT
56	293+134	293+010	RHS	3.90	BT
57	293+414	293+290	LHS	3.15	BT
58	293+694	293+570	RHS	2.75	BT
59	294+074	293+950	RHS	3.75	BT
60	294+104	293+980	LHS	2.90	BT
61	294+508	294+380	RHS	2.76	BT
62	294+608	294+480	LHS	3.20	BT
63	294+873	294+745	RHS	3.27	BT
64	295+028	294+900	LHS	3.00	BT
65	295+202	295+080	RHS	4.10	BT
66	295+737	295+615	LHS	4.50	BT
67	295+977	295+855	LHS	3.00	BT
68	296+425	296+305	LHS	2.43	BT
69	296+610	296+490	LHS	2.60	BT
70	297+010	296+890	RHS	3.50	BT
71	297+309	297+190	RHS	3.00	BT
72	297+659	297+540	RHS	2.91	BT
73	297+896	297+777	LHS	3.70	BT
74	297+981	297+862	LHS	2.73	BT
75	298+109	297+990	LHS	3.00	BT
76	298+277	298+170	LHS	4.70	BT
77	298+470	298+363	RHS	5.64	BT
78	298+492	298+385	RHS	2.92	BT
79	298+542	298+435	LHS	3.63	BT
80	298+700	298+593	RHS	3.54	BT
81	298+920	298+813	RHS	1.75	BT

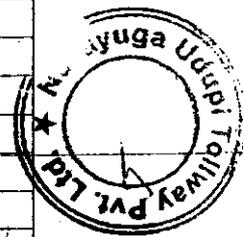
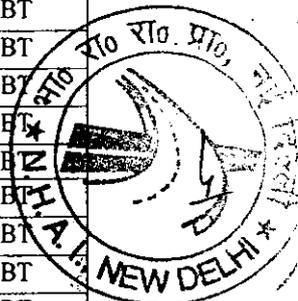


Sl.No	Existing Chainage	Design Chainage	Side	Carriageway Width (m)	Category
82	299-077	298+970	RHS	3.10	BT
83	299-165	299+035	LHS	2.80	BT
84	299+270	299+140	RHS	3.86	BT
85	299-352	299+222	RHS	2.94	BT
86	299+508	299+378	LHS	1.83	BT
87	299-642	299+512	LHS	2.66	BT
88	299+760	299+630	RHS	2.88	BT
89	299+863	299+733	LHS	3.50	BT
90	299+895	299+765	LHS	2.72	BT
			RHS	2.52	BT
91	300+360	300+240	LHS	3.45	BT
92	300+632	300+512	RHS	2.95	BT
93	300+880	300+760	RHS	2.93	BT
94	301+030	300+910	RHS	2.80	BT
95	301+223	301+050	LHS	3.20	BT
96	301+666	301+493	RHS	2.99	BT
97	301+843	301+670	LHS	2.75	BT
98	301+923	301+750	LHS	2.39	BT
99	302+172	302+015	RHS	3.10	BT
100	302+782	302+625	RHS	2.90	BT
101	302+877	302+720	RHS	3.08	BT
102	304+738	304+580	LHS	6.40	BT
			RHS	3.47	BT
103	304+808	304+650	RHS	2.25	BT
104	305+008	304+850	RHS	5.12	BT
105	305+409	305+270	RHS	3.50	BT
106	305+539	305+400	RHS	2.50	BT
107	306+059	305+920	LHS	2.87	BT
108	307+033	306+900	RHS	2.80	BT
109	307+202	307+085	LHS	3.20	BT
110	307+327	307+210	LHS	4.40	BT
111	307+516	307+399	LHS	5.30	BT
			RHS	3.60	BT
112	307+617	307+500	RHS	3.00	BT
113	307+717	307+600	RHS	3.59	BT
114	307+817	307+700	RHS	3.84	BT
115	308+263	308+200	LHS	3.50	BT
116	308+603	308+540	LHS	2.30	BT
			RHS	3.50	BT
117	308+823	308+760	LHS	3.20	BT
			RHS	3.12	BT
118	309+003	308+940	RHS	2.60	BT
119	309+386	309+310	RHS	2.90	BT

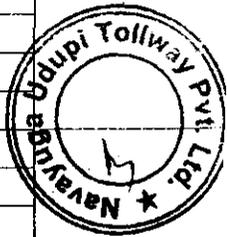


303

Sl.No	Existing Chainage	Design Chainage	Side	Carriageway Width (m)	Category
120	309+456	309+380	RHS	2.84	BT
121	309+716	309+640	LHS	3.30	BT
			RHS	3.10	BT
122	310+165	310+000	LHS	3.10	BT
			RHS	3.60	BT
123	310+490	310+325	LHS	3.70	BT
124	310+790	310+625	RHS	2.07	BT
125	311+581	311+430	LHS	3.42	BT
126	311+751	311+600	RHS	2.89	BT
127	311+878	311+727	LHS	3.54	BT
128	311+911	311+760	RHS	2.88	BT
129	312+126	311+975	LHS	3.57	BT
130	312+824	312+710	LHS	5.20	BT
131	313+438	313+290	LHS	5.14	BT
132	313+498	313+350	LHS	3.60	BT
133	314+190	314+230	RHS	3.54	BT
134	314+250	314+290	LHS	2.95	BT
135	314+270	314+310	RHS	3.70	BT
136	314+510	314+550	RHS	3.58	BT
137	315+054	315+070	RHS	3.28	BT
138	315+384	315+400	LHS	3.50	BT
			RHS	3.00	BT
139	315+644	315+660	LHS	2.80	BT
140	315+684	315+700	RHS	2.90	BT
141	315+734	315+750	RHS	3.61	BT
142	316+240	316+300	LHS	3.68	BT
			RHS	2.26	BT
143	316+710	316+770	LHS	4.20	BT
144	316+770	316+830	RHS	4.46	BT
145	316+910	316+970	RHS	2.67	BT
146	317+045	317+120	LHS	4.00	BT
			RHS	4.20	BT
147	317+535	317+610	LHS	3.10	BT
			RHS	3.00	BT
148	319+074	319+160	LHS	2.50	BT
149	319+264	319+350	LHS	4.45	BT
150	319+554	319+640	RHS	3.46	BT
151	319+674	319+760	LHS	6.10	BT
152	319+804	319+890	RHS	3.45	BT
153	319+944	320+040	RHS	3.00	BT
154	320+019	320+115	LHS	2.10	BT
			RHS	3.17	BT
155	320+249	320+345	LHS	3.64	BT



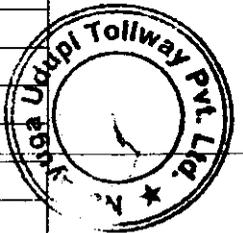
Sl.No	Existing Chainage	Design Chainage	Side	Carriageway Width (m)	Category
156	320-324	320-420	RHS	2.48	BT
157	320-404	320+500	LHS	2.00	BT
158	320+684	320+780	LHS	2.38	BT
159	320+891	321+040	LHS	2.27	BT
160	320+961	321+110	LHS	2.54	BT
161	320-931	321+130	RHS	3.30	BT
162	321+031	321+180	LHS	2.90	BT
163	321+466	321+615	RHS	2.37	BT
164	321+511	321+660	LHS	2.30	BT
			RHS	2.50	BT
165	321+671	321+820	RHS	6.28	BT
166	322+474	322+650	LHS	3.20	BT
167	322+644	322+820	RHS	2.50	BT
168	322+724	322+900	RHS	2.35	BT
169	322+804	322+980	LHS	2.82	BT
170	323+067	323+230	LHS	2.50	BT
171	323+272	323+435	LHS	3.60	BT
			RHS	1.79	BT
172	323+637	323+800	LHS	3.25	BT
173	323+697	323+860	LHS	2.92	BT
			RHS	2.75	BT
174	323+943	324+120	LHS	3.50	BT
			RHS	4.50	BT
175	324+713	324+890	LHS	3.24	BT
176	324+793	324+970	RHS	3.30	BT
177	325+404	325+390	RHS	3.73	BT
178	326+269	326+250	LHS	3.20	BT
			RHS	3.40	BT
179	327+247	327+240	RHS	3.60	BT
180	327+507	327+500	LHS	4.40	BT
181	327-687	327+680	LHS	2.30	BT
182	327+887	327+880	RHS	2.40	BT
183	327+952	327+945	LHS	3.60	BT
184	328+086	328+060	RHS	2.40	BT
185	328+581	328+555	RHS	3.60	BT
186	329+037	329+020	RHS	3.30	BT
187	329+062	329+045	LHS	3.51	BT
188	329+999	330+020	LHS	3.50	BT
189	330+112	330+133	RHS	3.18	BT
190	330+329	330+350	RHS	2.18	BT
			LHS	2.79	BT
191	330+394	330+415	RHS	2.67	BT



Sl.No	Existing Chainage	Design Chainage	Side	Carriageway Width (m)	Category
192	330+329	330+350	LHS	4.30	BT
			RHS	2.90	BT
193	330+574	330+595	LHS	4.00	BT
194	330+684	330+705	RHS	2.34	BT
195	330+749	330+770	RHS	2.55	BT
196	330+799	330+820	RHS	2.58	BT
197	330+959	330+980	RHS	2.94	BT
198	331+008	331+000	LHS	3.20	BT
199	331+238	331+230	RHS	1.93	BT
200	331+398	331+390	LHS	3.77	BT
201	331+493	331+485	RHS	3.54	BT
202	332+258	332+270	LHS	4.32	BT
203	332+318	332+330	RHS	3.75	BT
204	332+443	332+455	LHS	3.42	BT
205	332+588	332+600	RHS	3.89	BT
206	332+728	332+740	RHS	3.50	BT
207	333+114	333+130	RHS	2.94	BT
208	333+194	333+210	RHS	2.94	BT
209	333+714	333+730	RHS	4.30	BT
210	333+754	333+770	LHS	3.20	BT
211	334+603	334+600	LHS	3.50	BT
212	334+863	334+860	RHS	3	BT
213	335+214	335+210	RHS	2.4	BT
214	335+604	335+600	RHS	3.26	BT
215	335+819	335+815	RHS	3.4	BT
216	336+126	336+132	RHS	2.5	BT
217	336+229	336+235	LHS	3.15	BT
218	336+334	336+340	RHS	3.11	BT
219	336+669	336+675	RHS	3.8	BT
220	336+729	336+735	RHS	2.5	BT
221	336+934	336+940	RHS	3.3	BT
			LHS	2.7	BT
222	336+969	336+975	RHS	2.7	BT
			LHS	2.7	BT
223	337+201	337+200	LHS	4.1	BT
224	337+401	337+400	LHS	3.5	BT
			RHS	3.1	BT
225	337+851	337+850	RHS	3.5	BT
226	338+594	338+610	RHS	4.35	BT
227	339+037	339+070	LHS	4.42	BT
228	339+062	339+095	RHS	1.96	BT
229	339+207	339+240	LHS	3.72	BT



Sl.No	Existing Chainage	Design Chainage	Side	Carriageway Width (m)	Category
230	340+257	340+300	LHS	2.6	BT
231	340+557	340+600	RHS	4.6	BT
232	340+832	340+875	RHS	3.89	BT
233	340+867	340+910	RHS	3.1	BT
234	341+383	341+425	RHS	3.5	BT
235	345+099	344+990	RHS	4.7	BT
236	345+056	345+040	LHS	3.8	BT
237	345+076	345+060	RHS	4.3	BT
			LHS	3.5	BT
238	345+296	345+280	LHS	2.2	BT
239	345+706	345+690	RHS	4.4	BT
240	345+896	345+880	LHS	2.3	BT
241	346+430	346+385	LHS	3.5	BT
242	346+965	346+920	LHS	3.5	BT
			RHS	4.8	BT
243	347+507	347+470	LHS	2.8	BT
244	347+567	347+530	RHS	5.34	BT
245	347+807	347+770	LHS	2.8	BT
246	348+849	348+830	LHS	3.6	BT
			RHS	4.4	BT
247	Bypass	349+135	LHS	2.9	BT
			RHS	2.8	BT
248	Bypass	349+560	LHS	2.6	BT
			RHS	2.6	BT
249	351+303	350+950	LHS	3.3	BT
			RHS	2.79	BT
250	351+528	351+170	RHS	3.2	BT
251	351+558	351+200	LHS	5.5	BT
252	352+178	351+820	LHS	6.4	BT
253	352+452	352+110	LHS	6.9	BT
254	352+502	352+160	RHS	2.6	BT
255	352+882	352+540	LHS	4.4	BT
256	352+982	352+640	LHS	4.1	BT
257	353+162	352+820	RHS	2	BT
258	353+993	353+640	LHS	3.6	BT
			RHS	4	BT
259	354+537	354+090	LHS	2.9	BT
260	354+967	354+520	LHS	3	BT
261	355+217	354+770	LHS	4.5	BT
			RHS	5.89	BT
262	355+462	355+000	LHS	4.5	BT
263	356+162	355+700	RHS	4.1	BT
264	356+222	355+760	LHS	3	BT



Sl.No	Existing Chainage	Design Chainage	Side	Carriageway Width (m)	Category
265	356+407	355+945	RHS	2.6	BT
266	356+650	356+100	LHS	3	BT
267	357+030	356+480	RHS	2.4	BT
268	357+500	356+950	LHS	2.5	BT
269	358+014	357+480	RHS	4.5	BT
270	358+124	357+590	RHS	3.5	BT
271	358+444	357+910	LHS	2.5	BT

**Section 2**

Sl.No	Existing Chainage	Design Chainage	Side	Carriageway Width (m)	Category
Existing 15 minor junctions to be improved					



## Appendix BVIII

## Details of Proposed Grade Separated Intersections

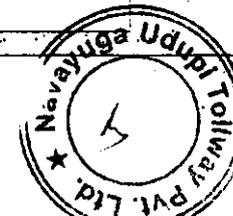
## Section 1

Sl. No.	Location	Existing Chainage (Km)	Design Chainage (Km)	Name of Intersecting Road	Proposed Structural Configuration	Proposed Structure Type	Proposed Span Arrangement	Total Width of the structure
Nil								

## Section 2

## Location for Proposed Flyovers

Sl. No.	Location	Existing Chainage (Km)	Design Chainage (Km)	Name of Intersecting Road	Proposed Structural Configuration	Proposed Structure Type	Proposed Span Arrangement	Total Width of the structure
1	Mahaveer Circle/Pumpwell circle	376+700	3+700	NH-48	Pile Foundation with PSC post tensioned I girder – RCC cast in situ deck	Flyover	1 x 30.5 m	2x9.9m
2	Thekottu	9+600	9+572	-	Pile Foundation with PSC post tensioned I girder – RCC	Flyover	1 x 30.5 m	2x9.9m



Sl. No.	Location	Existing Chainage (Km)	Design Chainage (Km)	Name of Intersecting Road	Proposed Structural Configuration	Proposed Structure Type	Proposed Span Arrangement	Total Width of the structure
					cast in situ deck			

310

4 Laning of Kundapur - Surathkal and Mangalore -Karnataka/  
Kerala Border sections of NH 17 (Total Length 90.08 Km)  
in the State of Karnataka under NHDP Phase III on BOT Basis



## Appendix BIX

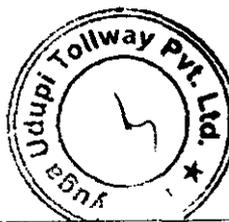
## Details of Proposed Vehicular Underpasses

## For Section 1

Sl. No.	Existing Chainage (Km)	Design Chainage (Km)	Name of Intersecting Roads	Proposed Structure Configuration	Proposed Structure Type	Proposed Span Arrangement	Total Width of the structure
1	284+040	284+000	Loin's Club road	New Four lane	Vehicular Underpass	10.5 x 5	27.5
2	321+500	321+350	Uduppi	New Four lane	Overpass	2x12 x 5	27.5
3	357+957	358+250	Near NIT	New Four lane	Vehicular Underpass	10.5 x 5	13.75

## For Section 2

Sl. No.	Existing Chainage (Km)	Design Chainage (Km)	Name of Intersecting Roads	Proposed Structure Configuration	Proposed Structure Type	Proposed Span Arrangement	Total Width of the structure
Nil							

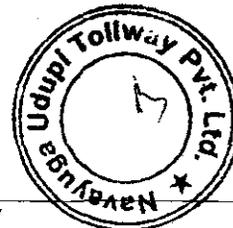


## Appendix BX

## Details of Proposed Pedestrian/Cattle Underpasses

## For Section 1

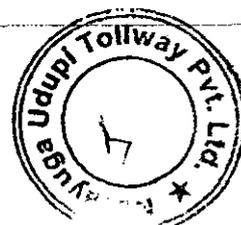
Sl. No.	Existing Chainage (Km)	Design Chainage (Km)	Name of Intersecting Roads	Proposed Structure Configuration	Proposed Structure Type	Proposed Span Arrangement	Total Width of the structure
<b>Cattle Underpass-</b>							
1	286+580	286+550	-	New Four Lane	Cattle Underpass	4.0m x 3.5m	27.5
2	287+750	287+800	Koteswara Town - Shimoga	New Four Lane	Cattle Underpass	4.0m x 3.5m	27.5
3	289+190	289+290	-	New Four Lane	Cattle Underpass	4.0m x 3.5m	27.5
4	294+610	294+730	To Police Station	New Four Lane	Cattle Underpass	4.0m x 3.5m	27.5
5	295+380	295+500	To Kota Village	New Four Lane	Cattle Underpass	4.0m x 3.5m	27.5
6	298+000	298+120	Saligram Old Road – Narasimha Swami Temple	New Four Lane	Cattle Underpass	4.0m x 3.5m	27.5
7	307+200	307+300	Brahmavara Village	New Four Lane	Cattle Underpass	4.0m x 3.5m	27.5
8	320+050	319+960	To Udupi	New Four Lane	Cattle Underpass	4.0m x 3.5m	27.5
9	Bypassed	349+140	-	New Four Lane	Cattle Underpass	4.0m x 3.5m	27.5
10	357+020	357+620	-	New Four Lane	Cattle Underpass	4.0m x 3.5m	27.5
<b>Pedstrian Underpass</b>							
11	283+820	283+705	-	New Four Lane	Pedestrian Pass	3.0mx2.5m	27.5
12	284+240	284+145	-	New Four Lane	Pedestrian Pass	3.0mx2.5m	27.5
13	284+850	284+765	Rayappana Matha	New Four Lane	Pedestrian Pass	3.0mx2.5m	27.5
14	285+280	285+195	TT Road	New Four Lane	Pedestrian Pass	3.0mx2.5m	27.5
15	332+200	332+200	-	New Four Lane	Pedestrian Pass	3.0mx2.5m	22.5
16	Bypassed	342+883	-	New Four Lane	Pedestrian Pass	3.0mx2.5m	27.5
17	Bypassed	343+340	-	New Four Lane	Pedestrian Pass	3.0mx2.5m	27.5



312

## For Section 2

Sl. No.	Existing Chainage (Km)	Design Chainage (Km)	Name of Intersecting Roads	Proposed Structure Configuration	Proposed Structure Type	Proposed Span Arrangement	Total Width of the structure
<b>Pedestrian Underpass</b>							
1	14+500	14+500	Uchilla	New Four Lane	Pedestrian Underpass	3.0mx2.5m	27.5
2	16+900	16+900	Thalappady	New Four Lane	Pedestrian Underpass	3.0mx2.5m	27.5



313

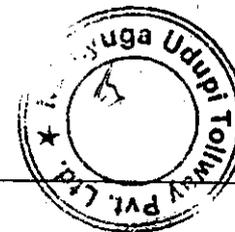
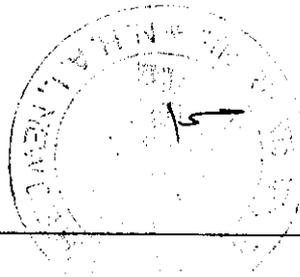
## Details of new Major Bridges and Rehabilitation/Repair/widening Scheme for Existing Major Bridges

Appendix BXI

A. Construction of new Major Bridges For Section 1

Sl. No	Name of the bridge	Bridge No	Existing Chainage (km)	Design Chainage (km)	Type of crossing	Proposed structural configuration	Proposed Structural type	Proposed Span arrangement	Total width of structure
1	Pangala	330/1	330+300	329+467	Normal	6 lane	T-Beam Bridge	3x20	12X2

314



B. Rehabilitation/Repair/widening of existing Major bridges For Section I

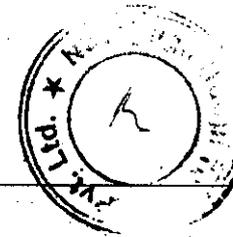
Sl. No	Name of the bridge	Bridge No	Chainage (km)	Width	Span Arrangement	Type Of structure				Details of Rehabilitation	Details of Repair	Details of widening
						Foundation	Substructure		Superstructure			
							Abutment	Pier				
1	Mabukala	304/2	303+467	12X2	10 x 29	Well	RCC	RCC	PSC I Girder	Retain the existing bridge with minor repairs.		Additional bridge with 12m total width and footway on one side, suitable for 3 lane upgradation
2	Bhadragiri	311/1	310+453	12X2	3 x 29	Well	RCC	RCC	PSC I Girder	Retain the existing bridge with minor repairs.		Additional bridge with 12m total width and footway on one side, suitable for 3 lane upgradation

315



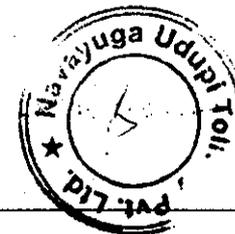
Sl. No	Name of the bridge	Bridge No	Chainage (km)	Width	Span Arrangement	Type Of structure				Details of Rehabilitation	Details of Repair	Details of widening
						Foundation	Substructure		Superstructure			
							Abutment	Pier				
3	Kalyanpur	313/5	313+072	12X2	7 x 29	Well	RCC	RCC	PSC I Girder	Retain the existing bridge with minor repairs.	Additional bridge with 12m total width and footway on one side, suitable for 3 lane upgradation	
4	Udayavar	325/2	324+562	12X2	9 x 29	Well	RCC	RCC	PSC I Girder	Retain the existing bridge with minor repairs.	Existing bridge is retained. Additional bridge with 12m total width and footway on one side, suitable for 3 lane upgradation	

316



Sl. No	Name of the bridge	Bridge No	Chainage (km)	Width	Span Arrangement	Type Of structure				Details of Rehabilitation	Details of Repair	Details of widening
						Foundation	Substructure		Superstructure			
							Abutment	Pier				
5	Mulky	349/4	348+454	12X2	6 x 29	Well	SSM	SSM	PSC I Girder	Retain the existing bridge with minor repairs.	Additional bridge with 12m total width and footway on one side, suitable for 3 lane upgradation	
6	Pavanje	356/3	356+407	12X2	5 x 29	Well	RCC	RCC	PSC I Girder	Retain the existing bridge with minor repairs.	Additional bridge with 12m total width and footway on one side, suitable for 3 lane upgradation	

317



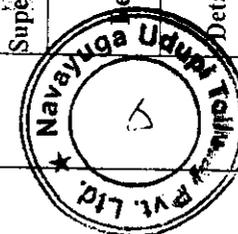
A. Construction of Major Bridge For Section 2

Sl. No	Name of the bridge	Bridge No	Design Chainage (km)	Width	Span Arrangement	Type of Structures			
						Foundation	Abutment	Pier	Superstructure
1	Netravathy Bridge		6+165	13.1	24 x 33.5	Well	Well foundation with R C C Piers and abutment	RCC Piers	PSC 'I' Girder with slab
2	Talpady Bridge		16+344	12	2 x 35m	open	RCC abutment + RCC Pier	RCC Piers	PSC 'I' Girder with slab + solid Slab

B. Rehabilitation/Repair/widening of existing Major bridges For Section 2

Sl. No	Name of the bridge	Bridge No	Design Chainage (km)	Width	Span Arrangement	Type Of structure				Details of Rehabilitation	Details of Repair	Details of widening
						Foundation	Substructure		Superstructure			
							Abutment	Pier				

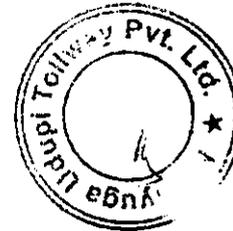
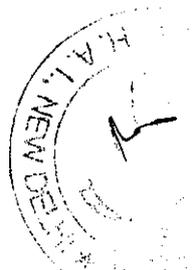
318



1	Netravathy Bridge	6+165	10.3m	24 x 33.5	Well	Well foundation with RCC piers and abutment	PSC 'I' Girder with slab	Retain the existing bridge with repairs required as per site conditions with the approval of IC
2	Talpady Bridge	16+344	8.0m	2 x 35m	Open	PCC abutment + RCC Pier	PSC 'I' Girder with slab + Solid Slab	Retain the existing bridge with repairs required as per site conditions with the approval of IC

\* The proposed span arrangement is tentative and the same shall be finalized in consultation with Irrigation Authority & IC. Any change in span arrangement shall not be treated as change in scope of work.

319



## Appendix BXII

## Details of new Minor Bridges and Rehabilitation/Repair /widening Scheme for Existing Manor Bridges

A. Construction of New Minor Bridges for Section 1

Sl. No	Bridge No	Existing Chainage (km)	Design Chainage (km)	Type of crossing	Proposed structural configuration	Proposed Structural type	Proposed Span arrangement	Total width of structure
1	342/2	341+950	341+926 (Bypassed)	Normal	6 lane	PSC I Girder	1x29	2x12

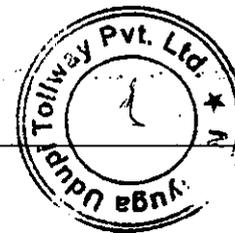
B. Rehabilitation/Repair/Widening of Existing Minor Bridges For Section 1

Sl. No	Name of the bridge	Bridge No	Chainage (km)	Width	Span Arrangement	Foundation	Type Of structure			Details of Rehabilitation	Details of Repair	Details of widening
							Substructure		Superstructure			
							Abutment	Pier				
1	Canal	313/2	312+358	12X2	1 x 6.7	Open	RCC		RCC Slab	Existing bridge to be reconstructed to 3 lane bridge with footway on either side, suitable for 6 lane up gradation (12m +3.5m median gap+12m)		
2	Nittur	319/2	318+190	12X2	3 x 9.5	Open	RCC	RCC	RCC slab	Existing bridge to be reconstructed to 3 lane bridge with footway on either side, suitable for 6 lane up		



Sl. No	Name of the bridge	Bridge No	Chainage (km)	Width	Span Arrangement	Type Of structure				Details of Rehabilitation	Details of Repair	Details of widening
						Foundation	Substructure		Superstructure			
							Abutment	Pier				
											gradation (12m +3.5m median gap+12m)	
3	Canal	328/1	327+149	12X2	1 x 8	Open	RCC	-	RCC Slab		Existing bridge to be reconstructed to 6 lane bridge with footway on either side, suitable for 6 lane up gradation(12m +3.5m median gap+12m)	
4	Hejamadi	347/1	346+264	12X2	1 x 7	Open	RCC	-	RCC Slab		Existing bridge to be reconstructed to 6 lane bridge with footway on either side - suitable for 3 lane up gradation (12m +3.5m median gap+12m)	
5	Canal	347/3	346+640	12X2	1 x 9.1	Open	RCC	-	RCC Slab		Additional bridge with 12m total width and footway on one side, suitable for 3 lane upgradation (Existing bridge is retained and shall be widened to standard 2 lane)	
6	Canal	353/4	353+213	12X2	1 x 13.5	Open	RCC	-	T-Beam Bridge		Retain the existing bridge with minor repairs. Additional bridge with 12m total width and footway on one side, suitable for 3 lane upgradation	

321

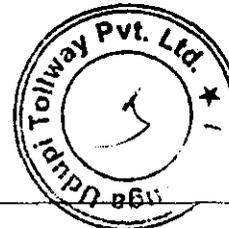


**Construction of Minor Bridges for Section 2****C. New and Rehabilitation/Repair/Widening of Existing Minor Bridges For Section 2**

Sl. No	Name of the bridge	Bridge No	Proposed Chainage (km)	Width	Span Arrangement	Type Of structure				Details of widening
						Foundation	Substructure		Superstructure	
							Abutment	Pier		
1	-		5+490	12	1 x 8	Open	RR Abutment		Box	Widening of existing structure with Cell Box structure. Additional bridge with 12m total width and footway on one side, suitable for 3 lane upgradation
2	-		6+165	12	1 x 8	Open	RR Abutment		Box	Widening of existing structure with Cell Box structure. Additional bridge with 12m total width and footway on one side, suitable for 3 lane upgradation
3	-		14+767	12	2 x 5 + 1 x 25	Open	Solid wall type RCC		PSC 'I' Girder with slab + Solid Slab	PSC 'I' Girder with deck slab, Circular pier for intermediate Span & RCC deck slab with Wall type abutment for End Span. Additional bridge with 12m total width and footway on one side, suitable for 3 lane upgradation

\* The proposed span arrangement is tentative and the same shall be finalized in consultation with Irrigation Authority & IC. Any change in span arrangement shall not be treated as change in scope of work.

322



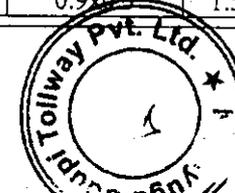
## Appendix BXIII

## Section I

## Reconstruction Scheme for Culverts

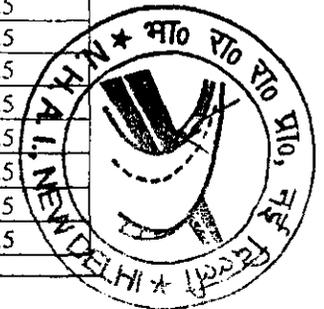
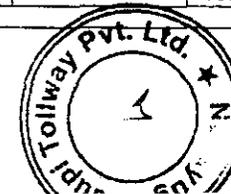
Sl. No.	Existing CD No.	Existing Chainage	Design Chainage	Type of Structure		Recommendation	Span Arrangement		Proposed total width (m)
				Existing	Proposed		Existing (m)	Proposed (m)	
1	284/2	283+500	283+390	Slab	Slab	Reconstruction	0.9x0.9	1.5 x 1.5	41.2
2	284/3	283+700	283+610	Slab	Slab	Reconstruction	0.9x0.9	1x1.2	45
3	285/1	284+230	284+140	Slab	Slab	Reconstruction	0.9x0.9	1.5 x 1.5	45
4	285/2	284+925	284+835	Slab	Slab	Reconstruction	0.9x0.9	1.5 x 1.5	41.2
5	286/1	285+585	285+500	Pipe	Pipe	Reconstruction	0.9x1	1.5 x 1.5	41.2
6	287/1	286+610	286+570	Pipe	Pipe	Reconstruction	0.9x1	1x1.2	41.2
7	288/1	287+550	287+510	Slab	Slab	Reconstruction	0.9x0.4	1.5 x 1.5	41.2
8	288/2	287+700	287+620	Pipe	Pipe	Reconstruction	0.6x1	1.5 x 1.5	41.2
9	288/3	287+830	287+785	Skew slab	Skew slab	Reconstruction	1x0.9	1x1.2	41.2
10	288/4	287+900	287+935	Pipe	Pipe	Widening	0.9x1	1 x 0.9 Dia	41.2
11	289/1	288+050	288+110	Slab	Slab	Reconstruction	0.7x0.7	1.5 x 1.5	26.5
12	289/2	288+350	288+475	Pipe	Pipe	Reconstruction	0.9x1	1.5 x 1.5	26.5
13	289/3	288+630	288+825	Pipe	Pipe	Reconstruction	0.9x1	1.5 x 1.5	26.5
14	289/4	288+980	289+040	Slab	Slab	Reconstruction	0.9x0.7	1.5 x 1.5	26.5
15	290/1	289+100	289+295	Pipe	Pipe	Widening	0.9x1	1 x 0.9 Dia	26.5
16	290/2	289+500	289+710	Slab	Slab	Widening	3x1	3 x 1.5	26.5
17	290/3	289+800	289+970	Slab	Slab	Reconstruction	0.9x0.9	1.5 x 1.5	26.5
18	291/1	290+050	290+230	Slab	Slab	Reconstruction	2.5x2	2.5 x 2	26.5
19	291/2	290+900	291+090	Slab	Slab	Reconstruction	0.9x0.5	1.5 x 1.5	26.5
20	292/1	291+200	291+415	Slab	Slab	Reconstruction	0.9x0.6	1.5 x 1.5	26.5
21	292/2	291+750	291+915	Slab	Slab	Reconstruction	0.9x0.9	1.5 x 1.5	26.5
22	292/3	291+920	292+035	Slab	Slab	Reconstruction	0.9x0.7	1.5 x 1.5	26.5
23	293/1	292+270	292+300	Box	Box	Reconstruction	0.9x0.4	1.5 x 1.5	26.5
24	293/2	292+450	292+560	Slab	Slab	Reconstruction	0.9x0.9	1.5 x 1.5	26.5

4 Laning of Kundapur - Surathkal and Mangalore -Karnataka/  
Kerala Border Sections of NH 17 (Total Length 90.08 Km)  
in the State of Karnataka under NHDP Phase III on BOT Basis



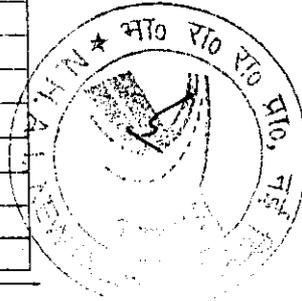
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				Existing	Proposed		Existing (m)	Proposed (m)	
25	293/3	292+600	292+780	Slab	Slab	Reconstruction	0.9x0.7	1.5 x 1.5	26.5
26	294/1	293+100	293+235	Pipe	Pipe	Widening	0.9x1	1 x 0.9 Dia	26.5
27	294/2	293+600	293+730	Pipe	Pipe	Reconstruction	0.9x1	1.5 x 1.5	41.2
28	294/3	293+720	293+885	Slab	Slab	Reconstruction	0.9x0.9 on LHS 0.9x1.6 on RHS	1.5 x 1.5	41.2
29	294/4	293+960	294+110	Slab	Slab	Reconstruction	0.9x0.45	1.5 x 1.5	41.2
30	295/1	294+070	294+190	Slab	Slab	Reconstruction	0.9x0.4	1.5 x 1.5	41.2
31	295/2	294+300	294+440	Slab	Slab	Reconstruction	0.9x0.5	1.5 x 1.5	41.2
32	295/3	294+600	294+735	Slab	Slab	Reconstruction	0.9x0.2	1x1.2	41.2
33	296/1	295+150	295+245	Slab	Slab	Reconstruction	0.9x0.2	1.5 x 1.5	41.2
34	296/2	295+800	295+905	Pipe	Pipe	Reconstruction	0.9x1	1.5 x 1.5	26.5
35	296/3	295+900	295+995	Slab	Slab	Reconstruction	0.9x0.2	1.5 x 1.5	26.5
36	297/1	296+500	296+595	Slab	Slab	Reconstruction	0.9x0.15	1.5 x 1.5	26.5
37	298/1	297+100	297+180	Pipe	Pipe	Widening	0.9x2	2 x 0.9 Dia	26.5
38	298/2	297+470	297+530	Slab	Slab	Reconstruction	0.9x0.4	1.5 x 1.5	26.5
39	299/1	298+100	298+165	slab	slab	Reconstruction	0.9x0.7	1x1.2	26.5
40	299/2	298+650	298+670	Slab	Slab	Reconstruction	0.9x0.4	1.5 x 1.5	26.5
41	300/1	299+150	299+210	Slab	Slab	Reconstruction	0.9x0.9	1.5 x 1.5	26.5
42	300/2	299+280	299+345	Slab	Slab	Reconstruction	0.9x0.5	1.5 x 1.5	26.5
43	300/3	299+650	299+760	Slab	Slab	Reconstruction	0.9x0.4	1.5 x 1.5	26.5
44	300/4	299+900	300+010	Slab	Slab	Reconstruction	0.9x0.9	1.5 x 1.5	26.5
45	302/1	301+010	301+190	Slab	Slab	Reconstruction	0.9x0.9	1.5 x 1.5	26.5
46	302/3	301+800	301+825	Box	Box	Reconstruction	0.9x0.5	1.5 x 1.5	26.5
47	303/1	302+300	302+365	Pipe	Pipe	Reconstruction	0.9	1.5 x 1.5	26.5
48	303/2	302+530	302+620	Slab	Slab	Reconstruction	0.9x0.6	1.5 x 1.5	26.5
49	303/3	302+950	303+010	Pipe	Pipe	Widening	0.9	1 x 0.9 Dia	26.5
50	304/1	303+100	303+250	Pipe	Pipe	Reconstruction	0.9	1X1.2 Dia	26.5

4 Laning of Kundapur - Surathkal and Mangalore -Karnataka/  
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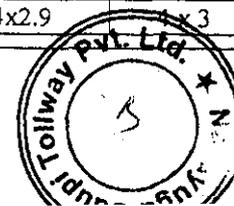
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				Existing	Proposed		Existing (m)	Proposed (m)	
51	305/1	304+180	304+210	Pipe	Pipe	Reconstruction	0.9	1.5 x 1.5	26.5
52	305/2	304+300	304+340	Slab	Slab	Reconstruction	1.2x0.5	1.5 x 1.5	26.5
53	305/3	304+380	304+535	Slab	Slab	Reconstruction	1.2x0.2	1.5 x 1.5	26.5
54	305/4	304+480	304+570	Slab	Slab	Reconstruction	1.2x0.6	1.5 x 1.5	26.5
55	305/5	304+650	304+740	Slab	Slab	Reconstruction	0.9x0.9	1.5 x 1.5	26.5
56	305/6	304+950	305+070	Slab	Slab	Reconstruction	0.9x0.9	1.5 x 1.5	26.5
57	306/1	305+720	305+840	Pipe	Pipe	Reconstruction	0.9	1.5 x 1.5	26.5
58	307/1	306+015	306+125	Box	Box	Reconstruction	3.7x3.7	1.5 x 1.5	51.5
59	307/2	306+960	307+070	Slab	Slab	Reconstruction	3.7x2.5	4x4	51.5
60	308/1	307+650	307+750	Slab	Slab	Widening	2.4x0.7	2.5 x 1.5	26.5
61	309/1	308+150	308+210	Pipe	Pipe	Widening	0.9	2 x 0.9 Dia	26.5
62	309/2	308+650	308+710	Pipe	Pipe	Reconstruction	0.6	1x1.2	26.5
63	310/1	309+130	309+105	Slab	Slab	Reconstruction	1.5x2.55	1.5 x 2.5	26.5
64	310/2	309+300	309+420	Slab	Slab	Reconstruction	0.9x0.6	1.5 x 1.5	26.5
65	310/3	309+750	309+830	Pipe	Pipe	Reconstruction	0.9	1x1.2	26.5
66	311/2	310+760	310+645	Pipe	Pipe	Reconstruction	0.9	1x1.2	26.5
67	311/3	310+900	310+930	Pipe	Pipe	Widening	0.9	1 x 0.9 Dia	26.5
68	312/1	311+300	311+315	Pipe	Pipe	Widening	0.9	1 x 0.9 Dia	26.5
69	312/2	311+600	311+595	Slab	Slab	Reconstruction	1.5x3.4	2 x 3.5	26.5
70	313/1	312+050	312+195	Pipe	Pipe	Reconstruction	0.9	1.5 x 1.5	26.5
71	313/2	312+200	312+320	Pipe	Pipe	Widening	0.9	1 x 0.9 Dia	26.5
72	313/3	312+800	312+760	Slab	Slab	Reconstruction	1.5x3.4	2 x 3.5	26.5
73	313/4	312+920	312+860	Pipe	Pipe	Reconstruction	0.9	1x1.2	26.5
74	316/1	315+500	315+320	Slab	Slab	Reconstruction	0.9x0.7	1.5 x 1.5	26.5
75	316/2	315+900	315+880	Slab	Slab	Reconstruction	1.2 x 0.7	1.5 x 1.5	26.5
76	317/1	316+400	316+145	Pipe	Pipe	Widening	0.9	1 x 0.9 Dia	26.5
77	317/2	316+800	316+650	Pipe	Pipe	Reconstruction	0.9	1.5 x 1.5	26.5
78	318/1	317+900	317+850	Slab	Slab	Widening	3x 1.5	3 x 1.5	26.5

325  
4 Laning of Kundapur - Surathkal and Mangalore -Karnataka/  
Kerala Border Sections of NH 17 (Total Length 90.08 Km)  
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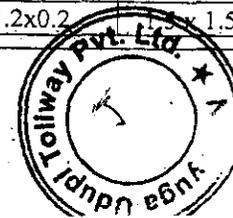
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				Existing	Proposed		Existing (m)	Proposed (m)	
79	319/3	318+650	318+585	Pipe	Pipe	Reconstruction	0.9	1 x 1.2	26.5
80	319/4	318+900	318+760	Pipe	Pipe	Reconstruction	0.9	1.5 x 1.5	60
81	320/1	319+125	319+050	Pipe	Pipe	Widening	0.9	1 x 0.9 Dia	60
82	320/2	319+700	319+380	Pipe	Pipe	Widening	0.9	1 x 0.9 Dia	51.5
83	320/4	319+920	319+850	Pipe	Pipe	Reconstruction	0.6	1x1.2	51.5
84	321/1	320+170	320+475	Slab	Slab	Reconstruction	2.4x2.5	2.5 x 2.5	51.5
85	321/2	320+950	320+825	pipe	pipe	Reconstruction	0.9	1.5 x 1.5	51.5
86	322/1	321+100	320+885	Slab	Slab	Widening	4.5x2.6	4.5 x 2.5	51.5
87	322/2	321+350	321+080	Skew pipe	Skew pipe	Widening	0.9	1 x 0.9 Dia	52.5
88	322/3	321+890	321+730	Pipe	Pipe	Reconstruction	0.9	1.5 x 1.5	26.5
89	322/4	321+970	321+855	Pipe	Pipe	Reconstruction	0.6	1.5 x 1.5	26.5
90		322+080	321+945	Slab	Slab	Reconstruction	4x4	4 x 4	26.5
91	323/1	322+250	322+090	Skew slab	Skew slab	Reconstruction	1.5x2.8	1.5 x 3	26.5
92	323/2	322+350	322+190	Pipe	Pipe	Reconstruction	0.9	1.5 x 1.5	26.5
93	323/3	322+440	322+290	Slab	Slab	Reconstruction	3.5x3.5	3.5 x 3.5	26.5
94	324/1	323+050	322+880	pipe	pipe	Widening	0.9	1 x 0.9 Dia	26.5
95	324/2	323+720	323+560	pipe	pipe	Reconstruction	0.6	1 x 1.2 Dia	26.5
96	324/3	323+870	323+680	Pipe	Pipe	Reconstruction	0.6	1.5 x 1.5	26.5
97	325/1	324+200	323+985	slab	slab	Widening	4.5x2.6	4.5 x 2.6	26.5
98	325/3	324+970	324+775	Slab	Slab	Reconstruction	0.9x3.4	2 x 3.5	26.5
99	326/1	325+040	325+090	pipe	pipe	Widening	0.9	1 x 0.9 Dia	26.5
100	326/2	325+550	325+605	slab	slab	Widening	4x4.2	4 x 4.2	26.5
101	328/2	327+220	327+210	Pipe	Pipe	Reconstruction	0.6	1.5 x 1.5	26.5
102	328/3	327+300	327+295	Slab	Slab	Widening	1.2x1.3	1.5 x 1.5	26.5
103	328/4	327+400	327+420	Slab	Slab	Widening	1.2x1.6	1.5 x 1.5	26.5
104	328/5	327+850	327+880	Slab	Slab	Reconstruction	0.9x0.5	1.5 x 1.5	26.5
105	329/1	328+100	328+105	Slab	Slab	Reconstruction	0.9x0.2	1.5 x 1.5	26.5
106	329/2	328+650	328+640	Slab	Slab	Widening	4x2.9	4 x 3	26.5

326 Laning of Kundapur - Surathkal and Mangalore -Karnataka/  
Kerala Border Sections of NH 17 (Total Length 90.08 Km)  
in the State of Karnataka under NHDP Phase III on BOT Basis



Sl. No.	Existing CD No.	Existing Chainage	Design Chainage	Type of Structure		Recommendation	Span Arrangement		Proposed total width (m)
				Existing	Proposed		Existing (m)	Proposed (m)	
107	329/3	328+850	328+900	Pipe	Pipe	Reconstruction	0.6	1.5 x 1.5	26.5
108	329/4	328+930	328+980	Pipe	Pipe	Reconstruction	0.6	1.5 x 1.5	26.5
109	331/1	330+700	330+645	Pipe	Pipe	Reconstruction	0.9	1.5 x 1.5	26.5
110	332/1	331+200	331+170	Pipe	Pipe	Widening	0.9	1 x 0.9 Dia	26.5
111	332/2	331+900	331+890	Pipe	Pipe	Reconstruction	0.9	1x1.2	50.5
112	333/2	332+160	332+170	Pipe	Pipe	Reconstruction	0.9	1.5 x 1.5	26.5
113	334/1	333+060	333+050	Slab	Slab	Widening	1.2x1.3	1.5 x 1.5	26.5
114	334/2	333+500	333+480	Slab	Slab	Reconstruction	0.9x0.9	1.5 x 1.5	26.5
115	334/3	333+900	333+910	Slab	Slab	Reconstruction	0.9x0.5	1.5 x 1.5	26.5
116	336/1	335+250	335+250	Slab	Slab	Reconstruction	0.9x0.2	1.5 x 1.5	26.5
117	337/1	336+500	336+475	Slab	Slab	Reconstruction	0.9x0.2	1.5 x 1.5	26.5
118	337/2	336+750	336+720	Slab	Slab	Reconstruction	0.9x0.5	1.5 x 1.5	26.5
119	337/3	336+900	336+880	Pipe	Pipe	Reconstruction	0.9	1.5 x 1.5	26.5
120	338/2	337+650	337+600	Pipe	Pipe	Widening	0.9	1 x 0.9 Dia	26.5
121		337+998	337+880	Pipe	Pipe	Reconstruction	0.9	1.5 x 1.5	26.5
122	339/1	338+050	338+045	Pipe	Pipe	Reconstruction	0.6	1.5 x 1.5	26.5
123	339/2	338+400	338+370	Slab	Slab	Reconstruction	0.7x0.5	1.5 x 1.5	26.5
124	339/3	338+790	338+740	Slab	Slab	Reconstruction	0.9x0.7	1.5 x 1.5	26.5
125	340/2	339+900	339+860	Pipe	Pipe	Reconstruction	0.6	1.5 x 1.5	26.5
126	345/3	344+650	344+662	Pipe	Pipe	Reconstruction	0.6	1x1.2	26.5
127	345/4	344+860	344+857	Pipe	Box	Reconstruction	0.9	1.5 x 1.5	26.5
128	345/5	344+920	344+907	Slab	Box	Reconstruction	0.9x0.9	1.5 x 1.5	26.5
129	346/1	345+840	345+852	Slab	Box	Reconstruction	0.9x0.2	1.5 x 1.5	26.5
130	346/2	345+950	345+967	Pipe	Box	Reconstruction	0.6	1.5 x 1.5	26.5
131	347/2	346+500	346+502	Pipe	Pipe	Widening	0.9	1 x 0.9 Dia	26.5
132	348/1	347+250	347+252	Pipe	Box	Reconstruction	0.9	1.5 x 1.5	26.5
133	348/2	347+400	347+417	Pipe	Pipe	Widening	0.9	1 x 0.9 Dia	26.5
134	348/3	347+850	347+862	Slab	Box	Reconstruction	1.2x0.2	1.5 x 1.5	26.5

327  
4 Laning of Kundapur - Surathkal and Mangalore -Karnataka/  
Kerala Border Sections of NH 17 (Total Length 90.08 Km)  
in the State of Karnataka under NHDP Phase III on BOT Basis





## Proposed New Culverts

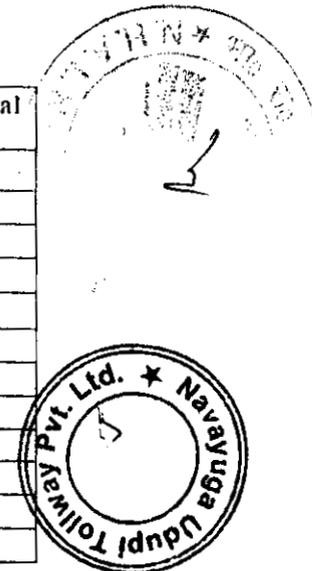
Sl No.	Design Chainage/ Location	Design Chainage	Proposed Structure	Proposed size arrangement	Proposed total width (m)
1	Kota	296+890	Pipe	1x1.2	26.5
2	Kota	297+950	Pipe	1x1.2	26.5
3	Uppinakote	306+860	Single cell box	1.5 x 1.5	51.5
4	Brahnavar	307+160	Pipe	1x1.2	51.5
5	Herur	313+630	Single cell box	1.5 x 1.5	26.5
6	Herur	313+970	Pipe	1x1.2	26.5
7	Herur	314+970	Single cell box	1.5 x 1.5	51.5
8	Puttur	316+940	Single cell box	1.5 x 1.5	26.5
9	Puttur	320+540	Single cell box	1.5 x 1.5	51.5
10	Kotpadi	326+330	Single cell box	1.5 x 1.5	51.5
11	Kotpadi	326+600	Single cell box	1.5 x 1.5	51.5
12	Kaup	334+220	Single cell box	1.5 x 1.5	26.5
13	Kaup	334+310	Single cell box	1.5 x 1.5	26.5
14	Kaup	335+070	Single cell box	1.5 x 1.5	26.5
15	Uchila	339+285	Single cell box	1.5 x 1.5	26.5
16	Uchila	340+010	Single cell box	1.5 x 1.5	26.5
17	Uchila	340+180	Single cell box	1.5 x 1.5	26.5
18	Uchila	340+410	Single cell box	1.5 x 1.5	26.5
19	Uchila	341+080	Single cell box	1.5 x 1.5	26.5
20	Uchila	341+380	Single cell box	1.5 x 1.5	26.5
21	Uchila	341+780	Pipe	1x1.2	26.5
22	Uchila	342+160	Pipe	1x1.2	26.5
23	Uchila	342+700	Pipe	1x1.2	26.5
24	Padudidri	343+570	Pipe	1x1.2	26.5
25	Padudidri	344+190	Pipe	1x1.2	26.5
26	Padudidri	344+360	Pipe	1x1.2	26.5
27	Padudidri	348+845	Single cell box	1.5 x 1.5	26.5



SI No.	Design Chainage/ Location	Design Chainage	Proposed Structure	Proposed size arrangement	Proposed total width (m)
28	Padudidri	349+200	Pipe	1 x 1.2 Dia	26.5
29	Padudidri	349+380	Single cell box	1.5 x 1.5	26.5
30	Mulki	349+700	Single cell box	1.5 x 1.5	26.5
31	Mulki	349+915	Single cell box	1.5 x 1.5	26.5
32	Mulki	350+349	Single cell box	1.5 x 1.5	26.5
33	Mulki	350+520	Single cell box	1.5 x 1.5	26.5
34	Mulki	350+670	Single cell box	1.5 x 1.5	26.5
35	Mulki	352+410	Single cell box	1.5 x 1.5	26.5
36	Mukka	358+000	Pipe	1x1.2	51.5

**Section2****Reconstruction Scheme for Culverts**

Sl. No.	Existing CD No.	Existing Chainage	Design Chainage	Type of Structure		Recommendation	Span Arrangement		Proposed total width (m)
				Existing	Proposed		Existing (m)	Proposed (m)	
1		3.64		Pipe Culvert	Pipe Culvert	Widening			12
2		3.82		Pipe Culvert	Pipe Culvert	Widening			12
3		3.96		Pipe Culvert	Pipe Culvert	Widening			12
4		3.97		Pipe Culvert	Pipe Culvert	Widening			12
5		4.1		Pipe Culvert	Pipe Culvert	Widening			12
6		4.23		Pipe Culvert	Pipe Culvert	Widening			12
7		4.63		Pipe Culvert	Pipe Culvert	Widening			12
8		5.32		Pipe Culvert	Pipe Culvert	Widening			12
9		5.425		Pipe Culvert	Pipe Culvert	Widening			12
10		5.58		Pipe Culvert	Pipe Culvert	Widening			12
11		5.94		Pipe Culvert	Pipe Culvert	Widening			12



Sl. No.	Existing CD No.	Existing Chainage	Design Chainage	Type of Structure		Recommendation	Span Arrangement		Proposed total width (m)
				Existing	Proposed		Existing (m)	Proposed (m)	
12		6.47		Pipe Culvert	Pipe Culvert	Widening			12
13		8.26		Pipe Culvert	Pipe Culvert	Widening			12
14		8.87		Pipe Culvert	Pipe Culvert	Widening			12
15		9.05		Pipe Culvert	Pipe Culvert	Widening			12
16		9.14		Pipe Culvert	Pipe Culvert	Widening			12
17		9.6		RCC Slab Culvert	RCC Slab Culvert	Widening			12
18		9.87		RCC Slab Culvert	RCC Slab Culvert	Widening			12
19		10.2		RCC Slab Culvert	RCC Slab Culvert	Widening			12
20		11		G. I. Pipe Culvert	G. I. Pipe Culvert	Widening			12
21		11.05		RCC Slab Culvert	RCC Slab Culvert	Widening			12
22		12.04		RCC Slab Culvert	RCC Slab Culvert	Widening			12
23		12.84		RCC Slab Culvert	RCC Slab Culvert	Widening			12
24		12.96		RCC Slab Culvert	RCC Slab Culvert	Widening			12
25		13.29		RCC Slab Culvert	RCC Slab Culvert	Widening			12
26		13.4		RCC Slab Culvert	RCC Slab Culvert	Widening			12
27		14.08		RCC Slab Culvert	RCC Slab Culvert	Widening			12
28		14.25		RCC Slab Culvert	RCC Slab Culvert	Widening			12
29		14.3		RCC Slab Culvert	RCC Slab Culvert	Widening			12
30		14.45		RCC Slab	RCC Slab	Widening			12



Sl. No.	Existing CD No.	Existing Chainage	Design Chainage	Type of Structure		Recommendation	Span Arrangement		Proposed total width (m)
				Existing	Proposed		Existing (m)	Proposed (m)	
				Culvert	Culvert				
31		14.5		RCC Slab Culvert	RCC Slab Culvert	Widening			12
32		15.38		RCC Slab Culvert	RCC Slab Culvert	Widening			12
33		15.72		RCC Slab Culvert	RCC Slab Culvert	Widening			12
34		16.17		Pipe Culvert	Pipe Culvert	Widening			12
35		16.4		Pipe Culvert	Pipe Culvert	Widening			12

## Proposed New Culverts

Sl No.	Design Chainage/ Location	Design Chainage	Proposed Structure	Proposed size arrangement	Proposed total width (m)
Nil					



## Details of Proposed ROB/RUB

## Appendix BXIV

Section 1									
Sl. No	Location	ROB/RUB	Existing Chainage (km)/Design Chainage	Name of crossing	Existing Structure	Proposed Structural Configuration	Proposed Structural Type	Proposed span arrangement	Total width of structure
NIL									

## Section 2

Sl. No	Location	ROB/RUB	Existing Chainage (km)/Design Chainage	Name of crossing	Existing Structure	Proposed Structural Configuration	Proposed Structural Type	Proposed span arrangement	Total width of structure
1	Mangalore - Sakleshpur	ROB	5/000	broad gauge line from Mangalore - Sakleshpur	ROB; column pier structure	3 x 10.3	-	1 x 31	13.1 with 1.5m footpath



**SCHEDULE – C**  
(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:

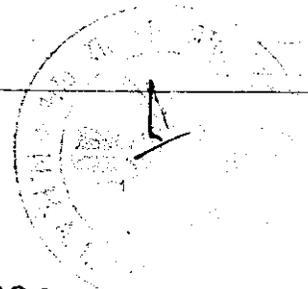
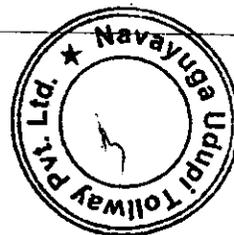
- (a) toll plazas;
- (b) roadside furniture;
- (c) street lighting;
- (d) pedestrian facilities;
- (e) landscaping and tree plantation;
- (f) rest areas;
- (g) truck lay-bys;
- (h) bus-bays and bus shelters;
- (i) cattle crossings;
- (j) traffic aid posts;
- (k) medical aid posts;
- (m) vehicle rescue posts; and
- (n) telecom system;

**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.

**3 Project Facilities for Six-Laning**

Deleted



**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) street lighting
- (d) pedestrian facilities;
- (e) landscaping and tree plantation;
- (f) rest areas;
- (g) truck lay-bys;
- (h) bus-bays and bus shelters;
- (i) Vehicular Underpasses and Pedestrian/Cattle Underpasses
- (j) traffic aid posts:
- (k) medical aid posts:
- (l) vehicle rescue posts
- (m) telecom system

**2 Description of Project Facilities**

Each of the Project Facilities is briefly described below:

**(a) Toll Plazas (3 Nos)**

- 1) At km. km 300+480 (Design Ch. 300+600) for section 1
- 2) At Km. 347+180 (Design Ch 347+200) for section 1
- 3) Between km 16+850 and km 17+050 for section 2

Specifications and other requirements of the toll plaza's shall be strictly as per schedule "D"

**(b) Road side Furniture**

Road side furniture shall be provided in accordance with Section 11 of the Manual of Specifications and Standards.



**(c) Street Lighting:**

Street lighting shall be provided in accordance with para 13.3 of Section 13 of the Manual of Specifications and Standards.

**(d) Pedestrian Facilities**

Pedestrian Facilities shall be provided in accordance with para 13.2 of Section 13 of the Manual of Specifications and Standards.

**(e) Landscaping and Tree Plantation:**

Landscaping and tree plantation shall be provided in accordance with Section 12 of the Manual of specifications and Standards.

**(f) Rest areas and Wayside Amenities:**

Wayside Amenities (one rest area) shall be provided at one location. These should have provisions for restaurants, car parking, toilets, vehicle service station, drinking water facilities and emergency health care facilities for accident victims.

**(g) Truck Lay-byes**

Truck lay-byes are proposed to be constructed at the following locations.

**Section 1**

S.No.	Existing Chainage(Km)	Design Chainage(km)	Side	Name/Location
1	312+580	312+700	LHS	Herur
2	313+420	313+600	RHS	Herur
3	351+000	351+400	Bothsides	Mulki

**Section 2**

S.No.	Chainage(km)	Side	Name/Location
1	8+500	RHS	Thokuttu

It shall be constructed in accordance with para 13.4 of Section 13 of the Manual of Specifications and Standards.



## (h) Bus-bays and Bus Shelter,

Bus bays with pick up bus stops are provided at following locations in Section 1

Sl.No	Existing Chainage (Km)		Design chainage (km)		Village	Side
	LHS	RHS	LHS	RHS		
1	289+000	289+940	290+000	290+040	Kumbhashi	Both side
2	294+275	294+195	294+400	294+320	Kota Village	Both side
3	296+080	295+920	296+210	296+040	Kota Village	Both side
4	298+610	298+430	298+720	298+540	Saligrama	Both side
5	299+940	300+200	300+070	300+330	Gundmi	Both side
6	301+190	300+870	301+370	301+000	Saasthan	Both side
7	306+300	306+580	306+420	306+700	Uppinakote	Both side
8	307+790	307+890	307+900	308+000	Brahmavar	Both side
9	311+160	311+260	311+300	311+400	Uppur	Both side
10	316+470	316+535	316+420	316+485	Puttur	Both side
11	326+250	326+310	326+280	326+340	Kotpadi	Both side
12	332+990	332+930	333+000	332+940	Kaup	Both side
13	336+130	336+450	336+140	336+460	Muloor	Both side
14	337+395	337+115	337+395	337+115	Uchila	Both side
15	340+000	339+310	339+960	339+280	Ermalubada	Both side
16	340+740	340+770	340+700	340+730	Thenkaermalu	Both side
17	Padubidri Bypass		343+825	343+680	Padubidri	Both side
18	Mulky Bypass		349+690	349+840	Mulky	Both side
19	354+140	354+420	354+650	354+930	Haleyangadi	Both side
20	-	357+410	-	358+010	Mukka	RHS
Total						39

Bus bays with pick up bus stops are provided at following locations in Section 2. The Chainages mentioned below are indicative. The exact chainages shall be finalized with ICE

Sl.No	Existing Chainage (Km)	Side
1	5.791	LHS
2	11.765	LHS
3	13.152	LHS
4	14.669	LHS
5	5.028	RHS
6	10.056	RHS
7	11.765	RHS
8	13.152	RHS



Sl.No	Existing Chainage (Km)	Side
9	14.669	RHS
10	14.307	RHS
11	15.300	RHS

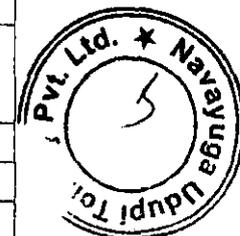
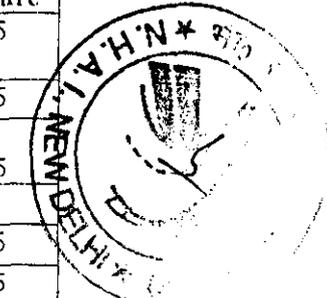


## (i) Vehicular Underpasses and Pedestrian/Cattle Underpasses:

2 Vehicular underpasses, 1 Vehicular Overpass, 7 Pedestrian Underpasses and 10 Cattle Underpasses shall be provided at the following locations in Section I:

## For Section 1

Sl. No.	Existing Chainage (Km)	Design Chainage (Km)	Name of Intersecting Roads	Proposed Structure Configuration	Proposed Structure Type	Proposed Span Arrangement	Total Width of the structure
1	284+040	284+000	Loin's Club road	New Four lane	Vehicular Underpass	10.5 x 5	27.5
2	321+500	321+350	Uduppi	New Four lane	Overpass	2x12 x 5	27.5
3	357+957	358+520	Near NIT	New Four lane	Vehicular Underpass	10.5 x 5	27.5
<b>Cattle Underpass</b>							
1	286+580	286+550	-	New Four Lane	Cattle Underpass	4.0m x 3.5m	27.5
2	287+750	287+800	Koteswara Town - Shimoga	New Four Lane	Cattle Underpass	4.0m x 3.5m	27.5
3	289+190	289+290	-	New Four Lane	Cattle Underpass	4.0m x 3.5m	27.5
4	294+610	294+730	To Police Station	New Four Lane	Cattle Underpass	4.0m x 3.5m	27.5
5	295+380	295+500	To Kota Village	New Four Lane	Cattle Underpass	4.0m x 3.5m	27.5
6	298+000	298+120	Saligram Old Road - Narasimha Swami Temple	New Four Lane	Cattle Underpass	4.0m x 3.5m	27.5
7	307+200	307+300	Brahmavara Village	New Four Lane	Cattle Underpass	4.0m x 3.5m	27.5
8	320+050	319+960	To Uduppi	New Four Lane	Cattle Underpass	4.0m x 3.5m	27.5
9	Bypass	349+140	-	New Four Lane	Cattle Underpass	4.0m x 3.5m	27.5
10	357+020	357+620	-	New Four Lane	Cattle Underpass	4.0m x 3.5m	27.5

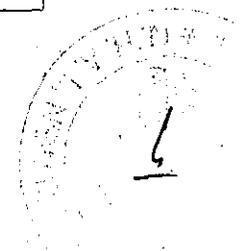
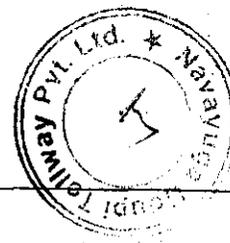


Pedestrian Underpass							
11	283+820	283+705	–	New Four Lane	Pedestrian Pass	3.0mx2.5m	27.5
12	284+240	284+145	–	New Four Lane	Pedestrian Pass	3.0mx2.5m	27.5
13	284+850	284+765	Rayappana Matha	New Four Lane	Pedestrian Pass	3.0mx2.5m	27.5
14	285+280	285+195	TT Road	New Four Lane	Pedestrian Pass	3.0mx2.5m	27.5
15	332+200	332+200	–	New Four Lane	Pedestrian Pass	3.0mx2.5m	22.5
16	Bypassed	342+883	–	New Four Lane	Pedestrian Pass	3.0mx2.5m	27.5
17	Bypassed	343+340	–	New Four Lane	Pedestrian Pass	3.0mx2.5m	27.5

## For Section 2

2 Pedestrian Underpasses shall be provided at the following locations in Section II:

Sl. No.	Existing Chainage (Km)	Design Chainage (Km)	Name of Intersecting Roads	Proposed Structure Configuration	Proposed Structure Type	Proposed Span Arrangement	Total Width of the structure
<b>Pedestrian Underpass</b>							
1	14+500	14+500	Uchilla	New Four Lane	Pedestrian Underpass	3.0mx2.5m	27.5
2	16+900	16+900	Thalappady	New Four Lane	Pedestrian Underpass	3.0mx2.5m	27.5



**(j) Traffic Aid Posts:**

Traffic Aid Posts shall be provided at the Toll Plazas in accordance with Para 20.3 of this Agreement.

**(k) Medical Aid Posts:**

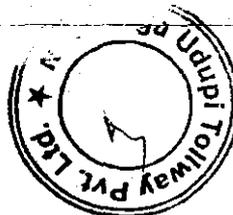
Medical aid posts shall be provided at the Toll Plazas in accordance with Para 21.2 of this Agreement.

**(l) Vehicle rescue posts:**

Vehicle rescue posts shall be provided at the Toll Plazas in accordance with Para 13.9 of the Manual of Specifications and Standards.

**(m) Telecom system:**

Telecom posts shall be provided at the Toll Plazas for convenience of the users of the Project Highway.

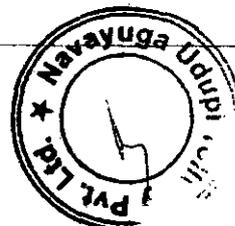


SCHEDULE – D  
(See Clause 2.1)

**SPECIFICATIONS AND STANDARDS**

**1 Four-Laning**

The Concessionaire shall comply with the Specifications and Standards set forth in Annex-I of this Schedule-D for construction of the Four-Lane Project Highway.



Annex - I  
(Schedule-D)**Specifications and Standards for Four-Laning****1. Manual of specifications and standards to apply**

Subject to the provisions of Paragraph 2 of this Annex-I, 4-laning of the Project Highway shall conform to the Manual of Specifications and Standards for 4-Laning of National Highways through Public Private Partnership published by the MOSRTH. (An authenticated copy of the Manual has been provided as a part of this RFP (refer Volume V))

**2. Deviations from the Manual**

Notwithstanding anything to the contrary contained in the aforesaid Manual, the following Specifications and Standards shall apply to the 4-lane Project Highway, and for purposes of this agreement, the aforesaid manual shall be deemed to be amended to the extent set forth below:

Sl. No	Clause	Detail of Item	Provision as per Manual	Description of Deviation
1	2.2.1	Service road for separation of local traffic.	Local traffic in built up area shall be separated with provisions of service roads. The requirement and the length of the service roads in such built up areas shall be identified for the design period of the project highway and specified in the Schedule B. Built up area shall mean all sections of the Project Highway, which are situated within the limits of municipal town(s) and shall also include those sections having continuous length of 200 m or more in non-municipal areas where dwellings / shops have been built on one or both sides of the Project Highway on at least 50 percent of the total length of each such section.	Service roads shall be provided at locations as specified in schedule 'B'. The service roads shall be connected to the main carriageway by a taper merge at both entry and exit. However, service roads shall not be continued at minor bridges, major bridges, ROBS and toll plazas etc.
2	2.2.4	Vehicular underpasses	Vehicular underpass shall be provided as specified in schedule 'B' and to connect service roads on both sides of the Project Highway in such a manner that no vehicle is required to travel more than 2 km on service road to approach an underpass for crossing over to the	Vehicular underpass shall be provided at locations as specified in schedule 'B'.

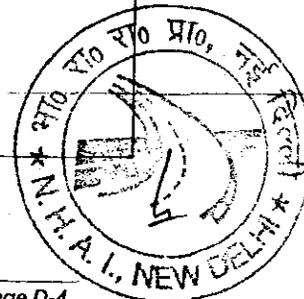
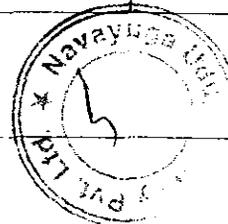
343

Sl. No	Clause	Detail of Item	Provision as per Manual	Description of Deviation
			other side.	
3	2.2.5	Facilities for pedestrians and cyclists.	Facilities for safe and unhindered movement of pedestrians and cyclists shall be provided on the project highway wherever it passes through urban/built-up areas and at grade separators. These facilities shall be planned in accordance with the relevant provisions contained in IRC-11, IRC-17 and IRC-103. Facilities shall also be planned and provided for crossing of pedestrians and cyclists. The crossing facilities can be either in conjunction with at grade intersections or through underpasses. The crossing facilities shall be so planned that pedestrians do not have to walk for more than 0.5 km. to reach the crossing point. The existing slab culverts and minor bridges with span length equal to or more than 5m, a vertical clearance of more than 2.5m and not catering to perennial flow, can also be used for pedestrians and cycle crossings by providing necessary flooring. In rural stretches, pedestrian / cycle underpasses shall be provided at the locations of existing crossing points.	Pedestrian/Cattle underpass shall be provided at locations as specified in schedule 'B'.
4	4.2.2.	Specific Cross sectional requirements	4.2.2.1 Rural Sections (i) Width of Median (iii) Width of earthen shoulder (a) Plain and rolling terrain 2.0 m	(i) Width of median in rural areas shall be 4.5 to 1.5m depending on availability of ROW and with the approval of ICE. (iii) width of Earthen shoulder of 1.5m is adopted
5	4.4.2	Pavement Design	Pavement of the main highway shall be designed for the cumulative number of standard axles of 8.16 tones over the design life of 20 years for the concession period of 15 years and above and the design life of 15 years for the concession period of less than 15 years	Pavement has been designed for a life of 15 years and an overall growth rate of 5%.

4 Laning of Kundapur – Surathkal and Mangalore -Karnataka/  
Kerala Border Sections of NH 17 (Total Length 90.08 Km)  
in the State of Karnataka under NHDP Phase III on BOT Basis



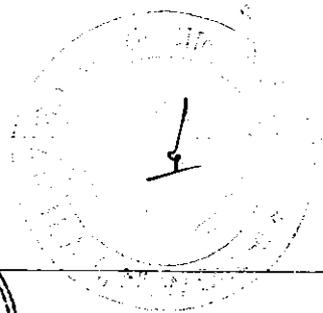
Sl. No	Clause	Detail of Item	Provision as per Manual	Description of Deviation
6	4.18	ATMS		All the ATMS facilities other than Electronic Calling Boxes (ECBs) have been deleted
7	4.5.5 (b)	Width of Structures	(b) All other new bridges shall be constructed to accommodate for six lane carriageway. In case existing bridge is retained, as mentioned below, for traffic in one direction, a new three lane bridge shall be constructed for plying of traffic in other direction. Width of bridge shall be increased to provide for additional lane in urban/built up areas in accordance with section 4.2.9 e (ii) above. Width of immediate approaches shall be adjusted to provide smooth transition from approaches to bridge.	All other new bridges shall be constructed to accommodate for four lane carriageway with footpath. In case existing bridge is retained, as mentioned below, for traffic in one direction, a new two lane bridge with footpath shall be constructed for plying of traffic in other direction. Width of bridge shall be increased to provide for additional lane in urban/built up areas in accordance with section 4.2.9 e (ii) above. Width of immediate approaches shall be adjusted to provide smooth transition from approaches to bridge.
8	4.3.3	Use Fly-ash Embankment	Use of fly-ash for Embankment Construction (i) Fly ash shall be used for construction of embankment shall be designed and construction in accordance with IRC:SP-58. The thickness of soil cover shall not be less than 1 m for embankment upto 3m height. For high embankment the thickness of soil cover shall be increased as per design.	No fly-ash is being proposed to be used due to non-availability of Thermal Power Station within 100 km from the project corridor.



9. **ENTRY / EXIT RAMPS:** At grade ramps without loop to be provided at the following locations where service roads are joining the Project Highway:

Sl No	Existing Chainage (km)	Design Chainage (km)
1	283300	283300
2	288040	288000
3	288980	289080
4	289400	289500
5	293480	293500
6	295380	295500
7	297680	297800
8	298270	298380
9	305780	305900
10	307500	307600
11	314020	314000
12	315020	315000
13	319270	319200
14	321790	321650
15	325770	325800
16	326770	326800
17	329870	329900
18	330400	330400
19	331290	331300
20	332400	332400
21	349020	349020
22	349630	349630
23	356845	357470
24	358061	358686

Exit and Entry Ramps for Section II shall be fixed based on Availability of ROW in consultation with ICE based on site requirements.



**SCHEDULE - E**  
(See Clause 4.1.3)

**APPLICABLE PERMITS**

**1 Applicable Permits**

- 1.1 The Concessionaire shall obtain, as required under the Applicable Laws, the following Applicable Permits on or before the Appointed Date, save and except to the extent of a waiver granted by the Authority in accordance with Clause 4.1.3 of the Agreement:
- (a) Permission of the State Government for extraction of boulder from quarry;
  - (b) Permission of Village Panchayat and Pollution Control Board for installation of crusher;
  - (c) Licence for use of explosives;
  - (d) Permission of the State Government for drawing water from river/reservoir;
  - (e) Licence from Inspector of factories or other Competent Authority for setting up Batching Plant;
  - (f) Clearance of Pollution Control Board for setting up Batching Plant;
  - (g) Clearance of Village Panchayats and Pollution Control Board for Asphalt Plant;
  - (h) Permission of Village Panchayat and State Government for borrow earth;
  - (i) Permission of State Government for cutting of trees;
  - (j) Any other permits or clearances required under Applicable Laws.
- 1.2 Applicable Permits, as required, relating to environmental protection and conservation shall have been procured by the Authority as a Condition Precedent.



347

**SCHEDULE - F**  
(See Clause 9.1)

**PERFORMANCE SECURITY**

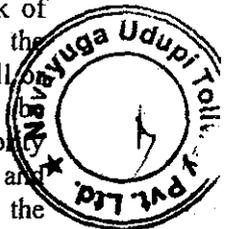
The Chairman,  
National Highways Authority of India,  
New Delhi.

**WHEREAS:**

- (A) M/s Navayuga Udupi Tollway Private Limited (the "Concessionaire") and the Chairman, National Highways Authority of India (the "Authority") have entered into a Concession Agreement dated \_\_\_\_\_ (the "Agreement") whereby the Authority has agreed to the Concessionaire undertaking Design, Engineering, Finance, Construction, Operation and Maintenance of 4 laning of NH-17, Kundapur- Surathkal section from km 283+300 to km 358+080 (Section 1) and Mangalore- Kerala Border [km 375+300 to km 376+700 (i.e. Nantur circle to Mahaveer circle) and km 3+700 to km 17+200 (i.e. Mahaveer circle to Kerala border)] (Section 2) of total length 90.08 km under NHDP PHASE III on Build, Operate and Transfer (BOT) Basis subject to and in accordance with the provisions of the Agreement.
- (B) The Agreement requires the Concessionaire to furnish a Performance Security to the Authority in a sum of Rs.33.55 -Rs Thirty three point five five-Crores (the "Guarantee Amount") as security for due and faithful performance of its obligations under and in accordance with the Agreement, during the Construction Period (as defined in the Agreement).
- (C) We, \*\*\*\*\* through our Branch at \*\*\*\*\* (the "Bank") have agreed to furnish this Bank Guarantee by way of Performance Security.

NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees and affirms as follows:

1. The Bank hereby unconditionally and irrevocably guarantees the due and faithful performance of the Concessionaire's obligations during the Construction Period, under and in accordance with the Agreement, and agrees and undertakes to pay to the Authority, upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Concessionaire, such sum or sums upto an aggregate sum of the Guarantee Amount as the Authority shall claim, without the Authority being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.
2. A letter from the Authority, under the hand of an Officer not below the rank of General Manager in the National Highways Authority of India, that the Concessionaire has committed default in the due and faithful performance of all or any of its obligations under and in accordance with the Agreement shall be conclusive, final and binding on the Bank. The Bank further agrees that the Authority shall be the sole judge as to whether the Concessionaire is in default in due and faithful performance of its obligations during the Construction Period under the Agreement and its decision that the Concessionaire is in default shall be final, and binding on the Bank, notwithstanding any differences between the Authority and the Concessionaire, or any dispute between them pending before any court, tribunal,



348



arbitrators or any other authority or body, or by the discharge of the Concessionaire for any reason whatsoever.

3. In order to give effect to this Guarantee, the Authority shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Concessionaire and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.
4. It shall not be necessary, and the Bank hereby waives any necessity, for the Authority to proceed against the Concessionaire before presenting to the Bank its demand under this Guarantee.
5. The Authority shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Agreement or to extend the time or period for the compliance with, fulfilment and/or performance of all or any of the obligations of the Concessionaire contained in the Agreement or to postpone for any time, and from time to time, any of the rights and powers exercisable by the Authority against the Concessionaire, and either to enforce or forbear from enforcing any of the terms and conditions contained in the Agreement and/or the securities available to the Authority, and the Bank shall not be released from its liability and obligation under these presents by any exercise by the Authority of the liberty with reference to the matters aforesaid or by reason of time being given to the Concessionaire or any other forbearance, indulgence, act or omission on the part of the Authority or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.
6. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by the Authority in respect of or relating to the Agreement or for the fulfilment, compliance and/or performance of all or any of the obligations of the Concessionaire under the Agreement.
7. Notwithstanding anything contained hereinbefore, the liability of the Bank under this guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force for the period specified in paragraph 8 below and unless a demand or claim in writing is made by the Authority on the Bank under this Guarantee, not later than 6 (six) months from the date of expiry of this Guarantee, all rights of the Authority under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.
8. The Performance Security shall cease to be in force and effect when the Concessionaire shall have expended on Project construction an aggregate sum not less than 20% (twenty per cent) of the Total Project Cost which is deemed to be Rs. 134.20 crores. (One Hundred Thirty Four Crores and Twenty Lakhs) for the purpose of this Guarantee, and provided the Concessionaire is not in breach of this Agreement. Upon request made by the Concessionaire for release of the Performance Security alongwith the particulars required hereunder, duly certified by a statutory auditor of the Concessionaire, the Authority shall release the Performance Security forthwith.



9. The Bank undertakes not to revoke this Guarantee during its currency, except with the previous express consent of the Authority in writing, and declares that it has the power to issue this Guarantee and the undersigned has full powers to do so on behalf of the Bank.
10. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred Branch, which shall be deemed to have been duly authorised to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of the Authority that the envelope was so posted shall be conclusive.
11. This Guarantee shall come into force with immediate effect and shall remain in force and effect for a period of one year or until it is released earlier by the Authority pursuant to the provisions of the Agreement

Signed and sealed this \*\* day of \*\*\*, 200\* at \*\*\*.

SIGNED, SEALED AND DELIVERED  
For and on behalf of the BANK by:

(Signature)

(Name)

(Designation)

(Address)



350

**SCHEDULE - G**  
(See Clause 12.1)  
**PROJECT COMPLETION SCHEDULE**

**1 Project Completion Schedule**

During Construction Period, the Concessionaire shall comply with the requirements set forth in this Schedule-G for each of the Project Milestones and the Scheduled Four-Laning Date (the "Project Completion Schedule"). Within 15 (fifteen) days of the date of each Project Milestone, the Concessionaire shall notify the Authority of such compliance along with necessary particulars thereof.

**2 Project Milestone-I**

2.1 Project Milestone-I shall occur on the date falling on the 180<sup>th</sup> (one hundred and eightieth) day from the Appointed Date (the "Project Milestone-I").

2.2 Prior to the occurrence of Project Milestone-I, the Concessionaire shall have commenced construction of the Project Highway and expended not less than 10% (ten per cent) of the total capital cost set forth in the Financial Package.

**3 Project Milestone-II**

3.1 Project Milestone-II shall occur on the date falling on the 400<sup>th</sup> (Four Hundredth) day from the Appointed Date (the "Project Milestone-II").

3.2 Prior to the occurrence of Project Milestone-II, the Concessionaire shall have commenced construction of all bridges and expended not less than 35% (thirty five per cent) of the total capital cost set forth in the Financial Package.

**4 Project Milestone-III**

4.1 Project Milestone-III shall occur on the date falling on the 650<sup>th</sup> (Six hundred and Fiftieth) day from the Appointed Date (the "Project Milestone-III").

4.2 Prior to the occurrence of Project Milestone-III, the Concessionaire shall have commenced construction of all Project Facilities and expended not less than 70% (Seventy per cent) of the total capital cost set forth in the Financial Package.

**5 Scheduled [Four-Laning] Date**

5.1 The Scheduled Four-Laning Date shall occur on the 910<sup>th</sup> (Nine hundred and Tenth) day from the Appointed Date.

5.2 On or before the Scheduled Project Completion Date, the Concessionaire shall have completed the Four-Lane Project Highway in accordance with this Agreement.

**6 Extension of period**

Upon extension of any or all of the aforesaid Project Milestones or the Scheduled Project Completion Date, as the case may be, under and in accordance with the provisions of this Agreement, the Project Completion Schedule shall be deemed to have been amended accordingly.



351

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**SCHEDULE - H**  
(See Clause 12.3)

**DRAWINGS**

**1 Drawings**

In compliance of the obligations set forth in Clause 12.3 of this Agreement, the Concessionaire shall furnish to the Independent Consultant, free of cost, all Drawings listed in Annex-I of this Schedule-H.

**2 Additional drawings**

2.1 If the Independent Consultant determines that for discharging its duties and functions under this Agreement, it requires any drawings other than those listed in Annex-I, it may by notice require the Concessionaire to prepare and furnish such drawings forthwith. Upon receiving a requisition to this effect, the Concessionaire shall promptly prepare and furnish such drawings to the Independent Consultant, as if such drawings formed part of Annex-I of this Schedule-H.



352

**ANNEX-I**  
**(Schedule-H)**  
**List of Drawings**

1. The Project Highway drawings, as defined in Clause 1.1, Definitions, Article 1, Definitions and Interpretation, Part-I : Preliminary, of the Concession Agreement shall consist:
  - (a) Working Drawings of all the components/elements of the Project Highway as determined by Independent Consultant/NHAI, and
  - (b) As-built drawings for the Project Highway components/elements as determined by IE/NHAI. As-built drawings shall be duly certified by Independent Consultant.
  
2. A broad list of the drawings of the various components/elements of the Project Highway and project facilities required to be submitted by the Concessionaire is given below:
  - (a) Drawings of horizontal alignment, vertical profile and cross sections
  - (b) Drawings of cross drainage works
  - (c) Drawings of interchanges, major intersections, grade separators, underpasses and ROB's
  - (d) Drawings of toll plaza layout, toll collection systems and roadway near toll plaza
  - (e) Drawings of Control Centre
  - (f) Drawings of bus-bay and bus shelters with furniture and drainage system
  - (g) Drawing of a truck parking lay bye with furniture and drainage system
  - (h) Drawings of road furniture items including traffic signage, markings, safety barriers, etc.
  - (i) Drawings of traffic diversion plans and traffic control measures
  - (j) Drawings of road drainage measures
  - (k) Drawings of typical details slope protection measures
  - (l) Drawings of landscaping and horticulture
  - (m) Drawings of pedestrian crossings
  - (n) Drawings of street lighting
  - (o) Layout/Configuration of HTMS
  - (p) General arrangement of Base camp and Administrative Block



**SCHEDULE- I**  
(See Clause 14.1.2)



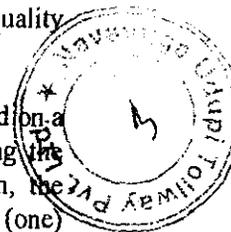
**TESTS**

**1 Schedule for Tests**

- 1.1 The Concessionaire shall, not later than 30 (thirty) days prior to the likely completion of Four-Laning, notify the Independent Consultant and the Authority of its intent to subject the Project Highway to Tests, and not later than 7 (seven) days prior to the actual date of Tests, furnish to the Independent Consultant and the Authority detailed inventory and particulars of all works and equipment forming part of Four-Laning.
- 1.2 The Concessionaire shall notify the Independent Consultant of its readiness to subject the Project Highway to Tests at any time after 7 (seven) days from the date of such notice, and upon receipt of such notice, the Independent Consultant shall, in consultation with the Concessionaire, determine the date and time for each Test and notify the same to the Authority who may designate its representative to witness the Tests. The Independent Consultant shall thereupon conduct the Tests itself or cause any of the Tests to be conducted in accordance with Article 14 and this Schedule-I.

**2 Tests**

- 2.1 Visual and physical Test: The Independent Consultant shall conduct a visual and physical check of Four-Laning to determine that all works and equipment forming part thereof conform to the provisions of this Agreement.
- 2.2 Test drive: The Independent Consultant shall undertake a test drive of the Project Highway by a Car and by a fully loaded Truck to determine that the quality of service conforms to the provisions of the Agreement.
- 2.3 Riding quality Test: Riding quality of each lane of the carriageway shall be checked with the help of a calibrated bump integrator and the maximum permissible roughness for purposes of this Test shall be 1,800 (one thousand and eight hundred) mm for each kilometre.
- 2.4 Pavement Composition Test: The thickness and composition of the pavement structure shall be checked on a sample basis by digging pits to determine conformity of such pavement structure with Specifications and Standards. The sample shall consist of one pit in each direction of travel to be chosen at random in each stretch of 5 (five) kilometres of the Project Highway. The first pit for the sample shall be selected by the Independent Consultant through an open draw of lots and every fifth kilometre from such first pit shall form part of the sample for this pavement quality Test.
- 2.5 Cross-section Test: The cross-sections of the Project Highway shall be checked on a sample basis through physical measurement of their dimensions for determining the conformity thereof with Specifications and Standards. For the road portion, the sample shall consist of one spot to be selected at random in each stretch of 1 (one) kilometre of the Project Highway. The first spot for the sample shall be selected by the Independent Consultant through an open draw of lots and the spots located every one kilometre from such first spot shall form part of the sample. For the bridge



portion, one spot shall be selected at random by the Independent Consultant in each span of the bridge.

- 2.6 Structural Test for bridges: All major and minor bridges constructed by the Concessionaire shall be subjected to the Rebound Hammer and Ultrasonic Pulse Velocity tests, to be conducted in accordance with the procedure described in Special Report No. 17: 1996 of the IRC Highway Research Board on Non-destructive Testing Techniques, at two spots in every span, to be chosen at random by the Independent Consultant. Bridges with a span of 15 (fifteen) metres or more shall also be subjected to load testing.
- 2.7 Other Tests: The Independent Consultant may require the Concessionaire to carry out or cause to be carried additional Tests, in accordance with Good Industry Practice, for determining the compliance of the Project Highway with Specifications and Standards.
- 2.8 Environmental audit: The Independent Consultant shall carry out a check to determine conformity of the Project Highway with the environmental requirements set forth in Applicable Laws and Applicable Permits.
- 2.9 Safety review: Safety audit of the Project Highway shall have been undertaken by the Safety Consultant as set forth in Schedule-L, and on the basis of such audit, the Independent Consultant shall determine conformity of the Project Highway with the provisions of this Agreement.

**3 Agency for conducting Tests**

All Tests set forth in this Schedule-I shall be conducted by the Independent Consultant or such other agency or person as it may specify in consultation with the Authority.

**4 Completion/Provisional Certificate**

Upon successful completion of Tests, the Independent Consultant shall issue the Completion Certificate or the Provisional Certificate, as the case may be, in accordance with the provisions of Article 14.



**SCHEDULE - J**  
(See Clauses 14.2 & 14.3)

**COMPLETION CERTIFICATE**

- 1 I, \*\*\*\* (Name of the Independent Consultant), acting as Independent Consultant, under and in accordance with the Concession Agreement dated \*\*\* (the "Agreement"), Design, Engineering, Finance, Construction, Operation and Maintenance of 4 laning of NH-17, Kundapur- Surathkal section from km 283+300 to km 358+080 (Section 1) and Mangalore- Kerala Border [km 375+300 to km 376+700 (i.e. Nantur circle to Mahaveer circle) and km 3+700 to km 17+200 (i.e. Mahaveer circle to Kerala border)] (Section 2) of total length 90.08 km under NHDP PHASE III on Build, Operate and Transfer (BOT) Basis through M/s Navayuga Udupi Tollway Private Limited, hereby certify that the Tests specified in Article 14 and Schedule-I of the Agreement have been successfully undertaken to determine compliance of the Project Highway with the provisions of the Agreement, and I am satisfied that the Project Highway can be safely and reliably placed in commercial service of the Users thereof.
- 2 It is certified that, in terms of the aforesaid Agreement, all works forming part of Four-Laning have been completed, and the Project Highway is hereby declared fit for entry into commercial operation on this the \*\*\* day of \*\*\* 200\*.

SIGNED, SEALED AND DELIVERED

For and on behalf of

INDEPENDENT CONSULTANT by:

(Signature)

(Name)

(Designation)

(Address)



356

**Provisional Certificate**

- 1 I, \*\*\*\* (Name of the Independent Consultant), acting as Independent Consultant, under and in accordance with the Concession Agreement dated \*\*\* (the "Agreement"), for Design, Engineering, Finance, Construction, Operation and Maintenance of 4 laning of NH-17, Kundapur- Surathkal section from km 283+300 to km 358+080(Section 1) and Mangalore- Kerala Border [km 375+300 to km 376+700 (i.e. Nantur circle to Mahaveer circle) and km 3+700 to km 17+200 (i.e. Mahaveer circle to Kerala border) (Section 2) of total length 90.08 km under NHDP PHASE III on Build, Operate and Transfer (BOT) Basis through M/s Navayuga Udupi Tollway Private Limited, hereby certify that the Tests specified in Article 14 and Schedule-I of the Agreement have been undertaken to determine compliance of the Project Highway with the provisions of the Agreement.
  
- 2 Construction Works that were found to be incomplete and/or deficient have been specified in the Punch List appended hereto, and the Concessionaire has agreed and accepted that it shall complete and/or rectify all such works in the time and manner set forth in the Agreement. [Some of the incomplete works have been delayed as a result of reasons attributable to the Authority or due to Force Majeure and the Provisional Certificate cannot be withheld on this account. Though the remaining incomplete works have been delayed as a result of reasons attributable to the Concessionaire,] I am satisfied that having regard to the nature and extent of such incomplete works, it would not be prudent to withhold commercial operation of the Project Highway, pending completion thereof.
  
- 3 In view of the foregoing, I am satisfied that the Project Highway can be safely and reliably placed in commercial service of the Users thereof, and in terms of the Agreement, the Project Highway is hereby provisionally declared fit for entry into commercial operation on this the \*\*\* day of \*\*\* 200\*.

ACCEPTED, SIGNED, SEALED

SIGNED, SEALED AND

AND DELIVERED

DELIVERED

For and on behalf of

For and on behalf of

CONCESSIONAIRE by:

INDEPENDENT CONSULTANT

by:

(Signature)

(Signature)

(Name and Designation)

(Name and Designation)

(Address)

(Address)



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357

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**SCHEDULE - K**  
(See Clause 17.2)

**MAINTENANCE REQUIREMENTS**

**1 Maintenance Requirements**

- 1.1 The Concessionaire shall, at all times, operate and maintain the Project Highway in accordance with the provisions of the Agreement, Applicable Laws and Applicable Permits. In particular, the Concessionaire shall, at all times during the Operation Period, conform to the maintenance requirements set forth in this Schedule-K (the "Maintenance Requirements").
- 1.2 The Concessionaire shall repair or rectify any defect or deficiency set forth in Paragraph 2 of this Schedule-K within the time limit specified therein and any failure in this behalf shall constitute a breach of the Agreement. Upon occurrence of any breach hereunder, the Authority shall be entitled to recover Damages as set forth in Clause 17.8 of the Agreement, without prejudice to the rights of the Authority under the Agreement, including Termination thereof.

**2 Repair/rectification of defects and deficiencies**

The obligations of the Concessionaire in respect of Maintenance Requirements shall include repair and rectification of the defects and deficiencies specified in Annex - I of this Schedule - K within the time limit set forth therein.

**3 Other defects and deficiencies**

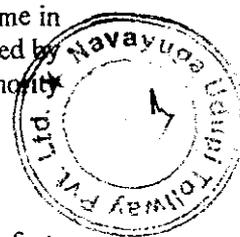
- 3.1 In respect of any defect or deficiency not specified in Annex - I of this Schedule-K, the Concessionaire shall undertake repair or rectification in accordance with Good Industry Practice.
- 3.2 In respect of any defect or deficiency not specified in Annex - I of this Schedule-K, the Independent Consultant may, in conformity with Good Industry Practice, specify the permissible limit of deviation or deterioration with reference to the Specifications and Standards, and any deviation or deterioration beyond the permissible limit shall be repaired or rectified by the Concessionaire within the time limit specified by the Independent Consultant.

**4 Extension of time limit**

Notwithstanding anything to the contrary specified in this Schedule-K, if the nature and extent of any defect or deficiency justifies more time for its repair or rectification than the time specified herein, the Concessionaire shall be entitled to additional time in conformity with Good Industry Practice. Such additional time shall be determined by the Independent Consultant and conveyed to the Concessionaire and the Authority with reasons thereof.

**5 Emergency repairs/restoration**

Notwithstanding anything to the contrary contained in this Schedule-K, if any defect, deficiency or deterioration in the Project Highway poses danger to the life or property



358

of the Users thereof, the Concessionaire shall promptly take all reasonable measures for eliminating or minimizing such danger.

**6 Daily Inspection by the Concessionaire**

The Concessionaire shall, through its engineer, undertake a daily visual inspection of the Project Highway and maintain a record thereof in a register to be kept in such form and manner as the Independent Consultant may specify. Such record shall be kept in safe custody of the Concessionaire and shall be open to inspection by the Authority and the Independent Consultant at any time during office hours.

**7 Divestment Requirements**

All defects and deficiencies specified in this Schedule-K shall be repaired and rectified by the Concessionaire so that the Project Highway conforms to the Maintenance Requirements on the Transfer Date.

**8 Display of Schedule - K**

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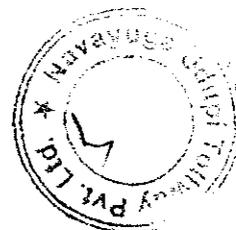
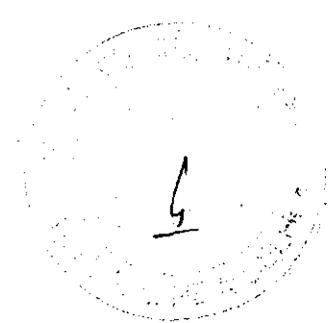
Annex - I

(Schedule-K)

**Repair/Rectification of Defects and Deficiencies**

The Concessionaire shall repair and rectify the defects and deficiencies specified in this Annex - I of Schedule - K within the time limit set forth herein.

<b>Nature of defect or deficiency</b>	<b>Time limit for repair/rectification</b>
<b>ROADS</b>	
<b>(a) Carriageway and paved shoulders</b>	
(i) Breach or blockade	- Temporary restoration of traffic within 24 hours; permanent restoration within 15 days
(ii) Roughness value exceeding 2,500 mm in a stretch of 1 km (as measured by a standardised roughometer/ bump integrator)	- 180 days
(iii) Pot holes	- 48 hours
(iv) Cracking in more than 5% of road surface in a stretch of 1 km	- 30 days
(v) Rutting exceeding 10 mm in more than 2% of road surface in a stretch of 1 km (measured with 3 m straight edge)	- 30 days
(vi) Bleeding/skidding	- 7 days
(vii) Ravelling/Stripping of bitumen surface exceeding 10 sq m	- 15 days
(viii) Damage to pavement edges exceeding 10 cm	- 15 days



- (ix) Removal of debris - 6 hours
- (b) Hard/earth shoulders, side slopes, drains and culverts**
- (i) Variation by more than 2% in the prescribed slope of camber/cross fall - 30 days
- (ii) Edge drop at shoulders exceeding 40 mm - 7 days
- (iii) Variation by more than 15% in the prescribed side (embankment) slopes - 30 days
- (iv) Rain cuts/gullies in slope - 7 days
- (v) Damage to or silting of culverts and side drains during and immediately preceding the rainy season - 7 days
- (vi) Desilting of drains in urban/semi-urban areas - 48 hours
- (c) Road side furniture including road signs and pavement marking**
- (i) Damage to shape or position; poor visibility or loss of retro-reflectivity - 48 hours
- (d) Street lighting and telecom (ATMS)**
- (i) Any major failure of the system - 24 hours
- (ii) Faults and minor failures - 8 hours
- (e) Trees and plantation**
- (i) Obstruction in a minimum head-room of 5 m above carriageway or obstruction in visibility of road signs - 24 hours

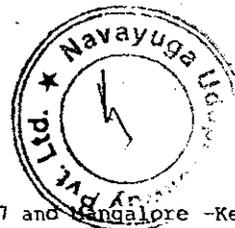


361

- (ii) Deterioration in health of trees and bushes - Timely watering and treatment
- (iii) Replacement of trees and bushes - 90 days
- (iv) Removal of vegetation affecting sight line and road structures - 15 days
- (f) Rest areas
- (i) Cleaning of toilets - Every 4 hours
- (ii) Defects in electrical, water and sanitary installations - 24 hours
- (g) Toll plaza
- (i) Failure of toll collection equipment or lighting - 8 hours
- (ii) Damage to toll plaza - 7 days
- (h) Other Project Facilities and Approach roads
- (i) Damage or deterioration in Approach Roads, [pedestrian facilities, truck lay-bys, bus-bays, bus- shelters, cattle crossings, Traffic Aid Posts, Medical Aid Posts and other works] - 15 days

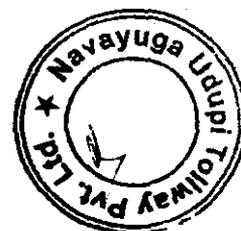
#### BRIDGES

- (a) Superstructure of bridges
- (i) Cracks - --
- Temporary measures within 48 hours
- Permanent measures within 45 days
- (ii) Spalling/scaling - 15 days



362

- (b) **Foundations of bridges**
  - (i) Scouring and/or cavitation - 15 days
- (c) **Piers, abutments, return walls and wing walls of bridges**
  - (i) Cracks and damages including settlement and tilting - 30 days
- (d) **Bearings (metallic) of bridges**
  - (i) Deformation - 15 days
- (e) **Joints in bridges**
  - (i) Loosening and malfunctioning of joints - 15 days
- (f) **Other items relating to bridges**
  - (i) Deforming of pads in elastomeric bearings - 7 days
  - (ii) Gathering of dirt in bearings and joints; or clogging of spouts, weep holes and vent-holes - 3 days
  - (iii) Damage or deterioration in parapets and handrails - 3 days
  - (iv) Rain-cuts or erosion of banks of the side slopes of approaches - 15 days
  - (v) Damage to wearing coat - 15 days
  - (vi) Damage or deterioration in approach slabs, pitching, apron, toes, floor or guide bunds - 30 days
  - (vii) Growth of vegetation affecting the structure or obstructing the waterway - 15 days



363

**SCHEDULE - L**  
(See Clause 18.1.1)

**SAFETY REQUIREMENTS**

**1 Guiding principles**

- 1.1 Safety Requirements aim at reduction in injuries, loss of life and damage to property resulting from accidents on the Project Highway, irrespective of the person(s) at fault.
- 1.2 Users of the Project Highway include motorised and non-motorised vehicles as well as pedestrians and animals involved in, or associated with accidents. Vulnerable Road Users (VRU) include pedestrians as well as riders of motorised two-wheelers, bicycles and other vehicles which do not provide adequate occupant protection.
- 1.3 Safety Requirements apply to all phases of construction, operation and maintenance with emphasis on identification of factors associated with accidents, consideration of the same, and implementation of appropriate remedial measures.
- 1.4 Safety Requirements include measures associated with traffic management and regulation such as road signs, pavement marking, traffic control devices, roadside furniture, highway design elements, enforcement and emergency response.

**2 Obligations of the Concessionaire**

The Concessionaire shall abide by the following insofar as they relate to safety of the Users:

- (a) Applicable Laws and Applicable Permits;
- (b) Manual for Safety in Road Design, issued by MOSRTH;
- (c) relevant Standards/Guidelines of IRC relating to road geometrics, bridges, culverts, road signs, pavement marking and roadside furniture;
- (d) provisions of this Agreement; and
- (e) Good Industry Practice.

**3 Appointment of Safety Consultant**

For carrying out safety audit of the Project Highway under and in accordance with this Schedule-L, the Authority shall appoint from time to time, one or more qualified firms or organisations as its consultants (the "Safety Consultant"). The Safety Consultant shall employ a team comprising, without limitation, one road safety expert and one traffic planner to undertake safety audit of the Project Highway.

**4 Safety measures during Development Period**

- 4.1 Not later than 90 (ninety) days from the date of this Agreement, the Authority shall appoint a Safety Consultant for carrying out safety audit at the design stage of the Project. The Safety Consultant shall collect data on all fatal crashes and other road accidents which occurred on the Project Highway in the preceding two years by



364

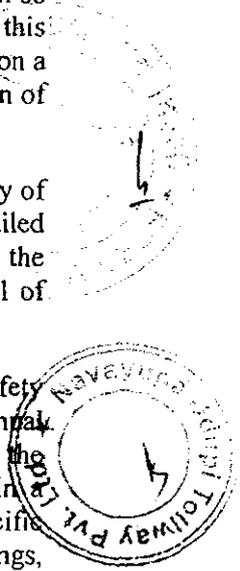
obtaining copies of the relevant First Information Reports (FIRs) from the police stations having jurisdiction. The information contained in such FIRs shall be summarised in the form prescribed by IRC/MOSRTH for this purpose and the data shall be analysed for the type of victims killed or injured, impacting vehicles, location of accidents and other relevant factors.

- 4.2 The Concessionaire shall provide to the Safety Consultant, in four copies, the relevant drawings containing the design details that have a bearing on safety of Users (the "Safety Drawings"). Such design details shall include horizontal and vertical alignments; sightlines; layouts of intersections; interchanges; road cross-section; bridges and culverts; side drains; provision for parked vehicles, slow moving vehicles (tractors, bullock carts, bicycles) and pedestrians; bus bays; truck lay-bys; and other incidental or consequential information. The Safety Consultant shall review the design details and forward three copies of the Safety Drawings with its recommendations, if any, to the Independent Consultant who shall record its comments, if any, and forward one copy each to the Authority and the Concessionaire.
- 4.3 The accident data and the design details shall be compiled, analysed and used by the Safety Consultant for evolving a package of recommendations consisting of safety related measures for the Project Highway. The safety audit shall be completed in a period of three months and a report thereof (the "Safety Report") shall be submitted to the Authority, in five copies. One copy each of the Safety Report shall be forwarded by the Authority to the Concessionaire and the Independent Consultant forthwith.
- 4.4 The Concessionaire shall endeavour to incorporate the recommendations of the Safety Report in the design of the Project Highway, as may reasonably be required in accordance with Applicable Laws, Applicable Permits, Manuals and Guidelines of MOSRTH and IRC, Specifications and Standards, and Good Industry Practice. If the Concessionaire does not agree with any or all of such recommendations, it shall state the reasons thereof and convey them to the Authority forthwith. In the event that any or all of the works and services recommended in the Safety Report fall beyond the scope of Schedule-B, Schedule-C or Schedule-D, the Concessionaire shall make a report thereon and seek the instructions of the Authority for funding such works in accordance with the provisions of Article 18.
- 4.5 Without prejudice to the provisions of Paragraph 4.4, the Concessionaire and the Independent Consultant shall, within 15 (fifteen) days of receiving the Safety Report, send their respective comments thereon to the Authority, and not later than 15 (fifteen) days of receiving such comments, the Authority shall review the same alongwith the Safety Report and by notice direct the Concessionaire to carry out any or all of the recommendations contained therein with such modifications as the Authority may specify; provided that any works or services required to be undertaken hereunder shall be governed by the provisions of Article 18.

## 5 Safety measures during Construction Period

- 5.1 A Safety Consultant shall be appointed by the Authority, not later than 4 (four) months prior to the expected Project Completion Date, for carrying out a safety audit of the completed Construction Works.

- 5.2 The Safety Consultant shall collect and analyse the accident data for the preceding two years in the manner specified in Paragraph 4.1 of this Schedule-L. It shall study the Safety Report for the Development Period and inspect the Project Highway to assess the adequacy of safety measures. The Safety Consultant shall complete the safety audit within a period of 4 (four) months and submit a Safety Report recommending a package of additional road safety measures, if any, that are considered essential for reducing accident hazards on the Project Highway. Such recommendations shall be processed, *mutatis mutandis*, and acted upon in the manner set forth in Paragraphs 4.3, 4.4 and 4.5 of this Schedule-L.
- 5.3 The Concessionaire shall make adequate arrangements during the Construction Period for the safety of workers and road Users in accordance with the guidelines of IRC for safety in construction zones, and notify the Authority and the Independent Consultant about such arrangements.
- 6 Safety measures during Operation Period**
- 6.1 The Concessionaire shall develop, implement and administer a surveillance and safety programme for Users, including correction of safety violations and deficiencies and all other actions necessary to provide a safe environment in accordance with this Agreement.
- 6.2 The Concessionaire shall establish a Highway Safety Management Unit (the "HSMU") to be functional on and after COD, and designate one of its officers to be in-charge of the HSMU. Such officer shall have specialist knowledge and training in road safety and traffic engineering by having attended a course conducted by a reputed organisation on the subject.
- 6.3 The Concessionaire shall keep a copy of every FIR recorded by the Police with respect to any accident occurring on the Project Highway. In addition, the Concessionaire shall also collect data for all cases of accidents not recorded by the Police but where a vehicle rolled over or had to be towed away. The information so collected shall be summarised in the form prescribed by IRC/ MOSRTH for this purpose. The Concessionaire shall also record the exact location of each accident on a road map. The aforesaid data shall be submitted to the Authority at the conclusion of every quarter and to the Safety Consultant as and when appointed.
- 6.4 The Concessionaire shall submit to the Authority before the 31st (thirty first) May of each year, an annual report (in ten copies) containing, without limitation, a detailed listing and analysis of all accidents of the preceding Accounting Year and the measures taken by the Concessionaire pursuant to the provisions of Paragraph 6.1 of this Schedule-L for averting or minimising such accidents in future.
- 6.5 Once in every Accounting Year, a safety audit shall be carried out by the Safety Consultant to be appointed by the Authority. It shall review and analyse the annual report and accident data of the preceding year, and undertake an inspection of the Project Highway. The Safety Consultant shall complete the safety audit within a period of 1 (one) month and submit a Safety Report recommending specific improvements, if any, required to be made to the road, bridges, culverts, markings, signs, road furniture and Project Facilities, including cattle crossings and pedestrian crossings. Such recommendations shall be processed, *mutatis mutandis*, and acted upon in the manner set forth in Paragraphs 4.3, 4.4 and 4.5 of this Schedule-L.



7 **Costs and expenses**

Costs and expenses incurred in connection with the Safety Requirements set forth herein, including the provisions of Paragraph 2 of this Schedule, shall be met in accordance with Article 18, and in particular, the remuneration of the Safety Consultant, safety audit, and costs incidental thereto, shall be met out of the Safety Fund.



367

## SCHEDULE - M

(See Clause 19.5)

### MONTHLY FEE STATEMENT

**Project Highway:** Four laning of NH-17, Kundapur- Surathkal section **Month:**  
from km 283+300 to km 358+080 (Section 1) and Mangalore-  
Kerala Border [km 375+300 to km 376+700 (i.e. Nantur circle  
to Mahaveer circle) and km 3+700 to km 17+200 (i.e.  
Mahaveer circle to Kerala border)] (Section 2) of total l  
ength 90.08 km under NHDP PHASE III

Type of Vehicle	For Corresponding Month of Previous Year		For Preceding Month		For the Month Reported upon		
	No. of Vehicles	Fee Collected (in lakh Rs.)	No. of Vehicles	Fee Collected (in lakh Rs.)	Fee per Vehicle (in Rs.)	No. of Vehicles	Fee Collected (in lakh Rs.)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A Car							
B Mini Bus/ LCV							
C Bus							
D Mini Truck/ LCV							
E Truck							
F Heavy Truck							
G Total							

**Note 1:** The above statement does not include Local Traffic and vehicles travelling on Daily Passes or Monthly Passes

**Note 2:** Monthly Fee Statements for Monthly Passes and Daily Passes have been prepared separately in the above format and are enclosed.

**Remarks, if any:**



368

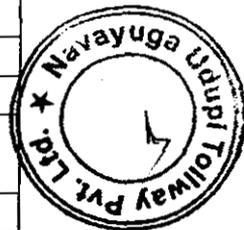
**SCHEDULE - N**  
(See Clause 22.1)

**WEEKLY TRAFFIC CENSUS**

**Project Highway:** Four laning of NH-17, Kundapur- Surathkal section from km 283+300 to km 358+080 (Section 1) and Mangalore- Kerala Border [km 375+300 to km 376+700 (i.e. Nantur circle to Mahaveer circle) and km 3+700 to km 17+200 (i.e. Mahaveer circle to Kerala border)]. (Section 2) of total length 90.08 km under NHDP PHASE III

**Week ending:**

Type of Vehicle	No. of vehicles using the Project Highway during		
	Corresponding week/last year	Preceding week	Week of report
(1)	(2)	(3)	(4)
<b>A Fee paying Traffic</b>			
A1 Car			
A2 Mini Bus/ LCV			
A3 Bus			
A4 Mini Truck/ LCV			
A5 Truck			
A6 Heavy Truck			
<b>Total (A)</b>			
<b>B Local Traffic</b>			
B1 Car			
<b>Total (B)</b>			
<b>C Exempted Vehicles</b>			
C1 Car			
C2 Mini Bus/ LCV			
C3 Bus			
C4 Mini Truck/ LCV			
C5 Truck			
C6 Tractor			
<b>Total (C)</b>			
<b>D Total Traffic (A+B-C)</b>			
D1 Car			
D2 Mini Bus/ LCV			
D3 Bus			
D4 Mini Truck/ LCV			
D5 Truck			
D6 Heavy Truck			
D7 Tractor			
<b>Grand Total (E)</b>			



369

## WEEKLY REPORT FOR WEIGH STATIONS

**Project Highway:**

**Week ending:**

Type of Vehicle	Permitted Gross Vehicle Weight (Tonnes)	No. of Vehicles weighed (Sample size)	No. of Vehicles carrying load:			
			Within permissible limits	Up to 10% in excess	Over 10% and up to 20% in excess	Over 20% in excess
(1)	(2)	(3)	(4)	(5)	(6)	(7)
A Mini Truck/LCV						
B Truck						
C Heavy Truck						
D Total						

[Note: Sample size shall not be less than 200 trucks per week and 20 trucks per day, and should include a proportionate number of Heavy Trucks.]

**Remarks, if any:**



370

**SCHEDULE - O**  
(See Clause 22.3.1)

**TRAFFIC SAMPLING**

**1 Traffic sampling**

The Authority may, in its discretion and at its own cost, undertake traffic sampling, pursuant to Clause 22.3, in order to determine the actual traffic on the Project Highway. Such traffic sampling shall be undertaken through the Independent Consultant in the manner set forth below.

**2 Manual traffic count**

The Independent Consultant shall employ the required number of enumerators who shall count, classify and record all the vehicles as they pass by, and divide the survey into fixed time periods. The count stations shall be located near the Toll Plaza on a straight section of the road with good visibility. The survey shall be conducted continuously for a minimum of 24 (twenty four) hours and maximum of 7 (seven) days at a time. The count period shall be 15 (fifteen) minutes with results summarised hourly.

**3 Automatic traffic count**

For automatic traffic count to be conducted on intermittent (non-continuous) basis, the Independent Consultant shall use suitable and standardised equipment to classify and record the range of vehicles passing through the Toll Plaza. For this purpose, the counter shall be checked with at least 100 (one hundred) vehicles, including all major vehicle types, over a range of speeds to ensure that all vehicles are being counted and classified correctly.

**4 Variation between manual and automatic count**

Average Daily Traffic (ADT) for each type of vehicle shall be determined separately by the aforesaid two methods and in the event that the number of vehicles in any category, as counted by the manual method, varies by more than 1% (one per cent) of the number of such vehicles as counted by the automatic method, the manual and automatic count of such category of vehicles shall be repeated, and in the event of any discrepancy between the two counts in the second enumeration, the average thereof shall be deemed to be the actual traffic. For the avoidance of doubt, it is expressly agreed that the Authority may, in consultation with the Concessionaire, adopt modified or alternative processes of traffic sampling for improving the reliability of such sampling.



**SCHEDULE - P**  
(See Clause 23.1)

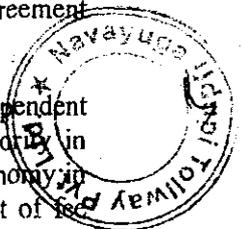
**SELECTION OF INDEPENDENT CONSULTANT**

**1 Selection of Independent Consultant**

- 1.1 The provisions of Part II of the Standard Bidding Documents for Consultancy Assignments: Time Based (Volume V) issued by the Ministry of Finance, GOI in July, 1997 shall apply, *mutatis mutandis*, for invitation of bids and evaluation thereof save as otherwise provided herein.
- 1.2 The Authority shall invite expressions of interest from consulting engineering firms or bodies corporate to undertake and perform the duties and functions set forth in Schedule-Q and thereupon shortlist 10 (ten) qualified firms in accordance with pre-determined criteria. The Authority shall convey the aforesaid list of firms to the Concessionaire for scrutiny and comments, if any. The Concessionaire shall be entitled to scrutinise the relevant records of the Authority to ascertain whether the selection of firms has been undertaken in accordance with the prescribed procedure and it shall send its comments, if any, to the Authority within 15 (fifteen) days of receiving the aforesaid list of firms. Upon receipt of such comments, if any, the Authority shall, after considering all relevant factors, finalise and constitute a panel of 10 (ten) firms (the "Panel of Firms") and convey its decision to the Concessionaire.
- 1.3 The Authority shall invite the aforesaid firms in the Panel of Firms to submit their respective technical and financial offers, each in a separate sealed cover. All the technical bids so received shall be opened and pursuant to the evaluation thereof, the Authority shall shortlist 3 (three) eligible firms on the basis of their technical scores. The financial bids in respect of such 3 (three) firms shall be opened and the order of priority as among these firms shall be determined on the basis of a weighted evaluation where technical and financial scores shall be assigned respective weights of 80:20.

**2 Fee and expenses**

- 2.1 In determining the nature and quantum of duties and services to be performed by the Independent Consultant during the Development Period and Construction Period, the Authority shall endeavour that payments to the Independent Consultant on account of fee and expenses do not exceed 2% (two per cent) of the Total Project Cost. Payments not exceeding such 2% (two per cent) shall be borne equally by the Authority and the Concessionaire in accordance with the provisions of this Agreement and any payments in excess thereof shall be borne entirely by the Authority.
- 2.2 The nature and quantum of duties and services to be performed by the Independent Consultant during the Operation Period shall be determined by the Authority in conformity with the provisions of this Agreement and with due regard for economy in expenditure. All payments made to the Independent Consultant on account of fee and expenses during the Operation Period, shall be borne equally by the Authority and the Concessionaire.



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**3 Constitution of fresh panel**

Not later than three years from the date of this Agreement, and every three years thereafter, the Authority shall prepare a fresh panel of firms in accordance with the criteria set forth in this Schedule-P; provided that the Authority may, at any time, prepare a fresh panel with prior written consent of the Concessionaire.

**4 Appointment of government entity as Independent Consultant**

Notwithstanding anything to the contrary contained in this Schedule, the Authority may in its discretion appoint a government-owned entity as the Independent Consultant; provided that such entity shall be a body corporate having as one of its primary function the provision of consulting, advisory and supervisory services for engineering projects; provided that a government-owned entity which is owned or controlled by the Authority and/or MoSRTTH shall not be eligible for appointment as Independent Consultant].



373

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**SCHEDULE - Q**  
(See Clause 23.2.1)

**TERMS OF REFERENCE FOR INDEPENDENT CONSULTANT**

**1 Scope**

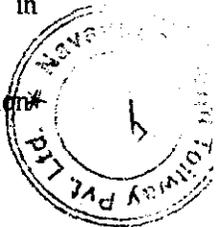
- 1.1 These Terms of Reference for the Independent Consultant (the "TOR") are being specified pursuant to the Concession Agreement dated \*\*\* (the "Agreement"), which has been entered into between the Authority and M/s Navayuga Udupi Tollway Private Limited (the "Concessionaire") for Design, Engineering, Finance, Construction, Operation and Maintenance of 4 laning of NH-17, Kundapur- Surathkal section from km 283.300 to km 358.080(Section 1) and Mangalore- Kerala Border km 375.300 to km 376.700 (i.e. Nantur circle to Mahaveer circle) and km 3.700 to km 17.200 (i.e. Mahaveer circle to Kerala border) (Section 2) of total length 90.08 km under NHDP PHASE III on Build, Operate and Transfer (BOT) Basis, and a copy of which is annexed hereto and marked as Annex-A to form part of this TOR.
- 1.2 This TOR shall apply to construction, operation and maintenance of the Four-Lane Project Highway.

**2 Definitions and interpretation**

- 2.1 The words and expressions beginning with or in capital letters used in this TOR and not defined herein but defined in the Agreement shall have, unless repugnant to the context, the meaning respectively assigned to them in the Agreement.
- 2.2 References to Articles, Clauses and Schedules in this TOR shall, except where the context otherwise requires, be deemed to be references to the Articles, Clauses and Schedules of the Agreement, and references to Paragraphs shall be deemed to be references to Paragraphs of this TOR.
- 2.3 The rules of interpretation stated in Clauses 1.2, 1.3 and 1.4 of the Agreement shall apply, *mutatis mutandis*, to this TOR.

**3 Role and functions of the Independent Consultant**

- 3.1 The role and functions of the Independent Consultant shall include the following:
- (i) review of the Drawings and Documents as set forth in Paragraph 4;
  - (ii) review, inspection and monitoring of Construction Works as set forth in Paragraph 5;
  - (iii) conducting Tests on completion of construction and issuing Completion Provisional Certificate as set forth in Paragraph 5;
  - (iv) review, inspection and monitoring of O&M as set forth in Paragraph 6;
  - (v) review, inspection and monitoring of Divestment Requirements as set forth in Paragraph 7;
  - (vi) determining, as required under the Agreement, the costs of any works or services





and/or their reasonableness;

(vii) determining, as required under the Agreement, the period or any extension thereof, for performing any duty or obligation;

(viii) assisting the Parties in resolution of disputes as set forth in Paragraph 9; and

(ix) undertaking all other duties and functions in accordance with the Agreement.

3.2 The Independent Consultant shall discharge its duties in a fair, impartial and efficient manner, consistent with the highest standards of professional integrity and Good Industry Practice.

#### 4 Development Period

4.1 During the Development Period, the Independent Consultant shall undertake a detailed review of the Drawings to be furnished by the Concessionaire along with supporting data, including the geo-technical and hydrological investigations, characteristics of materials from borrow areas and quarry sites, topographical surveys and traffic surveys. The Independent Consultant shall complete such review and send its comments/observations to the Authority and the Concessionaire within 15 (fifteen) days of receipt of such Drawings. In particular, such comments shall specify the conformity or otherwise of such Drawings with the Scope of the Project and Specifications and Standards.

4.2 The Independent Consultant shall review any modified Drawings or supporting Documents sent to it by the Concessionaire and furnish its comments within 7 (seven) days of receiving such Drawings or Documents.

4.3 The Independent Consultant shall review the Drawings sent to it by the Safety Consultant in accordance with Schedule-L and furnish its comments thereon to the Authority and the Concessionaire within 7 (seven) days of receiving such Drawings. The Independent Consultant shall also review the Safety Report and furnish its comments thereon to the Authority within 15 (fifteen) days of receiving such report.

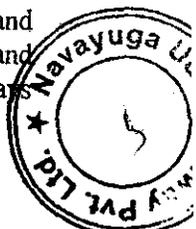
4.4 The Independent Consultant shall review the detailed design, construction methodology, quality assurance procedures and the procurement, engineering and construction time schedule sent to it by the Concessionaire and furnish its comments within 15 (fifteen) days of receipt thereof.

4.5 Upon reference by the Authority, the Independent Consultant shall review and comment on the EPC Contract or any other contract for construction, operation and maintenance of the Project Highway, and furnish its comments within 7 (seven) days from receipt of such reference from the Authority.

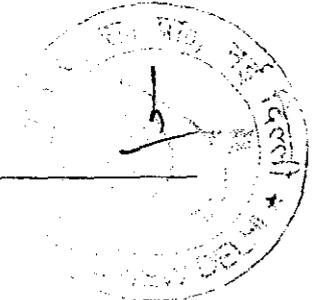
#### 5 Construction Period

5.1 In respect of the Drawings, Documents and Safety Report received by the Independent Consultant for its review and comments during the Construction Period, the provisions of Paragraph 4 shall apply, *mutatis mutandis*.

5.2 The Independent Consultant shall review the monthly progress report furnished by the Concessionaire and send its comments thereon to the Authority and the



375



Concessionaire within 7 (seven) days of receipt of such report.

- 5.3 The Independent Consultant shall inspect the Construction Works and the Project Highway once every month, preferably after receipt of the monthly progress report from the Concessionaire, but before the 20th (twentieth) day of each month in any case, and make out a report of such inspection (the "Inspection Report") setting forth an overview of the status, progress, quality and safety of construction, including the work methodology adopted, the materials used and their sources, and conformity of Construction Works with the Scope of the Project and the Specifications and Standards. In a separate section of the Inspection Report, the Independent Consultant shall describe in reasonable detail the lapses, defects or deficiencies observed by it in the construction of the Project Highway. The Inspection Report shall also contain a review of the maintenance of the existing lanes in conformity with the provisions of the Agreement. The Independent Consultant shall send a copy of its Inspection Report to the Authority and the Concessionaire within 7 (seven) days of the inspection.
- 5.4 The Independent Consultant may inspect the Project Highway more than once in a month if any lapses, defects or deficiencies require such inspections.
- 5.5 For determining that the Construction Works conform to Specifications and Standards, the Independent Consultant shall require the Concessionaire to carry out, or cause to be carried out, tests on a sample basis, to be specified by the Independent Consultant in accordance with Good Industry Practice for quality assurance. For purposes of this Paragraph 5.5, the tests specified in the IRC Special Publication-11 (Handbook of Quality Control for Construction of Roads and Runways) and the Specifications for Road and Bridge Works issued by MOSRTH (the "Quality Control Manuals") or any modification/substitution thereof shall be deemed to be tests conforming to Good Industry Practice for quality assurance. The Independent Consultant shall issue necessary directions to the Concessionaire for ensuring that the tests are conducted in a fair and efficient manner, and shall monitor and review the results thereof.
- 5.6 The sample size of the tests, to be specified by the Independent Consultant under Paragraph 5.5, shall comprise 10% (ten per cent) of the quantity or number of tests prescribed for each category or type of tests in the Quality Control Manuals; provided that the Independent Consultant may, for reasons to be recorded in writing, increase the aforesaid sample size by up to 10% (ten per cent) for certain categories or types of tests.
- 5.7 The timing of tests referred to in Paragraph 5.5, and the criteria for acceptance/rejection of their results shall be determined by the Independent Consultant in accordance with the Quality Control Manuals. The tests shall be undertaken on a random sample basis and shall be in addition to, and independent of, the tests that may be carried out by the Concessionaire for its own quality assurance in accordance with Good Industry Practice.
- 5.8 In the event that the Concessionaire carries out any remedial works for removal or rectification of any defects or deficiencies, the Independent Consultant shall require the Concessionaire to carry out, or cause to be carried out, tests to determine that such remedial works have brought the Construction Works into conformity with the Specifications and Standards, and the provisions of this Paragraph 5 shall apply to

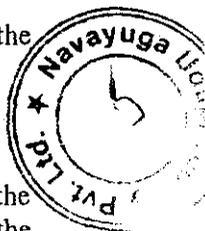


such tests.

- 5.9 In the event that the Concessionaire fails to achieve any of the Project Milestones, the Independent Consultant shall undertake a review of the progress of construction and identify potential delays, if any. If the Independent Consultant shall determine that completion of the Project Highway is not feasible within the time specified in the Agreement, it shall require the Concessionaire to indicate within 15 (fifteen) days the steps proposed to be taken to expedite progress, and the period within which the Project Completion Date shall be achieved. Upon receipt of a report from the Concessionaire, the Independent Consultant shall review the same and send its comments to the Authority and the Concessionaire forthwith.
- 5.10 If at any time during the Construction Period, the Independent Consultant determines that the Concessionaire has not made adequate arrangements for the safety of workers and Users in the zone of construction or that any work is being carried out in a manner that threatens the safety of the workers and the Users, it shall make a recommendation to the Authority forthwith, identifying the whole or part of the Construction Works that should be suspended for ensuring safety in respect thereof.
- 5.11 In the event that the Concessionaire carries out any remedial measures to secure the safety of suspended works and Users, it may, by notice in writing, require the Independent Consultant to inspect such works, and within 3 (three) days of receiving such notice, the Independent Consultant shall inspect the suspended works and make a report to the Authority forthwith, recommending whether or not such suspension may be revoked by the Authority.
- 5.12 If suspension of Construction Works is for reasons not attributable to the Concessionaire, the Independent Consultant shall determine the extension of dates set forth in the Project Completion Schedule, to which the Concessionaire is reasonably entitled, and shall notify the Authority and the Concessionaire of the same.
- 5.13 The Independent Consultant shall carry out, or cause to be carried out, all the Tests specified in Schedule-I and issue a Completion Certificate or Provisional Certificate, as the case may be. For carrying out its functions under this Paragraph 5.13 and all matters incidental thereto, the Independent Consultant shall act under and in accordance with the provisions of Article 14 and Schedule-I.
- 5.14 Upon reference from the Authority, the Independent Consultant shall make a fair and reasonable assessment of the costs of providing information, works and services as set forth in Article 16 and certify the reasonableness of such costs for payment by the Authority to the Concessionaire.
- 5.15 The Independent Consultant shall aid and advise the Concessionaire in preparing the Maintenance Manual.

## 6 Operation Period

- 6.1 In respect of the Drawings, Documents and Safety Report received by the Independent Consultant for its review and comments during the Operation Period, the provisions of Paragraph 4 shall apply, *mutatis mutandis*.
- 6.2 The Independent Consultant shall review the annual Maintenance Programme furnished by



- 4
- the Concessionaire and send its comments thereon to the Authority and the Concessionaire within 15 (fifteen) days of receipt of the Maintenance Programme.
- 6.3 The Independent Consultant shall review the monthly status report furnished by the Concessionaire and send its comments thereon to the Authority and the Concessionaire within 7 (seven) days of receipt of such report.
- 6.4 The Independent Consultant shall inspect the Project Highway once every month, preferably after receipt of the monthly status report from the Concessionaire, but before the 20th (twentieth) day of each month in any case, and make out an O&M Inspection Report setting forth an overview of the status, quality and safety of O&M including its conformity with the Maintenance Requirements and Safety Requirements. In a separate section of the O&M Inspection Report, the Independent Consultant shall describe in reasonable detail the lapses, defects or deficiencies observed by it in O&M of the Project Highway. The Independent Consultant shall send a copy of its O&M Inspection Report to the Authority and the Concessionaire within 7 (seven) days of the inspection.
- 6.5 The Independent Consultant may inspect the Project Highway more than once in a month, if any lapses, defects or deficiencies require such inspections.
- 6.6 The Independent Consultant shall in its O&M Inspection Report specify the tests, if any, that the Concessionaire shall carry out, or cause to be carried out, for the purpose of determining that the Project Highway is in conformity with the Maintenance Requirements. It shall monitor and review the results of such tests and the remedial measures, if any, taken by the Concessionaire in this behalf.
- 6.7 In respect of any defect or deficiency referred to in Paragraph 3 of Schedule-K, the Independent Consultant shall, in conformity with Good Industry Practice, specify the permissible limit of deviation or deterioration with reference to the Specifications and Standards and shall also specify the time limit for repair or rectification of any deviation or deterioration beyond the permissible limit.
- 6.8 The Independent Consultant shall determine if any delay has occurred in completion of repair or remedial works in accordance with the Agreement, and shall also determine the Damages, if any, payable by the Concessionaire to the Authority for such delay.
- 6.9 The Independent Consultant shall examine the request of the Concessionaire for closure of any lane(s) of the carriageway for undertaking maintenance/repair thereof, keeping in view the need to minimise disruption in traffic and the time required for completing such maintenance/repair in accordance with Good Industry Practice. It shall grant permission with such modifications, as it may deem necessary, within 5 (five) days of receiving a request from the Concessionaire. Upon expiry of the permitted period of closure, the Independent Consultant shall monitor the re-opening of such lane(s), and in case of delay, determine the Damages payable by the Concessionaire to the Authority under Clause 17.7.
- 6.10 The Independent Consultant shall monitor and review the curing of defects and deficiencies by the Concessionaire as set forth in Clause 19.4.
- 6.11 In the event that the Concessionaire notifies the Independent Consultant of any



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modifications that it proposes to make to the Project Highway, the Independent Consultant shall review the same and send its comments to the Authority and the Concessionaire within 15 (fifteen) days of receiving the proposal.

6.12 The Independent Consultant shall undertake traffic sampling, as and when required by the Authority, under and in accordance with Article 22 and Schedule-O.

## 7 Termination

7.1 At any time, not earlier than 90 (ninety) days prior to Termination but not later than 10 (ten) days prior to such Termination, the Independent Consultant shall, in the presence of a representative of the Concessionaire, inspect the Project Highway for determining compliance by the Concessionaire with the Divestment Requirements set forth in Clause 38.1 and, if required, cause tests to be carried out at the Concessionaire's cost for determining such compliance. If the Independent Consultant determines that the status of the Project Highway is such that its repair and rectification would require a larger amount than the sum set forth in Clause 39.2, it shall recommend retention of the required amount in the Escrow Account and the period of retention thereof.

7.2 The Independent Consultant shall inspect the Project Highway once in every 15 (fifteen) days during a period of 90 (ninety) days after Termination for determining the liability of the Concessionaire under Article 39, in respect of the defects or deficiencies specified therein. If any such defect or deficiency is found by the Independent Consultant, it shall make a report in reasonable detail and send it forthwith to the Authority and the Concessionaire.

## 8 Determination of costs and time

8.1 The Independent Consultant shall determine the costs, and/or their reasonableness, that are required to be determined by it under the Agreement.

8.2 The Independent Consultant shall determine the period, or any extension thereof, that is required to be determined by it under the Agreement.

## 9 Assistance in Dispute resolution

9.1 When called upon by either Party in the event of any Dispute, the Independent Consultant shall mediate and assist the Parties in arriving at an amicable settlement.

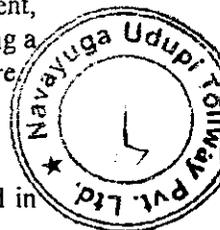
9.2 In the event of any disagreement between the Parties regarding the meaning, scope and nature of Good Industry Practice, as set forth in any provision of the Agreement, the Independent Consultant shall specify such meaning, scope and nature by issuing a reasoned written statement relying on good industry practice and authentic literature.

## 10 Other duties and functions

The Independent Consultant shall perform all other duties and functions specified in the Agreement.

## 11 Miscellaneous

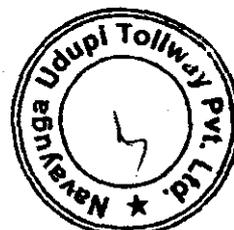
11.1 The Independent Consultant shall notify its programme of inspection to the Authority



379

and to the Concessionaire, who may, in their discretion, depute their respective representatives to be present during the inspection.

- 11.2 A copy of all communications, comments, instructions, Drawings or Documents sent by the Independent Consultant to the Concessionaire pursuant to this TOR, and a copy of all the test results with comments of the Independent Consultant thereon shall be furnished by the Independent Consultant to the Authority forthwith.
- 11.3 The Independent Consultant shall obtain, and the Concessionaire shall furnish in two copies thereof, all communications and reports required to be submitted, under this Agreement, by the Concessionaire to the Independent Consultant, whereupon the Independent Consultant shall send one of the copies to the Authority along with its comments thereon.
- 11.4 The Independent Consultant shall retain at least one copy each of all Drawings and Documents received by it, including 'as-built' Drawings, and keep them in its safe custody.
- 11.5 Upon completion of its assignment hereunder, the Independent Consultant shall duly classify and list all Drawings, Documents, results of tests and other relevant records, and hand them over to the Authority or such other person as the Authority may specify, and obtain written receipt thereof



**SCHEDULE -R**  
(See Clause 27.1.1)

**FEE NOTIFICATION**

**MINISTRY OF ROAD TRANSPORT AND HIGHWAYS**

**(Department of Road Transport and Highways)**

**NOTIFICATION**

**New Delhi, the \*\*\* 20\*\***

S.O. \*\*\*. Whereas, by the notification of the Government of India in the Ministry of Road Transport and Highways, number \*\*\*\*\* dated the \*\*\*\*\*, issued under section 11 of the National Highways Authority of India Act, 1988 (68 of 1988), the Central Government has entrusted the section of National highway from Kundapur- Surathkal (km 283+300 to km 358+060,) and Mangalore- Kerala Border [km 375+300 to km 376+700 (i.e. Nantur circle to Mahaveer circle) and km 3+700 to km 17+200 (i.e. Mahaveer circle to Kerala border)] of 90.08km in the state of Karnataka to the National Highways Authority of India (hereinafter referred to as the "Authority");

And Whereas, pursuant to the provisions of section 14 of the said Act, the Authority has entered into an agreement with ....., having its Registered Office at ..... (hereinafter referred to as "Concessionaire") for the development of the Kundapur- Surathkal and Mangalore- Kerala Border [km 375+300 to km 376+700 (i.e. Nantur circle to Mahaveer circle) and km 3+700 to km 17+200 (i.e. Mahaveer circle to Kerala border)] (hereinafter referred to as the said section) of the national highway No. 17 on Design, Build, Finance, Operate and Transfer (DBFOT) basis;

Now, therefore, in exercise of the powers conferred by section 8A of the National Highways Act, 1956 (48 of 1956), read with Rule 3 of the National Highways Fee (Determination of Rates and Collection) Rules, 2008, the Central Government, having regard to the expenditure involved in building, maintenance, management and operation of the said section of the said national highway, interest on the capital invested, reasonable return, the volume of traffic and the period of said agreement between the Authority and the Concessionaire, hereby notifies that there shall be levied and collected fees on mechanical vehicles for the use of the stretch from Kundapur- Surathkal (km 283+300 to km 358+060,) and Mangalore- Kerala Border [km 375+300 to km 376+700 (i.e. Nantur circle to Mahaveer circle) and km 3+700 to km 17+200 (i.e. Mahaveer circle to Kerala border)] including



construction of permanent Bridge over Netravathi having estimated cost of Rs.60.0 crores in the state of Karnataka at the rates specified in the aforesaid Rules and authorises the said Concessionaire to collect and retain the said fees on and from the date of commercial operation of the said section of National highway, subject to and in accordance with the said Rules and the provisions of the aforesaid agreement.

The fee levied and collected hereunder shall be due and payable at the following Toll Plazas for the distance specified for each such Toll Plaza:

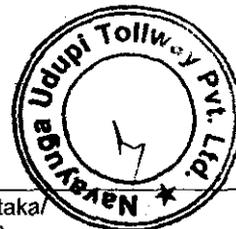
S No.	Location of Toll Plaza	Length (in km) for which Fee payable.
1.	km 300+480	40.53
2.	Km . 347+180	34.25
3.	Km. 16.850	15.30

[F.No. RW/NH-\*\*\*\*\*]

(Name)

Deputy Secretary

Government of India



6

1. **Short title and commencement.** - (1) These rules may be called the National Highways Fee (Determination of Rates and Collection) Rules, 2008.

(2) They shall come into force on the date of their publication in the Official Gazette.

(3) They shall not apply to agreements and contracts executed and bids invited prior to the publication of these rules.

2. **Definitions.** - (1) In these rules, unless the context otherwise requires,-

(a) "Act" means the National Highways Act, 1956;

(b) "base year" means the period from 1<sup>st</sup> April 2007 to 31<sup>st</sup> March 2008;

(c) "bypass" means a section of the national highway bypassing a town or city;

(d) "concessionaire" means a person with whom an agreement has been entered into under section 8A of the Act;

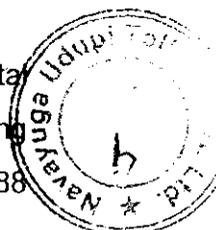
(e) "elevated highway" means any section of national highway raised above ground level through support of piers or columns;

(f) "executing authority" means an officer or authority notified by the Central Government under section 5 of the Act;

(g) "expressway" means a national highway having a divided carriageway suitable for high speed traffic and with control of access;

(h) "financial year" means the year commencing on the 1<sup>st</sup> day of April of a year and ending on 31<sup>st</sup> day of March of the succeeding year;

(i) "gross vehicle weight" in respect of any vehicle means the total weight of the vehicle and load certified and registered by the registering authority as permissible for that vehicle under the Motor Vehicles Act, 1988 (59 of 1988);



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(j) "lane" means a lane forming part of the main carriageway and having a minimum width of three meters and fifty centimeters;

(k) "mechanical vehicle" means any vehicle driven under its own power including a motor vehicle as defined under the Motor Vehicles Act, 1988;

(l) "notification" means a notification published in the Official Gazette;

(m) "private investment project" means a project relating to section of national highway, permanent bridge, bypass or tunnel, as the case may be, for which an agreement is entered into with a concessionaire ;

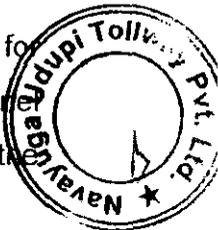
(n) "public funded project" means a project which is not a private investment project, as defined in clause (m) above and includes a private investment project in respect of which the agreement has expired;

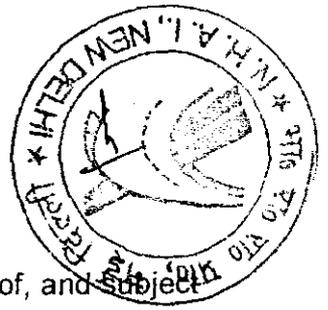
(o) "toll plaza" means any building, structure or booth made for collection of fee.

(2) Words and expressions used herein and not defined but defined in the National Highways Authority of India Act, 1988 shall have the meanings respectively assigned to them in that Act.

3. Levy of fee.- (1) The Central Government may by notification, levy fee for use of any section of national highway, permanent bridge, bypass or tunnel forming part of the national highway, as the case may be, in accordance with the provisions of these rules:

Provided that the Central Government may, by notification, exempt any section of national highway, permanent bridge, bypass or tunnel constructed





through a public funded project from levy of such fee or part thereof, and subject to such conditions as may be specified in that notification.

(2) The collection of fee levied under sub-rule (1), shall commence within forty- five days from the date of completion of the section of national highway, permanent bridge, bypass or tunnel, as the case may be, constructed through a public funded project.

(3) In case of private investment project, the collection of fee levied under sub-rule (1) shall be made in accordance with the terms of the agreement entered into by the concessionaire.

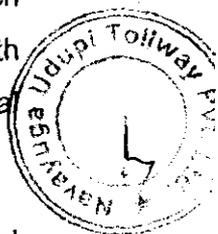
(4) No fee shall be levied for the use of the section of national highway, permanent bridge, bypass or tunnel, as the case may be, by two wheelers, three wheelers, tractors and animal drawn vehicles:

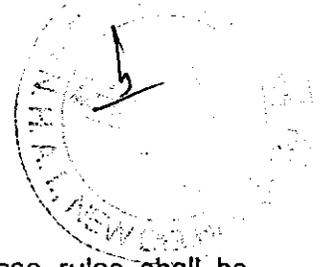
Provided that three wheelers, tractors and animal-drawn vehicles shall not be allowed to use the section of national highway, permanent bridge, bypass or tunnel, as the case may be, where a service road or alternative road is available in lieu of the said national highway, permanent bridge, bypass or tunnel:

Provided further that where service road or alternative road is available and the owner, driver or the person in charge of a two wheeler is making use of the section of national highway, permanent bridge, bypass or tunnel, as the case may be, he or she shall be charged fifty per cent. of the fee levied on a car.

*Explanation 1.*- For the purposes of this rule,- (a) "alternative road" means such other road, the carriageway of which is more than ten meters wide and the length of which does not exceed the corresponding length of such section of national highway by twenty per cent. thereof;

(b) "service road" means a road running parallel to a section of the national highway which provides access to the land adjoining such section of the national highway.





(5) The fee notified by the Central Government under these rules shall be rounded off and levied in multiple of the nearest rupees five.

4. **Base rate of fee.** - (1) The rate of fee for use of the section of national highway, permanent bridge, bypass or tunnel constructed through public funded project or private investment project shall be identical.

(2) The rate of fee for use of a section of national highway of four or more lanes shall, for the base year 2007-08, be the product of the length of such section multiplied by the following rates, namely:-

Type of Vehicle	Base rate of fee per km (in rupees)
Car, Jeep, Van or Light Motor Vehicle	0.65
Light Commercial Vehicle, Light Goods Vehicle or Mini Bus	1.05
Bus or Truck	2.20
Heavy Construction Machinery(HCM) or Earth Moving Equipment (EME) or Multi Axle Vehicle (MAV) (three to six axles)	3.45
Oversized Vehicles (seven or more axles)	4.20

Explanation.- For the purposes of this rule,-

(a) "car" or "jeep" or "van" or "light motor vehicle" means any mechanical vehicle the gross vehicle weight of which does not exceed seven thousand five hundred kilograms or the registered passenger carrying capability as specified in the certificate of registration issued under the Motor Vehicles Act, 1988 does not exceed twelve excluding the driver;

(b) "light commercial vehicle" or "light goods vehicle" or "mini bus" means any mechanical vehicle with a gross vehicle weight exceeding seven thousand five hundred kilograms but less than twelve thousand kilograms or the registered passenger carrying capability as specified in the certificate of registration issued under the Motor Vehicles Act, 1988, exceeds twelve but does not exceed thirty two excluding the driver;

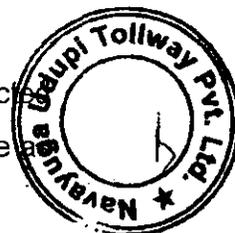
(c) "truck" or "bus" means any mechanical vehicle with a gross vehicle weight exceeding twelve thousand kilograms but less than twenty thousand kilograms or the registered passenger carrying capability as specified in the certificate of registration issued under the Motor Vehicles Act, 1988, exceeds thirty two, excluding the driver;

(d) "heavy construction machinery" or "earth moving equipment" or "multi axle vehicle " means heavy construction machinery or earth moving equipment or mechanical vehicle including a multi axle vehicle with three to six axles or vehicle with a gross vehicle weight exceeding twenty thousand kilograms but less than sixty thousand kilogram; and

(e) "oversized vehicle " means any mechanical vehicle having seven or more axles or vehicle with a gross vehicle weight exceeding sixty thousand kilograms.

(3) The rate of fee for use of a section of national highway, having two lanes and on which the average investment for up gradation has exceeded rupees one crore per kilometer, shall be sixty per cent. of the rate of fee specified under sub-rule (2).

(4) The rate of fee for use of permanent bridge, bypass or tunnel construction with the cost exceeding rupees ten crore, shall, for the base year 2007-08, be as follows:-



Base rate of fee (rupees per vehicle per trip)					
Cost of permanent bridge, bypass or tunnel (rupees in crore)	Car, Jeep, Van or Light Motor Vehicle	Light Commercial Vehicle, Light Goods Vehicle or Mini Bus	Truck or Bus	HCM, EME or MAV	Oversized Vehicle
10 to 15	5	7.50	15	22	30
For every additional rupees five crore or part	1	1.50	3	4.50	6

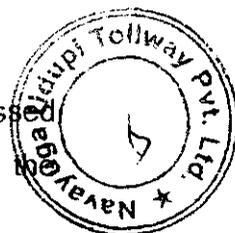
thereof, exceeding rupees fifteen crore and up to rupees one hundred crore.					
For every additional rupees five crore or part thereof, exceeding rupees one hundred crore and upto rupees two hundred crore.	0.75	1.15	2.25	3.40	4.50
For every additional rupees five crore or part thereof, exceeding rupees two hundred crore.	0.50	0.75	1.50	2.25	3

Provided that while computing fee for the section of national highway on which a permanent bridge, bypass or tunnel costing rupees fifty crore or more is situated, the length of such permanent bridge, bypass or tunnel shall be excluded from the length of such section of national highway and fee shall be levied at the rates specified for such permanent bridge, bypass and tunnel:

Provided further that where the cost of such permanent bridge, bypass or tunnel, as the case may be, is less than rupees fifty crore, and the said permanent bridge, bypass or tunnel, form part of the section of national highway, then instead of above rate of fee, the rate of fee specified under sub-rule (2) shall be applicable, for such permanent bridge, bypass or tunnel.

Explanation.- For the purpose of this sub-rule,-

- the cost for private investment project, shall be the cost as assessed by the executing authority prior to invitation of bids from the concessionaire ;
- the cost for public funded project shall be the cost as assessed by the executing authority six months prior to completion thereof.





5. Annual revision of rate of fee.-(1) The rates specified under rule 4 shall be increased without compounding, by three per cent. each year with effect from the 1<sup>st</sup> day of April, 2008 and such increased rate shall be deemed to be the base rate for the subsequent years.

(2) The applicable base rates shall be revised annually with effect from April 1 each year to reflect the increase in wholesale price index between the week ending on January 6, 2007 (i.e. 208.7) and the week ending on or immediately after January 1 of the year in which such revision is undertaken but such revision shall be restricted to forty per cent of the increase in wholesale price index.

(3) The formula for determining the applicable rate of fee shall be as follows:-

$$\text{Applicable rate of fee} = \text{base rate} + \text{base rate} \times \left\{ \frac{\text{WPI A} - \text{WPI B}}{\text{WPI B}} \right\} \times 0.4$$

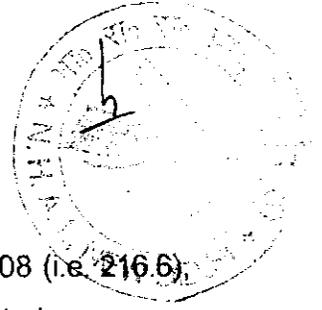
*Explanation.*- for the purposes of this sub-rule , -

- (a) applicable rate of fee shall be the rate payable by the user;
- (b) base rate shall be the rate specified in rule 4 read with sub- rule (1);
- (c) WPI A means the wholesale price index of the week ending on or subsequent to 1st January immediately preceding the date of revision under these rules; and
- (d) WPI B means the wholesale price index of the week ending on 6<sup>th</sup> January, 2007 i.e. 208.7.

Illustration:

If the revision is to be made for the year 2008-09 by applying the





wholesale price index of the week ending on 5<sup>th</sup> January 2008 (i.e. 216.6),  
then the rate for car, jeep or van will be 0.6796 as computed below:

$$\text{Applicable rate of fee: } 0.6695 \cdot 0.6695 \times \left\{ \frac{216.6 - 208.7}{208.7} \right\} \times 0.4 =$$
$$0.6796$$

(4) Annual revision of rate of fee under this rule shall be effective from first of April every year.

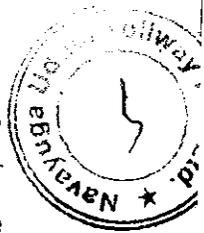
6. **Collection of fee.**- (1) Fee levied under these rules shall be collected by the Central Government or the executing authority or the concessionaire, as the case may be, at the toll plaza.

(2) Every driver, owner or person in charge of a mechanical vehicle shall for the use of the section of national highway, permanent bridge, bypass or tunnel, before crossing the toll plaza, pay the fee specified under these rules.

(3) The fee collected under these rules shall be paid either in cash or through smart card or on board unit (transponder) or any other like device:

Provided that no additional charges shall be realised for making the payment of fee by use of a smart card or on board unit (transponder) or any other such device.

(4) Any driver, owner or person in charge of a mechanical vehicle who opts for the installation of on board unit (transponder) or any other such device for payment of fee, shall deposit a refundable security equivalent to the cost of the equipment with the Central Government, the executing authority or the concessionaire, as the case may be, for such installation and no interest shall accrue on such security deposit.



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(5) The person receiving such fee under sub-rule (2), shall issue to the driver, owner or person in charge of mechanical vehicle a receipt, specifying therein the date and time of such receipt of fee, total amount received, and the class of vehicle for which the fee has been received:

Provided that where the fee is paid through smart card or on board unit (transponder) or any other such device, a receipt shall be issued on demand only.

(6) The fee shall be collected in perpetuity by the Central Government or the executing authority, as the case may be, and for a specified period in accordance with the terms of the agreement entered into by the concessionaire.

(7) In respect of public funded projects the fee levied under these rules shall be collected by the Central Government, or the executing authority, as the case may be, through its own officials or through a contractor.

**7. Remittance and appropriation of fee.-** (1) In case of public funded projects, the fee collected under the provisions of these rules by every executing authority shall be remitted to the Central Government:

Provided that the Central Government may by notification allow any or all executing authorities to appropriate the whole or any part of the fee for such purposes and subject to such conditions as may be specified in the said notification:

Provided further that in case of private investment projects, the fee collected under the provisions of these rules shall be appropriated by the concessionaire in accordance with the provisions of and for the performance of its obligations under the agreement entered into by such concessionaire.

(2) Every executing authority shall remit to the Central Government, the amount of fee collected over and above the amount permitted to be appropriated by the executing authority under sub-rule (1), within ninety days from the date of the closing of the financial year along with an annual return showing the amount

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collected and the expenditure incurred on collection of fee, including the administrative and management expenses.

(3) The Central Government shall by notification determine the administrative and management expenses which may be allowed to be deducted and retained by the executing authority.

**8. Location of toll plaza.-** (1) The executing authority or the concessionaire, as the case may be, shall establish a toll plaza beyond a distance of ten kilometers from a municipal or local town area limits:

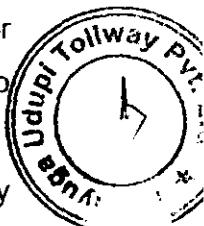
Provided that the executing authority may, for reasons to be recorded in writing, locate or allow the concessionaire to locate a toll plaza within a distance of ten kilometers of such municipal or local town area limits, but in no case within five kilometers of such municipal or local town area limits:

Provided further that where a section of the national highway, permanent bridge, bypass or tunnel, as the case may be, is constructed within the municipal or town area limits or within five kilometers from such limits, primarily for use of the residents of such municipal or town area, the toll plaza may be established within the municipal or town area limits or within a distance of five kilometers from such limits:

(2) Any other toll plaza on the same section of national highway and in the same direction shall not be established within a distance of sixty kilometers:

Provided that where the executing authority deems necessary, it may for reasons to be recorded in writing, establish or allow the concessionaire to establish another toll plaza within a distance of sixty kilometers:

Provided further that a toll plaza may be established within a distance of sixty kilometers from another toll plaza if such toll plaza is for collection of fee for a permanent bridge, bypass or tunnel.



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9. **Discounts.**-(1) The executing authority or the concessionaire, as the case may be, shall upon request provide a pass for multiple journeys to cross a toll plaza within the specified period at the rates specified in sub-rule (2).

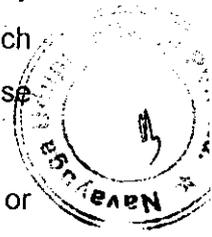
(2) A driver, owner or person in charge of a mechanical vehicle who makes use of the section of national highway, permanent bridge, bypass or tunnel, may opt for such pass and he or she shall have to pay the fee in accordance with the following rates, namely:-

Amount payable	Maximum number of one way journeys allowed	Period of validity
One and half times of the fee for one way journey	Two	Twenty four hours from the time of payment
Two-third of amount of the fee payable for fifty single journeys.	Fifty	One month from date of payment

(3) A person who owns a mechanical vehicle registered for non-commercial purposes and uses it as such for commuting on a section of national highway, permanent bridge, bypass or tunnel, may obtain a pass, on payment of fee at the base rate for the year 2007-2008 of rupees one hundred and fifty per calendar month and revised annually in accordance with rule 5, authorising it to cross the toll plaza specified in such pass:

Provided that such pass shall be issued only if such driver, owner or person in charge of such mechanical vehicle resides within a distance of twenty kilometers from the toll plaza specified by such person and the use of such section of national highway, permanent bridge, bypass or tunnel, as the case may be, does not extend beyond the toll plaza next to the specified toll plaza.

Provided further that no such pass shall be issued if a service road or alternative road is available for use by such driver, owner or person in charge of a mechanical vehicle.



(4) No pass shall be issued or fee collected from a driver, owner or person in charge of a mechanical vehicle that uses part of the section of a national highway and does not cross a toll plaza.

**10. Rate of fee for overloading.-** (1) Without prejudice to the liability of the driver, owner or a person in charge of a mechanical vehicle under any law for the time being in force, a mechanical vehicle which is loaded in excess of the permissible load specified for its category under sub-rule (2) of rule 4, shall be liable to pay fee at such rate which is applicable for the next higher category of mechanical vehicles:

Provided that the payment of such fee for overloading shall not entitle a driver or owner or a person in charge of a mechanical vehicle to make use of such national highway and his or her vehicle shall be prevented from using the national highway or crossing the toll plaza until the excess load has been removed from such mechanical vehicle.

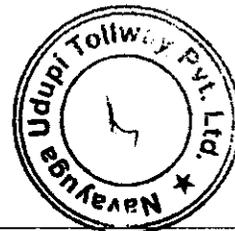
(2) The weight of a mechanical vehicle, as recorded at a weighbridge installed at the toll plaza, shall be the basis for levying the fee for overloading under this rule:

Provided that where no weighbridge has been installed at the toll plaza, no fee for overloading shall be levied and collected under this rule and the driver, owner or person in charge of the mechanical vehicle shall be liable to pay fee applicable for such vehicle only.

**11. Exemption from payment of fee.-** (1) No fee shall be levied and collected from a mechanical vehicle,-

(a) transporting and accompanying,-

- (i) the President of India;
- (ii) the Vice-President of India;
- (iii) the Prime-Minister of India;



- (iv) the Chief Justice of India;
- (v) the Governor;
- (vi) the Lieutenant Governor;
- (vii) the Union Minister;
- (viii) the Chief Minister;
- (ix) the Judge of Supreme Court;
- (x) the Chairman of the Council of State;
- (xi) the Speaker of the House of People;
- (xii) the Chairman of the Legislative Council of the State;
- (xiii) the Speaker of the Legislative Assembly of the State;
- (xiv) the Chief Justice of High Court;
- (xv) the Judge of High Court;
- (xvi) Ministers of States; and
- (xvii) Foreign dignitaries on State visit.

(b) used for official purposes by,-

- (i) the Ministry of Defence including those which are eligible for exemption in accordance with the provisions of the Indian Toll (Army and Air Force) Act, 1901 and rules made thereunder, as extended to Navy also;
- (ii) the Central and State armed forces in uniform including para military forces and police;
- (iii) an executive Magistrate;
- (iv) a fire-fighting department or organisation;
- (v) the National Highway Authority or any other organisation or person using such vehicle for inspection, survey, construction or operation and maintenance thereof; and

(c) used as ambulance.

**12. Display of Information.-** (1)The executing authority or the concessionaire, as the case may be, shall publish a notice specifying the amount of fee to be charged from the mechanical vehicle, in at least one Newspaper, each in English and vernacular language, having a wide circulation in such area.

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(2) The executing authority shall prominently display in Hindi and English one thousand meters ahead of the toll plaza and in English and local language five hundred meters ahead of the toll plaza,-

- (i) the amount of fee payable for each class of vehicles and the discounts available under rule 9;
- (ii) the categories of vehicles exempted from payment of fee; and
- (iii) the name, address and telephone or contact number of the executing authority or the concessionaire, as the case may be.

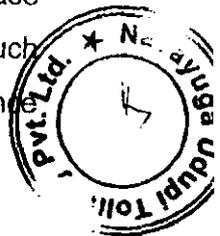
(3) The height of the display boards, their quality and size of lettering shall be clearly visible and legible to the users.

**13. Unauthorised collection.-** (1) An officer authorised by the Central Government or by the executing authority, as the case may be, may assess the excess fee collected, if any, by the executing authority or the concessionaire, as the case may be, and recover the same from such authority or concessionaire, along with an additional sum equal to twenty five per cent. of the excess fee collected:

Provided that no recovery of such excess fee shall be made unless an opportunity of hearing has been given to the executing authority or concessionaire, as the case may be.

(2) Any driver, owner or person incharge of a mechanical vehicle aggrieved by unauthorised collection of fee, may lodge a complaint with the officer authorised by the Central Government or the executing authority, as the case may be, in this behalf, who shall after hearing the parties pass an order on such complaint for refund of excess payment and damages for the inconvenience suffered by such user within thirty days.

**14. Failure to pay fee.-** (1) If any driver, owner or person in charge of a mechanical vehicle does not pay or refuses to pay the fee for use of national



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highway, permanent bridge, bypass or tunnel, his or her vehicle shall not be allowed to use such section of national highway, permanent bridge, bypass or tunnel and in case such vehicle obstructs the normal flow of traffic, the executing authority or the concessionaire, as the case may be, may get such obstructing vehicle removed from the national highway, permanent bridge, bypass or tunnel, as the case may be.

(2) Where the driver or the person in charge of a mechanical vehicle refuses or fails to pay the fee levied under these rules, the same shall be recovered from the registered owner of the mechanical vehicle.

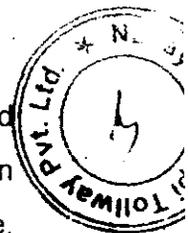
(3) Where the Central Government, executing authority or the concessionaire, as the case may be, has reason to believe that a mechanical vehicle is plying on a section of the national highway, permanent bridge, bypass or tunnel without payment of fee due, it may stop such vehicle for the purpose of verifying the payment thereof and collect the fee due from such vehicle.

**15. Power of Central Government to verify records.-** An officer duly authorised by the Central Government or the executing authority, as the case may be shall have the power to verify the collection of fee, and inspect any document, records, other information, receipts or reports of the executing authority or the concessionaire, as the case may be.

**16. Collection of fee in respect of Private Investment Project.-** (1) The fee levied under the provisions of sub-rule (3) of rule 3 shall be collected by the concessionaire till its agreement is in force.

(2) On and from the date of expiry of the agreement specified under sub-rule (3) of rule 3, the fee levied shall be collected by the Central Government or the executing authority, as the case may be.

**17. Bar for installation of additional barrier.-** No barrier shall be installed at any place, other than at the toll plaza, except with the prior permission in writing of the Central Government or the executing authority, as the case may be, who after being satisfied that there is evasion of fee, may allow on such terms and conditions as it may impose, the installation of such additional barrier by the



Central Government, the executing authority or the concessionaire, as the case may be, within ten kilometers from the toll plaza, to check the evasion of fee:

Provided that the Central Government or the executing authority, as the case may be, may, at any time, for reasons to be recorded in writing, withdraw such permission.

Provided further that where the Central Government or the executing authority, as the case may be, do not allow installation of an additional barrier by the concessionaire, the reasons for such refusal shall be communicated to such concessionaire within a reasonable period.



**SCHEDULE - S**  
(See Clause 31.1.2)

**ESCROW AGREEMENT**

THIS ESCROW AGREEMENT is entered into on this the \*\*\* day of \*\*\* 200\*.

**AMONGST**

- 1 M/s **NAVAYUGA UDUPI TOLLWAY PRIVATE LIMITED**, a company incorporated under the provisions of the Companies Act, 1956 and having its registered office at 1259, Lakshmi Towers, Road No. 36, Jubilee Hills Hyderabad-500033 (hereinafter referred to as the "**Concessionaire**" which expression shall, unless repugnant to the context or meaning thereof, include its successors, permitted assigns and substitutes);
- 2 \*\*\*\*[name and particulars of Lenders' Representative] and having its registered office at \*\*\* acting for and on behalf of the Senior Lenders as their duly authorised agent with regard to matters arising out of or in relation to this Agreement (hereinafter referred to as the "**Lenders' Representative**" which expression shall, unless repugnant to the context or meaning thereof, include its successors and substitutes);
- 3 \*\*\*\*[name and particulars of the Escrow Bank] and having its registered office at \*\*\*\*(hereinafter referred to as the "**Escrow Bank**" which expression shall, unless repugnant to the context or meaning thereof, include its successors and substitutes); and
- 4 The National Highways Authority of India, established under the National Highways Authority of India Act 1988, represented by its Chairman and having its principal offices at G-5 & 6, Sector 10, Dwarka, New Delhi-110075 (hereinafter referred to as the "**Authority**" which expression shall, unless repugnant to the context or meaning thereof, include its administrators, successors and assigns).

**WHEREAS:**

- (A). The Authority has entered into a Concession Agreement dated \*\*\* with the Concessionaire (the "Concession Agreement") for Four laning of Design, Engineering, Finance, Construction, Operation and Maintenance of NH-17 Kundapur- Surathkal section from km 283+300 to km 358+080(Section 1) and Mangalore- Kerala Border [km 375+300 to km 376+700 (i.e. Nantur circle to Mahaveer circle) and km 3+700 to km 17+200 (i.e. Mahaveer circle to Kerala border)] (Section 2) of total length 90.08 km under NHDP PHASE III on Build Operate and Transfer (BOT) Basis and a copy of which is annexed hereto and marked as Annex-A to form part of this Agreement.
- (B). Senior Lenders have agreed to finance the Project in accordance with the terms and conditions set forth in the Financing Agreements.
- (C). The Concession Agreement requires the Concessionaire to establish an Escrow Account, *inter alia*, on the terms and conditions stated therein.



NOW IT IS HEREBY AGREED as follows:

## 1 DEFINITIONS AND INTERPRETATION

### 1.1 Definitions

In this Agreement, the following words and expressions shall, unless repugnant to the context or meaning thereof, have the meaning hereinafter respectively assigned to them:

“Agreement” means this Escrow Agreement and any amendment thereto made in accordance with the provisions contained herein;

“Concession Agreement” means the Concession Agreement referred to in Recital (A) above and annexed hereto as Annex-A, and shall include all of its Recitals and Schedules and any amendments made thereto in accordance with the provisions contained in this behalf therein;

“Cure Period” means the period specified in this Agreement for curing any breach or default of any provision of this Agreement by the Concessionaire, and shall commence from the date on which a notice is delivered by the Authority or the Lenders’ Representative, as the case may be, to the Concessionaire asking the latter to cure the breach or default specified in such notice;

“Escrow Account” means an escrow account established in terms of and under this Agreement, and shall include the Sub-Accounts;

“Escrow Default” shall have the meaning ascribed thereto in Clause 6.1;

“Lenders’ Representative” means the person referred to as the Lenders’ Representative in the foregoing Recitals;

“Parties” means the parties to this Agreement collectively and “Party” shall mean any of the Parties to this Agreement individually;

“Payment Date” means, in relation to any payment specified in Clause 4.1, the date(s) specified for such payment; and

“Sub-Accounts” means the respective Sub-Accounts of the Escrow Account, into which the monies specified in Clause 4.1 would be credited every month and paid out if due, and if not due in a month then appropriated proportionately in such month and retained in the respective Sub Accounts and paid out therefrom on the Payment Date(s).

### 1.2 Interpretation

1.2.1 References to Lenders’ Representative shall, unless repugnant to the context or meaning thereof, mean references to the Lenders’ Representative, acting for and on behalf of Senior Lenders.

1.2.2 The words and expressions beginning with capital letters and defined in this Agreement shall have the meaning ascribed thereto herein, and the words and



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expressions used in this Agreement and not defined herein but defined in the Concession Agreement shall, unless repugnant to the context, have the meaning ascribed thereto in the Concession Agreement.

1.2.3 References to Clauses are, unless stated otherwise, references to Clauses of this Agreement.

1.2.4 The rules of interpretation stated in Clauses 1.2, 1.3 and 1.4 of the Concession Agreement shall apply, *mutatis mutandis*, to this Agreement.

## 2 ESCROW ACCOUNT

### 2.1 Escrow Bank to act as trustee

2.1.1 The Concessionaire hereby appoints the Escrow Bank to act as trustee for the Authority, the Lenders' Representative and the Concessionaire in connection herewith and authorises the Escrow Bank to exercise such rights, powers, authorities and discretion as are specifically delegated to the Escrow Bank by the terms hereof together with all such rights, powers, authorities and discretion as are reasonably incidental hereto, and the Escrow Bank accepts such appointment pursuant to the terms hereof.

2.1.2 The Concessionaire hereby declares that all rights, title and interest in and to the Escrow Account shall be vested in the Escrow Bank and held in trust for the Authority, the Lenders' Representative and the Concessionaire, and applied in accordance with the terms of this Agreement. No person other than the Authority, the Lenders' Representative and the Concessionaire shall have any rights hereunder as the beneficiaries of or as third party beneficiaries under this Agreement.

### 2.2 Acceptance of Escrow Bank

The Escrow Bank hereby agrees to act as such and to accept all payments and other amounts to be delivered to and held by the Escrow Bank pursuant to the provisions of this Agreement. The Escrow Bank shall hold and safeguard the Escrow Account during the term of this Agreement and shall treat the amount in the Escrow Account as monies deposited by the Concessionaire, Senior Lenders or the Authority with the Escrow Bank. In performing its functions and duties under this Agreement, the Escrow Bank shall act in trust for the benefit of, and as agent for, the Authority, the Lenders' Representative and the Concessionaire or their nominees, successors or assigns, in accordance with the provisions of this Agreement.

### 2.3 Establishment and operation of Escrow Account

2.3.1 Within 30 (thirty) days from the date of this Agreement, and in any case prior to the Appointed Date, the Concessionaire shall open and establish the Escrow Account with the \*\*\*\* (name of Branch) Branch of the Escrow Bank. The Escrow Account shall be denominated in Rupees.

2.3.2 The Escrow Bank shall maintain the Escrow Account in accordance with the terms of this Agreement and its usual practices and applicable regulations, and pay the maximum rate of interest payable to similar customers on the balance in the said account from time to time.



2.3.3 The Escrow Bank and the Concessionaire shall, after consultation with the Lenders' Representative, agree on the detailed mandates, terms and conditions, and operating procedures for the Escrow Account, but in the event of any conflict or inconsistency between this Agreement and such mandates, terms and conditions, or procedures, this Agreement shall prevail.

#### 2.4 Escrow Bank's fee

The Escrow Bank shall be entitled to receive its fee and expenses in an amount, and at such times, as may be agreed between the Escrow Bank and the Concessionaire. For the avoidance of doubt, such fee and expenses shall form part of the O&M Expenses and shall be appropriated from the Escrow Account in accordance with Clause 4.1.

#### 2.5 Rights of the parties

The rights of the Authority, the Lenders' Representative and the Concessionaire in the monies held in the Escrow Account are set forth in their entirety in this Agreement and the Authority, the Lenders' Representative and the Concessionaire shall have no other rights against or to the monies in the Escrow Account.

#### 2.6 Substitution of the Concessionaire

The Parties hereto acknowledge and agree that upon substitution of the Concessionaire with the Nominated Company, pursuant to the Substitution Agreement, it shall be deemed for the purposes of this Agreement that the Nominated Company is a Party hereto and the Nominated Company shall accordingly be deemed to have succeeded to the rights and obligations of the Concessionaire under this Agreement on and with effect from the date of substitution of the Concessionaire with the Nominated Company.

### 3 DEPOSITS INTO ESCROW ACCOUNT

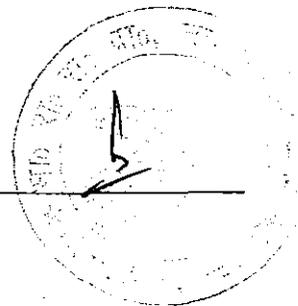
#### 3.1 Deposits by the Concessionaire

3.1.1 The Concessionaire agrees and undertakes that it shall deposit into and/or credit the Escrow Account with:

- (a) all monies received in relation to the Project from any source, including the Senior Lenders, lenders of Subordinated Debt and the Authority;
- (b) all funds received by the Concessionaire from its share-holders, in any manner or form;
- (c) all Fee levied and collected by the Concessionaire;
- (d) any other revenues from or in respect of the Project Highway; and
- (d) all proceeds received pursuant to any insurance claims.

3.1.2 The Concessionaire may at any time make deposits of its other funds into the Escrow Account, provided that the provisions of this Agreement shall apply to such deposits.





### 3.2 Deposits by the Authority

The Authority agrees and undertakes that, as and when due and payable, it shall deposit into and/or credit the Escrow Account with:

- (a) Grant and any other monies disbursed by the Authority to the Concessionaire;
- (b) Revenue Shortfall Loan;
- (c) all Fee collected by the Authority in exercise of its rights under the Concession Agreement; and
- (d) Termination Payments:

Provided that the Authority shall be entitled to appropriate from the aforesaid amounts, any Concession Fee due and payable to it by the Concessionaire, and the balance remaining shall be deposited into the Escrow Account.

### 3.3 Deposits by Senior Lenders

The Lenders' Representative agrees, confirms and undertakes that the Senior Lenders shall deposit into and/or credit the Escrow Account with all disbursements made by them in relation to or in respect of the Project; provided that notwithstanding anything to the contrary contained in this Agreement, the Senior Lenders shall be entitled to make direct payments to the EPC Contractor under and in accordance with the express provisions contained in this behalf in the Financing Agreements.

### 3.4 Interest on deposits

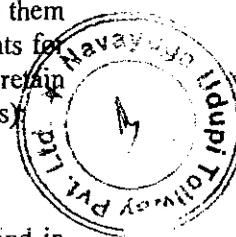
The Escrow Bank agrees and undertakes that all interest accruing on the balances of the Escrow Account shall be credited to the Escrow Account; provided that the Escrow Bank shall be entitled to appropriate therefrom the fee and expenses due to it from the Concessionaire in relation to the Escrow Account and credit the balance remaining to the Escrow Account.

## 4 WITHDRAWALS FROM ESCROW ACCOUNT

### 4.1 Withdrawals during Concession Period

4.1.1 At the beginning of every month, or at such shorter intervals as the Lenders' Representative and the Concessionaire may by written instructions determine, the Escrow Bank shall withdraw amounts from the Escrow Account and appropriate them in the following order by depositing such amounts in the relevant Sub-Accounts for making due payments, and if such payments are not due in any month, then retain such monies in such Sub-Accounts and pay out therefrom on the Payment Date(s)

- (a) all taxes due and payable by the Concessionaire;
- (b) all payments relating to construction of the Project Highway, subject to and in accordance with the conditions, if any, set forth in the Financing Agreements;
- (c) O&M Expenses, subject to the ceiling, if any, set forth in the Financing Agreements;



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- (d) O&M Expenses incurred by the Authority, provided it certifies to the Escrow Bank that it had incurred such expenses in accordance with the provisions of the Concession Agreement and that the amounts claimed are due to it from the Concessionaire;
  - (e) Concession Fee due and payable to the Authority;
  - (f) monthly proportionate provision of Debt Service due in an Accounting Year;
  - [(g) Deleted;]
  - (h) all payments and Damages certified by the Authority as due and payable to it by the Concessionaire pursuant to the Concession Agreement, including repayment of Revenue Shortfall Loan;
  - (i) debt service payments in respect of Subordinated Debt;
  - (j) any reserve requirements set forth in the Financing Agreements; and
  - (k) balance, if any, in accordance with the instructions of the Concessionaire.

4.1.2 Not later than 60 (sixty) days prior to the commencement of each Accounting Year, the Concessionaire shall provide to the Escrow Bank, with prior written approval of the Lenders' Representative, details of the amounts likely to be required for each of the payment obligations set forth in this Clause 4.1; provided that such amounts may be subsequently modified, with prior written approval of the Lenders' Representative, if fresh information received during the course of the year makes such modification necessary.

#### 4.2 Withdrawals upon Termination

Upon Termination of the Concession Agreement, all amounts standing to the credit of the Escrow Account shall, notwithstanding anything in this Agreement, be appropriated and dealt with in the following order:

- (a) all taxes due and payable by the Concessionaire;
- (b) 90% (ninety per cent) of Debt Due excluding Subordinated Debt;
- (c) outstanding Concession Fee;
- (d) all payments and Damages certified by the Authority as due and payable to it by the Concessionaire pursuant to the Concession Agreement, including repayment of Revenue Shortfall Loan and any claims in connection with or arising out of Termination;
- (e) retention and payments arising out of, or in relation to, liability for defects and deficiencies set forth in Article 39 of the Concession Agreement;
- (f) outstanding Debt Service including the balance of Debt Due;
- (g) outstanding Subordinated Debt;

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- (h) incurred or accrued O&M Expenses;
- (i) any other payments required to be made under the Concession Agreement; and
- (j) balance, if any, in accordance with the instructions of the Concessionaire:

Provided that the disbursements specified in Sub-clause (j) of this Clause 4.2 shall be undertaken only after the Vesting Certificate has been issued by the Authority.

**4.3 Application of insufficient funds**

Funds in the Escrow Account shall be applied in the serial order of priority set forth in Clauses 4.1 and 4.2, as the case may be. If the funds available are not sufficient to meet all the requirements, the Escrow Bank shall apply such funds in the serial order of priority until exhaustion thereof.

**4.4 Application of insurance proceeds**

Notwithstanding anything in this Agreement, the proceeds from all insurance claims, except life and injury, shall be deposited into and/or credited to the Escrow Account and utilised for any necessary repair, reconstruction, reinstatement, replacement, improvement, delivery or installation of the Project Highway, and the balance remaining, if any, shall be applied in accordance with the provisions contained in this behalf in the Financing Agreements.

**4.5 Withdrawals during Suspension**

Notwithstanding anything to the contrary contained in this Agreement, the Authority may exercise all or any of the rights of the Concessionaire during the period of Suspension under Article 36 of the Concession Agreement. Any instructions given by the Authority to the Escrow Bank during such period shall be complied with as if such instructions were given by the Concessionaire under this Agreement and all actions of the Authority hereunder shall be deemed to have been taken for and on behalf of the Concessionaire.

**5 OBLIGATIONS OF THE ESCROW BANK**

**5.1 Segregation of funds**

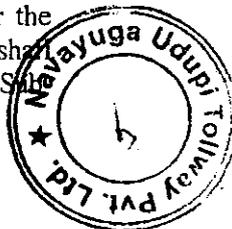
Monies and other property received by the Escrow Bank under this Agreement shall, until used or applied in accordance with this Agreement, be held by the Escrow Bank in trust for the purposes for which they were received, and shall be segregated from other funds and property of the Escrow Bank.

**5.2 Notification of balances**

7 (seven) business days prior to each Payment Date (and for this purpose the Escrow Bank shall be entitled to rely on an affirmation by the Concessionaire and/or the Lenders' Representative as to the relevant Payment Dates), the Escrow Bank shall notify the Lenders' Representative of the balances in the Escrow Account and Sub-Accounts as at the close of business on the immediately preceding business day.

**5.3 Communications and notices**

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In discharge of its duties and obligations hereunder, the Escrow Bank:

- (a) may, in the absence of bad faith or gross negligence on its part, rely as to any matters of fact which might reasonably be expected to be within the knowledge of the Concessionaire upon a certificate signed by or on behalf of the Concessionaire;
- (b) may, in the absence of bad faith or gross negligence on its part, rely upon the authenticity of any communication or document believed by it to be authentic;
- (c) shall, within 5 (five) business days after receipt, deliver a copy to the Lenders' Representative of any notice or document received by it in its capacity as the Escrow Bank from the Concessionaire or any other person hereunder or in connection herewith; and
- (d) shall, within 5 (five) business days after receipt, deliver a copy to the Concessionaire of any notice or document received by it from the Lenders' Representative in connection herewith.

#### 5.4 No set off

The Escrow Bank agrees not to claim or exercise any right of set off, banker's lien or other right or remedy with respect to amounts standing to the credit of the Escrow Account. For the avoidance of doubt, it is hereby acknowledged and agreed by the Escrow Bank that the monies and properties held by the Escrow Bank in the Escrow Account shall not be considered as part of the assets of the Escrow Bank and being trust property, shall in the case of bankruptcy or liquidation of the Escrow Bank, be wholly excluded from the assets of the Escrow Bank in such bankruptcy or liquidation.

#### 5.5 Regulatory approvals

The Escrow Bank shall use its best efforts to procure, and thereafter maintain and comply with, all regulatory approvals required for it to establish and operate the Escrow Account. The Escrow Bank represents and warrants that it is not aware of any reason why such regulatory approvals will not ordinarily be granted to the Escrow Bank.

### 6 ESCROW DEFAULT

#### 6.1 Escrow Default

6.1.1 Following events shall constitute an event of default by the Concessionaire (an "Escrow Default") unless such event of default has occurred as a result of Force Majeure or any act or omission of the Authority or the Lenders' Representative:

- (a) the Concessionaire commits breach of this Agreement by failing to deposit any receipts into the Escrow Account as provided herein and fails to cure such breach by depositing the same into the Escrow Account within a Cure Period of 5 (five) business days;
- (b) the Concessionaire causes the Escrow Bank to transfer funds to any account of the Concessionaire in breach of the terms of this Agreement and fails to cure



such breach by depositing the relevant funds into the Escrow Account or any Sub-Account in which such transfer should have been made, within a Cure Period of 5 (five) business days; or

- (c) the Concessionaire commits or causes any other breach of the provisions of this Agreement and fails to cure the same within a Cure Period of 5 (five) business days.

6.1.2 Upon occurrence of an Escrow Default, the consequences thereof shall be dealt with under and in accordance with the provisions of the Concession Agreement.

## 7 TERMINATION OF ESCROW AGREEMENT

### 7.1 Duration of the Escrow Agreement

This Agreement shall remain in full force and effect so long as any sum remains to be advanced or is outstanding from the Concessionaire in respect of the debt, guarantee or financial assistance received by it from the Senior Lenders, or any of its obligations to the Authority remain to be discharged, unless terminated earlier by consent of all the Parties or otherwise in accordance with the provisions of this Agreement.

### 7.2 Substitution of Escrow Bank

The Concessionaire may, by not less than 45 (forty five) days prior notice to the Escrow Bank, the Authority and the Lenders' Representative, terminate this Agreement and appoint a new Escrow Bank, provided that the new Escrow Bank is acceptable to the Lenders' Representative and arrangements are made satisfactory to the Lenders' Representative for transfer of amounts deposited in the Escrow Account to a new Escrow Account established with the successor Escrow Bank. The termination of this Agreement shall take effect only upon coming into force of an Escrow Agreement with the substitute Escrow Bank.

### 7.3 Closure of Escrow Account

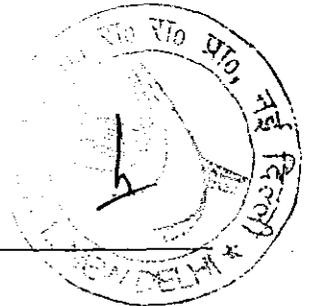
The Escrow Bank shall, at the request of the Concessionaire and the Lenders' Representative made on or after the payment by the Concessionaire of all outstanding amounts under the Concession Agreement and the Financing Agreements including the payments specified in Clause 4.2, and upon confirmation of receipt of such payments, close the Escrow Account and Sub-Accounts and pay any amount standing to the credit thereof to the Concessionaire. Upon closure of the Escrow Account hereunder, the Escrow Agreement shall be deemed to be terminated.

## 8 SUPPLEMENTARY ESCROW AGREEMENT

### 8.1 Supplementary escrow agreement

The Lenders' Representative and the Concessionaire shall be entitled to enter into a supplementary escrow agreement with the Escrow Bank providing, *inter alia*, for detailed procedures and documentation for withdrawals from Sub-Accounts pursuant to Clause 4.1.1 and for matters not covered under this Agreement such as the rights and obligations of Senior Lenders and lenders of Subordinated Debt, investment of





surplus funds, restrictions on withdrawals by the Concessionaire in the event of breach of this Agreement or upon occurrence of an Escrow Default, procedures relating to operation of the Escrow Account and withdrawal therefrom, reporting requirements and any matters incidental thereto; provided that such supplementary escrow agreement shall not contain any provision which is inconsistent with this Agreement and in the event of any conflict or inconsistency between provisions of this Agreement and such supplementary escrow agreement, the provisions of this Agreement shall prevail.

## 9 INDEMNITY

### 9.1 General indemnity

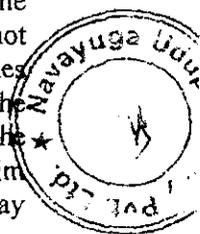
9.1.1 The Concessionaire will indemnify, defend and hold the Authority, Escrow Bank and the Senior Lenders, acting through the Lenders' Representative, harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of any breach by the Concessionaire of any of its obligations under this Agreement or on account of failure of the Concessionaire to comply with Applicable Laws and Applicable Permits.

9.1.2 The Authority will indemnify, defend and hold the Concessionaire harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of failure of the Authority to fulfil any of its obligations under this Agreement materially and adversely affecting the performance of the Concessionaire's obligations under the Concession Agreement or this Agreement other than any loss, damage, cost and expense arising out of acts done in discharge of their lawful functions by the Authority, its officers, servants and agents.

9.1.3 The Escrow Bank will indemnify, defend and hold the Concessionaire harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of failure of the Escrow Bank to fulfil its obligations under this Agreement materially and adversely affecting the performance of the Concessionaire's obligations under the Concession Agreement other than any loss, damage, cost and expense, arising out of acts done in discharge of their lawful functions by the Escrow Bank, its officers, servants and agents.

### 9.2 Notice and contest of claims

In the event that any Party hereto receives a claim from a third party in respect of which it is entitled to the benefit of an indemnity under Clause 9.1 or in respect of which it is entitled to reimbursement (the "**Indemnified Party**"), it shall notify the other Party responsible for indemnifying such claim hereunder (the "**Indemnifying Party**") within 15 (fifteen) days of receipt of the claim and shall not settle or pay the claim without the prior approval of the Indemnifying Party, which approval shall not be unreasonably withheld or delayed. In the event that the Indemnifying Party wishes to contest or dispute the claim, it may conduct the proceedings in the name of the Indemnified Party and shall bear all costs involved in contesting the same. The Indemnified Party shall provide all cooperation and assistance in contesting any claim and shall sign all such writings and documents as the Indemnifying Party may reasonably require.



## 10 DISPUTE RESOLUTION

### 10.1 Dispute resolution

10.1.1 Any dispute, difference or claim arising out of or in connection with this Agreement, which is not resolved amicably, shall be decided finally by reference to arbitration to a Board of Arbitrators comprising one nominee of each Party to the dispute, and where the number of such nominees is an even number, the nominees shall elect another person to such Board. Such arbitration shall be held in accordance with the Rules of Arbitration of the Indian Council of Arbitration, and shall be subject to the provisions of the Arbitration and Conciliation Act, 1996.

10.1.2 The Arbitrators shall issue a reasoned award and such award shall be final and binding on the Parties. The venue of arbitration shall be Delhi and the language of arbitration shall be English.

## 11 MISCELLANEOUS PROVISIONS

### 11.1 Governing law and jurisdiction

This Agreement shall be construed and interpreted in accordance with and governed by the laws of India, and the Courts at Delhi shall have jurisdiction over all matters arising out of or relating to this Agreement.

### 11.2 Waiver of sovereign immunity

The Authority unconditionally and irrevocably:

- (a) agrees that the execution, delivery and performance by it of this Agreement constitute commercial acts done and performed for commercial purpose;
- (b) agrees that, should any proceedings be brought against it or its assets, property or revenues in any jurisdiction in relation to this Agreement or any transaction contemplated by this Agreement, no immunity (whether by reason of sovereignty or otherwise) from such proceedings shall be claimed by or on behalf of the Authority with respect to its assets;
- (c) waives any right of immunity which it or its assets, property or revenues now has, may acquire in the future or which may be attributed to it in any jurisdiction; and
- (d) consents generally in respect of the enforcement of any judgement or award against it in any such proceedings to the giving of any relief or the issue of any process in any jurisdiction in connection with such proceedings (including the making, enforcement or execution against it or in respect of any assets, property or revenues whatsoever irrespective of their use or intended use of any order or judgement that may be made or given in connection therewith).

### 11.3 Priority of agreements

In the event of any conflict between the Concession Agreement and this Agreement, the provisions contained in the Concession Agreement shall prevail over this Agreement.



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**11.4 Alteration of terms**

All additions, amendments, modifications and variations to this Agreement shall be effectual and binding only if in writing and signed by the duly authorised representatives of the Parties.

**11.5 Waiver**

**11.5.1** Waiver by any Party of a default by another Party in the observance and performance of any provision of or obligations under this Agreement:

(a) shall not operate or be construed as a waiver of any other or subsequent default hereof or of other provisions of or obligations under this Agreement;

(b) shall not be effective unless it is in writing and executed by a duly authorised representative of the Party; and

(c) shall not affect the validity or enforceability of this Agreement in any manner.

**11.5.2** Neither the failure by any Party to insist on any occasion upon the performance of the terms, conditions and provisions of this Agreement or any obligation thereunder nor time or other indulgence granted by any Party to another Party shall be treated or deemed as waiver of such breach or acceptance of any variation or the relinquishment of any such right hereunder.

**11.6 No third party beneficiaries**

This Agreement is solely for the benefit of the Parties and no other person or entity shall have any rights hereunder.

**11.7 Survival**

**11.7.1 Termination of this Agreement:**

(a) shall not relieve the Parties of any obligations hereunder which expressly or by implication survive termination hereof; and

(b) except as otherwise provided in any provision of this Agreement expressly limiting the liability of either Party, shall not relieve either Party of any obligations or liabilities for loss or damage to the other Party arising out of, or caused by, acts or omissions of such Party prior to the effectiveness of such termination or arising out of such termination.

**11.7.2** All obligations surviving the cancellation, expiration or termination of this Agreement shall only survive for a period of 3 (three) years following the date of such termination or expiry of this Agreement.

**11.8 Severability**

If for any reason whatever any provision of this Agreement is or becomes invalid, illegal or unenforceable or is declared by any court of competent jurisdiction or any other instrumentality to be invalid, illegal or unenforceable, the validity, legality or enforceability of the remaining provisions shall not be affected in any manner, and



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the Parties will negotiate in good faith with a view to agreeing to one or more provisions which may be substituted for such invalid, unenforceable or illegal provisions, as nearly as is practicable to such invalid, illegal or unenforceable provision. Failure to agree upon any such provisions shall not be subject to dispute resolution under Clause 10.1 of this Agreement or otherwise.

**11.9 Successors and assigns**

This Agreement shall be binding on and shall inure to the benefit of the Parties and their respective successors and permitted assigns.

**11.10 Notices**

All notices or other communications to be given or made under this Agreement shall be in writing and shall either be delivered personally or sent by courier or registered post with an additional copy to be sent by facsimile. The address for service of each Party and its facsimile number are set out under its name on the signing pages hereto. A notice shall be effective upon actual receipt thereof, save that where it is received after 5.30 (five thirty) p.m. on a business day, or on a day that is not a business day, the notice shall be deemed to be received on the first business day following the date of actual receipt. Without prejudice to the foregoing, a Party giving or making a notice or communication by facsimile shall promptly deliver a copy thereof personally, or send it by courier or registered post to the addressee of such notice or communication. It is hereby agreed and acknowledged that any Party may by notice change the address to which such notices and communications to it are to be delivered or mailed. Such change shall be effective when all the Parties have notice of it.

**11.11 Language**

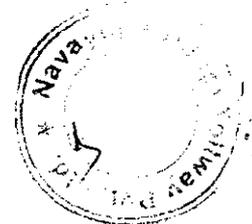
All notices, certificates, correspondence and proceedings under or in connection with this Agreement shall be in English.

**11.12 Authorised representatives**

Each of the Parties shall, by notice in writing, designate their respective authorised representatives through whom only all communications shall be made. A Party hereto shall be entitled to remove and/or substitute or make fresh appointment of such authorised representative by similar notice.

**11.13 Original Document**

This Agreement may be executed in four counterparts, each of which when executed and delivered shall constitute an original of this Agreement.



IN WITNESS WHEREOF THE PARTIES HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DATE FIRST ABOVE WRITTEN.

SIGNED, SEALED AND DELIVERED  
For and on behalf of  
CONCESSIONAIRE by:

(Signature)  
(Name)  
(Designation)  
(Address)  
(Fax No.)

SIGNED, SEALED AND DELIVERED  
For and on behalf of SENIOR LENDERS by the  
Lenders' Representative:

(Signature)  
(Name)  
(Designation)  
(Address)  
(Fax No.)

SIGNED, SEALED AND DELIVERED  
For and on behalf of ESCROW BANK by

(Signature)  
(Name)  
(Designation)  
(Address)  
(Fax No.)

SIGNED, SEALED AND DELIVERED  
For and on behalf of NATIONAL HIGHWAY  
AUTHORITY OF INDIA by:

(Signature)  
(Name)  
(Designation)  
(Address)  
(Fax No.)

In the presence of;

1.

2.



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**SCHEDULE - T**  
(See Clause 33.2.1)

**PANEL OF CHARTERED ACCOUNTANTS**

**1 Panel of Chartered Accountants**

Pursuant to the provisions of Clause 33.2.1 of the Agreement, the Authority and the Concessionaire shall prepare a mutually agreed panel of 10 (ten) reputable firms of Chartered Accountants having their registered offices in India (the "Panel of Chartered Accountants"). The criteria for preparing such Panel and the procedure to be adopted in this behalf shall be as set forth in this Schedule-T.

**2 Invitation for empanelment**

2.1 The Authority shall invite offers from all reputable firms of Chartered Accountants who fulfil the following eligibility criteria, namely:

- (a) the firm should have conducted statutory audit of the annual accounts of at least one hundred companies registered under the Companies Act, 1956, of which at least ten should have been public sector undertakings;
- (b) the firm should have at least 5 (five) practising Chartered Accountants on its rolls, each with a minimum experience of ten years in the profession;
- (c) the firm or any of its partners should not have been disqualified or black-listed by the Comptroller and Auditor General of India or the Authority; and
- (d) the firm should have an office in the State or in an adjacent State with at least 2 (two) practising Chartered Accountants on its rolls in such State.

2.2 Interested firms meeting the eligibility criteria shall be required to submit a statement of their capability including the bio-data of all the practising Chartered Accountants on its rolls. In particular, each firm shall be required to furnish year-wise information relating to the names of all the companies with an annual turnover exceeding Rs. 100,00,00,000 (Rs. One hundred crore) whose annual accounts were audited by such firm in any of the preceding 5 (five) Accounting Years.

**3 Evaluation and selection**

3.1 The information furnished by each firm shall be scrutinised and evaluated by the Authority and 1 (one) point shall be awarded for each annual audit of the companies specified in Paragraph 2.2 above. (For the avoidance of doubt, a firm which has conducted audit of the annual accounts of any such company for five years shall be awarded five points).

3.2 The Authority shall prepare a list of all the eligible firms along with the points scored by each such firm and 10 (ten) firms scoring the highest points shall be identified and included in the draft Panel of Chartered Accountants.

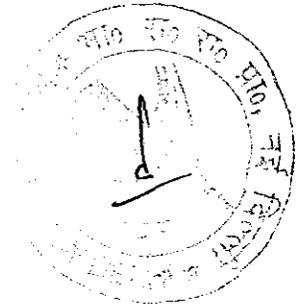


**4 Consultation with the Concessionaire**

The Authority shall convey the aforesaid panel of firms to the Concessionaire for scrutiny and comments, if any. The Concessionaire shall be entitled to scrutinise the relevant records of the Authority to ascertain whether the selection of firms has been undertaken in accordance with the prescribed procedure and it shall send its comments, if any, to the Authority within 15 (fifteen) days of receiving the aforesaid panel.

**5 Mutually agreed panel**

- 5.1 The Authority shall, after considering all relevant factors including the comments, if any, of the Concessionaire, finalise and constitute a panel of 10 (ten) firms which shall be deemed to be the mutually agreed Panel of Chartered Accountants.
- 5.2 After completion of every five years from the date of preparing the mutually agreed Panel of Chartered Accountants, or such earlier period as may be agreed between the Authority and the Concessionaire, a new panel shall be prepared in accordance with the provisions of this Schedule - T.



**Schedule-U**  
(See clause 38.3)

**VESTING CERTIFICATE**

1. The Chairman, National Highways Authority of India (the "Authority") refers to the Concession Agreement dated \*\*\* (the "Agreement") entered into between the Authority and M/s Navayuga Udupi Tollway Private Limited (the "Concessionaire") Design, Engineering, Finance, Construction, Operation and Maintenance of 4 laning of NH-17, Kundapur- Surathkal section from km 283.300 to km 358.080 (Section 1) and Mangalore- Kerala Border [km 375.300 to km 376.700 (i.e. Nantur circle to Mahaveer circle) and km 3.700 to km 17.200 (i.e. Mahaveer circle to Kerala border)] (Section 2) of total length 90.08 km in the State of Karnataka under NHDP PHASE III on Build, Operate and Transfer ("BOT") Basis.
2. The Authority hereby acknowledges compliance and fulfillment by the Concessionaire of the Divestment Requirements set forth in Clause 38.1 of the Agreement on the basis that upon issue of this Vesting Certificate, the Authority shall be deemed to have acquired, and all title and interest of the Concessionaire in or about the Project Highway shall be deemed to have vested unto the Authority, free from any encumbrances, charges and liens whatsoever.
3. Notwithstanding anything to the contrary contained hereinabove, it shall be a condition of this Vesting Certificate that nothing contained herein shall be construed or interpreted as waiving the obligation of the Concessionaire to rectify and remedy any defect or deficiency in any of the Divestment Requirements and/or relieving the Concessionaire in any manner of the same.

Signed this \*\*\* day of \*\*\*, 200\* at Delhi.

AGREED, ACCEPTED AND SIGNED  
DELIVERED For and on behalf of  
CONCESSIONAIRE by:

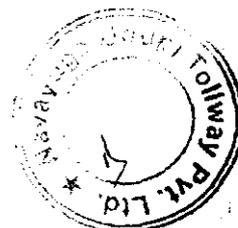
SIGNED, SEALED AND  
For and on behalf of  
NATIONAL HIGHWAYS AUTHORITY OF  
INDIA by:

Signature  
Name  
Designation  
Address

Signature  
Name  
Designation  
Address

In the presence of  
1.

2.



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**SCHEDULE - V**  
(See Clause 40.3.1)

**SUBSTITUTION AGREEMENT**

THIS SUBSTITUTION AGREEMENT is entered into on this the \*\*\* day of \*\*\* 200\*.

**AMONGST**

- 1 The National Highways Authority of India, established under the National Highways Authority of India Act 1988, represented by its Chairman and having its principal offices at G-5 & 6, Sector 10, Dwarka, New Delhi-110075 (hereinafter referred to as the "Authority" which expression shall unless repugnant to the context or meaning thereof include its administrators, successors and assigns);
- 2 M/s NAVAYUGA UDUPI TOLLWAY PRIVATE LIMITED, a company incorporated under the provisions of the Companies Act, 1956 and having its registered office at 1259, Lakshmi Towers, Road No:36, Jubilee Hills, Hyderabad-500033, Andhra Pradesh, (hereinafter referred to as the "Concessionaire" which expression shall unless repugnant to the context or meaning thereof include its successors and permitted assigns and substitutes);
- 3 \*\*\*\* [name and particulars of Lenders' Representative] and having its registered office at \*\*\*\*, acting for and on behalf of the Senior Lenders as their duly authorised agent with regard to matters arising out of or in relation to this Agreement (hereinafter referred to as the "Lenders' Representative", which expression shall unless repugnant to the context or meaning thereof include its successors and substitutes);

**WHEREAS:**

- (A) The Authority has entered into a Concession Agreement dated \*\*\* with the Concessionaire (the "Concession Agreement") for Four Laning of Nh 17, Kundapur-Surathkal section from km 283.300 to km 358.080 (Section 1) and Mangalore- Kerala Border [km 375.300 to km 376.700 (i.e. Nantur circle to Mahaveer circle) and km 3.700 to km 17.200 (i.e. Mahaveer circle to Kerala border)] (Section 2) of total length 90.08 km in the State of Karnataka on build, operate and transfer ("BOT") basis, and a copy of which is annexed hereto and marked as Annex-A to form part of this Agreement.
- (B) Senior Lenders have agreed to finance the Project in accordance with the terms and conditions set forth in the Financing Agreements.
- (C) Senior Lenders have requested the Authority to enter into this Substitution Agreement for securing their interests through assignment, transfer and substitution of the Concession to a Nominated Company in accordance with the provisions of this Agreement and the Concession Agreement.
- (D) In order to enable implementation of the Project including its financing, construction, operation and maintenance, the Authority has agreed and undertaken to transfer and assign the Concession to a Nominated Company in accordance with the terms and conditions set forth in this Agreement and the Concession Agreement.

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NOW IT IS HEREBY AGREED as follows:

**1 DEFINITIONS AND INTERPRETATION**

**1.1 Definitions**

In this Substitution Agreement, the following words and expressions shall, unless repugnant to the context or meaning thereof, have the meaning hereinafter respectively assigned to them:

“**Agreement**” means this Substitution Agreement and any amendment thereto made in accordance with the provisions contained in this Agreement;

“**Financial Default**” means occurrence of a material breach of the terms and conditions of the Financing Agreements or a continuous default in Debt Service by the Concessionaire for a minimum period of 3 (three) months;

“**Lenders’ Representative**” means the person referred to as the Lenders’ Representative in the foregoing Recitals;

“**Nominated Company**” means a company, incorporated under the provisions of the Companies Act, 1956, selected by the Lenders’ Representative, on behalf of Senior Lenders, and proposed to the Authority for assignment/transfer of the Concession as provided in this Agreement;

“**Notice of Financial Default**” shall have the meaning ascribed thereto in Clause 3.2.1; and

“**Parties**” means the parties to this Agreement collectively and “**Party**” shall mean any of the Parties to this Agreement individually.

**1.2 Interpretation**

1.2.1 References to Lenders’ Representative shall, unless repugnant to the context or meaning thereof, mean references to the Lenders’ Representative, acting for and on behalf of Senior Lenders.

1.2.2 References to Clauses are, unless stated otherwise, references to Clauses of this Agreement.

1.2.3 The words and expressions beginning with capital letters and defined in this Agreement shall have the meaning ascribed thereto herein, and the words and expressions used in this Agreement and not defined herein but defined in the Concession Agreement shall, unless repugnant to the context, have the meaning ascribed thereto in the Concession Agreement.

1.2.4 The rules of interpretation stated in Clauses 1.2, 1.3 and 1.4 of the Concession Agreement shall apply, *mutatis mutandis*, to this Agreement.



## 2 ASSIGNMENT

### 2.1 Assignment of rights and title

The Concessionaire hereby assigns the rights, title and interest in the Concession to, and in favour of, the Lenders' Representative pursuant to and in accordance with the provisions of this Agreement and the Concession Agreement by way of security in respect of financing by the Senior Lenders under the Financing Agreements.

## 3 SUBSTITUTION OF THE CONCESSIONAIRE

### 3.1 Rights of substitution

3.1.1 Pursuant to the rights, title and interest assigned under Clause 2.1; the Lenders' Representative shall be entitled to substitute the Concessionaire by a Nominated Company under and in accordance with the provisions of this Agreement and the Concession Agreement.

3.1.2 The Authority hereby agrees to substitute the Concessionaire by endorsement on the Concession Agreement in favour of the Nominated Company selected by the Lenders' Representative in accordance with this Agreement. (For the avoidance of doubt, the Senior Lenders or the Lenders' Representative shall not be entitled to operate and maintain the Project Highway as Concessionaire either individually or collectively).

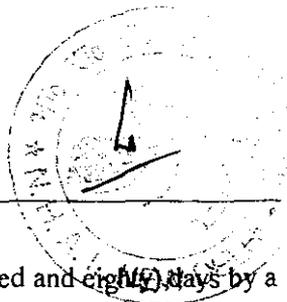
### 3.2 Substitution upon occurrence of Financial Default

3.2.1 Upon occurrence of a Financial Default, the Lenders' Representative may issue a notice to the Concessionaire (the "Notice of Financial Default") along with particulars thereof, and send a copy to the Authority for its information and record. A Notice of Financial Default under this Clause 3 shall be conclusive evidence of such Financial Default and it shall be final and binding upon the Concessionaire for the purposes of this Agreement.

3.2.2 Upon issue of a Notice of Financial Default hereunder, the Lenders' Representative may, without prejudice to any of its rights or remedies under this Agreement or the Financing Agreements, substitute the Concessionaire by a Nominated Company in accordance with the provisions of this Agreement.

3.2.3 At any time after the Lenders' Representative has issued a Notice of Financial Default, it may by notice require the Authority to suspend all the rights of the Concessionaire and undertake the operation and maintenance of the Project Highway in accordance with the provisions of Article 36 of the Concession Agreement, and upon receipt of such notice, the Authority shall undertake Suspension under and in accordance with the provisions of the Concession Agreement. The aforesaid Suspension shall be revoked upon substitution of the Concessionaire by a Nominated Company, and in the event such substitution is not completed within 180 (one hundred and eighty) days from the date of such Suspension, the Authority may terminate the Concession Agreement forthwith by issuing a Termination Notice in accordance with the provisions of the Concession Agreement; provided that upon written request from the Lenders' Representative and the Concessionaire, the





Authority may extend the aforesaid period of 180 (one hundred and eighty) days by a period not exceeding 90 (ninety) days.

### **3.3 Substitution upon occurrence of Concessionaire Default**

- 3.3.1 Upon occurrence of a Concessionaire Default, the Authority shall by a notice inform the Lenders' Representative of its intention to issue a Termination Notice and grant 15 (fifteen) days time to the Lenders' Representative to make a representation, stating the intention to substitute the Concessionaire by a Nominated Company.
- 3.3.2 In the event that the Lenders' Representative makes a representation to the Authority within the period of 15 (fifteen) days specified in Clause 3.3.1, stating that it intends to substitute the Concessionaire by a Nominated Company, the Lenders' Representative shall be entitled to undertake and complete the substitution of the Concessionaire by a Nominated Company in accordance with the provisions of this Agreement within a period of 180 (one hundred and eighty) days from the date of such representation, and the Authority shall either withhold Termination or undertake Suspension for the aforesaid period of 180 (one hundred and eighty) days; provided that upon written request from the Lenders' Representative and the Concessionaire, the Authority shall extend the aforesaid period of 180 (one hundred and eighty) days by a period not exceeding 90 (ninety) days.

### **3.4 Procedure for substitution**

- 3.4.1 The Authority and the Concessionaire hereby agree that on or after the date of Notice of Financial Default or the date of representation to the Authority under Clause 3.3.2, as the case may be, the Lenders' Representative may, without prejudice to any of the other rights or remedies of the Senior Lenders, invite, negotiate and procure offers, either by private negotiations or public auction or tenders for the take over and transfer of the Project Highway including the Concession to the Nominated Company upon such Nominated Company's assumption of the liabilities and obligations of the Concessionaire towards the Authority under the Concession Agreement and towards the Senior Lenders under the Financing Agreements.
- 3.4.2 To be eligible for substitution in place of the Concessionaire, the Nominated Company shall be required to fulfil the eligibility criteria that were laid down by the Authority for shortlisting the bidders for award of the Concession; provided that the Lenders' Representative may represent to the Authority that all or any of such criteria may be waived in the interest of the Project, and if the Authority determines that such waiver shall not have any material adverse effect on the Project, it may waive all or any of such eligibility criteria.
- 3.4.3 Upon selection of a Nominated Company, the Lenders' Representative shall request the Authority to:
- (a) accede to transfer to the Nominated Company the right to construct, operate and maintain the Project Highway in accordance with the provisions of the Concession Agreement;
  - (b) endorse and transfer the Concession to the Nominated Company, on the same terms and conditions, for the residual Concession Period; and
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(c) enter into a Substitution Agreement with the Lenders' Representative and the Nominated Company on the same terms as are contained in this Agreement.

3.4.4 If the Authority has any objection to the transfer of Concession in favour of the Nominated Company in accordance with this Agreement, it shall within 7 (seven) days from the date of proposal made by the Lenders' Representative, give a reasoned order after hearing the Lenders' Representative. If no such objection is raised by the Authority, the Nominated Company shall be deemed to have been accepted. The Authority thereupon shall transfer and endorse the Concession within 7 (seven) days of its acceptance/deemed acceptance of the Nominated Company; provided that in the event of such objection by the Authority, the Lenders' Representative may propose another Nominated Company whereupon the procedure set forth in this Clause 3.4 shall be followed for substitution of such Nominated Company in place of the Concessionaire.

### 3.5 Selection to be binding

The decision of the Lenders' Representative and the Authority in selection of the Nominated Company shall be final and binding on the Concessionaire. The Concessionaire irrevocably agrees and waives any right to challenge the actions of the Lenders' Representative or the Senior Lenders or the Authority taken pursuant to this Agreement including the transfer/assignment of the Concession in favour of the Nominated Company. The Concessionaire agrees and confirms that it shall not have any right to seek revaluation of assets of the Project or the Concessionaire's shares. It is hereby acknowledged by the Parties that the rights of the Lenders' Representative are irrevocable and shall not be contested in any proceedings before any court or Authority and the Concessionaire shall have no right or remedy to prevent, obstruct or restrain the Authority or the Lenders' Representative from effecting or causing the transfer by substitution and endorsement of the Concession as requested by the Lenders' Representative.

## 4 PROJECT AGREEMENTS

### 4.1 Substitution of Nominated Company in Project Agreements

The Concessionaire shall ensure and procure that each Project Agreement contains provisions that entitle the Nominated Company to step into such Project Agreement, in its discretion, in place and substitution of the Concessionaire in the event of such Nominated Company's assumption of the liabilities and obligations of the Concessionaire under the Concession Agreement.

## 5 TERMINATION OF CONCESSION AGREEMENT

### 5.1 Termination upon occurrence of Financial Default

At any time after issue of a Notice of Financial Default, the Lenders' Representative may by a notice in writing require the Authority to terminate the Concession Agreement forthwith, and upon receipt of such notice, the Authority shall undertake Termination under and in accordance with the provisions of Article 37 of the Concession Agreement.

### 5.2 Termination when no Nominated Company is selected

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In the event that no Nominated Company acceptable to the Authority is selected and recommended by the Lenders' Representative within the period of 180 (one hundred and eighty) days or any extension thereof as set forth in Clause 3.3.2, the Authority may terminate the Concession Agreement forthwith in accordance with the provisions thereof.

### 5.3 Realisation of Debt Due

The Authority and the Concessionaire hereby acknowledge and agree that, without prejudice to their any other right or remedy, the Lenders' Representative is entitled to receive from the Concessionaire, without any further reference to or consent of the Concessionaire, the Debt Due upon Termination of the Concession Agreement. For realisation of the Debt Due, the Lenders' Representative shall be entitled to make its claim from the Escrow Account in accordance with the provisions of the Concession Agreement and the Escrow Agreement.

## 6 DURATION OF THE AGREEMENT

### 6.1 Duration of the Agreement

6.1 This Agreement shall come into force from the date hereof and shall expire at the earliest to occur of the following events:

- (a) Termination of the Agreement; or
- (b) no sum remains to be advanced, or is outstanding to the Senior Lenders, under the Financing Agreements.

## 7 INDEMNITY

### 7.1 General indemnity

7.1.1 The Concessionaire will indemnify, defend and hold the Authority and the Lenders' Representative harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense of whatever kind and nature arising out of any breach by the Concessionaire of any of its obligations under this Agreement or on account of failure of the Concessionaire to comply with Applicable Laws and Applicable Permits.

7.1.2 The Authority will indemnify, defend and hold the Concessionaire harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of failure of the Authority to fulfil any of its obligations under this Agreement, materially and adversely affecting the performance of the Concessionaire's obligations under the Concession Agreement or this Agreement, other than any loss, damage, cost and expense, arising out of acts done in discharge of their lawful functions by the Authority, its officers, servants and agents.

7.1.3 The Lenders' Representative will indemnify, defend and hold the Concessionaire harmless against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of failure of the Lenders' Representative to fulfil its obligations under this Agreement, materially and adversely affecting the performance

of the Concessionaire's obligations under the Concession Agreement, other than any loss, damage, cost and expense, arising out of acts done in discharge of their lawful functions by the Lenders' Representative, its officers, servants and agents.

## 7.2 Notice and contest of claims

In the event that any Party hereto receives a claim from a third party in respect of which it is entitled to the benefit of an indemnity under Clause 7.1 or in respect of which it is entitled to reimbursement (the "Indemnified Party"), it shall notify the other Party responsible for indemnifying such claim hereunder (the "Indemnifying Party") within 15 (fifteen) days of receipt of the claim and shall not settle or pay the claim without the prior approval of the Indemnifying Party, such approval not to be unreasonably withheld or delayed. In the event that the Indemnifying Party wishes to contest or dispute the claim, it may conduct the proceedings in the name of the Indemnified Party and shall bear all costs involved in contesting the same. The Indemnified Party shall provide all cooperation and assistance in contesting any claim and shall sign all such writings and documents as the Indemnifying Party may reasonably require.

## 8 DISPUTE RESOLUTION

### 8.1 Dispute resolution

8.1.1 Any dispute, difference or claim arising out of or in connection with this Agreement which is not resolved amicably shall be decided by reference to arbitration to a Board of Arbitrators comprising one nominee each of the Authority, Concessionaire and the Lenders' Representative. Such arbitration shall be held in accordance with the Rules of Arbitration of the Indian Council of Arbitration and shall be subject to provisions of the Arbitration and Conciliation Act, 1996.

8.1.2 The Arbitrators shall issue a reasoned award and such award shall be final and binding on the Parties. The venue of arbitration shall be Delhi and the language of arbitration shall be English.

## 9 MISCELLANEOUS PROVISIONS

### 9.1 Governing law and jurisdiction

This Agreement shall be construed and interpreted in accordance with and governed by the laws of India, and the Courts at Delhi shall have jurisdiction over all matters arising out of or relating to this Agreement.

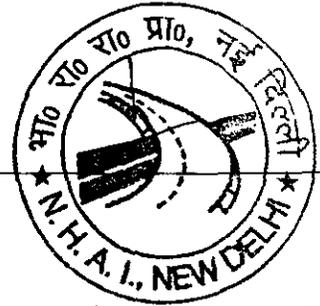
### 9.2 Waiver of sovereign immunity

The Authority unconditionally and irrevocably:

- (a) agrees that the execution, delivery and performance by it of this Agreement constitute commercial acts done and performed for commercial purpose;
- (b) agrees that, should any proceedings be brought against it or its assets, property or revenues in any jurisdiction in relation to this Agreement or any transaction contemplated by this Agreement, no immunity (whether by reason of sovereignty or otherwise) from such proceedings shall be claimed by or on behalf of the



422



Authority with respect to its assets;

- (c) waives any right of immunity which it or its assets, property or revenues now has, may acquire in the future or which may be attributed to it in any jurisdiction; and
- (d) consents generally in respect of the enforcement of any judgement or award against it in any such proceedings to the giving of any relief or the issue of any process in any jurisdiction in connection with such proceedings (including the making, enforcement or execution against it or in respect of any assets, property or revenues whatsoever irrespective of their use or intended use of any order or judgement that may be made or given in connection therewith).

### 9.3 Priority of agreements

In the event of any conflict between the Concession Agreement and this Agreement, the provisions contained in the Concession Agreement shall prevail over this Agreement.

### 9.4 Alteration of terms

All additions, amendments, modifications and variations to this Agreement shall be effectual and binding only if in writing and signed by the duly authorised representatives of the Parties.

### 9.5 Waiver

#### 9.5.1 Waiver by any Party of a default by another Party in the observance and performance of any provision of or obligations under this Agreement:

- (a) shall not operate or be construed as a waiver of any other or subsequent default hereof or of other provisions of or obligations under this Agreement;
- (b) shall not be effective unless it is in writing and executed by a duly authorised representative of the Party; and
- (c) shall not affect the validity or enforceability of this Agreement in any manner.

#### 9.5.2 Neither the failure by either Party to insist on any occasion upon the performance of the terms, conditions and provisions of this Agreement or any obligation thereunder nor time or other indulgence granted by a Party to another Party shall be treated or deemed as waiver of such breach or acceptance of any variation or the relinquishment of any such right hereunder.

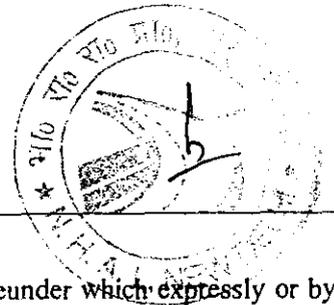
### 9.6 No third party beneficiaries

This Agreement is solely for the benefit of the Parties and no other person or entity shall have any rights hereunder.

### 9.7 Survival

#### 9.7.1 Termination of this Agreement:





- (a) shall not relieve the Parties of any obligations hereunder which expressly or by implication survive termination hereof; and
- (b) except as otherwise provided in any provision of this Agreement expressly limiting the liability of either Party, shall not relieve either Party of any obligations or liabilities for loss or damage to the other Party arising out of or caused by acts or omissions of such Party prior to the effectiveness of such termination or arising out of such termination.

9.7.2 All obligations surviving the cancellation, expiration or termination of this Agreement shall only survive for a period of 3 (three) years following the date of such termination or expiry of this Agreement.

#### 9.8 Severability

If for any reason whatever any provision of this Agreement is or becomes invalid, illegal or unenforceable or is declared by any court of competent jurisdiction or any other instrumentality to be invalid, illegal or unenforceable, the validity, legality or enforceability of the remaining provisions shall not be affected in any manner, and the Parties will negotiate in good faith with a view to agreeing to one or more provisions which may be substituted for such invalid, unenforceable or illegal provisions, as nearly as is practicable to such invalid, illegal or unenforceable provision. Failure to agree upon any such provisions shall not be subject to dispute resolution under Clause 8 of this Agreement or otherwise.

#### 9.9 Successors and assigns

This Agreement shall be binding on and shall inure to the benefit of the Parties and their respective successors and permitted assigns.

#### 9.10 Notices

All notices or other communications to be given or made under this Agreement shall be in writing, shall either be delivered personally or sent by courier or registered post with an additional copy to be sent by facsimile. The address for service of each Party and its facsimile number are set out under its name on the signing pages hereto. A notice shall be effective upon actual receipt thereof, save that where it is received after 5.30 (five thirty) p.m. on any day, or on a day that is a public holiday, the notice shall be deemed to be received on the first working day following the date of actual receipt. It is hereby agreed and acknowledged that any Party may by notice change the address to which such notices and communications to it are to be delivered or mailed. Such change shall be effective when all the Parties have notice of it.

#### 9.11 Language

All notices, certificates, correspondence and proceedings under or in connection with this Agreement shall be in English.

#### 9.12 Authorised representatives

Each of the Parties shall by notice in writing designate their respective authorised representatives through whom only all communications shall be made. A Party hereto

424

shall be entitled to remove and/or substitute or make fresh appointment of such authorised representative by similar notice.

**9.13 Original Document**

This Agreement may be executed in three counterparts, each of which when executed and delivered shall constitute an original of this Agreement.

**IN WITNESS WHEREOF THE PARTIES HAVE EXECUTED AND DELIVERED THIS AGREEMENT AS OF THE DATE FIRST ABOVE WRITTEN.**

SIGNED, SEALED AND DELIVERED  
For and on behalf of  
CONCESSIONAIRE by:

(Signature)  
(Name)  
(Designation)  
(Address)  
(Fax No.)

SIGNED, SEALED AND DELIVERED  
For and on behalf of  
NATIONAL HIGHWAY AUTHORITY OF  
INDIA  
by:

(Signature)  
(Name)  
(Designation)  
(Address)  
(Fax No.)

SIGNED, SEALED AND DELIVERED  
For and on behalf of  
SENIOR LENDERS by the Lenders' Representative:

(Signature)  
(Name)  
(Designation)  
(Address)  
(Fax)

In the presence of:

1.

2.

**SSCHEDULE W**

*(See Clause 47.3)*

**STATE SUPPORT AGREEMENT**

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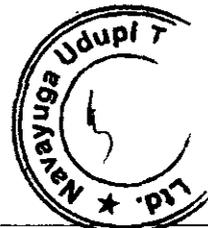
THIS STATE SUPPORT AGREEMENT is made on this \_\_\_\_\_ day of \_\_\_\_\_ 200\_\_  
AMONGST

- 1 THE GOVERNOR OF THE STATE OF Karnataka through the Secretary, Ministry of \_\_\_\_\_, Government of Karnataka, (hereinafter referred to as "GOK" which expression shall unless repugnant to the context or meaning thereof include its successors and permitted assigns) of the One Part,
- 2 National Highways Authority of India, a statutory body established under the provisions of the National Highways Authority of India Act, 1988, through its [.....] and having its principal office at G - 5 & 6, Sector - 10, Dwarka, New Delhi - 110 075 (hereinafter referred to as "NHAI" which expression shall unless repugnant to the context or meaning thereof include its administrators, successors and assigns), of the Second Part,

AND

- 3 M/s NAVAYUGA UDUPI TOLLWAY PRIVATE LIMITED LIMITED, a company incorporated and existing under the provisions of the Companies Act, 1956 and having its registered office at 1259, Lakshmi Towers, Road No. 36, Jubilee Hills, Hyderabad-500033 (hereinafter referred to as the "Concessionaire", which expression shall unless repugnant to the context or meaning thereof include its successors and substitutes) of the Third Part.

(Unless repugnant to the context or meaning thereof GOK, NHAI and the Concessionaire are hereinafter collectively referred to as "Parties" and singly as "Party")

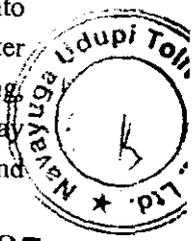


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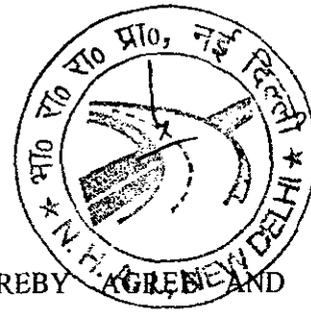
WHEREAS

- A** The Government of India in the Ministry of Shipping, Road Transport & Highways has mandated as on date hereof and may entrust at any time to NHAI specified sections of various National Highways situated within the State of Karnataka for, inter alia, improvement (including four laning), operation and maintenance on build, operate and transfer ("BOT") basis.
- B** The NHAI had decided to take up the improvement and strengthening of the existing carriageway of NH-17, Kundapur- Surathkal section from km 283.300 to km 358.080 (Section 1) and Mangalore- Kerala Border [km 375.300 to km 376.700 (i.e. Nantur circle to Mahaveer circle) and km 3.700 to km 17.200 (i.e. Mahaveer circle to Kerala border)] (Section 2) of total length 90.08 km in the State of Karnataka, India and widening thereof to 4 lanes and its improvement, operation and maintenance on BOT basis (the "Project") through award of concession on certain terms and conditions as set forth in the Concession Agreement (as defined hereinafter).
- C** NHAI had accordingly, invited Request for Proposals dated [.....] (the "RFP") for selection of BOT Entrepreneurs for, inter alia, execution and implementation of the said Project on BOT basis.
- D** NHAI had after evaluation of bids received, in response to the RFP, accepted the bid of the Consortium and had issued its Letter of Acceptance vide Letter No. **NHAI/BOT-I/11012/58/11/2005/1** dated 04.11.2009 (the "LOA") to the Consortium requiring, inter alia, the execution of the Concession Agreement pursuant thereto.
- E** The Consortium had promoted and incorporated the Concessionaire as a limited liability company to enter into the Concession Agreement pursuant to the LOA for undertaking, inter alia, the design, engineering, financing, procurement, utility shifting, tree cutting, improvement, construction, operation and maintenance of the Project on BOT basis as referred to in Recital B and to fulfill its other obligations under the Concession Agreement and had requested NHAI to accept the Concessionaire as the entity which shall undertake and fulfill and perform the obligations and exercise the rights of the Consortium under the LOA, including under the Concession Agreement to be entered into pursuant to the LOA.
- F** NHAI agreed to the said request of the Consortium and had accordingly entered into the Concession Agreement with the Concessionaire pursuant to the LOA for, inter alia, the design, engineering, financing, procurement, utility shifting, tree cutting, improvement, construction, operation and maintenance of the said Project Highway including the widening thereof to 4lanes on BOT basis subject to and on the terms and conditions setforth therein including schedules forming part thereof.



- G** GOK recognizes that the implementation of the Project and its continued operation and maintenance under and in accordance with the Concession Agreement is necessary and required for the development of the State of Karnataka in general and development of infrastructure for economic development and growth of the State in particular and acknowledges that to enable the implementation of the said Project, including to facilitate its financing and its operation and maintenance on BOT basis, in accordance with the Concession Agreement, it is necessary for the GOK to agree and undertake to support and extend complete cooperation to the Concessionaire and NHAI with respect to the implementation of the Project.
- H** GOK, NHAI and the Concessionaire have agreed that for the successful implementation of the Project, including performance of its obligations by the Concessionaire under and in accordance with the Concession Agreement requires extensive continued support and grant of certain rights and authorities as hereinafter set forth by GOK and is an essential pre-condition for mobilization of resources therefore by the Concessionaire and therefore it is necessary and expedient to enter into this Agreement.





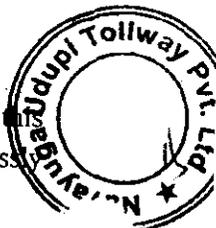
NOW THEREFORE THE PARTIES HERETO HEREBY AGREE AND THIS AGREEMENT WITNESSETH AS FOLLOWS:

## 1. DEFINITIONS AND INTERPRETATIONS

- 1.1 In this Agreement the following terms shall, unless repugnant to the context or meaning thereof, have the meaning hereinafter respectively assigned to them.
- 1.1.1 "Agreement" means this Support Agreement and all annexures hereto and amendments if any thereto made in accordance with the provisions contained herein in this behalf.
- 1.1.2 "Concession Agreement" means the Concession Agreement dated \_\_\_\_\_ entered into between NHAI and the Concessionaire for, inter alia, the implementation of the Project as more fully described therein and shall include all of its annexures and appendices and any amendments thereto made in accordance with the provisions contained in this behalf therein.
- 1.1.3 "Cure Period" means the period specified in this Agreement for curing any breach or default under this Agreement by a Party and shall commence from the date on which notice is delivered to the Party in such breach or default by any of the other Parties requiring it to cure such breach or default.
- 1.1.4 "GOK Agency" means and department, body, authority, commission, instrumentality, agency, Municipality, Panchayat or other local authority or any statutory body or authority under the control of GOK or which is subject to supervision, direction or control of GOK in respect of any matter or which can be suspended, superseded or dissolved by GOK.
- 1.1.5 "Local Taxes" means any state or local taxes, duties, levies, cess, fee or octroi or any import or surcharge of like nature on the whole or any part of the traffic including any motorized vehicles or goods while in transit on the whole or any part of the Project Highway.
- 1.1.6 "MOSRTH" means Ministry of Shipping, Road Transport and Highways, earlier Ministry of Road Transport & highways.
- 1.1.7 "Municipality" shall have the meaning as assigned to it in Article 243Q of the Constitution of India.
- 1.1.8 "Panchayat" shall have the meaning as assigned to it in Article 243B of the Constitution of India.

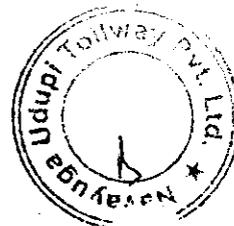


- 1.1.9 "State Support" means the obligations assumed and the facilities agreed to be provided by GOK to the Concessionaire hereunder or pursuant hereto and shall include the support obligations of the GOK as set forth in the Concession Agreement.
- 1.1.10 "Substitution Agreement" means the Substitution Agreement dated \_\_\_\_\_ entered into between the Senior Lenders, NHAI and the Concessionaire in relation to the Project and providing for substitution of the Concessionaire by any other person selected by the Senior Lenders in the manner and subject to and on the terms and conditions set forth therein and a copy of which is annexed hereto and marked as "Annexure 'A'."
- 1.2 The words and expressions beginning with or in capital letters used in this Agreement and not defined herein but defined in the Concession Agreement shall have, unless repugnant to the context, the meaning respectively assigned to them in the Concession Agreement. Words and expressions used in this Agreement and neither defined herein nor in the Concession Agreement but defined in the Substitution Agreement shall have the meaning respectively assigned to them in the Substitution Agreement.
- 1.3 In this Agreement unless the context otherwise requires-
- (a) any reference to a any statute or any statutory provision shall include any amendment or re-enactment or consolidation thereof so far as such modification or re-enactment or consolidation applies or is capable of applying to any transactions entered into hereunder;
  - (b) the words importing singular shall include plural and vice versa, and reference to a "person" and words denoting natural persons shall include partnerships, firms, companies, corporations, joint ventures, trusts, associations, organizations or other entities (whether or not having a separate legal entity) and shall include Government Instrumentalities and GOK Agencies;
  - (c) the headings are for convenience of reference only and shall not be used in and shall not affect the construction or interpretation of this Agreement;
  - (d) terms beginning with capital letters and defined in this Agreement shall have the meaning ascribed thereto herein;
  - (e) the words "include" and "including" are to be construed without limitation.
  - (f) any reference to a "day" shall mean reference to a calendar day;
  - (g) any reference to "month" shall mean reference to a calendar month;
  - (h) the Annexures and appendices to this Agreement form an integral part of this Agreement and will be in full force and effect as though they were expressly set out in the body of this Agreement;
  - (i) any reference at any time to any agreement, deed, instrument, license or document of any description shall be construed as reference to that agreement,



deed, instrument,, license or other document as amended, varied, supplemented, modified or suspended at the time of such reference provided that this clause shall not operate so as to increase liabilities or obligations of GOK or NHAI hereunder or pursuant hereto in any manner whatsoever.

- (j) References to Recitals, Clauses, Sub-clauses, Paragraphs, Annexures or Appendices in this Agreement shall, except where the context otherwise requires, be deemed to be references to Recitals, Clauses, Sub-clauses, Paragraphs, Annexures and Appendices of this Agreement.
- (k) Any agreement, consent, approval, authorization, proposal, notice, communication, information or report required under or pursuant to this Agreement from or by any Party or Senior Lender(s) shall be valid and effectual only if it is in writing under the hands of duty authorized representative of such Party or the Senior Lender(s), as the case may be, in this behalf and not otherwise; and
- (l) Any reference to any period commencing "from" a specified day or date and "till" or "until" a specified day or date shall include both days or dates.
- (m) "Concessionaire" shall include Selectee under the Substitution Agreement.



431

5

## 2. TERM

- 2.1 This Agreement shall come into force on and from the date hereof and shall continue to be in full force and effect for (i) the period the Concession Agreement is in force and effect in accordance with the terms thereof including any extension thereof, or (ii) final determination and discharge by GOK of all of its liabilities and claims hereunder against it, whichever is later.

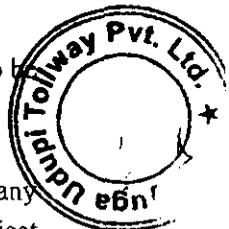
## 3. SUPPORT OF GOK

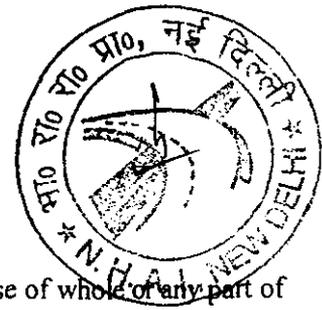
- 3.1 In Consideration of the Project being in the interests of the State of Karnataka and its economic growth and development and the Concessionaire entering into the Concession Agreement and agreeing to comply with its obligations hereunder, GOK agrees and undertakes to observe, comply with and perform the following with reference to the Concession Agreement and the Project:

- (i) enable continued access to the Site to the Concessionaire for peaceful use of and operations at the Site by the Concessionaire under and in accordance with the provisions of the Concession Agreement without any let or hindrance from GOK or persons claiming through or under it or any GOK Agency;
- (ii) subject to the Concessionaire complying with Applicable Laws, including payment of prescribed fee and charges, if any, provide to the Concessionaire Applicable Permits to the extent GOK or any Governmental Instrumentality of GOK is entitled to issue;
- (iii) upon written request from the Concessionaire, assist the Concessionaire in obtaining access to all necessary infrastructure facilities from any Governmental Instrumentality of GOK and to utilities, including water, electricity and telecommunication facilities at rates and on terms no less favorable to the Concessionaire than those generally available to commercial customers receiving substantially equivalent services;
- (iv) ensure that no barriers are erected or placed on the Project Highway by GOK or any GOK Agency that interrupts free flow of traffic on the Project Highway except on account of any law and order situation calamities, disasters (natural, accidental or due to any act or omission of any person or accident or otherwise) or upon national security considerations;
- (v) provide the Concessionaire with assistance through a dedicated team against payment of prescribed fee and charges, if any, for regulation of traffic on the Project Highway;
- (vi) provide the Concessionaire with police assistance in the form of dedicated highway patrol parties against payment of prescribed costs and charges, if any, for patrolling and provision of security on the Project Highway;
- (vii) observe and comply with its obligations set forth in this Agreement;

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- (viii) support, cooperate with and facilitate NHAI and the Concessionaire in the implementation of the Project;
- (ix) subject to and in accordance with the Applicable Laws including payment of prescribed fee and charges, if any, assist the Concessionaire in the procurement of all Applicable Permits required from any municipal and other local authorities and bodies including Panchayats in the State of Karnataka for the implementation of the Project;
- (x) ensure and procure, subject to and in accordance with the Applicable Laws, that all relevant municipal and other local authorities and bodies including Panchayats in the State of Karnataka do not put any barriers or other obstructions on the Project Highway or accesses thereto that interrupt free flow of traffic on the Project Highway;
- (xi) ensure and procure, subject to and in accordance with the Applicable Laws, that all relevant municipal and other local authorities and bodies including Panchayats in the State of Karnataka do not levy or impose any Local Taxes on the Project Highway or on the traffic and or goods moving on the Project Highway without prior express written consent of the GOK and after prior consultation with NHAI;
- (xii) support, cooperate with and facilitate the NHAI and the Concessionaire in the implementation and operation of the Project Highway in accordance with the provisions of the Concession Agreement;
- (xiii) not do or omit to do any act, deed or thing which may in any manner be violative of or cause the Concessionaire to violate any of the provisions of the Concession Agreement; and
- (xiv) observe and comply with all of its obligations set forth in this Agreement.
- 3.2 Notwithstanding anything to the contrary contained in the Agreement, GOK may construct and operate either itself or have the same, inter alia, built and operated on BOT basis or otherwise any Expressway or other toll road., not being a bye-pass, between inter alia, from kundapur to surathkal (km 283.300 to km 358.080)(Section 1) and Mangalore- Kerala Border [km 375.300 to km 376.700 (i.e. Nantur circle to Mahaveer circle) and km 3.700 to km 17.200 (i.e. Mahaveer circle to Kerala border) (Section 2) of total length 90.08)(the "Additional Tollway"), provided that such Additional Tollway shall not be opened to traffic before expiry of 15 (fifteen) years from the Appointed Date
- 3.3 GOK agrees and undertakes that it shall not build and construct nor shall it cause to be built and constructed any Competing Road in breach of the Concession Agreement.
- 3.4 GOK agrees and undertakes that it shall not levy, nor permit or authorize any Panchayat or Municipality to levy, any property taxes on or for the Site or Project





Highway any additional toll, fee, charge or other tax on the use of whole or any part of the Project Highway.

3.5 **GOK** acknowledges the rights of Senior Lenders and NHAI under the Substitution Agreement to undertake the substitution of the Concessionaire in accordance therewith and hereby covenants that upon substitution of the Concessionaire by the Selectee pursuant to and in accordance with the Substitution Agreement, it shall be deemed for the purposes of this Agreement that as if Selectee is a Party hereto and the Selectee shall accordingly be deemed to have succeeded to the rights and obligations of the Concessionaire under this Agreement on and with effect from the date of such substitution of the Concessionaire by the Selectee.

3.6 **GOK** acknowledges and agrees that each of the Concessionaire and the NHAI shall have the right to seek specific performance of this Agreement.

#### 4. CONCESSIONAIRE'S OBLIGATIONS

4.1 Concessionaire agrees and undertakes to perform, observe and comply with the following :

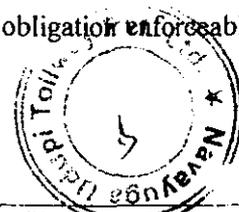
- (i) All Applicable Laws and Applicable Permits;
- (ii) The provisions of the Concession Agreement, the Substitution Agreement, and the Project Agreements; and
- (iii) Its obligations under this Agreement.

#### 5. REPRESENTATIONS AND WARRANTIES

5.1 The Concessionaire reiterates all of the Concessionaire's representations and warranties set forth in Article 7.1 of the Concession Agreement as if the same have been expressly incorporated herein by reference and makes the following further representations and warranties:

- (i) It is duly organized, validly existing and in good standing under the laws of India.
- (ii) It has power and authority to execute, deliver and perform its obligations under this Agreement and to carry out the transactions contemplated hereby;
- (iii) It has taken all necessary corporate and other action under Applicable Laws and its constitutional documents to authorize the execution, delivery and performance of this Agreement;
- (iv) This Agreement constitutes its legal, valid and binding obligation enforceable against it in accordance with the terms hereof;

434

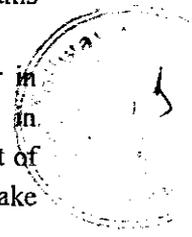




- (v) It is subject to civil and commercial laws of India with respect to this Agreement and it hereby expressly and irrevocably waives any immunity in any jurisdiction in respect thereof;
- (vi) All the information furnished to the GOK pertaining to the Concessionaire including its constitution and existing and proposed shareholding structure is now and shall be true and correct as on the Appointed Date and COD;
- (vii) The execution, delivery and performance of this Agreement will not conflict with, result in the breach of, constitute a default under or accelerate performance required by any of the terms of the Concessionaire's Memorandum and Articles of Association or any member of the Consortium or any Applicable Laws or Applicable Permits or any covenant, agreement, understanding, decree or order to which it is a party or by which it or any of its properties or assets is bound or affected;
- (viii) There are no actions, suits, proceedings or investigations pending or, to the Concessionaire's knowledge, threatened against it at law or in equity before any court or before any judicial, quasi judicial or other authority, the outcome of which may result in the breach of or constitute a default of the Concessionaire under this Agreement or

which individually or in the aggregate may result in any material adverse effect on its business, properties or assets or its condition, financial or otherwise, or in any impairment of its ability to perform its obligations and duties under this Agreement;

- (ix) The Concessionaire has no knowledge of any violation or default with respect to any order, writ, injunction or decree of any court or any legally binding order of any Governmental Instrumentality which may result in any material adverse effect or impairment of the Concessionaire's ability to perform its obligations and duties under this Agreement;
- (x) The Concessionaire has complied with all Applicable Laws and Applicable Permits, and has not been subject to any fines, penalties, injunctive-relief or any other civil or criminal liabilities which in the aggregate have or may have material adverse effect on its financial condition or its ability to perform its obligations and duties under this Agreement;
- (xi) Each Consortium Member was and is duly organized and existing under the laws of the jurisdiction of its incorporation and has full power and authority to consent to and has validly consented to the Concessionaire entering into this Agreement with the GOK;
- (xii) No representation or warranty by the Concessionaire contained herein or in any other document furnished by it to GOK, or to any GOK Agency in relation to Applicable Permits contains or will contain any untrue statement of material fact or omits or will omit to state a material fact necessary to make such representation or warranty not misleading;



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- (xiii) The Concessionaire warrants that no sums have been paid or will be paid, by or on behalf of the Concessionaire, to any Person by way of fees, commission or otherwise for entering into this Agreement or for influencing or attempting to influence any officer or employee of NHAI, or GOK in connection herewith; and
  - (xiv) The Concessionaire is subject to civil and commercial laws of India with respect to this Agreement.

5.2 GOK represents and warrants to the Concessionaire that :

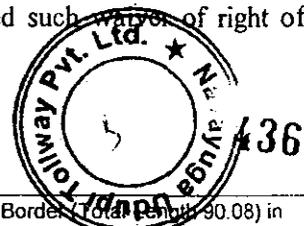
- (i) It has full power and authority to execute, deliver and perform this Agreement.
- (ii) It has taken all necessary governmental action to authorize the execution, delivery and performance of this Agreement; and
- (iii) This Agreement constitutes the legal, valid and binding obligation of GOK enforceable against it in accordance with its terms.

## 6. SOVEREIGN IMMUNITY

6.1 GOK hereby unconditionally and irrevocably:

- (i) Agrees that the execution, delivery and performance by it of this Agreement do not constitute sovereign acts;
- (ii) Agrees that should any proceedings be brought or any execution, attachment or any other legal process is made against it or its assets, property or revenues in any jurisdiction in relation to or arising out of this Agreement or any transaction contemplated by this Agreement, no immunity (whether by reason of sovereignty or otherwise) from such proceedings, execution, attachment or other legal process shall be claimed by or on behalf of GOK or with respect to any of its assets, property or revenues;
- (iii) waives any right of immunity, which it or its assets property or revenues now has or may acquire in the future or which may be attributed to it in any jurisdiction; and
- (iv) consents generally to the enforcement of any judgment or award against it in any such proceedings including to the giving of any relief or the issue of any process in any jurisdiction in connection with any such proceedings including the making, enforcement or execution against it or any of its assets, property or revenues, of any order, judgment or decree that may be made or given in connection therewith.

6.2 Notwithstanding anything to the contrary herein contained such waiver of right of immunity shall not apply to

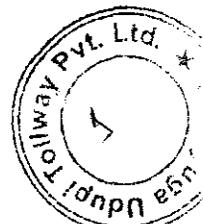


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- a) Property and assets of any consular or diplomatic mission or consulate or
  - b) Property belonging to the Defence services and such assets of the Union of India.

**7. Breach and Compensation**

- 7.1 In case GOK or any GOK Agency is in material breach of any of its obligations under this Agreement, and such breach is not cured within 30 days of receipt of a notice in writing in this behalf from the Concessionaire to GOK with copy to NHAI and which has not occurred as a result of Concessionaire's breach of its obligations under this Agreement or the Concession Agreement or Force Majeure, GOK shall pay to the Concessionaire, all direct additional costs suffered or incurred by the Concessionaire, determined by MOSRTH as arising out of such material default by GOK.
- 7.2 In case of any dispute by GOK on admissibility of the claim or extent of compensation determined by MOSRTH, the claim shall be settled in accordance with the Dispute Settlement mechanism provided in Clause 9 of this Agreement.
- 7.3 Any such compensation, as determined by MOSRTH or through the Dispute Settlement mechanism set forth in Clause 9 hereof as payable by GOK, shall be paid to the Concessionaire by GOK, in one lump sum within 90 (ninety) days of receipt of MOSRTH's determination of compensation or Award made in the arbitration pursuant to the Dispute Settlement mechanism set forth in Clause 9 of this Agreement.
- 7.4 In the event of the Concessionaire being in material breach of any of its obligations under this Agreement and such breach is not cured by the Concessionaire within 30 days of receipt of a notice in writing from GOK or NHAI (the "Claiming Party"), as the case may be, with copy to the other of them and which has not occurred as a result of breach by Claiming Party of its obligations under this Agreement or the Concession Agreement or Force Majeure, the Concessionaire shall pay to the Claiming Party, all direct additional costs suffered or incurred by it determined by MOSRTH as arising out of such material breach by the Concessionaire. In case of any dispute by the Concessionaire on the admissibility of such claim or the extent of compensation by MOSRTH, the claim shall be settled in accordance with the Dispute Resolution mechanism set forth in Clause 9 of this Agreement. Any such compensation, as determined by MOSRTH or by an Award in any

arbitration pursuant to Clause 9, shall be paid within 90 (ninety) days of receipt of such MOSRTH determination or Award, as the case may be.



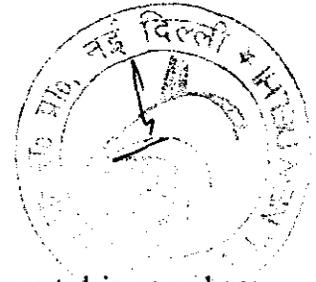
437



## 8. INDEMNITY

- 8.1. The Concessionaire will indemnify, defend and hold **GOK** and NHA1 harmless against any and all proceedings, actions and claims for any loss, damage, cost and expense of whatever kind and nature arising out of design, engineering, construction, operation and maintenance of the Project Highway or arising out of any breach by the Concessionaire of any of its obligations under this Agreement or on account of failure of the Concessionaire to comply with, and observe Applicable Laws and Applicable Permits;
- 8.2. **GOK** will, indemnify, defend and hold harmless the Concessionaire against any and all proceedings, actions and third party claims for any loss, damage, cost and expense arising out of failure of **GOK** to fulfill any of its obligations under this Agreement materially and adversely affecting the performance of the Concessionaire's obligations under the Concession Agreement other than any loss, damage, cost and expense, arising out of acts done in good faith in discharge of their lawful functions by **GOK**, its officers, servants and **GOK** Agencies;
- 8.3. Without limiting the generality of Clause 8.2, the **GOK** shall indemnify the Concessionaire and shall save it harmless from and against any payments required to be made by the Concessionaire with respect to levy of any Local Taxes [provided nothing contained herein shall be construed or interpreted as restricting in any way or manner the right of **GOK** or any municipal, Panchayat or other local authorities to levy any taxes which they or any of them are lawfully entitled to levy, impose or collect (the "Expected Taxes"). The Concessionaire shall not be entitled to and **GOK** shall be under no obligation to reimburse Expected Taxes to the Concessionaire or any person claiming through or under the Concessionaire;]
- 8.4. In the event that any of the Parties receives a claim from a third party in respect of which it is entitled to the benefit of an indemnity under this Clause 8 or in respect of which it is entitled to reimbursement hereunder (the "Indemnified Party") it shall within 14 (fourteen) days of receipt of the claim or payment, as the case may be, communicate such claim to the Party obligated to indemnify the Indemnified Party hereunder (the "Indemnifying Party") and shall not settle or pay the claim without the prior approval of the Indemnifying Party. In the event that the Indemnifying Party wishes to contest or dispute the claim, it may conduct the proceedings in the name of the Indemnified Party and shall bear all costs involved in contesting the same. The Indemnified Party shall provide to the Indemnifying Party all cooperation and assistance in contesting any claim and shall sign all such writings and documents, the risk and cost of the Indemnifying Party as the Indemnifying Party may reasonably require.





## 9. GOVERNING LAW AND DISPUTE SETTLEMENT

- 9.1. This Agreement shall be governed by and construed and interpreted in accordance with the laws of India. The provisions contained in Clause 8 and 9 shall survive the termination of this Agreement.
- 9.2. Any dispute, difference or controversy of whatever nature howsoever arising out of or in connection with or in relation to this Agreement which is not resolved amicably within 90 (ninety) days of receipt of notice of such dispute, difference or controversy from a Party (the "Claimant") by the other remaining Parties (collectively the "Respondents"), the same shall be decided finally by reference to arbitration to a Board or Arbitrators comprising of one nominee each of the Claimant and of the Respondent against whom the claim has been made and if the claim is against both the Respondents than the two Respondents shall jointly select their nominee arbitrator and if the two Respondents are unable to agree upon such arbitrator than such arbitrator shall be appointed by the International Centre for Alternative Dispute Resolution, New Delhi in accordance with its Rules of Arbitration. Such arbitration shall be held in accordance with the Rules of Arbitration of the International Centre for Alternative Dispute Resolution, New Delhi. The arbitration shall be subject to the provisions of the Arbitration and Conciliation Act, 1996 as amended from time to time. The Arbitrators shall issue a reasoned award. The venue of such arbitration shall be New Delhi, India. The Award made in any such arbitration shall be final and binding on the Parties.
- 9.3. Parties agree that they shall continue to perform their respective obligations under this Agreement during such arbitration, unless the performance or otherwise of such arbitration is itself the subject matter of arbitration.
- 9.4. The Courts of Delhi shall have exclusive jurisdiction over all matters arising out of or relating to this Agreement.

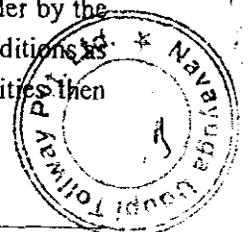
## 10. MISCELLANEOUS

### 10.1. Alteration of Terms

All additions, amendments, modifications and variations to this agreement shall be effectual and binding only if in writing and signed by the duly authorized representatives of GOK and the Concessionaire.

### 10.2. Time or Indulgence Allowed

An indulgence by a Party to any of the other Party in respect of any obligation or matter hereunder including time for performance to such other party or to remedy any breach hereof shall not be construed as a waiver of any of its rights hereunder by the Parties and any such indulgence may be on such terms and subject to such conditions as the Party giving it may specify and shall be without prejudice to the Parties then



accrued respective rights under this Agreement except to the extent expressly varied in writing.

10.3. Severability of Terms

If any provisions of this Agreement are declared to be invalid, unenforceable or illegal by any competent arbitration tribunal or court, such invalidity, unenforceability or illegality shall not prejudice or affect the remaining provisions of this Agreement, which shall continue in full force and effect.

10.4. Language

All notices, certificates, correspondence or other communications under or in connection with the Agreement shall be in English

10.5. Notices

Any notice or communication hereunder shall be in writing and shall either be delivered personally or sent by registered or by electronic means. A copy of facsimile transmission or other means of telecommunication shall be sent in permanent written form. A copy of all the notices and communications will also be forwarded to the Lenders Representative. The service of notice shall unless otherwise notified by a notice hereunder to the parties at their following address:

IF to GOK:

Attn :

Fax no :

Tel no.

IF to the NHAI:

Attn:

Fax no.

Tel no.

IF to the Concessionaire:

Attn :

Fax no.

Tel no.

The notice pursuant hereto will be deemed to have been received on the date when such notice is in fact received by the addressee.

10.6. Authorized Representatives

Each of the Parties shall by notice in writing designate their respective authorized representatives through whom only all communications shall be made. A Party hereby



440

shall be entitled to remove and/or substitute or make fresh appointment of its such authorized representative by similar notice.

**10.7. Original Document**

This Agreement is made in three counterparts, each of which shall be deemed to be an original.

10.8. In case of any conflict between this Agreement and the Concession Agreement, the provisions contained in the Concession Agreement shall be binding on parties signing this State Support Agreement.

10.9. This Agreement is solely for the benefit of the Parties and no other person or entity shall have any rights hereunder.

10.10. Termination of this Agreement shall not relieve any Party of any accrued rights, obligations and liabilities arising out of or caused by any act or omission of a Party into the effective date of such termination or arising out of such termination.

10.11. This Agreement shall be binding on and shall inure to the benefit of successors and permitted assigns.

**IN WITNESS WHEREOF THE PARTIES HERETO HAVE PUT THEIR HANDS  
HEREUNTO ON THE DAY, MONTH AND YEAR FIRST ABOVE WRITTEN.**

**FOR CONCESSIONAIRE**

**FOR GOVT. OF \_\_\_\_\_**

BY : \_\_\_\_\_  
Name : \_\_\_\_\_  
Title: \_\_\_\_\_

BY : \_\_\_\_\_  
Name: \_\_\_\_\_  
Title: \_\_\_\_\_

**FOR NATIONAL HIGHWAYS AUTHORITY OF INDIA**

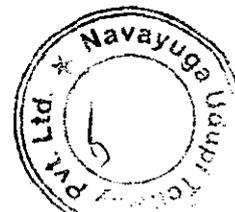
BY : \_\_\_\_\_  
Name : \_\_\_\_\_  
Title: \_\_\_\_\_

*h*

In the presence of:

1.

2.



441